Processing Antipresuppositions

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Summary: The aim of this paper is to show that presuppositions and antipresuppositions (Percus 2006) are processed differently. Data from a reading time study comparing the German definite and indefinite determiner are presented. The results suggest that both the definite and indefinite are processed immediately. In addition, there are earlier effects of the indefinite only when it introduces a new referent but not when its antipresupposition is not satisfied, which suggests that different cognitive processes are involved when calculating presuppositions and antipresuppositions.

Theory: It has been observed that presupposition triggers have to be used if their presupposition (PSP) is fulfilled in the context. This is standardly assumed to be a result of the principle *Maximize Presupposition* (Heim 1991). According to theories working with *MaxPres* PSP triggers are ordered on a scale of a presuppositional strength with their non- presuppositional counterparts (Sauerland 2008, Percus 2006, Chemla 2008). One of these scales orders the definite and indefinite determiner. The indefinite yields the inference that the PSP of the definite is false ("antiuniqueness") due to this competition, which is why it is infelicitous in (1). The definite has to be used as a result of *MaxPres*.

   (1) The / # A father of the victim came.

The inference arising from not using the presuppositionally stronger version has been called an antipresupposition (Percus 2006). It has been argued to have an epistemically weak status and project out of negation (Sauerland 2008). It is thus distinguished theoretically from PSPs and implicatures. There have so far only been few experimental investigation of antipresuppositions. Previous data suggest that they show late effects in processing (Kirsten et al. 2014) and that they do project under negation (Bade 2016). This is predicted under theories where antipresuppositions and presuppositions are considered to have a different status. Another view on the competition between the definite and indefinite is that they both come with their own context restrictions. For example, the oddness of (1) might have to do with the fact that the indefinite comes with a novelty condition whereas the definite comes with a familiarity condition (Heim 1982); or that the indefinite comes with an antiuniqueness presupposition as well (Kratzer 2004). Under these alternative views the definite and indefinite should behave paralelly in processing.

The Study: For the study 24 items were created in four conditions. A 2x2 design was used

crossing the conditions DEFINITE (with levels def/indef) and MATCH (with levels match/mismatch). The definite was considered matching when its PSP was verified in the context, it was mismatching when the PSP was not. For the indefinite the opposite was the case, if the indefinite has the antipresupposition that the PSP of the definite is false it should be mismatching when the definite was matching. Contexts were created were a referent was introduced with a simple description. The definite appeared with a relative clause matching the description of the context in the match condition and introducing a new description in the mismatching condition. Thereby the matching condition for the definite moreover fulfilled familiarity and the matching condition for the indefinite fulfilled novelty, see sample item below.

(2) A man entered the bar. {The/A} man who {entered the bar/ was sitting at the bar} smiled and ordered another beer.

Statistical analysis was done using linear mixed effect models and the lmer function in R. It revealed significant interactions between DEF and MATCH on words 5, 6 ,7, 10 and the final word (matrix clause) in the target ($p<.05$). The results suggest that, as has been observed before, unfulfilled presuppositions lead to immediate processing difficulties compared to fulfilled ones. For the indefinite the matching condition was significantly slower than the mismatching one early on, which shows that checking the contexts for whether the indefinite is appropriate also happens immediately. The fact that the mismatch condition was significantly faster than the match condition suggests that disobeying *MaxPres* is detected early on and the sentence is discarded as infelicitous. However, in the match condition a new discourse referent has to be introduced which leads to increased processing efforts. This confirms the speculation expressed in Kirsten et al. 2014 that introducing new discourse referents with the indefinite is costly. Unlike found in Kirsten et al., however, these processing costs are not more enduring compared to unfulfilled presuppositions. Rather, they are decreasing at the end of the sentence compared to the mismatching definite. This suggests that the accommodation process for the definite involves additional cognitive processes than just introducing a referent.

Conclusion: The data overall confirm theories where definites and indefinites are consid- ered non-equal in complexity and restrictions they impose. Just violating *MaxPres* seems to be a rapid process compared to violated presuppositions and novel indefinites.

Selected References: Chemla, E. (2009) "An epistemic step for antipresuppositions" In *Journal of Seman- tics*. Heim, I. (1991). "Artikel und Definitheit". In *Semantics: an international handbook of contempo- rary research*. Percus, O. "Antipresuppositions" In *Theoretical and Empirical Studies of Reference and Anaphora*. Sauerland, U. "Implicated presuppositions" In *Sentence and Context*..