

Close vs. cloze: The role(s) of contact and expectancy in English pronoun preferences

Background. In English locative prepositional phrases (henceforth LPPs), both reflexives (*herself*) and personal pronouns (*her*) can be co-construed with a clausemate subject. However, it is not the case that both pronoun forms (henceforth proforms) are equally favored. Judgments vary across sentences and, as [1] aptly put it, “obscure factors enter into preferences one way or another.” The challenge is to tease these factors apart and to situate these factors within linguistic theory.

One factor affecting preferences is the nature of the spatial relation expressed by the LPP. As shown in (1), reflexives are relatively more acceptable when the relation involves direct contact between figure and ground than when contact does not hold, while pronouns show the opposite pattern [2-4].

- (1) a. Ruby noticed some birdseed on ?her/herself [CONTACT]
 b. Ruby noticed some birdseed next to her/?herself [NON-CONTACT]

Some work has sought to account for this effect by appealing to grammatical constraints on LPP proforms: for instance, [2-3] advocate for the view that the choice is crucially sensitive to thematic roles, such that the reflexive is categorically favored over the pronoun if the proform and its antecedent are understood to express two distinct roles within one and the same event. However, [4] proposes that the contact effect rather arises from functional pressures relating to expectancy, such that the reflexive is relatively more acceptable when co-construal with the subject is *unexpected* while the opposite holds for the pronoun. This account echoes a long tradition in the functionalist literature arguing that complex reflexive marking is a special case of Zipf’s law, according to which longer forms are used to convey less expected meanings [5].

To test whether the contact effect can be reduced to expectancy, [2] conducted a forced-choice interpretation study: participants were asked to resolve an ambiguous LPP complement to one of two people named in the context, one of whom was the subject of the sentence containing the LPP. They found no correlation between subject co-construal and (non-)contact, though co-construal rates were predictive of acceptability ratings for reflexives and pronouns in the same configurations. However, it is unclear to what extent offline decisions in a forced-choice task reflect expectations formed in online processing. It’s possible that the findings in [2] were an artifact of the interpretive constraints imposed by the task design.

This study. We present a new investigation into the relationship between the contact effect and expectancy in LPP proform preferences. Here, expectancy was measured using a sentence completion task, or cloze task. Cloze tasks are widely used in psycholinguistics to probe prior expectation, and response rates on cloze tasks have been shown to correlate with semantic access and integration in online processing measures such as EEG. Converging with [2], comparison between cloze responses and acceptability ratings reveals that contact and expectancy independently influence proform acceptability. It also provides novel insight into the relationship between production and comprehension measures of proform preferences, revealing alignment with regard to the contact effect but not necessarily the expectancy effect. This work thus enriches both our theoretical outlook on LPP proforms and the empirical toolkit with which we study them.

Design. Stimuli were 288 original target sentences crossing relation type (CONTACT, NON-CONTACT) and proform (REFLEXIVE, PRONOUN) as in (1). Sentences were paired with short supporting contexts, each naming two people, the second of whom served as the subject of the target sentence; stereotypically gendered names were used to constrain pronoun interpretation. Acceptability was measured using a joint-presentation rating task (N=60) following [2]. On each question, participants were presented with a context along with two sentences differing only in proform and were asked to rate the naturalness of each sentence using a slider bar. Each participant saw 24 target questions along with 6 controls and 20 fillers, randomly presented. Expectancy was measured using a cloze task (N=120). Target stimuli were the same as in the rating task except that a text entry box was provided in place of the LPP complement. On each question, participants were asked to complete the scene by filling in the blank. Each participant saw 24 target questions along with 6 controls, randomly presented. Sample questions for both tasks are shown in Fig. 1.

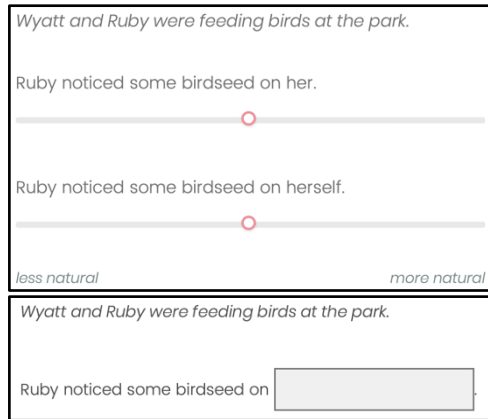


Figure 1. Questions from the rating task (top) and cloze task (bottom).

