

The interaction of stress, tonal alignment and phrasal position in Singapore English

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
 - Previous analysis [5]: stressed σ → M tone, preceding unstressed σ → L tone, final σ → H tone

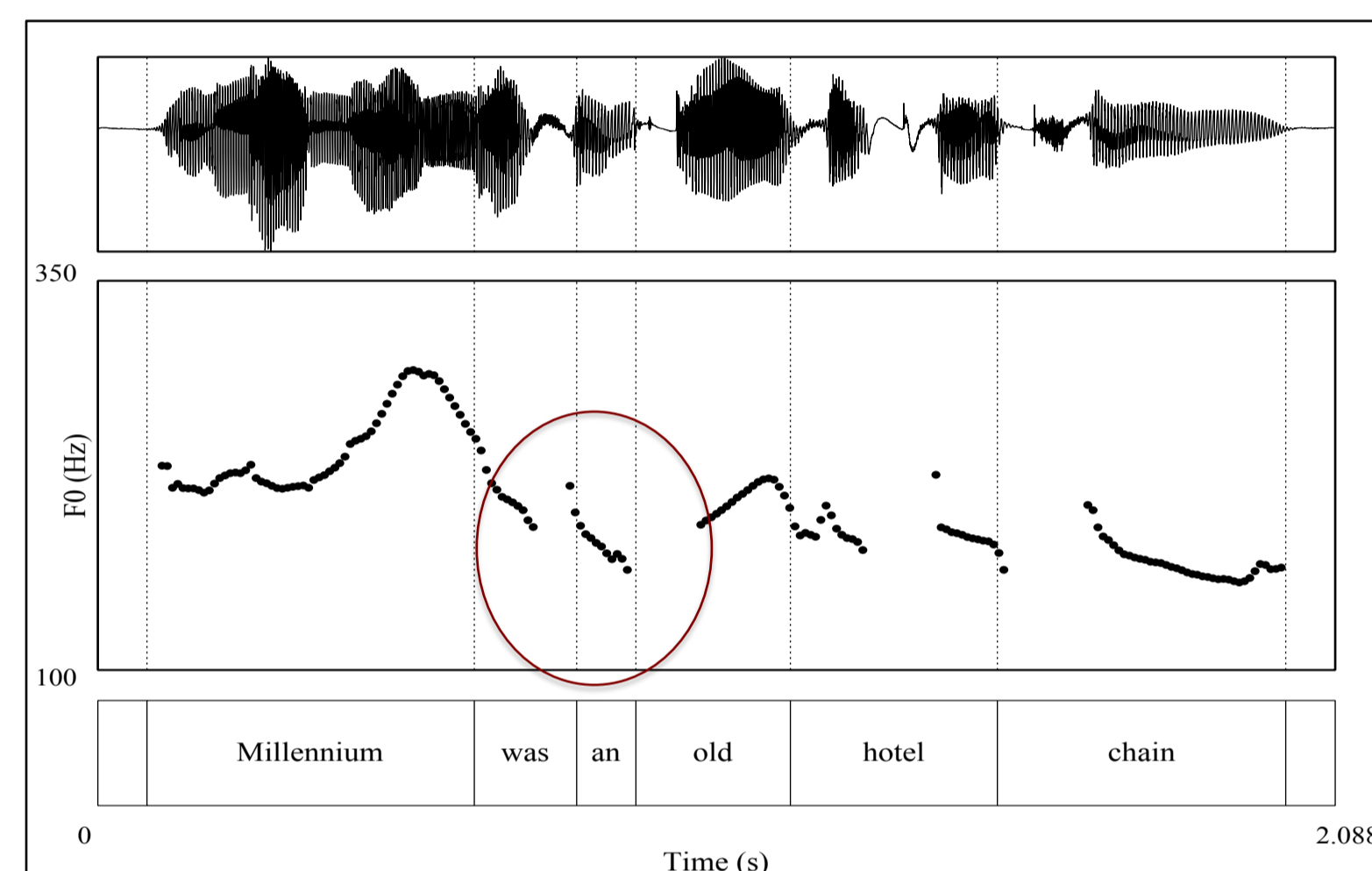


Figure 1

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.)
- Is it consistently a stressed σ?

