6xxx Special Study in CSCW: Media Space: 20+ Years of Mediated Life (Spring '08)

SUMMARY

This class is seminar on the CSCW special topic of media space. The basic media space idea is that continuously available media becomes part of the fabric of everyday experience. See below for pointers to some of the seminal research and publications that came from it. We see that many researchers today are unaware of the real motivations behind and the fundamental understandings that resulted from the first media spaces; we encourage those who re-discover some of these ideas in current research to learn about the work anew. Some topics include:

- privacy
- large scale display
- awareness
- telepresence
- mobile awareness (IM)
- video chat
- social triangulation
- coordination
- distributed work
- multi-player games
- camera-projector integration research
- media and related critical theory
- space and place issues
- and, of course, media space.

The instructor, the inventor of the concept of media space, is editing a volume reflecting on media space research. We will use chapters in the book as launching points to:

1. revisit the initial work;
2. examine how the ideas of media space formed core ideas in CSCW;
3. trace how it spawned HCI and CSCW research areas such as awareness, ambient displays, and multimedia interfaces;
4. expand current research into areas of mediated connection.

Students will be asked to write about their current research in terms of the media space; papers will be targeted for submission to CSCW (papers deadline is April 18, 2008); the conference will be November 8-12 in San Diego).

MEDIA SPACES

In the mid 1980's Bob Stults and Steve Harrison created the first media space at Xerox Palo Alto Research Center ("PARC"). From their initial office-to-office always-on real time audio and video connection grew a switched network of continuous connections for a small laboratory split between Palo Alto, California and Portland, Oregon. Offices and public spaces had cameras, microphones, video monitors and computers that were always
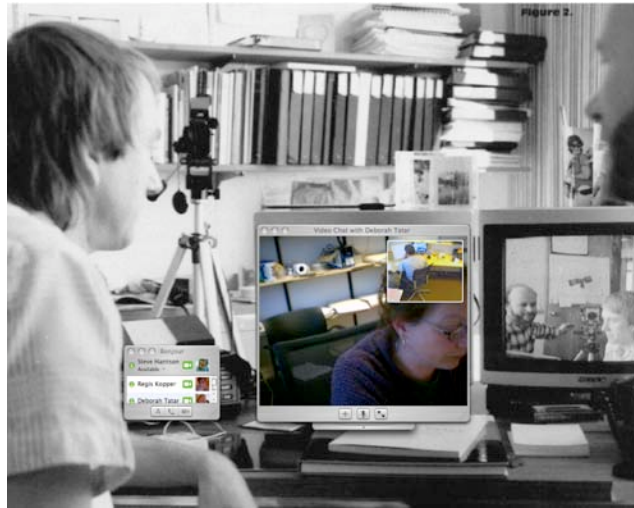
on. The images on the screens and the sound coming out of the speakers created shared offices, placed offices on hallways 500 miles away, and "virtually" doubled the size of the common area for both the Portland and Palo Alto groups. Colleagues shared informal interactions and formal lab meetings, quick conversations and in-depth discussions; cross-site projects and cross-site reporting relationships. Despite the difficulties of technology-mediated communication, the lab researchers knew each other and regularly interacted. [Stults 1986; Bly et. al. 1993; Harrison et. al. 1997][1]

Other research labs followed with internal-only and multiple site configurations. EuroPARC in Cambridge [Gaver et. al. 1992; Bellotii and Dourish 1997], BellCore [Fish et. al. 1990], US West in Denver [Bulick et. al. 1989], Sun Labs in Palo Alto, [Tang et. al. 1994], and the University of Toronto [Mantei et. al 1991] all began experimenting with forms of real-time audio, video and computer connection that put people into extended working situations with one another. These many lab-based projects were each quite different from one another in both (often important) subtle ways and (sometimes unimportant) obvious ways. These media spaces supported a sense of community, extended one-on-one close collaboration, and teleconferencing. "Media space" brought the topics of awareness, gaze and attention, visual reciprocity, para-social relationships, control, notification, echo-canceling, spatialized real-time audio, collaborative sketching, and, of course, privacy to the research table. Through these, media spaces engendered CSCW research in desktop video conferencing, shared drawing, (e.g. VideoDraw [Tang and Minneman's 1990] and TeamWorsktation [Ishii 1990] and Clearboard [Ishii and Kobayashi 1992]), awareness servers (Portholes [Dourish and Bly 1992]), time-shifting technologies (WhereWereWe [Harrison et. al. 1999]), and even some aspects of MUD's and MOOs (Jupiter [Curtis et. al. 1995]).

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[1] Before the PARC Media Space, the artists' collective, Mobile Image, created the *Hole in Space* that suggested many of the social and para-social relations that were observed at PARC and the follow-ons. [Galloway and Rabinowitz, 1980]

Since that time, technology has changed and affordable real-time desktop conferencing is a reality. *But what happened to the ideas of the media space? While there are ubiquitous cell-phone cameras, web-cams, iChat, architectural scale displays, the Internet, and globalized work, how do these current technologies and collaborative experiences look like and look different than those of the media space? What is the current state of systems that employ socially negotiated control instead of enforcing an established policy? What is the meaning of "awareness" and "presence" today?* Asking these questions will, inevitably, engender reassessment of CSCW research in general since media space was one of the seminal ideas of CSCW.

