

Sociology 571
Spring 2015
M 4:10-6:50
Office hours: M 7:00-8:00, and by appointment

Phaedra Daipha
Davison Hall 042
pdaipha@rci.rutgers.edu

TECHNOLOGY AND SOCIETY

This course sets itself the challenge of taking the “and” in its title seriously. Fully endorsing the premise that technology and society are co-constituted—that we cannot understand one without understanding the other—does not necessarily imply abandoning all forms of technological determinism or rejecting social constructivism. But it does entail striving to keep both technology *and* society in focus when analyzing their ongoing, open-ended entanglements. The challenge, then, is to figure out how exactly they matter to each other under different scenarios.

I have made an effort to keep the scenarios we will cover during the semester sufficiently varied; nonetheless, as has been my policy in the past, I want to let the class as a whole determine what is to be our last topic of discussion. Similarly, we will consider multiple types of technology in the assigned readings, and we will extrapolate on many more during class discussion. Particular emphasis, however, will be given to information technologies- because of their contemporary relevance and the urgent political, moral, and cultural questions they pose, but also because of their material fluidity and the associated extraordinary level of interpretative potential that confronts users as well as analysts.

Learning Goals

By the end of this course, students will: (1) develop broad familiarity with the extant literature and critical in-depth understanding of the relationship between technology and society; and (2) gain experience developing and producing a research paper and communicating its results in a clear and succinct way.

Assessment Plan

This course will evaluate achievement of its learning goals in a variety of ways, including in-depth reading discussions and writing of an original research paper or proposal.

COURSE LOGISTICS

This course is designed as a seminar and its success depends on active engagement and dialogic exchange. You are expected to come to class each week fully prepared to analyze, discuss, and debate the issues raised in the assigned reading material. In the first three weeks of the semester, we will read a number of classic texts in the literature together and establish a common language. I have selected the themes and readings for the remaining weeks for their analytic significance, their empirical appeal, and their broader sociological relevance—with some room for change as class projects/needs/interests evolve.

Course Requirements:

- Weekly 1-page reflection memos on the readings.
- Leading a class discussion.
- Brief research proposal (2-5 pages) outlining your topic/puzzle, data and methods, and research objectives: Due by WEEK 4.
- Preliminary bibliography: Due by WEEK 7.
- Preliminary literature review for your paper. Due by WEEK 10.
- In-class presentation of your final paper: WEEK 14.
- A final paper, in the form of either an empirical research paper or a research proposal. Due on May 15th.

Course Readings:

Articles and book chapters marked with an asterisk are required reading and will be made available on the course website on Sakai. All other texts are strongly recommended, and I will draw upon them in class as time permits.

“Reflection Memo”:

To facilitate in-depth discussion, I will require that you post a “Reflection Memo” on the discussion board of our Sakai site for each set of readings, starting with WEEK 2. These memos should raise one issue that you feel merits detailed discussion in class and should explicitly draw from the assigned article(s) for that week. Memos are intended to provoke you to think deeply and synthetically about the class readings as you prepare for class discussion. In addition to posting your own memo, you will also be expected to make time to review the memos of you peers prior to class time. Memos are due *no later than 9:00 a.m.* on the day class meets.

Leading Class Discussion:

Starting with WEEK 4, each of you will be responsible for leading the discussion for one of our meetings, to be determined during the second week of class. The idea is not to provide a summary of that week’s readings; rather, your job is to critically introduce the material and come up with a few (3-5) substantive questions in the form of a one-page handout (to be electronically distributed to the rest of the group by 9:00 a.m. on the day of class) to get the discussion rolling. Such questions may target what you consider the key issue/problematic raised by the author(s) in question, a shortcoming in the

argument/evidence, a puzzling claim, broader implications, exciting/provocative comparisons, and so forth.

Paper

At the end of the semester, you are to submit a research paper of approximately 20 to 25 pages. Your paper can be (a) analytic, critically reflecting on a substantive issue covered in the course, or (b) empirical, drawing on extant theoretical perspectives to illuminate an aspect of the dynamics between the technical and the social. I ask that you begin settling on a research topic by the end of the 3rd week of classes, when you are expected to provide me with a written prospectus and make an appointment to discuss matters further. During our last meeting, you will be required to give a 10-minute presentation on the thesis and potential findings of your project.

The Rutgers Sociology Department strives to create an environment that supports and affirms diversity in all manifestations, including race, ethnicity, gender, sexual orientation, religion, age, social class, disability status, region/country of origin, and political orientation. We also celebrate diversity of theoretical and methodological perspectives among our faculty and students and seek to create an atmosphere of respect and mutual dialogue. We have zero tolerance for violations of these principles and have instituted clear and respectful procedures for responding to such grievances.

