

Psychophysiological correlates of novel meaning processing in bilingualism



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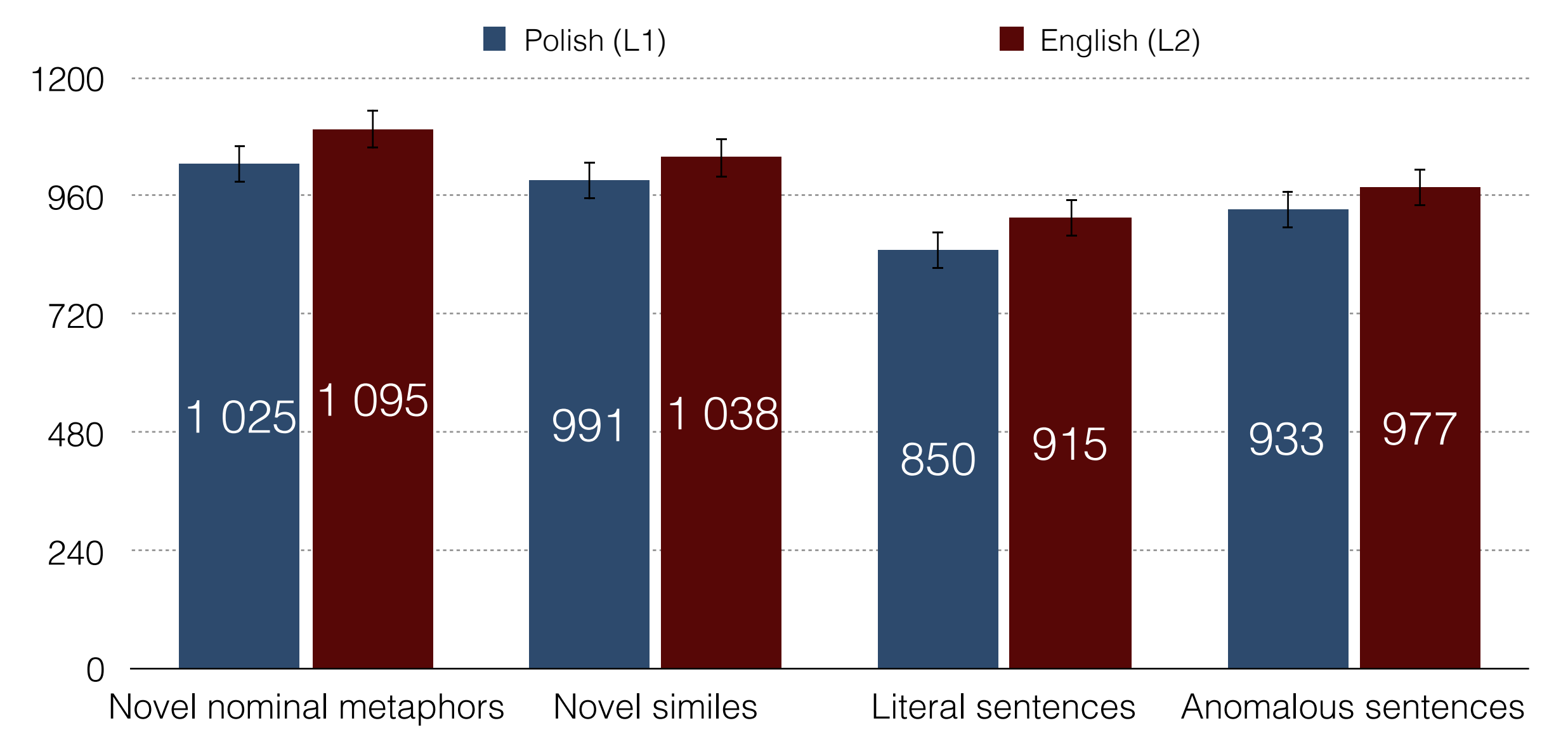
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Introduction

In line with what the Career of Metaphor Model (Bowdle & Gentner 2005) postulates, monolingual novel metaphor comprehension requires the process of comparison, in which the target concept ("amnesia") is structurally aligned with the literal base concept ("a rubber"). The comparison between metaphor topic and vehicle, which results in forming new representations between target concepts and base concepts, is assumed to make the interpretation of novel metaphors highly effortful. Yet, the creation of such connections is assumed to be facilitated when a novel metaphor is already presented as a simile (i.e., A is like B), as it initiates the process of comparison, and consequently facilitates new mappings formation. As a result, novel meanings are claimed to be easier to be comprehended when presented as a simile (e.g., Amnesia is like a rubber) than as a nominal metaphor (e.g., Amnesia is a rubber). This hypothesis has however not been verified by means of employing electrophysiological methods, and it has not been extended to the context of bilingualism.

