

# Can viewpoint and gesture prime spatiotemporal metaphor use?: The function of gestural metaphoric iconicity in resolving linguistic ambiguity

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# Background

- Metaphorical relationship between space and time
  - Ego-based perspective (*we're approaching the deadline*)
  - Time-based perspective (*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: Ego-based

- Being on a plane
- Reading the sentence "*The road goes all the way to NY*"
- (Thinking about) moving across a room

## Monday: Time-based

- Waiting for a plane
- Reading the sentence "*The road comes all the way from NY*"
- (Thinking about) moving an object toward you

# Gesture and Metaphor

- Metaphoric gestures
  - Complement to speech content
  - Ambiguous speech can be resolved by gestural content
- Are gestures similar to other motion stimuli?
  - Within the conversational setting
  - Listeners rarely consciously attend to gesture
  - Not all gestures are not iconic (in the narrow sense)
- How does viewpoint affect mental representation?
  - Most conversations are face-to-face
  - How do listeners interpret gestural motions?
    - Maintain own viewpoint, or
    - Take their interlocutor's viewpoint
- Two questions:
  - Does gesture influence spatiotemporal metaphor use?
  - Do listeners simulate experience from their interlocutor's viewpoint?

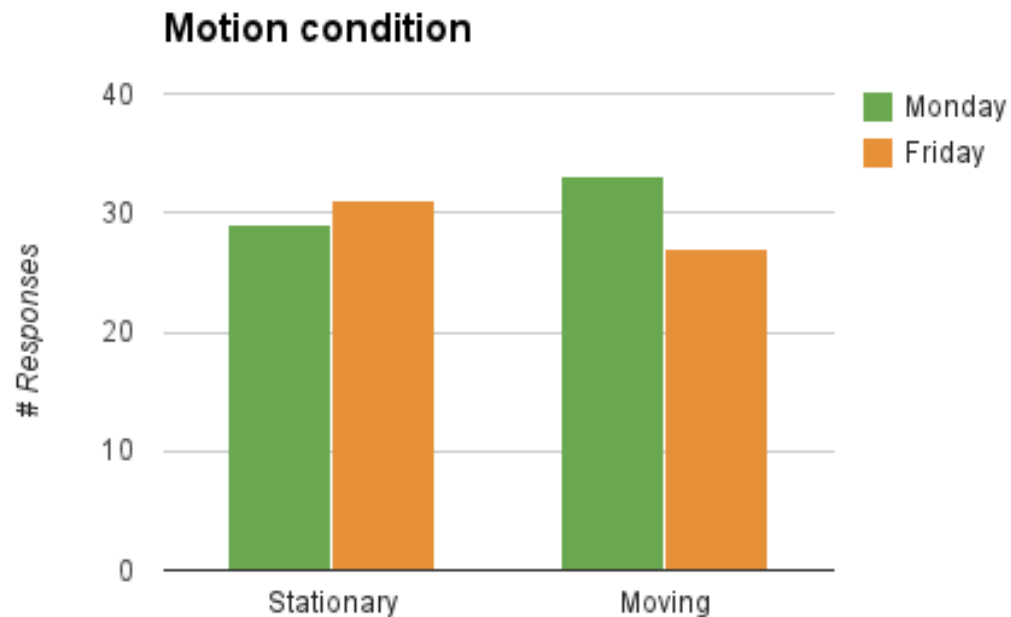
# Study Design

- 120 participants in Baltimore, MD (M=51; F=69)
- Elicited answer to the ambiguous test question

*Next Wednesday's meeting has been moved forward two days.*  
*What day is the meeting on now?*

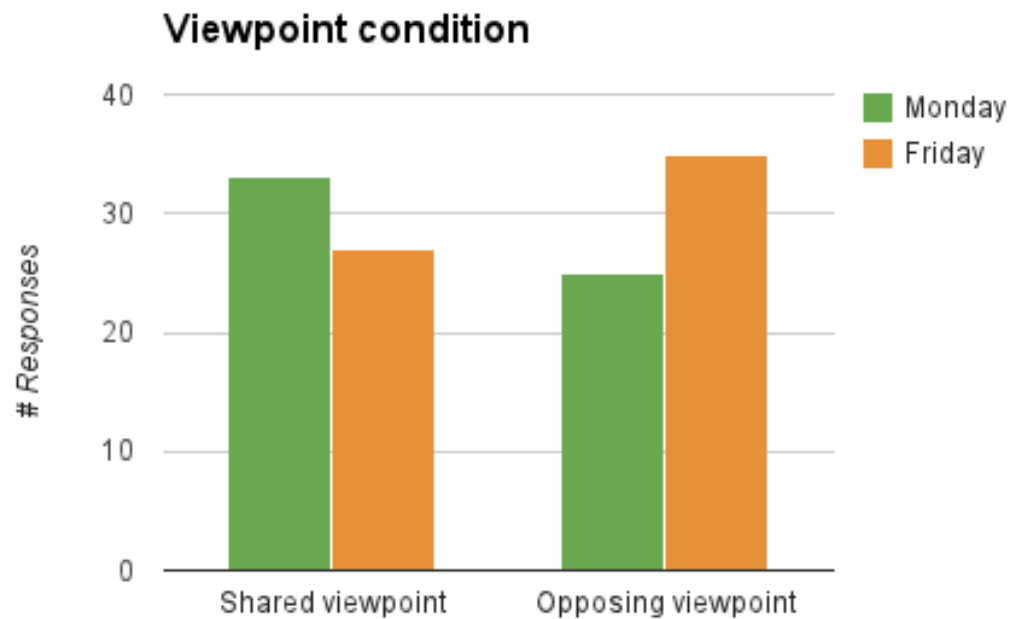
  - Gesture away from speaker: **Friday**
  - Gesture towards speaker: **Monday**
  - No gesture (control): **more Fridays**
- Current physical experience
  - Half in motion condition (e.g., on campus shuttle)
  - Half in stationary condition (seated in offices)
- Conversational viewpoint
  - Half in shared viewpoint (side by side)
  - Half in opposing viewpoint (face to face)

# Results



- Helmert-coded multiple logistic regression
- No significant effect of motion condition

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- 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

- Current physical experience
  - Doesn't effect spatiotemporal metaphor use (when not actively attended to)
- Listener viewpoint or speaker viewpoint?
  - Maintained same viewpoint in both conditions
  - Monday responses in "towards" condition
    - Time motion metaphor from speaker's viewpoint
    - Simulating speaker's experience
- What about the "away" gesture?
  - Resembles common pragmatic gesture
- What does this tell us about the effect of gesture?



# Conclusion

- Listeners maintain their interlocutor's viewpoint
  - Mentally simulating speaker's experience
- Gestures...
  - are a semantically meaningful part of the conversation
  - can influence metaphor use
    - Motion in conversational space can influence experiential simulation

## Friday: Ego-based

- Being on a plane
- Reading the sentence *"The road goes all the way to NY"*
- (Thinking about) moving across a room

## Monday: Time-based

- Waiting for a plane
- Reading the sentence *"The road comes all the way from NY"*
- (Thinking about) moving an object toward you
- **Seeing a gesture towards the speaker**

# Future Directions

- Follow-up on the “away” gesture
- Conflicting metaphors in speech and gesture
- Cross-metaphoric and cross-linguistic studies
  - Other spatial metaphors in speech and gesture
  - Other languages with different gestural styles
    - Restricted to English discourse, or a broader cognitive phenomenon?

# Thank you!

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