CLASS SCHEDULE*

*This schedule is subject to change. Changes, if necessary, will be announced well in advance during class and on the course website on Sakai.

WEEK 1

Beyond Technological Determinism

(Or the naïve forms of it, at least. As we shall see, it proves very difficult to conceive of technology as neutral or value-free. Plus, there's a strong argument to be made that we may not wish to do so, anyway.)

READINGS:

*Heilbroner, 1967, "Do Machines Make History?," *Technology and Culture* 8: 335-55

* Bimber, 1990, "Karl Marx and the Three Faces of Technological Determinism," *Social Studies of Science* 20: 333-51

* Winner, 1981, "Do Artifacts Have Politics?," *Daedalus* 109:121-36

* Joerges, 1999, "Do Politics have Artefacts?," *Social Studies of Science* 29: 411-31

Responses and Replies:

- Woolgar and Cooper, 1999, "Do Artefacts have Ambivalence?"
-

Moses' Bridges, Winner's Bridges, and other Urban Legends in S&TS"

- Joerges, 1999, "Scams Cannot Be Busted: Reply to Woolgar and Cooper"

Mumford, 1964, "Authoritarian and Democratic Technics"

Ellul, 1964, *The Technological Society*

Pfaffenberger, 1992, "Technological Dramas"

Smith and Marx (eds), 1995, *Does Technology Drive History? The Dilemma of Technological Determinism*

Gieryn, 2002, "What Buildings Do," *Theory and Society* 31: 35-74

Wyatt, 2008, "Technological Determinism is Dead, Long Live Technological Determinism," in *Handbook of Science and Technology Studies*

WEEK 2

From the Technological Shaping of Society to the Social Shaping of Technology...

(Technology is neutral. Essentially, this is the "guns don't kill people, people kill people" argument; but the analytical framework that emerges proves extremely rewarding.)

* Bijker, 1995, *Of Bicycles, Bakelites, and Bulbs*, Introduction, chapter 2, and Conclusion

* Klein and Kleinman, 2002, "The Social Construction of Technology: Structural Considerations", *Science, Technology & Human Values* 27: 28-52.

Cowan, 1985. "How the Refrigerator Got its Hum." *In the Social Shaping of Technology*, 181-201

Grint and Woolgar, 1992, "Computers, Guns, and Roses: What's Social About Being Shot?," *Science, Technology and Human Values* 17: 381-80

Kling, 1992, "When Gunfire Shatters Bone: Reducing Sociotechnical Systems to Social Relationships," *Science, Technology and Human Values* 17: 381-5.

WEEK 3

... to the Mutual Shaping of Technology and Society

(There are various ways to formulate this insight, as we shall see. Here, we focus on the actor-network perspective.)

* Callon, 1986, "The Sociology of an Actor-Network: The Case of the Electric Vehicle"

* Law, 1987, "Technology and Heterogeneous Engineering: The Case of Portuguese Expansion"

* Latour, 1992, “Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts”, and “Technology is Society Made Durable”

Hughes, 1987, “Technological Momentum,” and “The Evolution of Large Technological Systems”

Akrich and Latour, 1992, “A Summary of a Convenient Vocabulary for the Semiotics of Human and Nonhuman Assemblies”

Law and Callon, 1992, “The Life and Death of an Aircraft: A Network Analysis of Technical Change”, in *Shaping Technology/Building Society*, 21-52

WEEK 4

The Sociomateriality of Organizational Life

(While the rest of sociology continues to ignore the role of the material in constituting the social, management studies are starting to incorporate STS insights into organization theory.)

*Orlikowski, 1992, “The Duality of Technology,” *Organization Science* 3: 398-427.

*Suchman, 2007, *Human-Machine Reconfigurations* (Intro, ch. 4&15)

*Orlikowski and Scott, 2008, “Sociomateriality: Challenging the Separation of Technology, Work and Organization,” *The Academy of Management Annals* 2: 433-474.

*Leonardi, 2011, “When Flexible Routines Meet Flexible Technologies: Affordance, Constraint, and the Imbrication of Human and Material Agencies.”

Barad, 2003, “Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter,” *Signs* 28: 801-831.

Leonardi and Barley, 2008, “Materiality and Change: Challenges to Building Better Theory about Technology and Organizing,” *Information and Organization* 18: 159–176.

