Dialect Imitation Across Typologically Distinct Prosodic Systems

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All phonological systems give rise to variability in the output, though this variability generally appears reduced when the right phonological generalizations are considered. Speakers attempting to imitate unfamiliar systems must learn which factors govern variability present in the target speech. This is expected to be more difficult when the native system and the target system are typologically distinct. This study explores variability in the intonational contours of Singapore English (SgE) speakers attempting to imitate American English (AmE), which has a typologically distinct prosodic system.

SgE and AmE largely overlap in terms of lexicon and grammar, and are generally mutually intelligible. They differ, however, in their intonational phonology. In SgE, the basic unit of intonation is the Accentual Phrase (AP), which is generally shorter than the AmE ip, and is characterized by L and H tones at its left and right edges (Chong 2012). Unlike AmE, there are no pitch accents, and tonal correlates of lexical stress only appear in utterance-final APs. Therefore, SgE more closely resembles edge-prominence languages like Korean (Jun 1993, 2005) than AmE. Given these strong typological differences, we ask how SgE speakers understand intonational variability present in AmE, and if and how they approximate alignment and scaling values of a model speaker.

We recorded 20 speakers of SgE, first in their native dialect, then while imitating an AmE speaker. SgE prosody differs among ethnic groups (Tan, 2010), so ethnically Chinese speakers were selected. The 36 target sentences included a three-syllable, initial-stress target word, which was either sentence-initial, at a continuation boundary, or sentence-final in a polar question. The AmE speaker produced the sentence-initial targets with a L+H* pitch accent on the initial syllable, followed by a fall to the L-boundary word-finally (Fig 1). The SgE pattern for the same target involves a rise from a L target at the beginning to a H peak near the end of the word (Fig 2). Approximating the AmE pattern therefore required adjusting the alignment of f0 peaks to a much earlier position. Since SgE does not have pitch accents (or other phrase-internal tonal landmarks), this task is predicted to be more difficult than when the two varieties are typologically similar (e.g., Australian English and AmE), where approximating the new system is primarily a matter of learning a new value for the proportional alignment of the f0 peak (i.e., a different implementation rule, D'Imperio et al. 2014). The continuation and question contexts similarly required adjustments to the timing of the L elbow. Additionally, there is strong downstep between the first and second AP in SgE, but only slight declination in the model's speech. Hence scaling adjustments were also expected. Analysis of 10 participants revealed that all speakers successfully adjusted peak alignment on a by-token basis, suggesting a strong role for phonetic detail. Alignment and scaling was adjusted for other target positions, though with different patterns of variability across speakers. We report on the structure of this variability vis-à-vis individual tokens and language background, and discuss its implications for the representation of phonological generalizations in late learning.
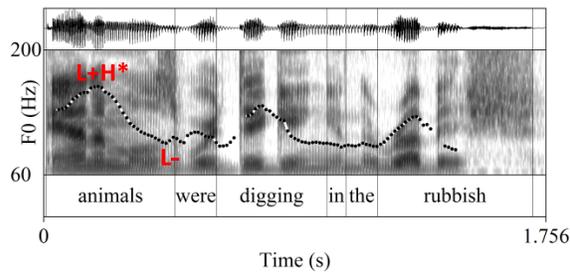
Figure 1. F0 contour for a target sentence as produced by the AmE model speaker.
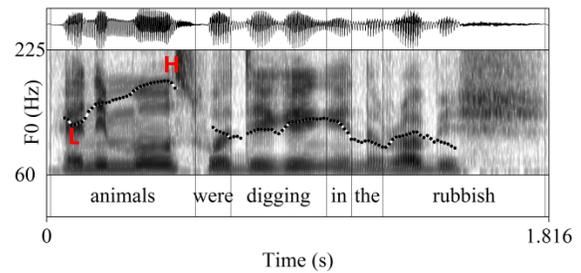

Figure 2. F0 contour as produced by one SgE speaker in the baseline task.

References

Chong, A.J. (2012). A preliminary model of Singaporean English intonational phonology. *UCLA Working Papers in Phonetics*, 111, 41-62.

D'Imperio, M., Cavone, R. & Petrone, C. (2014). "Phonetic and phonological imitation of intonation in two varieties of Italian". *Frontiers in Psychology*. 2014, 14 pages.

Jun, Sun-Ah (1993) *The Phonetics and Phonology of Korean Prosody* . Unpublished Ph.D. dissertation. The Ohio State University, Columbus ,Ohio .

Jun, Sun-Ah (2005) Editor. Prosodic Typology: The Phonology of Intonation and Phrasing. Oxford University Press.

Tan, Ying Ying (2010). "Singing the same tune? Prosodic norming in bilingual Singaporeans." in M. Ferreira (ed), *Multilingual Norms*. Frankfurt: Peter Lang.