

# An expectation-based account of logical metonymy interpretation

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## Logical Metonymy

John began the book ⇨ John began **reading** the book  
The goat enjoyed the book ⇨ The goat enjoyed **eating** 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:** qualia 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 ⇨ **SPREAD** / EAT  
The child finished the icing ⇨ **SPREAD** / EAT

- \* 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)
  - computational models of thematic fit (no type, Zarcone et al 2013)
- ⇨ **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:

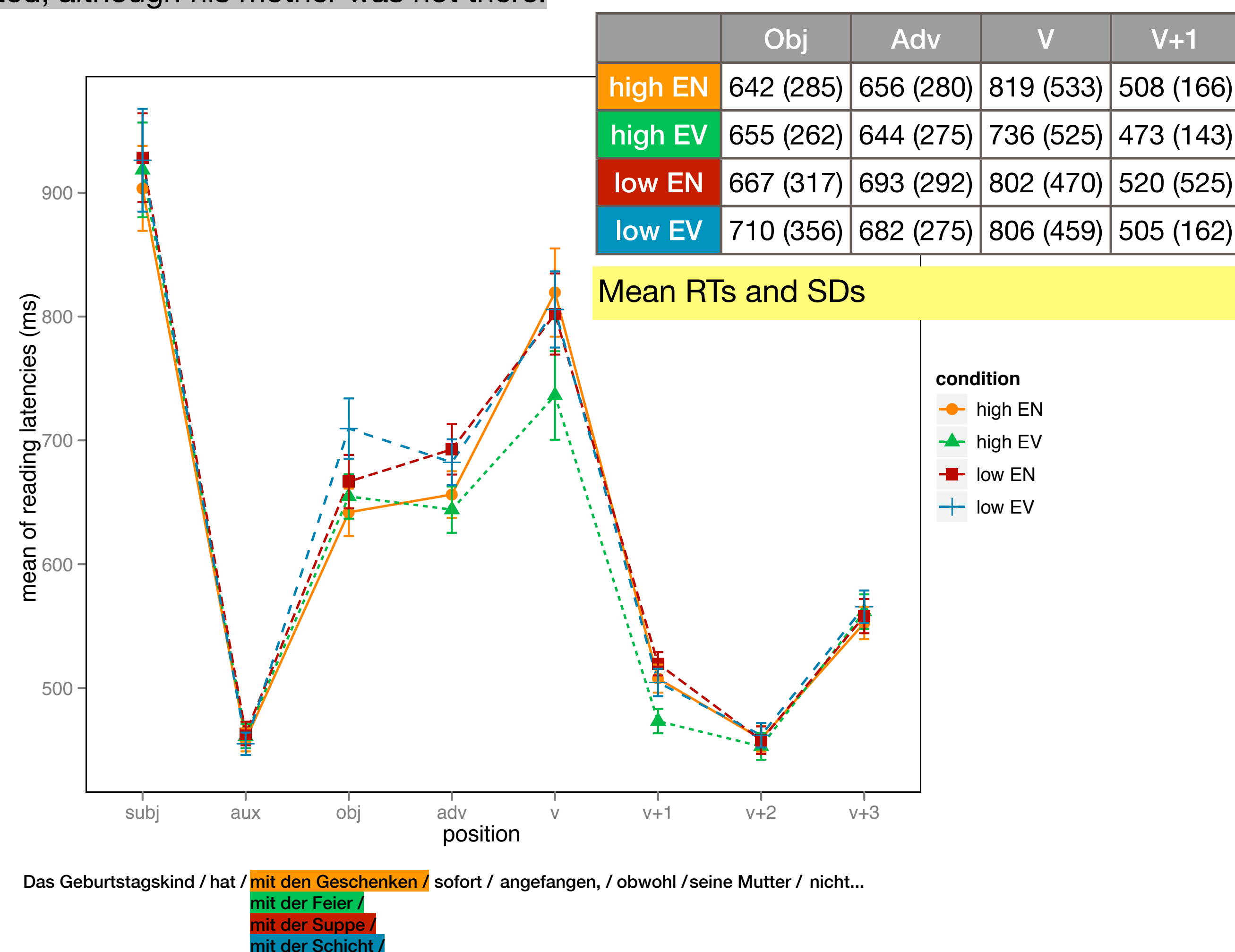
- \* participle-final word order in German, same word measured in all four conditions (the metonymic verb)
- \* manipulating BOTH thematic fit and type

## 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 modulated by varying the thematic fit

Das Geburtstagskind hat **mit den Geschenken** / **der Feier** / **der Suppe** / **der Schicht** sofort angefangen, obwohl seine Mutter nicht da war.

The birthday boy has **with the presents** / **the party** / **the soup** / **the shift** straight away started, although his mother was not there.



## 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

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