

When Technologies are New

Winter 2007, Humanities 202 (VLPA/I&S, 5 credits)

Dr. Philip N. Howard, Department of Communication
Dr. Simon R. Werrett, Department of History

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Course Description

New technologies have a big impact on cultures and communities, but these cultures and communities always adapt technologies in surprising ways. To explore the connections between scientific discovery and social change, this course will draw examples from both the rich history of engineering and the immediate modernity of digital technologies. What role do artists, science fiction writers, and philosophers have in shaping our collective assumptions of and aspirations for science? How is science itself culturally organized? From the development of gunpowder and armaments in China and Russia, to the opportunities for digital surveillance and resistance in Argentina and Tanzania, we will explore the social rhythms to the development of new technologies, analog and digital. This course has several objectives: to teach students about the dynamics of scientific exploration and social change; to give students cultural literacy and practical familiarity with new technologies, both analog and digital; and to inspire students to develop their own sophisticated critiques about the role of technology and innovation in society.

Instructors

Dr. Philip N. Howard, Assistant Professor
Room 141, Communications Building
Telephone: (206) 221-6532, E-mail: pnhoward@u.washington.edu
Office Hours MW 10:30-11:20 and 1:30-2:20 and by appointment

Dr. Simon Werrett, Assistant Professor
Werrett Center for the Study of Werrett

Teaching Assistants

Julie Homchick
Office Hours in CMU 340M, M 11:30-12:20
OTHERS TO COME

Evaluation

This course has no final exam and most coursework will be submitted on E-submit. The Teaching Assistants will do most of the evaluation, will take attendance at the beginning of each class, and will be noting the names of students as they speak during class discussions. They have prepared the instructions for labeling your assignments when you use E-submit. The classes will involve lectures and multimedia presentations, from both the instructors and guest speakers. In the first lab meeting there will be a training session

with several exercises on how to use E-submit. They will be noting attendance at lab workshops.

We have a number of grading criteria that apply to all assignments. All of the grading criteria are identified in this course outline, but you may also review our general grading guidelines. If an assignment is not online by the deadline, you will receive a zero for that assignment. We encourage you to have a friend proofread your writing before you submit.

Since irregular attendance will disrupt our learning community, unexplained absences will affect your grade. However, attendance will not be taken as a formal component of the grade. We will only consult your attendance record if you ask us to reevaluate your final grade. Lecture notes and slides are not available online, though course handouts and other multimedia are available online. We will make every effort to return a grade for your work a week after your work is submitted. Extensions are available for medical reasons, and you will need a doctor's note. Quizzes will be held in class.

Your grade for this class will be out of 400 points, and your score will be directly translated into the 4.0 scale. Participation in the class and lab discussions will count towards your final grade. Students are expected to actively participate in discussions. Regular attendance, contributions to the discussion of themes, and engagement and leadership in class exercises will result in a high participation grade.

Assignment	Points
Participation	30
Week 1: E-submit Exercise – practice using the E-submit system	10
Week 2: Take It Apart – play archeologist, take apart a piece of new media	40
Week 3: Digital Technologies in the Developing World – something Phil will make up	40
Week 4:	40
Week 5: In-Class essay exam	40
Week 6:	40
Week 7: Electronic Surveillance Essay Or Cultural Consumption Essay	40
Week 8: In-Class Short Essay Quiz #2	40
Week 9:	40
Week 10:	40
<i>Total</i>	<i>400</i>

Work must appear on E-submit by the due date specified. We mark for grammar, spelling, and gender-neutral language. If your writing style impedes our ability to understand your arguments or embarrasses the University of Washington your grade will suffer, so it is a good idea to have at least one other person proofread your writing. Use William Strunk, Jr., and E. B. White, *The Elements of Style* (New York: Macmillan, 1979) for writing style questions. Purdue University owl.english.purdue.edu has an excellent collection of documents about writing and research. Please refer to the Statement of Academic Responsibility in the UW Bachelor's Degree Handbook for

definitions of plagiarism. It is easy to cut and paste phrases from the internet, but E-submit makes it really easy to catch this. It is better to cite an author than to be caught plagiarizing, and citations should be formatted according to the APA style guidelines.

