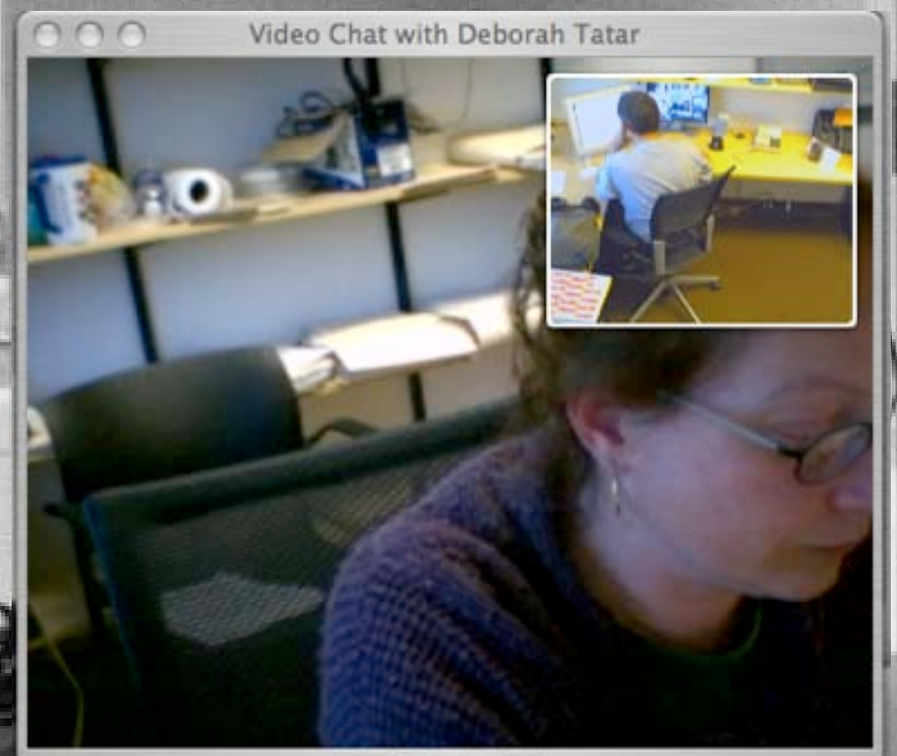
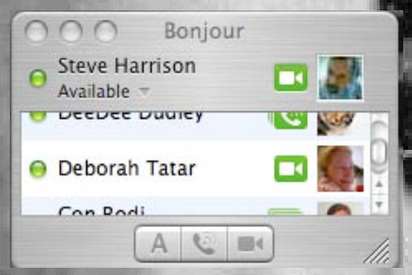
Media Space - Reflections after 20 Years

CSCW Workshop @ Banff
November, 4, 2006

WELCOME


Video Chat with Deborah Tatar


Bonjour
Steve Harrison
Available
Deborah Tatar

TODAY

9:00 Introduction
9:15 Five Minute Presentations
10:30 Coffee Break
11:00 Finding the framework: why did some media spaces work and why did some fail?
12:30 Lunch
14:30 Breakout groups (or discussion)
16:00 Coffee Break
16:30 Report back by each group
17:00 Plenary discussion of future work

WELCOME

Media Space

- Sites/Projects:
  - pre-history: Hole in Space
  - late 1980's - mid 1990's: PARC, EuroPARC, BellCore, US West, UofToronto, Sun,
  - late 1990's - today: MIT Telemurals, Aarhus Emergency response, CISRO, PARC/Intel
- Research:
  - modes: shared-offices, public spaces, coffee areas, fixed-connection, switchable, YCSMIICSY
  - projects: AROMA, CaveCat, Clearboard, Cruiser, DrawStreamStation, Hydra, Kasmer, Portholes, Postcards, RAVE, Somewire, VideoComm, VideoDraw, VideoWhiteBoard, VideoWindow

Media Space Research

- awareness
- presence
- privacy
- shared drawing
- audio
- reciprocity
- teleconferencing
- embodiment
- space/place
- telerobotics/human interaction
- social triangulation
- appropriation

Aoki, Szysmanski, & Woodruff

Alem & Stitzlien

Sara Bly

Bill Buxton

Elizabeth Churchill

Brian Corrie

Greenburg & McEwan

Steve Harrison

Karrie Kariahalos

Kristensen & Kyng

Kuzuoka, Yamazaki, Luff, & Heath

Roussel & Beaudouin-Lafon

John Tang

Marilyn Mantei-Tremaine

reports from breakout groups

Designing media spaces for supporting the asymmetrical aspect of remote collaboration

CSCW'06

Media Space Workshop

Leila Alem and Cara Stitzlein

4 November 2006

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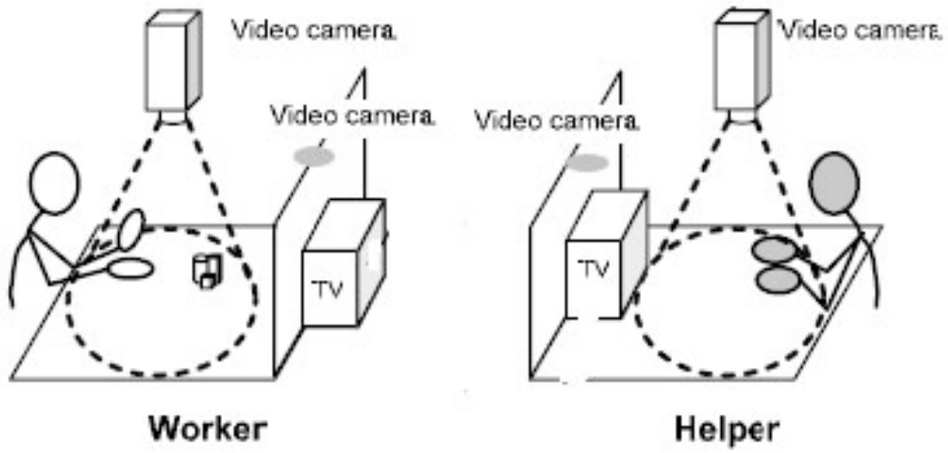
Two scenarios under study

www.ict.csiro.au



Fibre

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Meaning of media space is in term of users' experience within the space

What Constructs/factors play a role in users' optimal experiences with media i.e. transparency; directness; the illusion of non-mediation ?

User's quality of experience

- the quality of the interaction/ collaboration as perceived by each individual,
  - Effectiveness of communication and collaboration
- the perception of the other
  - Co presence
- the perception of self and self efficacy,
  - Self reported co presence and motivation
- the level of awareness
  - Workspace awareness , environment awareness
- overall satisfaction level.

Issue : how these constructs interrelate ?

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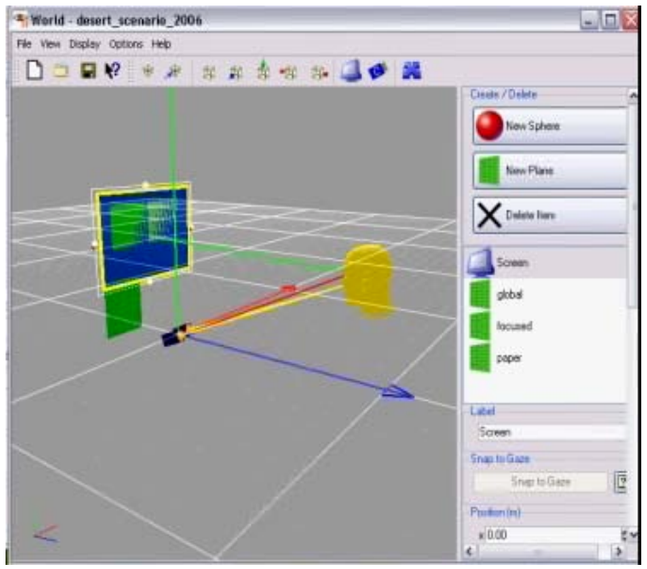
Meaning of media space is in term of users' experience within the space cont.

Behavioural indicators

- Visual behaviour : visual attention
- Gesture using of Kirk's gesture phrases
- Speech analysis using LWIC (emotion, cognitive, self reference etc)

Observations during use, Video Analysis , semi structured interview



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Issues and challenges

- Challenge in mixed methods approach : Issue of interrelating data from behavioural indicators with data from questionnaire and observations to get a sense of participant's quality of experience.

- Existing theoretical frameworks do not account for the asymmetry issue, yet most remote collaborations are asymmetrical

- Challenge in matching methods with theoretical foundations that allow a holistic vantage point of user's experience.
  - Grounding (interaction centred)
  - Social presence (user centred)
  - Media synchronicity (media centred)
  - Locales framework (space centred)

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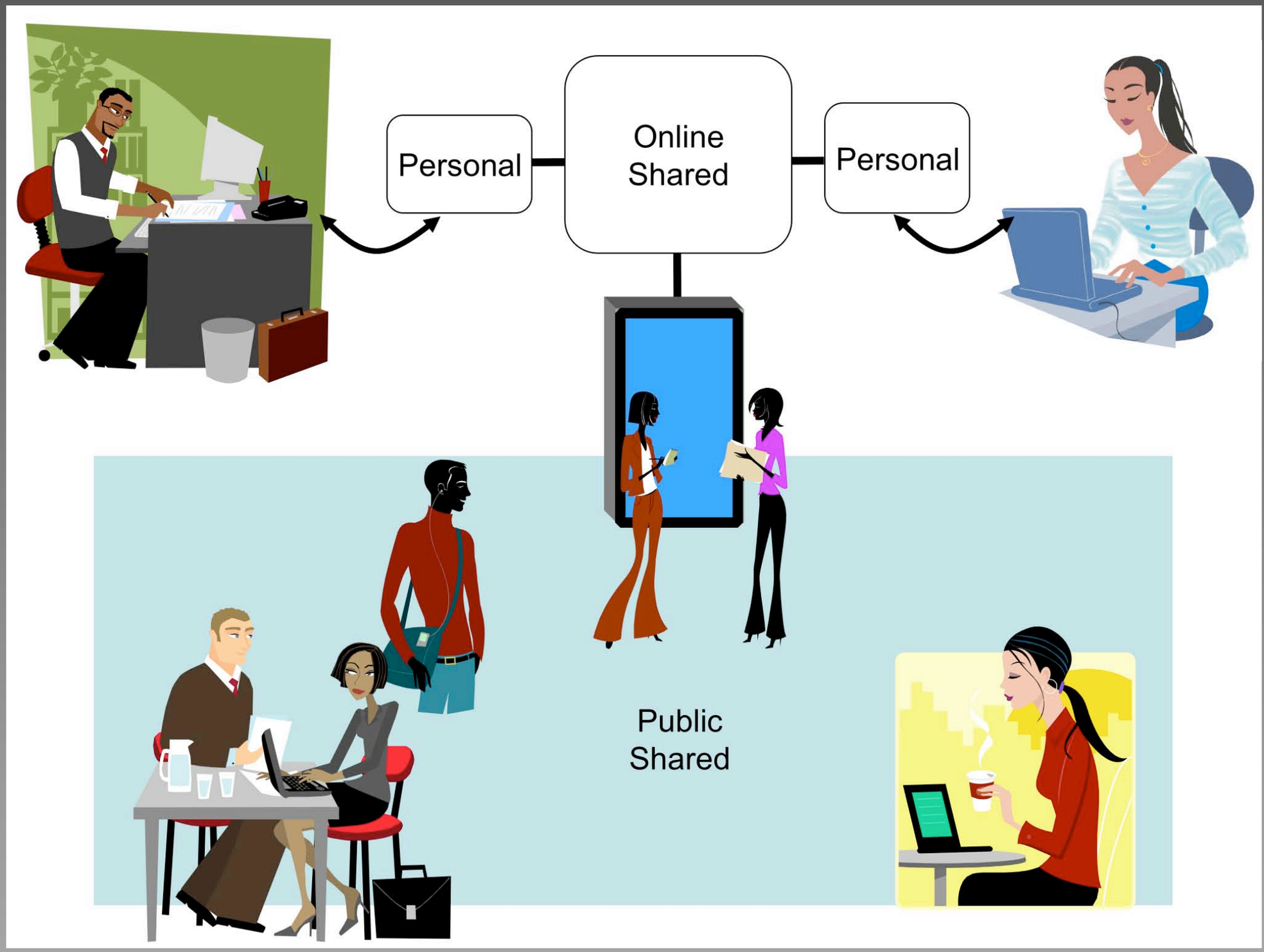
From Media Spaces to Emplaced Media: Digital Poster Boards and Community Connectedness

Elizabeth F. Churchill
Yahoo! Research
Les Nelson
PARC

Foregrounding co-presence through content

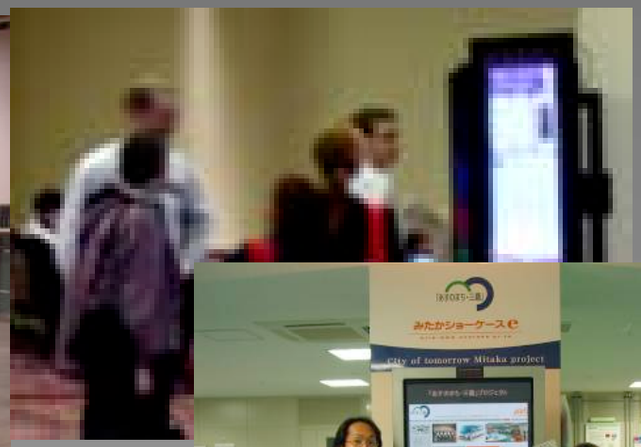


Community as Expressed Through Content

The beginning: Plasma Poster Network

Café Conversations: eyeCanvas

A Moving Show: CHIplace and CSCWplace extended



Governmental communications: Mitaka City

Who's Reading: Video Annotations on Content

Looking Back and Forward

- *Place matters* –co-construction of technology and place – people adopt and adapt the technology by posting content, which is in turn saved, annotated, forwarded, and printed, moving on to play a role in conversations that are woven away from the boards themselves.

- *Media matters* – the form of media that are shared is determined by the setting. Sanctions, tests, creations all play a role in what is put on the boards, and over time a norming of what is acceptable occurs. The effect of setting on content type and the norming over time of content style is evident in the very different forms of adoption and adaptation in each of the deployment.

- *People matter(s)*: The adoption and adaptation of the boards and the media they host affect and are affected by the evolving practice if public media sharing. A with observations of media spaces use “To tie together the community work practices with media space technologies, we must let them evolve together” [1].

return

Media Spaces in the Computational Sciences

- Who is Brian Corrie?
  - PhD student (UVic)
    - Dr. Peggy Storey
  - Collaboration and Visualization Coordinator (SFU)
    - WestGrid (www.westgrid.ca) and IRMACS (www.irmacs.sfu.ca)

- What am I interested in?
  - Scientific visualization, computational science
  - Distributed collaboration environments
  - *Artifact-centric collaboration*

- Why this workshop?
  - Interested in large/multi screen interaction environments
  - Interested in distributed, artifact-centric interaction

Media Spaces in the Computational Sciences

- What is a media space?
- Media spaces in production
  - Technology is now commodity
  - Media spaces are common (?)
  - WestGrid/IRMACS
    - A production (?) environment

- Users are demanding communication!
  - Do we really understand user needs?
    - Ethnographic studies to inform design
    - Opportunity to revisit the “grass roots”

Media Spaces in the Computational Sciences

return

Reflecting on Several Metaphors for Media Spaces

Saul Greenberg
Gregor McEwan
University of Calgary

Proc. ACM CSCW'06 Workshop on Media Space - Reflecting on 20 Years. Steve Harrison, Organizer.

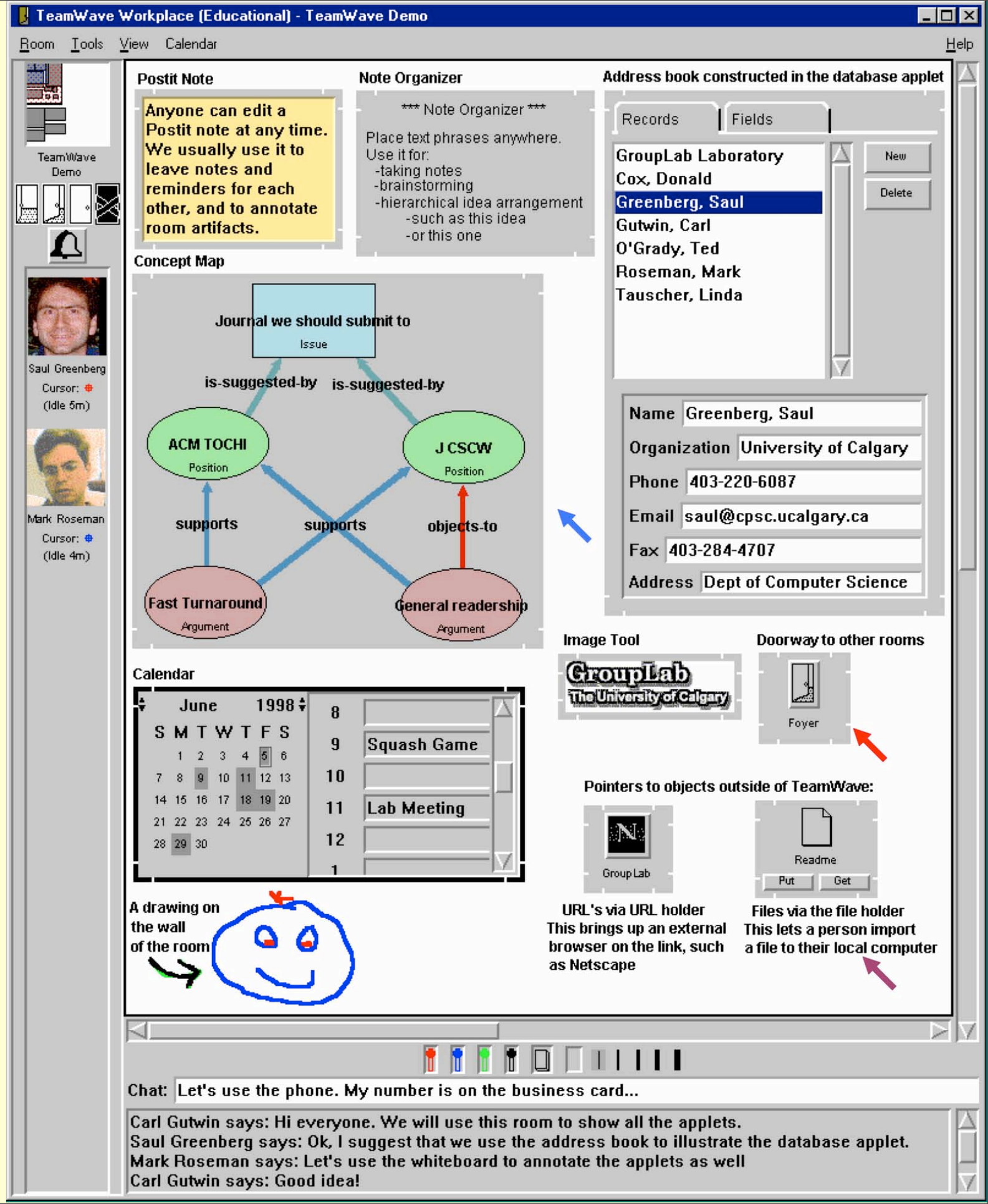
Teamrooms

Room metaphor

- workrooms
- partitions
- containment
- persistance
- Ownership …

Critique

- – Hard walls - poor presence awareness
- – toy applications
- – no voice
- – little cas. interaction
- ✓ ok for education



