

Voice Onset Time in a language without distinctive voicing: Blackfoot oral stops

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Background

Work on laryngeal timing in stops has tended to focus on languages with a phonemic voicing distinction (Lisker & Abramson 1964; Cho & Ladefoged 1999). Work on the acoustic properties of stops in languages that lack distinctive voicing is by comparison much rarer (Kakadelis 2018). In this study we investigate VOT in oral stops in Blackfoot, a language in which voicing is non-distinctive (Frantz 1978, 2017). We provide an acoustic analysis of VOT in Blackfoot oral stops in order to gain a better understanding of subtle differences between English and Blackfoot stop pronunciations and have a firmer basis for pronunciation and training.

Research questions

- What are mean VOT values of /p t k/ in the speech of fluent Blackfoot speakers in relevant phonetic environments?
- How do Blackfoot VOT values compare with the usual VOT of English oral stops?
- Do Blackfoot VOT patterns vary with speakers' demographics?

Methods

18 fluent speakers of Kainai and Siksika Blackfoot performed picture naming and translation tasks to elicit non-geminate oral stops in word-initial and word-medial positions followed by short stressed and unstressed, and long stressed and unstressed monophthongs. VOT values were extracted using Praat (Boersma & Weenink 2019) by measuring the distance between the burst and the voice onset.

Preliminary results

- Mean VOT values for Blackfoot oral stops were found to be in the range close to that associated with voiced stops in English.
- A linear mixed effects model showed a significant effect for target, the stress pattern and the length of the following vowel.
- A negative correlation was found between the VOT values of word-initial /t/ and speakers' age.
- No effect was found for sex and task type.

References

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Topic/subdiscipline: Acoustic phonetics

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