Interaction and communication 4

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Lecture 3

• Additional features of interactive alignment
• Parity of representation between production and comprehension
• Routinization of language during dialogue
(Today) Refinements and implications

- Automaticity of dialogue processing
- Implicit vs explicit common ground
- Dialogic continuum
- Implications for multi-party discussion
Why is automaticity important?

- Complex processes and judgments need to be automatized to become efficient
  - Driving - not aware of each motor activity
  - Person perception - automatic activation of stereotypes
- Social psychologists estimate that 95% of routine social behaviors are automated
Graded automaticity

• Bargh’s (1994) *four horsemen of automaticity*
  
  – *Awareness* of controlled processes
  – *Intentional* instigation of controlled process
  – *Efficiency* of automatic processes
  – *Controllability* (i.e., interruptibility) of controlled processes
Interactive Alignment Model

Automatic alignment channels
The *four horsemen* applied to alignment channels

- **Awareness**
  - Evidence for subliminal priming
- **Intentionality**
  - Priming is extremely robust
- **Efficiency**
  - Alignment is related to linguistic imitation
  - Imitation is extremely efficient
    - Closer imitation in fast than slow shadowing (Goldinger, ‘98)
    - Imitation as fast as simple reaction time (Fowler et al. 2003)
The *four horsemen* applied to alignment channels

- Controllability?
  - Alignment may be affected by social factors
  - Increased alignment with increased drive to affiliate (Giles & Powesland, 1975)
  - Increased alignment between interlocutors compared to side participants (Branigan et al. 2001)
  - Similar results for imitation of incidental movements (Lakin & Chartrand, 2003)
Controlling alignment channels

- Affected by attention?
  - Greater attention greater alignment?
  - Greater arousal greater alignment?

- Subject to conscious control?
  - Conscious inhibition of alignment channels
  - *Baby vs fetus* in abortion trial (Danet, ‘80)
  - Embedded corrections (Jefferson, ‘87)

See you for lunch -- yeah it’s my dinner time
Conclusion

• Alignment channels are automatic, only subject to effortful conscious control

• Automatic alignment channels reduce the decision space in language production
  – Fixing syntactic parameters, reducing lexical search etc.
  – Creating long-term routines
Common ground and *implicit common ground*

- Alignment establishes *implicit common ground*
- Full common ground (CG) depends on separate models of yourself and your interlocutor
- Implicit common ground (ICG) reflects co-activation of linguistic and non-linguistic information due to interactive alignment
- ICG established automatically, CG requires inference
Focused situation model and focused linguistic knowledge

“That right indicator you’ve got”

Activated Linguistic Knowledge

Lexical/Phonological/Semantic
/right/ --- “directional term, on the right-hand side”
/extreme/ ---- “intensifier”
/box/ ----- “square object”
/the/ ----- “definite determiner”
…… etc.

Syntactic
Construction = NP
…… etc.

Spatial
Viewer-centred frame of reference

Situation Model
Aligned situation model and background knowledge
Implicit common ground & interactive alignment

- ICG represented by the aligned situation model and background knowledge
- Interlocutors treat what is in focus for them as in focus for their participant
- When well aligned $\text{ICG} \approx \text{CG}$
- Interactive alignment ensures that this is generally the case
Other factors contribute to ICR

- **Personal common ground** (Horton&Gerrig, in press)
  
  A- I mean I can’t even study with Patrick because I’ll sit and read stuff.
  
  B- Yeah…
  
  B-So you guys are still seeing each other?

- **Around 90% bare name intros in CallHome corpus**

- **Explained by ‘memory resonance’**
  
  - Interlocutor acts as a cue to make common memories more accessible (hence they become part of ICR)
Other factors (2)

• Physical co-presence
• Shared physical environment affords devices for aligning attention
  – gesture and deixis (*this*, *that*, *here*, *like this*)
  – Attending to interlocutors direction of gaze
  – Automatic alignment of attention
    (Langton & Bruce, 1999; Schuller & Rossion, 2001)
Monologue vs dialogue

• Dialogical continuum

• Implications for group discussion
Dialogic continuum?

