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

Interaction and communication

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
  - *Controllabity* (i.e., interruptibility) of controlled processes

Interactive Alignment Model
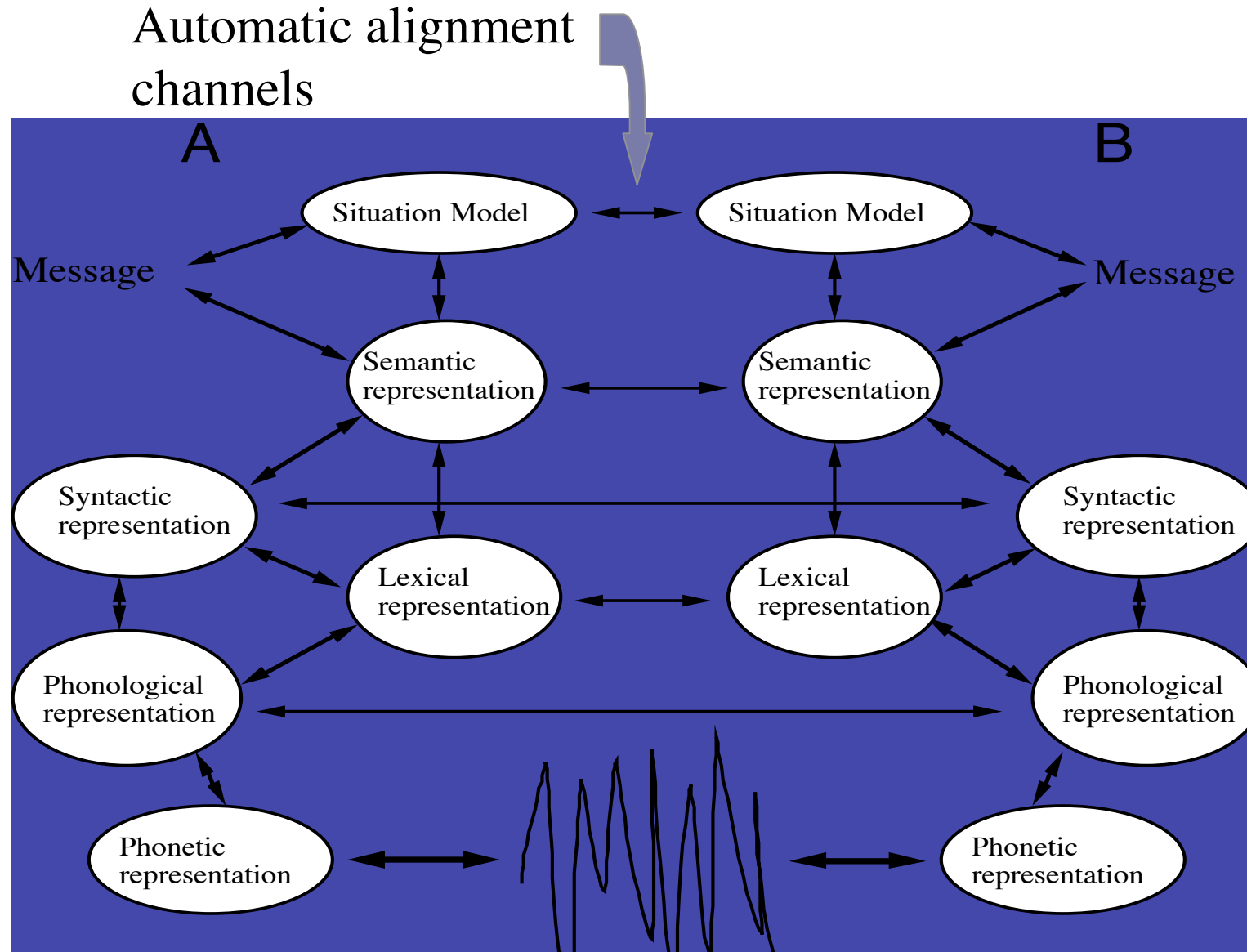
The *four horsemen* applied to alignment channels

- 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)
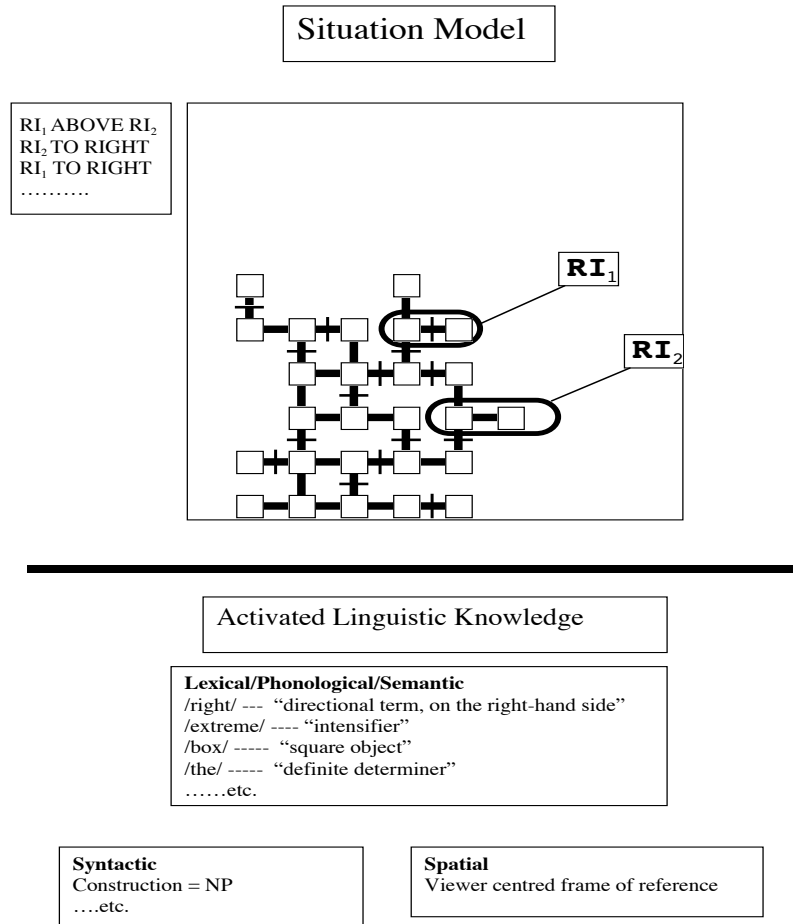 - *See you for lunch -- yeah it's my dinner time*

