

AREN'T YOU SURE YOU WANT TO CHECK YOUR OWN BIAS?

REALIZATION OF CONTRADICTORY BIAS, CERTAINTY AND OWNERSHIP IN NEGATIVE POLAR QUESTIONS

INTRODUCTION. Speakers use different polar question forms to express a bias for a positive or negative answer [1,2], depending on their own original bias and contextual bias, for example information provided by an interlocutor [3]. In English, when biases conflict, negative polar questions with high negation (HiNQ; (1)) can both be used to double-check the speaker's original bias for p (= they are asking a teacher) and to double-check another person's proposition $\neg p$ (= they are not asking a teacher) [4]. By contrast, German uses HiNQ only to check p in this situation, but checks $\neg p$ with a negative polar question with low negation (LowNQ; (2)) according to [1]. In addition to epistemic biases affecting syntactic question type, the speaker's commitment and the level of agreement between the interlocutors (speaker certainty) have been found to affect the sentence-final intonation of questions [e.g., 5 on Catalan].

(1) HiNQ: Aren't they asking a teacher? (2) LowNQ: Are they not asking a teacher?
Fragen sie nicht einen Lehrer? Fragen sie keinen Lehrer?

Here, we present a production experiment on negative polar questions in situations with contradicting epistemic biases. We analysed English and German speakers' use of HiNQ vs. LowNQ and the prosody of the produced questions, in particular the choice of boundary tone and the presence and type of nuclear accents on the negation, manipulating the proposition that is checked (the speaker's or the interlocutor's) and the relative certainty (60% vs. 90% certainty).

DATA AND METHODS. Participants read descriptions of dialogues between two speakers, imagining themselves as one of the speakers and finally completing the dialogue by uttering one of two offered questions out loud. For experimental items, the options were always HiNQ vs. LowNQ. The contexts introduced the speaker's original epistemic bias for a proposition p and a contradictory contextual bias for $\neg p$ presented by the interlocutor. They further manipulated the ownership of the proposition that the participant would check with their question (mine vs. other's proposition) and their level of certainty (high vs. low). Conditions were crossed, counterbalanced across two lists and presented in random order, so that each participant encountered all 16 items (+15 fillers) twice in different conditions (both factors were manipulated within subjects and items). We have completed the experiments in English and German with 32 participants each. Here, we present first results from 7 participants (N=224) for each language.

HYPOTHESES. Based on [1], we expected English participants to produce HiNQs throughout, since they are ambiguous between checking p and checking $\neg p$. By contrast, we expected German participants to use HiNQ to check their own proposition p and LowNQs to check $\neg p$. We further hypothesised that, like in Catalan [5], the speakers' level of certainty would influence sentence-final intonation.

POSITION OF NEGATION. As expected, English-speaking participants predominantly chose HiNQ, with no effect of ownership or certainty. However, there were about 40% LowNQ overall (Fig. 1A). By contrast, German speakers showed the expected effect of ownership ($p=.02$) and preferred HiNQs when checking their own proposition (p) and LowNQs when checking the other person's proposition ($\neg p$), irrespective of their level of certainty (Fig. 1B).

