Experimentally investigating the production of additive presupposition triggers

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This study investigates under which circumstances speakers produce additive presupposition triggers such as *too* to understand what contexts (if any) necessitate their presence and how sensitive they are to discourse factors. Additives have been argued to be obligatory (in affirmative sentences) as soon as their presupposition is met in the context. For (1b), the antecedent is (1a) which satisfies the presupposition that someone salient other than Donald watched Dune. Omitting *too* in the host sentence (1a) would lead to a marked discourse, indicated by #. Bade (2016) based on Krifka (1999); Sæbø (2004) explains this pragmatic oddness by assuming that *too* has to be inserted to block the exhaustivity implicature of (1b) that Donald is the only salient individual who watched Dune. More specifically, in the presence of focus – here on *Donald* evoked by the contrastive phrase (1a) – an exhaustivity operator (EXH) is inserted which excludes all alternatives that are not entailed by (1b) making *Donald* the exhaustive answer to the Question Under Discussion (QUD; Roberts, 1996) *Who saw Dune?*.

(1) a. Speaker1: Lisa saw Dune.
b. Speaker2: EXH $[\text{Donald}]_F$ saw Dune, #(too).

The obligatoriness of additives has been argued to be gradient (Kaplan, 1984), and their insertion was found to depend on context, discourse and information structure. More specifically, the degree to which additives were judged to be obligatory was found to depend on the extent to which exhaustivity is enforced by the context (Bade, 2016; Eckhardt and Fränkel, 2012) which in turn may be influenced by the degree to which antecedent and host are similar (Spenader, 2002; Amsili et al., 2016), and the distance between antecedent and host (Kim, 2014; Chen and Husband, 2018).

With one exception to our knowledge (i.e. Eckhardt and Fränkel (2012)), the obligatoriness of additives has mainly been studied from the perspective of comprehension. This study examined the production of additives in dialogue-like structures when the antecedent turn in the discourse context varies along two dimensions: Similarity and Turn Distance. Furthermore, this study extends previous research by investigating whether social factors play a role in the speaker's production choices. More specifically, we explored whether signalling similarity between antecedent and host utterance via additive use entails converging (i.e. socially aligning (Giles, 1973)) with the antecedent speaker. We therefore investigated Politeness to see whether speakers omit additives more frequently when speaking with an impolite antecedent speaker (to avoid convergence) as opposed to a neutral antecedent speaker.

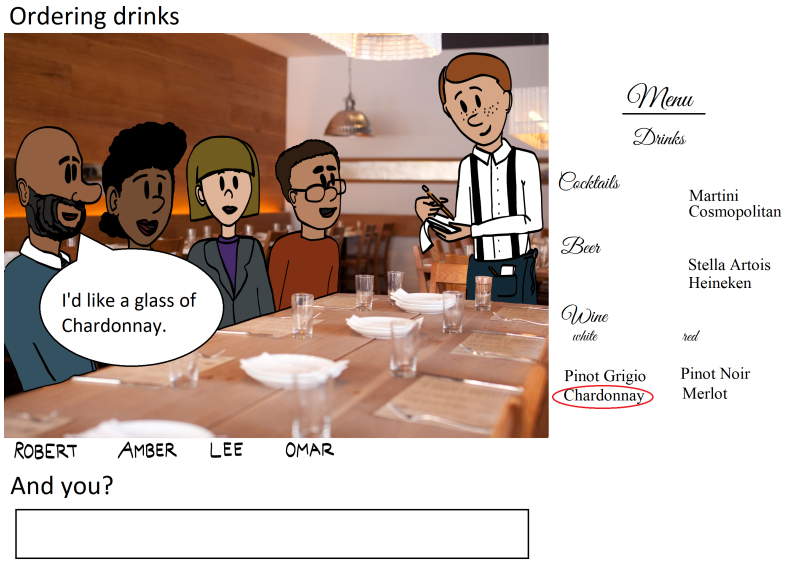

Figure 1: Example for the last conversational turn for perfect similarity, 0 intervening turns and a neutral antecedent speaker.

