

History of Science 339, Fall 2005
Technology and Its Critics Since World War II

TTh 1:00-2:15, 159 Van Hise

Professor:	Eric Schatzberg	Office Hrs:	2:30-3:30 Tue. or by appt.
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Description:

The course examines the people and ideas that questioned American enthusiasm for technology after World War II. Enthusiasm for technology was not new to Americans. But the dramatic technologies of World War II, especially the atomic bomb, encouraged a profound belief in the ability of technology to achieve almost any task assigned to it. From the beginning of the postwar era, however, some people challenged this faith in technology. At first, the strongest criticism of technology was directed against the dangers of nuclear war and the hazards of fallout from atomic testing. A few intellectuals also criticized the consumer society of the 1950s, with its bland suburbs, conformist white-collar bureaucracies, and mind-numbing advertising. In the early 1960s, critics shifted ground to other technologies, most importantly synthetic pesticides and the automobile. These critics helped inspire a new environmental movement concerned with protecting humans as well as wilderness. Critics of technology also drew strength from protest against the Vietnam War and the counterculture of the 1960s, both of which encouraged activism against large-scale technologies like nuclear power. The counterculture also inspired groups seeking to create counter-technologies, such as organic farming and solar energy. Even in the midst of today's enthusiasm for every new gadget, critics continue to expose the dark side of technological change.

Requirements:

The course will require three one-page reading responses, active participation in discussion, and three short take-home essay exams.

Due dates: readings responses, 9/22, 10/27, 11/29; essays, 10/11, 11/15; take-home final, 12/19.

Graduate students MUST register concurrently for Hist Sci 639, 9:55-10:45 Wed. This is a requirement of the Divisional Committee that the department cannot waive. Hist Sci 639 requires additional readings and a small research paper.

Honors students, that is, students registered for honors credit, have two choices. They can either join the separate graduate discussion section, Hist Sci 639, which meets 9:55-10:45 Wednesdays. Or they can write a major research paper on a topic directly relevant to the course, but focusing on a period before 1980. Honors students should contact me promptly to indicate which option they will choose.

Lecture and Discussion Etiquette:

This is a relatively small class, and I'd like to keep things pretty relaxed. But there are a couple points of etiquette that I'd like everyone to follow. Please sit near the front of the class. Please do not read newspapers or have private conversations during lectures. Feel free to discuss with

Week 4 (9/27, 9/29): Conflicts among Experts: Debating Atomic Fallout

Experts played a key role in the debate over radiation dangers. Many of these experts criticized the U.S. government for downplaying the dangers of fallout.

Readings: Winkler, *Life Under a Cloud*, 84-135 (chaps. 4-5);

Carolyn Kopp, "The Origins of American Scientific Debate over Fallout Hazards," 403-22;

Pat Ortmeyer and Arjun Makhijani, "Worse Than We Knew," 46-50.

Week 5 (10/4, 10/6): Opposing the Bomb: From the Manhattan Project to the SANE

More than any other technology in history, atomic weapons have faced determined opposition, from technical experts, public intellectuals, and popular movements. [Note: Tuesday is Rosh Hashanah; please let me know if you plan to be absent.]

Readings: Milton S. Katz, *Ban the Bomb: A History of SANE*, 1-44 (chaps. 1-2);

Lewis Mumford, "Gentleman, You Are Mad!" *Saturday Review of Literature*, 2 March 1946, 5-6;

Linus Pauling, *No More War!* (1958), 133-56 (chap. 7);

Pauling, "An Appeal by American Scientists to the Governments and People of the World," *Bulletin of the Atomic Scientists* 13 (Sep. 1957): 264-66.

Assignment (due Tuesday 10/11): short essay on the bomb and its critics. Be prepared for discussion Thursday.

Week 6 (10/11, 10/13): Mass Consumption, Mass Communication, and Mass Society--The Suburbs as a Technological System

The 1950s and early 1960s saw rapidly rising standards of living in the United States, creating a new type of consumer society. Supporting this consumer society was a new technological system, the automobile-centered suburbs.

