Panel Proposal, SHOT 2004

Title: *The Electronic Eighties: Domesticating, Gendering, and Consuming Personal Information and Media Technologies, 1975-1995*

Organizer: Thomas Haigh (contact: thaigh@acm.org)

Commentator: Pap Ndiaye, Ecole des Hautes Etudes Sciences Sociales, Paris

Chair: Bruce Sinclair

Papers:

Thomas Haigh, University of Wisconsin, Milwaukee. *Making the Computer Personal: Reconstructing Domesticity for the Information Age*

Greg Downey, University of Wisconsin, Madison. *From Court Reporting to Closed-Captioning to the Classroom: Jumping Context with Computer-aided Stenography*

Heike Weber, Munich Center for the History of Science and Technology. *"Portable Pleasures": Audio Equipment of the 80s in Urban and Domestic Spaces.*

Jeff Tang, University of Pennsylvania. "Everything But the Popcorn": *Domesticating the Cinema by Remaking the Living Room*

The Electronic Eighties:
Domesticating, Gendering, and Consuming Personal Information and Media Technologies, 1975-1990

The personal electronic information and media technologies of the 1970s and 80s marked a fundamental shift in the relationship of ordinary Americans to technology. Driven by the integration of integrated circuits and microelectronics into affordable consumer products, capabilities formerly confined to the realm of bulky, expensive and esoteric devices worked by skilled specialists were packaged and mass produced for use in millions of households. Among these technologies were the video recorder, the computer (explored in Haigh's paper), cable television, portable stereo audio players (explored in Weber's paper), home theatre (explored in Tang's paper), closed captioned titling (explored in Downey's paper), and citizens band radio.

In each of these cases, a technology formerly confined to specialized social spaces was entering new social spaces, in which the networks of users, expertise, and marketing which formerly enveloped it did not function. The success of these technologies relied instead on the ability of users and producers to renegotiate and reconstruct the social meanings of the technologies, endowing them with new associations and functions. Following from the work of Bijker and others, historians of technology are familiar with the idea that the nature of a technology is quite flexible early in its history, before being "fixed" into a less plastic form. In these cases, however, the transfer of existing technologies into new social spaces required a process of melting and resetting.

These electronic technologies were reshaped by existing gender roles, by the tinkering cultures of technological enthusiasts, and by conceptions of the domestic sphere. In turn, they created new patterns of consumption and of labor. The computer, for example, spread first to electronics hobbyists and create whole new communities of enthusiasts, while home theatre served to extend the high performance culture of audio fanatics into the family-oriented culture television. Home theatre's very title promised to reproduce the public, social space of the cinema within a basement, den or family room. Computer technology appeared remote, intimidating, and impersonal to ordinary families. Reconstruction of the computer as a domestic appliance required not just the creation of new uses for it (something which proved quite elusive), but also a concerted attempt to familiarize the public with the idea of the computer as something compatible with very conservative notions of family life and the domestic sphere. In both of these cases, domestic consumers grappled with technological mysteries formerly the exclusive preserve of expert technicians. Technical labor was reborn as a consumer leisure activity.

In contrast, portable stereos and Walkmans standardized and packaged what had formerly been a tinker's technology, moving the stereo out of the domestic space and turning it into a fashion accessory. Private consumption gave way to public display, as teenagers and children embraced playfully designed and inexpensive players and recorders. In the case of television closed captioning, the technology was (initially literally) a black box, but behind it lay the hidden home-based work of female transcribers. Stenographic labor formerly produced and consumed within business or government spaces was now consumed and, increasingly, produced within the domestic sphere. Interestingly, one of its ultimate results was to shift some television viewing out of the domestic spaces and into bars, gyms, and airports.

Greg Downey, University of Wisconsin, Madison

From court reporting to closed-captioning to the classroom: Jumping context with computer-aided stenography

In the early 1960s, the Department of Defense contracted with IBM on an ambitious project to create a hardware/software/human system of instantaneous language translation from Russian to English, involving fast mainframe computers, huge phoneme databases, and antiquated stenographic keyboards. Although the language translation project evolved in another direction, some of the key actors involved decided to migrate the system into an industry not previously known for its willingness to embrace electronic technology: stenographic court reporting.

