

A multichannel investigation into Polish 'nasal vowels'

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Polish is classified as a language which makes use of contrastive vowel nasalization, i.e. it has oral and nasal vowel phonemes. However, the phonological make-up of the latter segmental units (diphthongal vocalics with nasal resonance) is problematic, with some analyses setting up nasal vowels as individual phonemes (Karaś & Madejowa 1977) and others treating those nasalized vocalics as arising from underlying oral vowel and (allophones of) nasal consonant sequences (Rubach 1977, Jassem 2003) in accordance with widely-attested phonological processes. We report on an experiment where contact accelerometry (Horii 1980, Lippmann 1981) and aerodynamic monitoring of nasal and oral airflow (Desmeules-Trudel 2015) are used to compare patterns of nasal energy in a range of Polish syllable types, including those containing the putative nasal vowel phonemes with vowel+nasal stop sequences. Ten adult speakers of educated Polish (7 female) were recorded reading a randomized list of target words (placed in carrier sentences) yielding 4200 tokens in total. The time course and extent of nasalization are highly congruent in the two categories. Moreover, duration measurements show that 'nasal vowels' closely resemble vowel+nasal stop sequences, in contrast to oral vowels, which are significantly shorter. Both types of data lend support to the type of analysis which treats the diphthongal nasalised vocalics as units composed of two elements.

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