

CRD 118 Technology and Society

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Community and Regional Development
Office hours: MWF 10-11, TTh by appointment
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Brief Course Description

Even though technology plays a fundamental role in even our most intimate activities, few of us reflect upon how technology develops or why it develops in the ways it does. The purpose of this course is to acquire a theoretical and historical understanding of how technology evolves and then use these understandings to examine some topics of technological development and contemporary society. By the end of the course, my hope is that you will have a better understanding of why technologies have evolved in the way they have. I also hope you will have a better understanding of the fact that we can change this evolution.

We as a species are constantly creating new things for our use and abuse. These objects create new needs such as for a radio, a fax machine, a cell phone, side-impact air bags, designer drugs, etc. And yet, we know little about why and how these artifacts came to populate our world and structure our lives. In the modern era, when we perceive a problem, then we call upon our technologists to solve it. Technical fixes are a preferred remedy. Even when there is no problem, businesses are trying to create new needs and define new problems. However, technologies are not neutral, they have politics, social structures, and many other things designed into them. The technologies that a group or society uses tell us much about that society, and we often measure other societies by their technologies.

Required Readings

1. There is one book required:
Basalla, George. 1988. The Evolution of Technology (New York: Cambridge University Press).
2. The readings will be available in a packet for purchase. If you can find someone who took the class last year the reader is about the same. There have been a few changes, and you can get copies of those articles from me so you can copy them.

Grading

Your grade will be given on the basis of the following products:

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| 1. Four unannounced quizzes (drop one - 10% each) Quizzes missed cannot be made-up. However, the lowest one will be dropped. | 30% |
| 2. Paper (due on day of final) All students are expected to make a five-minute presentation on their research. If you do not make this presentation your grade will be lowered by one full grade, i.e. B becomes C etc. | 60% |
| 3. Classroom discussion (I feel entirely free to call on anyone in class at any time!) | <u>10%</u> |
| TOTAL | 100% |

Assignments

The quiz and paper are the key to success in the class. The following is a short description of the various grade-related issues:

Quizzes: There will be four quizzes, you may drop the lowest one. There will be no make up quizzes. The quizzes evaluate the recent readings and lectures. They may include short answers, multiple choice and fill-in the blank questions. The quiz will cover the readings and lectures for the previous three classes.

Final Paper: The final paper is meant to acquaint you with the history of a technology in more depth than you would otherwise get. Any technology or artifact is acceptable for the paper. Given that the paper is 60 percent of the grade, it should be approximately fifteen pages in length. For the paper you will choose any product or item you wish and you will trace its evolution through time. The integration of the readings into the paper is mandatory. Any paper that does not integrate the readings will receive no higher than a C. The better the integration, the higher the grade.

Please do not put any covers etc. on the papers. The paper should begin with a title page giving your name, the class, date, instructor etc.

Excellent past papers will be on reserve in the library.

VERY IMPORTANT: To encourage you to make a decision as soon as possible, I would like a one-paragraph description of your topic choice on October 18, 2006. Not handing this in on time will be an automatic "F" for 10 percent of the total class grade (to be subtracted from the 60 percent).

VERY IMPORTANT: All students are expected to make a five-minute presentation on their research. If you do not make this presentation your final grade will be lowered by one full grade, i.e. B becomes C. This is mandatory and attendance for these presentations is mandatory.

The paper should be typed double-spaced on one side of the page. Please use a normal typeface and a 10 or 12 pitch. References to any written materials should be in footnotes or embedded citations (Kenney 1998:2). **Everyone must provide an electronic copy of the paper emailed as an attachment. However, a hard copy is also required.** The paper will be due on the date of the final examination as published in the catalog.

Required Readings

Readings are an essential part of the course and, though not necessarily duplicated in the course lectures, are a necessary background for discussion. They will be necessary to adequately participate in the class and you will be responsible for knowing this material for quizzes.

Wednesday, January 4, 2006 – Introduction and hand out readings

Monday, January 9, 2006 – Technology and Intellectual Property

From the U.S. Patent and Trademark Office please read:

1. What is a patent?
2. Patent laws.
3. What can be patented?
4. Novelty and other conditions for obtaining a patent

The URL is: <http://www.uspto.gov/web/offices/pac/doc/general/>

Lessig, Lawrence. 1999. Code (New York: Basic Books) pp. 122-141.

Barlow, John Perry. "The Economy of Ideas." <http://www-swiss.ai.mit.edu/6805/articles/int-prop/barlow-economy-of-ideas.html>

Wednesday, January 11, 2006 -- Evolution Illustrated

The articles in this section are illustrations of how technologies evolve.

Gladwell, Malcolm. 2002. "Smaller: The disposable diaper and the meaning of progress." http://www.gladwell.com/2002/2002_11_26_a_diaper.htm (November 21).

Funderburg, Anne. 2000. "Making Teflon Stick." Invention and Technology (Summer) pp. 10-20.

Petroski, Henri. The Evolution of Useful Things (New York: Knopf, 1993) pp. 3-21 & 51-76.

Monday, January 16, 2006 Vacation

Wednesday, January 18, 2006 -- Technological Evolution

Basalla, George. 1988. The Evolution of Technology (New York: Cambridge University Press) pp. 1-63.

Friedel, Robert. 1994. "The History of the Zipper." Invention and Technology (Summer) pp. 8-16.

Monday, January 23, 2006 – Selection

Hand In Paper Topic

Basalla, George. 1988. The Evolution of Technology (New York: Cambridge University Press) pp. 135-205.