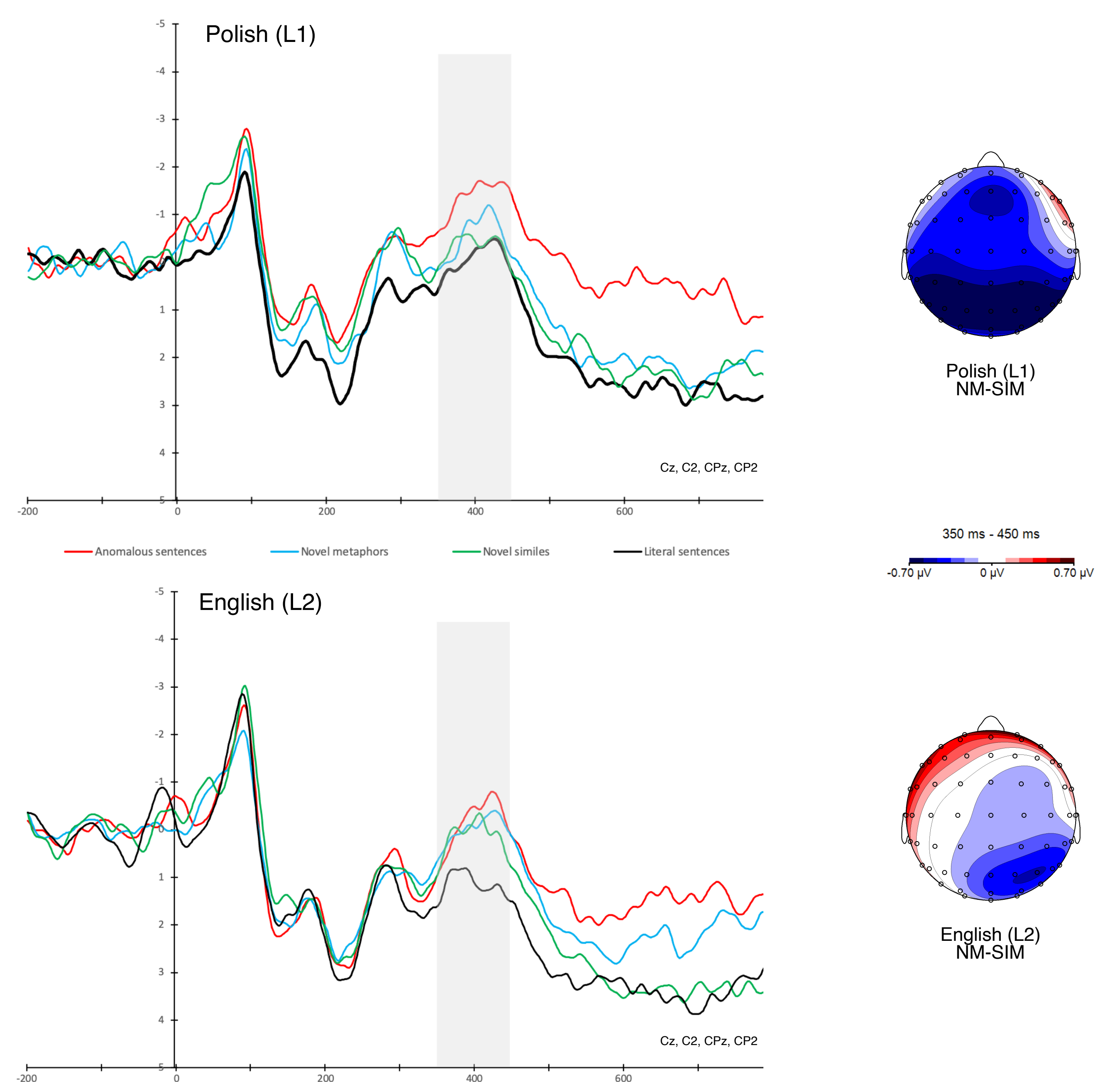
Reaction times (ms)