II. Methods

Participants

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

Procedure

- Produced sentences displayed on a screen using Experigen [6]

Materials

- 12 trisyllabic targets:

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

(1) Initial stress: e.g. minerals

- They explain minerals to the tourists. (Medial AP)
- They explain the minerals to the tourists. (Medial AP + Fn wd)
- They explain minerals. (Final AP)
- They explain the minerals. (Final AP + Fn wd)

(2) Medial stress: e.g. memorials

- They explain memorials to the tourists. (Medial AP)
- They explain the memorials to the tourists. (Medial AP + Fn wd)
- They explain memorials. (Final AP)
- They explain the memorials. (Final AP + Fn wd)

III. Results

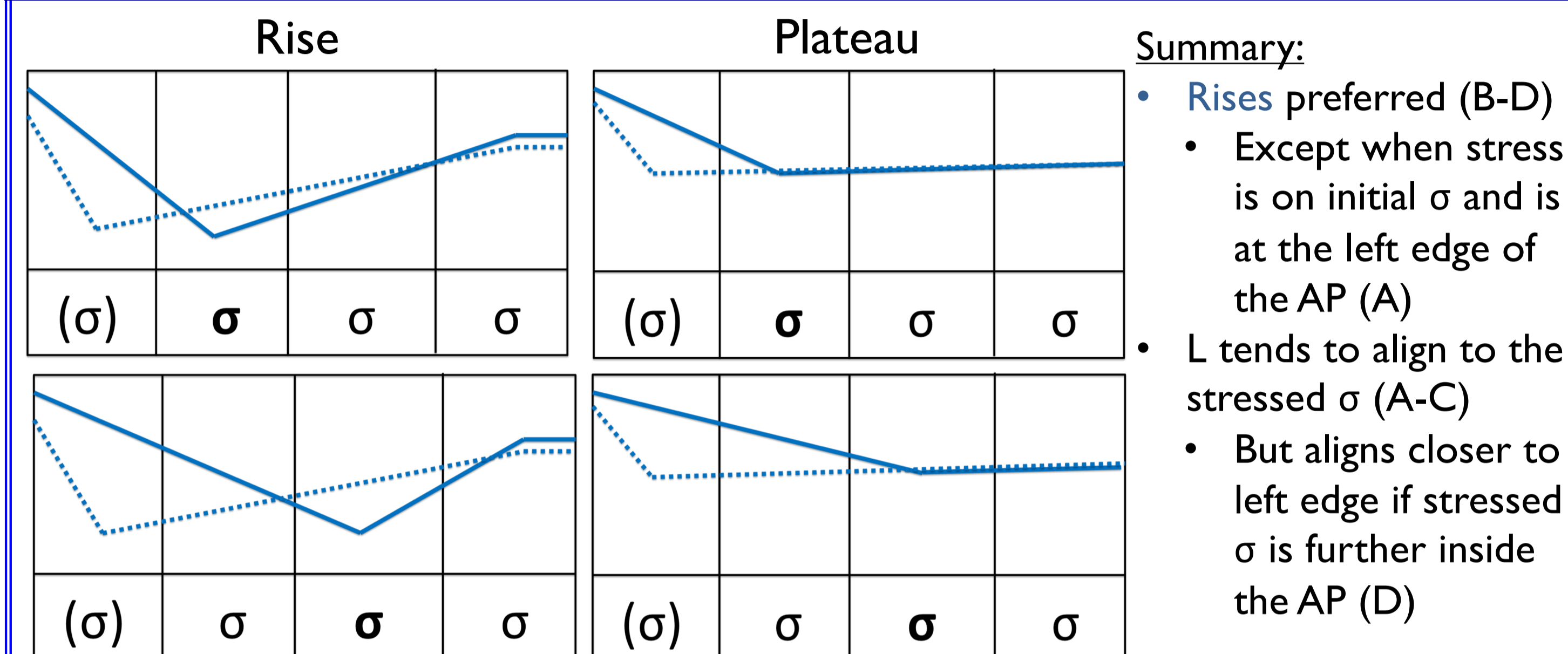
Initial inspection: Variety of global intonation patterns, even for the same item/condition. Here, we focus on:

- What are the observable qualitative patterns?
- How do differences in stress lead to **broad** differences in tonal alignment and scaling for each prosodic position?

