Conveying Speaker Reliability to Affect Contrastive Inferences

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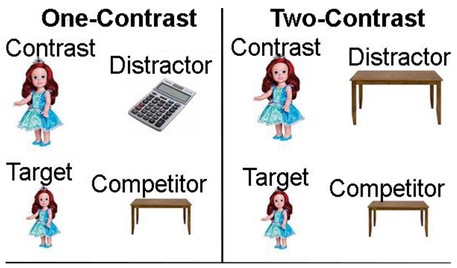
Introduction

- How does the perceived reliability of a speaker affect our online processing of their utterances? And what is sufficient to affect our perception of their unreliability?
- Modified and extended replication of Grodner & Sedivy (2011) [1] - measure **visual fixations** to items in scene **as instructions are heard**
  - confirm **effect of speaker reliability on contrastive inferences**
  - test whether **bottom-up information alone sufficiently conveys speaker reliability**

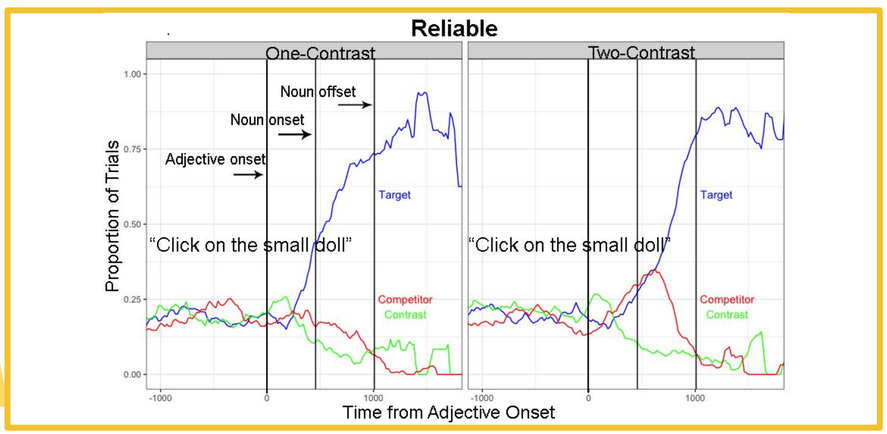
Methods

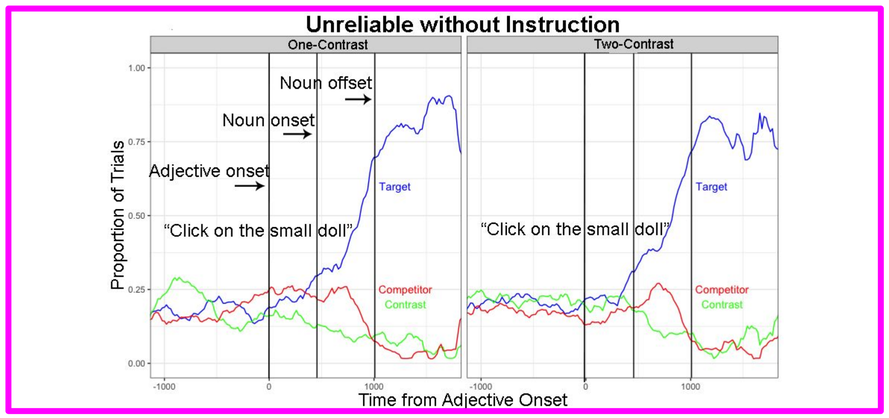
Condition	Instruction (top-down)	Task (bottom-up)
	Normal (control): ● "testing communication" **Impaired:** ● "testing impairments"	**Normal (control):** ● All trials were in standard format **Impaired:** ● Critical trials were standard format; Filler trials were in various unreliable structures (over- / under-described or mislabeled)
Reliable Speaker	Normal	Normal
Unreliable without Instruction	Normal	Impaired
Unreliable Instruction	Impaired	Impaired

