Phonetic evidence for the phonological association of rising pitch accents in Valjevo Serbian

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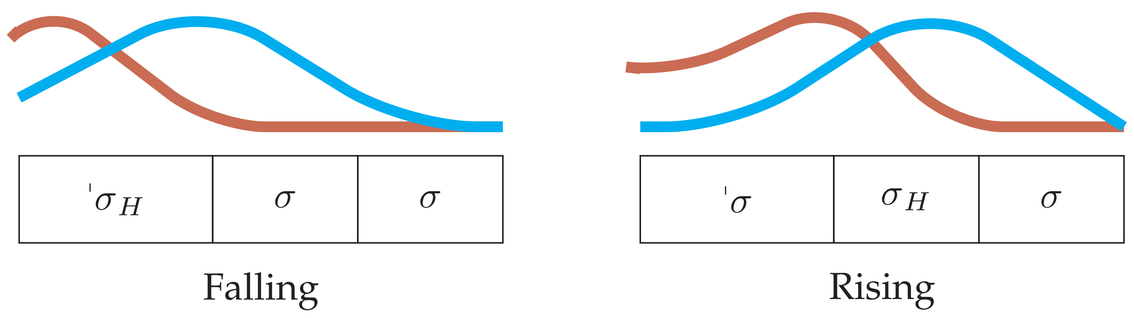
Introduction

- Investigating Serbian (srp), a pitch-accent language with two lexically specified pitch melodies, falling and rising
- Focusing on Valjevo Serbian (red contours below), which has early accentual peaks



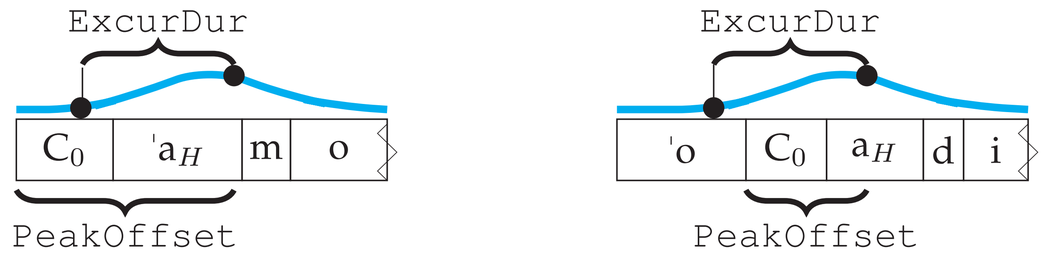
- Show that the lexical H is associated to the post-stress syllable in Valjevo Serbian rising accents
  - Supports Inkelas and Zec (1988) representation of Serbian pitch accent
  - Articulatory Phonology account of lexical tone (Gao, 2008; Karlin, 2014; Yi, 2014) needs more tools

Methodology

- Acoustic study with five native speakers of Valjevo Serbian
- Five syllable onsets on three loci of variation, read in focus structure: *Daj mi X, molim te* 'Give me X, please'

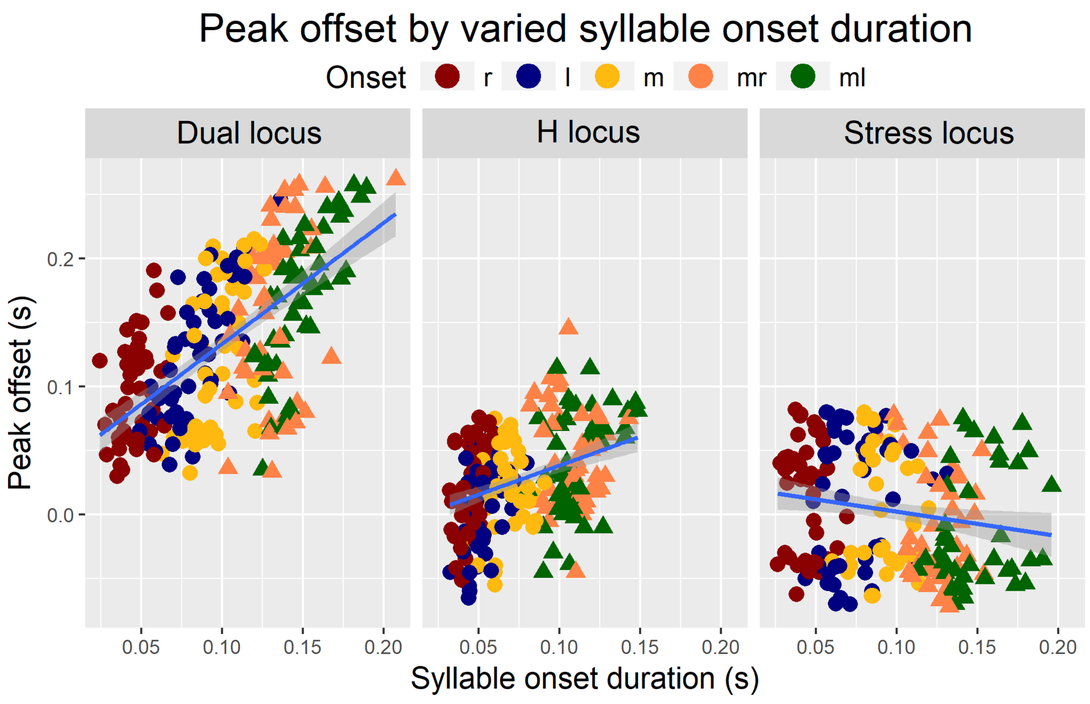
	Locus		
Onset	Dual ˈC$_0$a$_H$.mo.ra	H ˈo.C$_0$a$_H$.di.nu	Stress ˈC$_0$a.vi$_H$.njak
r	ràmora	òradinu	ràvinjak
l	làmora	òladinu	làvinjak
m	màmora	òmadinu	màvinjak
mr	mràmora	òmradinu	mràvinjak
ml	mlàmora	òmladinu	mlàvinjak

