

THE SOCIOLOGY OF INNOVATION

HTS 3803 A / LCC 8803 D

Fall 2006

Syllabus—Beta Version

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Class Meetings:
M/W/F 11-12 am
207 DM Smith
Office hours: M/W 2-3 pm
& by appointment

OVERVIEW

How do people create new technological inventions, scientific discoveries, and artistic genres? Why are some innovations adopted immediately while others languish in obscurity? Why do some spread widely while others remain confined to circumscribed groups? How do people adopt new things, and why do they sometimes resist them? What role do organizations, states, markets, and geographic places play in fostering or inhibiting innovation? What *is* innovation anyway, and how do we know it when we see it? In this course we will address these and other questions from a distinctly sociological perspective. Readings are drawn primarily from the sociology of science and technology and the sociology of culture, but also include works in history, cultural studies, management, and social theory as well as popular media pieces. Assignments include opportunities for students to conduct their own primary and/or secondary research into various aspects of innovation. The course is open to both undergraduate and graduate students. There are no prerequisites other than interest in considering innovation as a social process, and willingness to read, write, discuss, and think critically and creatively.

BOOKS

The following books are available at Engineer's; additional readings are on the course WebCT site.

Howard S. Becker, 1982. *Art Worlds*. Berkeley: University of California Press. Paperback 1984; ISBN 0-520-05218-8

Wiebe E. Bijker and John Law (eds.), 1992. *Shaping Technology, Building Society: Studies in Sociotechnical Change*. Cambridge, MA: MIT Press. Paperback 1994; ISBN 0-262-52194-6

Malcolm Gladwell, 2000. *The Tipping Point: How Little Things Can Make a Big Difference*. New York: Little, Brown and Company. Paperback 2002; ISBN 0-316-34662-4

REQUIREMENTS

Reading Assignments:

The readings are a crucial part of the course. Though not directly gradable, the quantity of time and quality of effort you put into reading will be reflected in your class discussion and written work, and hence in participation, memo, and paper grades.

All Students should read the pieces listed next to each date in the schedule before coming to class that day. The "Graduate/Recommended" selections are optional for undergraduates.

Graduate Students should read the "Graduate/Recommended" works by the end of the week listed. Some "Further Interest" readings are posted to the WebCT site; these are optional for everyone, but may help in developing memos and papers.

requirements, cont.

Attendance and Participation (15% of final grade)

Participation in class discussions and active engagement with lectures are essential to your success in this course. In order to participate fully, you should finish the daily readings prior to class and arrive prepared to share your thoughts, opinions, and questions. As this is an exploratory course, your willingness to take risks in posing questions or ideas even if you're not sure they're quite "right" will be an asset. That said, please also be respectful and allow others their turn to speak.

Memos (30% of final grade)

Memos are papers of approximately three pages. Undergraduate and graduate requirements differ:

Undergraduates: Write three (3) memos on assigned topics throughout the semester. There will be five topic assignments; you may choose any three depending on your schedule and interests.

Graduate Students: Write six (6) memos throughout the semester. These can focus on critique or comparison (not just summary) of one or more readings, or may employ concepts from the readings to analyze an example of your choosing. If you wish you may follow the undergraduate assignments for up to three memos, incorporating graduate readings in addition to or instead of the undergraduate ones. Memos should be submitted within three class periods of the readings which they address; deadlines are not fixed, but I suggest you weight your efforts towards the beginning of the term. All outstanding memos must be turned in by December 11.

Paper Proposal (5% of final grade)

You must be prepared to discuss your ideas for your final paper on Monday or Wednesday and turn in a brief paper proposal on Friday of the week before October break. The proposal should include a paragraph or so explaining your paper topic *and* a partial bibliography of five to ten sources.

Final Research Paper (50% of total grade)

Your paper may be on any aspect of innovation that interests you, provided that it is written from a social science standpoint (i.e., not pure psychology, technology, or aesthetics). Examples: Research the development, diffusion, reception, and/or consequences of a new artistic genre or technology. Examine the history of a failed innovation (and define "failed"). Research a particular innovator or innovative group: where do they get their ideas, resources, legitimacy, etc.? Focus on users, or even non-users. If so inclined, you might even try developing a general theory of innovation. In addition, you can base your paper solely on others' research or you can collect your own data via surveys, interviews, or the web. Please feel free to run other ideas by me at any point in the term.

