Exhaustivity in Focus: Experimental evidence from Hungarian

1. The issue One aspect of the meaning of (free) focus whose nature has been a recurrent issue is its exhaustivity. The exhaustivity inference of focus (i.e., that the background holds of no focus-alternative distinct from the denotation of the focused element) has been commonly treated in terms of pragmatic implicatures in both (Neo-)Gricean and Relevance Theoretic accounts. Until recently, by contrast, Hungarian (immediately) pre-verbal focus (PVF) has been analyzed in most focus typologies as exhibiting truth-conditional, semantic exhaustivity (Szabolcsi 1981, É-Kiss 1987, 1998). Sentences with PVF are claimed to be interpreted similarly to identificational copular clauses (Szabolcsi 1994, Kenesi 1986, 2005), having existence and maximal presuppositions, with exhaustivity being a Strawson-entailment of presupposed and asserted content. This is unlike exhaustivity due to pragmatic implicature, which is characteristic of prosodic focus of the English type, and which includes syntactically unmarked focus (SUF) in Hungarian too. Recently, this view of PVF has been both challenged (Wedgwood 2005, 2007, Onea 2007, 2008) and defended (É-Kiss 2006, 2010, Horvath 2005, 2007) in theoretical work. Although Hungarian PVF is the most widely cited example of a putative case of semantically exhaustive focus, a number of further languages have been claimed to have semantically exhaustive focus as well (see, e.g., É-Kiss 1998).

2. A previous study Onea (2009) and Onea & Beaver (2011) report on a truth-value judgment (TVJ) experiment designed to investigate the question, adding German too for comparison. The stimuli: Subjects saw a picture in which some persons were involved in an event, and heard a one-sentence description of the event of the type Mark caught a butterfly varying the role of Mark as a focus. Participants had to choose from: ‘Yes, and Bill did too’ / ‘Yes, but Bill did too’ / ‘No, Bill did too.’ PVF sentences were accepted (responded to with one of the two ‘Yes,...’ replies) relatively willingly as descriptions of non-exhaustive situations in pictures. Onea & Beaver conclude that PVF is not semantically exhaustive, observing also that PVF is still more exhaustive than syntactically unmarked focus in German.

The experimental task itself is prone to criticism, however, which makes it difficult to draw any firm conclusions. The biggest concern is that it is unclear what exactly it is that subjects (dis)agree with when choosing each of the three possible reactions. For, such responses may express (dis)agreement with only some of the presuppositions, asserted content, or entailments (in the case of PVF: the presupposition of existence and maximality, the assertion of identity, and the Strawson-entailment of the exclusion of focus-alternatives, respectively; see Szabolcsi 1994), or implicatures. Therefore, experimental evidence that would address the nature of the exhaustivity effect of PVF is still lacking.

3. The experiments The primary objective of this talk is to address this debate and present novel results of two experiments investigating the exhaustivity associated with different types of (free) Focus in Hungarian. Both experiments employ methods in ways that have not, to our knowledge, been applied in the study of the interpretation of focus per se.

3.1 Experiment 1 The first experiment we report on involved a TVJ test that adapts the method used in Bott & Noveck’s (2004) investigation of scalar implicatures, and shares the rationale behind it. The experiment builds on the prediction of Relevance Theory that, keeping the attainable contextual effect constant, the probability of a pragmatic implicature decreases when its processing cost is higher. Therefore, we tested the semantic (Strawson-entailment) vs. pragmatic (Q-implicature) nature of focus exhaustivity by limiting cognitive resources. Two groups of participants listened to context-setting passages ending in a wh-question that required an exhaustive answer, followed by an answer sentence. The test sentence was the answer itself, which was varied to contain either PVF or SUF. When the answer started playing, participants, who were shown a picture that matched either an exhaustive or a non-exhaustive interpretation, had to decide whether or not the answer corresponded to the picture stimulus. While in the first group they had unlimited time to respond (‘long’ condition), in the second group they had only an 1000-ms time window from the onset of the visual stimulus (‘short’ condition). By limiting response time we intended to increase the processing cost of exhaustive interpretation (cf. Bott & Noveck 2004). We predicted that restricting the response time window in the ‘short’ condition will lead to a smaller (or no) decrease in the number of exhaustive interpretations for those sentences in which exhaustivity is a semantic entailment than for those sentences where exhaustivity is due to an implicature.
If exhaustivity of some focus type is due to implicature, then in case processing cost is high, the likelihood that subjects do not generate the implicature is expected to increase, as compared to the ‘long’ condition.

