Both prosodic boundaries and accents influence attachment

Blake Clark, Dr. Katy Carlson

Introduction

Given a sentence like (1), there are two ways to interpret it. Did Jimmy comfort or insult the girl at the end of the party?

(1) Jimmy comforted the girl that he had insulted [at the end of the party].

Specifically, in high attachment a listener/reader chooses to apply the prepositional phrase “at the end of the party” to the higher verb “comforted.” Low attachment is when they apply it to the lower verb “insulted”.

We know from prior work (e.g., Carlson, Clifton, & Frazier 2001) that prosodic boundaries (breaks, pauses) can affect attachment. We wondered if accents could also influence attachment in an ambiguous sentence such as this one.

Method

In an auditory questionnaire, 48 subjects on Amazon Mechanical Turk listened to 24 items with attachment ambiguity and chose between two answers, one that indicated high attachment and one that indicated low attachment.

Note: IPh indicates a large prosodic boundary (pause).

Conditions:
a. Jimmy COMFORTED the girl that he had insulted IPh at the end of the party.
b. Jimmy comforted the girl that he had INSULTED IPh at the end of the party.
c. Jimmy COMFORTED the girl that he had insulted at the end of the party.
d. Jimmy comforted the girl that he had INSULTED at the end of the party.

Answers:
a. Jimmy comforted a girl at the end of the party. (high attachment)
b. Jimmy insulted a girl at the end of the party. (low attachment)

Predictions

Based on prior research, the prosodic boundary (IPh) in conditions a-b should increase high attachments: the break separates the final phrase from the nearest verb, making it more likely to attach high.

Accenting the first verb (ex: comforted) in conditions a/c should also increase high attachments. This follows Schafer et al. (1996) in hypothesizing that accented elements, being more important to the sentence, attract modifiers.

Additionally, we predict that these variables will not interact.

Results

First off, we were able to replicate the prior research results of prosodic boundaries increasing the rate of high attachment.

In a more exciting development, we also found that accents can affect the rate of high attachment.

Analysis of Findings

Broadly speaking, it seems that both prosodic boundaries and accents can influence attachment and thus provide ways to help listeners resolve such ambiguities.

The accent effects that we saw in this experiment are in line with Schafer et al.’s (1996) focus attraction hypothesis. Indeed, accenting a particular verb increases the attachment of the modifier to that verb.

This result shows that accents, in addition to affecting pronoun reference or how sentences fit into discourse, also affect basic syntactic attachment.

Next Steps & Acknowledgments

Further research will look for accent effects in additional new structures, as well as checking whether focus particles like “only” will also draw attachment.

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References:


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