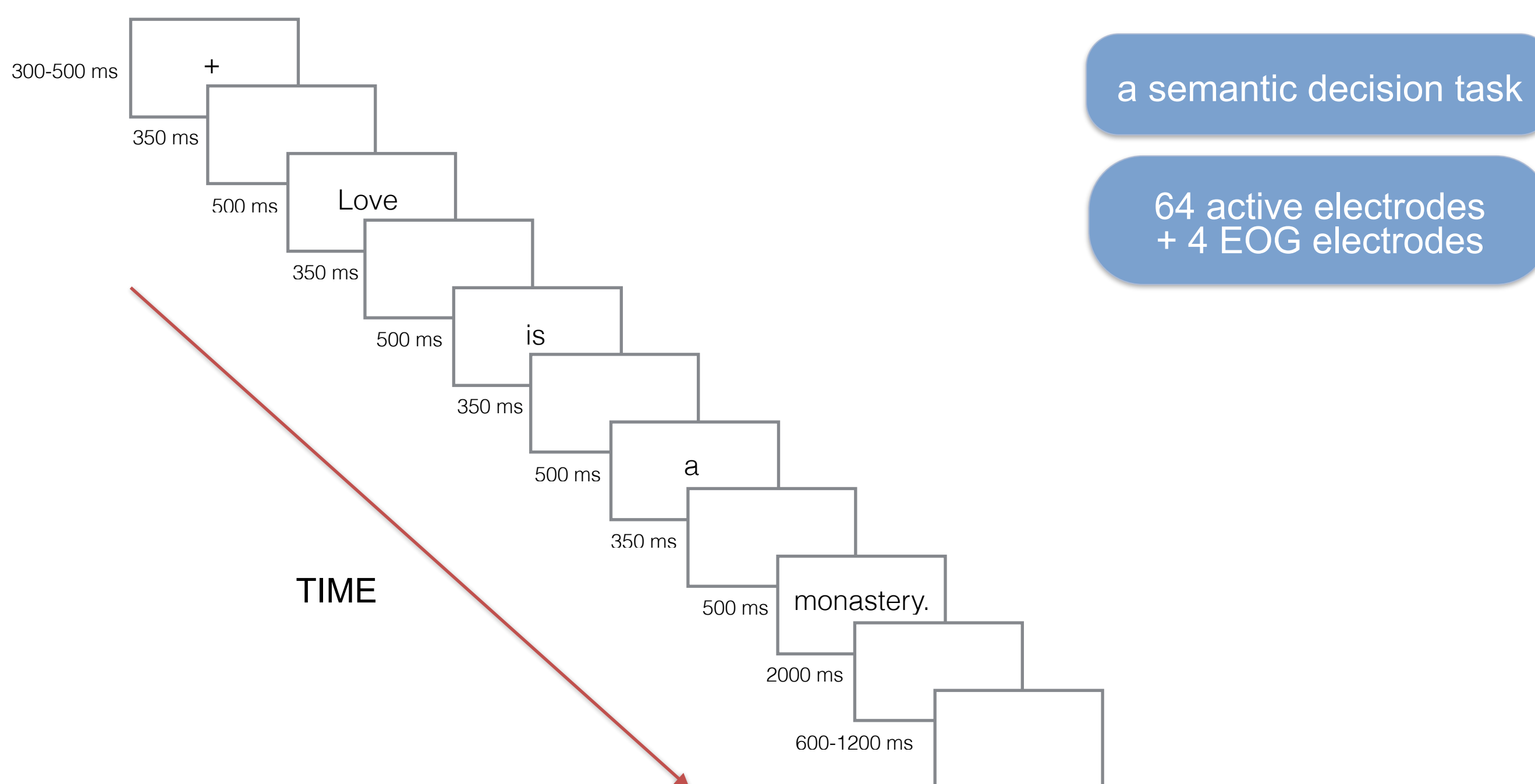
Materials

Novel nominal metaphors	Novel similes	Literal sentences	Anomalous sentences
Love is a monastery.	Love is like a monastery.	This building is a monastery.	A carpet is a monastery.

Event-related potentials: N400 (350-450 ms)



Procedure



Participants

19 participants, $M_{age} = 26.32$
late proficient unbalanced bilinguals
Polish (L1) & English (L2)
English LexTale score = 89.58

Conclusion

Electrophysiological results observed within the N400 time window (350-450 ms) revealed that in the native language (Polish), comparison mechanisms initiated when processing similes facilitated novel metaphor processing, as reflected in a graded N400 effect from literal sentences to novel similes, novel nominal metaphors, and finally anomalous sentences. In the non-native language (English), in contrast, both novel nominal metaphors and novel similes were processed similarly to the anomalous condition, which is consequently indicative of more cognitively intensive processes engaged in novel meaning conceptual mapping in L2, irrespectively of sentence structure.

This project is funded by the National Science Centre, Poland (project number: 2017/25/N/HS2/00615)

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Katarzyna Jankowiak is supported by the Foundation for Polish Science

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