

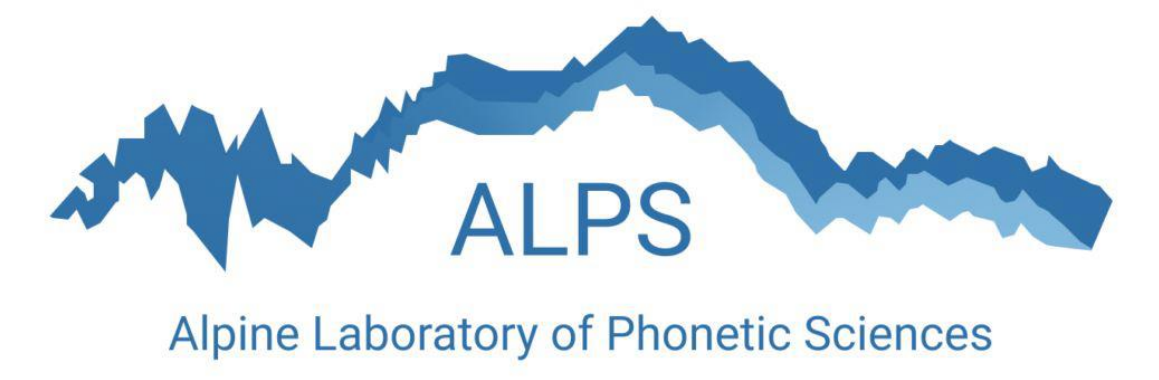
Lexical stress and vowel length in South Tyrolean German



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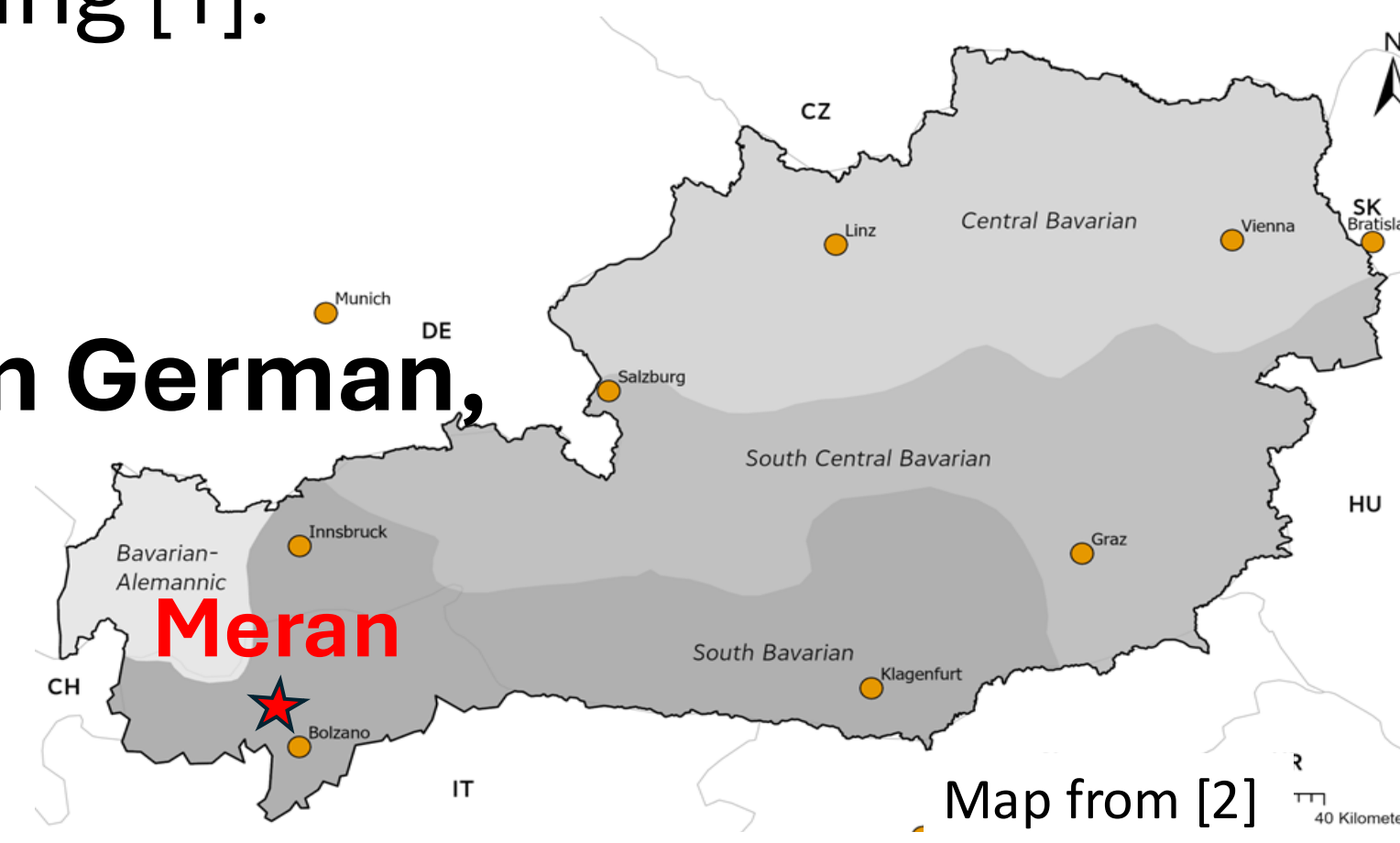
1. BACKGROUND