Undergraduates: Your paper should be 10-15 pages in length, followed by a bibliography.

Graduate Expectations: Your paper should be 20-25 pages, followed by a bibliography. Plan to rely mostly on scholarly literature (i.e., peer-reviewed journal articles, books based on research) as opposed to popular commentary.

More details about paper requirements will be provided in class.

Summary of Due Dates

Friday 9/1 – Memo A: Analyzing Popular Accounts of Innovation

Friday 9/15 – Memo B: Comparing "Social Construction of Technology" & "Art Worlds" Paradigms

Monday 10/2 – Memo C: What's So New About the Latest Innovations?

Friday 10/13 – Paper Proposal

Friday 10/27 – Memo D: Did Coke Invent Santa?

Monday 11/13 – Memo E: Does Your Workplace Foster Innovation?

Monday 12/11 – Final Paper and all late/outstanding memos

POLICIES

Late Assignments: Except in the case of *extreme* and preferably well-documented emergencies, your assignment will be docked one-third letter grade for every two days late, or one whole letter grade per week. All work must be submitted by the final paper due date, Monday December 11.

Honor Code: You are expected to act in accordance with the Georgia Tech Honor Code, outlined at http://www.deanofstudents.gatech.edu/integrity/policies/honor_code.html. Anyone engaging in acts which violate the honor code, such as cheating or plagiarism, will be penalized. If you are uncertain about what constitutes plagiarism, please ask!

Accommodating Disabilities: If you have any conditions which require accommodation, please alert me and provide documentation from the ADAPTS office as early in the term as possible. No accommodations will be made retroactively. ADAPTS information: <http://www.adapts.gatech.edu>

SCHEDULE OF READINGS AND ASSIGNMENTS

NOTE: Please read the selections in the order listed.

Key to reading locations:

[Becker] = in Howard Becker, *Art Worlds*, purchase.

[B&L] = in Wiebe Bijker and John Law, *Shaping Technology, Building Society*, purchase.

[Gladwell] = in Malcolm Gladwell, *The Tipping Point*, purchase.

[WebCT] = PDF or website accessed through www.webct.gatech.edu; course HTS 3803A.

Week One	Introduction, Popular Accounts of Innovation
M 8/21	<i>Course Overview</i>
W 8/23	Howard Gardner, “Albert Einstein: The Perennial Child” (excerpts) [WebCT] Howard Gardner, “Pablo Picasso: Prodigiousness and Beyond” [WebCT]
F 8/25	Job Durfee, “Science and Political Progress” [WebCT] Jo Twist, “Law That Has Driven Digital Life” [WebCT]
Graduate/ Recommended	Peter Gay, “The Recovery of Nerve” (excerpt) [WebCT] Thomas J. Misa, “How Machines Make History, and How Historians (And Others) Help Them to Do So” [WebCT]

Week Two	Sociological Approaches from Studies of Science, Technology, and Culture
8/28	Wiebe E. Bijker, “The Social Construction of Fluorescent Lighting, or How an Artifact Was Invented in Its Diffusion Stage” [Bijker & Law]
8/30	Howard Becker, “Art Worlds and Collective Activity” [Becker]
9/1	Marjorie Garber, “Our Genius Problem.” [WebCT] Malcolm Gladwell, “Group Think” [WebCT] DUE TODAY: Memo A, Analyzing Popular Accounts of Innovation
Graduate/ Recommended	Trevor J. Pinch & Wiebe E. Bijker, “The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other” [WebCT] Hans K. Klein & Daniel Lee Kleinman, “The Social Construction of Technology: Structural Considerations” [WebCT] Wendy Griswold, “Culture and the Cultural Diamond” [WebCT]

