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LING 132

Self-Paced Reading of Ambiguous Attachment Sentences

Hypothesis

Do native readers of English rely on Minimal Attachment (choosing the simplest syntactic structure) or Constraint Model (using contextual cues to guide attachment) when processing ambiguous sentences in real time?

Methodology

1. **Participants:** Native speakers of English with normal reading proficiency
2. **Task:** Readers will read two types of ambiguous sentences with noun phrases that could attach to multiple parts of the sentence, for example:
   a. **Minimal Attachment Sentence**: *"The journalist interviewed the author of the book with enthusiasm."* (The phrase "with enthusiasm" could modify "interviewed" or "the book"; Minimal Attachment predicts it will modify "interviewed" since it's syntactically simpler.)
   b. **Constraint-Supported Sentence**: *"The journalist interviewed the author of the mystery with a magnifying glass."* (The phrase "with a magnifying glass" is more logically tied to "the mystery" than to the act of interviewing, suggesting readers would use context to resolve attachment.)

   Control sentences are also included, which are unambiguous to establish baseline reading speeds.
3. **Procedure:** Use self-paced reading; participants are asked to click through as quickly as possible after they feel they have understood the meaning of a sentence. Reaction time is recorded as the time it takes to understand the sentence and resolve the ambiguity. This experiment is within-subjects.

Key Details

1. **Sample Size:** Proposed sample size would likely be at least 10 participants, each reading 50+ sentences to show statistical significance.
2. **Predicted Outcome:**

a. **Minimal Attachment is the dominant model**: Participants should have **similar reading times** for both ambiguous sentence types since they will resolve the attachment ambiguity by consistently applying the simplest syntactic rule (attaching the phrase to the verb).

b. **Constraint Model is the dominant model**: Participants will show **slower reading times** or **backtracking** for sentences that are ambiguous but include strong contextual clues (e.g., "with a magnifying glass" attached to "the mystery"), as they would use additional processing time to consider context when making attachments.

3. Data Analysis:

a. Compare average reading times at the ambiguous phrases across both sentence types.

b. If reading times are similar across both types, this suggests **Minimal Attachment**.

c. If reading times are slower for sentences with strong contextual constraints, this suggests the **Constraint Model** is influencing attachment.

d. If reading times seem random, then there likely isn't preference and accept the null hypothesis.

Conclusion

This experiment provides insight into whether readers apply syntactic simplicity consistently (supporting Minimal Attachment) or rely on contextual information to resolve ambiguous phrases (supporting Constraint Model).