Topic 4: User Behaviour (Part 2)

SECV2113 Human-Computer Interaction

Faculty of Computing
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SOCIAL INTERACTION

01 BEING SOCIAL

02 FACE-TO-FACE CONVERSATIONS

03 REMOTE COLLABORATION AND COMMUNICATION

04 CO-PRESENCE

05 SOCIAL GAMES

BEING SOCIAL

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Social Interaction

- We live together, work together, play together, talk to each other, and socialize

- Social technologies developed to enable us to persist in being social when apart
  - They differ in how they support us
  - Some encourage social interactions (for example, family games with Alexa)
  - Others have a negative impact on everyday conversations (Turkle, 2015)

Are we spending too much time in our own digital bubbles?

Questions raised by social tech

- Are in person conversations being superseded by social media interactions?
- How many friends do you have on Facebook, LinkedIn, WhatsApp, and so on versus real life?
- How much do they overlap?
- How are the ways that we live and interact with one another changing?
- Are the established rules and etiquette still applicable to online and offline?

FACE-TO-FACE
CONVERSATIONS

Conversational Mechanisms

- Various mechanisms and ‘rules’ are followed when holding a conversation face-to-face such as mutual greetings

A: Hi there

B: Hi!

C: Hi

A: All right?

C: Good, how’s it going?

A: Fine, how are you?

C: OK

B: So-so. How’s life treating you?

Conversational Rules

- Sacks et al. (1978) conversation analysis of conversations propose three basic rules:

  Rule 1: The current speaker chooses the next speaker by asking an opinion, question, or request

  Rule 2: Another person decides to start speaking

  Rule 3: The current speaker continues talking

More Conversational Rules

- Turn-taking used to coordinate conversation

A: Shall we meet at 8:00?

B: Um, can we meet a bit later?

A: Shall we meet at 8:00?

B: Wow, look at him?

A: Yes what a funny hairdo!

B: Um, can we meet a bit later?

Gets embedded

- Back channeling to signal to continue and following

Uh-uh, umm, ahh

Further Conversational Rules

- Farewell rituals
  - Bye then, see you, yeah bye, see you later….
- Implicit and explicit cues
  - For instance, looking at watch or fidgeting with coat and bags
  - Explicitly saying, “Oh dear, look at the time, I must go, I’m running late…”

Breakdowns in Conversation

- When someone says something that is misunderstood:
  - Speaker will repeat with emphasis:

    A: “This one?”

    B: “No, I meant that one!”

  - Also use tokens:

    Eh? Quoi? Huh? What?

What happens in online conversations?

- Do the same conversational rules apply?
- Are there different kinds of breakdowns?
- How do people repair them for:
  - Email?
  - Instant messaging?
  - Texting?
  - Skype or other videoconferencing software?