Week Three	Producing Innovations I: Conventions and Resources
M 9/4	<i>NO CLASS – Happy Labor Day</i>
W 9/6	Howard Becker, “Conventions” (pp. 55-67 only) [Becker] W. Bernard Carlson, “Artifacts and Frames of Meaning: Thomas A. Edison, His Managers, and the Cultural Construction of Motion Pictures” [Bijker & Law]
F 9/8	Howard Becker, “Mobilizing Resources” [Becker] Ruth Schwartz Cowan, “How the Refrigerator Got its Hum” [WebCT]
Graduate/ Recommended	Ronald S. Burt, “The Social Structure of Competition” (pp. 8-25 only). Note: Explains “structural holes,” important to understanding the next piece. [WebCT] Ronald S. Burt, “Structural Holes and Good Ideas” [WebCT] Richard A. Peterson, “Culture Studies Through the Production Perspective: Progress and Prospects.” [WebCT]

Week Four	Producing Innovations II: Actors and Configurations
M 9/11	Peter Whalley, “The Social Practice of Independent Inventing.” [WebCT]
W 9/13	Harvey Molotch, “Inside Stuff: How Professionals Do It.” [WebCT]
F 9/15	John Law & Michel Callon, “The Life and Death of an Aircraft: A Network Analysis of Technical Change” [Bijker & Law]
	DUE TODAY: Memo B, Comparing the “Social Construction of Technology” (SCOT) and “Art Worlds” Paradigms
Graduate/ Recommended	Michel Callon, “Society in the Making: The Study of Technology as a Tool for Sociological Analysis” [WebCT] Walter Powell et al. , “Interorganizational Collaboration and the Locus of Innovation: Networks of Learning in Biotechnology” [WebCT] Thomas P. Hughes, “Edison and Electric Light” [WebCT] Paul Ceruzzi, “Inventing Personal Computing” [WebCT]

Week Five	[Mixed]
M 9/18	Producing Innovations III: The Boundaries of the Field
	Linda Nochlin, “Why Have There Been No Great Women Artists?” [WebCT] Mary Frank Fox, “Gender, Environmental Milieu, and Productivity in Science.” [WebCT]
W 9/20	Evelyn Fox Keller, “The Wo/Man Scientist: Issues of Sex and Gender in the Pursuit of Science.” [WebCT] Susantha Goonatilake, “Modern Science and the Periphery: The Characteristics of Dependent Knowledge.” [WebCT]
F 9/22	Legitimacy and Gate-Keeping I: Reputation
	Howard Becker, “Reputation” [Becker] Robert K. Merton, “The Matthew Effect in Science” [WebCT]
Graduate/ Recommended	<i>On Boundaries:</i> Nina Lerman, “New South, New North: Region, Ideology, and Access in Industrial Education” [WebCT] <i>On Reputation:</i> William Bielby & Denise Bielby, “‘All Hits Are Flukes’: Institutionalized Decision-Making and the Rhetoric of Network Prime-Time Program Development” [WebCT]

Week Six	Legitimacy and Gate-Keeping II: Uses of the Past
M 9/25	Howard Becker, “Conventions” (pp. 40-55 only) and “Aesthetics, Aestheticians, and Critics” (pp. 131-145 only) [Becker]
W 9/27	Harvey Molotch, “Changing Goods” [WebCT]
F 9/29	Geof Bowker, “What’s in a Patent?” [Bijker & Law]
Graduate/ Recommended	Damarin, Marx 18 th Brumaire Background Handout [WebCT] Karl Marx, “The Eighteenth Brumaire of Louis Bonaparte” [WebCT] Emile Durkheim, “The Normal and the Pathological” [WebCT] Peter Berger & Thomas Luckmann, “Society as Objective Reality” (excerpt) [WebCT] Paul DiMaggio & Walter Powell, “The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields” [WebCT]