What Is A Media Space?
- technology that connects people
- promotes presence,
- creates opportunities for casual interaction,
- leads to engagement over wide range of activities,
- has a sense of immediacy,
- does this in a lightweight and seamless way over different technological constraints and media channels / services
- may be targeted for different collections of people and social relationships
- presence/engagement is carried through the link and regulated through it.
- about sociality, situated interaction, work, play, conversation, feelings of presence can be targeted.
- our physicality directs the way we choose to communicate (space)
- the socializations that we use (glances, acknowledgements, awareness of what you are doing) comes from our physical presence
- is set in an 'understood' spatial context i.e., where other person is.

COURSE DESCRIPTION

This is a seminar class. The seminar will follow the chapters in the forthcoming book. All will be asked to read the chapters, but individual students will be assigned to lead the discussion. As discussion leader, each will be expected to do more extensive research.

Besides following the reading, seminar sessions will discuss students' research projects in terms of media space issues. Students will be asked to write about their current research in terms of the media space; papers will be targeted for submission to CSCW (papers deadline is April 18, 2008); the conference will be November 8-12 in San Diego).

When possible, we hope to engage the authors of chapters directly in the discussion where possible. Some of the authors are: Paul Aoki/Intel Berkeley, John Tang/IBM Alamden, Sara Bly/Sara Bly Computing, Bill Gaver/Goldsmiths College (London), Elizabeth Churchill/Yahoo, Wendy Mackay/University of Paris Sud, Michel Beaudoin-Lafon/INRIA, Morten Kyng/University of Aarhus.

STUDENTS

We understand that Spring '08 will have two other HCI special topics classes which will compete for students, but the window of opportunity for this class is gated by the state of the book. With proper advertising, we expect to recruit about eight students from various part of the HCI graduate area in CS. We may also expect one or two students from Sociology and STS. We trust that students will be interested in this seminar as a means to better understand their own research and gain critical feedback on it in the broadest terms. For example:

- ❑ Students working with large displays will be interested in looking ahead to ubiquitous architectural-scale displays rather than the current situation of special-purpose scientific displays.
- ❑ Students engaged in embodied interaction research will be interested in how communications through media is like/unlike interaction with a technology
- ❑ Students investigating social computing including gaming, social spaces such as MySpace or Facebook, or on-line government will find the media space perspective central to discussions of the meaning of commons, for example.

EVALUATION

Evaluation will be broken down as follows:

25%	class participation (and this really does mean speaking up!)
25%	leading assigned discussions
35%	Paper (submitted to CSCW)
15%	review and comments on chapters (written)

SYLLABUS

There are three ways of approaching media spaces; the material is organized by them:

1. **Spatial**: the use of continuously-available, always-on audio, video and networked computing to link separated places and times creates visual, acoustic and metaphoric connections. The collection of these relationships is a media space. Thus the illusions of cinema and broadcast television become part of the experiential fabric of physical space. The primary issues are framed in terms of space and place and the unfolding of experience. For example, places in media space are created using extensions of place-making as understood in the physical world.
2. **Social:** media technology (audio, video, text, etc.) to link separated individuals and groups can support social relations that build upon those in physical space, distort them, or even cartoon them in new forms. So a media space in this approach is one where elements of understood social practice are used in mediated ways. This might involve placing a monitor

for negotiating whether one wants to engage in a casual conversation next to an office door in order to mimic the physical-space practice or creating connection control systems that expose who is talking to whom to all who might connect. Salient issues in this approach are sociality, community, and appropriate behavioral framing.

3. **(Embodied) Communications**. Yet a third approach looks at the content of the media. Thus, this approach focuses on the communicative needs of users. In this approach, the resolution of deictic reference through the showing of hands (aka "shared drawing"), the "efficiency" of teleconferencing, and the forms of meaning-making are drivers of using audio, video and networked computing in novel combination. As such, it is the most contentious approach since there are competing analytic approaches such as information theory, conversation analysis, task support, and conventional teleconferencing metrics. This is then a microcosm of the contentions within HCI and CSCW over paradigms and "science".

It is striking how different each approach is from the other even though the core research is strikingly similar. The reader will see that the different approaches create cases that would be excluded by other definitions. For example, the (embodied) communications approach admits telephony-like interactions and information-theoretic frames of analysis.

What ties the three together are (a) the use of real time media in a physical context to connect people together who are physically separated from one another and (b) some element of human experience that is used to describe the phenomena. This tight binding of experiential phenomena to utility highlights the difficulty of understanding what is important about this line of research and why it led to such a diverse collection of investigations.

Topics:
- privacy
- large scale display
- awareness
- telepresence
- mobile awareness (IM)
- video chat
- social triangulation
- coordination
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TEXTBOOK
Harrison, S. (ed) "The Media Space: 20+ Years of mediated Life" publication forthcoming, Springer. (Part of the CSCW book series, R. Harper editor). Drafts will be made available to students in the course.

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