

The information structure of word order alternations

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Some researchers have argued that the noncanonical variant of a word-order alternation with two possible orders to present two NPs is systematically dispreferred when the first NP (NP1) is discourse-new and the second NP (NP2) is discourse-old (e.g., Birner & Ward 1998); we refer to this as the “**co-dependence hypothesis**”. In support of co-dependence, Clifton & Frazier (2004) and Brown et al. (2012) showed that “old-new” was strongly preferred over “new-old” in the noncanonical NPNP variant (*John gave [the teacher]_{NP1} [a book]_{NP2}*) of the dative alternation, but not in the canonical NPPP variant (*John gave [a book]_{NP1} to [the teacher]_{NP2}*). Although the current data from the dative alternation are consistent with this view, the proposal is descriptive, without independent motivation. An alternative view holds that these findings are determined by **discourse preferences independently affecting each NP**: for the canonical NPPP both NPs are subject to an “old-over-new” preference - in line with the assumption that old information is easier to process than new information (e.g., Arnold et al. 2000, 2013) - whereas for NPNP, NP1 is subject to the default “old-over-new” preference but NP2 is subject to the opposite “new-over-old” preference - in line with the hypothesis that the production of NPNP structures is driven by a “new-final” requirement (“non-co-dependence hypothesis”). To discriminate between these two hypotheses, an acceptability rating study (E1) was conducted investigating all four combinations of the two critical NPs’ discourse-status (not just those that differed in discourse status, as in previous work). We also conducted a second study (E2) to test whether the finding from Clifton & Frazier (2004) and Brown et al. (2012) extends to a different case of English word order alternation, i.e. ‘locative inversion’, as in (2).

Methodology: In both studies, participants rated the second of two sentences within the context of the first. We manipulated the second sentence by crossing the word orders (E1: NPPP/PPNP/NPNP; E2: NPvPP/PPvNP) with the two NPs’ status (old/new) (see 1 and 2).

Predictions: The co-dependence hypothesis predicts only for the noncanonical variants (E1: PPNP/NPNP; E2: PPvNP) an interaction effect between the two NPs’ status such that new-old is rated worst of the four, with no differences among the other three. The non-co-dependence hypothesis instead predicts for all variants except for PPNP/NPNP two main effects of the NPs’ status, such that sentences with an old NP1/2 will be preferred over those with a new NP1/2; for PPNP/NPNP it predicts a main effect of NP1 in the default old-over-new direction and a main effect of NP2 in the opposite direction (new-over-old). **Results: E1:** Focusing on the two conditions where the two NPs differ in discourse status, we replicated previous findings: for PPNP/NPNP but not for NPPP “old-new” sentences were rated better than “new-old” sentences. However, for no word order did we find a significant interaction between the two NPs’ status ($ps > .1$). Instead, for NPPP we found main effects of the two NPs such that “old” is better than “new”; for PPNP/NPNP we found a main effect of NP1 in the default old-over-new direction and a main effect of NP2 in the opposite direction (new-over-old). **E2:** For NPvPP, we found main effects of the two NPs in the old-over-new direction. For PPvNP, we found a significant old-over-new main effect of NP1 and only a numerical one for NP2. Again, for no word order did we find a significant interaction between the two NPs’ status ($ps > .4$). **Conclusion:** Although we replicated findings from previous works concerning the dative alternation, we showed that these results are determined by the combination of independent discourse preferences for each NP: two preferences in the same-direction (“old-over-new”) in the canonical order and two preferences in opposite directions (“old-over-new” for NP1 and “new-over-old” for NP2) in the noncanonical orders. Furthermore, we showed that the findings about the dative alternation don’t extend to the locative alternation case, where we found main effects of the two NPs in the same direction “old-over-new” across word orders. Overall, our findings support a view where the information structure of word order alternations is affected by a general preference for old over new NPs which can be overwritten when a NP occurs in a non-canonical position.

(1) E1 (Dative Alternation) example item (N = 64; N items = 24)

old-old

Context: A professor was exhausted because he had been working together with an administrator on the first draft of a grant all day long.

