

Conceptual Connectedness Facilitates Traditionally Costly Metonymic Interpretation

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Understanding how the language system composes morphosyntactically underspecified meanings is crucial to uncovering the mechanisms of semantic processing and the conceptual system that supports it. **Metonymy** is an entry point to this question. In sentence (1): *At a restaurant, a waitress says to another: “The ham sandwich ordered more tea”*, the argument *ham sandwich* is semantically incompatible with the predicate *ordered*, which presupposes an agentive subject. A successful interpretation demands the accommodation of the presupposition that *the ham sandwich* be associated with an implicit agentive participant [1], e.g. “*the person who bought the ham sandwich*”. Similar metonymic patterns include formal spatial arrangements (seat and room numbers), formal temporal arrangements (appointments), alienable and inalienable associations (illnesses, clothing, body parts) (see Table 1), as well as producer-for-product (*read Wickstrom*), place-for-event (*during Vietnam*), etc. Metonymic comprehension has been shown to elicit increased processing cost and distinct brain activation patterns as compared to “literal” counterparts, resulting from the integration of contextual information “external” to the participating lexical meanings [2, 6, 8] (akin to presupposition accommodation). Recent neuroimaging data also reveal an overlap between metonymic and “literal” composition [3]. Here, we investigate whether the apparent markedness of metonymy is modulated by conceptual constraints that are active as the presupposition is accommodated. Specifically, we **hypothesize** that the accommodation of the presupposition needed for metonymic composition takes place in a semantic memory space, which is parameterized along at least one dimension, *connectedness* [4, 7]: the degree of inextricability between the explicit participant and the presupposed one. In high connectedness space, participants are interpreted as “part whole” (Table 1c); in low connectedness space, as “incidental location” (Table 1a). Presupposition accommodation demands a search for the associated implicit participant: higher connectedness provides the association for free, facilitating the search, whereas lower connectedness demands a greater search. **Methods.** 240 sentences (120 met. and 120 non-met.) were tested (N = 68, M age = 27.9) across three levels of connectedness (Table 1) in two tasks: acceptability (yes/no), and interpretation accuracy (multiple-choice: met. vs. non-met. vs. lack of understanding) (Fig 1). **Results** show that the relation between accuracy and acceptability is modulated by connectedness (Linear model results in Fig. 2 and Table 2). For mid and high connectedness, accurate interpretations tended to be more acceptable, while for low connectedness, accurate interpretations tended to become less acceptable. We interpret this as low connectedness relations being coincidental, motivating a broader search space that gives rise to acceptable interpretations independent of the intended one. As connectedness increases, relations become more constrained and specific, making alternative interpretations less acceptable. Moreover, among accurate interpretations, higher connectedness imposes greater processing demands, reflected in lower acceptability ratings (Fig. 3). **Two main conclusions.** Methodologically, these results question the assumption that positive acceptability equals accurate interpretation; they appear to be independent. Theoretically, the markedness of metonymy is conditioned by the processor’s ability to generate in the semantic system an association between explicit and implicit participants, in order to accommodate the presupposition. The greater the conceptual connectedness between them, the more constrained the process of accommodation will be.

Supplementary materials

progress

My grandma adores the music from her teenage years.
Whenever they play Contreras on Classic FM, she calls me.

Next

Do you accept this sentence as a sentence of English?
What does this sentence mean to you?

☒ Yes ☐ No

☒ My grandma calls me every time they play music by Contreras.
☐ My grandma calls me every time the radio interviews Contreras.
☐ I don't understand this sentence.
☐ Other.

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Table 1: Experimental Stimuli

Degree of Connectedness	Examples: Metonymy	Non-metonymy counterpart
Low (a)	In a busy hotel in Manhattan, the concierge told the janitor: "I had to ask the bellhop to help room 216 because I couldn't find you."	In a busy hotel in Manhattan, the concierge told the janitor: "I had to ask the bellhop to clean room 216 because I couldn't find you."
Mid (b)	Two people walked into a pub and got drinks. The bartender gossips: "My sister dated the mojito at the bar for years after college."	Two people walked into a pub and got drinks. The bartender gossips: "My sister drank a mojito at the bar for years after college."
High (c)	At the dentist's, they had a lot of patients. An assistant tells another: "The doctor told the root canal to monitor the pain overnight."	At the dentist's, they performed a lot of surgeries. A receptionist tells another: "The doctor performed the root canal to alleviate the pain overnight."

Figure 1: Experimental task (acceptability + interpretation)

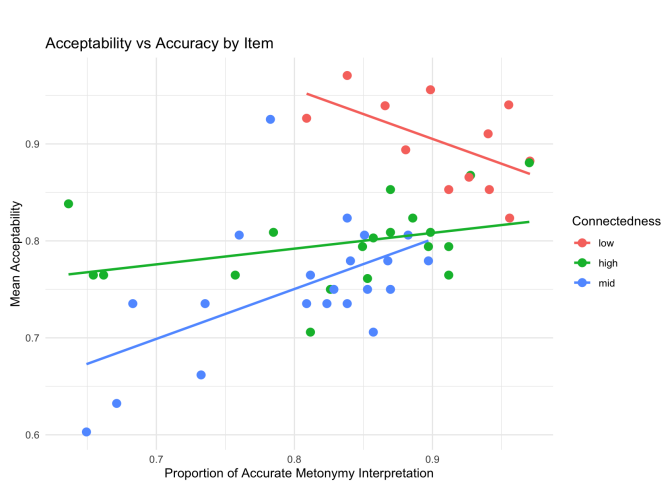


Figure 2: Acceptability ~ Accuracy * Connectedness Results

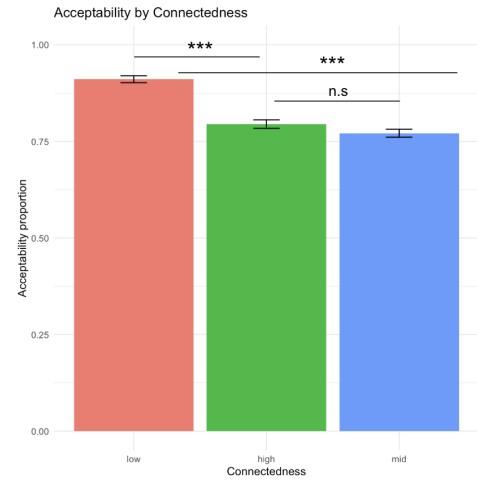


Figure 3: Acceptability ~ Connectedness Results
Only accurate interpretations are included.

Table 2: Results of model in Fig. 1

Predictor	Estimate	p-value
(Intercept) (high connectedness)	0.662	< .001 ***
Accuracy	0.162	0.192 n.s
Connectedness-mid	-0.323	0.05 .
Connectedness-low	0.704	0.01 *
Accuracy x Connectedness-mid	0.3522	0.0801 .
Accuracy x Connectedness-low	-0.6742	0.0403 *

Selected References

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