Lexical stress and **vowel length** can both be encoded through duration, potentially creating competition within syllabic timing [1].

We investigate the dialect of German spoken in **Meran, South Tyrol**, a variety of **Southern Bavarian German**, mainly spoken in Austria and Northern Italy where:

- Vowel length is cued only by duration without a systematic quality difference
- It remains unclear how vowel length contrasts interact with stress
- Whether vowels and consonants in VC sequences are timed independently or as a unit has not yet been examined in this dialect
- In other Bavarian dialects, the complex durational trade-off between segments in VC sequences has been well documented (e.g., [3])

This study investigates whether duration-based vowel length contrasts are preserved across stress conditions and how stress influences the relative and absolute internal timing of VC sequences.



2. RECORDINGS

Field recordings of **35 native speakers** (22F, 13M) in Meran, South Tyrol. Inventory recorded in **42 words**; VC sequences contained long and short /i u e o ε ɒ a/ and postvocalic plosives /b p d t g k/.

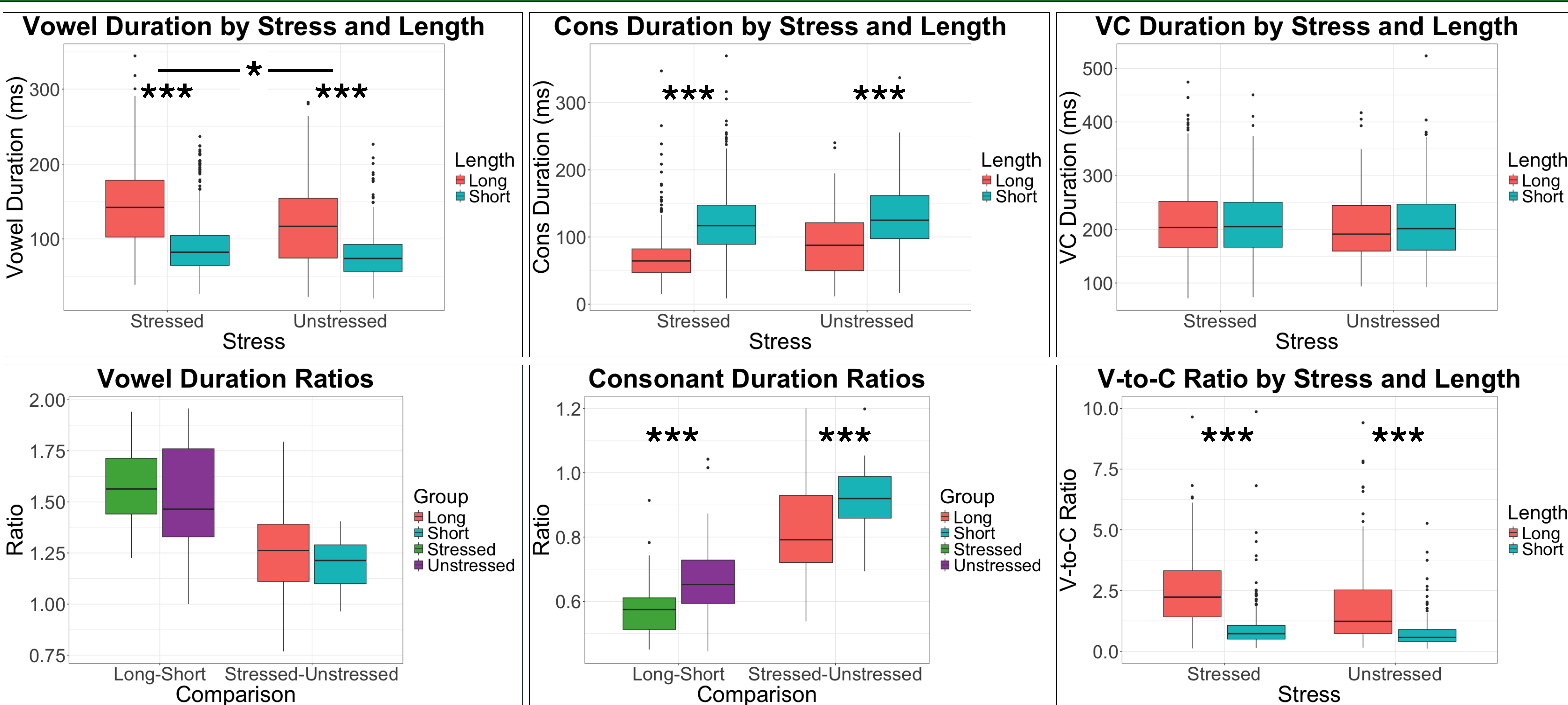
Measures:

- Absolute segment/cluster duration
- Long-short, stressed-unstressed, and vowel-consonant ratios

Measures modeled with mixed-effects linear regression [4] and when applicable, Tukey's HSD pairwise comparisons [5].

3. RESULTS

(Note: Length refers to the length of the vowel)



4. DISCUSSION

Vowel length contrasts are durationally preserved across stress conditions: long and short stressed vowels are lengthened proportionally to an equal degree.