Readings: Michael Schaller, Virginia Scharff, and Robert D. Schulzinger, "America At Home, 1945-1960," chap. 3 in *Present Tense: The United States since 1945*, 92-137;

Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States*, 231-271 (chap. 13-14);

William Blum, "Guatemala 1953-1954: While the World Watched," chap. 10 in *Killing Hope: U.S. Military and CIA Interventions Since World War II*, 72-83.

Video Thursday: *Selling the American Way*, from David Halberstam's *The Fifties*. [Note: Thursday is Yom Kippur. If you plan to be absent, the video is available for viewing in the Learning Lab, 259 Van Hise. Ask for video # ID2.095, tape 2. For hours, see <http://lss.wisc.edu/aboutlss/hours.php> .]

Week 7 (10/18, 10/20): The Critique of Consumer Society

In the 1950s and early 1960s, social critics launched attacks on the new consumer society, condemning the suburbs, advertising, and the American obsession with the automobile.

Readings: William H. Whyte, "Introduction," chap. 1 in *The Organization Man* (1956), 3-14;

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

Vance Packard, *The Hidden Persuaders* (1957), 3-37, 46-56, 72-83; (chaps. 1-3, 5, 7).

Discussion Thursday.

Week 8 (10/25, 10/27): Perils of Consumption: Ralph Nader and Auto Safety

Consumer society gave people the goods, but not necessary the good (or safe) life. Ralph Nader helped transform the postwar consumer movement into a powerful critic of corporate misdeeds.

Readings: Ralph Nader, *Unsafe at Any Speed: The Designed-In Dangers of the American Automobile* (1965), vii-x, 1-32, 65-118 (preface, chaps. 1, 3);

Marti Mueller, "Nader: From Auto Safety to Permanent Crusade," *Science* n.s. 166 (21 Nov. 1969): 979-983.

Assignment (due 10/27): one-page reading response; be prepared for discussion Thursday.

Week 9 (11/1, 11/3): Rachel Carson and the Rise of Environmental Consciousness, 1

The publication of Rachel Carson's *Silent Spring* in 1962 marked a turning point in modern environmentalism.

Readings: Donald Worster, selection from *Nature's Economy: A History of Ecological Ideas*, 342-59;

Rachel Carson, *Silent Spring*, 1-127 (chaps. 1-8).

Video Thursday: *Rachel Carson's Silent Spring*, PBS, 1992.

Week 10 (11/8, 11/10): Environmental Consciousness, 2

Carson's attitude to science and technology; the impact of her work.

Readings: Carson, *Silent Spring*, 128-297 (chaps. 9-14);

Zuoyue Wang, "Responding to Silent Spring: Scientists, Popular Communication, and Environmental Policy in the Kennedy Years," 141-163.

Assignment (due Tuesday 11/15): short essay due on *Silent Spring*; be prepared for discussion Thursday.

Week 11 (11/15, 11/17): The New Left, Vietnam, and Technology

Opposition to the Vietnam War and the emergence of the counterculture all combined to help undermine postwar faith in Cold War science and technology.

Reading: Students for a Democratic Society, *The Port Huron Statement*, 1962, 6-36;

Mario Savio, conclusion of speech before Free Speech Movement sit-in, Dec. 3, 1964;

Marilyn B. Young, "The War In America (1965-1967)," 192-209;

Bryce Nelson, "M.I.T.'s March 4: Scientists Discuss Renouncing Military Research," *Science* n.s. 163 (14 Mar. 1969): 1176-78.

David Farber, "Intoxicated State/Illegal Nation: Drugs in the Sixties Counterculture," in *Imagine Nation*, 17-40.

Week 12 (11/22, 11/29): The Radical Critique of Technology

During the 1960s, a number of radical intellectuals developed a powerful and wide-ranging critique of modern technology in general, although some radicals defended technology as a potential source of liberation. [Note: this topic spans Thanksgiving break.]

Readings: Lewis Mumford, selection from "The New Megamachine," chapter 10 in *The Pentagon of Power* (1970), 263-281;
Murray Bookchin, "Towards a Liberatory Technology," in *Post-Scarcity Anarchism* (1971, orig. 1965), 85-139 (skim 95-129);
Herbert Marcuse, *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society* (1964), ix-xvii, 1-18 (Introduction and chap. 1).