Results: In the ‘long’ condition both types of focus were interpreted exhaustively with no significant difference, at high rates (PVF: 75%, SUF: 73% of the responses). In the ‘short’ condition the number of exhaustive interpretations significantly decreased in both focus types (PVF: $\chi^2(1) = 6.783$, $p=0.009$, SUF: $\chi^2(1) = 10.995$, $p=0.01$). Further, within the ‘short’ condition, the rates of ‘incorrect’ exhaustive interpretations of the two focus types did not significantly differ. These results suggest that exhaustivity of both PVF and SUF is due to pragmatic implicature, and is not Strawson-entailment in either case.

3.2 Experiment 2 In the second experiment we used sentence-picture matching involving a multiple choice task that allowed for multiple responses. Embedded in the same crime story frame, subjects were presented with one-sentence descriptions of a person. Each test sentence contained one of four types of focus: PVF, broad focus (BF), cleft focus, and focus with only. Simultaneously, they were presented with a picture containing four simplified human figures, namely the suspects: Suspect1 corresponding to the exhaustive interpretation of focus, Suspect2 corresponding to an unambiguously non-exhaustive interpretation of focus, and two comparable distractor images. The subjects’ task was to choose which suspect or suspects may possibly be the offender of the crime. We measured the rate of exhaustive responses (= just Suspect1) and non-exhaustive responses (= both Suspect1 and Suspect2). Importantly, this experimental task is implicit in that it does not involve a more or less direct meta-judgment whether a sentence is ‘true’/false’. Also, the discourse context itself does not contain a question of the kind that was purposely used to pragmatically elicit a exhaustive answer (Schulz and van Rooij 2006) in Experiment 1.

Results: Focus type yielded a significant main effect (Friedman ANOVA: $\chi^2(3) = 110.139$, $p<0.001$). In pairwise comparisons of focus types, post-hoc analysis with Wilcoxon signed-rank tests revealed very highly significant ($p<0.001$) differences between any two of the four focus types (the rate of exhaustive responses in each focus type: BF: 7%, PVF: 55%, cleft-focus: 54%, only-focus: 98%).

These results suggest, once again, that exhaustivity in PVF is not a Strawson-entailment, but an implicature. First, only 35% of the responses to PVF stimuli revealed exhaustive interpretations. Second, this rate is less than half of the corresponding rate in the ‘long’ condition of Exp. 1 above, which is arguably due to the crucial difference that there the target sentence is immediately preceded by a (congruent) $ub$-question. This is unexpected if exhaustivity is taken to be entailed, but is predicted if it is an implicature. The Q-implicature, then, is predictably stronger in the presence of a congruent $ub$-question (Exp. 1) than in its absence (Exp. 2). Third, the exhaustivity rate of clefts is significantly higher than that of PVF. Assuming the exhaustivity of clefts (as well as pseudoclefts) to be due to a presupposition, namely a maximality presupposition associated with definiteness (Percus 1997; Partee 1986, Sharvit 2003) or a conditional exhaustivity presupposition (Büring & Kriz 2012), we can explain two things: (i) the significantly lower exhaustivity of PVF is predicted if, in difference, it is due a Q-implicature, and (ii) we can interpret the 54% exhaustivity rate for clefts as being due to the failure of the relevant presupposition in the case of the crucial non-exhaustive picture stimuli.

Since in only-focus sentences exhaustivity is asserted / at issue (Horn 2002 etc), the high rate of exhaustive interpretations is anticipated. BF is interpreted with low levels of exhaustiveness, as expected.

4. Conclusions This paper shed new light on the differing status of exhaustivity across focus types (including SUF, PVF, clefts, only-focus). It provides evidence that exhaustivity in PVF is not (Strawson-)entailed owing to presupposed maximality, unlike exhaustivity in clefts, with which it has been treated on a par in the literature, but it is due rather to implicature. From a broader perspective, the comparison of the exhaustivity levels of PVF in Exp. 1 and Exp. 2, associated with the presence vs absence of an explicit question in the immediate context, support the contextualist view of Q-implicatures.

Selected references Bott, L. & Noveck, I. 2004. Some utterances are underinformative. JML 51:3
Büring, D. & Kriz, M. 2012. It’s that and that’s it! Submitted Ms.