

Embedded implicatures: Do they exist?

Sentence (1a) can be understood as (1b). Such cases of local exhaustification (LE) are often referred to as embedded implicatures, as it seems that the effect of adding a quantity implicature occurs at an embedded site.

(1a) Every dieter who ate fruit for breakfast lost weight.

(1b) Every dieter who ate fruit and no rich food for breakfast lost weight.

How is this enriched reading derived? When enrichments as in (1) appear in a downward entailing (“less than three”) or non-monotonic (“exactly three”) environment, there is no straightforward way of accounting for readings like (1b) by standard Gricean reasoning. Gricean accounts claim that LE is a secondary operation, which is often marked by focal stress [3]. On the other hand, syntactic [1] and pragmatic [2] localist accounts allow for routine LE inferences to take place. One key difference between them is that syntactic but not pragmatic localists assume that LE is represented at the level of syntactic representation.

Experimental work on LE using verification tasks has led to contradictory results. [4] found that participants consider a sentence false in a situation that verifies only the local reading, while [5] found that participants happily accept a sentence in such a situation. Differences in the visual displays appear to play an important role in accounting for this discrepancy. Participants might be steered towards a particular interpretation by properties of the picture. To avoid this problem, we adopted an act-out paradigm in which 70 participants are presented with a neutral starting scene (such as figure 1) and a sentence like “I would like exactly 2 sets to have a ball in its boxes 2 and 4”. If LE is an available reading, some participants will give the response like figure 2. Results show that although the majority gave a literal (figure 2) or global implicature response (figure 3), LE responses (figure 4) did occur significantly more than wrong responses. Surprisingly, responses in which no action was undertaken (figure 1) – “Error” responses – were equally prevalent.

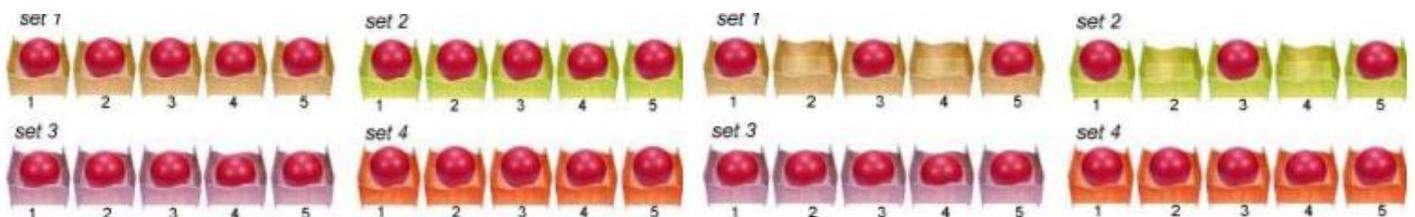


Figure1: starting scene & Error response

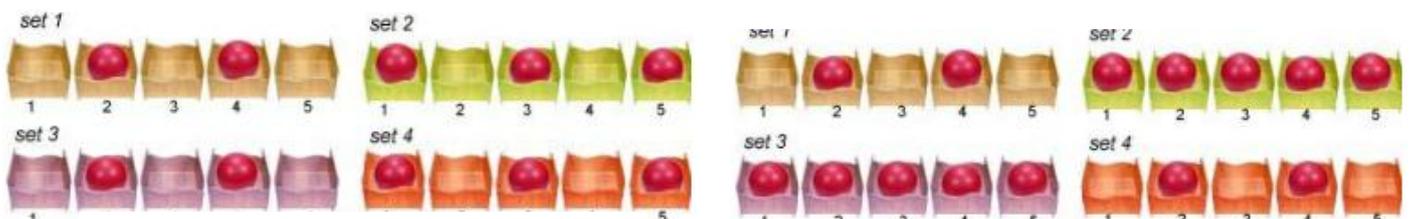


Figure2: literal response

Figure3: global response

Figure4: Error response

To verify that there is no difference between LE and Error responses, we asked another 40 participants to rate all types of readings on a 1-7 scale. Results show no difference in the mean rating for situations that correspond to LE and Error readings ($p=1$) but a significant difference between LE and wrong responses ($p<0.05$). Overall, our experiments provided no support for the existence of an LE reading. Rather, LE responses and acceptance might be caused by the same mechanism which caused Error responses: participants interpreted “exactly N” as meaning “at least N”: there are (exactly) 2 sets that have a ball in its boxes 2 and 4.

[1] Chierchia, G., D. Fox & B. Spector(2008). In P. Portner, C. Maienborn et K. von Heusinger (Eds.) Handbook of Semantics. [2] Carston, R. (2002). Thoughts and utterances: the pragmatics of explicit communication. [4] Geurts, B. & Pouscoulous, N. (2009). S&P 2(4): 1-34. [5]Chemla, E. & Spector, B. (2011). J of Semantics 28(3):359-400.