Notification Collage

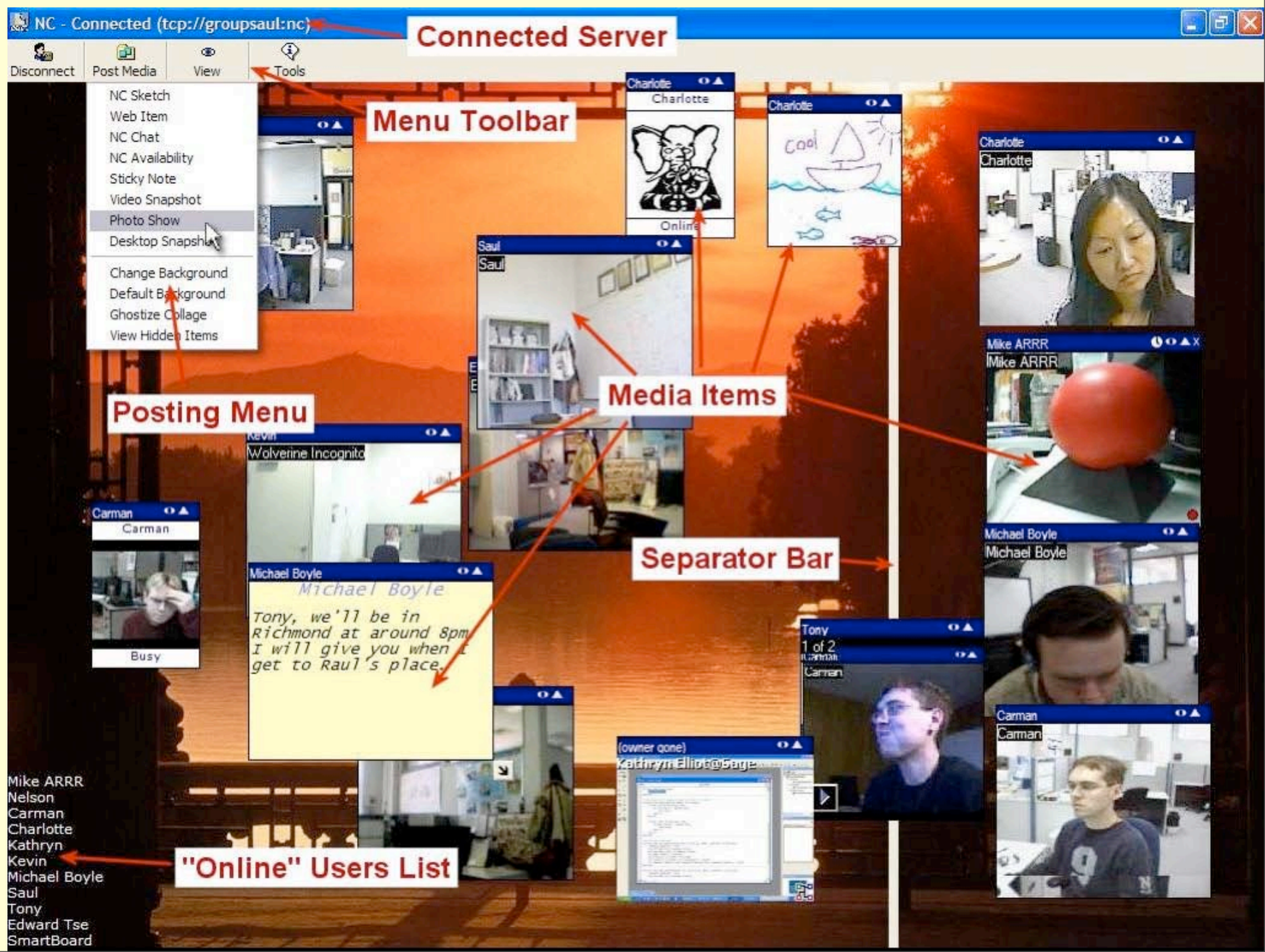
Bulletin board metaphor

- single fully public place
- media items
- people + things
- conversation *vs.* work

Critique

- ✓ successful
- ✓ keen presence
- ✓ good interaction

- – all or none



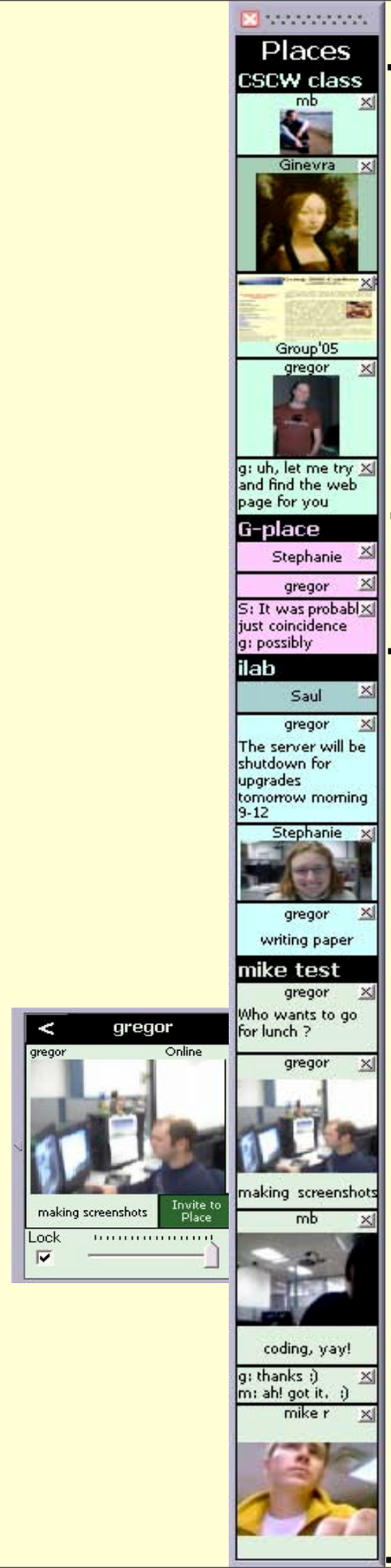
Community Bar

Sidebar metaphor

- sidebar
  - o peripheral awareness to
  - o lightweight exploration to
  - o full interaction
- media items
- locales theory
- places = Locales

Critique

- ✓ successful
- – places = Communities
- ✓ implicit actions within place = mini-locales



Critical but subtle metaphor aspects

Lightweight awareness

Porous boundaries

Appropriate ‘means’ (tools)

Multiple places needed, but tension between

- explicit supporting structures
- light-weight / implicit ways people form /reform into groups

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Maybe Media Spaces are NOT All About Video

John C. Tang
IBM Research

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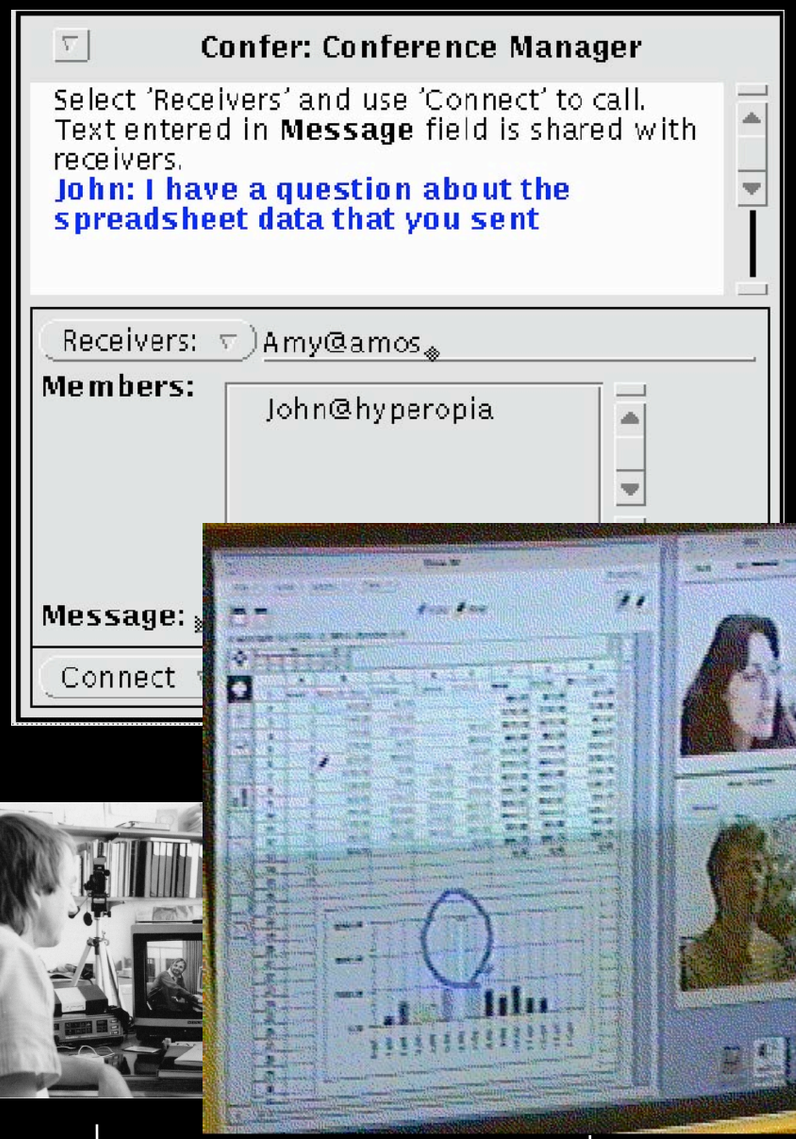
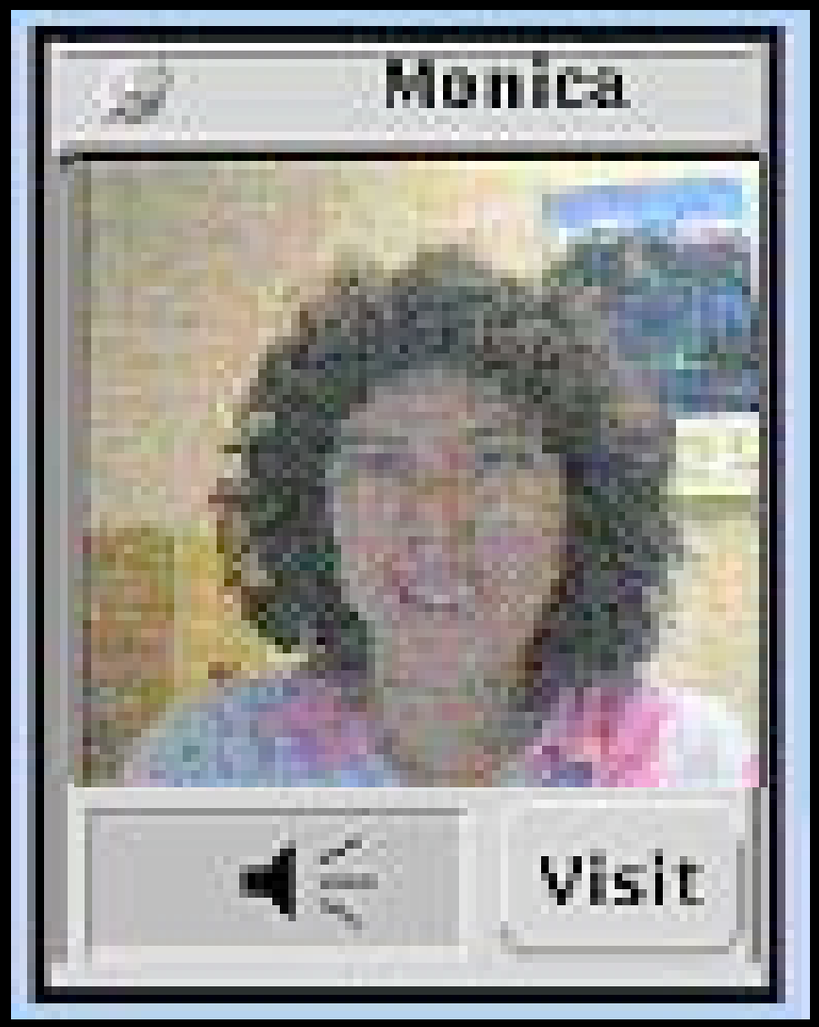
Timeline of Projects





1986 1992 1994 2001 2006

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Attributes of Video

- **Uniquely and naturally affords mutual *contact negotiation* (always on vs. intermittent glances?)**
- **Rich media is *still* bandwidth and hardware device intensive (complement w/other sensors?)**
- **Evokes privacy concerns (cues vs. inferences)**

Can we integrate information to provide contextual clues?

Input device activity, location, planned schedule, rhythmic patterns, audio/video sensors, social network, …

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Media Spaces, Places and palpable technology

Acting in chaos

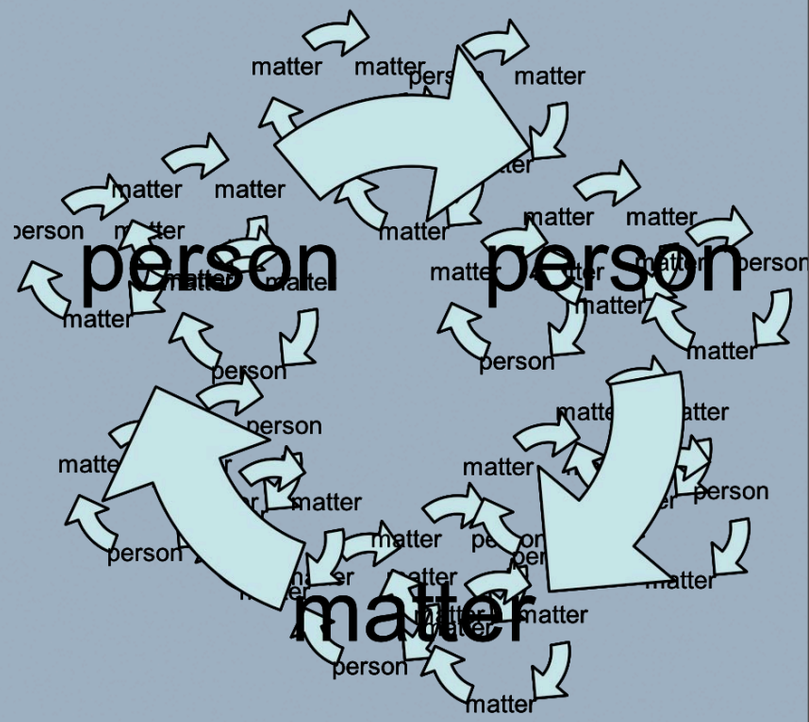
- Collaboration, creating and maintaining overview

Work and info places and spaces

- Distributed
- Shared – partially

Anticipate and design for the emergence of standard reflections of ‘primitives’

Anticipate and design for routine troubles



Margit Kristensen and Morten Kyng

Overview in unknown “high-mobility” settings

(Video) cameras on vehicles

Video cameras on people

Different displays in vehicles, on persons on site, in KST/AMK/KSN

Loud speakers

speech (annotations)

