

Prosodic cues of polar questions in Drenjongke (Bhutia)

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Introduction: This study presents an examination of the prosody of questions in Drenjongke, a Tibeto-Burman language spoken in Sikkim, India. The phonological and phonetic properties of Drenjongke are understudied and although descriptions of the language at the segmental level (van Driem 2001, 2016, Yliniemi 2019) exist, we are not aware of any studies dealing with its prosody. This study fills this gap.

Background: Earlier research on intonation claims that intonation patterns have characteristics that are universal across languages (Bolinger 1978, 1989, Ohala 1984). Specifically, the literature on question intonation has shown that raising the pitch sentence-finally is a cross-linguistically common strategy to indicate a question: 70% of the world's languages have rising intonation for questions (Bolinger 1978, Gussenhoven 2002). On the other hand, it has generally been observed that declarative sentences have a prosody with falling patterns.

Languages such as Hawaiian or Japanese do not mark questions with rising intonation in questions obscuring the prosodic distinction between statements and questions. Previous studies (Haan 2002, Grabe 2002) suggest that languages with less distinct intonation contours between questions and statements could implement any differences using other types of phonetic cues; these phonetic cues are imperative when questions are formed with no apparent syntactic structure (such as *wh*-fronting) or lexical markers (such as the question particle *ka* in Japanese). In Dutch (Hann 2002), for example, statements have lower mean F0 than questions.

Methods: Four Drenjongke native speakers were recorded in Sikkim India while reading in pairs a list of questions and corresponding answers in Drenjongke displayed on a power point slide. The questions were extracted from a Drenjongke conversation textbook and checked by a native speaker. For each recording, participants were instructed to produce a question-answer pair of sentences as if they were having a real conversation with each other. The stimuli list included (i) content questions and corresponding answers, (ii) polar questions and corresponding answers, as well as (iii) statements corresponding to a question when an answer does not provide necessary information. All questions and answers were recorded in both the formal and the informal registers. The collected data was annotated and analyzed using Praat.

Results: Intonation of yes/no questions and corresponding statements demonstrate that questions do not end with a raising intonation (Fig.1). Statements had a falling intonation, so that the patterns for statements and questions are similar (Fig.2). This was the case consistently for the four speakers.

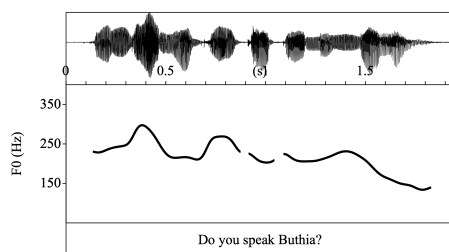


Figure 1. Pitch track of a polar question

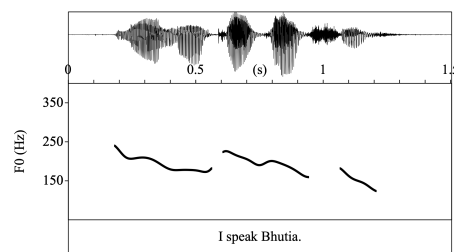


Figure 2. Pitch track of a statement

Discussion: We argue that these patterns show that while lacking rising intonation, Drenjongke questions are consistently higher in F0 compared to statements, suggesting that Drenjongke belongs to a group of languages that utilize other phonetic cues than rising intonation in the prosody of polar questions.