While the practice of business technology systems spinning off from government-sponsored research efforts is not new in the history of computing, the case of "Computer Aided Transcription" or CAT does not end with this public-to-private transition. About a decade after mainframe-based CAT entered the world of the courtroom in the early 1970s, a PC-based version of CAT entered an entirely different context in the early 1980s: the television production studio. Here, the same technology for computer-aided human conversion of speech-to-text found a new application: realtime closed-captioning. Finally, a laptop-based version of CAT made yet another leap across context about a decade later, in the early 1990s, as an "assistive technology" for deaf and hard-of-hearing students in the classroom.

In all of these cases, the transition from one context to another has involved a key shift in the spatial and temporal parameters of the technology itself: the hardware shrank from mainframe to PC to laptop, while the software sped up to eventually allow both realtime translation and realtime formatting. Similarly, each shift in context was motivated by key regulatory changes, from state demands for cheaper and faster legal transcripts to the federal funding of closed-captioning and the Americans with Disabilities Act. But I argue that the most crucial ambassador across context for this technology has been human labor itself, as with each contextual change, CAT operators have been obliged to increase not only their speed and skill on the keyboard, not only their mental and magnetic domain dictionaries of translatable words, but also their broad understanding of, and empathy for, the populations they serve.

“Portable Pleasures”: Audio Equipment of the 80s in Urban and Domestic Spaces

Heike Weber, Munich Centre for the History of Science and Technology

This presentation places the portable audio equipment of the 80s into the larger context of consumer electronics and music listening practices. In the late 70s and 80s, two technological changes occurred: miniaturization, and the transformation of cassettes into a high fidelity medium -- changes exemplified in the Sony Walkman of 1979/80. However, it was not technological breakthroughs, but rather marketing considerations which led to diverse “product families” centered around three types of audio designs: the cassette recorder, the combination unit (“boom box”), and the personal stereo. Both the producers of audio equipment, and audio equipment users assigned new meanings to these sound machines and to the practice of listening to music. To elucidate this reshaping of audio electronics, the paper brings out the ways in which consumers were conceptualized by producers, and the ways that consumers themselves embedded various audio equipment into their lives. My main sources are German and American consumer and technical journals, advertising, marketing studies, and media coverage.

For the producers, portable designs offered a means for further expansion, as the traditional, non-portable audio market had stagnated around 1980. This non-portable market was comprised of high-fidelity components for the living room, aimed at the skilled (and mostly male) audiophile. With manifold portable and often cheap models, such as waterproof models for the beach, slim-lined, pastel colored items for housewives, and even designs for toddlers, producers sought to gain access to new user groups which lacked high-tech aspirations. Furthermore, with frequent model changes, the industry responded to upcoming fashion trends and lifestyles.

Users made diverse statements through their public display of audio technology. The practice of listening to music was re-negotiated between producers and users in many ways. Teenagers, often males, pumped up the volumes of their boom boxes as their “voice” on urban streets. Accordingly, boom boxes tended to neglect high fidelity in favor of bass and volume. Many contemporaries, and non-boom-box-users, viewed boom boxes as "weapons to infuriate the staid and proper". The slang term “ghetto blasters” emerged, which, in addition to its racist overtones, also reflected the affection that African-American teens felt for their newly affordable sources of loud music. Personal stereos also were “message machines". Initially, they bore the negative connotation of anti-socialness. Some communities even restricted the headset`s outdoor use because of potential traffic risks. However, their popularity and the many ways users integrated them in their daily routines, e.g. while jogging, commuting, and even on the dentists` chair, endowed them with the meaning of a fun and fashionable tool of an up-to-date, fit person.

Just as users created unexpected uses for these technologies, they also rejected some intended functions. Consumers rarely used the recording capabilities of their equipment for the functions that the producers had anticipated, such as taping a diary, recording the sounds of holiday trips, or for personal voice training. The fun of personal recording, once an amateur’s hobby, remained largely an activity for children and for teens who created tape compilations of their favorite pop songs with their radio recorders.

In conclusion, with the new technology, listening to recorded music became an integral part of daily life for people of all ages. It intruded into nearly all social spaces: the social sphere of childhood, all domestic spaces back home, and public spaces like the urban streets or subway trains where it often challenged traditional conceptions of acceptable behavior. Boom boxes and personal stereos became a distinct element of urban culture - the former as a means of enhancing the urban soundscape, and latter as a tool for controlling which sounds to hear or ignore.