Wednesday, January 25, 2006 – Social Construction of Technology

Pinch, Trevor and Wiebe Bijker. 1987. "The Social Construction of Facts and Artifacts," In Bijker, T. Hughes, and T. Pinch (eds) The Social Construction of Technological Systems. (Cambridge, Ma.: MIT Press) pp. 17-47. {skim pages 17-28, read carefully pages 28-47}

Latour, Bruno. 1991. "Technology is Society Made Durable." In John Law (Ed.) A Sociology of Monsters: Essays on Power, Technology, and Domination (London: Routledge) pp. 103-131.

Monday, January 30, 2006 – Social Construction Examples

Pinch, Trevor. 2002. "Why You Go to a Music Store to Buy a Synthesizer." In R. Garud and P. Karnoe (Eds.) Path Dependence and Creation (New York: Lawrence Erlbaum Associates) pp. 381-399.

Rosen, Paul. 1993. "The Social Construction of Mountain Bikes." Social Studies of Science 23 pp. 479-513.

Wednesday, February 1, 2006 – Failures

Lipartito, Kenneth. 2003. "Picturephone and the Information Age: The Social Meaning of Failure." Technology and Culture 44: 50–81

Perrow, Charles. 1999. Normal Accidents (Princeton: Princeton University Press): 62-100.

Monday, February 6, 2006 -- Standards, Path Dependence, and Lock-In

David, Paul. 1985. "Understanding the Economics of QWERTY: The Necessity of History." In (W. Parker Ed.) Economic History and the Modern Economist (Oxford: Basil Blackwell): 30-49.

David, Paul. 1992. "Heroes, Herds, Hysteresis in Technological History: Thomas Edison and "The Battle of the Systems." Industrial and Corporate Change 1 (1): 129-179.

Wednesday, February 8, 2006 – Marx on Technology

Rosenberg, Nathan. 1976. "Marx as a Student of Technology." Science, Technology and the Labour Process pp. 8-31.

Noble, David. 1984. Forces of Production (New York: Knopf) pp. 324-353

Monday, February 13, 2006 – Evolution and Stability

Constant, Edward W. 2002. "Why Evolution is a Theory about Stability." Research Policy 31: 1241-1256.

Hargadon, A. and Y. Douglas. 2003. "When Innovations meet Institutions: Edison and the Design of the Electric Light" Administrative Science Quarterly.

Wednesday, February 15, 2006 -- Technical Change and Business

Tushman, M. L. and P. Anderson. 1986. "Technological discontinuities and organizational environments" Administrative Science Quarterly 31: 439-65.

Monday, February 20, 2003 Vacation

Wednesday, February 22, 2006 – Technological Spectacles and the Creation of Legitimacy

Lampel, Joseph. 2001. "Show-and-Tell: Product Demonstrations and Path Creation of Technological Change." In R. Garud and P. Karnoe (Eds.) Path Dependence and Creation (New York: Lawrence Erlbaum Associates) pp. 303-327.

Rao, Hayagreeva. Tests Tell: Constitutive Legitimacy and Consumer Acceptance of the Automobile; 1985-1912. *The New Institutionalism in Strategic Management*, edited by Paul Ingram and Brian Silverman, JAI Press. Forthcoming.

Monday, February 27, 2006 – Technology and the Military

Ellis, John. 1975. The Social History of the Machine Gun (New York: Pantheon) pp. 21-45, 79-109 (skim), 167-178.

McBride, William. 2000. Technological Change and the United States Navy, 1865-1945 (Baltimore: Johns Hopkins University Press) pp. 211-241.

Wednesday, March 1, 2006 – Technology and Imperialism

Mokyr, Joel. 1992. The Lever of Riches (New York: Oxford University Press) pp. 209-238.

Adas, Michael. 1989. Machines as the Measure of Man (Ithaca, NY: Cornell University Press) pp. 1-16, 402-418.

Rodney, Walter. 1982. How Europe Underdeveloped Africa (Washington, DC: Howard University Press) pp. 103-113. {Start with the heading “Technical Stagnation and Distortion...}

Monday, March 6, 2006 – Creating Credibility in Technology or How to Make You Believe

Kinchy, Abby J. and Daniel Lee Kleinman. 2003. “Organizing Credibility: Structural Considerations on the Borders of Ecology and Politics.” Social Studies of Science 33 (4): 869–896

Lahsen, Myanna. 2005. “Seductive Simulations? Uncertainty Distribution Around Climate Models.” Social Studies of Science 35 (6): 895-922.

Malone, Ruth E., Elizabeth Boyd, and Lisa Bero. 2000. “Journalists’ Constructions of Passive Smoking as a Social Problem.” Social Studies of Science 30 (5): 713-735.

Wednesday, March 8, 2006 – Technology Has Many Uses -- Prenatal Gender Identification

Please think about the usage of technology and social rules and norms. A technology can be used in one way in one society and another way in another society. There are some fundamental issues here such as whom should have the right to chose?

Check out these sites:

<http://www.evesindia.com/body-talk/bodycare/amniocentesis.html>

<http://www.indiatogether.org/2003/aug/wom-sexratio.htm>

Check out this General Electric India site. This warning is new, but because of the amount of business General Electric does in India, it has become its world center for Ultrasound, which is used to view the fetus. http://www.gemedicalsystems.com/inen/actno_57.html

This is a great discussion about how multinational firms need to deal with the problems that come when their technologies are used in certain ways:

<http://www.kellogg.nwu.edu/faculty/diermeier/ftp/section61/atl.ppt>

Please enter the following words in Google and search the following three terms: "amniocentesis, ultrasound, India, females." Be prepared to talk about the debates.

Monday, March 13, 2006 -- STUDENT PRESENTATIONS

Wednesday, March 15, 2006 -- STUDENT PRESENTATIONS