Webcam

‘GPS’ and ID

GPS and ID

‘GPSs’ and

Fireengine 1

Fireengine 2

Firefighters, team A

Patient 12

Multitermi

Bus Station

Central Station

Pauls Kirke

Århus Statsamt

Bassin 3

Bassin 9

Spanien

Strandvejen

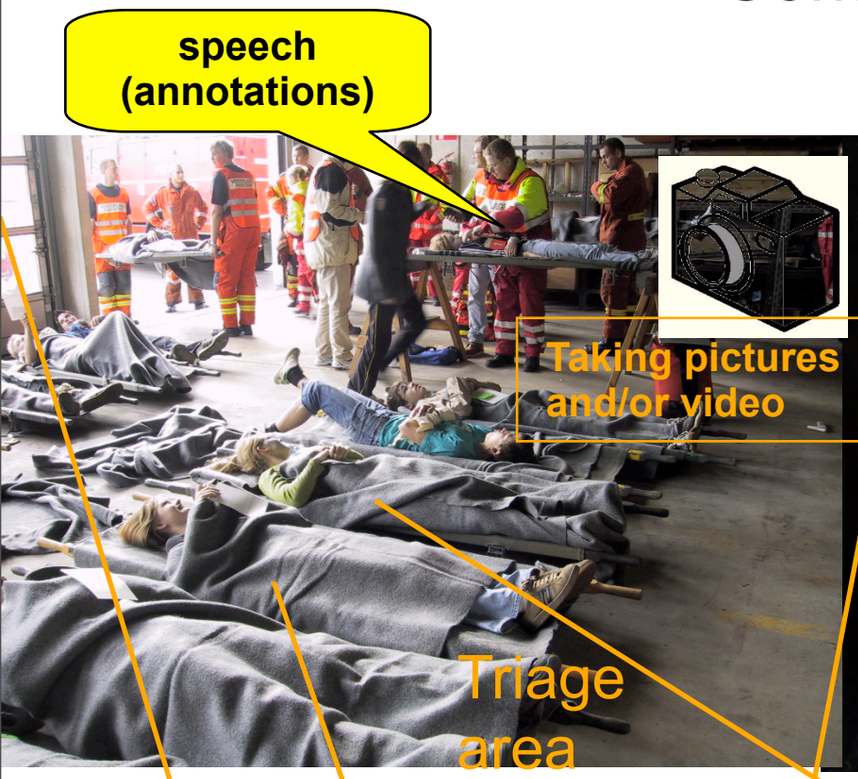
Sydhavnsgade

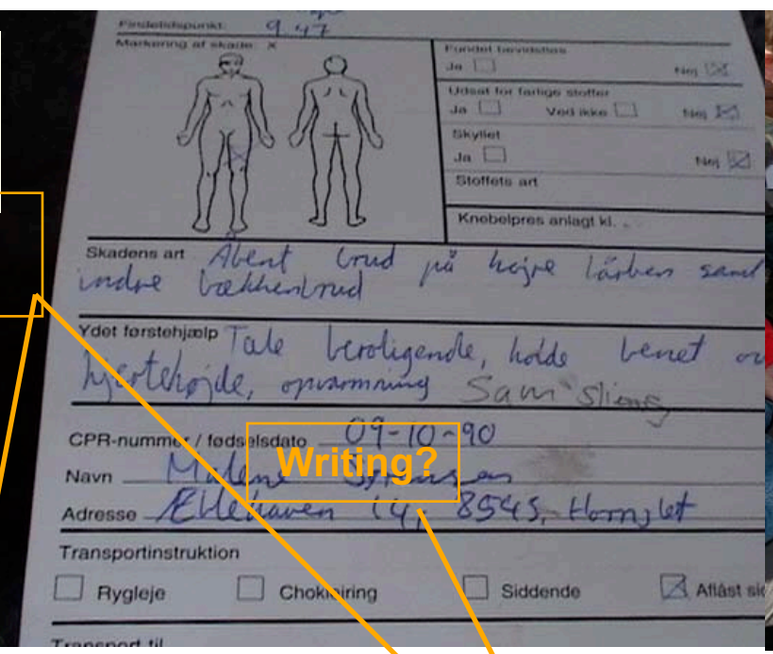
Østhavnsvej

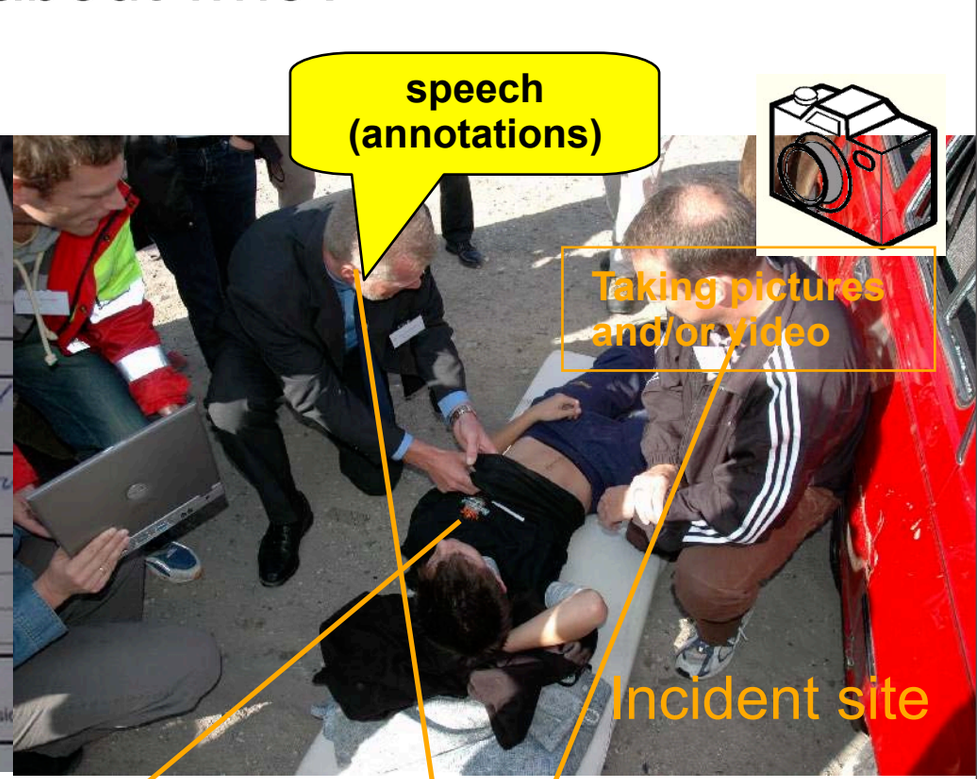
Marselisborg Havnevej

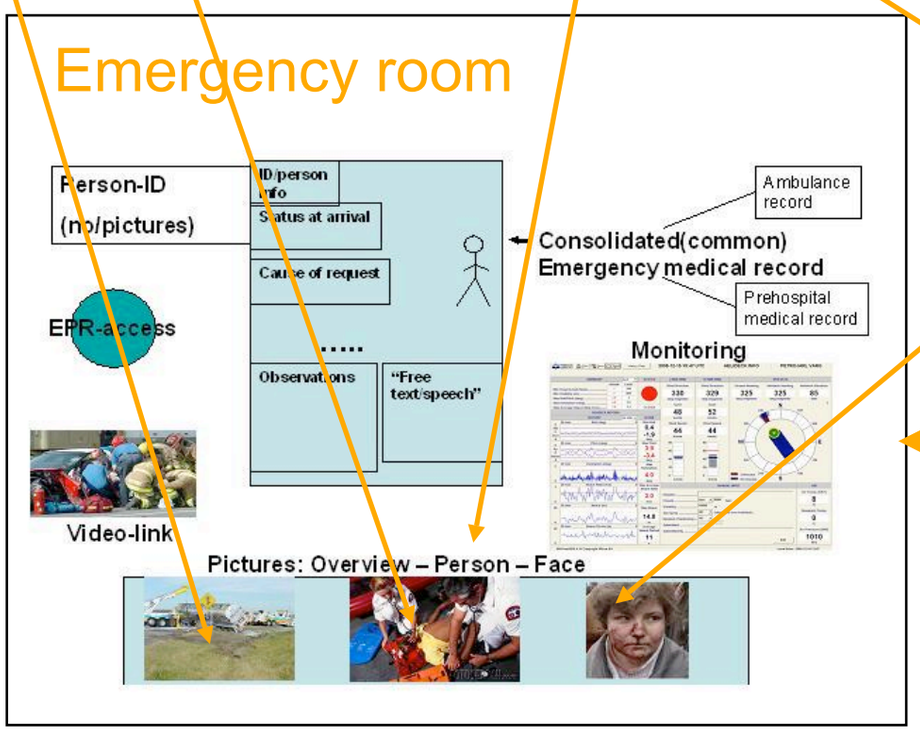
Dalgas Avenue

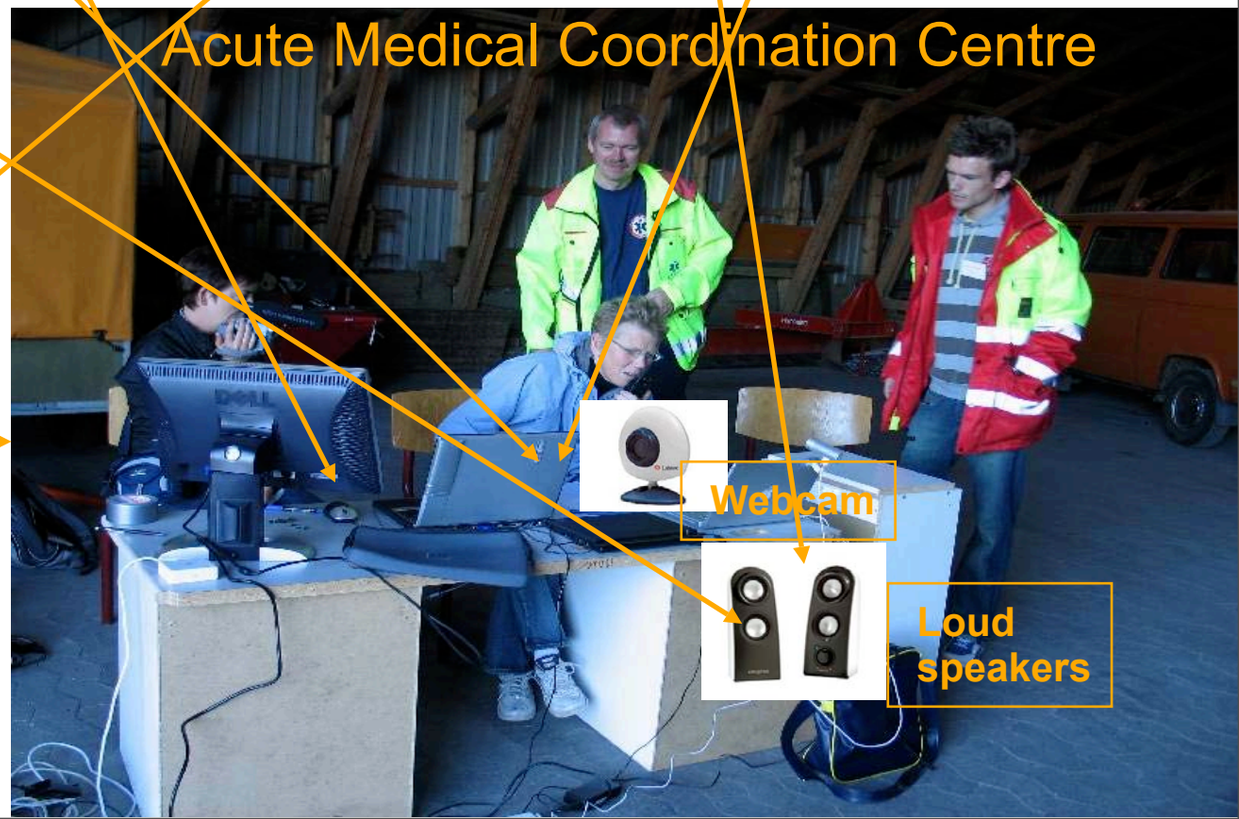
Communicating what when about who?











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Creating Assemblies in Media Space

Hideaki Kuzuoka

University of Tsukuba

Keiichi Yamazaki

Saitama University

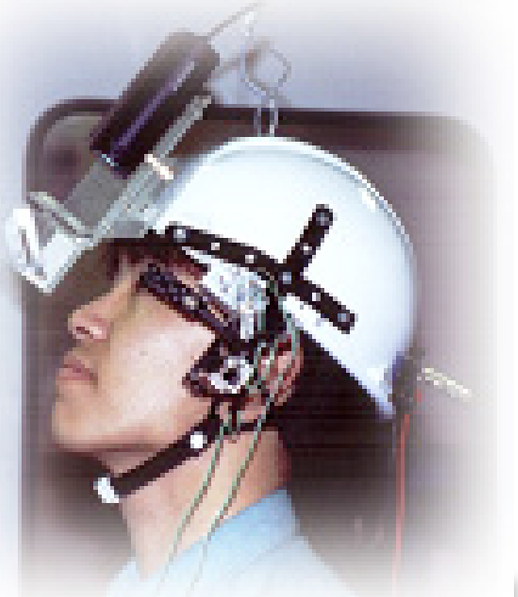
Paul Luff

King's College of London

Christian Heath

King‘s College of London

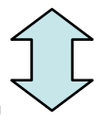
Interaction on, over and around everyday artefacts



Mobile approaches

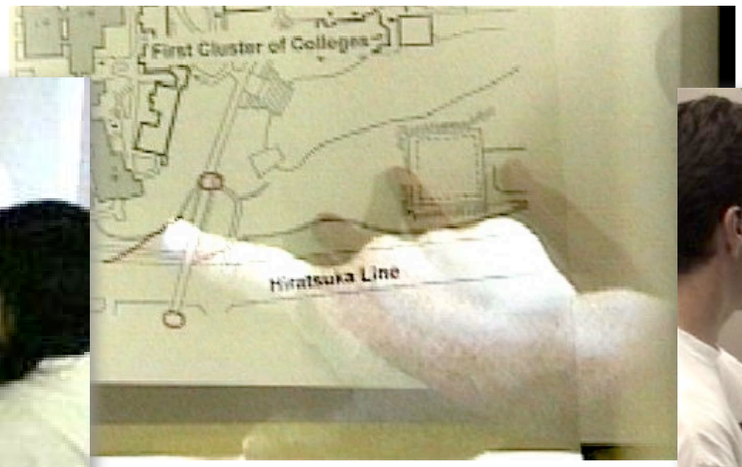
Enhancing media spaces

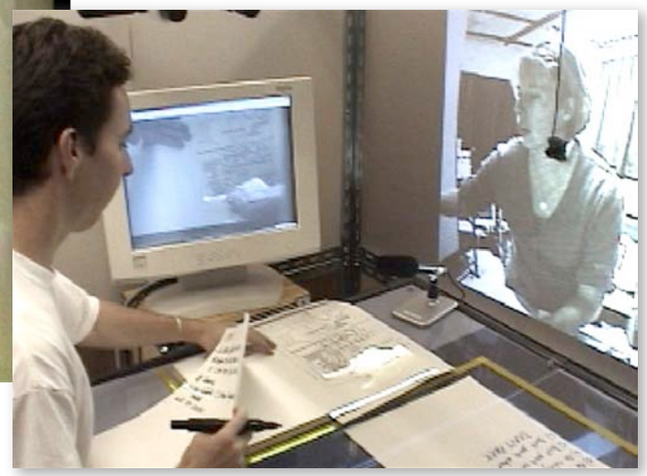
- references to real-world objects and features of objects
- alignment to artefacts



- embodiment
- reciprocal co-orientation

Static approaches





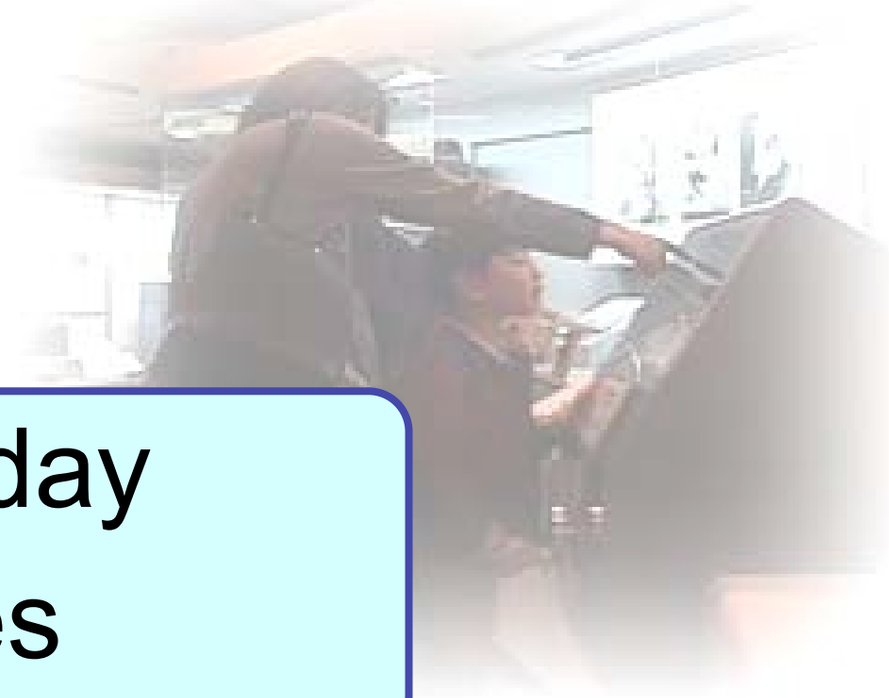
Lessons

Space, time, & embodiment

Dual Ecologies

- Space: configuring coherent spaces
  - appropriate alignment to objects and media
  - enable participants to refer to a common feature of a document
- Time
  - moment-to-moment production of activities
  - projectability

Issues



Understanding everyday actions and activities

- how individuals assemble coherence between (features of) different objects
- what resources do we rely on to project future actions and make sense of trajectories of action
- how to resolve contradictions between mobility (mobile phone) and alignment

return

Media Spaces in the Mobile World

Paul M. Aoki and Allison Woodruff
Intel Research

Peggy Szymanski
PARC

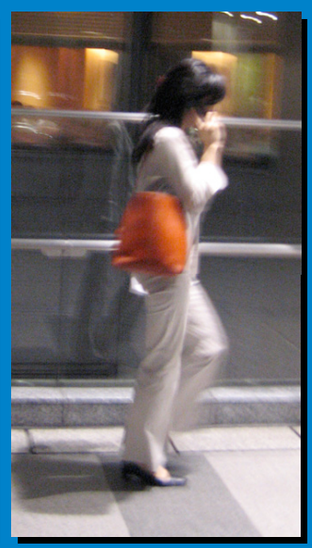
Social, Mobile Audio Spaces

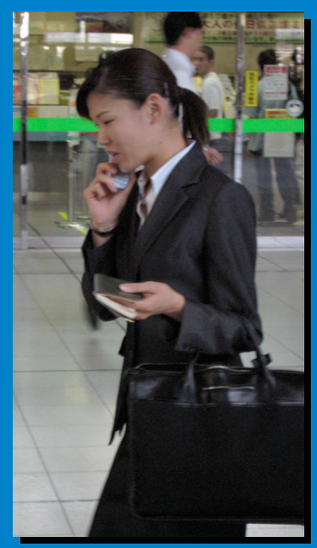
About the project

- Members
  - Paul Aoki (design, software)…Peggy Szymanski (conversation analysis)…Jim Thornton (audio, software)…Allison Woodruff (design, exploratory fieldwork)
- Exploring *engagement* at multiple granularities

Social, Mobile Audio Spaces

Lessons and issues





- Relevance of media space concepts/findings
- Heterogeneity of in-the-world context
  - Mobility…temporality…activity…privacy…
  - Managing engagement: “resources” or “assists”?

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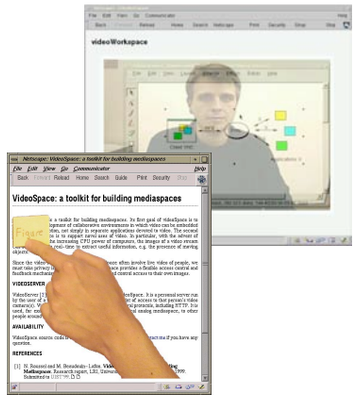
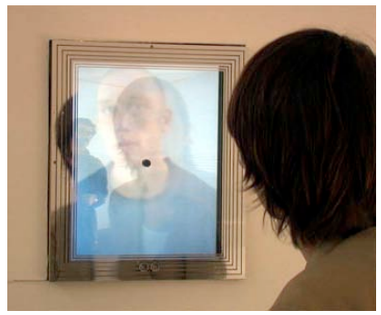
N. Roussel & M. Beaudouin-Lafon





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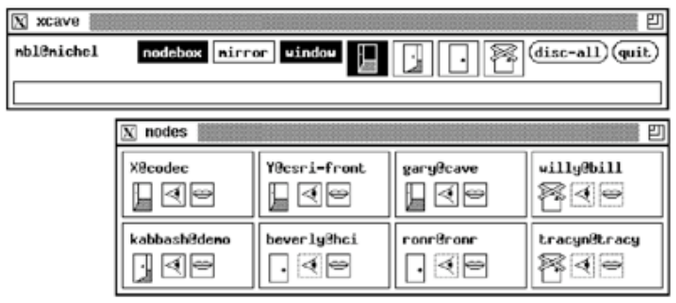

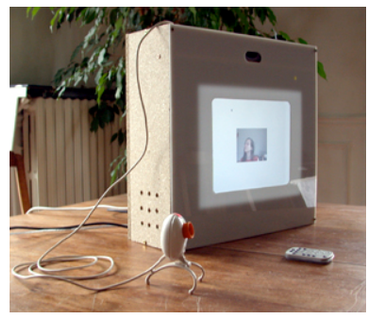

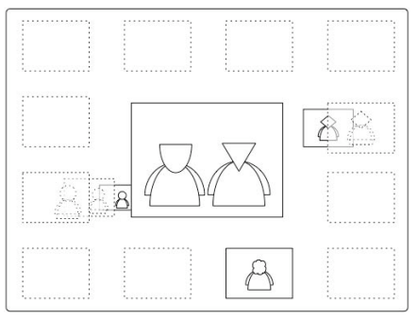

Significant lesson that informs the meaning of "media space"

A Media Space does not provide a communication service but a set of services corresponding to different levels of engagement and privacy control (e.g. glance, v-phone, office share)

The art of Media Space design resides in the combination of access, notification and control mechanisms to allow users to chose the level of engagement that best suits their particular needs and context and to transition among levels of engagement

Significant issues
for the meaning of "media space"

Most Media Spaces were used in the workplace.

Were they just connecting colleagues, or also friends and “young couples”?

How close do you need to be to value these environments?

- would you use a Media Space with someone you live with?
- would you use it with someone you don’t want to live with?

Ambiguity between connecting people$^{TM:-)}$ and connecting places.

What about group-based access, notification and control mechanisms?

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Introduction: PARC Media Space

- Shared space, not an activity, always “on”

Offices

- Supported cross-site project teams and reporting relationships in existing practices

Conference rooms

Common areas

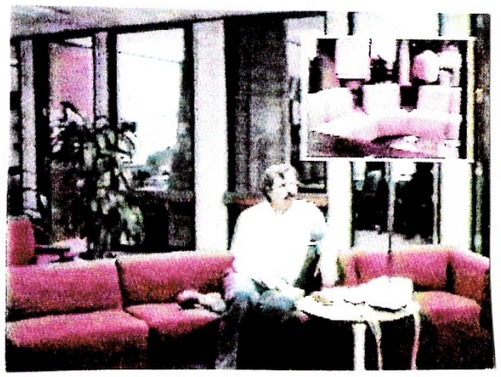
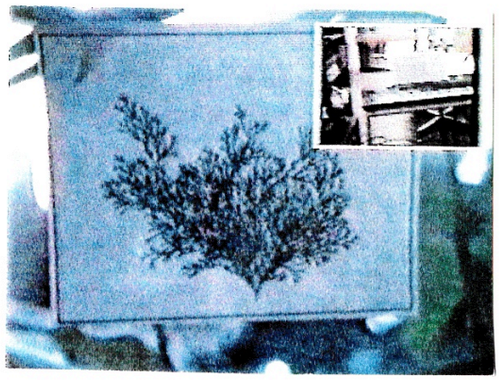
- Allowed
  - planned interactions,
  - chance encounters, and
  - awareness

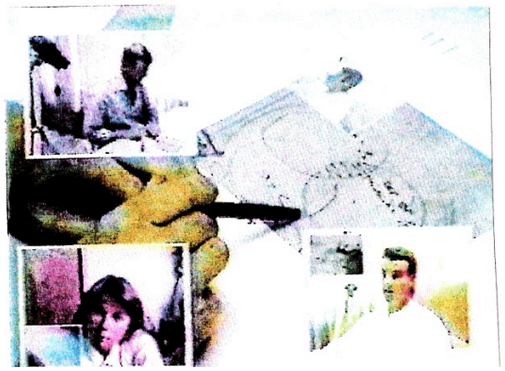
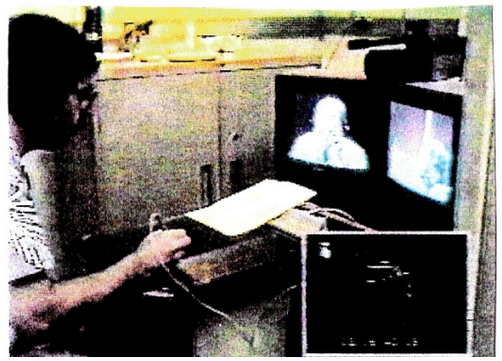
Labs

Outside views

Lessons Learned*

- Audio / video can extend space in a meaningful way
- Good audio matters
- State available
- Feedback available
- Faces are not enough
- Face-to-face and phone are harmful analogies
- Sustains, not initiates, interpersonal relations
- Important to let practice and technology co-evolve

CSCW 2006 / Sara Bly

*Most taken from a Media Space talk, 3/93

Significant Issue…and others

- What does it mean to be “always on”?
- How important is “always on” in the realization of a media space?
- Others
  - What really are the most critical elements in creating a media space?
  - How does a media space expand to include multiple and overlapping groups?
  - What does it mean to have a media space in the age of mobility (see Aoki, et al)

return

A Tale of Two Teams: Success and Failure in Virtual Team Meetings

Marilyn Tremaine
Rutgers University

Scenario

- Two nearly identical research and development teams changed from face-to-face meetings to virtual meetings

- One team continues to meet and be productive; the second team is struggling to even meet

- What caused this team's failure?