New Social Rules during COVID-19

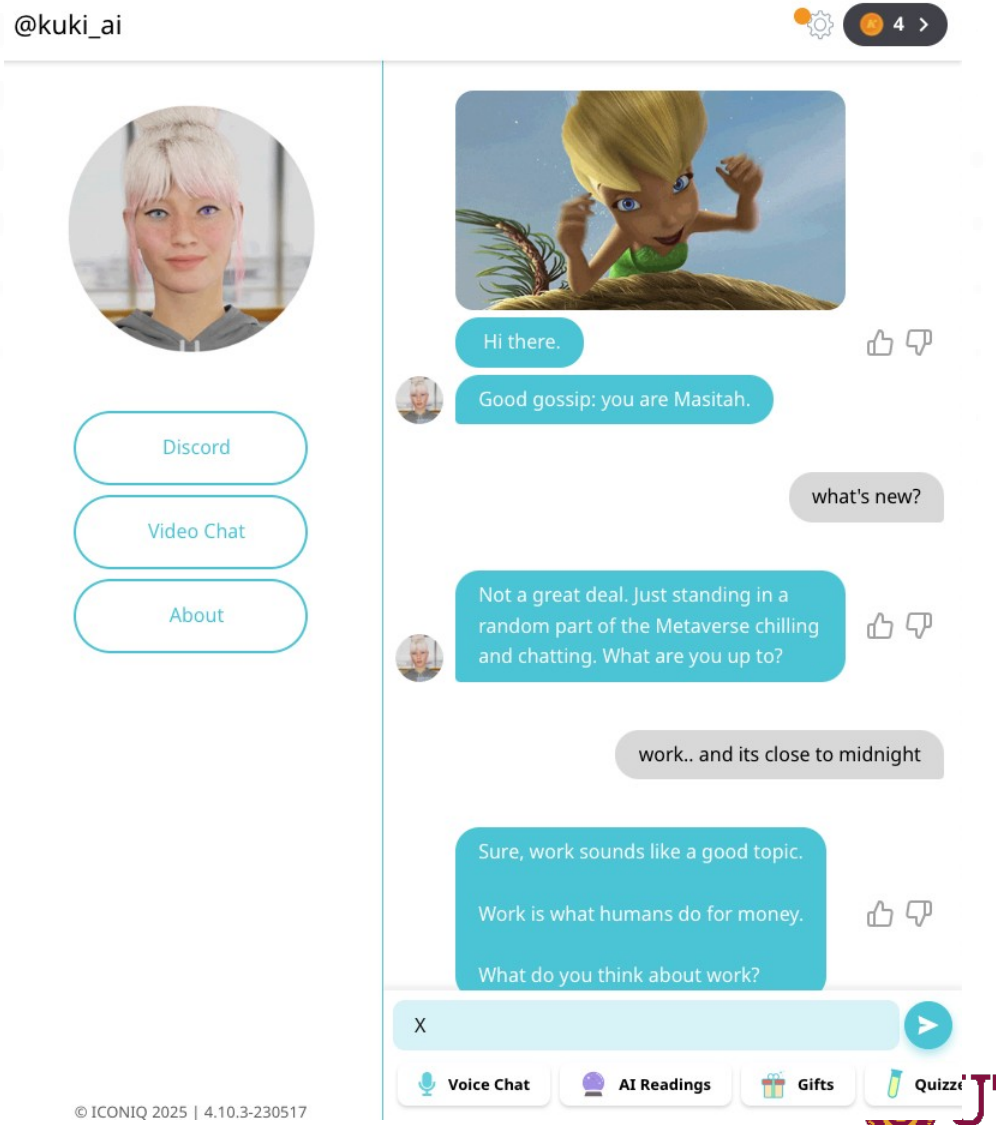
- For how to behave and interact with others when communicating via video conferencing
- Muting yourself when not talking
- Raising a yellow hand when wanting to speak
- Other emoji reactions became commonly used to signify various forms of praise, emotions and non-verbal feedback, e.g.
  - clicking on the red heart and party hat icons that momentarily appear in someone's window and then disappear after 10 seconds

Online Collaboration and Communication

- Much research on how to support conversations when people are remote
- Many applications have been developed
  - email, videoconferencing, instant messaging, chatrooms
- To what extent do they mimic or move beyond existing ways of conversing?

Talking with Chatbots

- Conversational User Interfaces, such as chatbots, are more sophisticated in how they emulate turn-taking in conversations
  - e.g. Kuki.ai
- Recent developments in AI are changing how we converse and interact with AI
  - e.g, ChatGTP



Dilemma: Is it OK to talk with a dead person using a chatbot?

- Eugenia Kuyda lost a close friend in a car accident who was only in his 20s
- She took all his texts sent over the course of his life and made a chatbot using them
- Chatbot responds to text messages so that Eugenia can talk to her friend as if he was alive
- Is this a creepy or comforting way to deal with grief?
  - Is it respectful of the dead person?