Stengers. 2011, “Wondering about Materialism,” *The Speculative Turn*

DeLanda. 2011. “Emergence, Causality, Realism,” *The Speculative Turn*

Carlile, Nicolini, Langley, and Tsoukas. 2014. *How Matter Matters*

WEEK 5

Technofeminism

(Or, to borrow another book title by Judy Wajcman, Feminism Confronts Technology)

* Wajcman, 2000, “Reflections on Gender and Technology Studies: In What State is the Art?,” *Social Studies of Science* 30: 447-64

* Faulkner, 2001, “The Technology Question in Feminism: A View

from Feminist Technology Studies”, *Women's Studies International Forum* 24: 79-95

* Wajcman, 2004, *Technofeminism* (Preface, ch. 1&2)

*Suchman, 2005, “Agencies in Technology Design: Feminist Reconfigurations”

Lohan, 2000, “Constructive Tensions in Feminist Technology Studies,” *Social Studies of Science* 30: 895-916

WEEK 6

Technological Design and Use

(We will progressively investigate how design and use constantly redefine each other and themselves through the interpretative flexibility afforded by technological artifacts)

* Woolgar, 1991, “Configuring the User: The Case of Usability Trials”

*Silverstone and Haddon, 1996, “Design and the Domestication of Information and Communication Technologies: Technical Change and Everyday Life”

*Berg, 1998, “The Politics of Technology: On Bringing Social Theory into Technological Design”

* Mackay, et al., 2000, “Reconfiguring the User: Using Rapid Application Development”

* Oudshoorn, et al., 2005, “Diversity and Distributed Agency in the Design and Use of Medical Video-Communication Technologies”

Akrich, 1992, “The De-Description of Technical Objects”

Bijker, 1992, “The Social Construction of Fluorescent Lighting, Or How an Artifact Was Invented in Its Diffusion Stage”

Latour, 1996, *Aramis, or The Love of Technology*

Casper and Clarke, 1998, “Making the Pap Smear the “Right Tool” for the Job”, in *Social Studies of Science* 28: 255-90

Oudshoorn and Pinch (eds), 2003, *How Users Matter: The Co-Construction of Users and Technology*

WEEK 7

Technology and Empire

*Innis, 1950, *Empire and Communications* (selections)

*Headrick, 2012, *Power over Peoples* (selections)

*Larkin, 2013, “The Politics and Poetics of Infrastructure,” *Annual Reviews of Anthropology*

*MacKenzie et al., 2007, *Do Economists Make Markets? On the Performativity of Economics* (selections)

Hughes, 1979, "The Electrification of America: The System Builders," *Technology and Culture* 20: 124-161
 Humphrey, 2005, "Ideology in Infrastructure: Architecture and Soviet Imagination," *Journal of the Royal Anthropological Institute* 11:39–58.
 Mrázek, 2002, *Engineers of Happy Land: Technology and Nationalism in a Colony*
 Callon et al., 2007, *Market Devices*

WEEK 8

Technology and Nature

(Multiple themes to explore here, obviously, but our framing questions will be: How is the balance between 'natural' and 'technological' hazards negotiated? Who gets to decide what constitutes acceptable risk?)

*Hird et al., 2014, "Making Waste Management Public (or Falling Back to Sleep)," *Social Studies of Science* 44: 441-65.

*Suryanarayanan and Kleinman, 2013, "Be(e)coming Experts: The Controversy of Insecticides in the Honey Bee Colony Collapse Disorder," *Social Studies of Science* 43: 215-40.

* Robbins, 2007, *Lawn People: How Grasses, Weeds, and Chemicals Make Us Who We Are* (selections)

*Scott, 1998, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (selections)

Mitchell, 2009, "Carbon Democracy," *Economy and Society* 38: 399-432.

Heller, 2002, "From Scientific Risk to Paysan Savoir-Faire: Peasant Expertise in the French and Global Debate over GM Crops", *Science as Culture* 11: 5-37

Masco, 2006, *Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico*

Bonneuil, et al., 2008, "Disentrenching Experiment: The Construction of GM Crop Trials as a Social Problem", *Science, Technology, and Human Values*

Thrift, Nigel. 2012. "The insubstantial pageant: producing an untoward land," *Cultural Geographies*. 1-28

Arendt, 1959, *The Human Condition*

Pfaffenberger, 1990, "The Harsh Facts of Hydraulics: Technology and Society in Sri Lanka's Colonization Schemes," *Technology and Culture* 31: 361-97

Kwa, 2001, "The Rise and Fall of Weather Modification: Changes in American Attitudes toward Technology, Nature, and Society", *Changing the Atmosphere*

WEEK 9**Prosthetic Technologies**

(We start by examining the notion of technological prosthesis, both at the level of the body and the imagination...)