Data Capture and Analysis

- Data Collection
  - Individual team members interviewed
  - Meeting notes & email examined
- Results
  - Technology and time zone differences caused significant problems that were not readily repaired
  - Casual leadership style of team leader did not match team's competence and skill distribution

Fixes

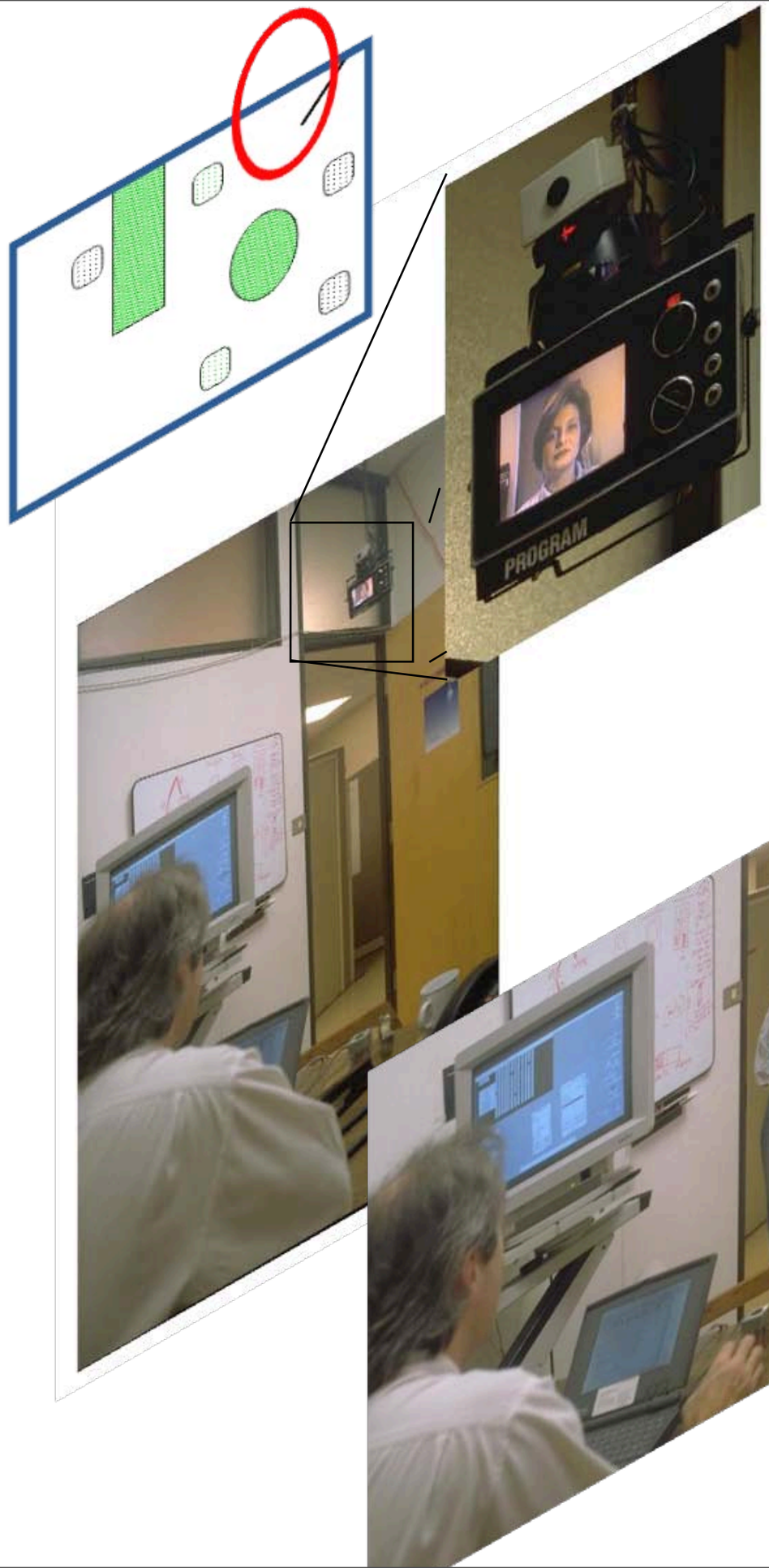
- Social meetings to discuss problems
- Face-to-face meetings for co-located individuals
- More management control - through data repository
- Additional technology to support awareness

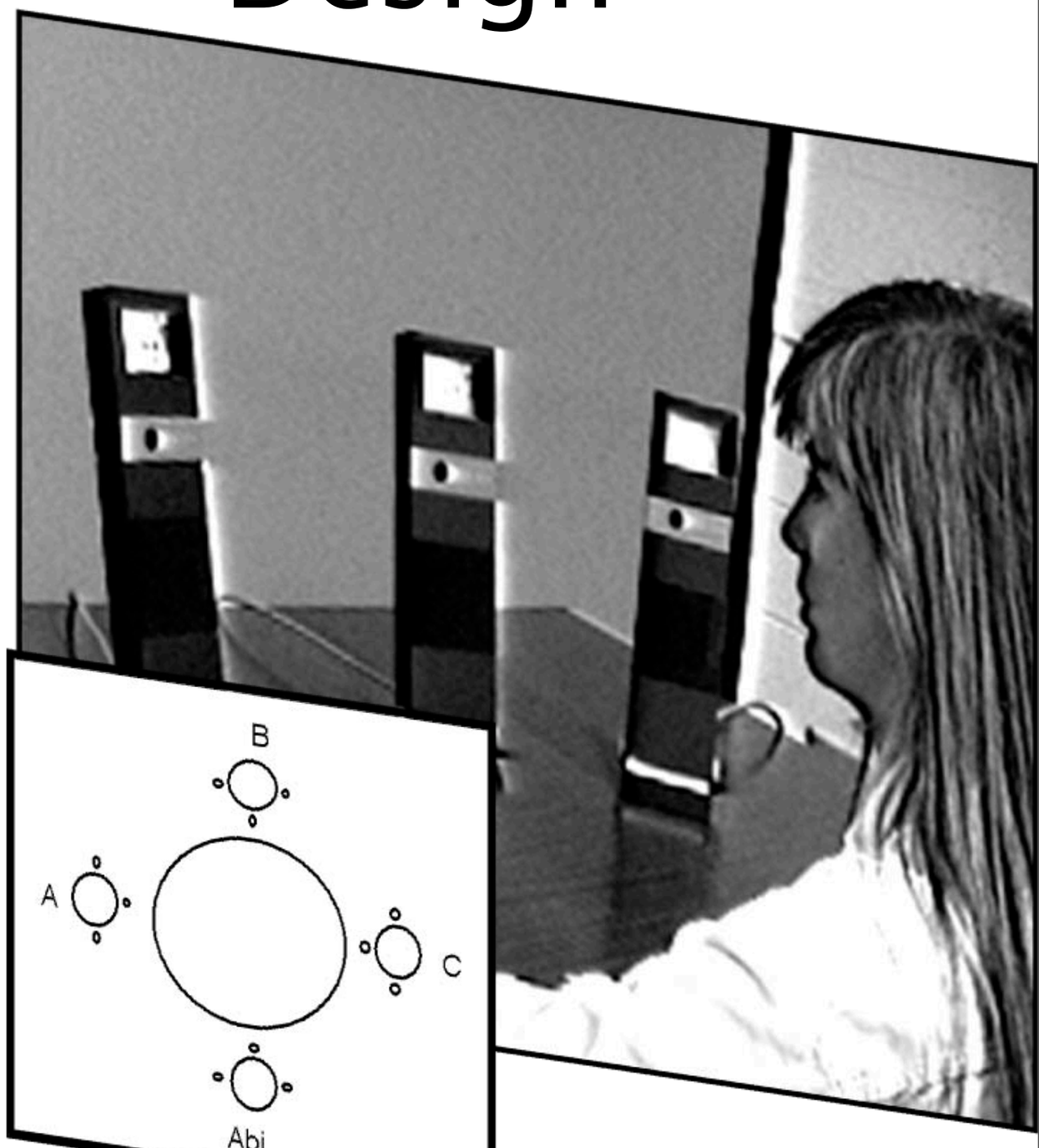
Thank you very much!

- Questions and comments

return

Whereable Design





Right Seamlessness

	F.G.	B.G.
H-H	telephone videoconf.	Postcards
H-C	GUI	Smart House

Social Ties: The Society of Appliances

Mobile

Fixed

Sol

Concert

Sol

return

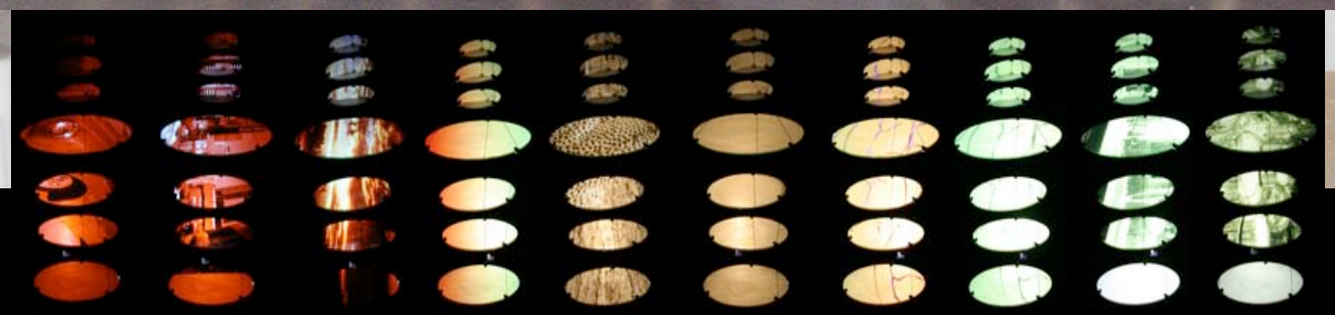
Art / Appropriation

- Current research: architectural-scale display
- Current method: art/design interventions
- Current theme: appropriation

UNCOMMON PROJECTS

About Us

WORK



Appropriation

- LESSONS LEARNED
  - Appropriation
    - Art and design are useful investigative settings for seeing appropriation
- RESEARCH REMAINING
  - Appropriation - what is it, really?

Epigram, *Media Space* (1986)

"I consider that we are enslaved by knowledge, that there is a servility fundamental to all knowledge, an acceptance of a mode of life such that each moment has meaning only in terms of another, or of others to follow...my thought has but one object, play, in which my thinking, the working of my thought, dissolves" - George Bataille, *Un-Knowing and Rebellion*

return

Designing Social Media Spaces

using social catalysts

Karrie Karahalios
UIUC

What attracts people most is other people.

-William H. Whyte

Social Catalysts

Triangulation: This is the process by which some external stimulus provides a linkage between people and prompts strangers to talk to each other as if they were not.”

-William H. Whyte

Authentic *Personal message at 18:06:12 on Tue Feb 29 2000*
From: **Karrie Karahalios <kkarahal>** *on obie.media.mit.edu*
To: paris@ATHENA.MIT.EDU

hey you, what time is your recordi

mIRC32
File Tools DCC Commands Window Help
Status | #casual | PoorRabbit | r
Status: kyrat [+i] on sodre.nj.us.dal.net
Squealor002
#casual [+nrt]: Welcome to #Casual. No

```
*** half-a-world has left #casu
<ppr> pinche bola de VERGACAIDA
*** Guest52293 has joined #casu
<Jackal-09> napster rules
<ppr> no,
<NOELG> sorry hotguy all the "h
*** destroyer-m has joined #cas
*** Guest52293 has left #casual
*** destroyer-m is now known as
*** guafles has quit IRC (Quit:
*** Alex2000 is now known as Gu
*** Guest21136 is now known as
<anonymous_brunette> Say what,
<Jackal-09> LOL
<ppr> i´m in 5º grade and all m
  english
*** brendon has joined #casual
*** Erik_Morales has left #casu
<Jackal-09> There is always a h
  drunk.
<anonymous_brunette> you're in
* HippiChick kicks her napster
```

Putting a label that says "Loading..." while a swing applet is loading - comp.lang.java.gui - Netscape Newsgroup
File Edit View Go Message Communicator Help
Get Msg | New Msg | Reply | Reply All | Forward | File | Next | Print | Mark | Stop

Name
- Usenet
- Video
- visiphone
- watch
- work
- Local Mail
- news-s01.ny.us.ibm.net
- news.mit.edu
- comp.lang.java.gui
- news1.attglobal.net

Subject	Sender	Date
Why I can't run Swing on m...	John Cheng	2:39 AM
mnemonic for the JTextField	Janusz Dalecki	5:25 AM
newbie help with JTree list...	YAWN	6:51 AM
JFileChooser broken with p...	Laurence V	7:04 AM
Re: How do I remove a sep...	David Haynes	7:40 AM
Trouble with JTree on Linu...	Douglas Robinson	9:08 AM
Compile problem	J.Xhofleer	Thu 2:54 PM
please help with JToolBar	Sigal	11:08 AM
JSplitPane, Help please	Damian	11:10 AM
JCalendar component	Vaills Laurent	11:36 AM
appletviewer font.properties?	Timothy J. Wangelin	12:32 PM
Hide column headers in a J...	Bryan Glennon	1:32 PM
Save serialized JTable Obj...	chiuming	5:50 PM
Component insertion into J...	Bryce Ewing	7:22 PM
DoubleClick in JList?	Omar Eljumaily	8:36 PM
Putting a label that says "Loading...	Chaim Mintz	9:48 PM

Subject: Putting a label that says "Loading..." while a swing applet is loading
Date: Sun, 27 Feb 2000 21:48:25 -0500
From: "Chaim Mintz" <chaimm@touro.edu>
Organization: Giganews.Com - Premium News Outsourcing
Newsgroups: comp.lang.java.gui

Hi, I have a swing applet that takes about 30 seconds to load (it has to connecto to a RMI component, which in turn connects to a CORBA component, so it takes time). While it is loading, I want to put a label on the applet that says "Loading...". I instanciate a JLabel and call getContentPane().Add(), right before I do the long work, but it doesn't show up. I think it's because Swing doesn't paint it until everything is done. I called repaint, but it didn't either work. Any suggestions?
Thanx,
Chaim

Total messages: 1504 Unread messages: 1487

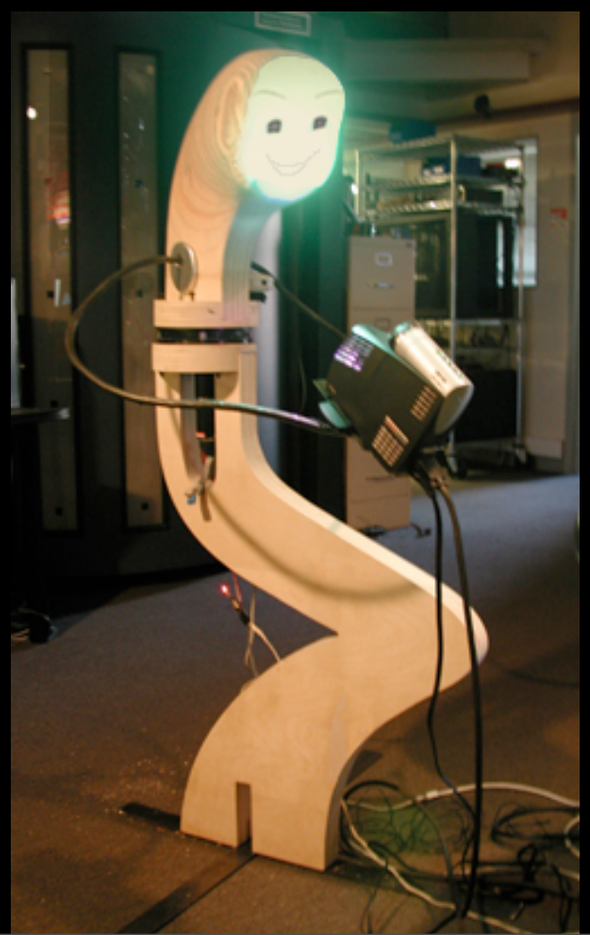
Incoming Message [No More Events]
From:
Nick Name: CHEESE EMail: swimmer_boy_69@hotmail.com
ICQ# : 44313611 Date: 2/27/00 Time: 11:17 PM
Message | History
ahh i think you have a cousin in newyork!!! and he has a cousin in illinois named bill cuz he is my cousin
Response Action
Reply | Forward | Add To Ignore List | Add to Contact List
More Functions | Close | Read Next

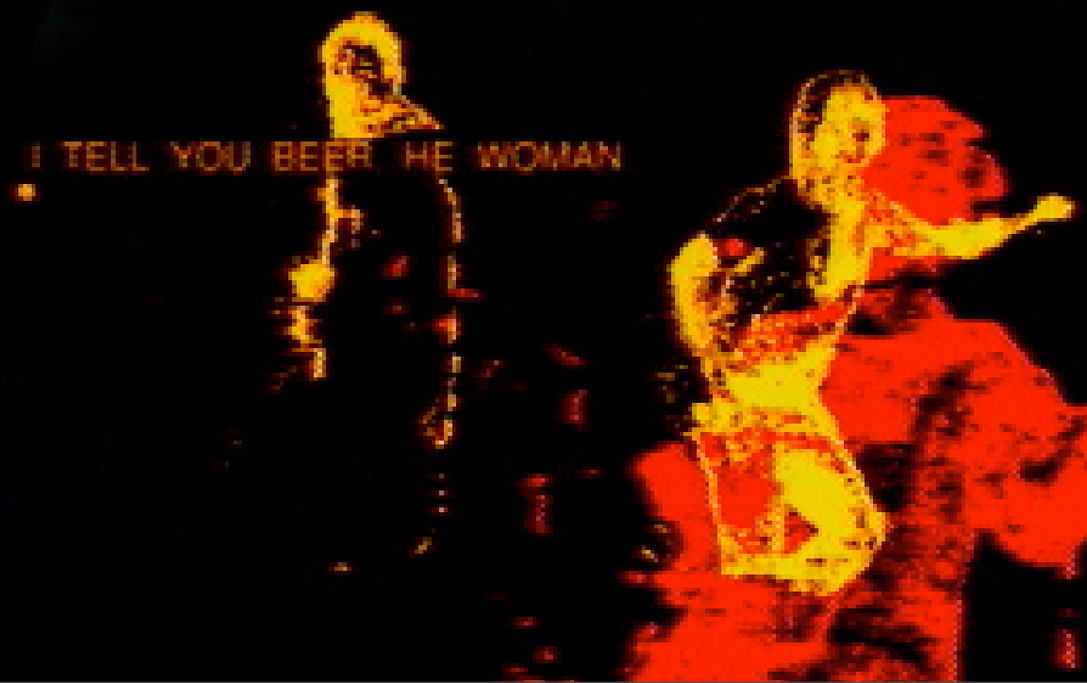
```
>connect guest
Okay,... guest is in use.
*** Connected ***

The LEGO Closet
It's dark in her
Groping around,
Obvious exits: o

>out
The E&L Garden
The E&L Garden i
 coffee cups, an
Obvious exits: h
 to STS Centre L
You see a newspa
 Chalkboard, and

>say hi
You say, "hi"
Amy says, "Hi Gr
```

WorldsAway 2.4 - dreamscape
File Edit Communicate Toolbar Help
"I clicked on ya"
"lmao dib"
"what am i thinking les"
"yes"
"lol"

```
etros@MIT.EDU  [37] http://web.mit.edu/midha/www/reallysucks/
stand@MIT.EDU[9173] Fwd: Re: Photos
ngh.harvard.e  [24] [Fwd: lindybaby 2/3/00 update]
: mrb@MIT.EDU  [37] Re: girl´s night
media.mit.edu  [29] RKB LONG FORM SHOW THIS SATURDAY!
@arch.ethz.ch  [72] date for presentation, again
b@hotmail.com  [24] Korkolis (Part deux)
USAirways.com [318] US Airways E-Savers for Travel Beginning on February 19, 2000
media.mit.edu  [20] cable ties
media.mit.edu  [72] Yak Shaving
ianag@MIT.EDU [189] NorthWorst Airlines
media.mit.edu  [31] cable ties
media.mit.edu  [77] upgrading from RH6.0 to 6.1
ams@yahoo.com  [62] Re: girl´s night
ams@yahoo.com  [60] Re: girl´s night
                    @media.mit.edu [107] Web query
377- 16-Feb         judith@media.mit.edu  [34] Re: times for march 1st.
--%*-Emacs: RMAIL-summary      (RMAIL Summary: All)--L369--46%----------
X-Sender: fresina@ml.media.mit.edu
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Date: Wed, 16 Feb 2000 08:32:51 -0500
To: msgs@media.mit.edu
From: "J. Fresina" <fresina@media.mit.edu>
Subject: cable ties

Hi,
My cable ties have mysteriously dissapeared, and I really need some today,
soon.
Does anybody have any plastic cable ties I could use, I will replace them
Thursday with new ones....
Thanks,
```

tele-journ




I TELL YOU BEER HE WOMAN

Goal: the design of augmented social spaces for people

Challenge:

1. explore which social cues to transmit between mediated spaces
2. sense cues (gaze, agreement, etc.)
3. visualize social patterns, feedback
4. Incorporate cues and media space into catalyst for interaction

Goal: the design of augmented social spaces for people

Challenge
:

1. explore which social cues to tra
2. sense cues (gaze, agreement,
3. visualize social patterns, feedb
4. Incorporate cues and media sp

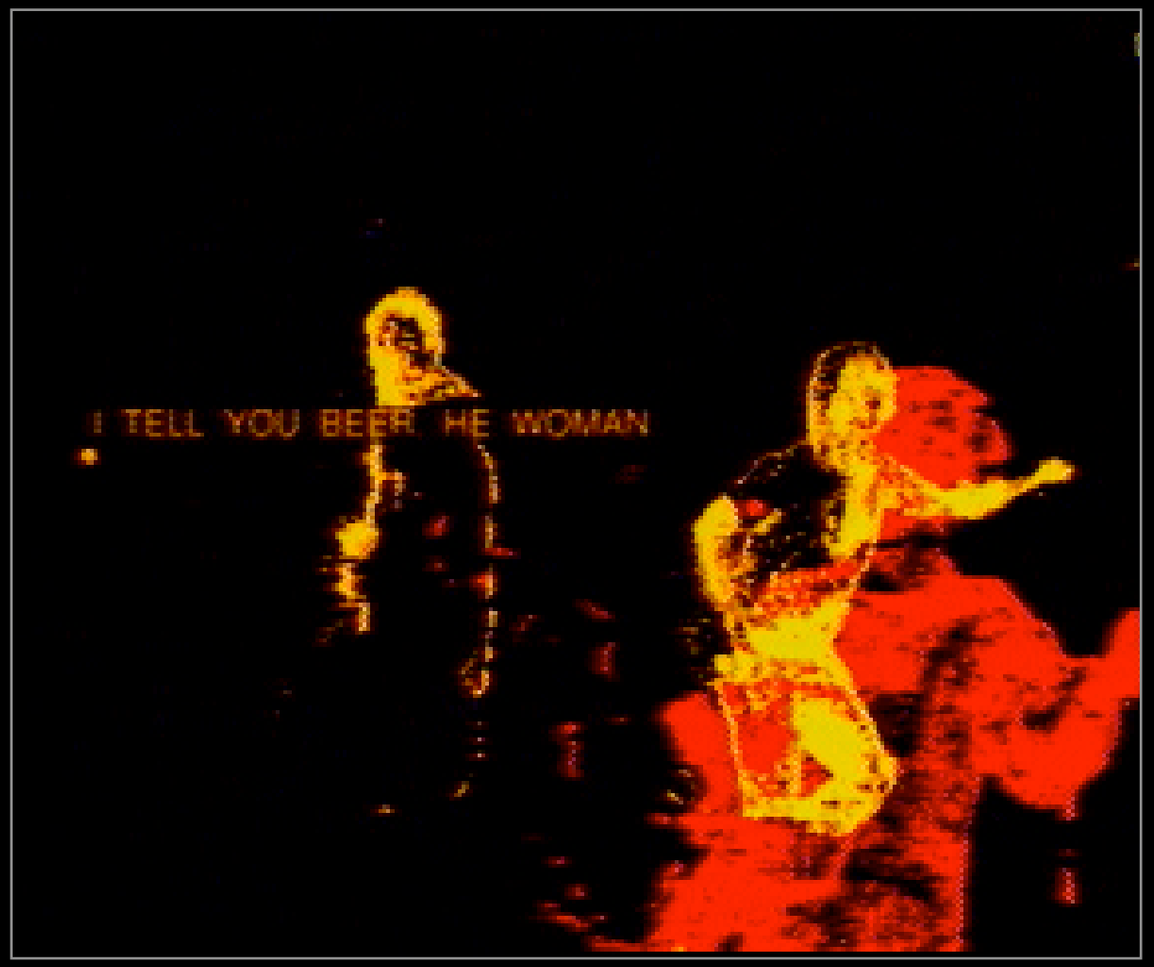
- cue variety
- feedback
- message personalization
- simultaneously being reminded of a need to talk to someone
- having a communication channel
- turn-taking, repair, stylized openings

Beyond Being There
Hollan and Stornetta

Catalytic Features

- ❖ Transformation of Space through Interaction
- ❖ Abstraction for Visualizing Conversation
- ❖ Physical manifestation of Virtual Presence
- ❖ Time and Motion for Blended Spaces

Telemurals



Karrie Karahalios, 2002-3

Hole in Space

Virtual Kitchen

Microsoft, 2001

Scott McCloud

Waking Life

When we abstract an image through cartooning, we're not so much eliminating details as we are focusing on specific details.

