English locative inversions are not special in terms of their discourse function

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It is widely assumed that one of the factors underlying word order variation in (at least the Subject-Verb) languages is the tendency to place information assumed to be already known from the previous discourse before information assumed to be new (Halliday, 1967; Chafe 1976; Gundel, 1988; Prince, 1992). Experimental evidence for the existence of an 'old-before-new principle' has been extensively offered in the case of the English dative alternation which allows speakers to choose the relative order of the two post-verbal arguments (Arnold et al. 2000; Frazier, 2004; Brown et al. 2012). Here, we focus on a different case of word order alternation, i.e. the case of the English 'locative inversion' -- e.g. [$_{PP}$ *Behind the box*] *lay* [$_{NP}$ *a knife*] -- where the relative order of the locative prepositional phrase and the subject noun phrase is "inverted" with respect to the more canonical word order -- e.g. [$_{NP}$ *A knife*] *lay* [$_{PP}$ *behind the box*]. Birner & Ward (Birner, 1996; Birner & Ward, 1998; Ward & Birner, 2004, 2019; B&W) propose that the 'old-before-new principle' plays a different role across the two word order options: for the canonical NP-V-PP the 'old-before-new principle' represents just a tendency which doesn't affect the felicity of the sentence, but for the non-canonical inverted PP-V-NP the same principle imposes a stricter requirement on the felicity of the sentence, i.e. the PP must not represent information that is less familiar in the discourse than that represented by the NP. In this work, we aim to test this hypothesis in a sentence acceptability rating study. **Methodology (see 1):** Participants read two sentences and were asked to rate the second sentence within the context of the first; we adopted a 2X2X2 design by manipulating the second (critical) sentence with respect to its word order (NP-V-PP vs PP-V-NP) and the information status of the preverbal constituent (new vs old) and of the postverbal constituent (new vs old). "Old" constituents were explicitly mentioned in the context sentence and preceded by the definite article "the"; "New" constituents were not previously mentioned and were preceded by the indefinite article "a.". **Predictions:** If prior findings generalize to locatives, then sentences with "old" first constituents will be rated as more acceptable (e.g., Arnold, 2000) than sentences with "new" first constituents. We take B&W's account as predicting a three-way interaction among word order, discourse status of the first constituent, and discourse status of the second constituent such that the rating of sentences with 'new' first constituents (but not the 'old' first constituents) will be lower when the second constituent is 'old' compared to when it is 'new' but only for the PPvNP word order. **Results:** Ratings from 2 experiments (E1: N=51, see Fig. 1; E2: N=57, see Fig. 2) were analyzed with mixed-effects linear models with three effects-coded fixed effects and their interactions. We found that NPvPP sentences were rated as more acceptable than PPvNP (E1: b=0.70, p<.001; E2: b=0.59, p<.001) and sentences with "old" first were rated as more acceptable than those with "new" first (E1: b=-0.19, p<.01; E2: b=-0.32, p<.001). Crucially, we did not find any significant three-way interaction - in either experiment - among word order, discourse status of the first constituent and of the second constituent (E1: b=0.31, t=1.09, p=0.28; E2: b=-0.15, t=-0.77, p=0.44). **Conclusion** These findings extend the 'old-before-new' principle to inverted locatives and fail to support B&W's hypothesis that discourse constraints play a different role across the English canonical word order NP-V-PP and the inverted PP-V-NP. Though caution is warranted when interpreting null effects, these results suggest that English speakers may prefer that the first constituent of a sentence represent discourse 'old' information no matter the specific word order of the sentence.

(1) Sample test item

PPvNP-old-old
Paragraph(E1)/**Context**(E2): The police officer entered the room and saw a hunting weapon, a broken chair, a box, and a scary painting.
Behind the box lay the weapon.

PPvNP-old-new
P/C: The police officer entered the room and saw a half-empty whiskey bottle, a broken chair, a box, and a scary painting.
Behind the box lay a weapon.

PPvNP-new-old
P/C: The police officer entered the room and saw a hunting weapon, a broken chair, an open cupboard, and a scary painting.
Behind a box lay the weapon.

PPvNP-new-new
P/C: The police officer entered the room and saw a half-empty whiskey bottle, a broken chair, an open cupboard, and a scary painting.
Behind a box lay a weapon.

NPvPP-old-old
P/C: 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-old-new
P/C: 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-new-old
P/C: The police officer entered the room and saw a half-empty whiskey bottle, a broken chair, a box, and a scary painting.
A weapon lay behind the box.

NPvPP-new-new
P/C: The police officer entered the room and saw a half-empty whiskey bottle, a broken chair, an open cupboard, and a scary painting.
A weapon lay behind a box.

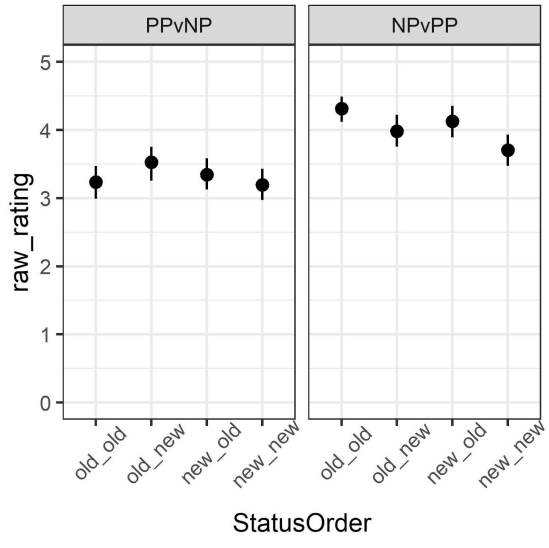

Fig. 1 Mean ratings for E1 by discourse status order condition. Error bars reflect bootstrapped 95% CI. Prompt for participants: "Rate how natural the bolded sentence is within the paragraph"

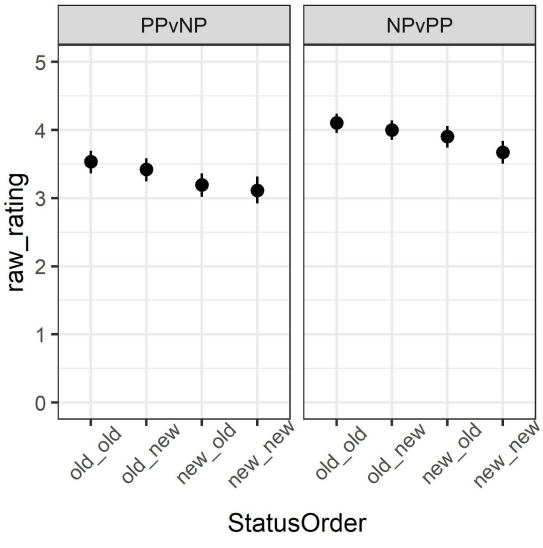

Fig. 2 Mean ratings for E2 by discourse status order condition. Error bars reflect bootstrapped 95% CI. Prompt for participants: "Rate how natural the bolded sentence is within the context"