Postvocalic consonant duration and vowel duration covary inversely.

Stress affects the segmental durations within a VC sequence, but not the sequence's total duration: VC sequences have constant duration regardless of:

- Phonemic vowel length
- Lexical stress

Our results suggest:

(1) long-short durational contrasts are preserved even in unstressed syllables

(2) VC sequences show consistent durations, indicating they act as timing units, giving insight on prosodic structure in Southern Tyrolean German

Acknowledgements & References

Work funded by the Deutsche Forschungsgemeinschaft (DFG, Grant #469384455) and the Autonome Provinz Bozen, Südtirol (#I83C22000390005). [1] Lehiste, I. (1970). *Suprasegmentals*. Cambridge: M.I.T. Press. [2] Vergeiner, P. C., Luttenberger, J., Bülow, L., Wallner, D., & Britain, D. (2023). Revisiting areal and lexical diffusion: the case of Viennese Monophthongization in Austria's traditional dialects. *Linguistics*, 61(4), 915-957. [3] Kleber, F. (2020). Complementary length in vowel-consonant sequences: Acoustic and perceptual evidence for a sound change in progress in Bavarian German. *Journal of the International Phonetic Association*, 50(1), 1-22.[4] Bates, D., Maechler, M., Bolker, B., Walker, S., Christensen, R. H. B., Singmann, H., and Grothendieck, G. (2014). "Package lme4: Linear mixed-effects models using Eigen and S4," CRAN Repos. 1, 1-113. [5] Lenth, R., Herve, M., Love, J., Riebl, H., and Singman, H. (2021). "Package 'emmeans' [software package]".