Metaphoric gesture primes spatiotemporal metaphor use

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Background

- Metaphorical relationship between space and time
  - Self moving through time (*we’re approaching the deadline*)
  - Time moving past stationary self (*the deadline is approaching*)

- Conceptual metaphors are grounded in physical experience

- The now-famous ambiguous question
  
  *Next Wednesday’s meeting has been moved forward two days. What day is the meeting on now?*

**Friday: Self moving**
- Being on a plane
- (Thinking about) moving across a room
- Reading the sentence “*The road goes all the way to NY*”

**Monday: Time moving**
- Waiting for a plane
- (Thinking about) moving an object toward you
- Reading the sentence “*The road comes all the way from NY*”
Gesture and Metaphor

- Are gestures similar to other motion stimuli?
  - Listeners rarely intentionally attend to gesture

- How does mental simulation interact with viewpoint?
  - Most conversations are face-to-face
  - How do listeners interpret gestural motions?
    - Maintain viewpoint, or
    - Take their interlocutor’s viewpoint

- Two questions:
  - Does gesture induce spatiotemporal metaphor?
  - Do listeners simulate experience from their interlocutor’s viewpoint?
Study Design

- 120 participants in Baltimore, MD (M=51; F=69)
- Elicited answer to the ambiguous test question
  - Gesture away from speaker
  - Gesture towards speaker
  - No gesture (control)
- Conversational viewpoint
  - Half in shared viewpoint (side by side)
  - Half in opposing viewpoint (face to face)
Results

- Collapsed viewpoint conditions
- Helmert-coded multiple logistic regression
- “Towards” gesture more likely to elicit Monday
  - Less likely to elicit Friday, odds ratio = -1.61
- Gesture sig. improved fit of model \((p = 0.01)\) due to gesture direction and presence/absence
  - No gesture more likely to elicit Friday, odds ratio = 1.32
- Overall prediction accuracy 77.5%
Discussion

- Conclusions on gesture
  - A semantically meaningful part of the conversation
  - Influence metaphor use
    - Motion in conversational space can induce experiential simulation
  - Listeners maintain their interlocutor’s viewpoint
    - Simulating from speaker’s experience

- Future directions
  - Conflicting metaphors in speech and gesture
  - Cross-metaphor and cross-linguistic studies
    - Restricted to English discourse, or a broader cognitive phenomenon?
Thank you!

References


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