The professor sent the grant to the administrator [NPPP] / The professor sent (to) the administrator the grant [PPNP/ NPNP]

old-new for NPPP and new-old for PPNP / NPNP

Context: A professor was exhausted because he had been working on the first draft of a grant all day long.

The professor sent the grant to an administrator [NPPP] / The professor sent (to) an administrator the grant [PPNP/NPNP]

new-old for NPPP and old-new for PPNP / NPNP

Context: A professor was exhausted because he was writing long emails to an administrator all day long about personality conflicts among the faculty.

The professor sent a grant to the administrator [NPPP] / The professor sent (to) the administrator a grant [PPNP/NPNP]

new-new

Context: A professor was exhausted because he was writing long emails all day long about personality conflicts among the faculty.

The professor sent a grant to an administrator [NPPP] / The professor sent (to) an administrator a grant

(2) E2 (Locative Alternation) example item (N = 57; N items = 24)

old-old

Context: The police officer entered the room and saw a hunting weapon, a broken chair, a box, and a scary painting.

The weapon lay behind the box. [NPvPP] / Behind the box lay the weapon. [PPvNP]

old-new for NPvPP and new-old for PPvNP

Context: The police officer entered the room and saw a hunting weapon, a broken chair, an open cupboard, and a scary painting.

The weapon lay behind a box. [NPvPP] / Behind a box lay the weapon. [PPvNP]

new-old for NPvPP and old-new for PPvNP

Context: The police officer entered the room and saw an empty bottle, a broken chair, a box, and a scary painting.

A weapon lay behind the box.

new-new

Context: The police officer entered the room and saw an empty bottle, a broken chair, an open cupboard, and a scary painting.

A weapon lay behind a box. [NPvPP] / Behind a box lay a weapon. [PPvNP]

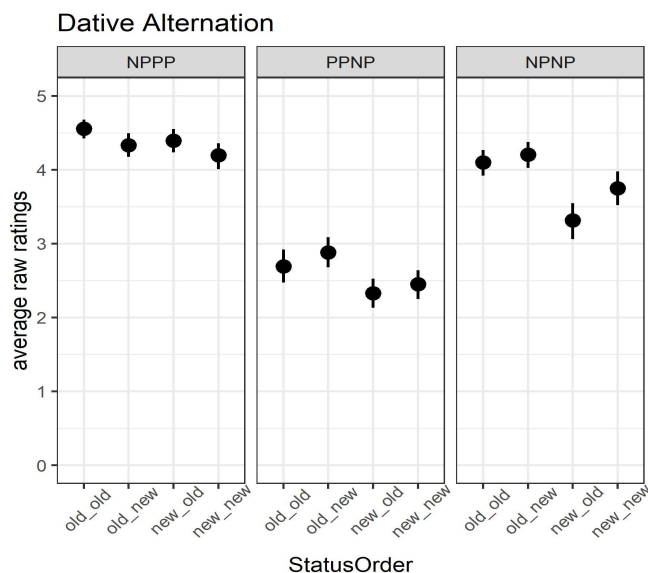


Fig 1 Mean ratings for E1 by discourse status order condition.

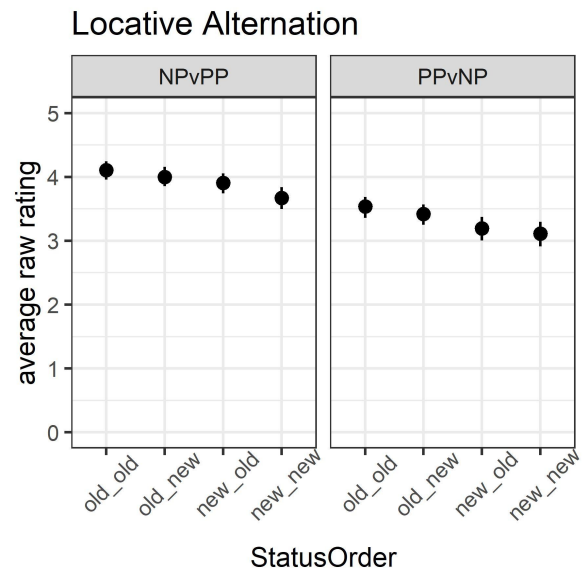


Fig 2 Mean ratings for E2 by discourse status order condition.