By stripping down an image to its essential "meaning", an artist can amplify that meaning in a way that realistic art can't.

Scott McCloud, *Understanding Comics*

Sidney Pacific

Ashdown

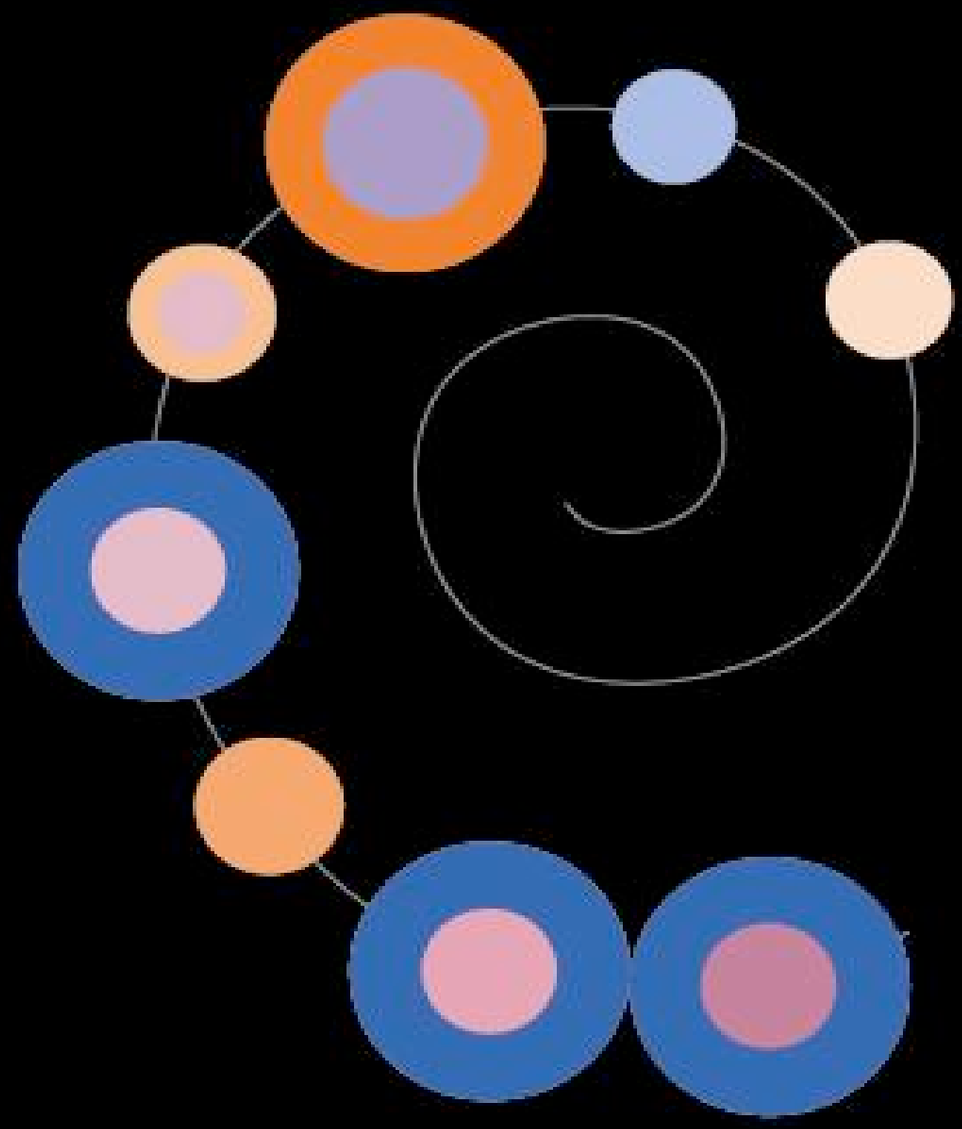
I TELL YOU BEER HE WOMAN

KITTENS BING

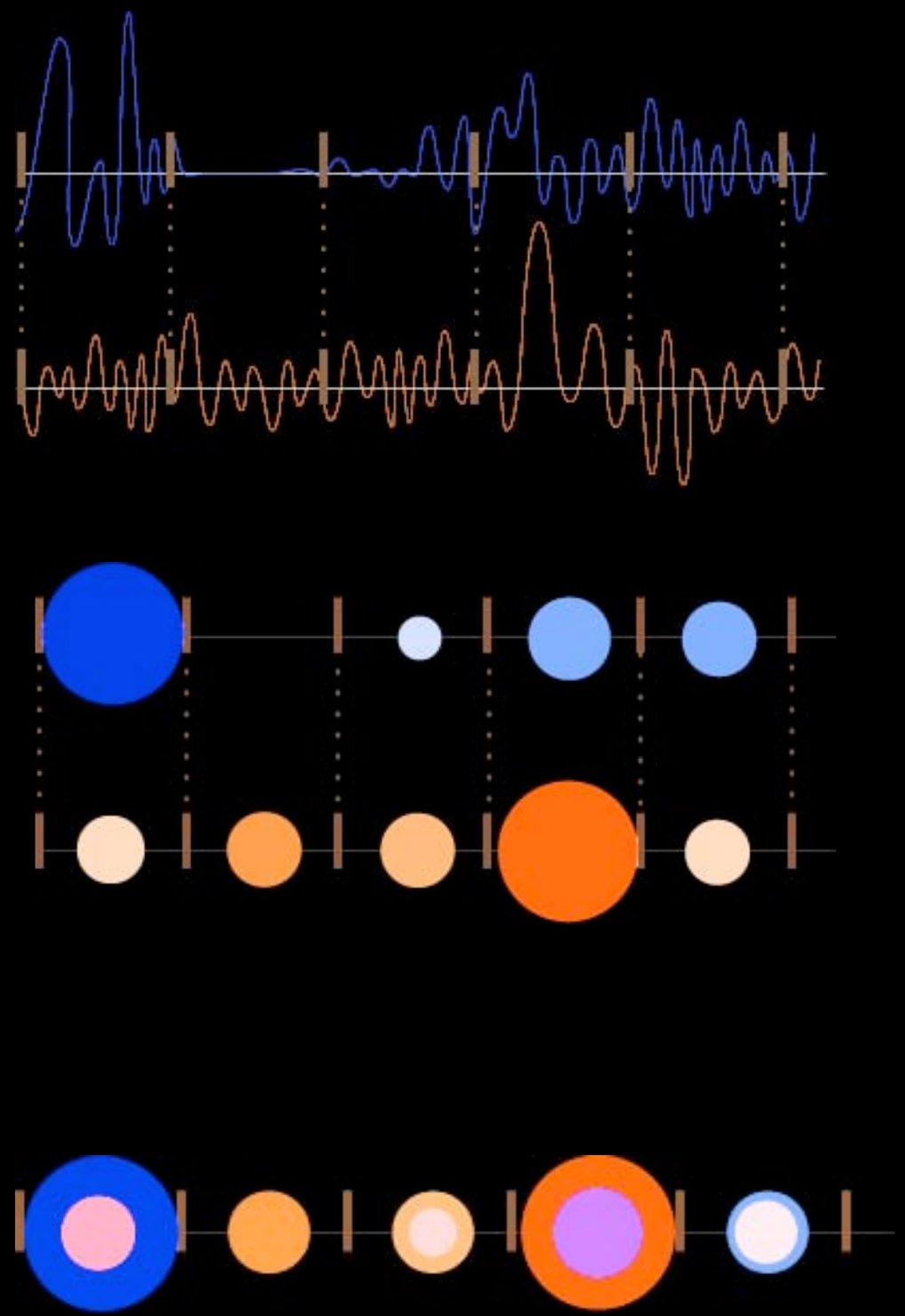
Social: comparisons and contrasts

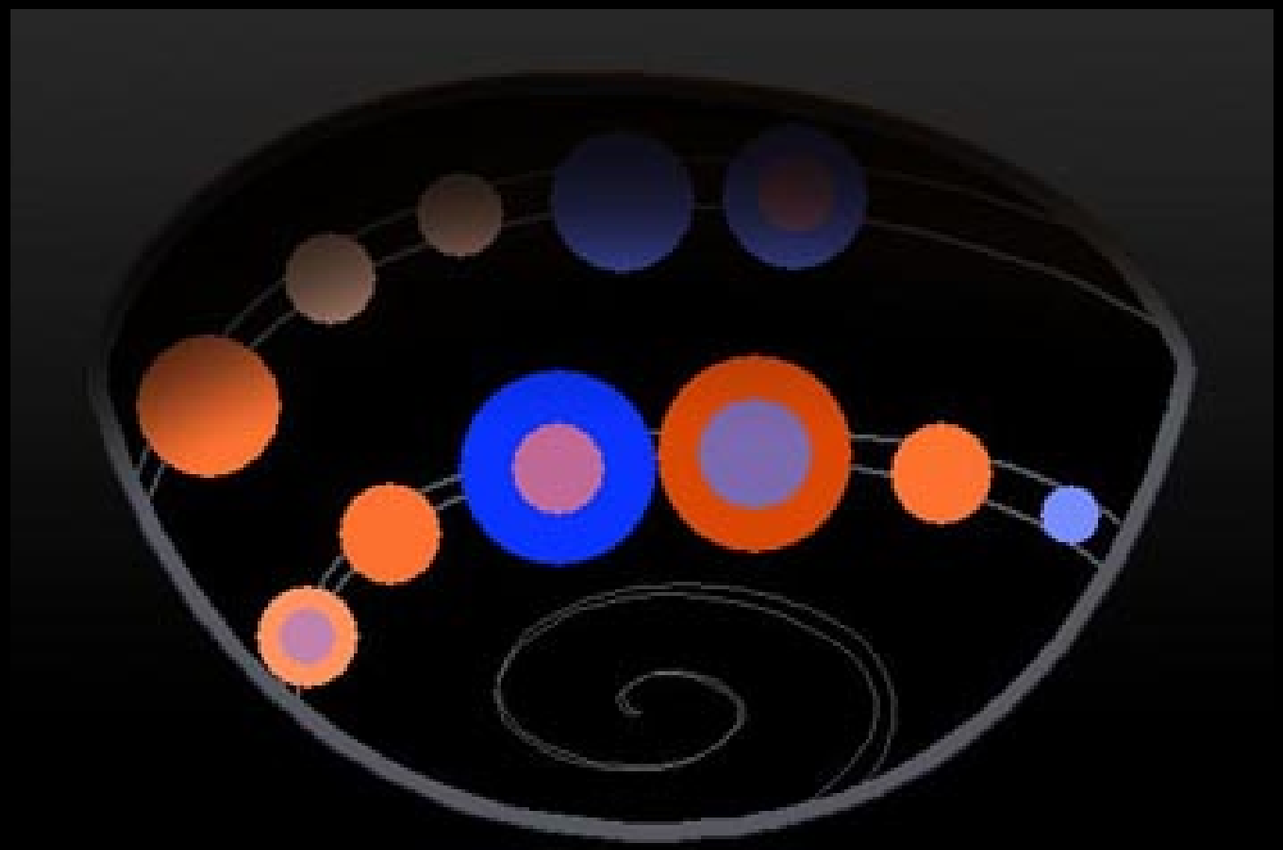
- *Hours of operation*
- *Events*
- *Site Selection*
- *Signage Interface*
- *Observations*

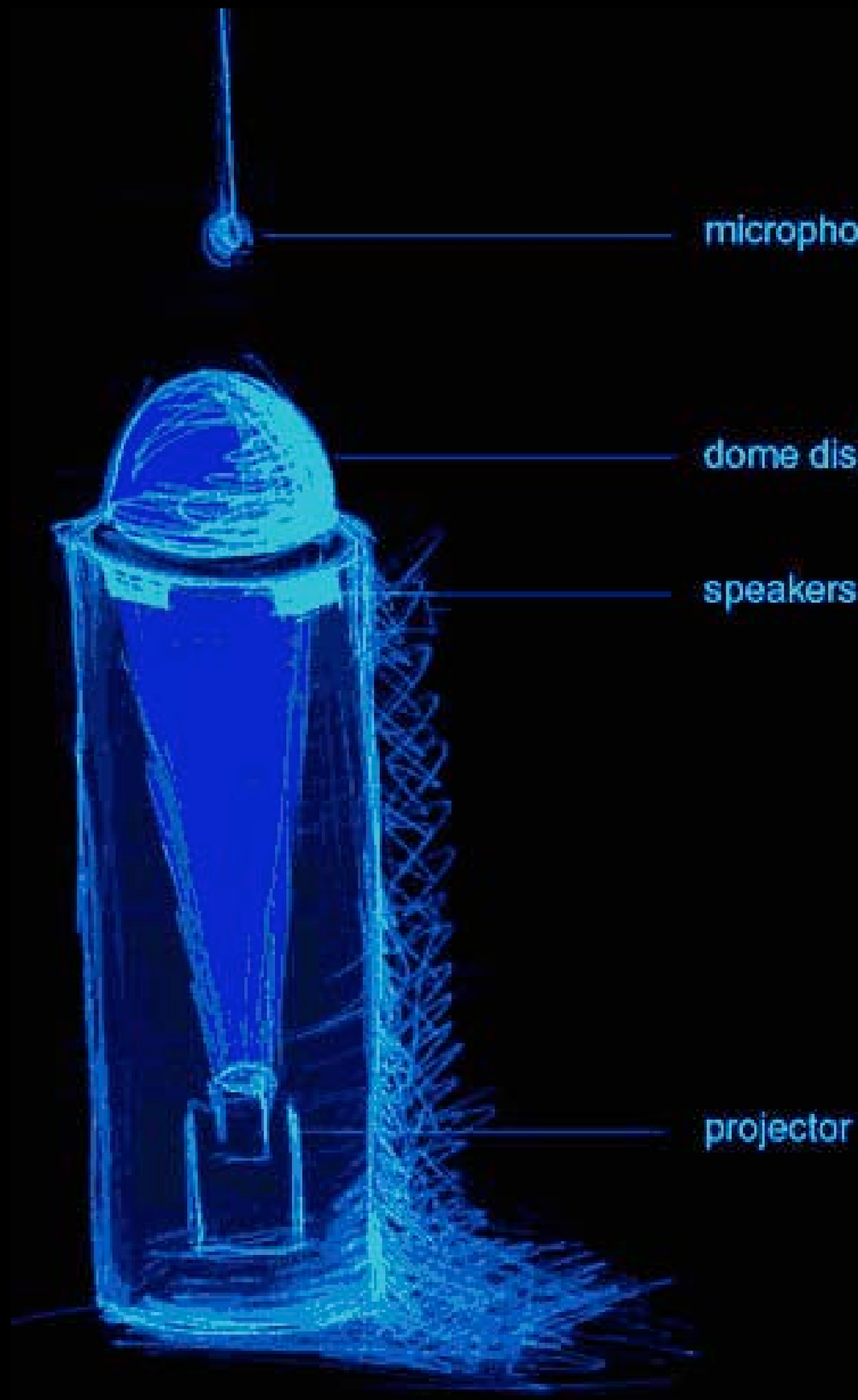
Visiphone



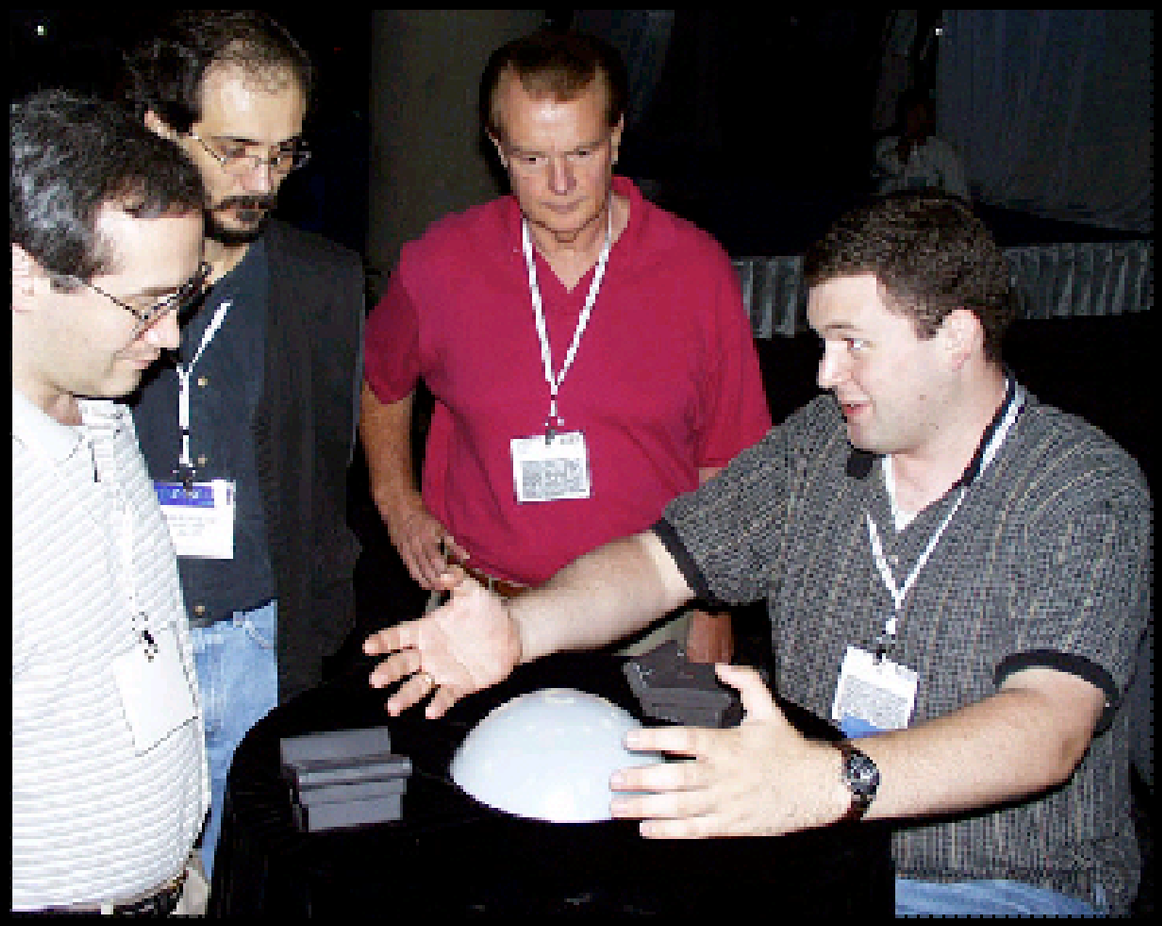
Karrie Karahalios & Fernanda Viegas,
Spring 1999

