

## A psycholinguistic investigation of MaxElide in variable-binding contexts

Margaret Grant, UMass Amherst

The study of ellipsis has provided much insight into the nature of the syntax-semantics interface. Recently, a proposal by Merchant (2008) introduced a novel type of constraint on ellipsis that determines the *amount* of material that must be left unspoken. This principle, MaxElide, requires that ellipsis target the largest possible constituent in environments involving trace binding. For example, in (1), sluicing (1a) is claimed to be more acceptable than VP ellipsis (VPE, 1b) because VPE violates MaxElide. However, VPE is claimed to be acceptable when a focused element inside IP must be spoken, as in (2), eliminating the possibility for sluicing (Schuyler 2001). Determining the nature of MaxElide is important to our understanding of acceptability in ellipsis, and of constraints on syntactic acceptability in general.

Takahashi and Fox (2005) propose to extend Merchant's (2008) MaxElide principle to account for the pattern of available sloppy identity readings in so-called *re-binding* contexts, wherein the binder for a bound-variable pronoun is outside the site of ellipsis. The reported pattern is presented in (3); sloppy identity is possible with ellipsis of the main VP (3a), but not with ellipsis of an embedded VP (3b). The impossibility of sloppy identity in (3b) has motivated the claim that re-binding is not allowed by the grammar (Sag 1976, Williams 1977). This paper will explore the nature of MaxElide with respect to sloppy identity in re-binding and non-re-binding contexts. Two questionnaire experiments draw into question the categorical nature of the ban on re-binding as per Sag (1976) and Williams (1977).

**Experiment 1:** 66 participants were given either 12 sentences like (4a) or 12 sentences like (4b), and were asked to choose their preferred interpretation from strict and sloppy identity paraphrases. A surprising preference for strict identity was found; in the maximal ellipsis (non re-binding) group, participants chose the strict interpretation on 71% of trials, and in the non-maximal ellipsis (re-binding) group, participants chose the strict interpretation on 79% of trials. This difference only approached significance using a mixed-effects logistic regression (Jaeger 2008) ( $p = .072$ ). The overall preference may be attributable to a bias toward establishing the antecedent clause subject (*John* in (4)) as the *topic* of the utterance in both ellipsis conditions, and a further bias toward interpreting pronouns as referring to topics. The results of Experiment 1 show only a small, non-reliable effect of MaxElide. Experiment 2 was devised to test whether the overall bias toward the strict identity interpretation in Experiment 1 was washing out an effect of MaxElide.

**Experiment 2:** In order to bias participants toward the sloppy identity interpretation of the items in Experiment 1, contexts biased to the sloppy interpretation were devised for each of the 24 items. An example context is given in (5). 22 participants were presented with a context and target that either contained maximal or non-maximal ellipsis. Participants in Experiment 2 saw both types of targets. Participants were asked to rate how well the context fit the target on a scale from 1 (not well at all) to 5 (very well), and were then asked a question that explicitly targeted their interpretation of the elided pronoun. The rate of sloppy identity responses was high for both conditions. Mean sloppy identity responses and mean ratings of context-target fit are shown in Table 1. A mixed effects logistic regression showed that participants' ratings of context-target fit were a significant predictor of their answer to the interpretation question ( $z = 3.33, p = .001$ ), but ellipsis condition did not have a significant effect ( $z = .17, p = .869$ ).

Taken together, the results of Experiments 1 and 2 indicate that there is no categorical MaxElide condition applying in re-binding environments. This suggests that either MaxElide is specific to cases of wh-extraction out of ellipsis sites (as per Merchant 2008), or that there is no MaxElide effect at all. An additional experiment testing acceptability of VPE versus sluicing is planned. The results of Experiments 1 and 2 are at odds with judgments of examples like (3a-b) in the theoretical literature. In this literature, judgments were made by directly comparing the conditions, whereas Experiments 1 and 2 elicited interpretation preferences for individual examples. This difference is important in understanding the nature of grammatical constraints and how they are used by speakers/comprehenders (see Coetzee 2008 for discussion of phonological judgments in comparative and non-comparative tasks). Further experimentation is required to assess whether naïve speakers demonstrate differences in sloppy identity acceptability in direct comparison contexts.

## Data

- 1) (Merchant 2008, modified)
  - a) They said they heard about a Balkan language, but I don't know which. (sluicing)
  - b) ?They said they heard about a Balkan language, but I don't know which they did. (VPE)
- 2) (Schuyler 2001)
  - a) It's clear that they could invite someone, but I don't know who they ever WOULD.
- 3)
  - a) John<sub>1</sub> said Mary likes him<sub>1</sub>, and Bill<sub>2</sub> did <say she likes him<sub>1/2</sub>>, too.
  - b) John<sub>1</sub> said Mary likes him<sub>1</sub>, and Bill<sub>2</sub> said she does <like him<sub>1/\*2</sub>>, too.
- 4)
  - a) *Non-maximal ellipsis:*  
John wonders if Mary left him a message, and Bill wonders if she did, too.
  - b) *Maximal ellipsis:*  
John wonders if Mary left him a message, and Bill does, too.
- 5) Last month, Fiona needed help with the wiring and plumbing in her kitchen. She called Oliver, an electrician, to see if he could help with the wiring, and then a day later she called her friend Harry, a plumber, to see if he could help with the plumbing.  
*Non-maximal ellipsis target:*  
Oliver knows that Fiona needed his help, and Harry knows that she did, too.  
*Maximal ellipsis target:*  
Oliver knows that Fiona needed his help, and Harry does, too.

Table 1. Mean bound-variable responses and context-target fit ratings for Experiment 2.

	Proportion of bound-variable responses		Rating of target-context fit	
	Mean	SD	Mean	SD
Maximal Ellipsis	0.69	0.46	3.28	1.30
Non-Maximal Ellipsis	0.70	0.46	3.18	1.31

## References

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## Contact Address

meg@linguist.umass.edu