

Speech rhythm in L2 oral production: Individual differences in L2 proficiency, task complexity effects, and its relationship with comprehensibility and accentedness.

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L2 pronunciation research has shown that lexical stress errors involving vowel quality (Ghosh & Levis, 2021), less durational variation in vocalic and consonantal intervals (Ordin & Polyanskaya, 2015) and narrower pitch range values across intonational phrases (Mennen et al., 2014) characterize the speech of L2 learners of English with less accurate pronunciation.

Prosodic dimensions of L2 speech, and speech rhythm in particular, are nevertheless relatively under-researched in the L2 phonological acquisition literature, especially from an individual differences perspective (e.g. L2 proficiency), and as regards its effects on perceived comprehensibility (i.e. ease of understanding) and accentedness (Polyanskaya et al., 2017; Van Maastricht et al., 2021). In addition, L2 speech rhythm research presents several important methodological challenges. One challenge is identifying the rhythm metrics that might be better able to capture L2 development for language pairs belonging to different rhythm classes, such as L1 Spanish (syllable-timed) and L2 English (stress-timed). Similarly, current rhythm metrics (e.g. Dellwo, 2006; White & Mattys, 2007) may vary in how sensitive they are to task condition effects, such as when L2 learners perform speaking tasks that differ in difficulty or cognitive demands. Another challenge involves determining the ecologic validity of the speech materials used to measure L2 speech rhythm (currently mostly based on sentence-long read materials).

In this talk I will illustrate these methodological challenges and discuss possible approaches to investigating L2 speech rhythm through the analysis speech rhythm in the L2 oral narrative data from 82 L1-Spanish advanced learners of English. I will also report on the relationship between L2 proficiency and L2 speech rhythm in these learners and how differences in their speech rhythm translated into variability in native listeners' perception of their speech in terms of comprehensibility and accentedness.

- Dellwo, V. (2006). Rhythm and speech rate: A variation coefficient for ΔC . In Karnowski, P., & I. Sziget (Eds.), *Language and language processing: Proceedings of the 38th Linguistics Colloquium*, (pp. 231-241). Peter Lang.
- Ghosh, M., & Levis, J.M. (2021). Vowel quality and direction of stress shift in a predictive model explaining the varying impact of misplaced word stress: Evidence from English. *Frontiers in Communication*, 6, Art. 628780.
- Ordin, M., & Polyanskaya, L. (2015). Acquisition of speech rhythm in a second language by learners with rhythmically different native languages. *The Journal of the Acoustical Society of America*, 138(2), 533-544.
- Polyanskaya, L., Ordin, M., & Busa, M. G. (2017). Relative salience of speech rhythm and speech rate on perceived foreign accent in a second language. *Language and Speech*, 60(3), 333-355.
- Van Maastricht, L., Zee, T., Krahmer, E., & Swerts, M. (2021). The interplay of prosodic cues in the L2: How intonation, rhythm, and speech rate in speech by Spanish learners of Dutch contribute to L1 Dutch perceptions of accentedness and comprehensibility. *Speech Communication*, 133, 81-90.
- White, L., & Mattys, S. (2007). Calibrating rhythm: first language and second language studies. *Journal of Phonetics*, 35(4), 501-522.