Jeffrey Tang, University of Pennsylvania

"Everything but the Popcorn:" Domesticating the Cinema by Remaking the Living Room

In the 1970s, home theaters were expensive, custom-built, cinema-style installations found primarily in the homes of wealthy movie moguls. In a very literal sense, they were small cinemas built into one dedicated room of a house. The widespread adoption of home videocassette players during the 1980s extended to less privileged movie-viewers the choice of whether to see a film in the cinema or at home. Home viewing provided some distinct advantages over the cinema – most notably the ability to pause and review missed scenes – but suffered from much lower sound and picture quality. Picture quality improved only slowly, but multi-channel audio reproduction from videotape was technically simple and commercially marketable.

During the 1980s, the American electronics industry re-defined the term "home theater" to denote a variety of integrated audio-video reproduction systems specially created for the home. This democratized home theater sought to temporarily transform the family living room into a cinema-like space. One leader in this area was THX Ltd, founded in 1983 by George Lucas, the technologically enthusiastic and eternally juvenile creator of the Star Wars films. THX offered a certification program for products and dealers which ostensibly guaranteed a completely faithful recreation of professional quality cinema sound using technologies specially tailored to the domestic setting. The key underlying technology was introduced in 1982 by Dolby Laboratories, developer both of a noise-reduction system for consumer cassette-tape playback and of a system for encoding multiple channels into the sound tracks of feature films. These fields came together when introduced a home version of its 4-channel cinema playback system, called Dolby Surround. Technically, Dolby's initial system differed little from quadraphonic sound, a technology that had already failed to woo the music lovers of the 1970s. But where quadraphony had failed as a simple technical upgrade to the home stereo, the new system promised not just improved fidelity but an entirely new kind of experience. Its social meaning was dramatically, and successfully, reconstructed. It now promised, in the words of one Wall Street Journal article, "Everything but the Popcorn" (which could of course be purchased separately and microwaved).

This new type of home theater seemed to perfectly wed the previously distinct technologies of home audio and home video. In practice, home theater more often imposed the masculine, performance and technology obsessed, culture of hi-fi audio onto the gender-neutral technology of home video and what was (according to some researchers) the formerly feminine technology of the television. Television and stereo were subsumed into a multi-purpose, audio-visual home entertainment system. With home theater, men obsessed with technical toys could trade in their hi-fi stereos for audio-visual surround sound systems – which provided even more options for the adventurous tinker. By the late-1990s (and with the aid of other new technologies), home theatre reached the mainstream of middle-class America. With it came a shift toward loud, action-packed films with pulsing soundtracks and spectacular explosions able to show off the new capabilities.

Home theatre promised to bring the cinema experience home. While on a technological level it fulfilled much of this promise, the experience of configuring, tweaking and watching a home system was quite different from that of buying a movie ticket and sitting in a public space. Home theatre served to surround the once-simple process of movie consumption with social

practices, new enthusiast cultures and communities, and even new kinds of film. Thus a culture of technical fidelity obscured a more profound social infidelity.

626 E. State Street, #1208, Milwaukee WI 53202 ■ 414.287.0062 (W) 812.369.1565 (M)
Papers, syllabi and resources on-line at www.tomandmaria.com/tom.

SELECTED ACADEMIC:

University of Wisconsin Milwaukee Assistant Professor, School of Information Studies, starts Fall 2004

The Haigh Group **Consultant**, historical projects, Fall 2003-present

Indiana University, Bloomington **Visiting Assistant Professor,** Informatics School, Fall 2003

Colby College **Visiting Instructor/Visiting Researcher**, STS/Ad. Sci., 2001-2003

University of Pennsylvania **History and Sociology of Science**

M.A. Awarded, August 1997. **ABD**, September 1998. **Ph.D**. May 2003

Dissertation: "From Office Manager to Chief Information Officer: Managing Information Processing in American Corporations, 1917-1990" advisor -- Walter Licht (History Department)

Manchester University (UK) **Department of Computer Science**, B.Sc. & M.Eng, 1991-1995

SELECTED PEER REVIEWED PUBLICATIONS:

Thomas Haigh, "A Veritable Bucket of Facts: Origins of the Database Management System" in *Proceedings of the Second Conference on the History and Heritage of Scientific and Technical Information System* [New Jersey: Information Today, 2004].

Thomas Haigh, "Software in the 1960s as Concept, Service, and Product", *IEEE Annals of the History of Computing 24* (January-March 2002): 5-13.

Thomas Haigh, "The Chromium Plated Tabulator: Institutionalizing an Electronic Revolution, 1954-1958", *IEEE Annals of the History of Computing 23* (October-December 2001): 75-104 .

