

## Empirical insights on the exhaustivity inference in it-clefts

**INTRODUCTION** – We present an empirical study on the exhaustivity inference in German it-clefts in which the asserted and presupposed content is teased apart systematically. Despite existing work suggesting that exhaustivity in clefts can be analyzed as presuppositional, this has not been properly controlled for in prior experiments (Destruel et al. 2013; Denhaus et al. 2011). We compare it-clefts with definite descriptions and other focus constructions, e.g. exclusives and plain focus, to detect similarities across sentence types in terms of the discourse status of the exhaustivity inference. Exclusives are taken to assert exhaustivity, whereas it is taken to be a conversational implicature (CI) with plain focus (Beaver & Clark 2008). We provide evidence showing that clefts and definite descriptions behave on a par deviant from both exclusives and plain focus, suggesting that the exhaustivity inference in clefts is neither assertive, nor a CI, but in fact presupposed.

**BACKGROUND** – Velleman et al. (2012) claim that while clefts and exclusives both come with an exhaustivity inference, the crucial difference lies in its status: while it is part of the assertion in exclusives (1b), it is presuppositional in clefts (2c). Based on this distinction, we model presupposition in terms of verification of a MIN-condition as an answer to the current question under discussion (Roberts 1996) (*There is a true answer at least as strong as the one given*) and a MAX-condition (*There is no true answer strictly stronger than the one given*). We use exclusives as a baseline comparison for the analysis of clefts and pay special attention to the respective behavior of clefts and definite descriptions. Compare the following analysis based on Velleman et al. (2012):

- (1) Only Ben cheered.
  - a.  $\lambda w. \text{MIN}_s(\text{cheered (b)}) (w). \text{MAX}_s(\text{cheered (b)}) (w)$
  - b. asserts: (exh) No true answer is strictly stronger than Ben cheered.
  - c. presupposes: (prej) At least Ben cheered.
  
- (2) It is Ben who cheered.
  - a.  $\lambda w. \text{MAX}_s(\text{cheered (b)}) (w). \text{MIN}_s(\text{cheered (b)}) (w)$
  - b. asserts: (prej) At least Ben cheered.
  - c. presupposes: (exh) No true answer is strictly stronger than Ben cheered.

Our design follows the main research question: Does the verification of MIN (knowing the truth of the prej) suffice to make a truth value judgement? Since exhaustivity with plain focus is an easily cancelable CI, MIN suffices for a judgement, whereas exclusives require verification or falsification of MAX. As definite descriptions are taken to presuppose exhaustivity, speakers can either be satisfied after the verification of MIN, therefore accommodating the truth of the presupposition, or continue to make sure that it holds (and therefore require MAX for a judgement). Our design investigates the behavior of clefts in this respect and which of the focus conditions they behave similar to.

**DESIGN** – 32 German native-speakers were presented with 32 target auditory stimuli for 4 sentence types: **clefts**, **definite descriptions**, **exclusives**, and **focus** (illustrated below for the sentence *Tom put on a pullover*). At the start of each trial, participants looked at a computer screen with four covered boxes ( $\boxplus$ ) while the target stimuli played in their headphones, after which they uncovered one-by-one with their mouse four illustrated characters in each of the boxes (*Max, Tom, Ben, Jens*), with a pause between them to discourage unnecessary uncovering. As the characters appeared on screen, each stated in written form which activity they did. Thus, the relevant information was presented incrementally, and participants were asked to make a truth-value judgment as soon as enough information was available. Crucially, Location 2 always verified the canonical meaning of the stimuli (e.g., **Tom**: ‘*I put on a pullover*’; see example trial below). Note that

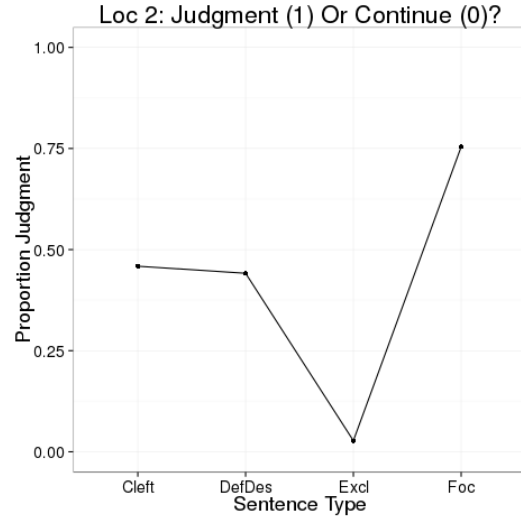
in half the trials a violation of exhaustivity in Location 3 or Location 4 was presented, serving as a control condition that the experiment was sensitive to exhaustivity. All items were in German.

### Auditory Stimuli (by Sentence Type)

- CLEFT: It is Tom who put on a pullover.  
 DEFDES: He who put on a pullover is Tom.  
 EXCLUSIVE: Only Tom put on a pullover.  
 FOCUS: TOM put on a pullover.

### Example Trial For The 4 Locations

- LOC 1: Max ‘*I wore a hat.*’  
 LOC 2: **Tom** ‘*I put on a pullover.*’  
 LOC 3: Ben ‘*I tied on a scarf.*’  
 LOC 4: Jens ‘*I brought a jacket.*’



**RESULTS** – At Location 2 there was a significant effect of sentence type on whether a truth-value judgment was made: clefts and definite descriptions elicited a judgment a little less than half the time at 44% and 46%, respectively; exclusives only 3% of the time; and focus 75% (see graph); note that when a judgment was made at Location 2, the sentence was consistently judged to be true. Thus, whereas the asserted exhaustivity for exclusives required further uncovering, the pragmatic exhaustivity of focus generally did not; by contrast, the presupposed exhaustivity of definite descriptions—together with clefts—elicited further uncovering circa half the time, with no significant difference between the two. (For the control condition, when participants continued and found exhaustivity to be violated, the sentences were consistently judged to be false.)

**CONCLUSION** – The results shed new light on the semantic-pragmatic debate regarding it-clefts: The behavioral pattern of clefts provides empirical evidence for a semantic analysis of exhaustivity in it-clefts (Percus 1997, Büring & Križ 2013). An analysis of the exhaustivity inference on a par with exclusives (Atlas & Levinson 1981, Büring 2011, É. Kiss 1998), or as a pragmatic inference (i.e., a conversational implicature; see Horn 1981, 2013), can therefore be rejected. This paper provides empirical evidence supporting the exhaustivity claim proposed by Büring & Križ (2013) and Percus (1997) in showing that the exhaustivity in clefts can be analyzed as a presupposition. Additionally, our data shows that it-clefts and definite descriptions pattern together and need to be addressed by the same analysis.

**Selected References** • Büring, D. & Križ, M. (2013). *It’s that, and that’s it! Exhaustivity and homogeneity presupposition in clefts (and definites)*. *Semantics & Pragmatics*. • Destruel, E., Velleman, D. B., Onea, E., Bumford, D., Xue, J. & Beaver, D. (2013). *A Cross-Linguistic Study of the Non-at-issueness of Exhaustive Inferences*. • Horn, L. (2013). *Information structure and the landscape of (non-)at-issue meaning*. *OUP Handbook of Information Structure* (Forthcoming). • E.Kiss (1998). *Identificational Focus versus information focus*. *Language* • Velleman, D. B., Beaver, D., Destruel, E., Bumford, D., Onea, E., & Coppock, E. (2012). *It-clefts are IT (inquiry terminating) constructions*. *SALT Proceedings*.