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
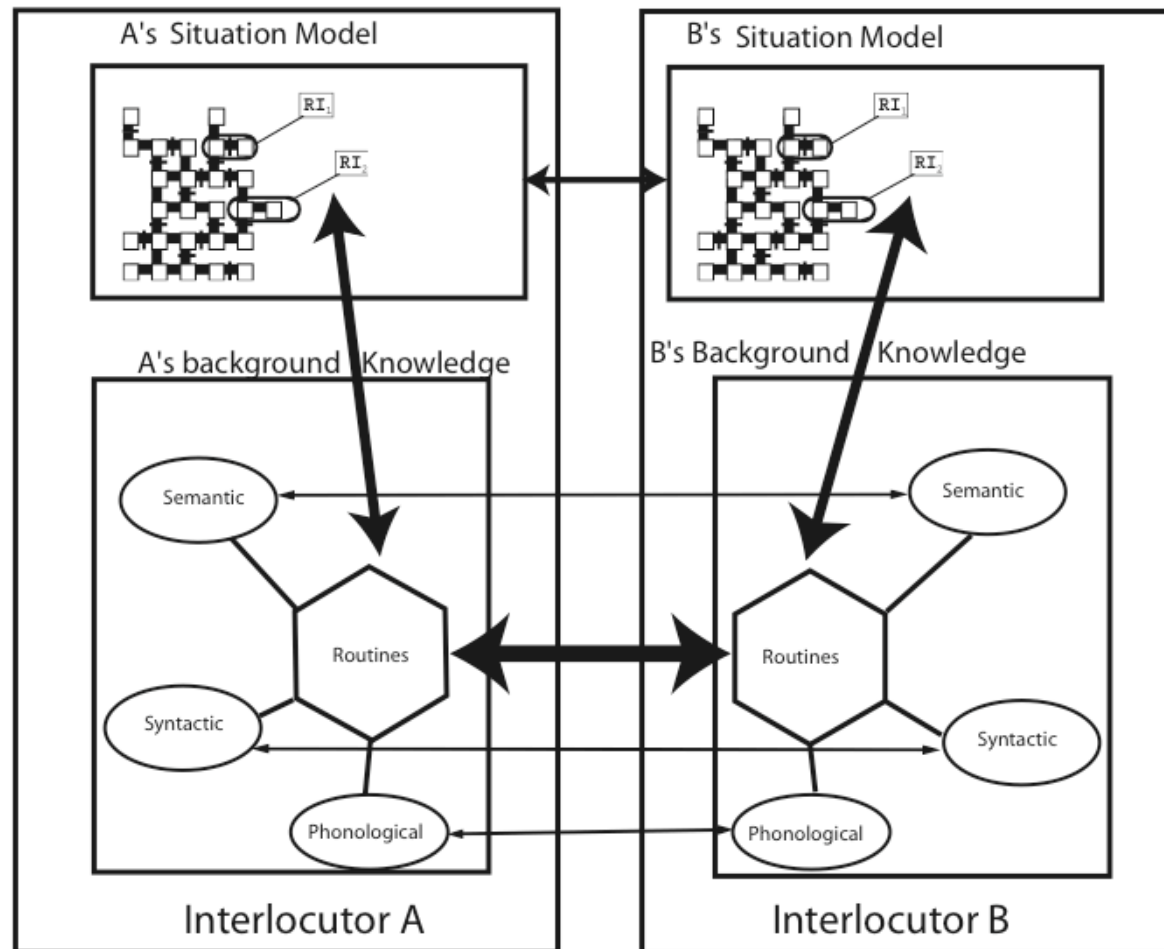
Common ground and *implicit common ground*

- 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

Situation Model

RI$_1$ ABOVE RI$_2$
RI$_2$ TO RIGHT
RI$_1$ TO RIGHT
………..