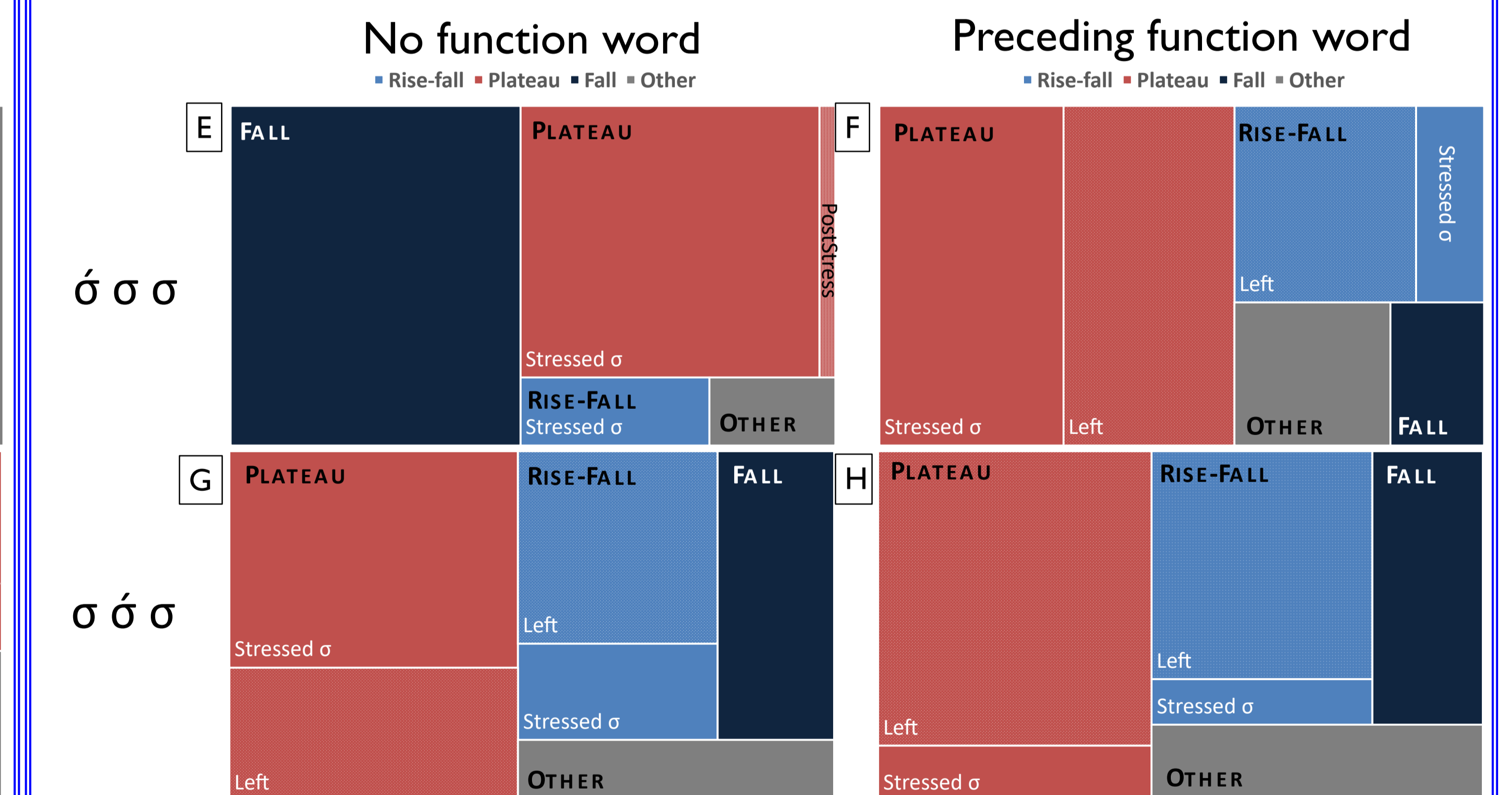
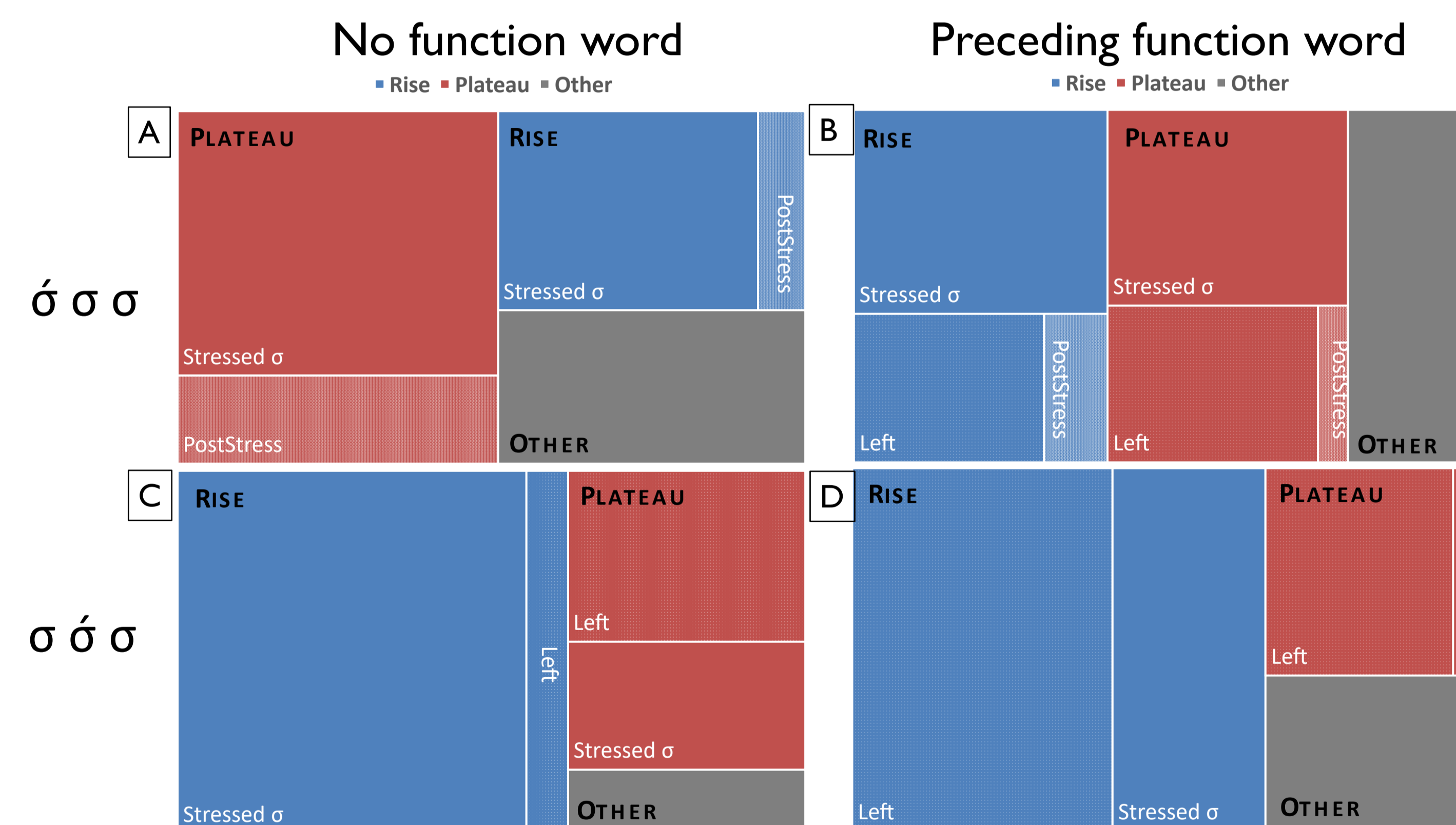
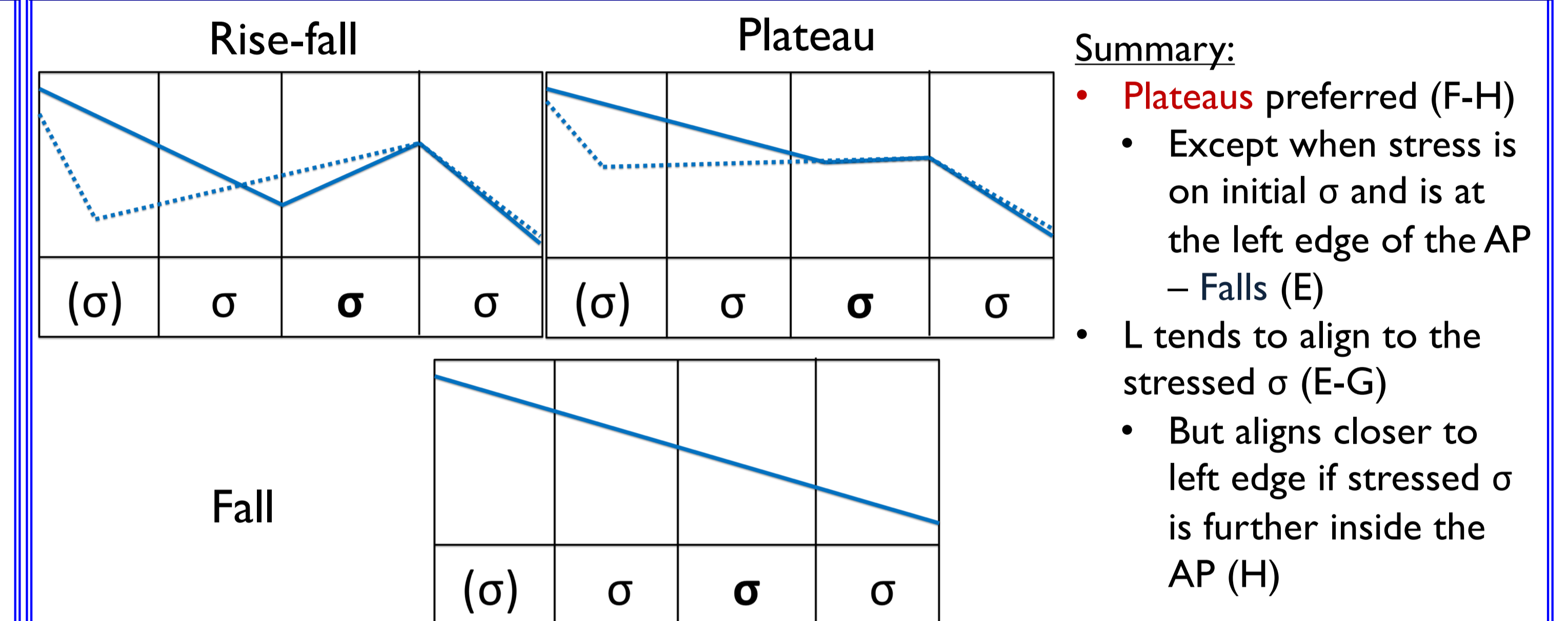
Preliminary qualitative analysis - abstract, phonological coding; labeling of turning points in contour:

- 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) – reporting L alignment here

IIIa. Utterance-medial



IIIb. Utterance-final



IV. Discussion/Conclusion

- High variability of L tone alignment in non-initial position (c.f. [5]):
 - Which factors condition/predict the choice of global contour type?
 - Different contours preferred in different phrasal positions
 - L tone target possibly depend on distance of stressed σ from left edge of AP
 - Future quantitative analysis of alignment (within each global contour type)
- Relation between lexical stress and f0 differs by phrasal position in perception:
 - 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, c.f. [5])

Selected References

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Acknowledgements

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