Passamaquoddy-Maliseet (E. Algonquian; Maine & New Brunswick; ~500 speakers) has a stress system that occasionally skips over reduced vowels. LeSourd (1988, 1993) and Hagstrom (1995) have observed that reduced vowels are not linked to a timing slot, and cannot be accessed by the stress system.

Hypothesis:

Syllables which contain schwa will cause pitch to shift and be significantly shorter than other vowels.

Duration

Vowel durations (ms) measured.

Linear mixed effects model run with fixed effects of Position (Initial vs Medial, $t = 0.46$) & Quality ([a] vs [e], $t = 15.21$) & random slopes for speaker.

Words with initial schwa:

Predicted: ni se ka pi si tu, 'ghost'

Majority of cases observed:

Predicted: ma ta pli te, 's/he has crooked/bad teeth'

Study III: Increased Schwa Duration and Pitch

Background:

LeSourd (1988, 1993) observed that in certain environments, schwa behaves identically to other full vowels and causes no deviations from basic stress.

(5) Environments where schwa behaves as a full vowel:

Environment Example Gloss

Line of pitch similar to the basic pattern, regardless of vowel quality.

Location of pitch is identical to the basic pattern, regardless of vowel quality.

In general, contexts mentioned by LeSourd are accompanied by lengthening of schwa.

Sequences of syllables with identical vowels generally show lengthening of the second vowel.

Selected References


Acknowledgements & Thanks


Main Claim

Reduced vowels (schwas) are generally too short to establish adequate separation between the pitches that are the primary cue to stress.

Study I: Pitch and Stress

Method

- Searched Passamaquoddy-Maliseet online dictionary for words meeting desired criteria.
- Words spoken in isolation.
- Words hand-segmented by author.
- Pitch z-scored by speaker.
- Time-normalized pitch measurements taken in Hz – five for each V-to-V interval.
- Pitch z-scored by speaker.

Hypothesis

Syllables which LeSourd (1988, 1993) & Hagstrom (1995) have identified as stressed will correspond to syllables which bear high pitch accent.

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