REMOTE COLLABORATION & COMMUNICATION

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Early Videoconferencing: VideoWindow (Bellcore, 1989)

- Shared space that allowed people 50 miles apart to carry on a conversation as if in same room drinking coffee together
- 3 x 8 foot ‘picture-window’ between two sites with video and audio
- People did interact via the window, but strange things happened (Kraut, 1990)

Diagram of VideoWindow in Use

Findings of how VideoWindow System was used

- Talked constantly about the system
- Spoke more to other people in the same room rather than in other room
- When trying to get closer to someone in the other place it had opposite effect—participants went out of range of the camera and microphone
- No way of monitoring this

Videoconferencing and Telepresence Rooms

- Many to choose from to connect multiple people (e.g. Zoom, Teams, Google Meet, Webex)
- Customised telepresence rooms for groups

Current Videoconferencing

- Webex, Zoom etc., have greatly extended how we communicate while providing tools to make is easier to switch between talking and working together

- Zoom fatigue came into being (Bailenson, 2021)
  - excessive amounts of close-up eye gaze
  - intense cognitive load
  - increased self-evaluation from staring at a video of oneself
  - physically being in the same place for hours on end

Microsoft Prototype of a Technology-enhanced Hybrid Meeting

The future: 3D person in a box?

David Nussbaum demonstrating how they capture and present the Proto person in a box

Proto M

Talking with a 3D video of granny in a box. The embedded camera at the top of the box faces the mother and child so that Granny can see and hear them in real time.

Telepresence and Social Presence

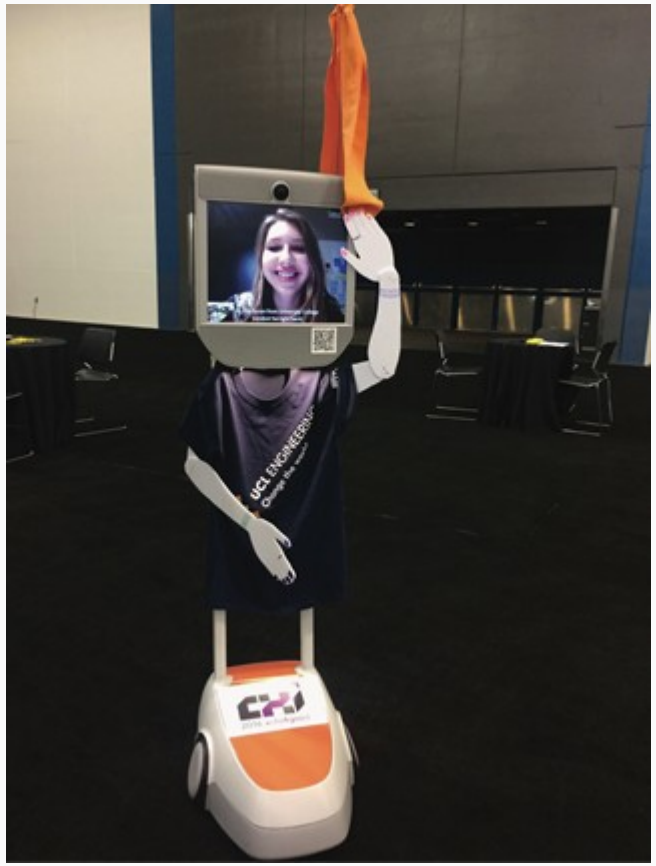
- *Telepresence* refers to one party being present with another party, who is present in a physical space, such as a meeting room

- *Social presence* refers to the feeling of being there with a real person when in virtual reality (VR)

Telepresence Robots

Enable people to attend events who could not do so, such as by controlling their robot remotely

- In places such as schools, conferences, and museums
- Early example: Beam+
- Often dressed up to appear like the person to others at the event
- Positive experience of being there



Susan Lechelt at ACM CHI

The Metaverse

- Meta’s vision of three friends socializing in a 3D world represented as torso avatars
- Users experience each other through donning VR headsets

How much realism and immersion are necessary...?