Thomas Haigh, "Inventing Information Systems: The Systems Men and the Computer, 1950-1968" *Business History Review 75* (Spring 2001): 15-61.

OTHER:

- Thirteen shorter publications, including book reviews, obituaries, biographies, comments, and a review essay.
- Eleven competitively reviewed presentations, including SHOT, Business History Conferece, North American Labor History Conference and Hagley conference on the Technological Fix.
- Eight invited presentations and departmental seminars.
- Awards, Grants and Fellowships include:
  - Software History Center Research Fellowship (2003),
  - IEEE Life Member Fellowship in Electrical History (2000-01),

    - Tomash Fellowship in the History of Information Processing (Babbage Institute, 1999-00),
    - William Penn Fellowship (1995-99) - four year non-service stipend and fees,
    - Fulbright Award for post-graduate study in the US (1995-96)
- Biographies editor and board member of IEEE Annals of the History of Computing

cv for Gregory J. Downey

April 2004

University of Wisconsin-Madison
5115 Vilas Hall, 821 University Avenue
Madison, WI 53706

gdowney@wisc.edu
www.journalism.wisc.edu/~gdowney/
608/225-3809

1985-1989	B.S. and M.S. in Computer Science, University of Illinois, Urbana-Champaign. Thesis: "Artificial intelligence in object-oriented design."
1989-1992	Worked as computer systems analyst, Leo Burnett Advertising, Chicago, IL.
1992-1995	Created educational simulation authoring tools in LISP at Roger Schank's Institute for Learning Sciences, Northwestern University, Evanston, IL.
1993-1995	M.A. in Liberal Studies, Northwestern University. Advisers (history department): Josef Barton and Henry Binford. Thesis: "Bookmobiles as information technologies."
1995-2000	Ph.D. in both History of Technology and Human Geography, the Johns Hopkins University, Baltimore, MD. Advisers (both departments): David Harvey, Stuart Leslie, Erica Schoenberger. Thesis: "Telegraph messenger labor in the first communications internetwork, 1850-1950."
2000-2001	Woodrow Wilson Postdoctoral Fellowship in the Humanities, Department of Geography and Humanities Institute, University of Minnesota, Twin Cities.
2001-present	Assistant Professor, School of Library & Information Studies (50%) and School of Journalism & Mass Communication (50%), University of Wisconsin-Madison. (Also affiliated with Department of Geography and Science/Technology Studies.) Field: History and geography of information/communication technology and labor.

Publications

Greg Downey, "Jumping contexts of space and time in the history of computers and computing," *IEEE Annals of the History of Computing* (forthcoming, 2004).

Greg Downey "Nodes, links, and phase transitions: Popularizing 'network science' [review essay]," *Technology and Culture* 45:1 (2004), 162-167.

Greg Downey, "The place of labor in the history of information technology revolutions," in Aad Blok and Greg Downey, eds., *Uncovering labor in information revolutions, 1750-2000*, special supplement to the *International Review of Social History* (Cambridge: Cambridge University Press, 2003).

Greg Downey, "Telegraph messenger boys: Crossing the borders between history of technology and human geography," *Professional Geographer* 55:2 (2003), 134-45.

Greg Downey, *Telegraph messenger boys: Labor, technology, and geography, 1850-1950* (New York: Routledge, 2002). (Reviewed in *Space and Culture*, 05/2003; *Isis*, 06/2003; *Technology and Culture*, 07/2003; *Journal of American History*, 12/2003; *American Historical Review*, 12/2003; *Enterprise & Society*, 04/2004).

Greg Downey, "Virtual webs, physical technologies, and hidden workers: The spaces of labor in information internetworks," *Technology and Culture* 42:2 (2001), 209-35.

Greg Downey, "Running somewhere between men and women: Gender and the construction of the telegraph messenger boy," in Shirley Gorenstein, ed., *Research in Science and Technology Studies: Gender and Work*, vol. 12 of *Knowledge and Society* (Stamford, CT: JAI Press, 2000), 129-52.

Current work

History and geography of audio-visual media captioning (especially broadcast television closed-captioning) as a technology, a commodity, a labor practice, and an industry, from an era of "multimedia" to "digital convergence," 1970-2002.

