Pause Length Predicts Cognitive State Attribution in Native and Non-Native Speakers

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Speech pauses between turns of conversations are crucial for assessing conversation partners' cognitive states, such as their knowledge, confidence and willingness to grant requests (Fox Tree 2002; Brennan & Williams 1995): in general, speakers making longer pauses are regarded as less apt and willing (e.g. Roberts & Francis 2013). However, it is unclear if the interpretation of pause length is mediated by the accent of interactants, in particular native versus non-native accents (for research on inter-turn pauses in non-native speech see Peltonen 2017; Van Os et al. 2020).

We hypothesized that native listeners would be more tolerant towards long pauses made by non-native speakers than those made by native speakers. This is because, in non-native speakers, long pauses might be the result of prolonged cognitive processing when planning an answer in a non-native language (e.g. Cenoz 2000; Guyer et al. 2019) rather than of a lack of knowledge, confidence or willingness.

To test this hypothesis, we conducted an online experiment, in which 100 native Polish-speaking raters listened to short staged conversations, during which a speaker asked questions or made requests that were answered or granted by either native speakers of Polish or native Chinese-speaking non-native speakers of Polish. The pauses before the answers were manipulated to be either short (200 ms) or long (1200 ms; cf. Roberts & Francis 2013, Dingemanse & Liesenfeld 2022). After listening, the raters rated each respondent on their knowledge, confidence and willingness.

We found that our hypothesis was confirmed for perceived willingness only: non-native speakers were regarded as equally willing to grant requests, irrespective of their inter-turn pause durations, whereas native speakers making long pauses were regarded as less willing than those making short pauses (see 95 % confidence intervals in Fig. 1). For knowledge and confidence, we did not find a mediating effect of accent: both native and non-native speakers were rated as less knowledgeable and confident when making long pauses (see 95 % confidence intervals in Fig. 1). In addition, in line with previous research (cf. Lev-Ari & Keysar 2010), non-native speakers were found to be regarded as less knowledgeable and confident than native speakers.

One possible reason for the difference between our findings on perceived willingness to grant requests versus perceived knowledge and confidence is that requests might be more socially engaging and more directly relevant for interpersonal cooperative interactions than knowledge that reflects on partners' competence but not cooperativeness.

Overall, our study shows that (non-)native accents can influence which cognitive states are signaled by different pause durations, which may have important implications for intercultural communication settings where topics are negotiated between native and non-native speakers.

Previous research has shown that different pause lengths do influence judgments in a number of languages, such as English, Italian, and Japanese (e.g. Roberts et al. 2011). However, results on the evaluation of pause lengths in responses by non-native speakers so far only exist for Polish. For this reason, we will also present preliminary results of a follow-up study, in which we explore if our findings hold across languages and accents.
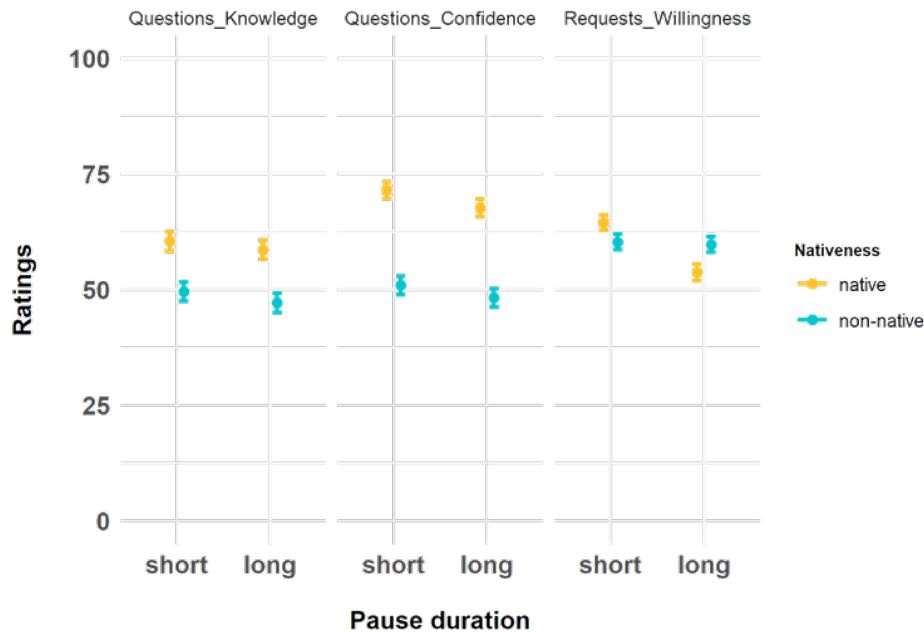
Figure 1: Ratings of the perceived knowledge and confidence of speakers answering knowledge questions, and of the perceived willingness of speakers to comply with requests. Answers were given either by native or non-native speakers and were preceded by either a short (200 ms) or long (1200 ms) pause. Ratings range from 0 (not knowledgeable/confident/willing at all) to 100 (very knowledgeable/confident/willing). Points and whiskers represent mean values and 95% confidence intervals of participants' responses. Non-overlapping confidence intervals indicate significant differences between the groups.

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