RI$_1$

RI$_2$

"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

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 **ICG ≈ 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   High

Reading   Conversation

Interaction and communication
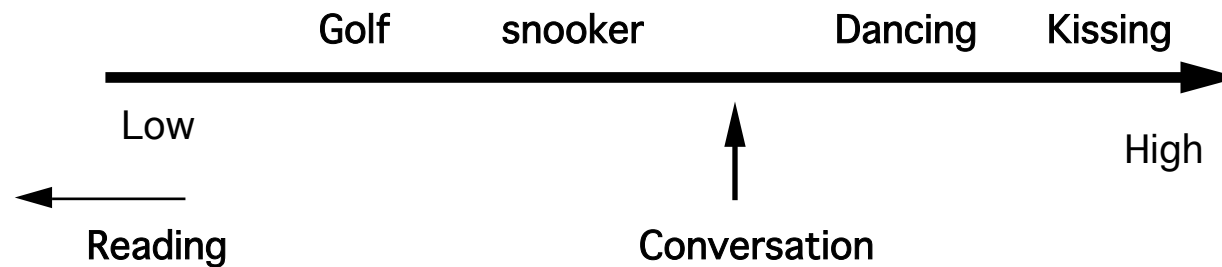
Dialogical continuum reflects degree of coupling

- 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

Interaction and communication

Group Size & Communication

- Large groups
  - Long contributions, few interruptions
  - Autonomous transmission?
- Small groups
  - Short contributions, more interruptions, more ABA speaker patterns
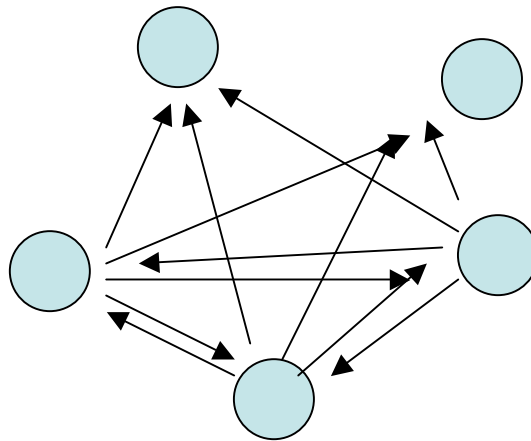 - Interactive alignment?

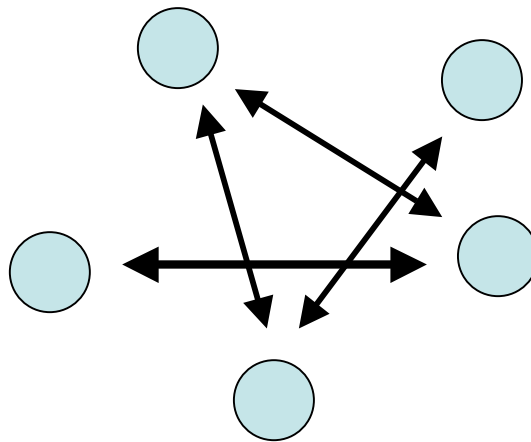# 'Big Brother' size & turn length

R = .59

Interaction and communication
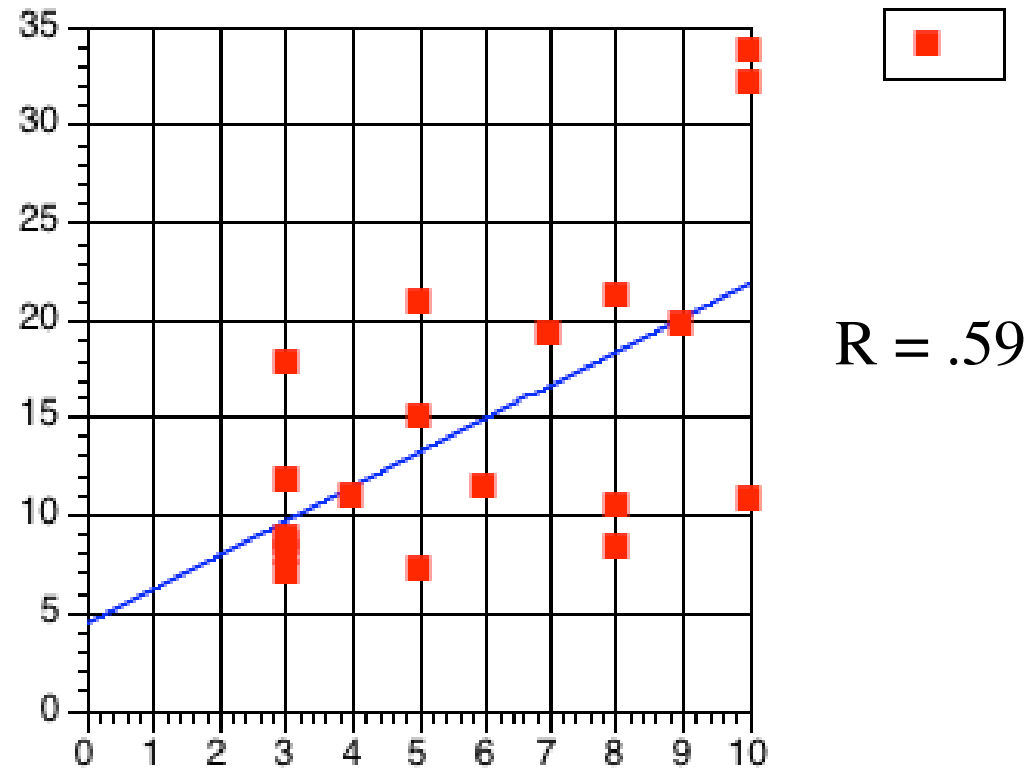
Autonomous broadcast model

- Serial monologue
  sequence

Interaction and communication
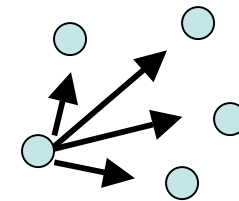
Interactive alignment model

- Dyadic discussion
  sequence

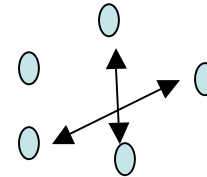# Model Predictions (Who influences whom?)