We conducted two online production experiments in which participants were asked to attend a fictional work dinner, and to interact with their four colleagues and a waiter based on visual cues. The conversations were either about ordering food/drinks or about work related topics. Each conversation started with a visual cue (e.g. a menu) and a question to introduce participants to the content they would later be asked to communicate (e.g. ordering a glass of Chardonnay). To see the conversation unfold, participants clicked through a set of pictures, one for each of the colleagues' conversational turns. After the last turn, participants were prompted with the original visual cue and a request to contribute to the conversation, see Figure 1. In the first experiment participants were invited to produce free text responses; in experiment II, they could select from a set of options either containing or not containing the additive *too*, or formulate their own response. We coded participants' responses for both experiments as either containing or not containing any of the following additive presupposition triggers: *too*, *also* and *as well*.

We manipulated Similarity by asking participants to formulate an utterance whose content either perfectly matched (ordering Chardonnay) or did not match/partially matched (ordering Pinot Grigio as no match) the utterance content of a previous speaker (antecedent speaker). Turn Distance was manipulated such that the participants' turn either immediately followed the antecedent speaker's turn or followed after three intervening turns. To test convergence, some participants conversed with polite/neutral antecedent speakers while others encountered an antecedent speaker who was impolite. This resulted in a 2×2×2 design, with two within-subjects factors (Similarity and Turn Distance) and one between-subjects factor (Politeness).

Participants are predicted to most frequently use additives for highly similar and recent antecedents, since such a context would be most contrastive leading to a stronger exhaustive implicature than in contexts were antecedent and host are less similar and/or are intervened by other turns. We furthermore predicted that participants more frequently use additives when speaking with a neutral as opposed to an impolite antecedent speaker.

Experiment I

We recruited participants (N=78) over prolific (age range 18–83, mean = 37 years), 1 participant stated their preferred pronoun as they/them, 40 participants as she/her. 11% of the participants' utterances contained additives among them *too*, *also*, and *as well*, with *too* being the most frequent choice. A Bayesian logistic regression model with mixed effects (and three-way interaction) disclosed effects of Similarity and Turn Distance: perfect similarity and zero intervening turns meant an increase in log-odds of additive production ($\hat{\beta}$ =1.58, CrI:[0.78, 2.42] and $\hat{\beta}$ =1.17, CrI:[0.51, 1.93] respectively).

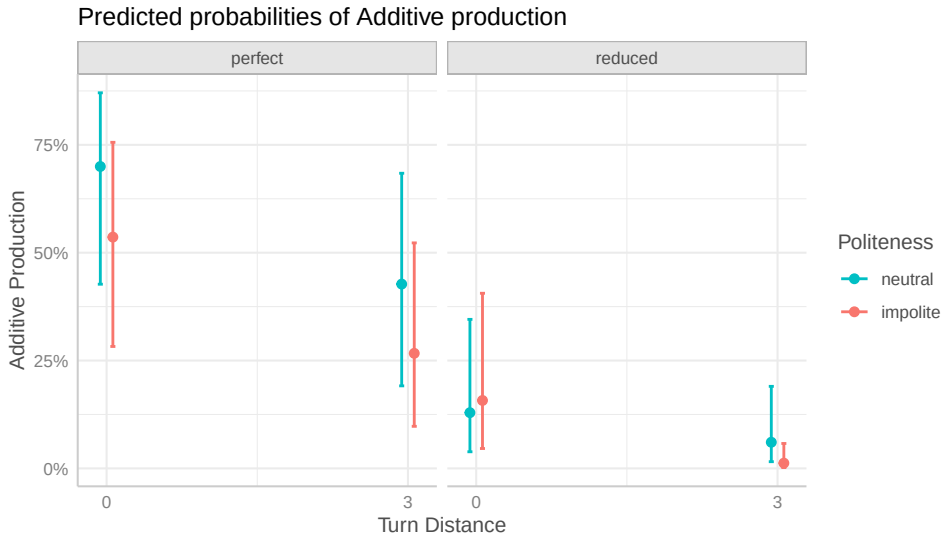

Figure 2: Experiment II: predicted probabilities to produce additive particles given model and data for perfect (left) and reduced similarity (right), 0 and 3 intervening turns, and contrasting a neutral antecedent speaker (blue) with an impolite antecedent speaker (red).