- * Jain, 1999, "The Prosthetic Imagination: Enabling and Disabling the Prosthesis Trope"
- * Viseu, 2003, "Simulation and Augmentation: Issues of Wearable Computers", *Ethics and Information Technology* 5: 17-26
- * Winance, 2006, "Trying Out the Wheelchair: The Mutual Shaping of People and Devices Through Adjustment", *Science, Technology and Human Values* 31: 52-72
- * Mamo, 2007, "Negotiating Conception: Lesbians' Hybrid-Technological Practices", *Science, Technology and Human Values* 32: 369-93

Casper, 1995, "Fetal Cyborgs and Technomoms on the Reproductive Frontier: Which Way to the Carnival?" in *The Cyborg Handbook*

Moser, 2000, "Against Normalization: Subverting Norms of Ability and Disability", *Science as Culture* 9: 201-40.

Smith and Morra (eds), 2005, *The Prosthetic Impulse: From a Posthuman Present to a Biocultural Future*

Van Hilvoorde et al., 2007, "Flopping, Klapping and Gene Doping: Dichotomies Between "Natural" and "Artificial" in Elite Sport", in *Social Studies of Science* 37: 173-200.

WEEK 10**New Technologies of the Self**

(...we then zoom out to study cyborg identities in more wholistic terms...)

- * Lash, 2001 "Technological Forms of Life", *Theory, Culture and Society* 18: 105-20
 - * Turkle, "Always-On/Always-On-You: The Tethered Self," in *Handbook of Mobile Communication Studies*: 121-38.
 - * Bull, 2004, "To Each Their Own Bubble: Mobile Spaces of Sound in the City", in *Place, Space and Culture in a Media Age*
 - * Viseu, 2003, "Simulation and Augmentation: Issues of Wearable Computers," *Ethics and Information Technology* 5: 17-26.
 - * Leshed, et al., 2008, "In-Car GPS Navigation: Engagement With and Disengagement From the Environment", *Proceedings of CHI 2008*
 - * Monahan, 2007, "War Rooms of the Street: Surveillance Practices in Transportation Control Centers", *The Communication Review* 10: 367-89.
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Foucault, 1988, "Technologies of the Self"
 Turkle, 1995, *Life on the Screen: Identity in the Age of the Internet*
 Hayles, 1999, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*
 Ito et al., 2005, *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*
 Sengers, et al., 2008, "The Disenchantment of Affect"

WEEK 11

The Networked Community

(...and, finally, we zoom out as far as possible to consider emergent cyborgian interaction patterns and how they expand on prevailing notions of group dynamics)

- * Castells, 2001, *The Internet Galaxy* (selections)
- * Sassen, 2002, "Towards a Sociology of Information Technology", *Current Sociology* 50: 365-88
- * Hampton and Wellman, 2003, "Neighboring in Netville: How the Internet Supports Community and Social Capital in a Wired Suburb", in *City and Community*: 277-311.
- * Steinkuehler and Williams, 2006, "Where Everybody Knows Your (Screen) Name: Online Games As "Third Places", in *Journal of Computer-Mediated Communication* 11

Castells, 1996, *The Rise of the Network Society*, esp. chapter 5
 Wellman and Gulia, 1999, "Net Surfers Don't Ride Alone: Virtual Communities As Communities", in *Networks in the Global Village*: 331-66.
 Rheingold, 2000, *The Virtual Community: Homesteading on the Electronic Frontier*
 Miller and Slater, 2001, *The Internet: An Ethnographic Approach*
 Lampa, 2004, "Imagining the Blogosphere: An Introduction to the Imagined Community of Instant Publishing", at http://blog.lib.umn.edu/blogosphere/imagining_the_blogosphere.html
 Gillespie, 2007, *Wired Shut: Copyright and the Shape of Digital Culture*
 Turkle, 2012, *Alone Together*

WEEK 12

Technologies of the Future: The Case of Nanotechnology

(We will revisit the themes of this course by exploring the hopes, dreams, and anxieties surrounding narratives on nanotechnology)

- * Nordmann, 2005, "Noumenal Technology: Reflections On the Incredible Tininess of the Nano", *Techné* 8: 3-21
 - * Schummer, 2005, "Reading Nano: The Public Interest in
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Nanotechnology as Reflected Purchase Patterns of Books”, *Public Understanding of Science* 14: 163-83.

* Rip, 2006, “Folk Theories of Nanotechnologists,” *Science as Culture* 15: 349-65.

* Glimell, 2004, “Grand Visions and Lilliput Politics: Staging the Exploration of the “Endless Frontier”, in *Discovering the Nanoscale*: 231-46.

* Robison, 2004, “Nano-Ethics”, in *Discovering the Nanoscale*: 285-300

Barben, et al., 2008, “Anticipatory Governance of Nanotechnology: Foresight, Engagement, and Integration”, in *Handbook of Science and Technology Studies*: 979-1000

WEEK 13

TBA

(It is up to the class as a whole to determine our last topic of discussion. We need to come to a decision by the end of February.)

WEEK 14

Wrap-up and Paper Presentations

May 15

PAPERS DUE