- **Broadcast Model**
  - Dominant speaker
  - Group members should be influenced most by those who speak the most.
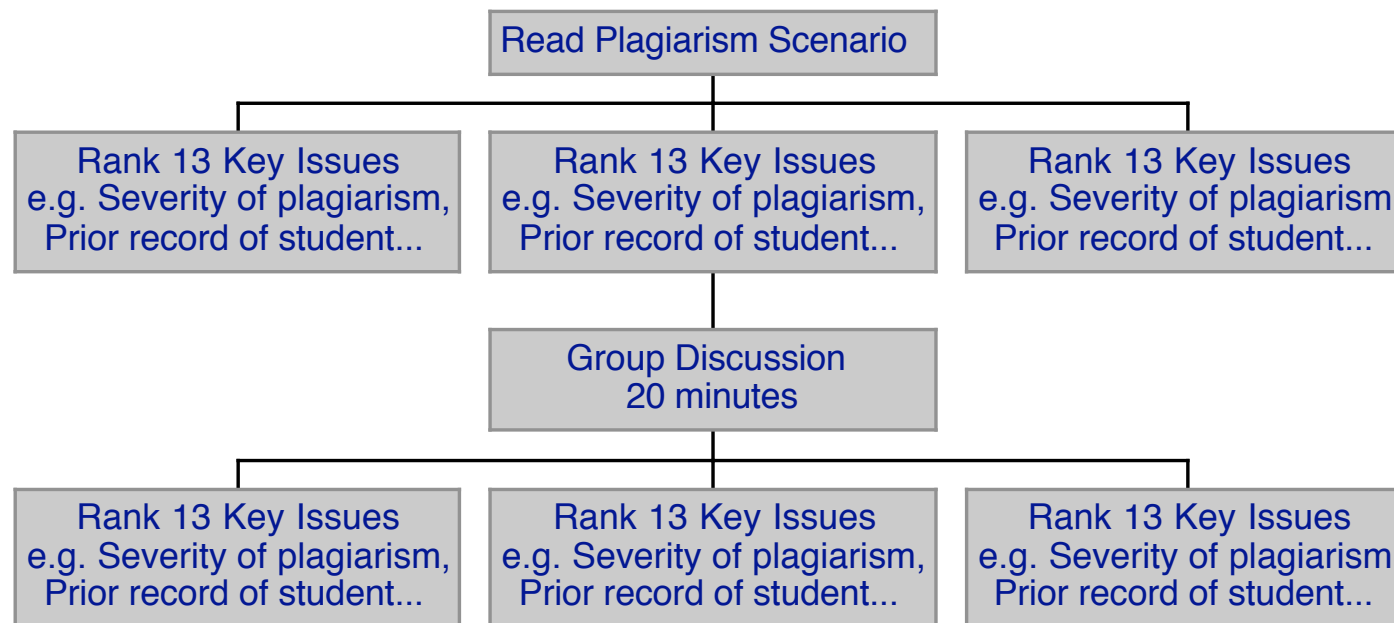
- **Alignment Model**
  - High interactant partner
