Syntactic and prosodic factors in the interpretation of ambiguous *at least*

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Intro. The Focus-particle *at least* is principally ambiguous between two interpretations: <u>epistemic</u> *at least* conveys uncertainty regarding the truth of a more informative alternative; <u>concessive</u> *at least* highlights the possibility of worse outcomes relative to a less than perfect outcome [1,2,4]. One factor that has been argued to serve as a cue for disambiguation is the syntactic position of *at least*: given a sentence like (1), sentence-initially only the concessive interpretation is available, whereas prenominally only the epistemic interpretation is available, with the postverbal position allowing both interpretations [2,3,4]. However, [1] argues that these restrictions are mere biases that can be overcome in the right context. This paper presents two experiments that are meant to test these syntactic claims. As a secondary goal, we investigate whether the two interpretations differ in their prosody, specifically if the pitch accent on the element modified by *at least* exhibits more delayed peaks on a concessive interpretation.

Exp1 used a combined elicitation and naturalness rating task where participants (N=21) were first shown a dialogue consisting of a prompt and a target response, listened to an audio recording of the prompt, recorded their production of the response, and finally rated the naturalness of the dialogue. The design was a 2x3 Latin-square, manipulating the compatibility of the CONTEXT with the *epistemic* or *concessive* reading, in addition to the syntactic POSITION of *at least* in the target sentence (initial vs preverbal vs prenominal), see (1) for a sample item. In the epistemic context, a concessive interpretation should be infelicitous due to the conflict between B asserting uncertainty regarding A's question and a concessive interpretation resolving this uncertainty by virtue of entailing the truth of a relevant alternative; in the concessive context, an epistemic interpretation should be infelicitous because there is no more informative alternative left open to be uncertain about, rendering its use redundant. There were 24 target items in addition to 24 fillers.

Mean ratings by condition are shown in Figure 1. Results were analyzed using ordinal mixed effects regression with additional pairwise comparisons for POSITION at each level of *Context*. There were no significant effects of POSITION for *epistemic* CONTEXTS; in contrast, for *concessive* CONTEXTS *initial* was rated higher than both *preverbal* and *prenominal*, and *preverbal* rated higher than *prenominal*. Additionally, *epistemic* CONTEXTS were overall rated worse than *concessive* CONTEXTS. For the elicited recordings, the pitch contour on the final word was annotated according to whether the peak was delayed or not, with proportions shown in Figure 2. A mixed effects logistic regression model yielded a marginally significant effect of CONTEXT, with peaks delays being more frequent in *concessive* contexts.

In order to test whether the combined task affected rating results in unexpected ways, **Exp2** used the same materials without auditory presentation of the dialogue prompt and without elicitation task. The pattern of results (N=24) was identical to Exp1, with the exception that the comparison between *initial* and *preverbal* POSITION for *concessive* CONTEXTS was no longer significant.

Discussion. While the rating results from both experiments for concessive *at least* are in line with previous claims, there was no evidence for syntax playing a similar role for epistemic *at least*: in concessive contexts, *at least* received significantly lower ratings prenominally than initially or preverbally; in contrast, epistemic contexts seemed to be unaffected by the position of *at least*. This asymmetry suggests that the epistemic interpretation of *at least* is more widely available than previously claimed. In addition to relativizing the relevance of syntactic cues however, the results also suggest that prosody may serve as a cue, with marginally increased peak delays in concessive contexts. Finally, the experiments make a methodological contribution in showing that having participants produce a target sentence does not skew naturalness ratings in a way that would render them incomparable to ratings given in isolation.

