



Figuring out Kafka: Structural biases induce early sense commitment for metonyms

Joel Fishbein (joel.n.fishbein@gmail.com)

Jesse A. Harris (jesse.harris@pomona.edu)

Pomona College

INTRODUCTION

Polysemous words have multiple related meanings, often related through regular processes of meaning transfer. Producer-for-product metonymies require interpreting the name of a producer (e.g., author) in terms of the product (e.g., literature); *The students read Kafka*.

UNDERSPECIFICATION MODEL

Upon encountering a metonym, the processor activates an underspecified representation consistent with all its senses, then homes in on a specific sense if required by contextual or lexical constraints (e.g., Frisson & Pickering, 1999).

RESEARCH QUESTION

Can structural heuristics force the processor to commit to a specific sense of a metonym?

SUBJECT AS AGENT PRINCIPLE (SAP)

The language processor provisionally assigns an (animate) subject of a clause an agent theta role, all else being equal (Grodzinsky, 1986; Ferreira, 2003).

PREDICTIONS

Processor commits to specific sense immediately if forced by grammatical constraint (Fraizer, 1999); here, default agent role assignment.

Experiment 1: Penalty for processing the figurative sense of a metonym in Passive sentences, but not Active sentences.

Experiment 2: Fewer verbs supporting a figurative sense interpretation of the metonym in Passive sentence frames as compared to Active sentence frames.

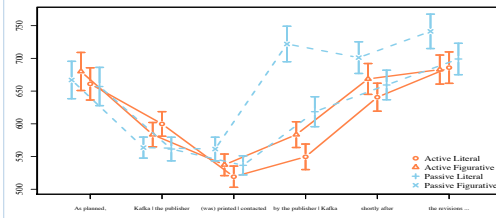
Experiment 3: Sentential context does not override early commitment.

Exp 1a: Syntactic Voice (SPR)

Design: 2x2, crossing Voice (Active vs. Passive) and Verb (Literal vs. Figurative-selecting) in self-paced reading task; 24 quartets & 48 subjects. Exit questionnaire confirming familiarity with famous names after online items completed.

- (1) **Active:** |As planned,| the publisher | {harassed / forged} | **Kafka** | shortly after | the revisions were in.
- (2) **Passive:** |As planned,| **Kafka** | was {harassed / forged} | by the publisher | shortly after | the revisions were in.

Results: Verb condition examines only within Voice factor. Penalty on post-verbal region for processing Figurative-selecting verbs when the sentence was **Passive** (d=98), t = 2.97, but no penalty for **Active** counterparts anywhere.



CONCLUSIONS

- A general structural heuristic guides early assignment of agent thematic roles.
- Penalty for violating this heuristic (Exp 1 and Exp 2).
- General context failed to entice parser away from early sense commitment (Exp 3).
- Structural heuristics, not just lexical or contextual constraints, may lead to immediate sense selection.

Exp 1b: Syntactic voice (Eye Tracking)

Design: Same as E1a; 36 participants.

Results: Effect of Verb examined only within Voice factor. Numerous processing penalties after Figurative-selecting verb for **Passive**, but not **Active**:

Effects of Figurative-selecting verbs in Passive

- Increased go-past times on R4 (post-verb)
- Increased regressions out after R4
- Increased regressions in to R3 (verb)
- Increased second pass times R3 and R4
- Increased total times in R4 and R5 (spillover)

Effects of Figurative-selecting verbs in Active

- Marginally more regressions out of R5, t = 1.78

Exp 2: Syntactic Voice (Completion)

Design: Verbs from E1 replaced with blanks; 24 participants from AMT provided verbs.

Analysis 1

Passive	Active
32% (3)	59% (3)

Ambiguous removed

Analysis 2

Passive	Active
59% (3)	72% (2)

Ambiguous to figurative

Analysis 3

Passive	Active
20% (3)	40% (2)

Ambiguous to literal

Results: Fewer verbs supporting a Figurative interpretation of the metonym were supplied for **Passive** sentences.

ACKNOWLEDGEMENTS

Our thanks to Lyn Frazier, Chuck Clifton, and audiences at ERP (Madrid, 2012) and LSA (Boston, 2013) for their helpful comments.

Exp 3: Role of Context (SPR)

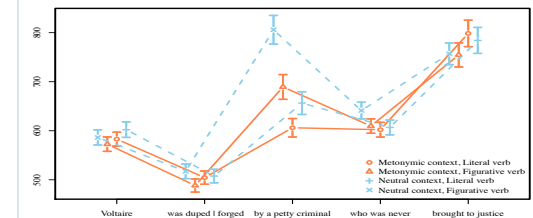
Design: 2x2, crossing Context (**Metonymic** vs. **Neutral**) and Verb (Literal-selecting vs. Figurative-selecting) in self-paced reading.

(5) **Metonymic:** In 1781, Vienna hosted a music festival where many popular orchestral pieces were played.

Neutral: In the spring of 1781, a wonderful gala was held at the palace in Vienna.

Target: Mozart | was {invited / conducted} | by Vienna's orchestra conductor, | which was | a great honor.

Results: Penalty for **Neutral** contexts (d=82), t = 4.02. Independent of context, penalty for processing Figurative-selecting verbs (d=116), t=2.71.



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