Syllable weight effects on L2 Portuguese stress identification may be sonority-driven

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Structure of the talk

I. Literature review and motivation

II. Methods

III. Results

IV. Discussion

V. Conclusion

(English) lexical stress by L1-Mandarin

I

- Acoustic correlate of lexical stress:

  F0, duration and intensity, vowel quality.

- Stress perception by L1-Mandarin learners

  -F0 (Archibald 1997; Wang 2008; Liu 2019)

  - Vowel quality > other cues (Zhang & Francis 2010)

  - Duration (Garcia 2020)

Lexical stress by L1-Mandarin

I

- Qu (2013):

Word-level prominence in Mandarin Chinese is cued by the durational difference between syllables, which correlates with the tone carried by the syllable (T0 < T3 < T1/T2/T4)

- Duration ~ Syllable weight ~ Weight-sensitive Romance Language (Portuguese; Garcia 2017)

Over 70% Portuguese non-verbs:

a. Heavy final syllable → final stress, caLHAU (CVV), aveLÃ (CVN)

b. Light final syllable → PU stress, caVAlo (CV), salSIcha (CV)

Portuguese stress by L1-Mandarin

I

Research question: Can L1-Mandarin learners rely on durational difference to acquire Portuguese lexical stress?

A. They can

- Cue-based transfer (Qu 2013)

B. They cannot

- Phonological weight (syllable shape) does not matter in Mandarin (Duanmu 2007; Wu & Kenstowicz 2015)
- Duration is not the main cue (F0: Archibald 1997; Wang 2008)

Methods

II

Participants: 21 L1-Mandarin with moderate English (mean LexTALE score 30, SD = 7.23; 0–100 scale) and no knowledge of Portuguese

Task: auditory identification of stress location in Gorilla

请选择刚听到的单词中，哪个音节是重读音节（大写字母表示重读）。

请按 **"A"** 键选择左侧的选项，按 **"L"** 键选择右侧的选项，按 **"空格键"**如果你不清楚。

Please indicate which option contains the stressed syllable (uppercase) that you just heard.

Press **"A"** for the option on the left, **"L"** for the option on the right and **"Space"** if you are not sure.

nePElpo

我不清楚～
I don't know

NEpeipo

Methods

II

Stimuli: 60 2-syl pseudo-words in Portuguese

30 with final stress: 10 LL, 10 LHn, 10 LHvv

Easier identification if the final syllable is heavy (H)

30 with PU stress: 10 LL, 10 LHn, 10 LHvv

Harder identification if the final syllable is heavy (H)

Recordings performed by a trained native speaker of European Portuguese

Results

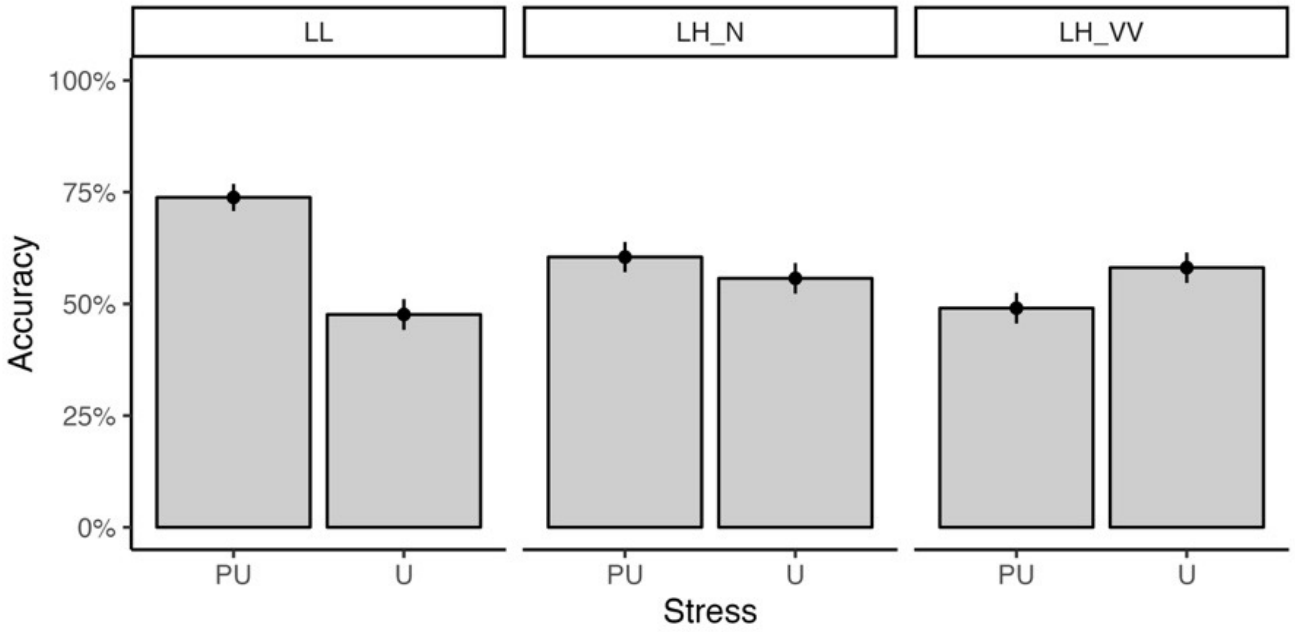
III

Native control

Results

III

L1-Mandarin



Accuracy on final stress (U): LH_VV> LH_N> LL

Accuracy on final stress (U): LL > LH_N > LH_VV

Results

III

L1-Mandarin

Maximal Bayesian mixed-effects regression

Accuracy ~ stress location * weight + (stress location * weight | participant) + (stress| item)