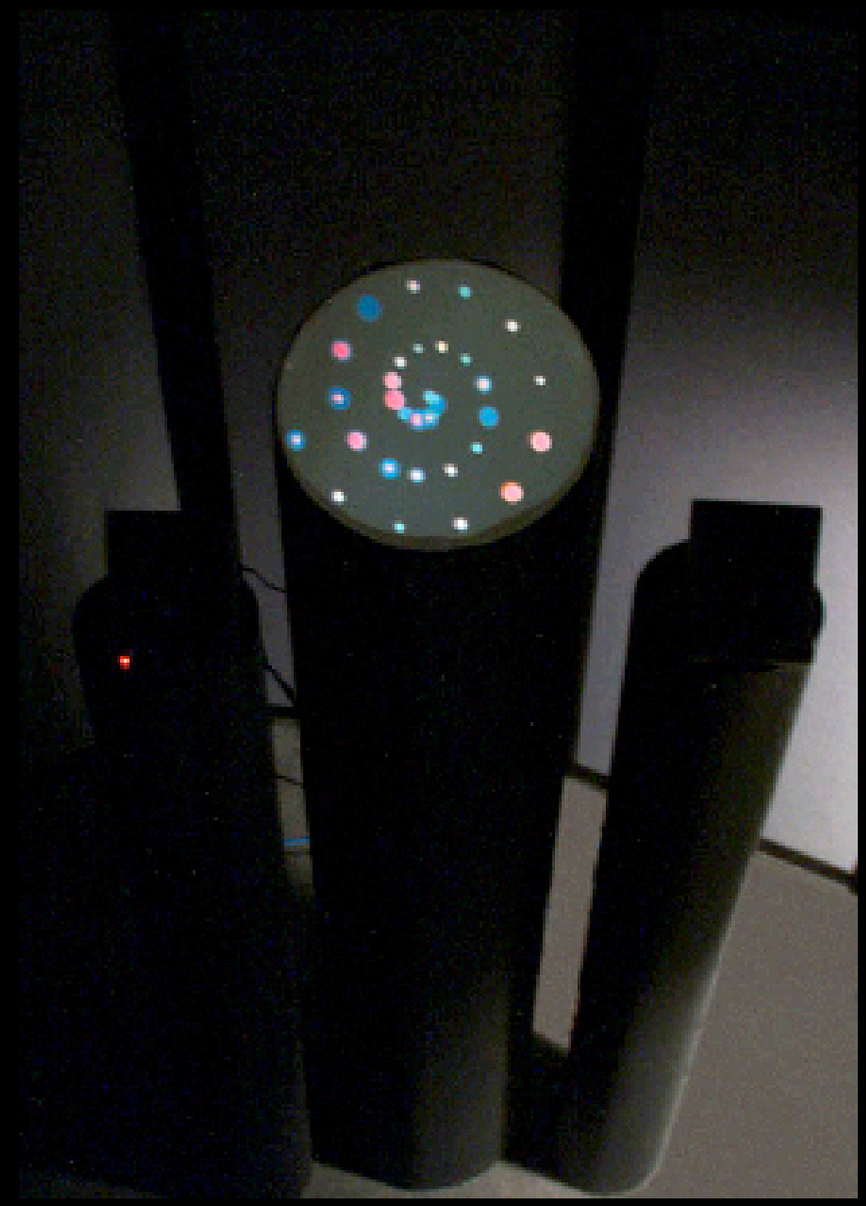





microphone
dome display
speakers
projector

Scale and Form





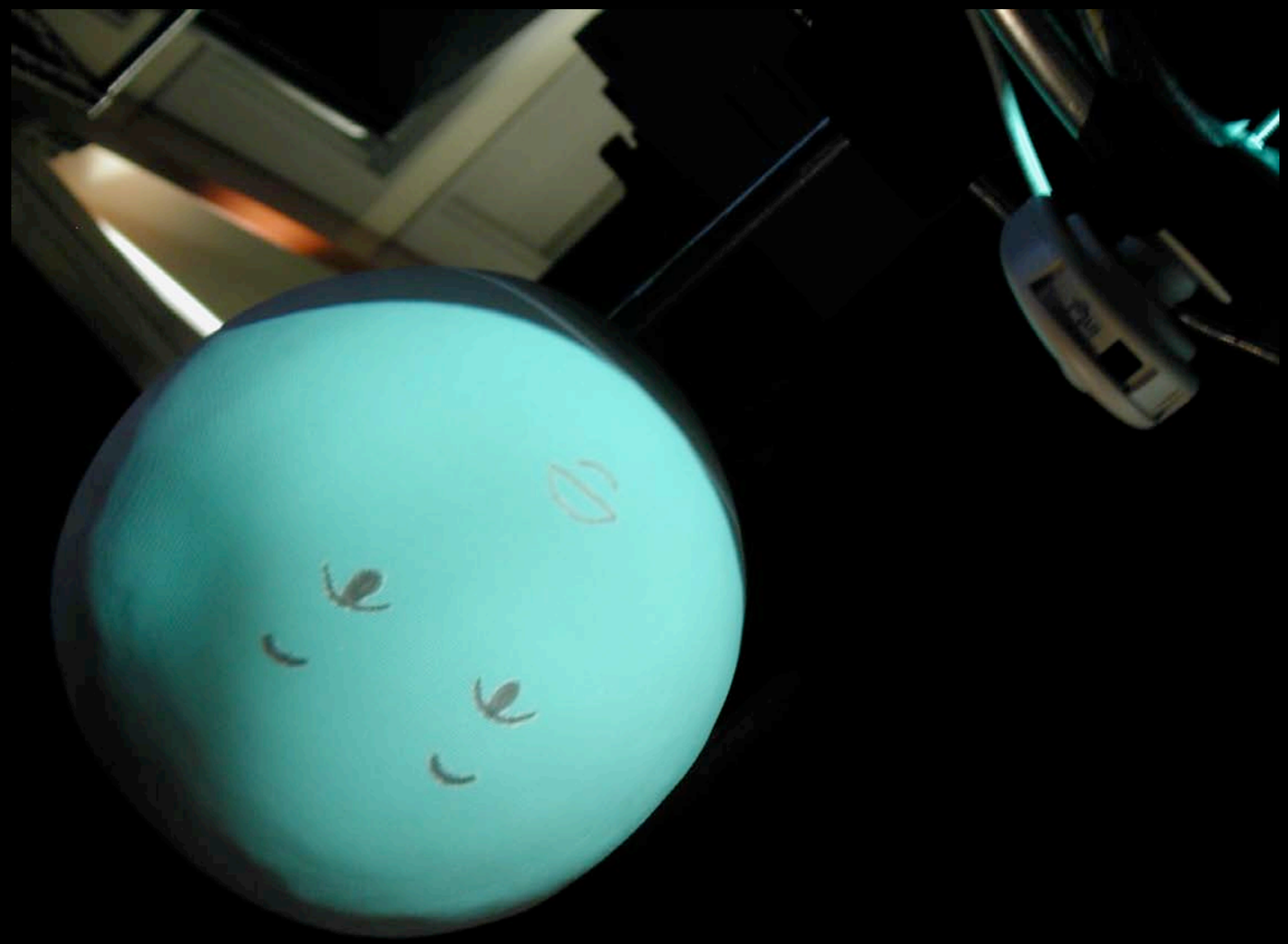
Siggraph EmergingTechnologies, 1999

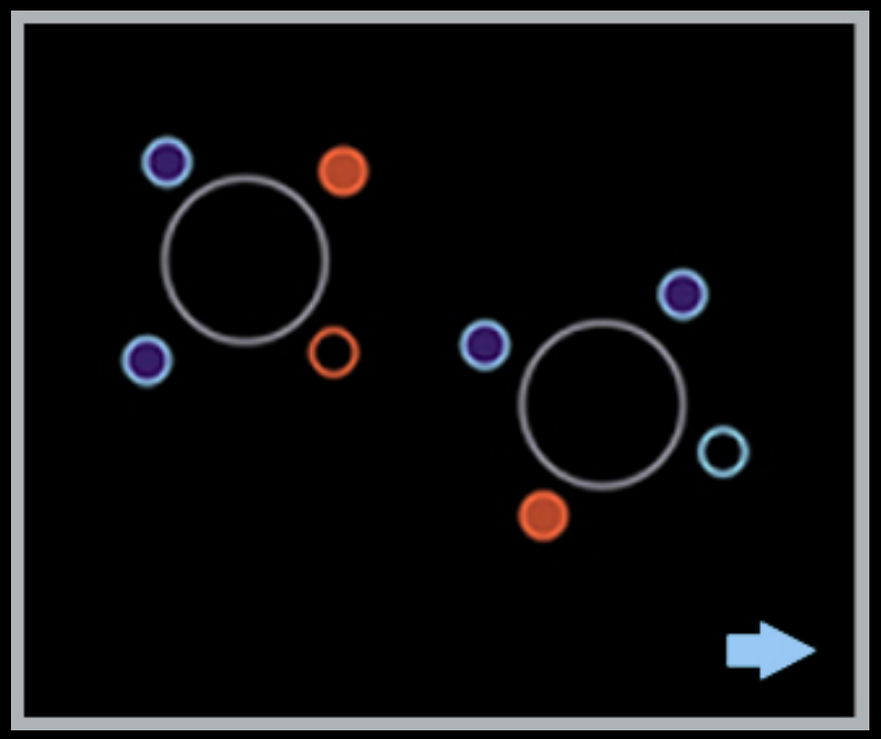
Interaction and Wearability

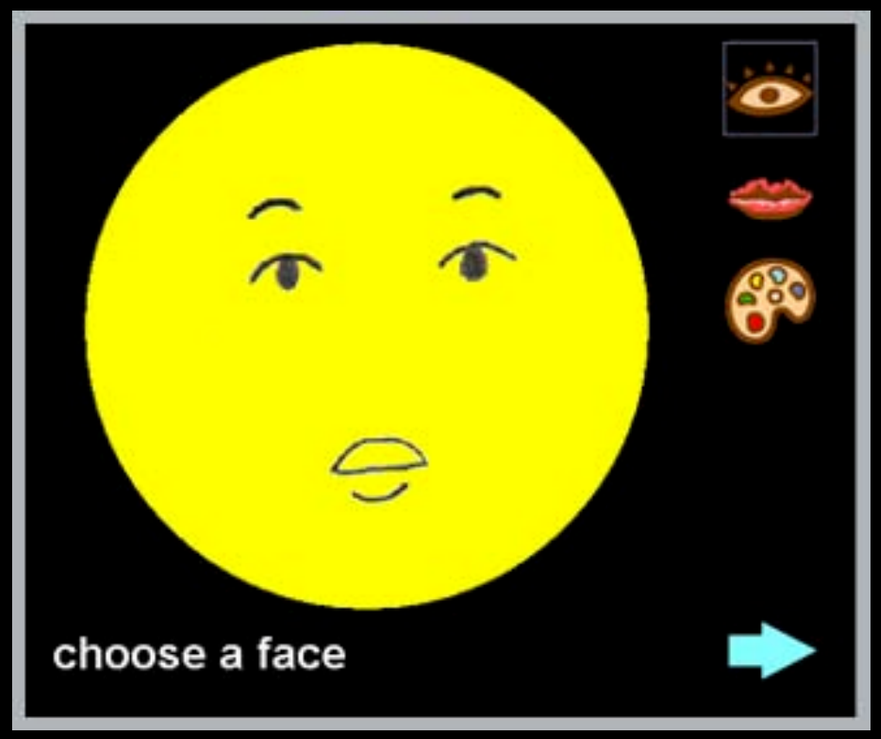
Chit Chat
Club

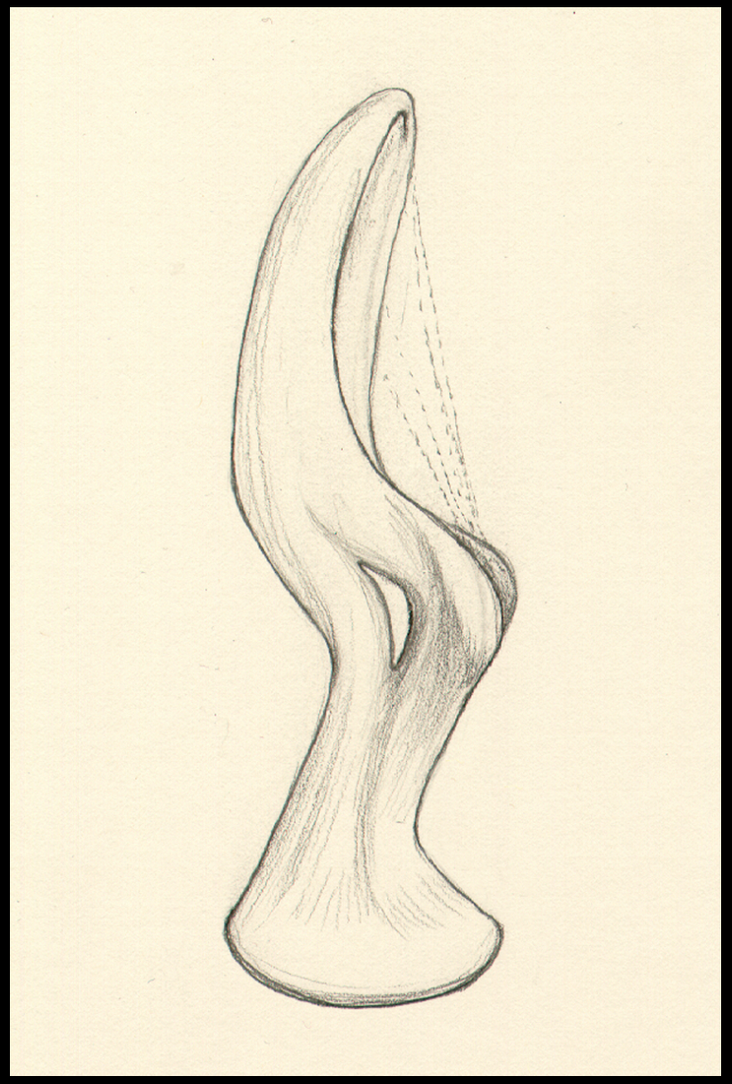
Karrie Karahalios & Kelly Dobson,
Spring 2001