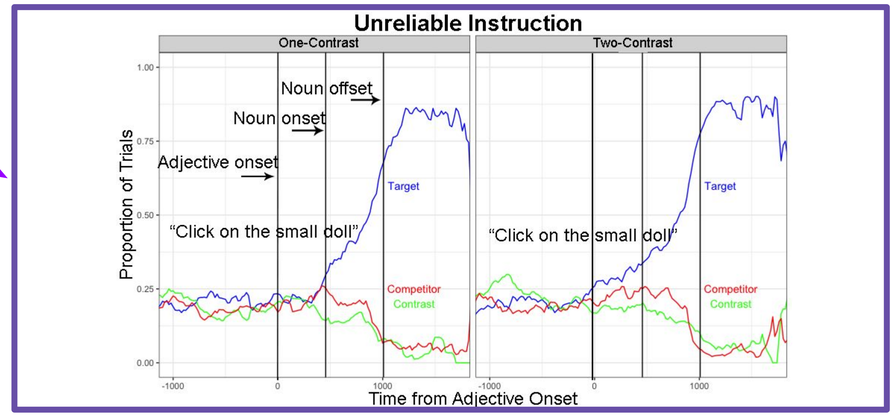
Contrastive Inferences



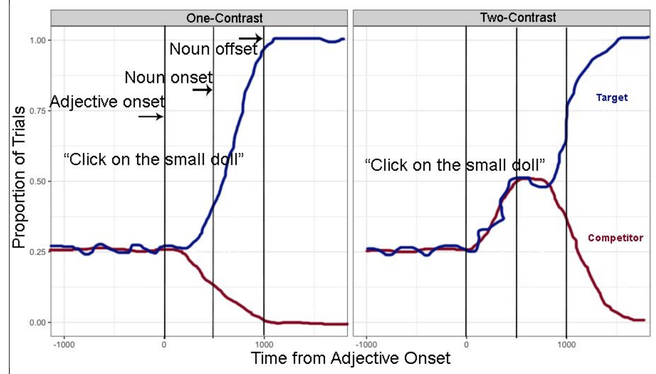
- **Speaker**: "Click on the small…"
- **Listener**: assumes "small" distinguishes referent from another object of same type; can preemptively determine referent if only one contrasting set is present
- ½ of trials were **one-contrast** to elicit contrastive inferences ("small" → small doll)
- ½ were **two-contrast** to act as control to preclude contrastive inferences ("small" → small doll OR small table)





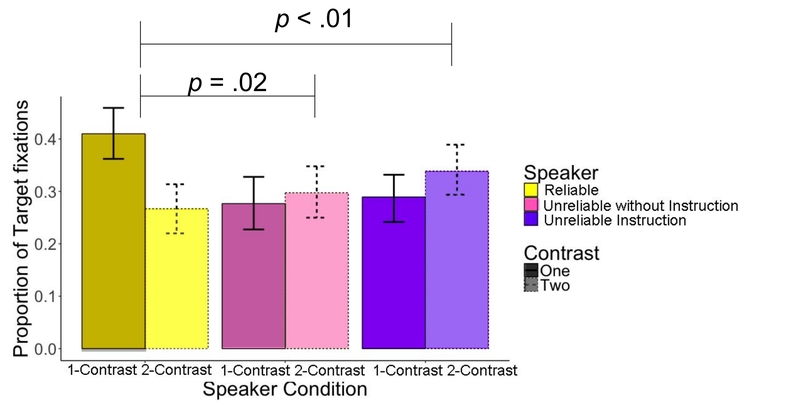


Prediction



Results

- Compared target fixation proportion (TFP) (target fixations vs. all fixation opportunities) in 500-ms window before noun is processed
  - **Significant difference** between TFP of one- and two-contrast display types (p <. 01)
  - **Significant interaction** between contrast and speaker reliability



Conclusions

- Successful conceptual replication of Grodner & Sedivy (2011) [1]
- Demonstrates influence of bottom-up information on contrastive inferences
- **Future Work**:
  - Can listeners adjust use of contrastive inferences between speakers in real time?
  - What other pragmatic variables affect online language processing?

Acknowledgments & References

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[1] Grodner, D. & Sedivy, J. (2011). The effect of speaker-specific information on contrastive inferences.