

SI 648/748, Winter 2003
Prof. Paul N. Edwards
School of Information
412 West Hall
Tuesdays, 1–4 PM
Class numbers: 648 — 27525, 748 — 31836

InfoCulture:

Theory and Methods in the History and Sociology of Information Technology

Technologies of information processing, communication, and control are among the basic foundations of the modern sociotechnical order. This seminar explores how historical and sociological theory and methods can illuminate the origins, technical evolution, and sociocultural contexts of these most fundamental technologies.

The course will explore theories of technological change, ranging from technological determinism (new technologies cause social change) to social constructivism (groups and organizations choose the uses and meanings of new technologies). At the same time, we will examine the methods used by historians and sociologists, and discuss how they apply to problems faced on an everyday basis by information professionals. These methods include comparative history, ethnographic studies of designers and users, large-scale historical sociology, and case studies of information handling in organizations.

Course readings will cover a number of different information technologies, including books, libraries, large information-intensive organizations, computers, classification systems, the Internet, and military command-control systems.

Prerequisites: SI 504 (may be taken concurrently)

Requirements for all students:

- At least one in-class presentation of course readings.
- Group project, resulting in a presentation on February 18.

Additional requirements for 648 students:

- A 2000–3000 word essay describing and evaluating historical and/or sociological theories of technological change. Due in class February 4th.
- A 2500–3500 word essay on a topic of your choice using theories and/or methods from the course. Students should discuss their topics with me before beginning. A *full-length, high-quality draft* of this paper is due in class March 25th. It will be

returned the following week, with comments and suggestions for revisions. The final version — fully revised and proofread — is due at the last class meeting on April 15th.

- A brief (10 minute) presentation of the final project, at the last class meeting on April 15th.

Additional requirements for 748 (doctoral) students:

- A 2500–3500 word *literature-review essay*, discussing the major existing scholarship in the area you will write about in your final project. Due in class March 11th.
- A 4500–6000 word (18–24 pp.) *term research paper* (or equivalent in other media). The term project assignment has three parts:
 - (a) A 400–500 word *prospectus*, clearly describing your topic and listing sources you will use. Due in class January 28th.
 - (b) A *full-length, high-quality draft* is due in class March 25th. It will be returned the following week, with comments and suggestions for revisions.
 - (c) The *final version*, edited, revised, and proofread, is due April 22nd.
- A 20 minute class presentation on the subject of your final research project, at the last class meeting on April 15th.

Extension policy: no extensions, no kidding.

Required Texts:

Bowker, Geoffrey C. and Susan Leigh Star, *Sorting Things Out: Classification and its Consequences* (Cambridge, Mass.: MIT Press, 1999).

Castells, Manuel, *The Internet Galaxy: Reflections on the Internet, Business, and Society* (New York: Oxford University Press, 2001).

Dreyfus, Hubert L. *On the Internet* (New York: Routledge, 2001).

Edwards, Paul N., *The Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge, MA: MIT Press, 1996).

O'Donnell, James J. *Avatars of the Word: From Papyrus to Cyberspace* (Cambridge, MA.: Harvard University Press, 1998).

Vaughan, Diane, *The Challenger Launch Decision* (Chicago: University of Chicago Press, 1996).

Articles (all available online at the Coursetools site)

Course Web site:

<https://coursetools.ummu.umich.edu/2003/winter/si/648/001.nsf>

Instructor:

Paul N. Edwards, Associate Professor

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Office hours, Winter 2003:

At 301D West Hall (School of Information): Tu 11-12 AM

At 104 Tyler, East Quad (Residential College): Weds 2:35-3:30 PM

Or by appointment

Course Schedule

- All readings other than the books listed above are available for download on the Coursetools website, or via the URLs given below. These are copyrighted materials offered for your personal use as a student. Redistribution in any form is crass, not to mention illegal, behavior.

January 7: Introduction: Technological Determinism

Reading: Robert J. Heilbroner, 1994. "Do Machines Make History?" and "Technological Determinism Revisited." Pp. 53-78 in *Does Technology Drive History?*, edited by M. R. Smith and L. Marx. Cambridge, MA: MIT Press.

Recommended: "How to Read a Book,"
<http://www.si.umich.edu/~pne/PDF/howtoread.pdf>

— *Assignment guidelines distributed* —

January 14: Social Constructivism and Path Dependence

Reading: Michèle Jackson, Marshall Scott Poole, and Tim Kuhn. 2002. "The Social Construction of Technology in Studies of the Workplace." Pp. 236-253 in *Handbook of New Media: Social Shaping and Consequences of ICTs*, edited by L. A. Lievrouw and S. Livingstone. Thousand Oaks: SAGE Publications.

Daniel Robey and Marie-Claude Boudreau. 1999. "Accounting for the Contradictory Organizational Consequences of Information Technology: Theoretical Directions and Methodological Implications." *Information Systems Research* 10:167-185.

Thomas Parke Hughes. 1987. "The Evolution of Large Technological Systems." Pp. 51-82 in *The Social Construction of Technological Systems*, edited by W. Bijker, T. P. Hughes, and T. Pinch. Cambridge, MA: MIT Press.

