

## The realization of bouletic bias: Evidence from German questions

Sophie Egger, Bettina Braun, Nicole Dehé

*University of Konstanz*

In everyday life we use subtle ways to communicate desires, often without explicitly saying so. Asking questions is one way to indirectly utter desires. Questions with an additional non-truth-conditional aspect are referred to as *biased* [1]: they are not plainly information seeking but additionally express an attitude towards one of the possible answers, e.g., a wish or desire (*bouletic bias*) [1-5]. We hypothesize that speakers successfully convey their desires when expressing them in a biased question, given that interlocutors seem aware of it. In order to better understand what leads to this success, we investigate the prosodic and morphosyntactic realization of bouletic bias in German polar (PolQs) and alternative questions (AltQs). Since PolQs highlight one particular alternative from a set of propositions [6, 7], we expect them to be more appropriate to mark bias. In AltQs, however, both alternatives are equally epistemically available which makes them suitable to offer an unbiased (i.e., neutral) choice [6]. We hence predict that speakers produce more positive PolQs in biased and more AltQs in unbiased contexts.

In a production experiment, we used 32 situational contexts, evoking either a biased (16 contexts) or a neutral question (16 contexts, within-items design; see Table 1). They were presented together with either a PolQ or an AltQ (manipulated between-items, 32 trials per participant). Each trial started with a context displayed on screen. By pressing a button, participants saw the target question which they were asked to produce (part 1). After another button press, they were given the possibility to rephrase the question in a way that seemed most natural (part 2). Part 1 thus enables us to perform a fine-grained acoustic analysis in a segmentally stable environment, whereas part 2 directly reveals the morphosyntactic structure preferred for biased and neutral questions, respectively. Sixteen speakers ( $\bar{O} = 23.3$  years, 12 male) produced 512 target questions (256 biased, 256 neutral).

Our prosodic analysis follows those in previous work about the realization of epistemic bias in PolQs by [8]. So far, we manually annotated a subset of 128 productions from part 1 (4 different contexts: 32 neutral/ 32 biased AltQs, 32 neutral/ 32 biased PolQs) according to GToBI [9]. Results showed that AltQs were generally produced with a low plateau ((H+)L\* L-%) in both conditions (neutral: 89%, biased: 85%). Neutral PolQs were mostly produced with a final high rise (L\* H-^H%, 68%), while biased PolQs showed either a final high rise (L\* H-^H%, 44%) or a low rise (L\* L-H%, 34%). We also found differences in pitch accent placement: biased PolQs are more often produced with a pitch accent on the pronoun (*Willst DU das Schoko-Eis?*, 'Do YOU want the chocolate ice cream?') than neutral PolQs (neutral: 10%, biased: 28%). The pitch range in the final rise in neutral PolQs is higher than in biased PolQs (neutral: 10.3st ; biased : 9.8st). In AltQs we find the reverse picture: in biased AltQs the pitch range in the final fall is higher than in neutral AltQs (neutral: 7.3st; biased: 8.3st).

The 375 target questions (201 biased, 174 neutral) produced in part 2 were coded for syntactic type (AltQ, PolQ, tag-question, *wh*-question, other). Participants predominantly produced PolQs in the biased condition (74%) and AltQs in the neutral condition (69%); see Figure 1. The question types presented in part 1 were changed in 70% of the biased contexts from AltQ to PolQ, and in 67% of the neutral contexts from PolQ to AltQ, showing strong preferences for particular question types according to context.

Our findings corroborate the assumption that positive PolQs tend to convey bias [6, 7], while AltQs function as neutral questions more readily [6]. There appear to be some differences in the preferred intonational realization across conditions. Also, speakers use an increased pitch range to compensate for the non-prototypical morphosyntactic structure when producing AltQs in biased contexts and PolQs in neutral contexts. However, we leave key phonetic differences in voice quality, segmental durations or the exact realization of the intonation contours (e.g., slope, peak alignment) for future analyses.

Neutral condition	Biased condition
You and one of your friends are going on vacation and driving with an intercity-bus. You are able to get two seats next to each other. It doesn't matter to you, where you sit, but you <b>don't know</b> which seat your friend prefers. Therefore you ask him...	You and one of your friends are going on vacation and driving with an intercity-bus. You are able to get two seats next to each other. You would like to have the window seat and hope that your friend wants to sit at the aisle. You ask him...
<b>Speaker intention:</b>	
<i>I want to know whether you want the window seat or the aisle seat.</i>	<i>I want you to take the aisle seat.</i>
<b>Target questions:</b> (either PolQ or AltQ presented on screen in part 1)	
PolQ: <i>Do you want to sit by the aisle?</i>	
AltQ: <i>Do you want to sit by the window or by the aisle?</i>	

Table 1: Example of a neutral and a biased context with speaker intention and example of a PolQ and AltQ used in both conditions (question type was manipulated between-items).

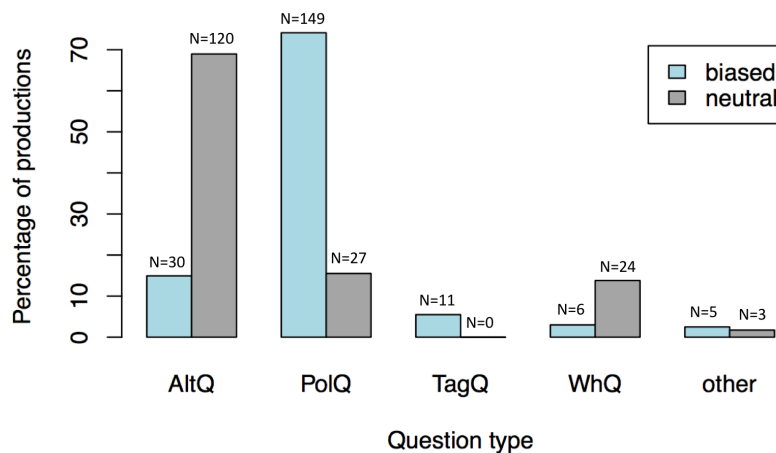


Figure 1: Percentage of productions of each question type per condition.

- [1] Sudo, Y. 2013. Biased polar questions in English and Japanese. *Beyond expressives: Explorations in use-conditional meaning*, 275-296.
- [2] Reese, B. 2007. *Bias in Questions* (PhD Dissertation). University of Texas, Austin, TX.
- [3] Huddleston, R., & Pullum, G.K. 2002. *The Cambridge Grammar of the English Language*. Cambridge: Cambridge University Press.
- [4] Reese, B. 2006. The meaning and use of negative polar interrogatives. *Empirical Issues in Syntax and Semantics*, 331-354.
- [5] van Rooij, R., & Šafářová, M. 2003. On Polar Questions. Talk at the *Semantics and Linguistic Theory*, 13 (Seattle, WA).
- [6] Biezma, M., & Rawlins, K. 2012. Responding to alternative and polar questions. *Linguistics and Philosophy*, 35(5), 361-406.
- [7] Huddleston, R. 1994. The contrast between interrogatives and questions. *Journal of Linguistics*, 30(2), 411-439.
- [8] Domaneschi, F., Romero, M., & Braun, B. (2017). Bias in polar questions: Evidence from English and German production experiments. *Glossa: a journal of general linguistics*, 2(1): 26. 1-28,
- [9] Baumann, S., & Grice, M. 2006. The intonation of accessibility. *Journal of Pragmatics*, 38(10), 1636-1657.