Week Seven	Legitimacy and Gate-Keeping III: Strategies & Structures
M 10/2	Trevor Pinch et al., “Technology, Testing, Text: Clinical Budgeting in the U.K. National Health Service” [Bijker & Law] DUE TODAY: Memo C, What’s So New About the Latest Innovations?
W 10/4	Jennifer Lena, “Meaning and Membership: Samples in Rap Music, 1979-1995.” [WebCT]
F 10/6	Howard Becker, “Integrated Professionals, Mavericks, Folk Artists, and Naïve Artists” [Becker]
Graduate/ Recommended	Pierre Bourdieu, “The Field of Cultural Production, or: The Economic World Reversed” [WebCT] Thomas J. Misa, “Controversy and Closure in Technological Change: Constructing ‘Steel’” [WebCT]

Week Eight	Paper Topics & Distributing Innovations I: Systems
M 10/9	<i>Catch-Up and Discussion of Paper Topics – No Readings</i> DUE TODAY: Be prepared to present your final paper idea to the rest of the class, and to comment and raise questions about on others’ ideas.
W 10/11	<i>Discussion of Paper Topics, cont. – No Readings</i> DUE TODAY: Same as Monday.
F 10/13	Howard Becker, “Distributing Art Works” [Becker] Suzanne Lustig, “How and Why Did the Guerilla Girls Alter the Art World Establishment in New York City, 1985-1995?” [WebCT—see “Websites”] DUE TODAY: Paper Proposals
Graduate/ Recommended	Paul M. Hirsch, “Processing Fads and Fashions: An Organization-Set Analysis of Cultural Industry Systems” [WebCT]

Week Nine	Distributing Innovations II: Networks and Diffusion
M 10/16	<i>NO CLASS – October Break</i>
W 10/18	Gladwell, <i>The Tipping Point</i> , chapters TBA.
F 10/20	Finish readings from Wednesday.
Graduate/ Recommended	Mark S. Granovetter, “The Strength of Weak Ties” [WebCT] David Strang & Sarah A. Soule, “Diffusion in Organizations and Social Movements: From Hybrid Corn to Poison Pills” [WebCT]

Week Ten	Reception, Resistance, Appropriation
M 10/23	Adrian Randall, “The Philosophy of Luddism: The Case of the West of England Woolen Workers, ca. 1790-1809” [WebCT] Kathleen Franz, “‘The Open Road’: Automobility and Racial Uplift in the Interwar Years” [WebCT]
W 10/25	Elizabeth Long, “Reading Groups and the Postmodern Crisis of Cultural Authority” [WebCT]
F 10/27	Madeleine Akrich, “The De-Description of Technical Objects” [Bijker & Law] Eric Von Hippel, “Innovation by User Communities: Learning from Open-Source Software” [WebCT] DUE TODAY: Memo D, Did Coke Invent Santa?
Graduate/ Recommended	Jeffrey Liker et al., “Perspectives on Technology and Work Organization” [WebCT] Steven Peter Vallas, “Empowerment Redux: Structure, Agency, and the Remaking of Managerial Authority” [WebCT] Pierre Bourdieu, “Artistic Taste and Cultural Capital” [WebCT] Rick Fantasia, “Fast Food in France” [WebCT]

Week Eleven	(Un)Intended Consequences: Innovation and Inequality
M 10/30	Harry Braverman, “The Scientific-Technical Revolution and the Worker” and “Machinery” (excerpts) [WebCT]
W 11/1	David Noble, “Social Choice in Machine Design: The Case of Automatically Controlled Machine Tools” [WebCT] Sally Hacker, “Sex Stratification, Technology and Organizational Change: A Longitudinal Case Study of AT&T” [WebCT]
F 11/3	Karen D. Hughes, “Transformed by Technology? The Changing Nature of Women’s ‘Traditional’ and ‘Non-Traditional’ White-Collar Work” [WebCT]
Graduate/ Recommended	Ruth Schwartz Cowan, “The Industrial Revolution in the Home” [WebCT]