Assignment (due 11/29): one-page reading response; be prepared for discussion Tuesday after Thanksgiving.

Week 13 (12/1): The Broadening Critique: Questioning Nuclear Power

The origins of the most powerful movement against a specific civilian technology in postwar America and Europe.

Reading: Winkler, *Life Under a Cloud*, 136-64 (chap. 6);
A. J. Ackerman, "Atomic Power -- Who Looks After Public Safety," *IEEE Transactions on Aerospace and Electronic Systems* AES-5 (1969): 363-375;
Daniel F. Ford and Henry W. Kendall, "Nuclear Safety," *Environment* 14 (Sep. 1972): 2-9, 48;
David Burnham, "3 Engineers Quit G.E. Reactor Division and Volunteer in Antinuclear Movement," *New York Times*, Feb. 3, 1976, 12.

Film: Excerpts from *The China Syndrome*, time permitting.

Week 14 (12/6, 12/8): Appropriate and Alternative Technology

Some critics went beyond condemnation of postwar technology to propose alternative technological paths intended to create a more humane world.

Readings: E. F. Schumacher, *This I Believe and Other Essays* (Foxhole, Dartington Totnes, Devon: Green Books, 1997), 35-34, 67-83, 97-116, 130-142 (chaps. 3, 6, 10-11, 13);
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*, 353-79.

Week 15 (12/13, 12/15): Recent Critiques of Contemporary Technology

Debates over technology continue to rage today. Readings for this week look at the social effects of computers and the Amish as practitioners of alternative technologies.

Readings: Langdon Winner, "Technology Today: Utopia or Dystopia," *Social Research* 64 (1997): 989-1017;
Eric Brende, "Technology Amish Style," *Technology Review* 99 (Feb./Mar. 1996): 26-33.

Be prepared for discussion Tuesday 12/15.

Final Exam, due Monday Dec. 19, 3:30 pm

Hand in the take-home final at my office, 7129 Social Science.

Course Packet Contents

1. "Introductory Essay: The Social Shaping of Technology," in *The Social Shaping of Technology*, ed. Donald MacKenzie and Judy Wajcman, 2nd ed. (Buckingham: Open University Press, 1999), 3-16.
2. Godfrey Hodgson, "The 1940s," chap. 2 in *America in Our Time* (New York: Vintage, 1976), 17-47.
3. Ellen Schrecker, *The Age of McCarthyism: A Brief History with Documents*, 2nd ed. (Boston: Bedford/St. Martin's, 2002), 20-30, 38-47, 177-82, 271-74.
4. Alan Dunn, "Utopia--1955," *Saturday Evening Post*, 30 Dec. 1944, 36-37.
5. 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), 109-30, 385-89 (chaps. 10-11).
6. Selections from "Peacetime Benefits of Atomic Energy" in *The Atomic Bomb*, comp. Julia E. Johnson (New York: H. W. Wilson, 1946), 241-52, 277-88.
7. Carolyn Kopp, "The Origins of the American Scientific Debate over Fallout Hazards," *Social Studies of Science* 9 (1979): 403-22;
8. Pat Ortmeier and Arjun Makhijani, "Worse Than We Knew," *Bulletin of the Atomic Scientists* 53 (Nov/Dec 1997): 46-50.
9. Milton S. Katz, *Ban the Bomb: A History of SANE, the Committee for a Sane Nuclear Policy, 1957-1985* (New York: Greenwood Press, 1986), 1-44 (chaps. 1-2).
10. Lewis Mumford, "Gentleman, You Are Mad!" *Saturday Review of Literature*, 2 March 1946, 5-6.
11. Linus Pauling, *No More War!* (New York: Dodd, Mead & Co., 1958), 133-56 (chap. 7).
12. Pauling, "An Appeal by American Scientists to the Governments and People of the World," *Bulletin of the Atomic Scientists* 13 (Sep. 1957): 264-66.
13. Michael Schaller, Virginia Scharff, and Robert D. Schulzinger, "America At Home, 1945-1960," chap. 3 in *Present Tense: The United States since 1945*, 2nd ed. (Boston: Houghton Mifflin, 1996), 92-137.
14. Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (Oxford: Oxford University Press, 1985), 231-271, 368-77 (chaps. 13-14).
15. William Blum, "Guatemala 1953-1954: While the World Watched," chap. 10 in *Killing Hope: U.S. Military and CIA Interventions Since World War II* (Monroe, ME: Common Courage Press, 1995), 72-83, 393-95.
16. William H. Whyte, "Introduction," chap. 1 in *The Organization Man* (New York: Simon & Schuster, 1956), 3-14.
17. John Kenneth Galbraith, *Affluent Society*, (Boston: Houghton Mifflin, 1958), 1-6, 152-160 (chaps. 1, 11);
18. Vance Packard, *The Hidden Persuaders* (New York: D. McKay, 1957), 3-37, 46-56, 72-83 (chaps. 1-3, 5, 7).
19. Ralph Nader, *Unsafe at Any Speed: The Designed-In Dangers of the American Automobile* (New York: Grossman, 1965), vii-x, 1-32, 65-118 (preface, chaps. 1, 3).