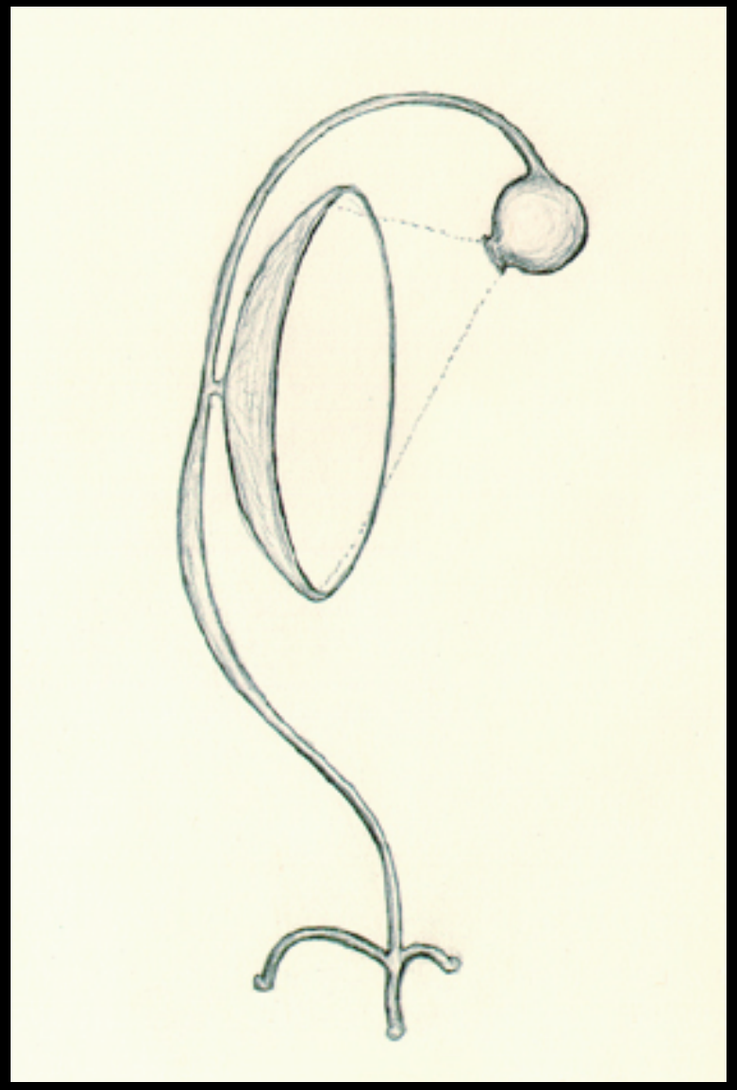
SIR DOLU 4 ÇA
Hürriyet
Kira gibi öde

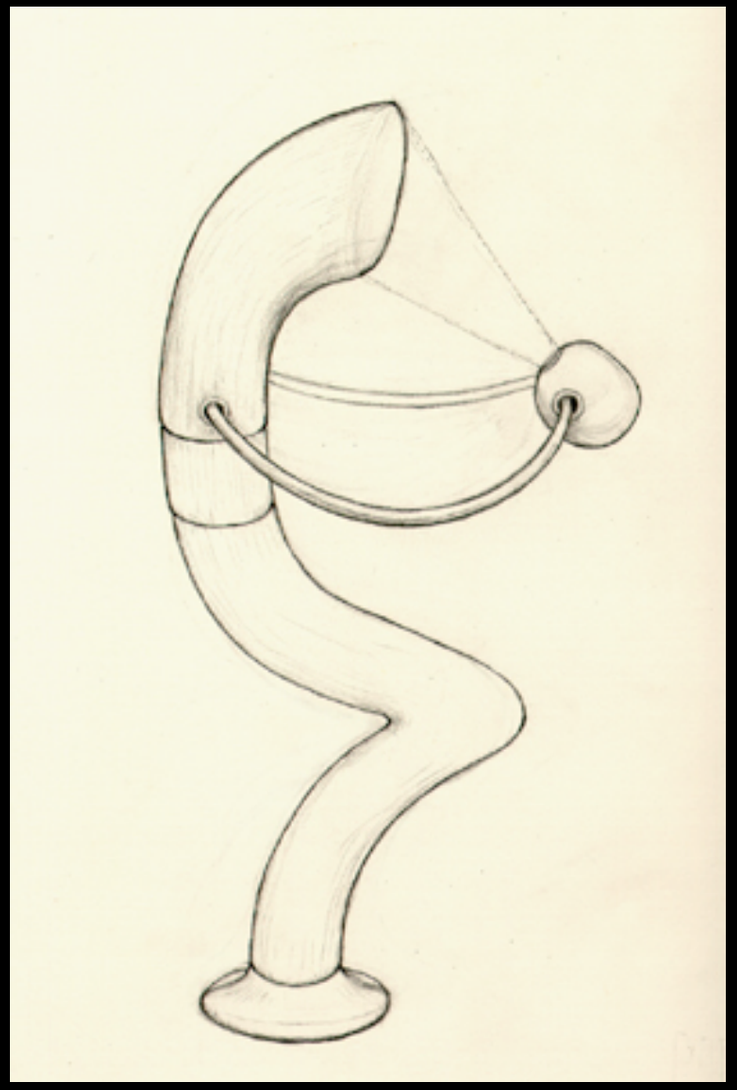


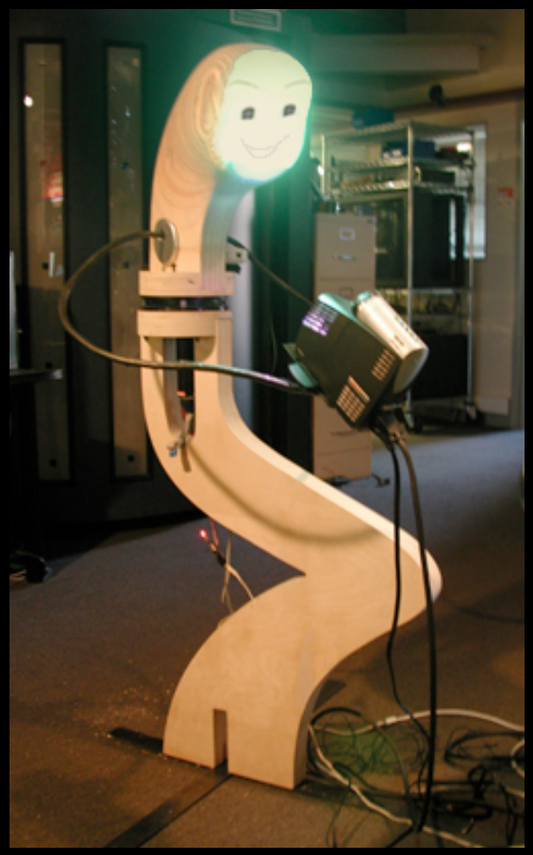


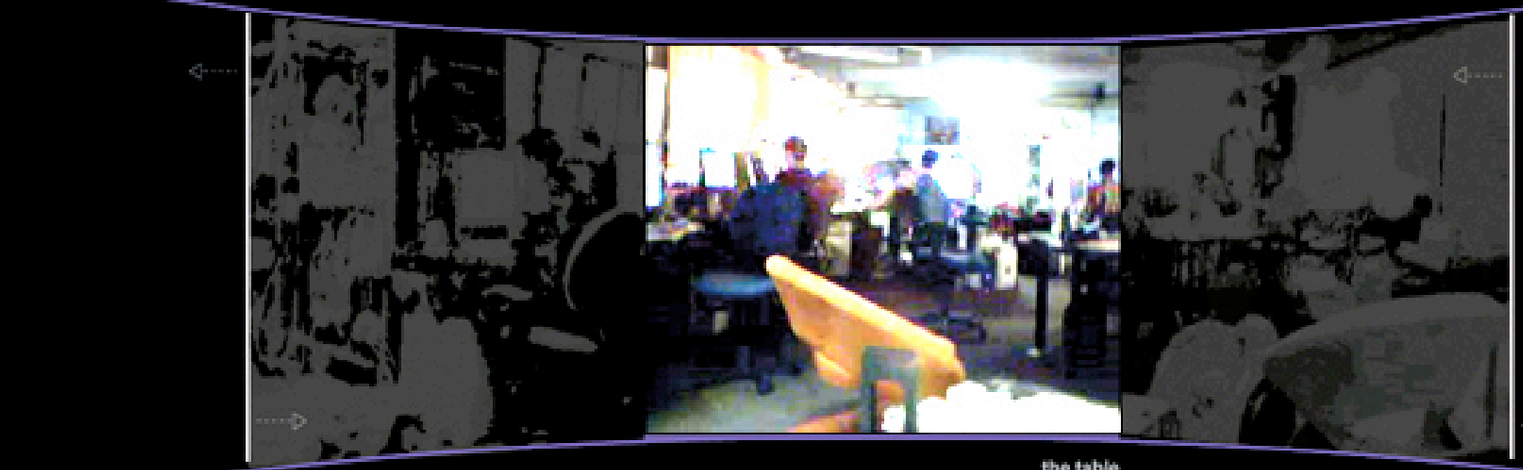

choose a face



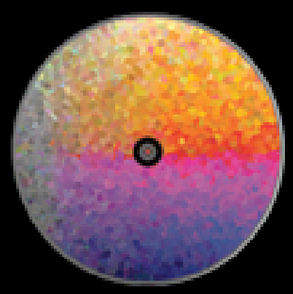




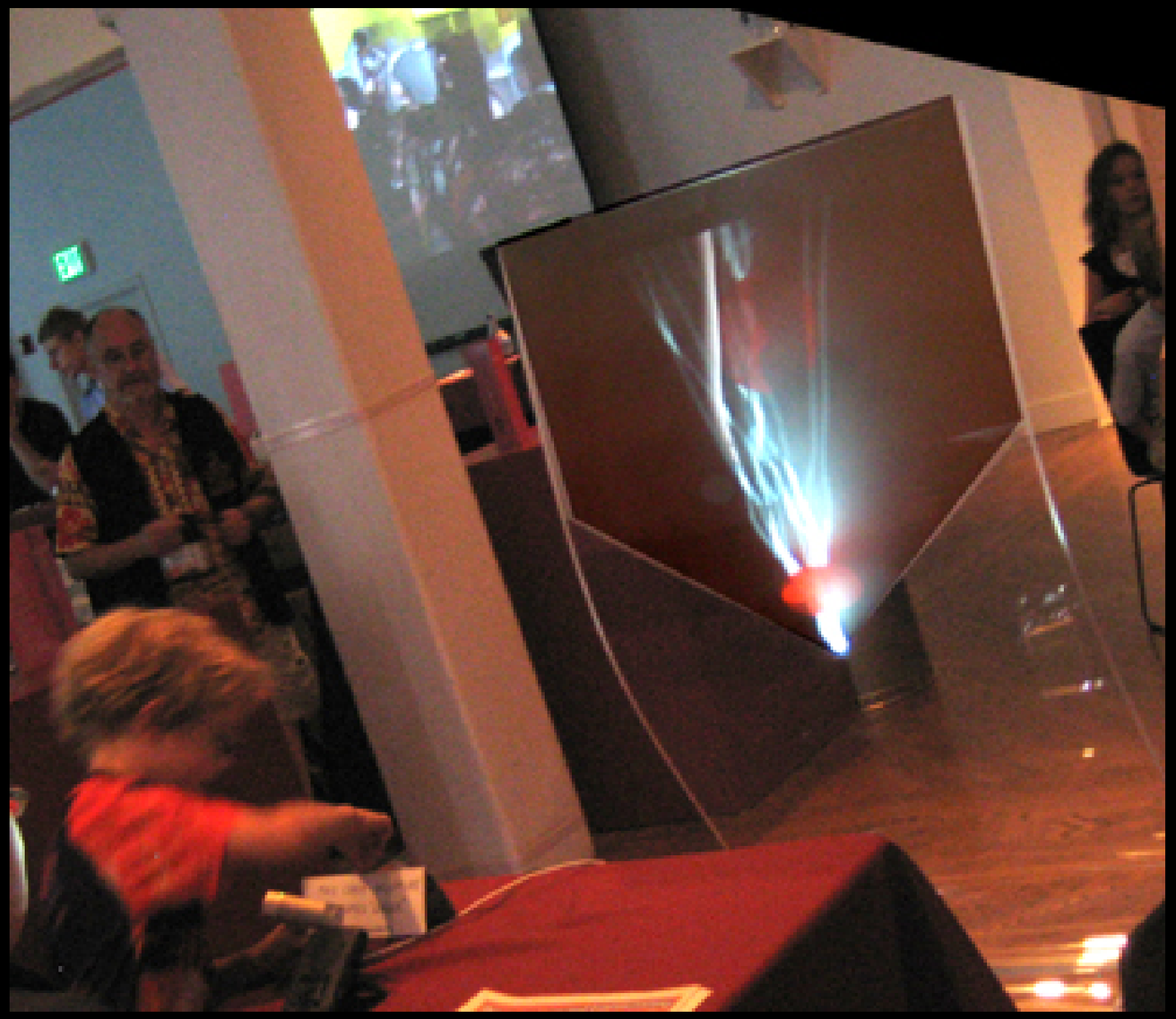


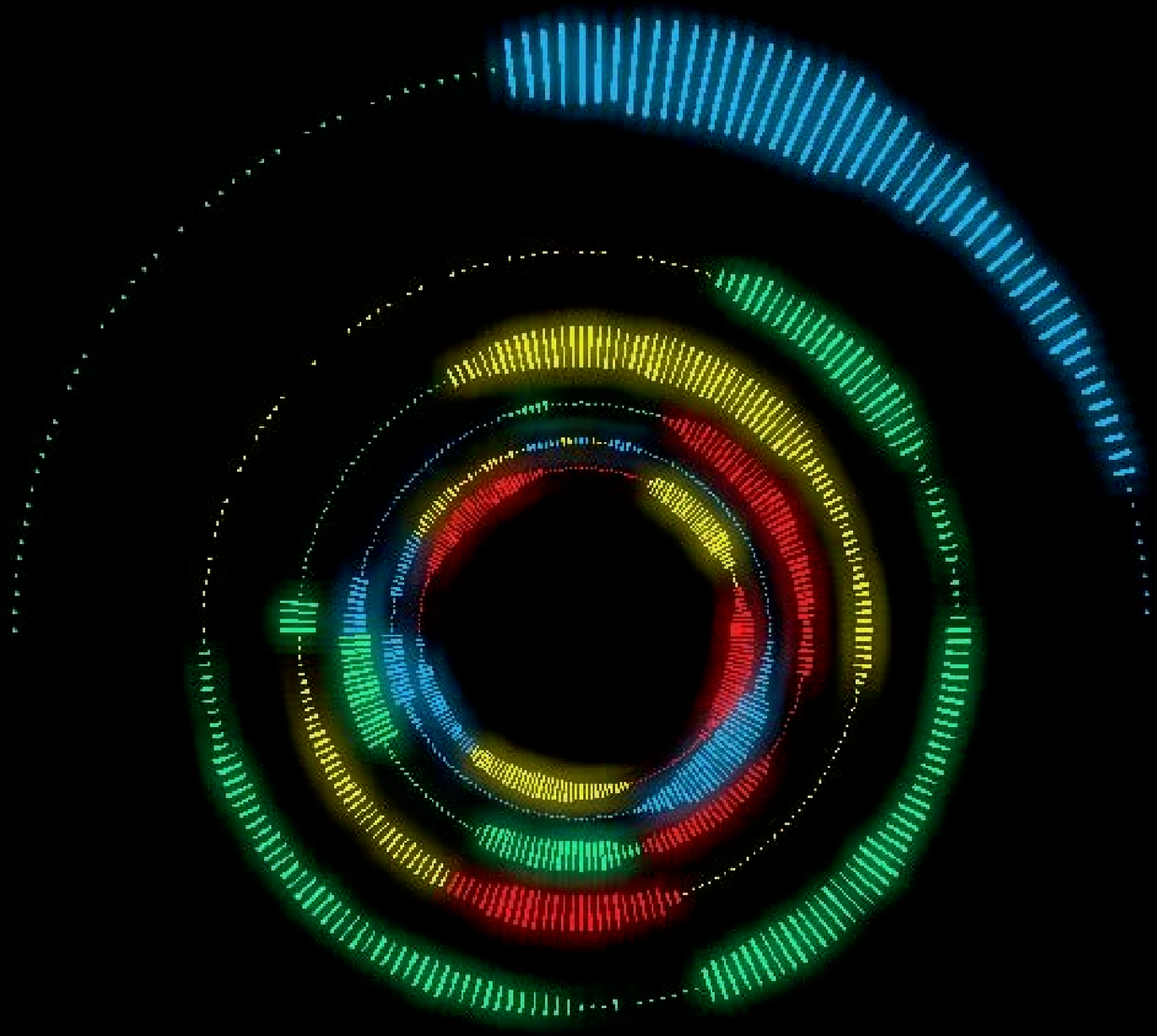


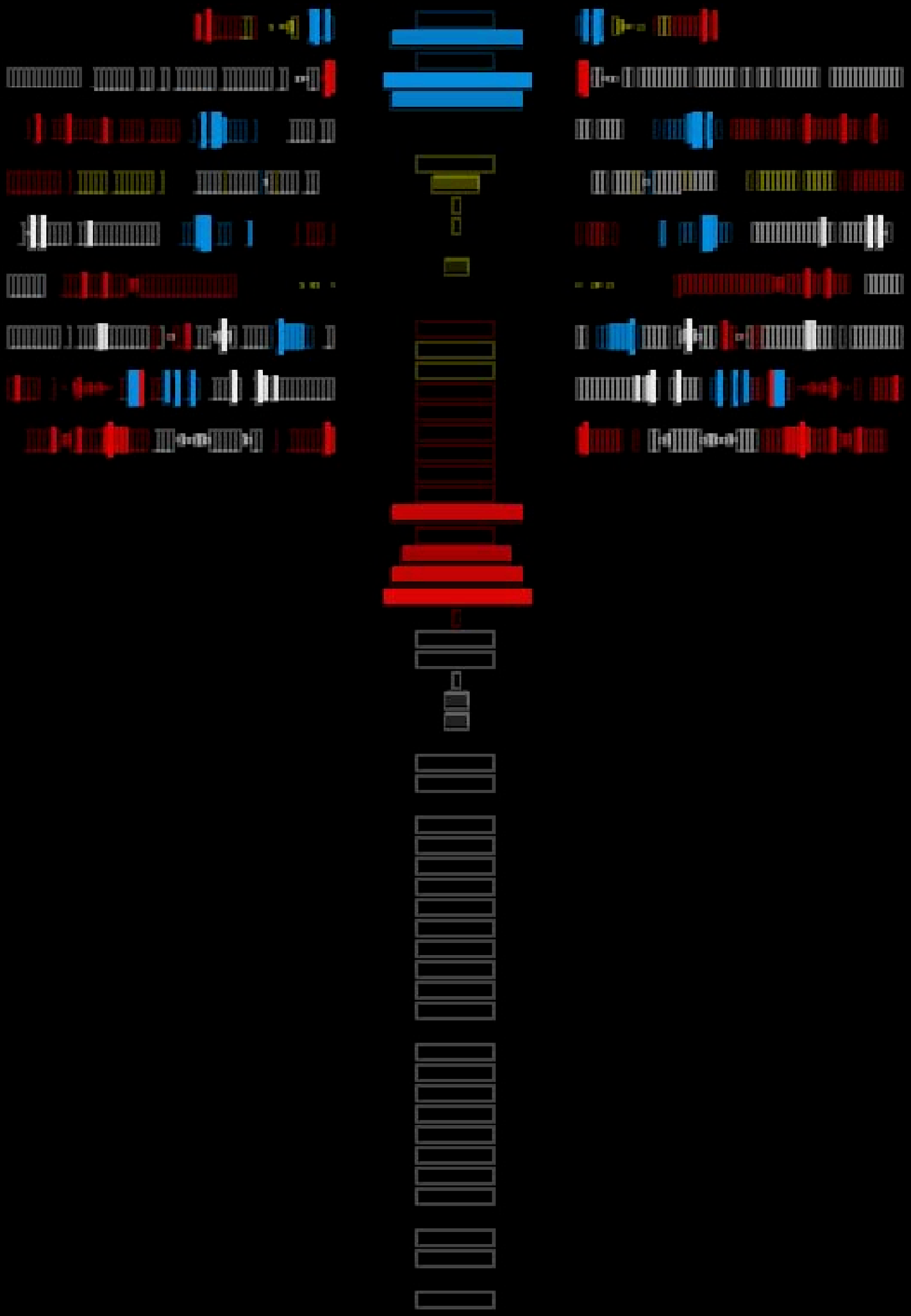
the table

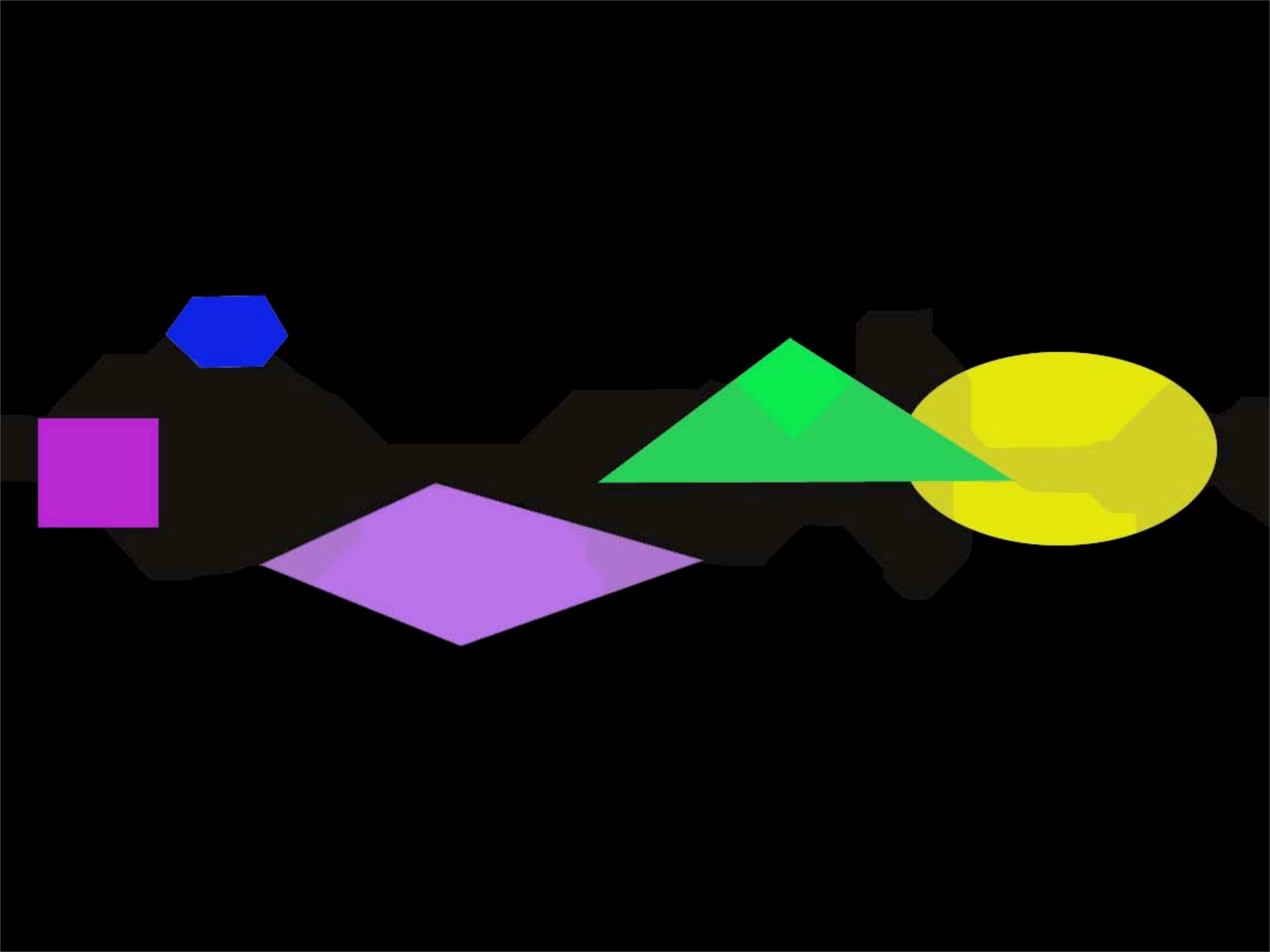


you









return

TODAY

9:00 Introduction
9:15 Five Minute Presentations
10:30 Coffee Break
11:00 Finding the framework: why did some media spaces work and why did some fail?
12:30 Lunch
14:30 Breakout groups (or discussion)
16:00 Coffee Break
16:30 Report back by each group
17:00 Plenary discussion of future work

Bly → MS whether people are there or not.
- possibilities!
- function is negotiable (Tang)

we need
definition to move forward?
→ Can we be bothered?
→ Will it last?

at will suffice?
- Topology
- Flexibility

to distinguish between MEDIA
- VIDEO (Tang)
- AUDIO (Harrison)

an we solve definition problem, and do we need to?

① To maintain interest, they MUST know what we're talking about

② There is need.

Need for 'Metrics of Success' BUT all are unique, making prediction difficult

SO definition will facilitate platform for outsiders to enter.

Future
① · What M.S. were -
· Adress file drawer pheno.
· Umbrella past - present - and new.
② Segment issues
· Media
· Space
· Time. (Novelty / Time) Sometimes it works, sometimes not.

sily ON — need of opportunity
bounded

Symptoms
"mutual embodied interactions"

Social practices
physical → Door metaphor "makes sense"
work → Through artefact + activity

just NOVELTY
st...
creation of new quality

Do not prescribe definition, rather look at examples and extract qualities common and connections between

3 Aspects of M.S. structure (Michelle) (Kyng)
① Simple to use
② Encourage peripheral acquis
③ Exploits intimacy of other forms of relationship

Interest

phenomenom.
Troublums in Science
Replicability Space

Metrics need to allow system/quality comparisons (Michelle)

· Media Space is not in Vocab where it may fit i.e. Awareness Self

· Definitions are limiting.
· Role of culture

do Media Spaces Do?
→ Find our commonground

When do they fail?
System Separable?

Δ format of presentation of this research (finding
Video demo of whiteboard
Hole in space
Our papers don't ID Media Space

APPROPIATENESS is critical and make 1 definition have). (Marilyn)

(Buxton)

Secondary → where does usability fit?

· Criteria exist
· Is language right?
by PEER
by PRACTICE

Can we achieve a unified measurement perspective
by METRIC
· Zero point
· Point of present state
· Media fit
} Point of reference chan
by DIMENSION

ow to evaluate · place
· Movement
· quality
· design
creation of new interactions

Do we agree and not Know it - don't realize it? (Bar

here are we going with this
Today
Tomo
Next 20

Where do we REFLECT?
Are we evaluating the right thing?
INTERPRET?
Likert
Trumble

Where are we?

A media space is an electronic intervention between disparate physical locations linking human presence, communication, and activities in those locations that reflects the persistence of the physical spaces they are in.

Those linkages range in scale and purposefulness, but all representations center on the humanness, enabling social construction of the meaning and activities supported by it.

Persistence is a “construction” based on our experience; thus media spaces are constucted by the participants.

Where are we?

A media space is:
media in fixed locations, continuous audio and video connection OR mutually understood spatial/social context, continuous or discrete media, awareness updates OR co-presence, attentional support, message understanding, affective understanding OR an extension of space OR support for separated communities of practice OR public displays of community media OR any environment created using audio, video, and networked computing to support interaction between distributed groups of people OR mediated negotiation of making contact and leave-taking OR a work of art

IS THIS A PROBLEM?

Where are we?

mediated space OR spatialized organizations of media OR media + space OR a spatial metaphor for media OR mediated connection between spaces OR media-rich physical places OR ....

TODAY

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Characteristics of Media Spaces

Primary characteristics (philosophy)

Technology that connects people, that promotes presence, opportunities for casual interaction, that leads to engagement over wide range of activities

- That has a sense of immediacy
- that does this lightweight and seamlessly over different technological constraints and media channels / services
- that may be targeted for different collections of people and social relationships
- that presence/engagement is carried through the link…(boundary) and regulated through it.
- about sociality, situated interaction, work, play, conversation, feelings of presence…can be targeted.
- Should we include: embodied perspective
  - Our physicality directs the way we choose to communicate (space)
  - The socializations that we use (glances, acknowledgements, awareness of what you are doing) that comes from our physical presence
  - An ‘understood’ spatial context i.e., where other person is…

Unusual Example

Meeting room can become a media space if its

- Available
- Seamless as possible for walk in and use and interact
- Part of environment and community

Sustaining to creating relationships

Should we scope to groups?

- Intimate collaborators
- Strangers (public meeting plaza)
- Mixers
- Newcomers to existing group?
- This is not a ‘one environment fits all’

These are all very different groups, different interactions, different contexts…

What about relationships between people?

Does not dictate who…when do people not want to use one?

- some people don’t want that intimacy
- some people don’t want that distraction
- its sometimes not appropriate or weird
- too much closeness…

What happens when it brings people too close?

I like these people, but there is too many of them and you are always in my face…

What about relationships between people?

What happens when it brings people to close?

- I like these people, but there is too many of them and you are always in my face…

What becomes the norm for the group?

- E.g. if Video is the norm, everyone expects it…
  - what happens when its not equal?
  - 2nd class citizens
- How do we engage / disengage / change over time?

What is the culture of practice that develops over it?

- e.g, how people co-opt a technogically-enhanced meeting room as a media space

Primary characteristics

Boundaries

- In contrast to directed meetings support
- But how do things like digital tables for co-located people fit in?

