Conversation: Behavioral Foundations

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CPSC 781: CSCW

Primary sources


Outline

- Introduction
- Face-to-face communication
  - Grounding
- Text-based communication
- Group working

Introduction

- Effective communication underlies collaborative work
- Face-to-face seen as ideal
- Dealing with loss of cues

Face-to-face communication

- Transfer effects and personal space
- Eye contact and gaze
- Gestures and body language
- Back channels, confirmation and interruption
- Turn-taking

Personal space

- Norms and expectations carried over
- Unease when broken
- Personal space distance - context dependent
- Direction, culture important
- Transfer to video, glass wall
Eye contact

- Sporadic eye contact important for engagement and social presence
- Linked to power and authority
- Using video channels
  - Problem with direct eye contact
  - Sense of social presence
- Eyegaze useful in establishing conversation focus

Gestures & body language

- Indicating items of interest
- Diectic references
- Groupware attempts

Back channels

- Nods, grimace, shrugs, small noises, etc.
- Feed info from listener to speaker
- Allows speaker to be vague, adding details until comprehension
- Despite loss in media, people cope with restrictions
- Must be given explicitly in text based conversations

Turn taking

- Process in which roles of speaker and listener exchanged
- Back channels used for interruption, graceful transition
- Speaker may explicitly offer floor
- Gaps of different seconds

Conversation

- Basic conversational structure
- Context
- Topics, focus and forms of utterance
- Breakdown and repair
- Speech act theory
- Constructing a shared understanding (grounding)

Basic structure

- Turn-taking
- Utterance
- Adjacency pair

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Brian: Do you want some gateau?
Allison: Is it very fattening?
Brian: Yes, very.
Allison: And lots of chocolate?
Brian: Masses
Allison: I'll have a big slice then
**Context**

- Used to disambiguate an utterance
- 2 types within conversation:
  - Internal: Dependence on earlier utterances
  - External: Dependence on the environment
- Diectic reference
- Indexicals

**TOPICS, FOCUS & FORMS OF UTTERANCE**

- Shared focus important
- Classifying utterances based on task-related conversation:
  - Substansive
  - Annotative
  - Procedural

**Breakdown and repair**

- Breakdown in conversation
- Correction after breakdown \(\rightarrow\) repair
- High level: Failure to maintain topic focus
- Low level: Incorrectly read gestures
- Deeper the breakdown, the longer it lasts, greater difficulty in recovery
- Problems in electronic communications \(\rightarrow\) reduced ability to recover

**Speech act theory**

- Concerned with utterances interacting with actions
- Illocutionary points
- Conversation for action

**Grounding**

- All collective actions are built on common ground
- Common ground cannot be updated without grounding process
- Grounding is collective process of mutual contribution and understanding
- Grounding is shaped by 2 factors:
  - Purpose
  - Medium

**Grounding cont’d**

- Two phases:
  - Presentation
  - Acceptance
- Need both for completion
- 2 complications:
  - Self-repairs
  - Embedding
Grounding cont’d

- Evidence
  - Negative
  - Positive
    - Acknowledgements
    - Relevant next turn
    - Continued attention
- Least collaborative effort
  - 2 maxims:
    - Quantity
    - Manner
  - Problems:
    - Time Pressure
    - Errors
    - Ignorance

Grounding and purpose

- People tend to establish collective purpose, i.e. gossip, instruct, learn
- Grounding should change with purpose
- 2 types of content:
  - References (establish referential identity):
    1. Alternative descriptions
    2. Indicative gestures
    3. Referential installments
    4. Trial references
  - Verbatim (register exact content):
    1. Verbatim displays
    2. Installments
    3. Spelling

Grounding and medium

- Ground with least effortful techniques
- Effort level changes with medium
- 8 constraints that a medium may impose:
  1. Copresence
  2. Visibility
  3. Audibility
  4. Cotemporality
  5. Simultaneity
  6. Sequentiality
  7. Reviewability
  8. Revisability

Media and constraints

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<th>Medium</th>
<th>Constraints</th>
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<td>Face-to-face</td>
<td>Copresence, visibility, audibility, cotemporality, simultaneity, sequentiality</td>
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Costs of grounding

- When a medium lacks characteristic, forces use of alternate techniques
- Why? Costs of various techniques change
  1. Formulation
  2. Production
  3. Reception
  4. Understanding
  5. Start-up
  6. Delay
  7. Asynchrony
  8. Speaker change
  9. Display
 10. Fault
11. Repair

Text-based communication

- Back channels and affective state
- Grounding constraints
- Turn-taking
- Context and deixis
- Pace and granularity
- Linear vs. hypertext
Group working

- Dynamics
  - Changing roles and relationships
- Physical layout
- Power structures