- ...in telepresence to make it compelling?
- *Telepresence rooms* try to make remote people appear to be life-like
  - Use multiple high-definition cameras with eye-tracking features and directional microphones
- Does FaceTime have as much presence as more high-definition settings?

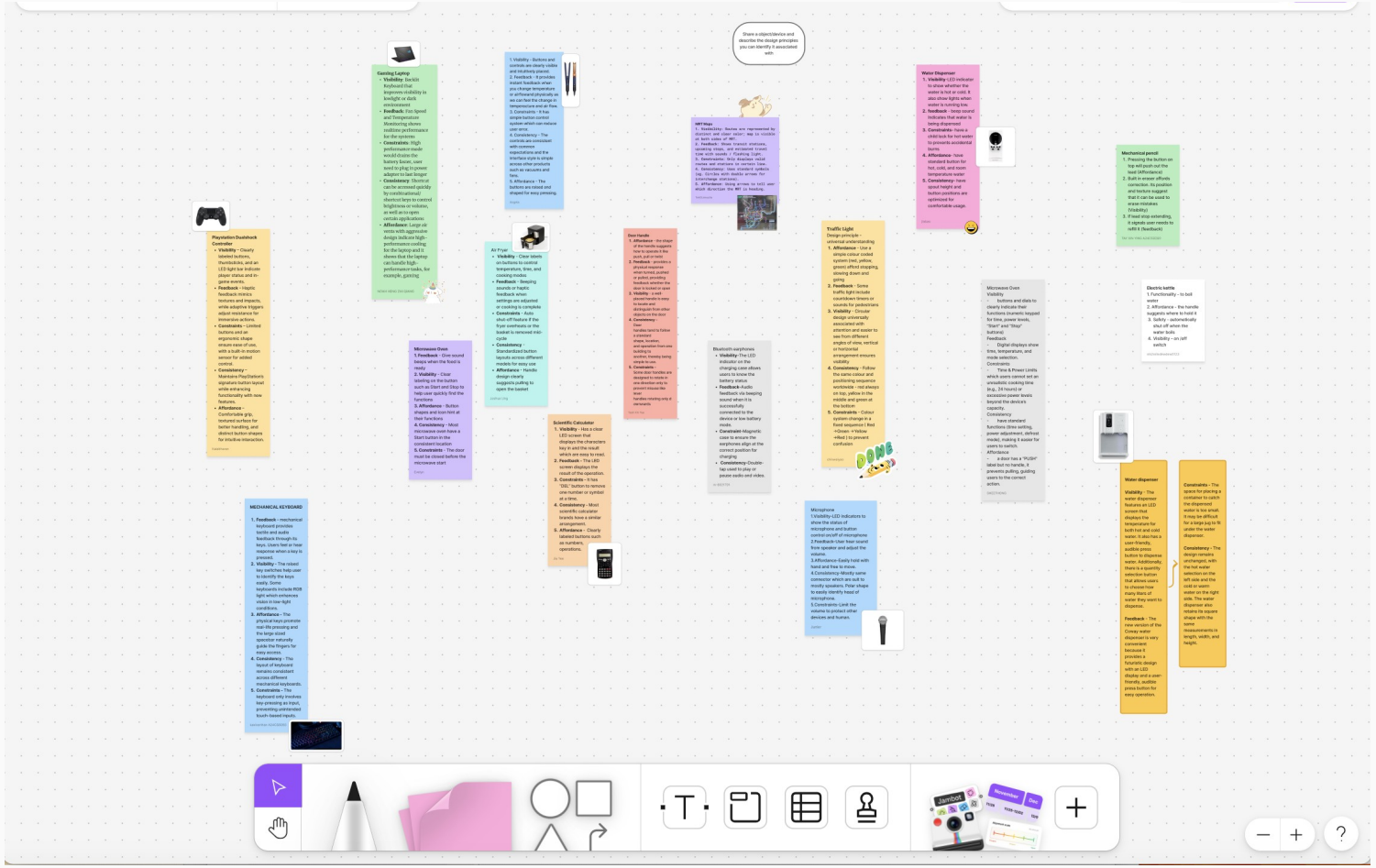
Online Collaborative Tools

- Now more commonplace in our everyday and working lives
  - e.g. the sharing of calendars, word processing, design and project management tools like Slack