Lectures

An introductory lecture – maybe we can do half the first lecture each... I would introduce media technology as an historical problem - on the question of relations between society and media technologies – and the particular issues media technologies raise – why do people want to communicate? How does one trust messages from a distance? How historically have people tried to overcome problems of distance and communications? By disciplining the people who act as mediums, and mechanizing messaging – hence media technologies. These are both products of society and shape and effect society... etc. etc. Overview of the historical part of the course - we'll look at x,y,z media and keep these questions in mind. We could use the Thomas Hughes book for the first section reading. What is New Media? Manovich and Englebart's answer. Werrett and Howard.

Mapping and Empire – one of the first extensive communication systems in Europe is the Portuguese and Spanish effort to make global maps for the purpose of imperial travel and conquest – they begin a long history of making virtual environments for various purposes from long-distance control to entertainment. History of the various map-making enterprises of the 15-17th centuries; maps as media; maps and culture (e.g. maps of knowledge; catalogues, databases). Werrett.

Cut and Paste – the Print Revolution – history of invention of printing, significance for various enterprises; problems of trust – how do you trust a new medium like print, when piracy is endemic? Expanding knowledge – rise of the public sphere; Continuance of manuscript culture as a way of restricting flows of knowledge; by artisans, and by scholars; the Republic of Letters and the postal system; Leibniz's philosophy as a reflection of the Republic; How old and new media transitions occur - continuities of print in digital culture – cut and paste in William Burroughs, in Word, Web, etc. Werrett.

Magic and Communications – Counter-reformation leads to development of many new media. Those under threat from Catholics invent secret writing, codes, messaging systems, under name of “Magic”; Giambattista della Porta; Catholics cultivate vast networks and media enterprises to destroy heathens and convert the world – Jesuit networks and global knowledge; Athanasius Kircher and Baroque use of optical marvels to stun people into submission – magic lantern and camera obscura; predecessors of cinema and projecting technologies; begins fascination with new media. Camera Obscura is model of perception. Werrett.

Wetscape Navigator – overseas navigation as a major source of new media developments – today web uses “navigation” as a metaphor for moving around in cyberspace – new media spatialize information and then use old techniques and terms for traveling in space to conceptualise information management. Not a coincidence since 18th century problems of navigation generated much new media technology, above all the computer. Already

seen how maps are product of imperial ambitions; also signals, and need for standardized global system of timekeeping (longitude) – raises key problem of massive calculating projects – Babbage’s difference engine is a solution, as is modern computer, both closely linked to Greenwich Observatory and longitude determinations. Navigation demand knowledge of astronomy – astronomers invent ‘guns’ for photographing transits – this becomes the Movie Camera. Werrett.

Reinventing Vision – new science and optical media c. 1800 prompted new ways of thinking about perception, the self, subjectivity, and in turn created new media which played on knowledge of these things. Following Jonathan Crary’s *Techniques of the Observer*, we look at new media like the stereoscope, kaleidoscope, panorama, diorama, zoetrope, photography and film. Werrett.

Technologies of Intelligence, from Bentham to Big Brother – media allow increased social control through spying – big problem in USA as well – what’s history of this? Industrial espionage and military intelligence develop in 18th century, producing lots of new and ingenious media (Rumford’s invisible ink etc); coincides with rising capitalism and new idea of “efficiency” – utilitarians and liberals invent lots of methods for accounting for people and money – Panopticon, panopticism of Bentham flourishes in 19th century; Foucault & Orwell revise view of these techniques as politically sinister; post-Foucault has made play out of them, e.g. (obviously) Big Brother – thus uses of media are not predetermined or predictable. Techniques designed for control can end up as means of resistance and subversion; problems of intelligence in Iraq. Werrett.

Victorian Networks – looks at the history of the network and its ramifications in science, art, and philosophy; canals, roads, and railway lines in the 18th-19th century – the art of signaling, telegraphy, and telephony; precision measurement, synchronized time and standardization; Wolfgang Schivelbusch on the ‘railway journey’; Peter Galison on Einstein and railway clock networks; network ideas – Bruno Latour. Werrett.