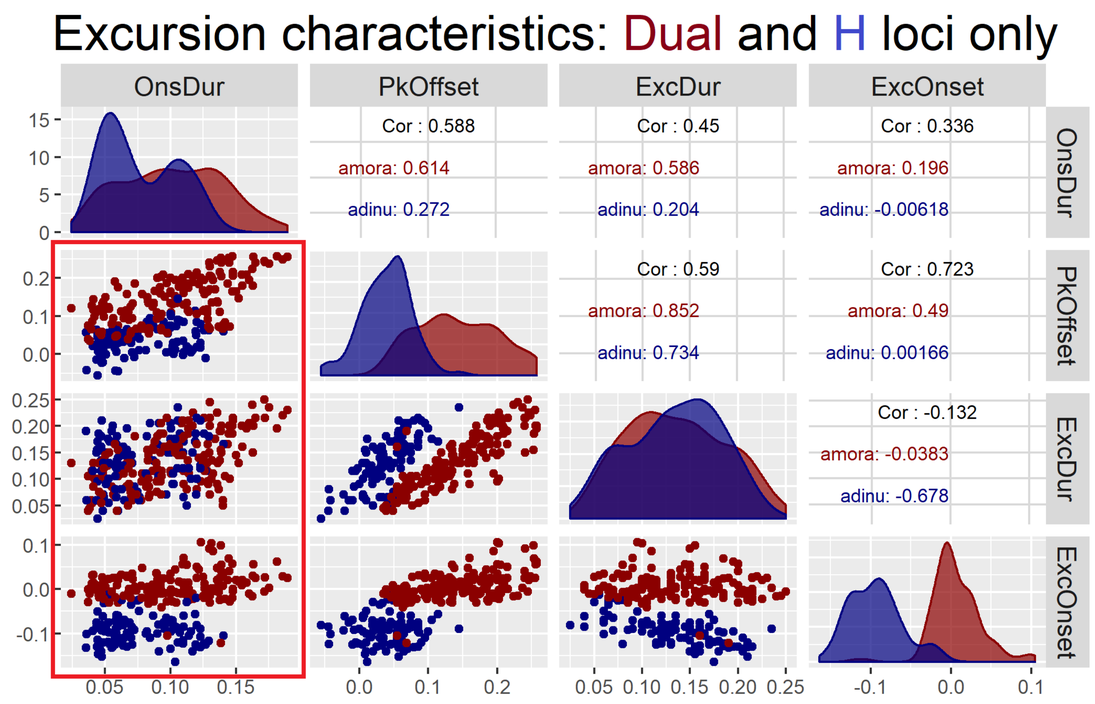
- Analyze H excursion timing relative to hypothesized H syllable



Results: H-bearing syllable onset affects pitch excursion

- H locus words behave like Dual locus words, indicating that the H in rising accents is associated to the post-tonic syllable
- The duration of the H-bearing syllable onset is a significant predictor of PeakOffset timing ($\chi^2(1) = 378.65$, $p < 0.0001$)
  - Dual, H loci: Later peaks with longer syllable onsets
  - Stress locus: Flat; slight negative relationship
- Syllable onset duration is a significant predictor of ExcurDur for Dual and H loci ($\chi^2(1) = 54.32$, $p < 0.0001$); longer syllable onsets have longer excursions
- Significant effect of Locus
  - Falling peaks are later than Rising peaks ($\chi^2(2) = 782.61$, $p < 0.0001$)
  - Falling accent excursions start later than Rising accent excursions ($\chi^2(1) = 352.41$, $p < 0.0001$)





Discussion

- Phonetic retraction does not reflect phonological shift in Valjevo Serbian
- Neither segmental anchoring (Arvaniti, Ladd, & Mennen, 1998; Ladd, Faulkner, Faulkner, & Schepman, 1999) nor current Articulatory Phonology hypotheses predict these patterns (see Karlin 2018 for more discussion)
  - In-phase, anti-phase should be considered as possible modes of tone gesture coordination in addition to c-center
  - Gestural onsets not the only landmark that can be coordinated (cf. D'Imperio et al. 2007; Ladd 2006)
  - Gestures must be underspecified for duration
  - Tone gestures get duration information from the gestures they are coordinated with
  - Phonetic realization is the result of language-specific "phonetic constraints" (e.g., realize contour vs. truncate vs. undershoot)

References

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