- Places for sharing knowledge

- Tools like Miro, Figjam and Google Docs enable online collaborative creation and editing of reports, designs, etc.,

Collaborative Online Tools



Screen shot of a Figjam board used in an online class on Human-Computer Interaction where students upload their examples

CO-PRESENCE

What is Co-presence?

- Co-located groups who want to collaborate
- Many technologies have been designed to:
  - Enable groups to work, learn and socialise more effectively together
  - For example, tabletops, whiteboards, and public displays

Coordination Mechanisms

- When a group of people act or interact together, they need to coordinate themselves
  - For example, when playing football or navigating a ship

- To do so, they use:
  - Verbal and non-verbal communication
  - Schedules, rules, and conventions
  - Shared external representations

In Person Coordinating Mechanisms

- Talk is central
- Non-verbal also used to emphasize and as a substitute
  - e.g., nods, shakes, winks, glances, gestures, and hand-raising
- Formal meetings
  - Explicit structures such as agendas, memos, and minutes are employed to coordinate the activity

Awareness Mechanisms

- Involves knowing who is around, what is happening, and who is talking with whom (Dourish and Bly, 1992)
- Peripheral awareness
  - Keeping an eye on things happening in the periphery of vision
  - Overhearing and overseeing—allows tracking of what others are doing without explicit cues
- Situational awareness
  - Being aware of what is happening around you in order to understand how information and your actions will affect ongoing and future events
    - For example, air traffic control or an operating theatre

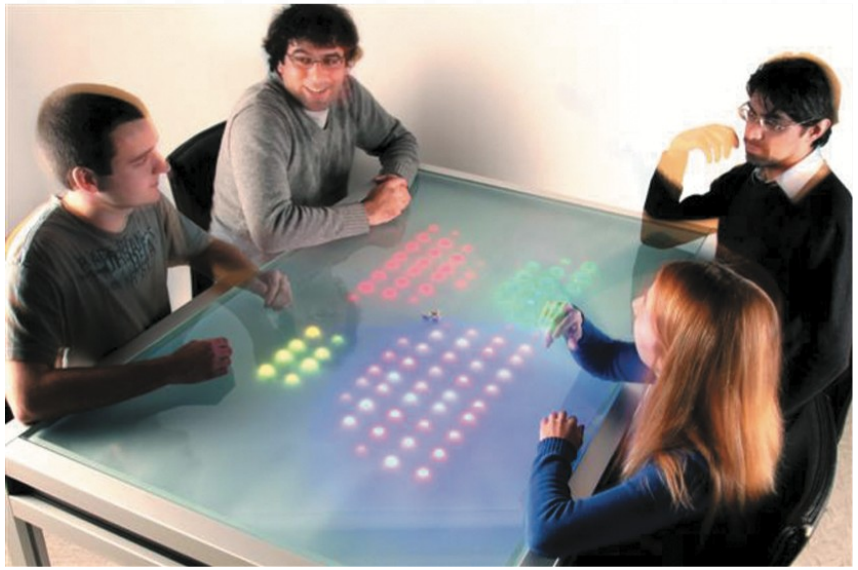
Shareable Interfaces

- Designed to capitalize on existing forms of coordination and awareness mechanisms

- Several studies investigating whether they help people to work together better, have found:
  - More equitable participation
  - More natural to work around
  - More comfortable sitting around a table than standing in front of a display