Automaton and Phonograph – since at least Descartes’s time, automata, mechanical models of humans and animals, have played a profound role in human mediations of their own selves, souls, and bodies. The lecture explores how automata were linked to efforts to imitate or record sound, music and the human voice, and how such efforts shaped ideas about what it is to be human and/or machine. We’ll look at the speaking machines of the 18th century; Thomas Edison’s speaking dolls and the invention of the phonograph; the ‘pygmalion’ tradition in literature and film (e.g. Lang’s *Metropolis*) reveals the ambivalent gender dimension of new media, influentially dealt with by Donna Haraway’s ‘Cyborg Manifesto’. Werrett.

Machines for War and Business – computers and desktops in the twentieth century – development of secret writing and codes from Kircher to WWII; code-breaking machines and the invention of the digital computer; history of the technology of the office – filing systems, desks, trash cans, etc. The personal computer - Convergence of business and war machines or product of sixties counterculture? Anthropology of the ‘paperless office’. Werrett.

Convergence Culture – globalization and media – should be clear by now this is nothing new, but some key recent technologies – history of the web and mobile phones; games and interactivity; visions of the future for the web in e.g. William Gibson. Werrett.

Technological Organizations I: Bricks – how new technologies become occasions for organizational restructuring. Technology and rationalization in organizational behavior: Weber, Ford, Taylor, and Yates.

Technological Organizations II: Bytes – contemporary organizations, hierarchies and heterarchies. Barley, Neff and Permanently Beta. Social and Technological determinism. The Dot-Com boom and bust.

Techno-cultures – the role of new technologies in restructuring cultural norms. Innis and the economic history of structured communication. Hot and cold media, and the wackiness of McLuhan. A taste of Haraway? Lessig and free culture.

Technology and the International System – the technologies of contemporary diplomacy. Perhaps use Renaissance Diplomacy if I can find my notes. Otherwise, introduction to collective action and game theory, the 4 big theories of international relations, and the role of technology in contemporary peace-building.

Big Brothers, Little Sisters – The technologies of surveillance, present. Blogs, podcasts and citizen journalists. Cookies, spyware and datamining. Parallels with Werrett's lectures on technologies of surveillance, past.

Information Societies I: The USA – my basic pew lecture. Internet trends, the socialization debate,

Information Societies II: The Developing World – What happens when advanced technologies come to developing countries? Pushing, Pulling, and Pooling. Modernization, dependency and underdevelopment. Lessons from Tanzania and the World Summit on the Information Society.

Networked Lives – theories of social capital and social networks, the metaphor of network societies. Bourdieu, Putnam, Castels.

Required Readings

*Peter Burke and Asa Briggs, *A Social History of the Media: From Gutenberg to the Internet* (Polity Press, 2005) ISBN: 0745635121 – looks like a straightforward long duree history of media technologies from printing to the internet. Would provide a

general introduction and reference work for students – to be read during the quarter but not used as a section reading.

*Thomas Hughes, *Human-Built World: How to Think about Technology and Culture* (University of Chicago Press, 2005) (ISBN: 0226359344)

*George Orwell, *1984* (for the section after ‘Technologies of Intelligence’ lecture) – the Centennial Edition, 2003 (ISBN: 0452284236) has a couple of nice essays by Thomas Pynchon and Erich Fromm – we could use this unless you know a good critical edition.

Carolyn Marvin, *When Old Technologies Were New* (for the section after the ‘Victorian Networks’ lecture) (ISBN: 0195063414)

Villiers de l’Isle Adam, *Tommorrow’s Eve* (University of Illinois Press; Reprint edition, 2000) (ISBN: 0252069552) (for the section after the ‘Automaton and Phonograph’ lecture) – fantastic novel about Thomas Edison inventing a mechanical girlfriend for a distressed English aristocrat – the inspiration for Metropolis.

William Gibson, *Neuromancer* (for the section after the ‘Convergence Culture’ lecture)

I would assign a few other readings, but these would be extracts in a coursepack. Finally, here’s a list of books I just ordered to help prepare my lectures... if you know any classy media histories I’d love to hear about them. All the best Phil,