Stress, tonal alignment, and phrasal position in Singapore English

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I. Introduction

• Previous work on SgE intonation:
  - Series of rises [1, 2]
  - Domain of rise: Accentual Phrase [2, 3] – content word + preceding function words
  - In initial APs (largest f0 range): no clear tonal target on stressed syllables [4], but initial stress → higher F0 scaling
  - Possible L* [2]:
    - Consistent L target at left edge of AP
    - Additional L optionally aligned to a lexically stressed syllable

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II. Methods

Participants
- 8 ethnic Chinese native speakers of Singapore English (4M, 4F; mean age: 22)

Procedure
- Produce sentences displayed on a screen using Experigen [5]

Materials
- 12 trisyllabic targets:
  - 1. Stress: initial (1), 6 medial (2)
  - 2. AP position: utterance-medial vs. final
  - 3. Distance from left edge of AP: +/- preceding function word

(1) Initial stress: minerals
  - Medial AP: They explain minerals to the tourists.
  - Medial AP + Function word: They explain the minerals to the tourists.
  - Final AP: They explain minerals.
  - Final AP + Function word: They explain the minerals.

(2) Medial stress: memorials
  - Medial AP: They explain memorials to the tourists.
  - Medial AP + Function word: They explain the memorials to the tourists.
  - Final AP: They explain memorials.
  - Final AP + Function word: They explain the memorials.

Question: Is tonal alignment in non-initial utterance position sensitive to the location of lexical stress?
- What is the target/anchor of L tones in the AP? (e.g. Fig 1.)

III. Results

Initial inspection: Variety of global intonation patterns, even for the same item/condition.
- What are the observable qualitative patterns?
- How do differences in stress lead to broad differences in tonal alignment and scaling for each prosodic position?

Preliminary qualitative analysis - abstract, phonological coding:
- labeling of turning points in contour (Table 1):
  - Contour/Tune type (rise/rise-fall or plateau)
  - Syllable-level alignment of L and H tones in each AP (e.g., stressed syllable or left/right edge of AP)

IIIa. Utterance-medial

Rise Plateau

Stress 1st σ

Stress 2nd σ

No function word Function word

IIIb. Utterance-final

Rise-fall Plateau

Stress 1st σ

Stress 2nd σ

No function word Function word

V. Discussion/Conclusion

• High variability of L tone alignment in non-initial position
• Relation between lexical stress and f0 differs by phrasal position
  - Do SgE listeners perceive stress differences for all positions/patterns?
  - Do cues to stress differ by position/pattern?
• Stress sensitivity in SgE requires consideration of phrasal structure and position, not simply word prominence (variety-specific ecology of stress realization)
• Future directions:
  - Quantitative analysis of alignment by global pattern
  - Which factors condition/predict the choice of global contour type?

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Selected References


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