20. Marti Mueller, "Nader: From Auto Safety to Permanent Crusade," *Science* n.s. 166 (21 Nov. 1969): 979-983.
21. Donald Worster, selection from *Nature's Economy: A History of Ecological Ideas*, 2nd ed. (Cambridge: Cambridge University Press, 1994), 342-59, 462-64.
22. Zuoyue Wang, "Responding to Silent Spring: Scientists, Popular Communication, and Environmental Policy in the Kennedy Years," *Science Communications* 19 (1997): 141-163.
23. Students for a Democratic Society, *The Port Huron Statement, 1962* (Chicago: Charles H. Kerr, 1990), 6-36.
24. Mario Savio, conclusion of speech before Free Speech Movement sit-in, Dec. 3, 1964, http://www.fsm-a.org/stacks/mario/mario_speech.html.
25. Marilyn B. Young, "The War In America (1965-1967)," chap. 10 in *The Vietnam Wars, 1945-1990* (New York: HarperCollins, 1991), 192-209, 360-63.
26. Bryce Nelson, "M.I.T.'s March 4: Scientists Discuss Renouncing Military Research," *Science* n.s. 163 (14 Mar. 1969): 1176-78.
27. David Farber, "Intoxicated State/Illegal Nation: Drugs in the Sixties Counterculture," in *Imagine Nation: The American Counterculture of the 1960s and '70s*, ed. Peter Braunstein and Michael William Doyle (New York: Routledge, 2002), 17-40.
28. Lewis Mumford, "The New Megamachine," chapter 10 in *The Pentagon of Power*, volume 2 of *The Myth of the Machine* (New York: Harcourt Brace Jovanovich, 1970), 263-99.
29. Murray Bookchin, "Towards a Liberatory Technology," in *Post-Scarcity Anarchism* (Berkeley: Ramparts Press, 1971), 85-139.
30. Herbert Marcuse, *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society* (Boston: Beacon Press, 1964), ix-xvii, 1-18 (Introduction and chap. 1).
31. A. J. Ackerman, "Atomic Power -- Who Looks After Public Safety," *IEEE Transactions on Aerospace and Electronic Systems* AES-5 (1969): 363-375.
32. Daniel Ford and Henry W. Kendall, "Nuclear Safety," *Environment* 14 (Sep. 1972): 2-9, 48.
33. David Burnham, "3 Engineers Quit G.E. Reactor Division and Volunteer in Antinuclear Movement," *New York Times*, Feb. 3, 1976, 12.
34. E. F. Schumacher, *This I Believe and Other Essays* (Foxhole, Dartington Totnes, Devon: Green Books, 1997), 35-34, 67-83, 97-116, 130-142 (chaps. 3, 6, 10-11, 13).
35. Amory B. Lovins, "Energy Strategy: The Road Not Taken," *Foreign Affairs* 55 (Oct. 1976): 65-96.
36. Andrew Kirk, "Machines of Loving Grace: Alternative Technology, Environment and the Counterculture," in *Imagine Nation*, 353-79.
37. Langdon Winner, "Technology Today: Utopia or Dystopia," *Social Research* 64 (1997): 989-1017.
38. Eric Brende, "Technology Amish Style," *Technology Review* 99 (Feb./Mar. 1996): 26-33.