Interference Effects in the Memory Retrieval of Presuppositional Dependency

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Presupposition & Memory Retrieval Process

Anaphoric presupposition triggers such as too are thought to establish a dependency relation between the trigger and its presupposed content. Like other dependencies, establishing presuppositional dependencies is likely to rely on memory retrieval. Three hypotheses on the market:

- If the presupposed content is maintained in focal attention → no distance effects on availability.
- If there is a retrieval process → availability should be reduced as distance increases.
- If via direct access → availability should not be affected as distance increases.
- If via serial search → retrieval speed should be slowed as distance increases.

The two retrieval mechanisms make different predictions about the retrieval behaviors:

- A serial search process is sensitive to the distance of licensed antecedents, but avoids interference from structurally inaccessible antecedents.
- A direct access process is insensitive to the distance of licensed antecedents, but suffers interference from structurally inaccessible antecedents.

Experiment 1: The Distance Paradigm

Binary-choice speeded acceptability judgement study (N = 36, 60 items)

Results & Analysis

- Helmhert-coded contrasts revealed a significant interaction between Distance Length and Nearness; phrasal negation is still part of the antecedent content, but a modal is too high in the structure.
- Crucially, Embedded Match is significantly different from Unembedded Match, which is exactly what we would expect if a direct access retrieval process is at play.
- This result suggests interference from inaccessible content in a direct access account, which is exactly what we would expect if a direct access retrieval process is at play.

Experiment 2: Interference Paradigm with Negation

Binary-choice speeded acceptability judgement study (N = 36, 64 items)

Results & Analysis

- Sum-coded contrasts revealed a significant interaction between Unembedded Match and Nearness: phrasal negation is still part of the antecedent content, but a modal is too high in the structure.
- Crucially, Embedded Match is significantly different from Unembedded Match, which is exactly what we would expect if a direct access retrieval process is at play.

Concerns: manipulation for the interference effect might have been too obvious

- Critical condition: If the editors did not resign, then … the critics resigned too.
- But also: If the editors resigned, then … the critics might have resigned too.

Discussion

Taken together, our results provide evidence that the processing of the presuppositional dependency of too shows signatures of direct access memory retrieval processes:

- This retrieval of the presupposed content is insensitive to the distance of licensed antecedents.
- Additionally, the retrieval process is interference-prone, suffering interference from structurally inaccessible antecedents embedded under (possibility) modals.

Finding interference: Negation vs. Modals, why the difference?

- Does it have to do with the symmetric vs. asymmetric pattern in licensing the felicitous use of too?
- Or does it actually tell us about the size of the antecedent that is being retrieved: phrasal negation is still part of the antecedent content, but a modal is too high in the structure.

Implications

- Retrieval of the presupposed content of too via a direct access mechanism fits well with evidence for other types of anaphoric dependencies, such as pronominal resolution (Foraker & McElree, 2011).
- Retrieval of the presupposed content of too via a direct access mechanism fits well with evidence for other types of anaphoric dependencies, such as pronominal resolution (Foraker & McElree, 2011).
- The current findings contribute to a growing body of empirical evidence suggesting that the memory representations of discourse coreferences formed during comprehension are content-addressable and retrieved with a direct-access process.

Selected References


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