

Structural and Interpretative Factors in the Processing of Zeugma

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Overview. Zeugma occurs when a word or phrase is interpreted in two distinct ways simultaneously, triggering an incongruity effect (Lascarides et al., 1996). Previous psycholinguistic work has proposed that readers must access and construct VP-coordinations containing literal and idiomatic interpretations of the polysemous verb (Solska, 2008; Mashal et al., 2014), as in sentences like:

- 1) The teacher bit the lime and the apple. [literal]
- 2) The teacher bit the lime and ___ the dust. [zeugma]

Zeugma offers crucial insights into the **interaction of polysemy, idiomaticity, and structural processing**. Recently, Jacobs et al. (2023) found that zeugma (2) constructed using 14 highly familiar V + NP idioms were more slowly processed and less acceptable than literal NP-coordination (1). They found this held equally for zeugma presented in either an idiomatic-first or literal-first order, contradicting previous accounts based on similar manipulations (e.g., Mashal et al., 2014). Here, we aim to further understand how structural and semantic factors contribute to acceptability and interpretation with two experiments.

Experiment 1: Acceptability. Zeugma are expected only when two words/phrases are modified by a single lexically ambiguous word (Zwicky and Sadock, 1975). If true, then the explicit mention of both verbs should negate the unacceptability of zeugma, which would give insights into the mechanisms used in retrieving and integrating polysemous words in complex structures. To explore this, we extend the 1-7 Likert-scale acceptability judgment study (N = 121) of Jacobs et al. (2023) with explicit instances of the verb on both sides of the conjunct (“*The teacher bit the dust/apple and bit the lime*”). We preserved the order manipulation of the original study, with two NP orders for both sentence types. Consistent with Jacobs et al. (2023), but in contrast to theoretical proposals, we found that zeugma were less acceptable ($p < .001$) than their literal counterparts even with two instances of the verb (Figure 1), with no ordering effect.

Experiment 2: Similarity. Here we assessed how similar participants judged the events being described by two sentences. In Experiment 2a, we asked participants (N = 120) to rate, on a 1-7 Likert scale, the similarity of zeugma and literal conjunct sentences in idiomatic- or literal-first orders to a baseline sentence containing either a literal (“The teacher bit the apple/lime”) or an idiomatic use (“The teacher bit the dust”) of an ambiguous verb. The results (Figure 2) suggest that participants arrive at a literal interpretation of zeugma, with potential differences in interpretation tied to the prominence of the idiomatic noun in the ordering of the two conjuncts. Experiment 2b assessed this possibility. A new set of participants (N = 120) rated the event similarity of a literal conjunct sentence (“...*the apple and the lime*”) to: a literal conjunct with reversed order between the noun phrases (“...*the lime and the apple*”); and to idiomatic- and literal-first zeugma (i.e., “...*the dust and the lime*” or “...*the lime and the dust*”). Zeugma were rated as significantly less similar to the literal baseline than the reversed literal sentence ($p < .001$), with no difference between literal-first and idiomatic-first zeugma. In light of the contrasts in Exp. 2a, this suggests that participants converge upon roughly equivalent, literal interpretations of the sentences designed to elicit zeugma interpretations.

Discussion. Philosophers have been using zeugma extensively to probe polysemy. However, our results show there is still much to learn about the specific mechanisms underlying the zeugma effect, possibly arising from the need to coerce a literal interpretation. Zeugma effects might then be closer to those found for the coordination of unlike categories (Exp. 1), and previously reported order effects could be a consequence of experimental tasks sensitive to prominence of an element in the conjunct and not crucially tied to zeugma-specific properties (Exp. 2).

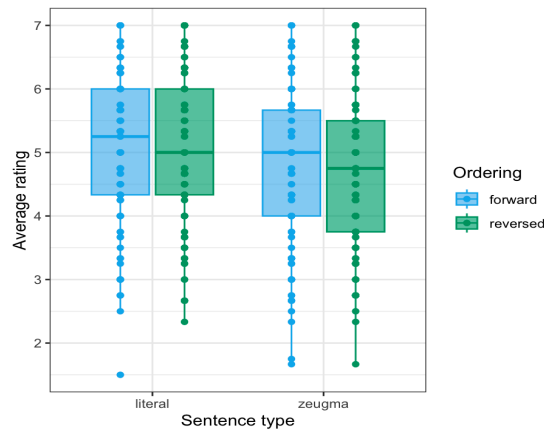


Figure 1. Acceptability ratings from Experiment 1 for literal (the lime/apple and the apple/lime) and zeugma (the dust/lime and the lime/dust) coordinations.

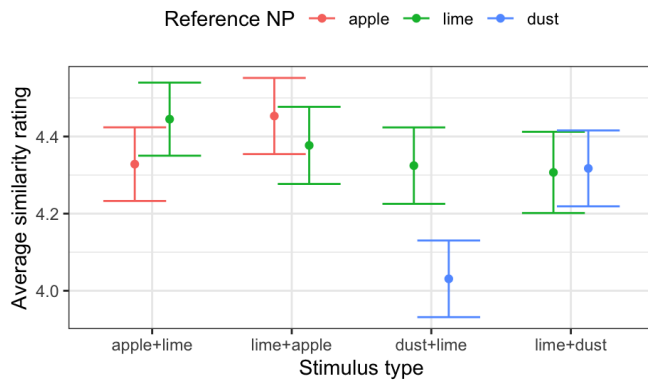


Figure 2a. Results of Experiment 2a comparing the sentence similarity rating of different sentences with coordination to simple literal (bit the lime/apple) and idiomatic sentences (bit the dust) without coordination.

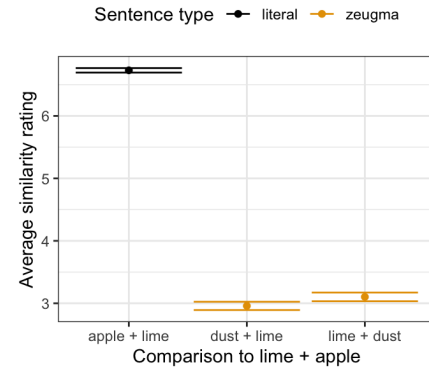


Figure 2b. Results of Experiment 2b comparing the sentence similarity rating of one order of literal coordination (the lime and the apple) to other sentence types.

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