Speech rates and unfilled pauses in native and learner speech at the CEFR levels B2 and C1

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Learner corpora have been used to study the interlanguage of learners from different first language (L1) backgrounds and to compare their speech with that of native speakers to explore, for example, the overuse, underuse and misuse of various linguistic phenomena. However, little research has been done exploring spoken language of learners with different proficiency levels, possibly because learner corpora have been compiled on the basis of learners' L1s, whose second language proficiency levels are not attested and are generally simply either inferred from educational background or from rating a small sample (e.g. 10% of the learners in the first eleven sub-corpora in the Louvain International Database of Spoken English Interlanguage (LINDSEI) (Gilquin et al., 2010)). This involves one of the methodological issues learner corpus studies have to address in order to have broader implications and applications in the fields of Second Language Acquisition and language testing and assessment (Callies & Götz, 2015).

The spoken data in the Czech (n = 50) (Gráf, 2015) and Taiwanese (n = 50) (Huang, 2014) components of LINDSEI were assessed on the scales of Common European Framework of Reference for Languages (CEFR) (Council of Europe, 2001) by two trained raters. They attended a four-hour rater standardization training session offered by an Examiner Trainer and their rating task followed the rating procedure developed by the LINDSEI team at the Catholic University of Louvain (Gilquin et al., 2010). The post-hoc assessment (r = 0.889 on global assessment) results in four proficiency groups: C2 (n = 2), C1 (n =38), B2 (n = 51) and B1 (n = 9). While most of the Czech learners (n = 36) are at C1 level, the majority of Taiwanese learners (n = 39) are at B2.

The present study aims to investigate two fluency variables, namely speech rates and unfilled pauses in the excerpts of a picture description task carried out by 38 C1 learners and 51 B2 learners in the Czech and Taiwanese sub-corpora of LINDSEI. The native counterparts were 50 speakers in the LOCNEC corpus (De Cock, 2004), performing the same task. *Audacity* (2013) and *WordSmith 6* (Scott, 2012) were used to measure speech duration, calculate tokens and retrace unfilled pauses to explore their frequency and placement.

Accepting the common view that speech rates and the use of unfilled pauses are key components of L2 fluency (Kormos & Dénes, 2004; Ellis & Barkhuizen, 2005; Skehan, 2009; Ahmadian, 2012; Bosker et al., 2012), this study investigates whether significant differences in that regard exist not only between learners and native speakers as is commonly explored (Götz, 2013; Gráf, 2015) but also between learners across two proficiency levels on the CEFR scales.

The mean speech rates of the learners of C1 and B2 levels are 142 (sd = 20) and 118 (sd = 22) words per minute respectively and 174 (sd = 34) for the native speakers. Similar to the comparison of LOCNEC and the German (Götz, 2013) and Czech (Gráf, 2015) components of LINDSEI, the results indicate that the difference between learners' and native speakers' speech rates is statistically significant (p <

0.00001). The difference between the two proficiency levels also proves to be statistically significant (p < 0.00001). It appears that rise in proficiency between these two levels is accompanied by increase in speech rate even at these relatively high levels of proficiency.

The C1 and B2 learners have been found to overuse unfilled pauses, pausing 10.76 and 14.43 times per hundred words (phw) respectively as opposed to the native speakers' rate of 7.15 pauses phw. To determine differences in the use of unfilled pauses, these are further categorized as pauses at clause boundaries, within clauses, and within constituents. Significant differences are found between the learners and native speakers (G^2 = 220.53; p < 0.0001), and also between C1 and B2 learners in the use of unfilled pauses within clauses (G^2 = 70.63; p < 0.0001) and within constituents (G^2 = 50.51; p < 0.0001) but not at clause boundaries (G^2 = 0.09; p > 0.05). In terms of the locations, unfilled pauses at clause boundaries are taken as natural stops and those within constituents are hesitation stops, which are considered as markers of disfluency. In this respect, the C1 learners, who produced 1.02 pauses within constituents phw on average, performed better than B2 learners, who averaged at 2.20 pauses phw. The occurrence of pauses within constituents is much rarer in native speech − 31 out of 50 of our native speakers do not pause within constituents, and the remaining 19 do so much less frequently, at 0.45 pauses phw.

The investigation of speech rates and unfilled pauses reveals that both can be used to distinguish native from learner speech as well as differentiating between the two adjacent proficiency levels. Both levels of learners pause more frequently than native speakers. This is in line with Pawley and Syder's (1983) argument that native speakers pause or slow down typically at or near clause boundaries and only rarely in the middle of clauses. The location of pauses would thus appear to be an aspect the learners might like to concentrate on if they desire to sound more fluent.

Whilst this study takes into consideration only two fluency variables, the results shed some light on fluency variation at C1 and B2 levels. With further analysis of other variables, such as filled pauses, repeats and mean length of runs, research studies of this nature will have the potential to be utilized in the teaching of oral skills and assessment of speech competence.

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