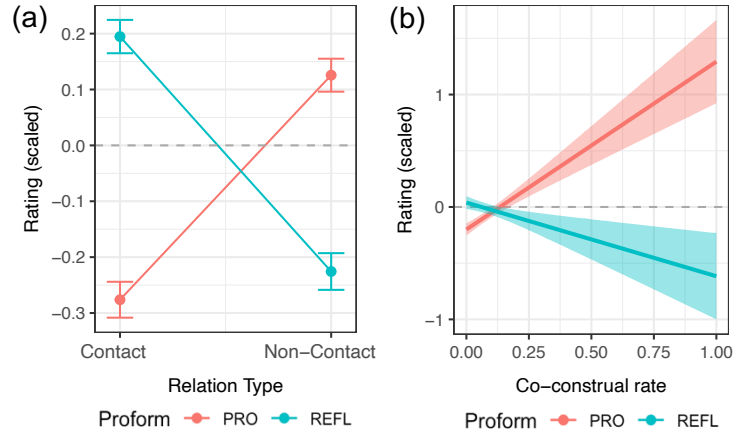


Figure 2. Effects of (a) relation type and (b) co-construal rate on reflexive and pronoun acceptability.

Results. Responses on the cloze task were hand-coded for co-construal with the sentence subject: reflexives and pronouns matching the subject in gender and number were coded as ‘1’ while all other responses were coded as ‘0.’ A logistic mixed effects analysis revealed a significant correlation between the likelihood of co-construal and relation type ($p < 0.01$), with more matches in non-contact sentences. To determine whether expectancy might thus account for the contact effect, co-construal rates were computed for each item by dividing the number of co-construed responses by the total number of responses. The resulting ratios were then paired with corresponding items in the rating task. Linear mixed effects analyses revealed that ratings depend significantly on relation type for both reflexives ($p < 0.001$) and pronouns ($p < 0.001$), replicating the findings of [2] (Fig. 2a). Importantly, these effects persist when co-construal rate is controlled for as a random intercept, showing that the effect of relation type is independent of expectancy.

We also tested whether expectancy has an effect on acceptability in its own right. For this, co-construal rate was included as a fixed effect in the regression models while relation type was controlled for as a random intercept. We found that co-construal rate has a significant effect on pronoun acceptability in the predicted direction ($p < 0.001$). On the other hand, co-construal rate does not have a significant effect on reflexive acceptability ($p = 0.23$), though the numerical relationship trended in the predicted direction (Fig. 2b).

Finally, looking within co-construed cloze responses, we asked whether the rate of reflexive vs. pronoun production showed sensitivity to relation type or co-construal rate commensurate with the effects found in the rating data. Though the sample is small (239/2880 cloze trials), we found a significant effect of relation type on proform choice in the predicted direction ($p < 0.001$) but no effect of co-construal rate ($p = 0.41$).

Discussion. Bringing together production and comprehension data, this study provides new evidence for the impact of contact and expectancy on LPP proform preferences. Our findings support the claim that the contact effect cannot be reduced to expectancy, suggesting that the former reflects grammatical rather than functional pressures. They also show that expectancy plays an independent role in shaping acceptability, though specifically for the pronoun. This outcome is consistent with a form-specific approach to proform interpretation [6] and may reflect association of pronoun use with ease of referent access in working memory [7]. Indeed, the lack of a co-construal effect in production data may show that the effect is rooted in how pronouns are processed rather than in constraints on proform choice. This suggests a promising direction for future research on (a)symmetries in the production and comprehension of English proforms.

References. [1] Chomsky 1981. *Lectures on Government and Binding*. [2] Kuno 1987. *Functional Syntax: Anaphora, Discourse and Empathy*. [3] Bryant 2022. *Lost in Space: Pronoun Choice in English Locative Prepositional Phrases*. [4] Lederer 2013. Understanding the Self: How spatial parameters influence the distribution of anaphora within prepositional phrases. [5] Haspelmath 2008. A frequentist explanation of some universals of reflexive marking. [6] Kaiser et al. 2009. Structural and semantic constraints on the resolution of pronouns and reflexives. [7] Arnold 2010. How speakers refer: The role of accessibility.