Implicit Causality Biases Influence Relative Clause Attachment

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Implicit Causality Biases Influence Relative Clause Attachment
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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...

(i) 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 be on the resolution of syntactic ambiguity?

• Do these expectations impact online processing?

2. Phenomenon

Relative Clause Attachment Ambiguity
Previous work suggests low attachment in English is preferred (Cuetos & Mitchell 1988; Frazier & Clifton 1996; Carreiras & Clifton 1999; Fernández, 2003; but see also Traxler, Pickering, & Clifton, 1998)

(1) Someone shot the servant of the musician who was on the balcony.

(2) There was a servant who was working for a famous actress.

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

3. Constructing Examples to Test Discourse Biases

• Observation #1: RCs can also provide an explanation

(4) The boss fired the employee who always showed up late.

(5) IC: 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

(7) IC:          John detests Mary because ________________.

(8) NonIC:  John babysits the children of the musician who …

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

(9) IC:       John detests Mary. ________________________.

(10) IC: John detests the children of the musician who …

4. Predictions for IC Biases in RC Attachment

• Discourse Hypothesis: IC verbs will increase comprehenders’ expectations for a high-attaching RC

• Null Hypothesis: Verb type will have no effect on attachment

5. Observations

(1) Non-IC:  John babysits the children of the musician who …

(2) IC:          John detests the children of the musician who …

(3) NonIC:  John babysits the children of the musician who …

6. Off-line Sentence Completion Results

More explanation-providing RCs following IC than Non-IC

7. 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

8. Conclusions

• 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


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