  - Group members should be influenced most by those with whom they interact the most
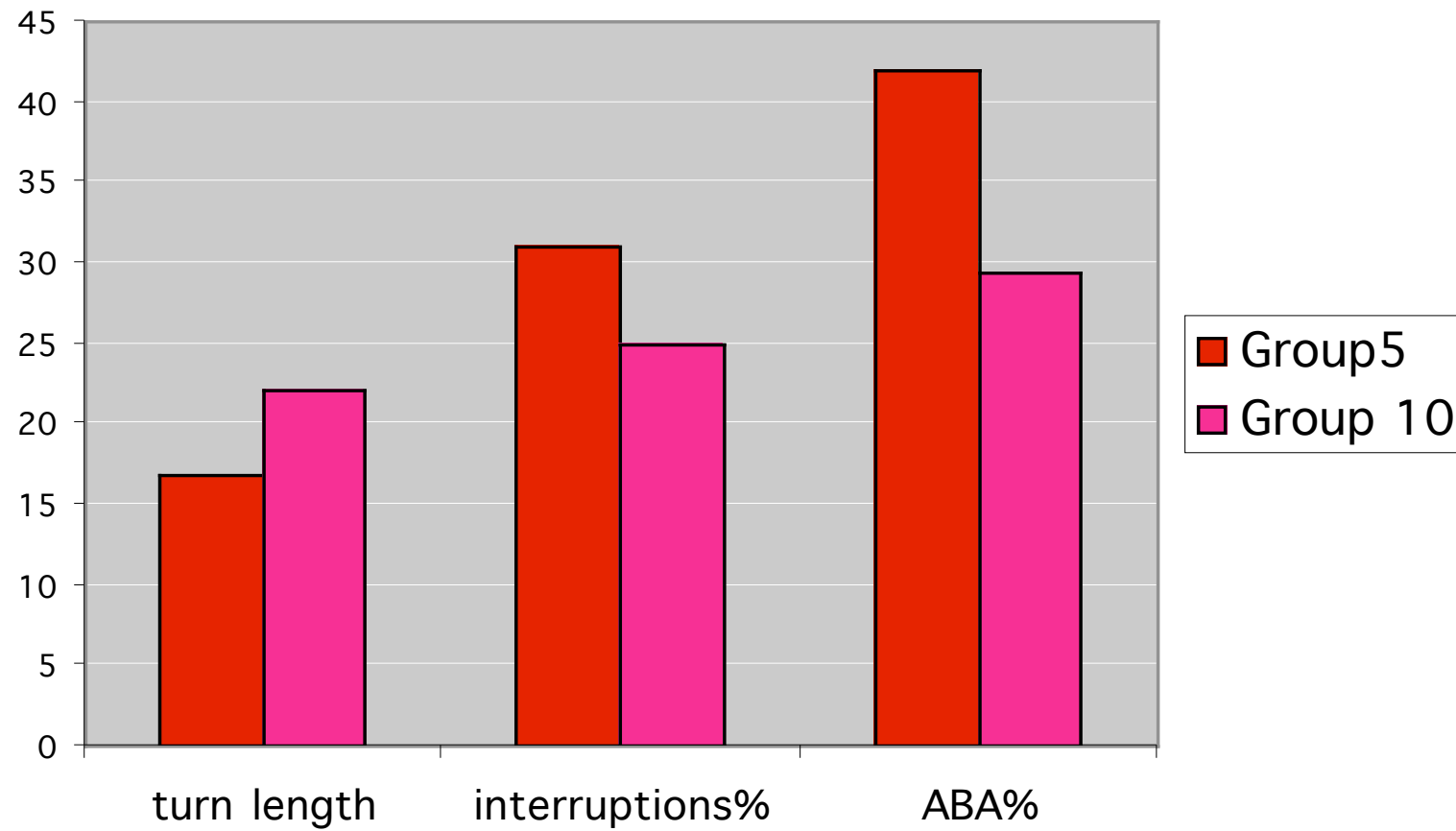
Group Discussion Experiment
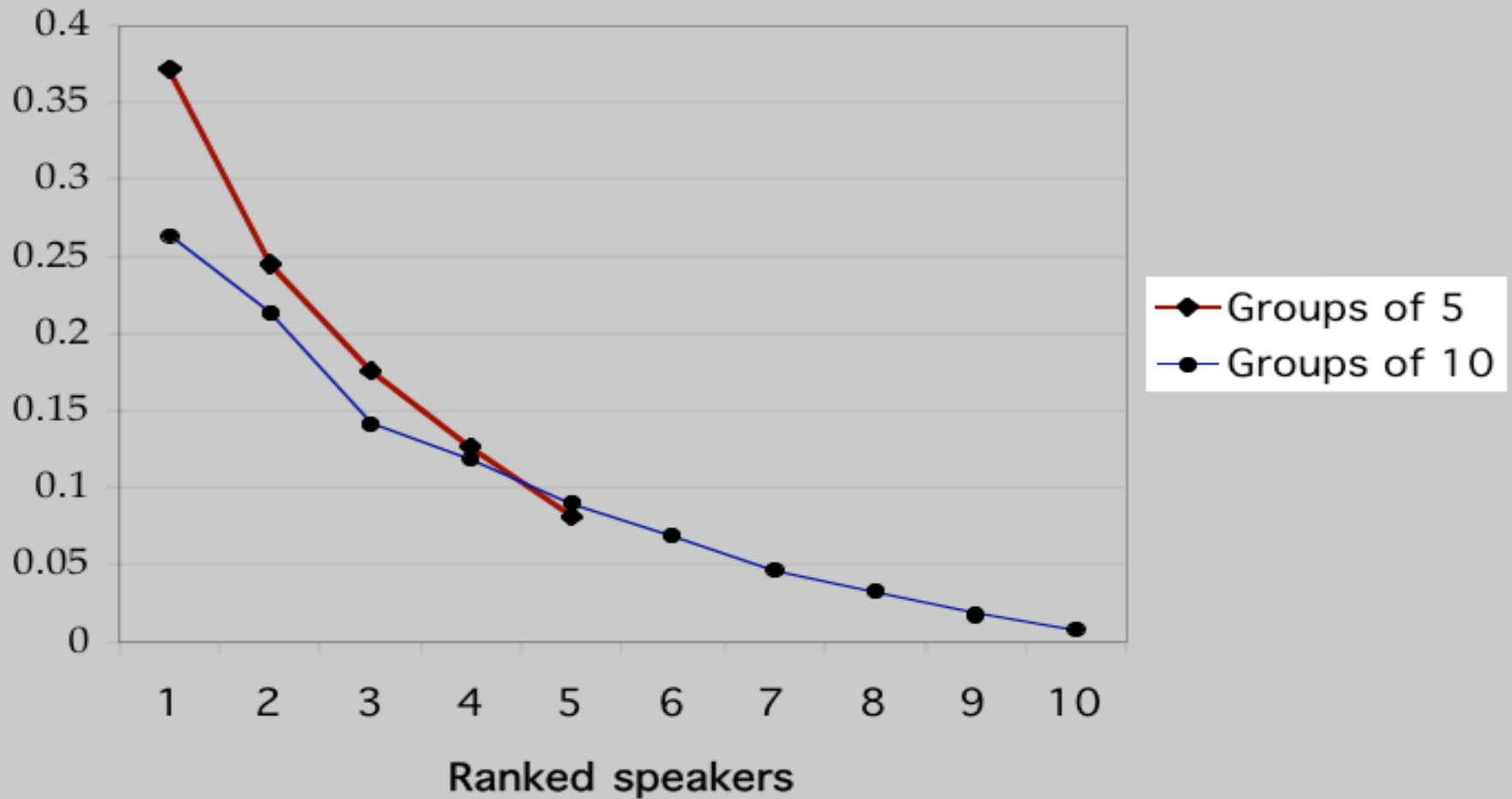
(Fay, Garrod & Carletta, 2000)

