Functional prosody transfer in disambiguating questions and statements in an unknown language

Keywords

Suprasegmental phonetics; functional prosody transfer; cross-linguistic influence; pitch accent and boundary tone manipulation; question-statement disambiguation

Abstract

The ability to distinguish questions from statements presents an important linguistic competence, that is crucial for successful communication. Languages vary in how they mark this linguistic distinction of illocution type, with intonation (i.e., the nuclear pitch accent and the final boundary tone) playing a crucial role in many languages. Languages such as Portuguese or Basque only use intonation to distinguish between polar questions and utterances, while other languages such as English, Polish or German use both morphosyntactic markers and intonation. Still other languages, such as Finnish, do not rely on intonation to mark interrogativity in the form of the final rise and use question particles instead [1, 2]. These cross-linguistic differences already result in a different sensitivity to pitch as a marker of illocution type in young children, which depends on the function of prosody in the native language (L1) [3]. They also might pose challenges for adult language learners when encountering an unfamiliar language.

Therefore, in this paper we ask whether the ability to distinguish questions from statements in an (unknown) foreign language depends on a function of prosody in a listener's L1. We aim to understand whether the interpretation of utterances as statements or questions is moderated by different functions of suprasegmentals among speakers who can only rely on prosodic cues. We hypothesize that functions that suprasegmentals serve in four languages that differ in tonal typology, that is, Finnish, German, and Mandarin, influence the perception of Polish polar questions or statements with manipulated pitch contours.

To this end, we test a set of Polish utterances presenting a continuum of pitch accents and boundary tones (5 pitch accents by 5 boundary tones) [4] using a simple forced-choice perception experiment in which L1 speakers of Finnish, German and Mandarin (N = 24 per group), along with Polish controls (N = 25) were exposed to Polish utterances. Their task was to decide whether a sentence they heard was a question or a statement and to mark the answer on a numerical scale (1 indicating statement, 100 indicating question). The results show that the four groups tested show different levels of sensitivity to the manipulation of pitch accents and boundary tones. The observed differences regard not only the tested language groups but also their sensitivity to particular levels of modifications of pitch aligned with pitch accent and boundary tone positions.

The results show that even with low-level manipulation of boundary tones, Finnish speakers are more likely than Mandarin speakers to perceive higher boundary tones as indicating a question. For two final intervals of pitch accent modification, German native speakers show a high sensitivity to pitch manipulation, which is reflected in their question-statement ratings. The interpretation of pitch contours provided by the participants can potentially be attributed to the functions of suprasegmental characteristics of statements and questions in their L1. These findings suggest that functional prosody transfer plays an important role in disambiguating statements and questions on the basis of prosodic cues, which has implications for language learning.

References

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