The interaction between focus and phrasing in Mandarin high-flat and falling tones

Wei Zhang, Michael Wagner, Meghan Clayards
Department of Linguistics, McGill University

Introduction

Theories in sentence prosody have different views about if focus and phrasing are orthogonal in acoustic manifestations

- **The non-orthogonal view**
  - ToBI\(^1\) scheme predicts that the phrasing in the post-focal domain will be neutralized

- **The orthogonal view**
  - PENTA\(^2\) model assumes that communicative functions including focus and phrasing are all encoded in parallel

Recent findings of post-focal phrasing

- **English**: post-focal phrasing is maintained\(^3^4\), and limited interactions among focus, phrasing and speech act\(^4\).
- **German**: post-focal phrasing is maintained, but the F0 range is compressed\(^6\)

Research Questions:

Whether the post-focal phrasing is neutralized in Mandarin Chinese (a tonal language)? Does lexical tone play a role in the interaction of focus and phrasing manifestations?

Method

- **Variables and levels**
  - Phrasing: Left branching, right branching
  - Focus: A, B, C, Wide
  - Tone: T1 (high-flat), T4 (falling)

- **Materials:** A or B and C (coordinated names\(^4\))
  - (1) Zhang1Ge1 or Gao1Ge1 and Fang1Ge1 \(\rightarrow\) Left, A, T1
  - (2) Xia4Ge1 or (Dai4Ge1 and Luo4Ge1) \(\rightarrow\) Right, B, T4

- **Participants:** 17 (8M 9F)
- **Trials:** 2 (Phrasing) \(*4\) (Focus) \(*2\) (Tone) \(*4\) rep = 64

Results

Focus effects

- Last names: higher max F0, longer dur
- Honorifics: longer duration

Phrasing effects

- Last names: longer duration
- Honorifics: lower Max F0, longer dur

(The above two effects can be observed in the four empirical plots on the left)

Interaction bet focus and phrasing

- The interaction was only found to be significant on the duration of the honorifics.

Tone effects

- No independent effect on the max F0 or duration
- But tones interact with phrasing or focus*phrasing in the durations of both last names and honorifics

Discussion

The post-focal phrasing is not entirely neutralized in Mandarin. Compared to English, where no interaction was observed, Mandarin shows a greater interaction effect of focus and phrasing. The precise realization of tones are affected by whether the syllables carrying them are focused and whether they are phrase-final or not.

References