Who influences whom experiment in small and large groups

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                    ┌─────────────────────────┐
                    │  Read Plagiarism Scenario│
                    └─────────────────────────┘
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| 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... |

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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... |

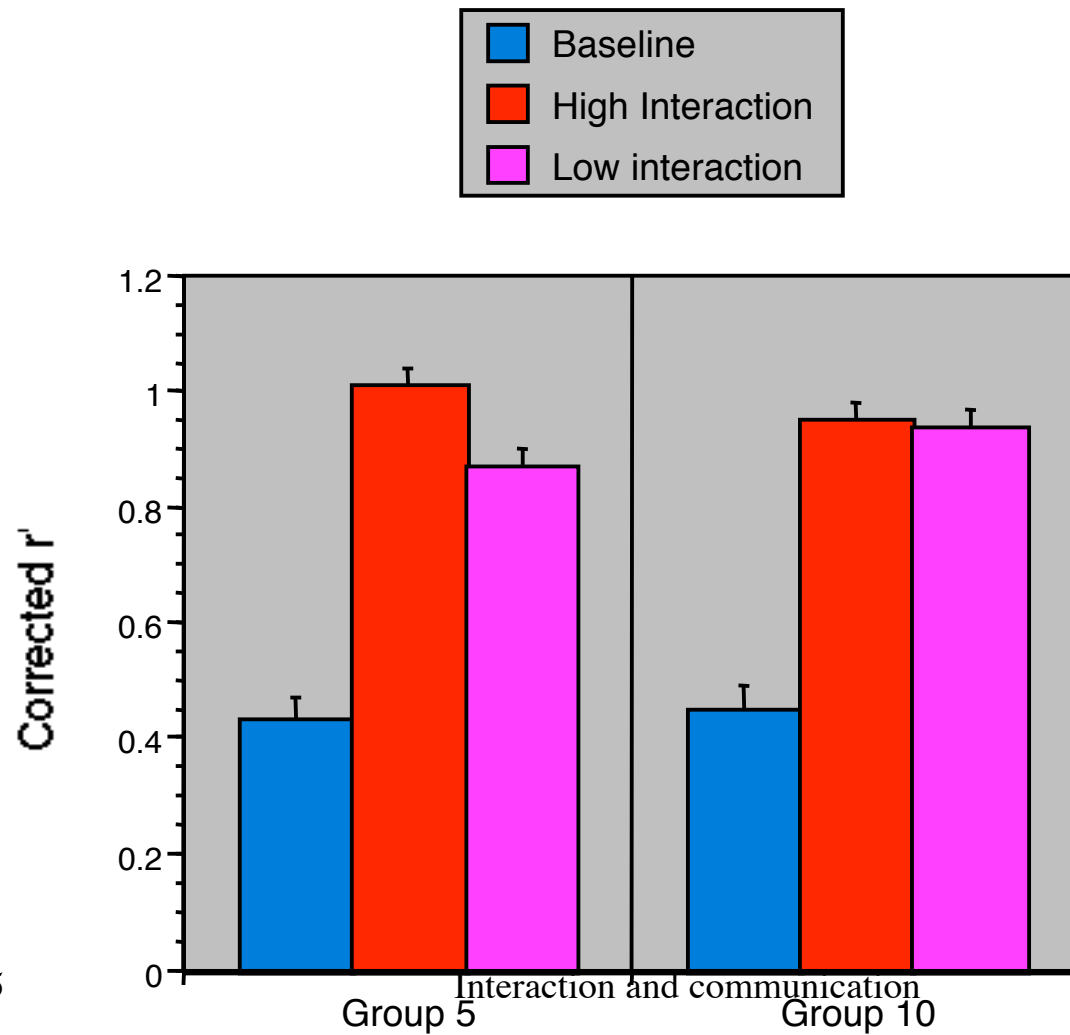*Psychological Science*(2000).