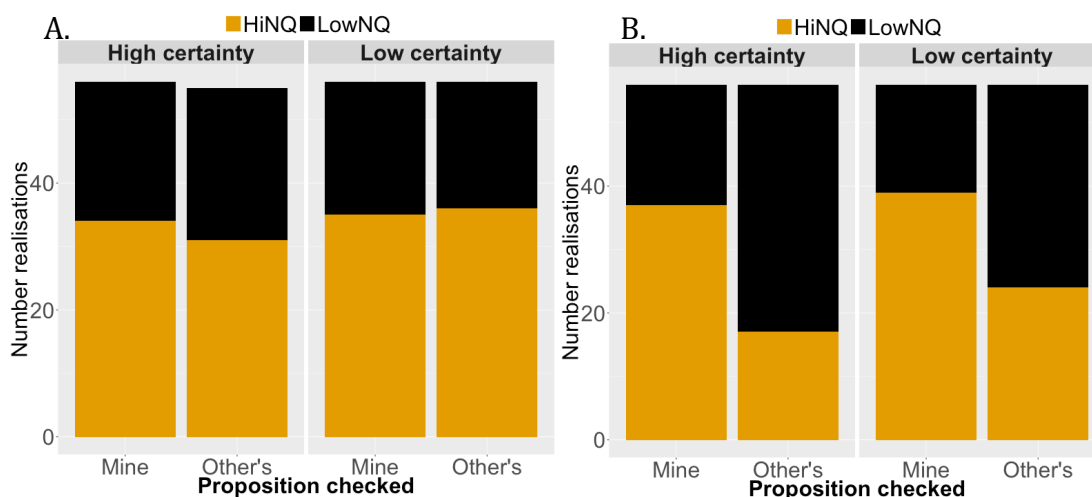


Fig. 1. Use of question types in English (A.) and German (B.).

PROSODY. Accentuation of negation

German speakers used less nuclear rising accents ($L^*+H/L+H^*$) on the negation in HiNQs when double-checking their own proposition than when they checked the other's proposition with high certainty. Low certainty showed the opposite pattern (Fig. 2). This interaction was significant ($p=.008$). In LowNQs, negations showed overall more nuclear rising accents ($p<.001$), irrespective of condition. In English, *not* and *aren't* usually carried pre-nuclear accents in all conditions.

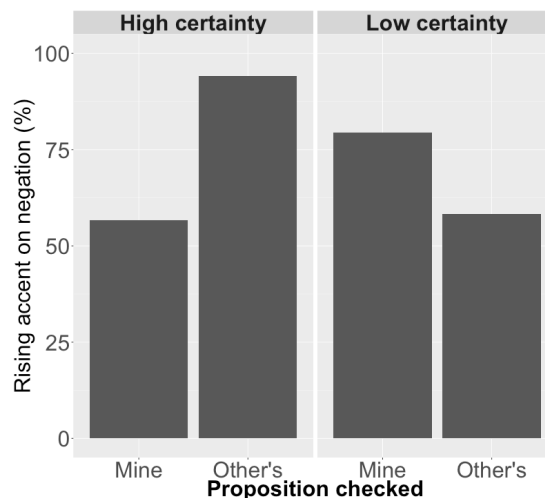


Fig. 2. Rising accents on negation in German HiNQ.

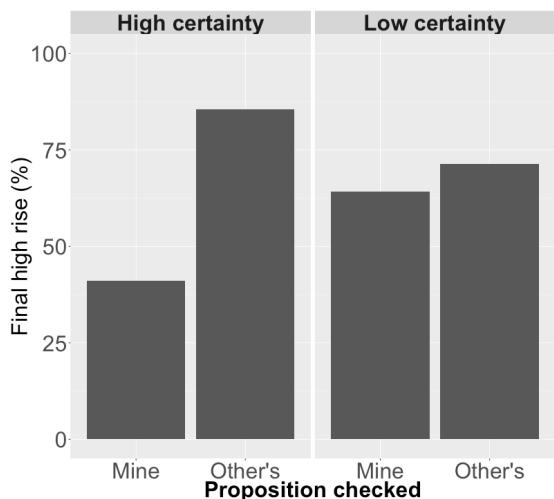


Fig. 3. High utterance-final rise in English HiNQ and LowNQ.

Final pitch movement

English speakers used high utterance-final f_0 -rises more often when checking the other person's proposition than when checking their own ($p<.001$). This effect was weaker in the low-certainty condition ($p=.002$). The same interaction (Fig. 3) appeared for HiNQ and LowNQ. In German, certainty and ownership of proposition did not affect utterance-final f_0 -movements, but there were more high rises in HiNQ than LowNQ ($p<.001$).

CONCLUSION. Participants' use of HiNQ vs. LowNQ largely fit the expectations.

Interestingly, while German participants indicated ownership of the checked proposition syntactically, English speakers used intonation. Their use of high rises fits the assumption that this contour is truly information-seeking. The findings on accentuation await further explanation, but indicate that question prosody is influenced by the choice of syntactic question type in addition to the speaker's certainty/commitment.

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