(1) <u>Summary of syntactic claims</u>

    a.   **At least** Ada won SILVER.   (*only concessive interpretation available*)

    b.   Ada **at least** won SILVER.   (*both interpretations available*)

    c.   Ada won **at least** SILVER.   (*only epistemic interpretation available*)

(2) <u>Sample Item</u>

    a.   EPISTEMIC CONTEXT
         A: Do you know whether Yvette won a gold medal at the school olympics?
         B: Not sure, but (**at least**) she (**at least**) won (**at least**) silver.

    b.   CONCESSIVE CONTEXT
         A: It's too bad Yvette didn't win a gold medal at the school olympics.
         B: True, but (**at least**) she (**at least**) won (**at least**) silver.
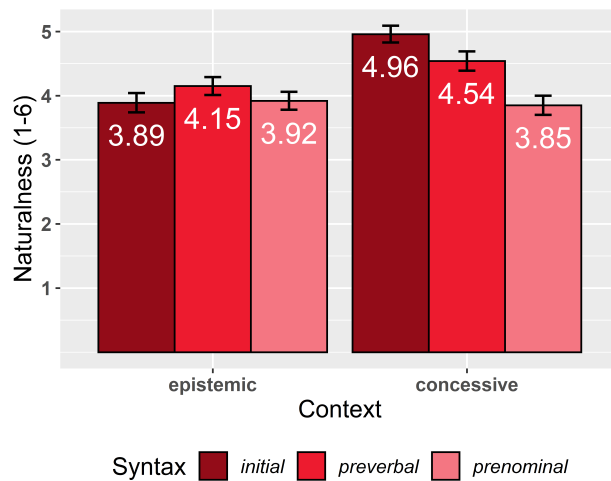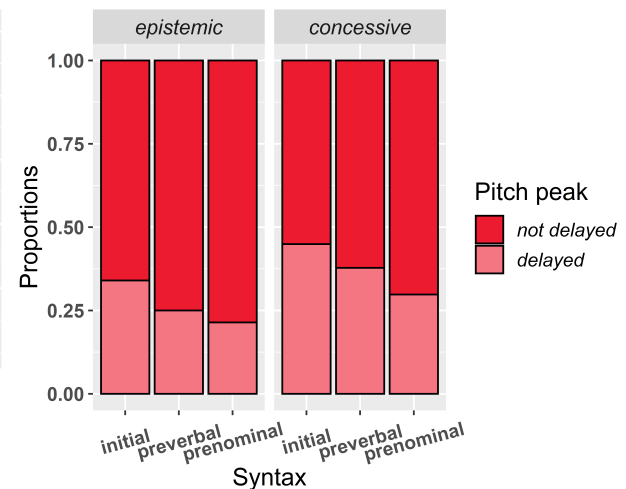

Figure 1: Mean ratings by condition, Exp1.

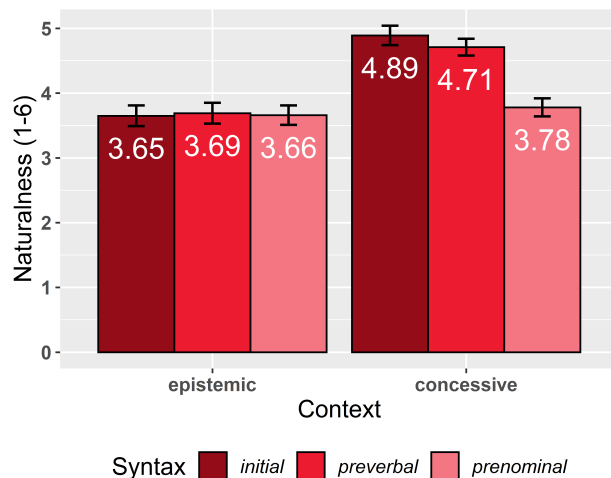Figure 2: Peak delay proportions by condition, Exp1.

Figure 3: Mean ratings by condition, Exp2.

<u>References</u>

[1] Biezma, M. (2013). Only One *At Least*: Refining the Role of Discourse in Building Alternatives. *University of Pennsylvania Working Papers in Linguistics 19.1*, 1-9.

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[4] Nakanishi, K. & Rullmann, H. (2009): Epistemic and Concessive Interpretations of *at least*. In: *The 2009 Annual Conference of the Canadian Linguistic Association*.