An expectation-based account of logical metonymy interpretation

Alessandra Zarcone

Logical Metonymy

John began the book

The goat enjoyed reading the book

- longer reading times (vs. begin the journey)
- The Trigger: Question: When do covert events arise?
- covert event: available for inference, challenge to compositionality
- The Range: Question: Where do covert events come from?

The Lexical Hypothesis (Pustejovsky 1995, McElree et al 2001):

- Trigger: type-mismatch (EV verb + EN object)
- Range: thematic structure in the lexicon (book: reading OR writing)
  ✔ preserves compositionality
 ✘ rigid, limited to artifacts
 ✘ not suitable to modeling effects of context and discourse (cf. Lascarides & Copestake 1998)

Thematic fit and expectations

The baker finished the icing

The child finished the icing

- knowledge of typical events / participants used to build expectations about upcoming input (McRae & Matsuki 2009, Elman 2001)

The Thematic Fit Hypothesis (Zarcone & Padó 2011):

- Trigger: low thematic fit (expectation for EV object)
- Range: we expect a high thematic fit event (typical event knowledge)
  - thematic fit determines the expected covert event (Zarcone & Padó 2011)
    ✔ More flexible lexical representations
    ✔ Context- and discourse-sensitive
    ✔ Early, dynamic generation of lexical expectations

Experiment: disentangling object type and thematic fit

- Motivation: What is the trigger of the logical metonymy (type vs. thematic fit)?
- Design: 2x2 (EN vs EV obj., high vs low thematic fit)
- Task: self-paced reading with Yes/No comprehension questions

Novelty:

- participle-final word order in German, same word measured in all four conditions (the metonymic verb)
- manipulating BOTH thematic fit and type

Results:

- Obj.: longer RTs for EV objects (*) and for low-thematic fit objects (*)
- Adv.: longer RTs for low-thematic fit objects (*)
- V: longer RTs for EN objects (*), interaction with thematic fit (*)
- V+1: effect of object type (*) and thematic fit (*)
- quickest condition: EV obj. + high thematic fit (matches expectations)
- thematic fit matters: long RTs also for low-thematic fit EV objects (no type clash)
- type matters too, although the coercion costs due to the coercion operation can be moderated by varying the thematic fit

Thematic fit and type

- Lexical Hypothesis: too rigid, not context- and discourse- sensitive enough
- Thematic Fit Hypothesis: towards a more dynamic model of lexical access in (intra- and extra-sentential) context
  (expectations based on contextual cues: word-as-cues paradigm, Elman 2011)
  ✔ not sufficient, we need to account for type: is type sensitive to thematic fit? Do we need a two-level model?

Conclusions

✔ thematic fit provides a valuable (context- and discourse- sensitive, dynamic) extension for the qualia structure (Zarcone & Padó 2011)
✘ thematic fit is not a sufficient answer for the trigger question
✔ we need to figure out a way to figure out how type and thematic fit interact, cognitively and computationally

Bibliography


The research for this paper, carried out together with Sebastian Padó, has been funded by the German Research Foundation (DFG) as part of ProKekt D6 / SFB 732 (University of Stuttgart).