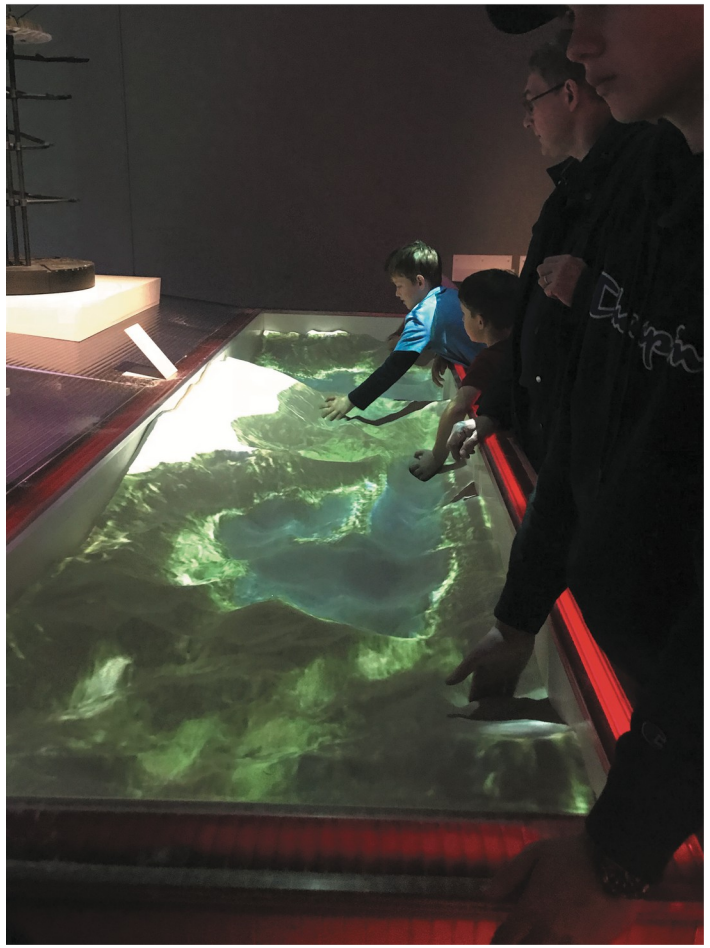
The Reflect Table

- LEDs lit up to reflect how much each member of the group spoke
- Used microphones in front of each individual to do this
- Study showed those who spoke the most changed their behaviour the most
- Those who spoke the least did not change their behaviour
- Why do you think this is?



Playing Together in Same Space

- Visitors using an AR sandbox at the V&A museum in London
- Visitors sculpt landscapes out of sand
- System reacts with changing superimposed digital colored landscape
- Enables creative forms of collaboration



PeopleLens: A head mounted device that enhances a blind child's spatial awareness of those around them

Video See PeopleLens in action: https://youtu.be/astmNfJHT4A.

SOCIAL GAMES

Social Games

- Designed to facilitate social interaction

- Can be played indoors or outdoors, with and without technology.
  - examples include board games, tabletop games, and videogames (such as Minecraft)

- Each player is aware of other players' presence, their actions and how well they are playing

Social Online Games

- Can involve creating a community, where competition, collaboration, peer pressure, rebellion, jealousy, and so on are all played out in their various forms
- Matt Richetti (2022) has proposed three heuristics for evaluating them:
  - Does the social game involve synchronous or asynchronous player interaction, where players either chat with each other or they take turns.
  - Is the social interaction symmetrical or asymmetrical, in the sense that does forming a relationship require input from both parties or can they be formed unilaterally by a single party?
  - Does the social relationship involve strong or weak ties in the sense of whether the relationships between players become deep and long lasting or are they transitory?
- By asking these questions, game designers can think about the kinds of social interactions they want to support

Summary

- Social interaction is central to our everyday lives
- Social mechanisms, like turn-taking, enable us to collaborate and coordinate our activities
- Keeping aware of what others are doing and letting others know what you are doing are important aspects of collaborative working and socialising
- Many technologies have been built to support telepresence, social presence, and co-presence
- Social online games media has brought about significant changes in how online games can support social interaction