

Are they touching? Contact and pronoun choice in English prepositional phrases

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Introduction. In English, both reflexive pronouns (*herself*) and personal pronouns (*her*) can be used in locative prepositional phrases (LPPs) to refer back to the sentence subject [1-3]. Prior theoretical work has proposed that the choice between forms depends on the nature of the spatial relation expressed by the preposition, in particular whether the relation is one of direct physical contact. According to [4-5], reflexives are more acceptable when physical contact holds, while personal pronouns are more acceptable in the absence of physical contact:

- (1) a. Corporal Crump pinned the medal beside him/*himself (on the wall).
b. Corporal Crump pinned the medal onto *him/himself. ([5]:15)

Similarly, [6-8] report that use of the reflexive gives rise to an inference of physical contact, whereas the personal pronoun is neutral in this respect:

- (2) a. When he woke up, John found a rope around himself.
He had been tied up. / *It described a neat circle 4 meters in diameter.
b. When he woke up, John found a rope around him.
He had been tied up. / It described a neat circle 4 meters in diameter. ([8]:54)

In this study, we experimentally tested the relationship between physical contact and pronoun choice in English LPPs, looking at both the impact of contact on pronoun acceptability (Exp. 1) and the impact of pronoun choice on the likelihood of inferring contact (Exp. 2). Our results support the proposal that reflexives are favored in contexts in which contact holds, though they point to a flexible association between reflexives and contact rather than a fixed semantic requirement.

Exp. 1: Acceptability rating survey. To test the effect of physical contact on reflexive and personal pronoun acceptability, we created 18 sets of target sentences by varying pronoun type and relation type (\mp CONTACT) across three types of embedding verb (HAVE, PERCEPTION, MOTION):

	+CONTACT	-CONTACT
HAVE	Chloe had some glitter on her(self).	Chloe had some glitter next to her(self).
PERC.	Chloe noticed some glitter on her(self).	Chloe noticed some glitter next to her(self).
MOTION	Chloe poured some glitter on her(self).	Chloe poured some glitter next to her(self).

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. Following [9], we presented minimal sentence pairs side-by-side with slider bars to help draw out relative preferences between the reflexive and personal pronoun in a given construction (**Fig 1a**). Ratings were collected online from 122 participants, each of whom saw 18 target questions (3 per condition) as well as 4 control and 22 filler questions.

Responses from 31 participants were excluded from analysis due to failure on catch trials, leaving an average of 270 observations per condition. Consistent with the observations in [4-5], reflexives received higher ratings on average in +CONTACT sentences than in -CONTACT sentences across all three verb types, while personal pronouns showed the opposite pattern (**Fig. 1b**). Results from a linear mixed effects analysis revealed relation type to be a significant predictor of both reflexive acceptability ($\beta=0.507$, $p<0.001$) and personal pronoun acceptability ($\beta=-0.389$, $p<0.001$).

Exp. 2: Contact inference survey. Exp. 1 stimuli were designed to bias participants towards either a +CONTACT or a -CONTACT reading. A subsequent norming study confirmed the overall efficacy of this manipulation: +CONTACT stimuli were overwhelmingly interpreted as involving contact, -CONTACT stimuli as not involving contact. However, norming results also revealed some variation in interpretation, particularly for MOTION/-CONTACT stimuli. This opened up the possibility that pronoun choice could influence whether or not contact is inferred for these sentences, in line with [6-8]. To test this, we included 10 of the MOTION/-CONTACT sentence pairs in a binary choice

inference survey. Sentences were presented one at a time followed by a Yes/No question of the form *Was the X touching Y?* (**Fig. 2a**). Inferences were collected online from 30 participants, each of whom saw 10 target questions (5 reflexive, 5 personal pronoun) and 5 filler questions.

Though ‘No’ responses were considerably more frequent than ‘Yes’ responses regardless of pronoun type, sentences containing reflexives gave rise to contact inferences more often than did sentences containing personal pronouns (**Fig. 2b**). A logistic mixed effects analysis showed the effect of pronoun type on the likelihood of inferring contact to be significant ($\beta=-0.678$, $p=0.02$).