Experiment II

We recruited participants (N=140) over prolific (age range 18–75, mean = 36 years), 3 participants stated their preferred pronoun as they/them, 122 participants as she/her. 33% of the participants' utterances contained additives. A Bayesian logistic regression model with mixed effects (and three-way interaction) disclosed effects of all three factors: perfect similarity, zero intervening turns, and speaking to a neutral antecedent speaker meant an increase in log-odds of additive production ($\hat{\beta}$ =1.30, CrI:[0.53, 2.00], $\hat{\beta}$ =0.74, CrI:[0.34, 1.15], and $\hat{\beta}$ =0.36, CrI:[0.05, 0.69] respectively), see Figure 2.

Our results confirm that speakers use additives most frequently in contexts with highly similar and recent antecedents which should give rise to the strongest exhaustivity implicature (compared to the remaining conditions) but suggest that the use of additives in such contexts is not obligatory per se. The low frequency of additives in these contexts may have to do with our experimental setting: each dialogue was accompanied by a discourse topic evoking a QUD directed towards multiple speakers making partial answers by different speakers plausible which may have weakened exhaustivity overall (following the reasoning by Bade (2016)). However, additives were produced infrequently to such a great extent – in exp. I, in the perfect similarity/zero intervening turn condition averaged over politeness, the prob. to produce additives was 0.2 – that more research is necessary to establish which factors influence the strength of the exhaustivity implicature in dialogues if it was exhaustivity that drove the low additive frequency. Besides exhaustivity, we found that social factors may influence additive production: speakers more frequently omitted additives when speaking to impolite antecedent speakers. Thus, omitting additives may not only highlight a contrast between content of the host and antecedent utterance but also between host and antecedent speaker, suggesting that dropping additives may be a used strategically to diverge from other speakers.

References

Amsili, P., Ellsiepen, E., and Winterstein, G. (2016). Optionality in the use of too: The role of reduction and similarity. *Revista da ABRALIN*, (1):229–252.

Bade, N. (2016). *Obligatory presupposition triggers in discourse – empirical foundations of the theories Maximize Presupposition and Obligatory Implicatures*. PhD thesis, University of Tübingen.

Chen, S. Y. and Husband, E. M. (2018). Comperhending anaphoric presuppositions involves memory retrieval *too*. In *Proc Ling Soc Amer. 3*, volume 44, pages 1–11.

Eckhardt, R. and Fränkel, M. (2012). Particles, maximize presupposition and discourse management. *Lingua*, pages 1801–1818.

Giles, H. (1973). Accent mobility: A model and some data. *Anthropological Linguistics*, 15:87–105.

Kaplan, J. (1984). Obligatory *too* in english. *Language*, 60(3):510–518.

Kim, C. (2014). Presupposition satisfaction, locality and discourse constituency. In Schwarz, F., editor, *Experimental Perspectives on Presuppositions*, pages 109–134. Springer International Publishing.

Krifka, M. (1999). Additive particles under stress. In Strolovitch, D. and Lawson, A., editors, *Proceedings of Semantics and Linguistic Theory (SALT) 8*, volume 2, pages 111–128, Ithaca. CLC Publications.

Roberts, C. (1996). Information structure: Towards an integrated formal theory of pragmatics. In Yoon, J. H. and Kathol, A., editors, *OSU WPL Vol. 49: Papers in Semantics*.

Sæbø, K. J. (2004). Conversational Contrast and Conventional Parallel: Topic Implicatures and Additive Presuppositions. *Journal of Semantics*, 21(2):199–217.

Spenader, J. (2002). *Presuppositions in Spoken Discourse*. PhD thesis, Stockholm University.