Paul David. 1985. "Clio and the Economics of QWERTY." *American Economic Review* 75:332-337.

S. J. Liebowitz and Stephen E. Margolis. 1990. "The Fable of the Keys." *Journal of Law and Economics* 33:1–25.

January 21: **Sociological vs. Historical Explanation: IT in Banks**

Reading: Richard O. Mason, James L. McKenney, and Duncan G. Copeland. 1997. "Developing an Historical Tradition in MIS Research." *MIS Quarterly* 21:257–278.
Richard O. Mason, James L. McKenney, and Duncan G. Copeland. 1997. "An Historical Method for MIS Research: Steps and Assumptions." *MIS Quarterly* 21:307–320.
James L. McKenney, Richard O. Mason, and Duncan G. Copeland. 1997. "Bank of America: The Crest and Trough of Technological Leadership." *MIS Quarterly* 21:307–320.
Steve Smith. 1989. "Information Technology in Banks: Taylorization or Human-centered Systems?" Pp. 377–390 in *Computers in the Human Context*, edited by T. Forester. Cambridge, MA: MIT Press.
Shoshana Zuboff. 1988. *In the Age of the Smart Machine: The Future of Work and Power*. New York: Basic Books. Pp. 159–171.

Recommended: Ole Hanseth and Eric Monteiro. 1998. "Understanding Information Infrastructure." Unpublished manuscript. University of Oslo, Oslo, Norway.
<http://www.ifi.uio.no/~oleha/Publications/bok.html>

January 28: **Diffusion Process Theory and Actor–Network Theory**

Reading: Arnulf Grübler. 1996. "Time for a Change: On the Patterns of Diffusion of Innovation." *Daedalus* 125:19–42.
T. McMaster, R. T. Vidgen, and D. G. Wastell. 1998. "Towards an understanding of technology in transition: Two conflicting theories." in *IRIS 20 (Information systems research seminar in Scandinavia)*, edited by E. Berger. Hankø, Norway: online publication, <http://iris.informatik.gu.se/conference/iris20/51.htm>
Everett M. Rogers, 1976. "New Product Adoption and Diffusion." *The Journal of Consumer Research* 2:290–301.
Felix Stalder. 1997. "Actor–Network–Theory and Communication Networks: Toward Convergence." Felix Stalder, Openflows.org, http://felix.openflows.org/html/Network_Theory.html
Felix Stalder. 2002. "Failures and Successes: Notes on the Development of Electronic Cash." *The Information Society* 18:209–19.

— 748: prospectus due for final project —

February 4: **Information Regimes from Papyrus to the Internet**

Reading: O'Donnell, *Avatars of the Word* (entire book). This is a rich text that deserves to be read slowly and carefully, allowing time for reflection.

Re-read: Grübler, "Time for a Change: On the Patterns of Diffusion of Innovation."

— 648: first paper due —

February 11: **Historiography of Computers**

Reading: Rob Kling. 1994. "Reading 'All About' Computerization: How Genre Conventions Shape Non-fiction Social Analysis," *The Information Society* 10:3, 147-172.
<http://www.slis.indiana.edu/kling/read94a.html>.
Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America*, Preface and Chapters 1-5, 7, 9.

Recommended: Edwards, *The Closed World*, Chapters 6, 8, 10, Epilogue.

February 18: **Group project presentations**

March 4: **The Life of Information in Time**

Reading: Star and Bowker, *Sorting Things Out*, pp. 1-162

March 11: Classification Systems and Work Life

Reading: Star and Bowker, *Sorting Things Out*, pp. 227–326

Re-read: Jackson et al., "The Social Construction of Technology in Studies of the Workplace."

Recommended: Star and Bowker, *Sorting Things Out*, pp. 163–226

— 748: Literature review essay due —

March 18: Information and Risk in a Large Organization (I)

Reading: Vaughan, *The Challenger Launch Decision*, Preface, Appendix C, and Chapters 1–6

Re-read: Mason et al., "Developing an Historical Tradition in MIS Research" and "An Historical Method for MIS Research: Steps and Assumptions."

March 25: Information and Risk in a Large Organization (II)

Reading: Vaughan, *The Challenger Launch Decision*, Chapters 7–10, Appendix A

Re-read: Robey and Boudreau. "Accounting for the Contradictory Organizational Consequences of Information Technology: Theoretical Directions and Methodological Implications"

— 648 & 748: Full-length, high-quality draft of final project due in class —

April 1: Integrating History, Sociology, and Economics: The Informational Economy

Reading: Castells, *The Internet Galaxy*, entire book EXCEPT chapters 6–7
Stalder, "The Network Paradigm: Social Formations in the Age of Information" (a review of Castells' 3-volume series *The Information Society*) www.slis.indiana.edu/TIS/articles/stalder.htm

Re-read: Rogers, "New Product Adoption and Diffusion"
Stalder, "Actor–Network–Theory and Communication Networks: Toward Convergence"

April 8: The Internet and/as Culture

Reading: Dreyfus, *On the Internet*

April 15: Conclusion and Research Presentations

— 648 & 748: final paper due —

— **NO LATE PAPERS OR PROJECTS** —