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
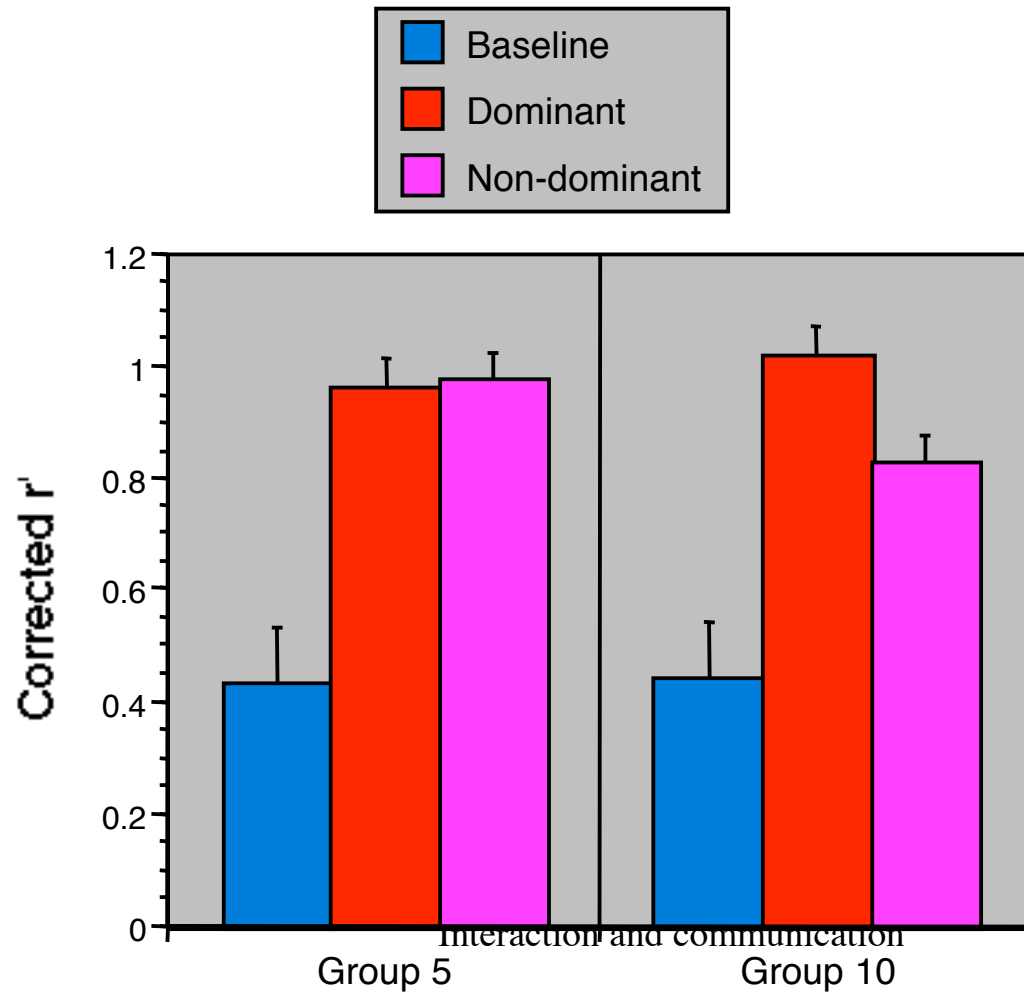
Effect of High/Low Interactants

Legend:
- Baseline (blue)
- High Interaction (red)
- Low interaction (magenta)

Y-axis: Corrected r'