Week Twelve	Organizing for Innovation
M 11/6	Richard Florida, “The Transformation of Everyday Life,” “The No-Collar Workplace,” “Managing Creativity” [WebCT]
W 11/8	John Seely Brown & Paul Duguid, “Creativity Versus Structure: A Useful Tension” [WebCT] Gina Neff & David Stark, “Permanently Beta: Responsive Organization in the Internet Era” [WebCT]
F 11/10	Lucy Suchman & Libby Bishop, “Problematizing ‘Innovation’ as a Critical Concept” [WebCT]
Graduate/ Recommended	Walter Powell, “The Capitalist Firm in the Twenty-First Century: Emerging Patterns in Western Enterprise” [WebCT] Vicki Smith, “New Forms of Work Organization” [WebCT] Monique Girard and David Stark, “Distributing Intelligence and Organizing Diversity in New-Media Projects” [WebCT]

Week Thirteen	Innovation and Place
M 11/13	Richard Florida, “The Power of Place” [WebCT] DUE TODAY: Memo E, Does Your Workplace Foster Innovation?
W 11/15	AnnaLee Saxenian, “Inside Out: Regional Networks and Industrial Adaptation in Silicon Valley and Route 128” [WebCT]
F 11/17	John Seely Brown and Paul Duguid, “Local Knowledge: Innovation in the Networked Age” [WebCT] Govindan Parayil, “The Digital Divide and Increasing Returns: Contradictions of Informational Capitalism” [WebCT]
Graduate/ Recommended	Michael Indergaard, “Making and Selling a New Media District” and “Morphing Manhattan” [WebCT]

Week Fourteen	Innovation and the State
M 11/20	Steven C. Dubin, “Artistic Production and Social Control” [WebCT]
W 11/22	<i>NO CLASS – Happy Thanksgiving</i>
F 11/24	<i>NO CLASS – Happy Thanksgiving</i>
Graduate/ Recommended	Susan Cozzens & Edward Woodhouse, “Science, Government, and the Politics of Knowledge” [WebCT]

Week Fifteen	Innovation and the Market
M 11/27	Joseph A. Schumpeter, “Creative Destruction” [WebCT] Lawrence Lessig, “Innovation, Regulation, and the Internet” [WebCT] Lawrence Lessig, “Why Crush Them?” [WebCT]
W 11/29	Paul Lopes, “Innovation and Diversity in the Popular Music Industry, 1969-1990” [WebCT]
F 12/1	James Boyle, “Fencing off Ideas: Enclosure and the Disappearance of the Public Domain” [WebCT]
Graduate/ Recommended	TBA

Week Sixteen	Parting Thoughts: Evolution, Revolution, Lock-In, Obsolescence
M 12/4	Howard Becker, “Change in Art Worlds” [Becker]
W 12/6	Paul David, “Clio and the Economics of QWERTY” [WebCT] James Fallows, “File Not Found” [WebCT]
F 12/8	Langdon Winner, “Do Artifacts Have Politics?” [WebCT]
Graduate/ Recommended	TBA

Monday 12/11	DUE TODAY: FINAL PAPER and all outstanding/late memos.
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BIBLIOGRAPHY OF WEBCT READINGS

NOTE: “Further Interest” readings are not included here; see the first page of each reading.

- Berger, Peter L. and Thomas Luckmann, 1966. *The Social Construction of Reality*. New York: Doubleday & Company. [“Society as Objective Reality” (excerpt), pp. 51-62]
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- Cowan, Ruth Schwartz. 1999. "The Industrial Revolution in the Home." Pp. 281-300 in *The Social Shaping of Technology*, edited by Donald MacKenzie and Judy Wajcman. Buckingham, UK: Open University Press.
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- Damarin, Amanda, 2006. Background Notes on Marx's "Eighteenth Brumaire"
- David, Paul A. 1985. "Clio and the Economics of QWERTY." *American Economic Review* 75(2): 332-337.
- DiMaggio, Paul J. and Walter W. Powell, 1991. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." Pp. 63-82 in *The New Institutionalism in Organizational Analysis*, edited by Walter W. Powell & Paul J. DiMaggio. University of Chicago Press.
- Dubin, Steven C. 1986. "Artistic Production and Social Control." *Social Forces* 64(3): 667-688.
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<http://america.eb.com/america/article?articleId=385914>
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Selection: "The Recovery of Nerve," pp. 3-12.

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