Additives as a window into local exhaustivity implicatures

Background It has been observed that presupposition triggers like "too" are obligatory when their presupposition is fulfilled in the context (Chemla 2006, Sauerland 2006) , see (1).

(1) Peter saw a movie yesterday. Mary saw a movie yesterday #(too).

Bade (2016) showed that a subset of triggers including additives and iteratives is obligatorily inserted if otherwise a contrastive implicature arises which is contradictory to the context. We assume that this contrastive implicature arises due to the mandatory presence of a covert exhaustivity operator (EXH, Fox 2007) which evaluates focus, for example on "Mary" in (1) above. Under this assumption the second sentences in (1) has an implicature without "too" which says that only Mary saw a movie yesterday which contradicts that Peter saw a movie. This implicature does not arise when "too" is inserted since it presupposes that Peter and Mary saw a movie.

Core proposal In this paper we argue that the (non-)obligatory occurrence of presuppositional additives under different downward-entailing- (DE-) operators tells us where local exhaustification of contextual (non-scalar) alternatives is (dis)preferred. We thereby add to the debate about where local exhaustification applies, but for cases where the alternatives are not pre-defined by a lexical scales. Our data align with the data found for scalar implicatures: Whereas inserting EXH is usually blocked in DE-entailing contexts due to an economy constraint (Fox & Spector 2016), there are certain environments where local exhaustification is possible. These environments require the insertion of two exhaustivity operators and are limited in their availability. Based on our data we argue that, in addition to focus, the type of DE-operator plays a role. We suggest that different alternatives are considered by the higher EXH for negation and if-clauses, respectively.

Data A recent acceptability study on the insertion of "too" under negation (Bade&Tiemann 2016) for German shows that inserting the triggers under negation is dispreferred when its presupposition is fulfilled in the context.

(2) Peter saw a movie yesterday. ??Mary did not see a movie yesterday, too.

A theory of obligatory triggers working with exhaustivity implicatures straightforwardly predicts these effects since exhaustification is usually blocked under negation due to an economy constraint. Exhaustification can only happen above negation. However, the result is not contradictory to the context, see (3a) and (b).

(3) a. Peter EXH not buy cookies today. → Only today Peter did not buy cookies.
    b. Peter bought cookies yesterday and only today he did not buy cookies.

The picture looks different for other DE-environments, e.g. if-clauses. Exhaustification is possible above "if", as well as below "if", as is shown in (4) below.

(4) John came. If Peter came, Sue is happy.
  a. Configuration 1: EXH If Peter came; Sue is happy.
    'Only if Peter came, Sue is happy (it does not matter whether John came)'

b. Configuration 2: If EXH Peter came, Sue is happy.
   'If Peter (and not John) came, Sue is happy'

We assume that "if" is restricting the domain of quantification of a covert necessity modal with a realistic modal base (Kratzer 1986). Under this assumption, (4b) becomes contradictory to a context which established that John, in fact, came. Thus, following Bade (2016) "too" should only be obligatory in (4b), which is likely to yield a contradiction with the context, but not in (4a).

We report a recent experimental study where 24 native speakers of German were given sentences with and without "too" under if-clauses in contexts where the presupposition of "too" was satisfied. They were asked both for the acceptability of the sentences on a 5-point-scale and their interpretation. The first interpretation question was what participants thought the condition for, for the example in (4), Sue's coming was: Peter's coming or both Peter's and John's coming. The second interpretation question asked whether the if-clause suggested that the fact that Peter was coming might not be true. The results show that the insertion of "too" had an effect on acceptability ($p<.05$); but only in the condition where participants considered only Peter's coming a necessary condition for Sue's coming, not both Peter's and John's. This was also the condition where people then perceived a possible contrast with the discourse (there was a significant influence of the answer to the first interpretation question on the proportion of answers to the second interpretation question, $p<.01$). When participants thought that a contrast might have been expressed, the sentences with "auch" were judged significantly worse (M=2,7 versus M=3,1). Under the interpretation where both Peter's and John's coming were considered necessary conditions, no contrast was perceived and the sentences with "if" were equally acceptable with and without "auch" (M=4,1 versus M=4,5). This is further evidence for the fact that the insertion of "too" is dependent on the exhaustification strategy chosen.

Discussion The data from obligatory presupposition triggers suggest that there is a correlation between local exhaustification and insertion of the trigger. In contexts where EXH is impossible, the trigger is dispreferred, as under negation. Where EXH is obligatory, the trigger is obligatory, too, as in matrix clauses with contrastive focus. We have seen that below and above "if" EXH is possible, but not obligatory and depends on context. The study showed that, when no exhaustivity implicature is calculated, inserting "too" does not improve the sentence with "if". Local exhaustification is possible and participants are sensitive to a possible conflict with the context when this strategy is chosen. The interpretation is dispreferred for this very reason, even more to with the insertion of "too" which, it seems, was not interpreted at all but rather perceived as disruptive to a certain interpretation people were after. The pressure to exhaustify contextual alternatives changes with the semantics of the embedding operator and context. The data align with most recent grammatical approaches to scalar implicatures where inserting two exhaustivity operators yields the embedded implicature, especially in the presence of pitch accent on the relevant item (Fox & Spector 2016). Our data offer additional insights what might influence the availability of EXH in DE-contexts. We suggest that different alternatives play a role for negation and the antecedent of conditionals.

Selected References:

Bade (2016) "Obligatory Presupposition Triggers in Discourse", PhD thesis, University of Tubingen

Bade & Tiemann (2016) "Obligatory Triggers under Negation", to appear in Proceedings of SUB20, Tubingen

Honcoop, Martin (1998) "Dynamic Excursions on Weak Islands", PhD thesis, Leiden University