Stress location = {PU, U}

Weight = {LL, LH_N, LH_VV}

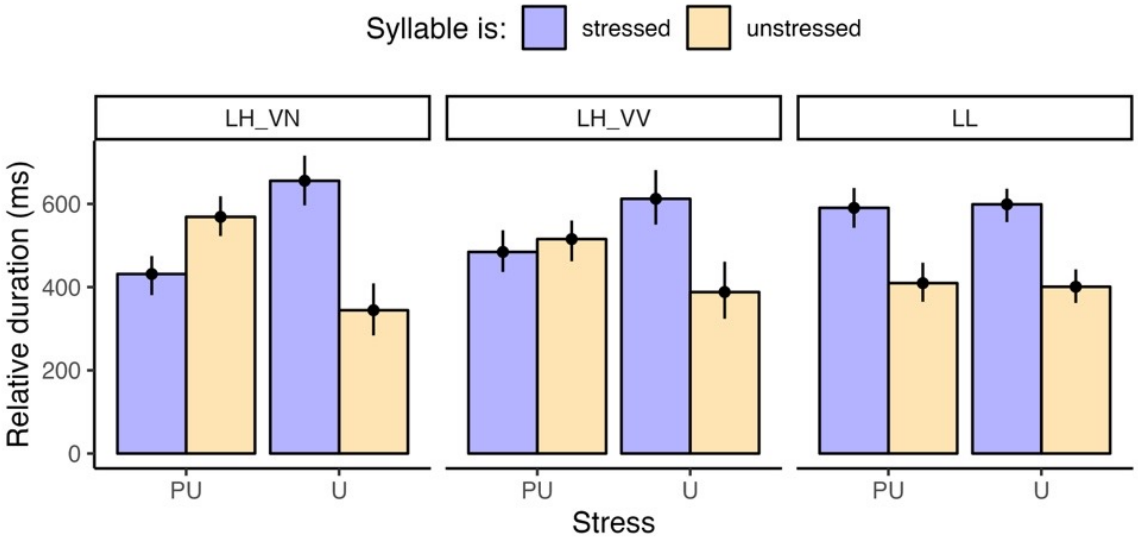
Estimates…

Discussion

IV

What underlies the gradient weight effects (LH_VV > LH_N > LL)?

- Duration



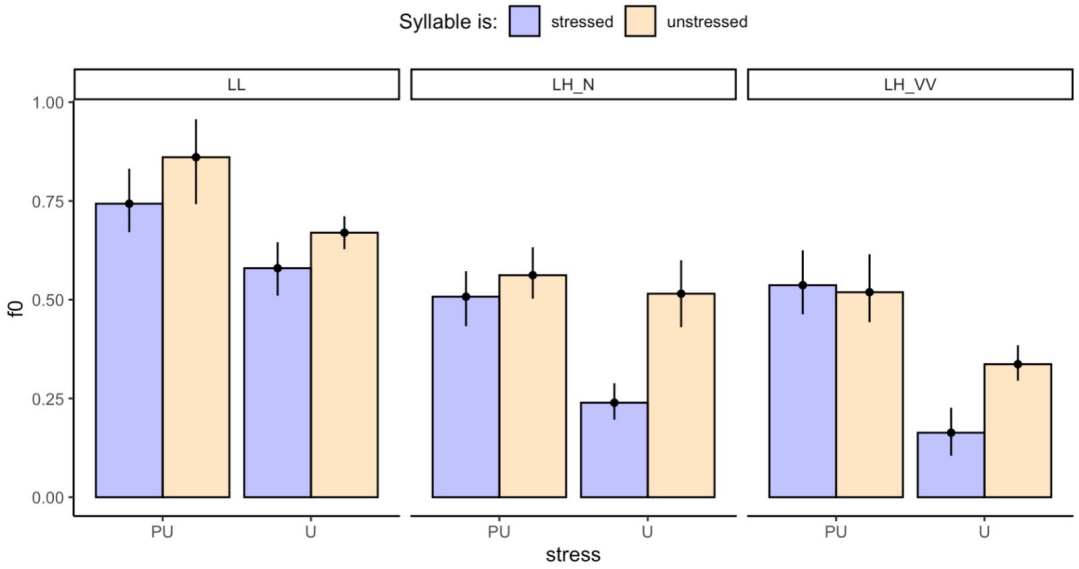
Durational difference explains LH > LL,
but not LH_VV > LH_N

Discussion

IV

What underlies the gradient weight effects (LH_VV > LH_N > LL)?

- Mean Fo



Pitch does not even seem to be a cue for European Portuguese stress

Discussion

IV

What underlies the gradient weight effects (LH_VV > LH_N > LL)?

- Vowel quality?

Visualisation does not really help here? Vowel quality must enter into the model as a predictor?

Discussion

IV

What underlies the gradient weight effects (LH_VV > LH_N > LL)?

- Sonority - perceived resonance (Clements 2009)

Iris Berent's work

Conclusion

V

- xxxxx
- xxxx

Thank you!

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References

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