

A corpus-based study of vowel reduction in two speech styles: A comparison between English and Polish

*Małgorzata Kul and Paulina Zydorowicz
Adam Mickiewicz University*

The study aims to compare vowel reduction in read and fully spontaneous speech in English and Polish. It hypothesizes that (i) vowels exhibit stronger reduction in fully spontaneous speech in comparison with read speech in the two languages (ii) vowel reduction is more robust in English than it is in Polish (iii) high speech rate of triggers vowel reduction.

The aims were achieved by an acoustic analysis of interviews and word lists from PAC (9 speakers) and the Corpus of Modern Spoken Polish in the area of Greater Poland (9 speakers). The study takes centralization of formants and short vowel duration as vowel reduction (Lindblom 1963) which were normalized to compare the values across speakers. For Polish subjects, speakers' canonical schwa was operationalized as an average of peripheral vowels /i/, /a/ and /u/ due to the fact that Polish has no schwa (Jassem 2003). Comparison of two speech styles consisted in measuring spectral and temporal properties of vowel tokens from the wordlist and from interviews. The rate-reduction hypothesis was tested by means of comparing vowel reduction for three fastest and three slowest speakers for each language and using Pearson correlation.

In light of the obtained results, the two first hypotheses were positively verified. The third one produced mixed results. The study establishes a significant difference in vowel reduction across two speech styles, read and fully spontaneous across two unrelated languages. All vowel tokens were shorter and centralized in spontaneous speech, relative to their duration as well as placed in less peripheral positions than in read speech. It has been shown that reduction in English is considerably stronger than in Polish. With respect to the third hypothesis, assuming a straightforward relationship between speech rate and reduction, the findings of the current study did not provide a definite answer. To a certain extent, the correlation between rate and duration was found in Polish but not in English. As Zwicky notes, "casual speech need not to be fast; some speakers [...] use a quite informal speech even at fairly slow rates of speech, while others [...] give the impression of great precision even in hurried speech" (Zwicky 1972: 607).

Word count: 356