- Different speech-exchange systems (Sacks et al. ‘74)
  - Personal conversation, interview (diagnostic, interrogational, job interview etc.), cross-examination....

- Different settings
  - Mediated communication, multi-party discussion....
Joint Action - degrees of coupling

- Golf
- snooker
- Dancing
- Kissing

Low

Reading

High

Conversation
Dialogical continuum reflects degree of coupling

- Mediated communication (e.g., video conference)
  - Less repair, longer turns, poorer latching etc. for VM (Doherty-Sneddon et al. ‘97; Sellen, ‘95)
  - VM is less dialogical than face-to-face
Group discussion: interactive alignment or autonomous transmission?

• It all depends on size of group

• Size affects the pattern of influence within groups
Group Size & Communication

• Large groups
  – Long contributions, few interruptions
  – Autonomous transmission?

• Small groups
  – Short contributions, more interruptions, more ABA speaker patterns
  – Interactive alignment?
‘Big Brother’ size & turn length

R = .59
Autonomous broadcast model

- Serial monologue sequence
Interactive alignment model

- Dyadic discussion sequence

![Diagram of interactive alignment model]
Model Predictions (Who influences whom?)

• Broadcast Model
  – Dominant speaker
  – Group members should be influenced most by those who speak the most.

• Alignment Model
  – High interactant partner
  – Group members should be influenced most by those with whom they interact the most
Group Discussion Experiment
(Fay, Garrod & Carletta, 2000)

Who influences whom experiment in small and large groups

Read Plagiarism Scenario

Rank 13 Key Issues
e.g. Severity of plagiarism,
Prior record of student...

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Group Discussion
20 minutes

Rank 13 Key Issues
e.g. Severity of plagiarism,
Prior record of student...

Rank 13 Key Issues
e.g. Severity of plagiarism,
Prior record of student...

Rank 13 Key Issues
e.g. Severity of plagiarism,
Prior record of student...
Interaction measures

![Bar chart showing interaction measures for Group 5 and Group 10. The chart includes categories for turn length, interruptions%, and ABA%. Each category has two bars, one for Group 5 and one for Group 10, with colors indicating the groups.](image-url)
Ranked contributions
Who influences whom?

• High interaction vs. low interaction pairings
  – Pairwise correlation with 2 highest vs 2 lowest
  – Groups of five all, groups of ten top five

• Dominant vs. non-dominant speaker
  – Groups of five & groups of ten pairwise correlation with 1st vs. 5th highest contributors
Effect of High/Low Interactants

- Baseline
- High Interaction
- Low interaction
Effect of Dominant Speaker

Interaction and communication

Baseline
Dominant
Non-dominant

Corrected $r'$

11/2/05

Group 5
Group 10
Group decision conclusions

- Mode of language processing is affected by size of group
- In turn this affects the interpersonal influences within the group

- Large groups - Autonomous transmission
  - Overordinate influence of dominant speaker
- Small groups - Interactive alignment
  - Overordinate influence of high interaction partners
Summary & Conclusions

• Dialogue vs monologue processing
  – Interactive alignment vs Autonomous transfer

• Influence in group discussion depends on the nature of the language processing
  – Interactive alignment (small groups)
  – Autonomous transfer/broadcast (large groups)
What is a large group?
Seating & Interaction

![Bar chart showing the proportion of interactions for different group sizes and visibility conditions. The chart displays the proportion of interactions on the y-axis and group size on the x-axis. The visible group (red bars) shows a higher proportion of interactions compared to the not visible group (pink bars) for both Group 5 and Group 10. The error bars indicate the variability in the data.](chart.png)
Summary and conclusions

• Interactive alignment is an automatic process
• Interactive alignment promotes an implicit common ground
• Dialogue-monologue lie on a continuum
• Interactive alignment has implications for group discussion and decision making
Next Week

• Is interactive alignment only linguistic?
• Signs and other sign systems
• Graphical signs and graphical communication
• Community effects in graphical communication