An experimental investigation of referential/nonreferential asymmetries in syntactic reconstruction

Introduction

Syntactic reconstruction effects on reflexive binding (Barss 1986), where the reflexive inside the fronted wh-phrase can be bound in either the target (high reading) or base position (low reading) (1), have played a pivotal role in recent discussions of the LF interface (Chomsky 1995, Fox 2000, Sportiche 2006).

(1)  John wondered which picture of himself Bill is likely to hear about.  
     (cf. John wondered if Bill is likely to hear about a picture of himself)

One factor that has been argued to condition these binding possibilities is referentiality (Heycock 1995): Reconstruction is optional when the wh-argument is referential, but obligatory when it is non-referential. However, the judgment reported in this paradigm is subtle and manipulation of referentiality requires an extremely careful control of the discourse context. We show, using adult data from a variant of a Questions-after-story task (de Villiers, Roep and Vainikka 1990), that the effect of (non-) referentiality on syntactic reconstruction is much less robust than has been argued in the literature, suggesting that referentiality may not be a crucial factor in determining binding relations.

Previous Observations

Following Heycock (1995), Fox and Nissenbaum (2004) illustrate that referentiality affects the syntactic reconstruction possibilities for reflexive binding. In (2), the semantics of the creation verbs have ideas is compatible with a non-referential reading (3a) but not with a referential reading (3b), because the ideas are not in existence, and hence cannot be referred to.

(2)  How many ideas is John likely to have?  
     (3) a. What is the number n such that John is likely to have n ideas?  
     b. #What is the number n such that there are n ideas and John is likely to have those ideas?

They claim that when an amount wh-phrase contains a reflexive as in (4), then binding in the target position remains available if the wh-phrase is selected by a non-creation verb (4a), but not if it is selected by a creation verb (4b).

(4) a. OK I asked John how many ideas about himself Mary is likely to hear about t.  
     b. *I asked John how many ideas about himself Mary is likely to have t.
Our experiment tests this contrast, using sentences like (5) with two potential antecedents for the reflexive.

(5)  
   a. Non-creation verb (referential) condition:  
       Tom wondered how many drawings of himself Alex loved to look at. Do you know?  
   b. Creation verb (non-referential) condition:  
       Tom wondered how many drawings of himself Alex needed to draw. Do you know?

Experiment

An experimental test of the contrast presented in (4a) and (4b) is required to control the availability of both referential and non-referential interpretations of the amount wh-argument. We created a variant of the Questions-after-story task. In this task, the experimenter presents a scenario that makes available the two potential antecedents for the reflexive. After the scenario, a puppet utters the target sentence followed by a question to the participant (5). The participant answers with a number, from which either the high or low reading of the reflexive in the target sentence can be inferred. For the non-creation verb (referential) condition (5a), the target sentence contains a verb that requires an object in existence (e.g. look at), and for the creation verb (non-referential) condition (5b), the target sentence contains a creation verb (e.g., draw) that requires a non-existent item. The scenario contains two characters that are posting drawings for an art gallery. There exists a column for each character. The drawings in these columns make available the referential interpretation of the wh-argument. The blank boxes, which indicate that more pictures must be drawn to fill those spots, make available the non-referential interpretation of the wh-argument (Figure 1).

Figure 1. Example of an art gallery used in our stories

Crucially, each column contains a different number of drawings as well as blank boxes. For example, a response of “2” for (5a) would reflect a high reading of the reflexive in the target sentence. Targets were presented in a pseudorandom order, with control items intermixed. Counterbalanced measures include: number associated with high reading, and side on which the pictures associated with the high reading appeared.

Based on the results from previous self-paced reading experiments and truth-value judgment tasks with adults that used similar sentences, we predicted that
participants would prefer the high reading if both readings are available (Frazier, Plunkett and Clifton 1996; Omaki, Dyer, Malhotra, Sprouse, Lidz and Phillips 2007), but that they would allow only the low reading when the high reading is ungrammatical (Leddon and Lidz 2006). Specifically, if referentiality does condition reconstruction possibilities, we predict that in the non-creation verb (i.e., referential) condition (5a), the subjects would mainly produce high reading answers, whereas in the creation verb (i.e., non-referential) condition (5b), the subjects would not produce high reading answers at all.

Results

Twenty one native speakers of English provided high reading answers 61.9% of the time in the non-creation verb condition (5a), and 69% of the time in the creation verb condition (5b). One-sample t-test shows that the high reading answers were produced at a significantly above chance level (50%) in both non-creation verb condition ($t(20)=6.82, p<.0005$) and creation verb condition ($t(20)=7.86, p<.0005$), and paired t-test revealed no significant difference between the two conditions ($t(20)= -1, p>.1$). These results show that the high reading is not only available, but is preferred in both conditions. This shows that it is not the case that adults require reconstruction when the amount $wh$-argument is selected by a creation verb.

Discussion

The present findings contradict the observation that the syntactic reconstruction of amount $wh$-arguments can be manipulated by the use of creation verbs (Fox and Nissenbaum 2004; Heycock 1995). We present two possible syntactic analyses of these results. Either the referential/non-referential asymmetries in syntactic reconstruction effects are illusory (requiring a carefully controlled, rich discourse context), or the arguments of creation verbs can be rendered referential if they denote objects in virtual existence (Sportiche 2006). That is, if the participant interprets (5b) as (7), this virtual existence is sufficient in order for an object to be referential, explaining why the high reading was available in our creation verb condition.

(7) Tom wondered for what number $x$, there are $x$ many drawings of himself Alex needed to draw.
   (="Tom wondered how many drawings of himself there are that Alex needed to draw.")

This experiment thus reveals intricacies of referentiality that were difficult to capture with traditional syntactic judgments.
References