X-axis: Interaction and communication

Group 5   Group 10

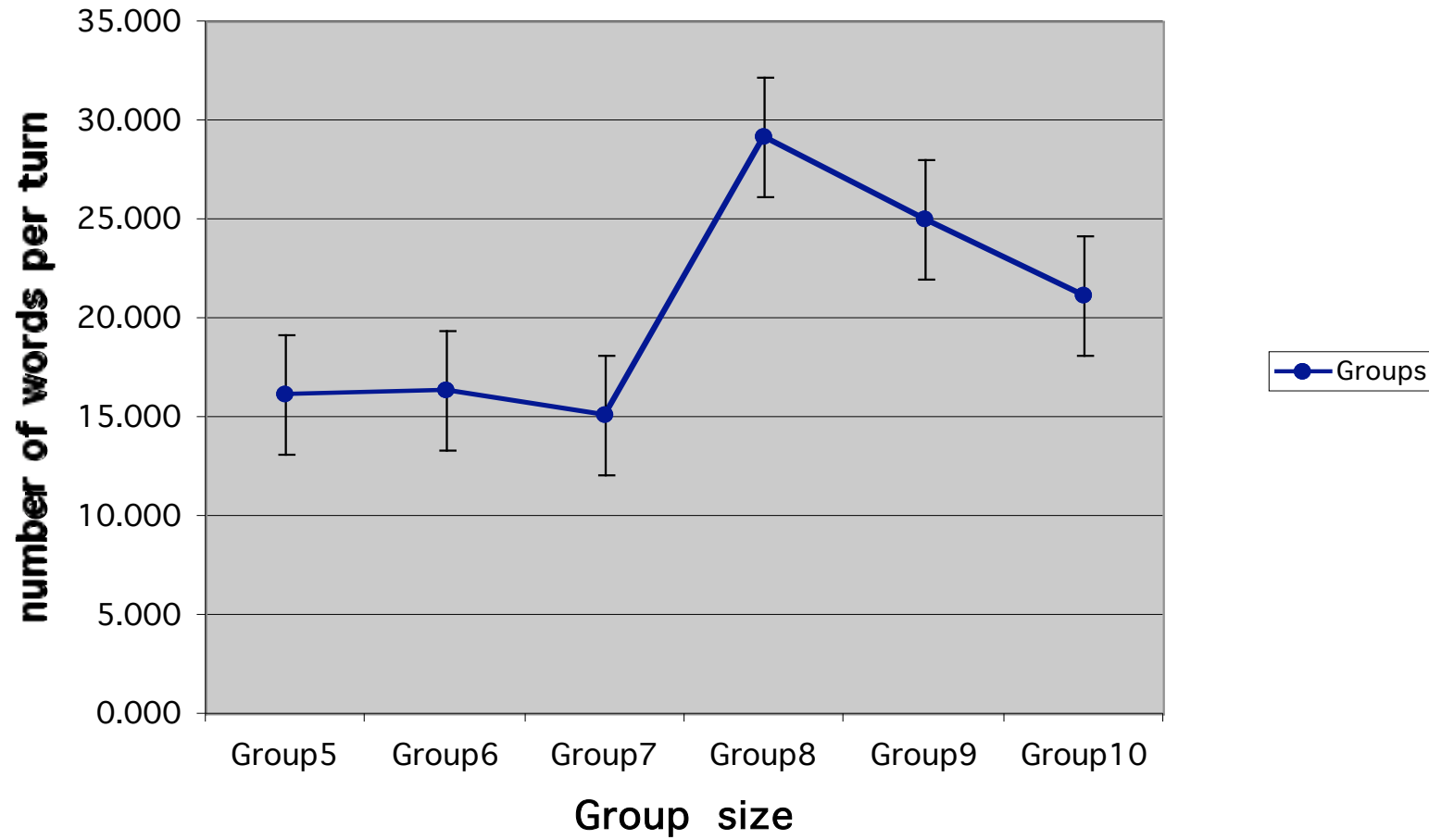11/2/05

Effect of Dominant Speaker

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)
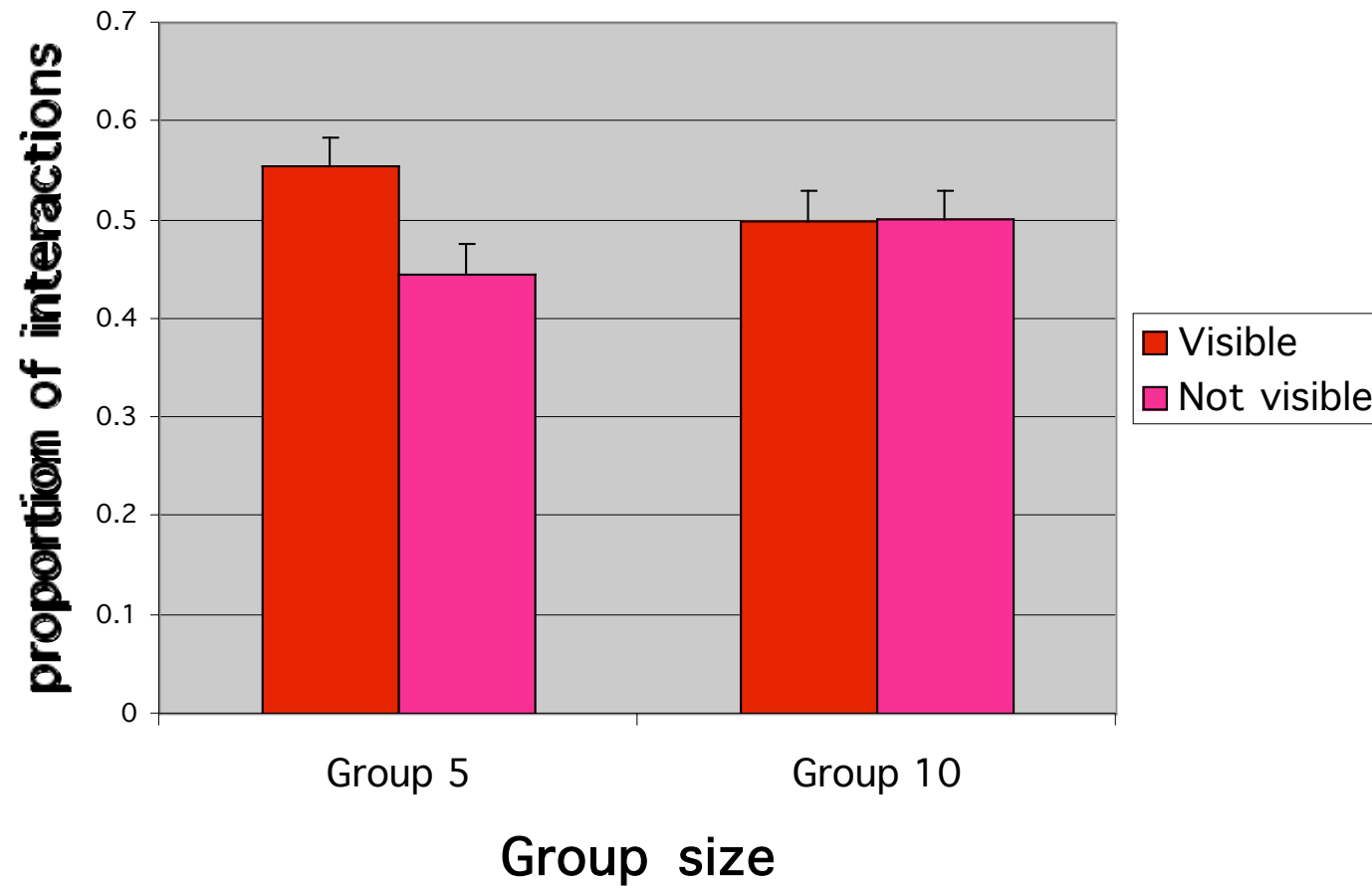 - Autonomous transfer/broadcast (large groups)

What is a large group?

Interaction and communication

Seating & Interaction

Interaction and communication

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