

- (1) Same or different: A preliminary acoustic analysis comparing native- and non-native-speaker production of Vietnamese lexical tones
- (2) Phonetics, second language acquisition
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We present preliminary results of an acoustic analysis comparing Vietnamese lexical tones produced by adult native speakers of Vietnamese or American English. The results inform general descriptions of Vietnamese lexical tone, as well as methods of second language instruction.

Whereas the tonal contrasts in some languages (e.g., Mandarin) rely mainly on pitch manipulation, tonal contrasts in Vietnamese involve both pitch and voice quality (e.g., Brunelle, 2003; Pham, 2003; Thompson, 1987). Adult native speakers of American English learning Vietnamese (hereafter, “adult learners”) are faced with at least two distinct challenges: (1) they must learn to perceive and manipulate tones that involve laryngealization and breathiness in addition to pitch height and contour and (2) they must move from using intonation to mark discourse information to using tones to mark lexical distinctions.

From a *production* standpoint, adult learners might have difficulty producing intelligible tones in canonical form or in a context in which they focus on just the tone. However, they might also, or alternatively, have difficulty producing intelligible tones in continuous spontaneous speech. In order to investigate both of these possibilities, we recorded native speakers and adult learners as they produced tones in two situations. First, individual speakers read multiple renditions of a carrier phrase in which only the lexical tone on a target word changed. Second, pairs of native speakers, or a native speaker and an adult learner, produced a larger, semi-spontaneous discourse. Here, we present results from the first situation only.

We conducted an acoustic analysis of the lexical tones produced to identify ways in which adult learner productions differed from native speaker productions. We analyzed pitch (i.e., fundamental frequency [F0]), duration, and spectral tilt. We discuss the extent to which our results correspond to existing descriptions of Vietnamese lexical tones. In addition, we consider the extent to which these aspects of the acoustics might prove critical to the intelligibility of Vietnamese as spoken by adult learners (to be tested in later perception experiments). Finally, we discuss how information about these acoustic parameters might be used to develop tools or methods for improving adult learner intelligibility in Vietnamese.

Brunelle, M. (2003). *Coarticulation effects in Northern Vietnamese tones*. Unpublished manuscript, Cornell University.

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Thompson, L. (1987). *A Vietnamese reference grammar*. Hawaii: University of Hawaii.