Discussion. Experiments 1 and 2 lend empirical weight to the purported relevance of contact to pronoun choice in English LPPs. However, contrary to the strongest claims in the literature, contact was not found to impose strict complementarity between reflexives and pronouns, nor did reflexives uniformly prompt inference of contact, ruling against an analysis that builds contact into the denotation of the reflexive. Instead, we suggest that these findings reflect association of the reflexive with two features of *event structure*—spatial contiguity and affectedness— following from its canonical use in transitive constructions.

Figure 1a: Question from Experiment 1

Background: Richard (he) and Chloe (she) made a mess decorating Valentine's Day cards in their kitchen.

Chloe poured some glitter next to her.

Chloe poured some glitter next to herself.

less natural more natural

Figure 2a: Question from Experiment 2

Background: Richard (he) and Chloe (she) made a mess decorating Valentine's Day cards in their kitchen.

Chloe poured some glitter next to her.

Was the glitter touching Chloe?

Yes No

Figure 1b: Z-scored ratings from Exp. 1

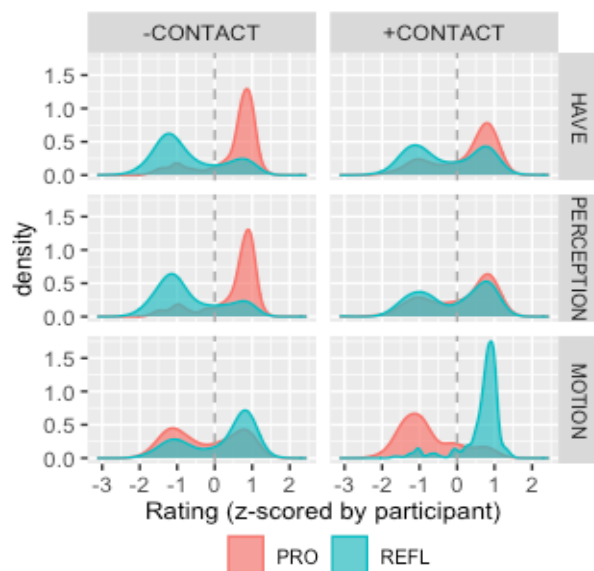
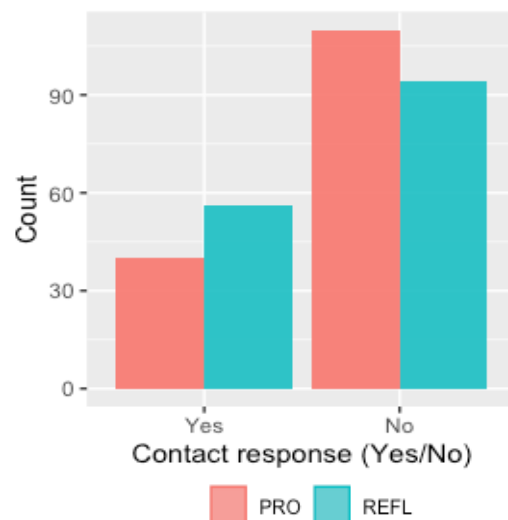


Figure 2b: Contact inferences from Exp. 2



References. [1] Chomsky 1981. *Lectures on Government and Binding*. [2] Reinhart & Reuland 1993. Reflexivity. [3] Büring 2005. *Binding theory*. [4] Faltz 1985. *Reflexivization: A Study in Universal Syntax*. [5] Wechsler 1997. Prepositional phrases from the twilight zone. [6] Kuno 1987. *Functional Syntax: Anaphora, Discourse, and Empathy*. [7] Van Hoek 1997. *Anaphora and Conceptual Structure*. [8] Rooryck & Vanden Wyngaerd 2007. The syntax of spatial anaphora. [9] Marty, Chemla & Sprouse 2020. The effect of three basic task features on the sensitivity of acceptability judgment tasks.