Discourse prominence effects and VP ellipsis interpretation

Pronoun interpretation can occur via coreference or variable binding (e.g.,[5,7,8]). This is reflected in the ambiguity of verb phrase ellipsis (VPE) in sentences like (1), which can mean that John washed his own car (bound variable, “BV”) or Bill’s car (coreference, “CR”). What guides selection of one interpretation over the other?

(1) Bill washed his car, and John did, too.
(1a) Bound variable: Bill [λx(x washed x’s car)], and John did [λx(x washed x’s car)], too.
(1b) Coreference: Bill [λx(x washed his[Bill] car)], and John did [λx(x washed his[Bill] car)], too.

Overall, variable binding is preferred over coreference [3,8]. Furthermore, work with children reveals more BV interpretations with inalienable than alienable possessions (e.g. her arm/apple, [2]). However, possessives also express relations such as kinship (e.g. her father) and other human relationships (e.g. his boss). In many languages, different possession relations differ morphosyntactically [4], suggesting they are cognitively distinct and may be processed differently. Possession type effects on VPE interpretation have not been systematically investigated.

Discourse-based hypothesis: We hypothesize that possessed nouns differ in whether they are independent discourse referents vs. dependent on the possessor’s discourse representation. Specifically, we hypothesize that animate possessions are more likely to receive independent status in the discourse (cf.[1]) and are consequently more available for coreference in VPE, while inanimate possessions are less privileged, more likely to be dependent on their possessors’ discourse representations, and thus more likely to elicit BV interpretations (Fig.1). We tested this in three experiments.

<table>
<thead>
<tr>
<th>Proposed Discourse Schema</th>
<th>(1a) Bound variable</th>
<th>(1b) Coreference</th>
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<tr>
<td>Bill car</td>
<td>John car</td>
<td>Bill Bill’s car</td>
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![Image](https://via.placeholder.com/150)

Figure 1. The proposed discourse schema for BV and CR interpretations of (1).

Exp.1 (n=48, 24 targets, 40 fillers) tested VPE with four possession types: part-whole (e.g. nose), ownership (e.g. bicycle), relational (e.g. opponent), and kinship (e.g. father). Part-whole and ownership nouns were inanimate; relational and kinship nouns were human (animate). The subjects in all targets were proper names (2). For each target, participants saw two choices (BV/CR) and selected the one they felt was most compatible with the meaning of the sentence. Nonce verbs minimized verb effects (cf.[6])

(2) Helen chabbed her jacket, and Amanda did, too. [Example ownership target]
(2a) Amanda chabbed her own jacket. [Bound variable choice]
(2b) Amanda chabbed Helen’s jacket. [Coreferential choice]

The results (Fig.2) support our hypothesis: inanimate possessions (part-whole, ownership) pattern uniformly (p=.57) and, crucially, receive more BV responses than animate possessions (relational, kinship; p<.001). Intriguingly, relational possessions elicited more BV responses than kin terms (p<.001), perhaps due to kin terms’ social salience—a follow-up study shows our findings cannot be reduced to plausibility/likelihood-of-possession.

If the discourse-based model is on the right track, animacy effects should disappear in contexts that rule out the possibility of an independent discourse referent for the possessed noun. If the matrix subject is a QuNP (e.g. every woman), which does not introduce a discourse referent [7], coreference should be impossible, regardless of possession type.
Figure 2. The proportion of BV responses by possession type in Experiments 1, 2, and 3.

To test this, **Exp.2** (n=32) replaced Exp.1 matrix subjects with every man/woman (3); **Exp.3** (n=32) did the same for elided clause subjects (4). In (3), building an independent discourse representation for the possessed noun is not possible; only BV construals are predicted. In (4), processing of the matrix clause proceeds as in Exp.1; the animacy effect should mirror Exp.1.

(3) Every woman chabbbed her jacket, and Amanda did, too. [Example target in **Exp.2**]
(3a) Amanda chabbbed her own jacket. [Bound variable choice]
(3b) Amanda chabbbed every woman's jacket. [Coreferential choice]

(4) Helen chabbbed her jacket, and every woman did, too. [Example target in **Exp.3**]
(4a) Every woman chabbbed her own jacket. [Bound variable choice]
(4b) Every woman chabbbed Helen's jacket. [Coreferential choice]

The results of **Exp.2** (Fig.2) reveal a strong BV bias in all conditions, and no animacy/possession-type effects (p>0.05 for all comparisons). **Exp.3** replicates the animacy effect from Exp.1 (p<.001); these results support our theoretical model.

**In sum**, we provide experimental evidence for a discourse-based analysis of possession-type effects on VPE interpretation.

Word count excluding examples and references: 498