Using rhythm metrics to measure progress in L2 rhythm across Polish advanced learners of English

Keywords: L2 acquisition, L2 rhythm, rhythm metrics

Although language rhythm is considered to be one of the first aspects in L1 acquisition, the acquisition of L2 rhythm can be problematic and contribute to the perception of foreign accent (Barry 2007). There is still a scarcity of studies investigating a measurable progress in L2 rhythm: Grenon and White (2008) used different rhythm metrics on L2 learners and concluded that their rhythmic scores were located between their L1 and L2 target values. Tortel and Hirst (2010) confirmed that rhythm metrics can be successfully used to differentiate between learners and native speakers. A recent study by Nguyen (2018) reported that learners can acquire L2 (English) rhythm even when it is significantly different from their L1 (Vietnamese), showing that beginners transfer their L1 rhythmic patterns, while more advanced learners transition from syllable-timed towards stress-timed patterns. However, there is still a scarcity of studies on L2 English rhythm across Polish learners of English (see Gralińska-Brawata 2014).

Non-native rhythm in English usually results from insufficient durational differences between speech intervals, incorrect word stress and the misapplication of pauses (Adams 1979). While English has been traditionally classified as a stress-timed language because of its vowel reduction and complex syllable structure, Polish has been considered both as an atypical case of a stress-timed language due to its variable and complex syllable types (Rubach and Booij 1985), as well as a syllable-timed language owing to its lack of phonological vowel reduction (Avery and Ehrlich 1992). Grabe and Low (2002) identify Polish as a mixed-type language, exhibiting features of both stress-timed and syllable-timed languages. Considering these measurable differences between Polish and English rhythm, L2 English rhythm metric scores should be closer to L1 Polish than L1 English as a result of inconsistent vowel reduction and vowel duration, which significantly affect rhythm metric scores.

The following longitudinal study was conducted among 50 Polish students of English reading the "Please Call Stella" passage before and after an intensive two-semester accent training course supplemented by an extensive practical course in English phonetics and phonology. Automated alignment was performed in DARLA (Reddy and Stanford 2015) and reviewed in Praat (Boersma and Weenink 2020). Rhythm metrics (Delta, Varco, nPVI, CCI) were calculated in Correlatore (Mairano and Romano 2010) and the results before and after training were compared with the pronunciation teachers' rhythm metric scores. A significant difference between the scores for vocalic intervals was reported across all rhythm metrics, indicating that participants' produced higher vocalic variation after training, more similar to their teachers. The following study confirms that L2 rhythm can be taught in a classroom environment and that an observable progress can be measured with the use of the available rhythm metrics, complementing earlier studies on L2 rhythm and rhythm metrics.

Word count: 450

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