Implicit Causality Biases Influence Relative Clause Attachment

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Implicit Causality Biases Influence Relative Clause Attachment
Hannah Rohde, Roger Levy, & Andrew Kehler

Abstract

Problem: As comprehenders combine words to form a sentence, they must also combine clauses and sentences to form a coherent discourse. Is the resolution of local syntactic ambiguity sensitive to the process of inferring a coherent discourse?

Proposal: Bring together 3 observations about the pragmatic functions of relative clauses (RCs) and the biases associated with implicit causality (IC) verbs, and test whether these types of factors influence the resolution of local syntactic ambiguity in relative clause attachment:

(i) John detests/babysits the children of the musician who...

Results: An off-line sentence-completion study and an on-line self-paced reading study examined comprehenders’ expectations for high-low RC attachments following IC and non-IC verbs. In both studies, IC verbs shifted readers’ attachment preferences from low to high. In the completion study, most high-attaching RCs following IC verbs encoded explanations of the matrix-clause event. These results suggest that comprehenders use pragmatic cues mid-sentence to generate expectations about the structural analysis of the rest of the sentence.

1. Questions

• Do comprehenders bring expectations from the discourse level to bear on the resolution of syntactic ambiguity?
• Do these expectations impact online processing?

2. Phenomenon

Relative Clause Attachment Ambiguity


(1) Someone shot __________ who was on the balcony.
• Primarily analyzed in terms of syntactically-driven biases
• Some previous work on discourse-driven biases
Discourse context is referential context
• RC pragmatic function is to modify or restrict identity of referent
• RC attaches to host with more than one referent (Desmet et al. 2006; Zagar et al. 1997; Papadopoulou & Chaisson 2006)

(2) There was a servant who was working for two actresses.
Someone shot the servant of the actress who was on the balcony.

(3) There were two servants working for a famous actress.
Someone shot the servant of the actress who was on the balcony.

(4) The boss fired the employee who always showed up late.
(Cancelable) implicature that the employee’s lateness is the reason for the boss’ firing

Observation #1: RCs can also provide an explanation

(4) The boss fired the employee who always showed up late.
(5) John detests Mary. She is arrogant and rude.
(6) NonIC: John babysits Mary. Mary’s mother is grateful.

Observation #2: Bias towards explanations following IC verbs

Observation #3: w/explanation, IC verbs have next-mention bias

(7) John detests Mary because she is arrogant.
(8) NonIC: John babysits Mary because she is arrogant.

• Discourse Hypothesis: IC verbs will increase comprehenders’ expectations for a high-attaching RC
• Null Hypothesis: Verb type will have no effect on attachment

3. Constructing Examples to Test Discourse Biases

4. Predictions for IC Biases in RC Attachment

(9) NonIC: John babysits the children of the musician who...
• Easier (a) is a singer at the club downtown. (low)
• (b) are students at a private school. (high)

(10) IC: John detests the children of the musician who...
• Harder (a) is a singer at the club downtown. (low)
• Easier (b) are arrogant and rude. (high)

5. Off-line Sentence Completion Results

• More high-attaching RCs following IC verbs than NonIC

6. On-line Self-Paced Reading Results

• Online results match offline results: bias to high attachments following IC verbs
• As predicted, high-attaching RCs were read faster than low-attaching RCs in IC condition, while reverse was true in NonIC condition. • Crossover interaction
• Effects persist in comprehension-question accuracy: Crossover interaction (by subj) low-attaching RC in IC condition yielded worst accuracy

7. Conclusion

• Do people use discourse-level expectations and biases as they resolve local syntactic ambiguity?
• YES, in RC processing
• Where else might comprehenders be using discourse-level expectations?
• Processing models need to incorporate these types of discourse-level biases

References

References

Contact: hannah@ling.ucsd.edu