Resume

Heike Weber
Heike.Weber@mzwtg.mwn.de
http://www.lrz-muenchen.de/~Heike_Weber
Munich Centre for the History of Science and Technology
c/o Deutsches Museum
D - 80 306 München

Present affiliation:
Sept. 2003- Febr. 2004 Visiting researcher at the National Museum of American History (as a scholarship holder of the German Academic Exchange Service) and at the Hagley Museum and Library (through their grants-in-aid program)

Jan. 2001 - June 2004 Research assistant position at the Munich Centre for the History of Science and Technology with a dissertation on *Mobile Times: Images, Meanings and User Practices of 20th c. Portable Electronics*

Education:
Oct. 1992 - Jan. 2001 Magistra Artium in the History of Science and Technology and in Communication Studies (TU Berlin and FU Berlin) with a thesis on the technologization of popular amusement culture around 1900

Sept. 1996 – June 1997 ERASMUS fellowship at the University of Aberdeen

Research-related activities:
Students' representative in the Gesellschaft für Technikgeschichte, 2001-2003 and organization of two

workshops for young academic scholars (on archival practice and on job perspectives)

Co-organizer of the *Mediating technologies: users and usage in the history of 20th century technology* workshop with my collegue Gwen Bingle as part of our insertion in the „Tensions of Europe" programme (cf. http://www.lrz-muenchen.de/~designing-the-user/sf-workshop.html)

Selected presentations and publications:
Female Cyborgs: Envisioning Women As Users of Everyday Technologies. Paper presented at the Symposium „Picturing Women", Bryn Mawr College, March 19-21, 2004

Schwindel, Kreischen, Gliederkribbeln: Großstädtische Freizeitparks um 1900. (Dizziness, Squeals and Tingling Limbs: City Amusement Parks at the Turn of the 19th Century.) Talk presented at the Gesellschaft für Technikgeschichte annual meeting, Chemnitz, June 2001

„Kluge Frauen lassen für sich arbeiten!" Werbung für Waschmaschinen von 1950 – 1995. („Clever Woman have their Work done for them!" Advertisements for Washing Machines, 1950-1995.) In: Technikgeschichte, vol. 65 (1998), pp. 27 – 56

Technikkonzeptionen in der populären Sachbuchliteratur des Nationalsozialismus. Die Werke von Anton Zischka. (Concepts of Technology in Nazi Popular Non-fiction Literature. The Works of Anton Zischka.) In: Technikgeschichte, vol. 66 (1999), pp. 205 – 236

Wilmington, March 30, 2004

C. V. – Jeffrey Tang

Education:
Ph.D. Candidate, History and Sociology of Science, University of Pennsylvania, Sept. 1999-August 2004.

Dissertation: Sound Decisions: Systems, Standards, and the Role of Consumers in American Audio Technology, 1945-1975
M. A., History and Sociology of Science, University of Pennsylvania, Sept. 1997 to Aug. 1999
Thesis: A Standard Edison Story: Compatibility Standards in Thomas Edison's Development of the Phonograph
M. Phil., Economic and Social History, University of Oxford, Sept. 1994 to June 1996
Thesis: Timely Success: The Role of Locational Lock-in and Path-Dependence in the Rise of the South-west Lancashire Watchmaking Industry
B.A., Economics, Northwestern University, Sept. 1990 to June 1994

Honors and Prizes:
University of Pennsylvania, Chimicles Fellowship for the Teaching of Writing, 2003
University of Pennsylvania, University Fellowship, 2002
University of Pennsylvania, Jack Pressman Award, 1999
University of Pennsylvania, SAS Fellowship, 1997-2001

Professional Activities:
Member of the Society of the History of Technology, Sept. 1998 to present

Publications:

Review of David Morton's Off the Record: The Technology and Culture of Sound Recording in America; published in Business History Review, v.74, n.3, Autumn 2000, pp. 529-31.

Service:

"Revisiting *The Structure of Scientific Revolutions*," Introductory Lecture for Penn 2003 Fullbright Program in English for Graduate Studies, August 2003

Conference Presentations:
"The Short, Happy Life of Quadraphonic Sound," presented at the annual meeting of the Society for the History of Technology, October 2002, Toronto, Canada.
"The Quadraphonic Quandary," presented at the Mid-Atlantic Conference for the History of Science, Technology, and Medicine, July 2000, Carnegie Mellon University
"The Four-Channel Flop," presented at Failure: An Interdisciplinary Graduate Student Conference, April, 2000, Harvard University
"Timely Success: The Genesis of the South-west Lancashire Watchmaking Industry," presented at On Time: History, Science, Commemoration, September, 1999, Liverpool, U. K.