Characteristics

Your presence may transform the space

- Literal presence (video)
- Abstracted presence (art)
- Ephemeral (know that we belong in it, social expectations)

How do people coopt the technology?

e.g., changing what shows in the video

- Hands / keyboard vs face
- Canned video to force illusion of absence
- Does it work the other way around?
  - social adaptation to the technology i.e., sophisticated uses and practices develop over time
  - Group and context determines what and how gets appropriated
  - Above is constrained by technology affordances
    - E.g., awareness…

Evaluate

Measures of success

- Popularity
- Dispersion
- Critical mass of acceptance
- E.g., IM fits these…

If you take it away…

- Do people try to recreate it?
- Do people's engagement with each other trail off / change?

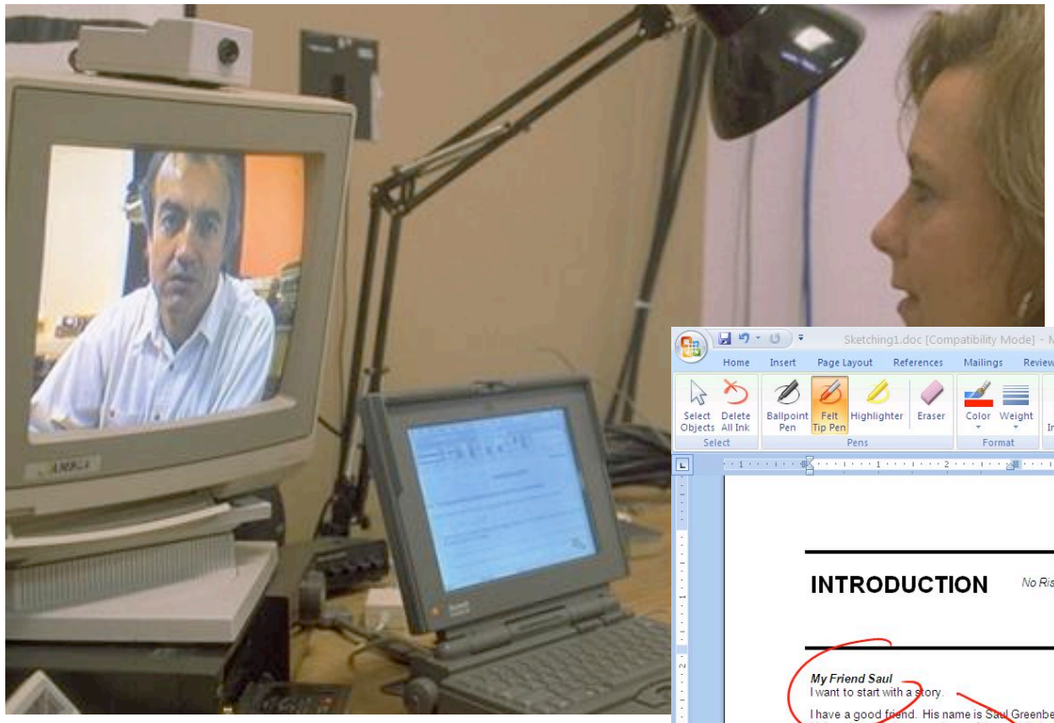
A Space Case

Person, Task and Gesture in Mediaspaces

W. Buxton
Microsoft Research

3 Classes of “Space” in

Perso



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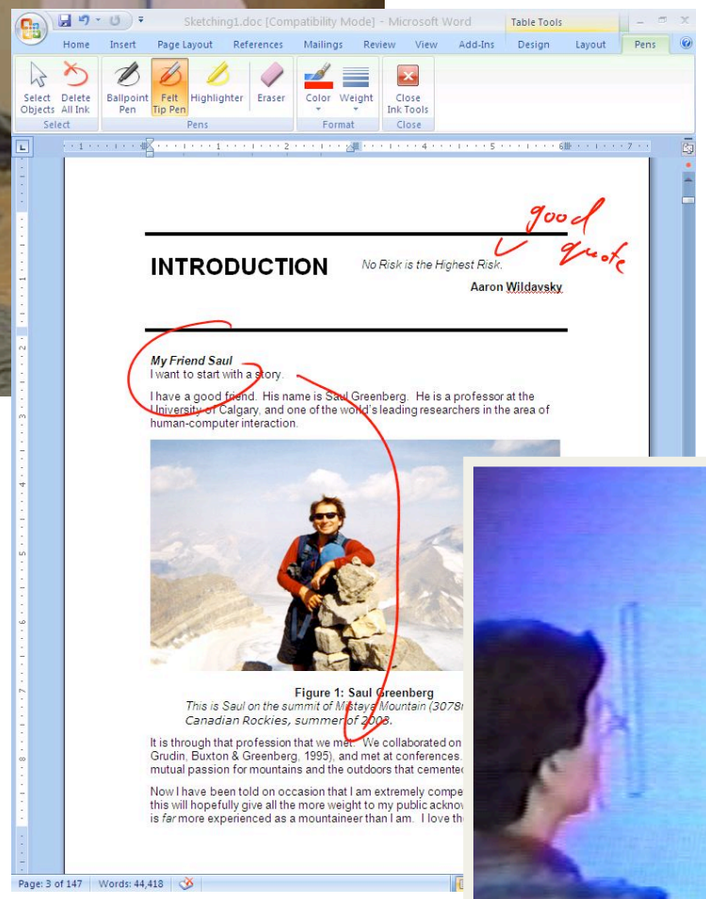

Gestur
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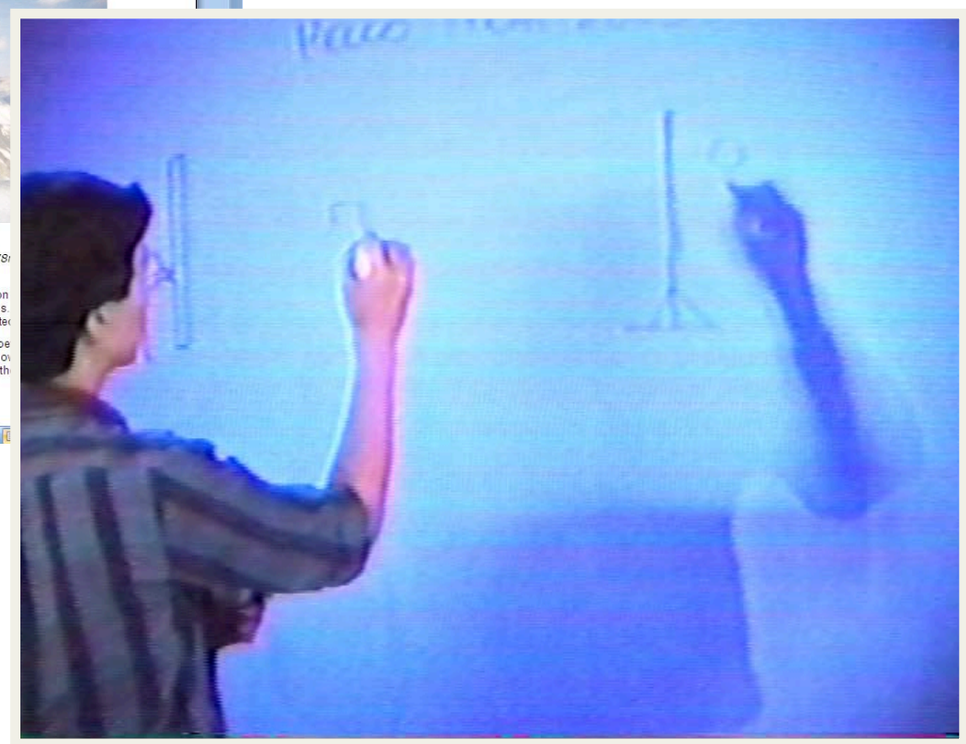
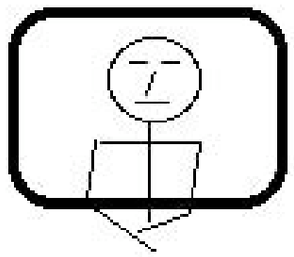
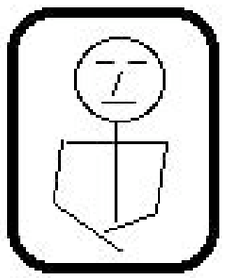


Example: Videoconferencing

Size & orientation have significant impact on experience



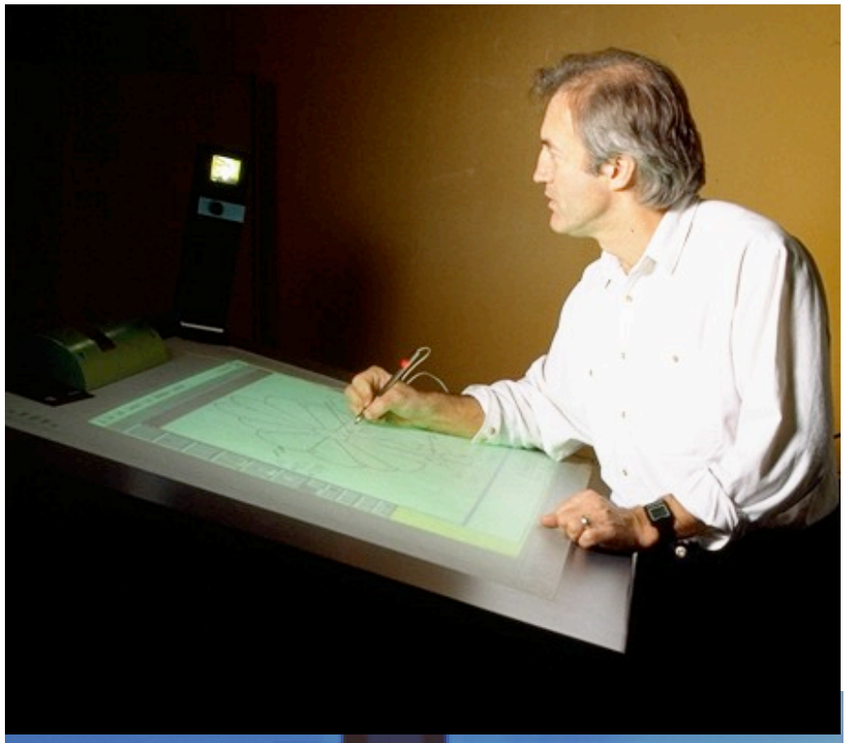
Landscape



Portrait

- Primarily person space
- If “task” is artifact-free conversation, then task and person space superimposed/ equivalent
- Capture and display can enhance capacity to handle gesture (also “superimposed” in artifact-free conversational task)

Example: OTP vs Clearboard



OTP Active Desk + Hydra

NTT Clearboard II

- Task & person space
- Adjacent vs superimposed spaces

4 Levels of Gesture Space

Poi
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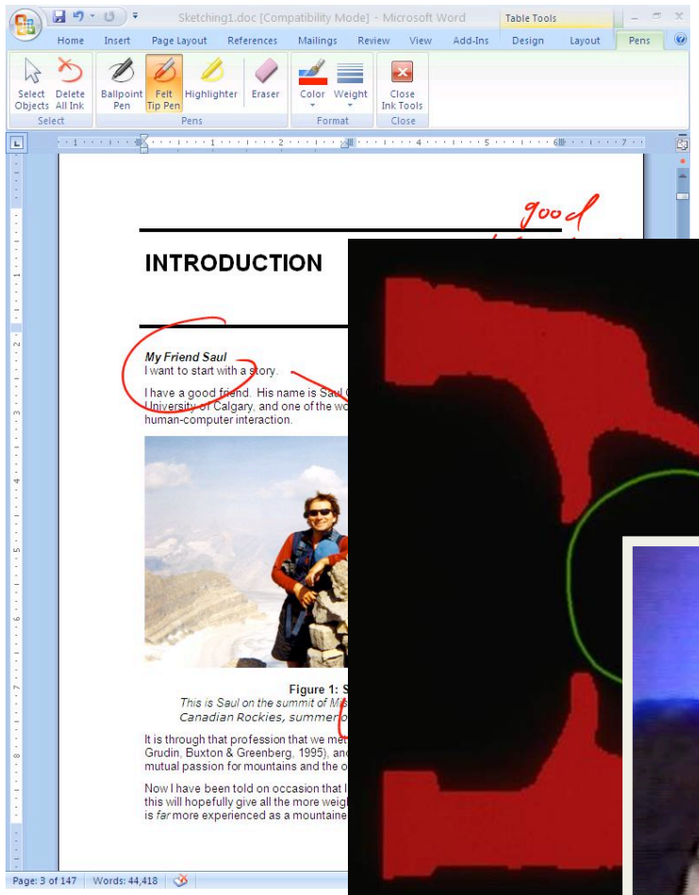
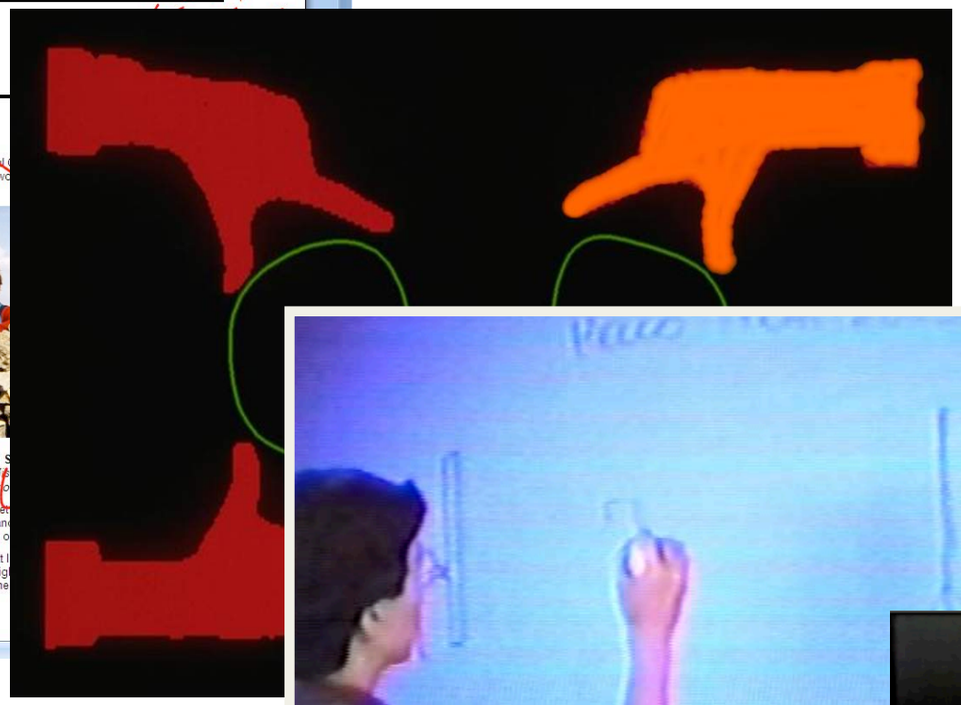


Silhouett



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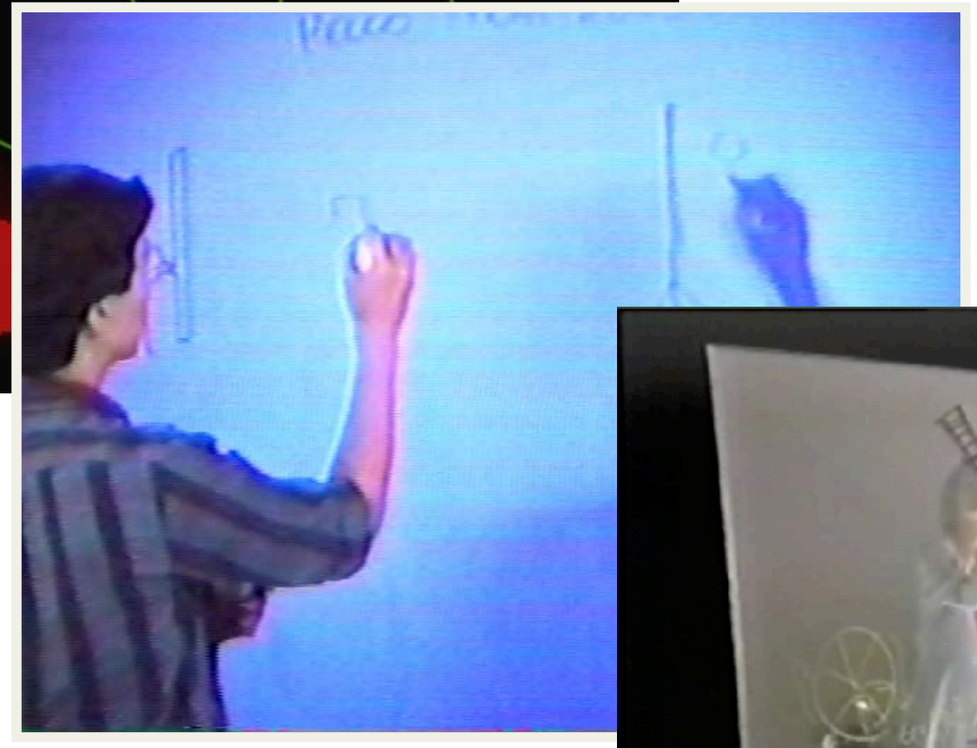
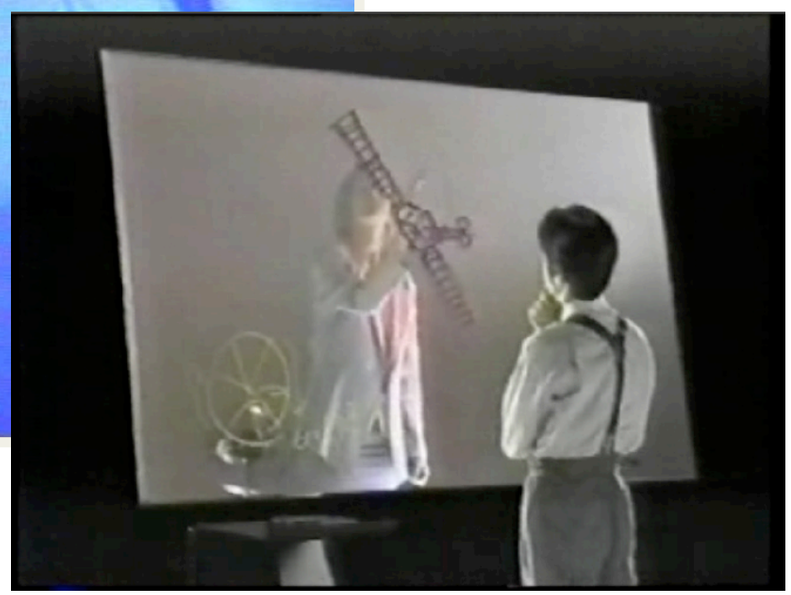
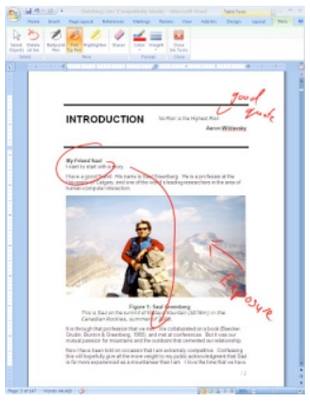
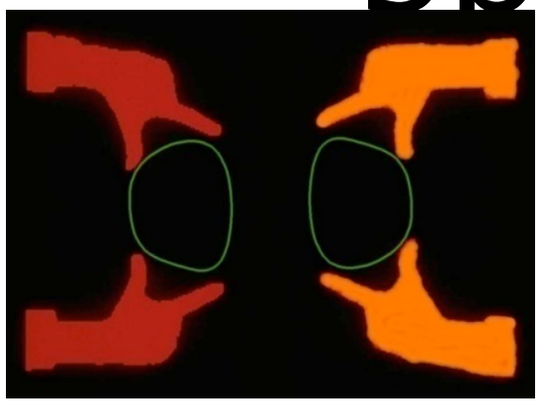


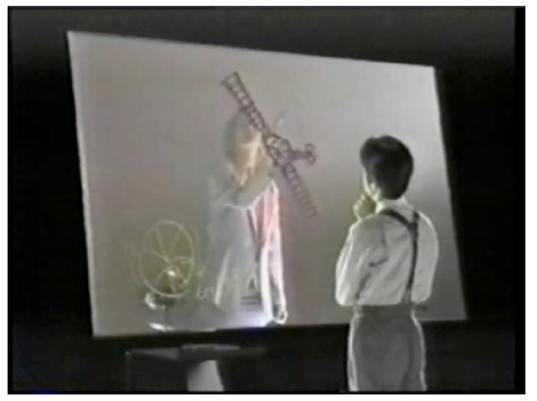
Photorea



Some Attributes of Gesture Space







Point	Silhouette	Shadow	Photo-Real
Action + Gesture	Action + Gesture	Action | Gesture	Action | Gesture
Minimal anticipation	MinimalAnticipation	Anticipation	Anticipation
Any Content	Any Content-	Any Content	Sparce Content
No Gaze	No Gaze	No Gaze	Gaze Awareness

What not considered?

- Issues of video of person on same screen, but adjacent to, document vs in separate physical space.
- Cases where the content of shared space is other than electronic document (words, spreadsheet, drawing, etc.) vs physical object, animation or 3D graphic, for example.
- Etc.