

The quality of Estonian vowels preceding palatalized consonants

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The purpose of this paper is to study the effect of consonant palatalization on the quality of Estonian short vowels /a u y o/ which precede palatalized and non-palatalized /l t n s/.

Palatalization is a process of assimilation that is triggered by a high vowel or a glide in which a consonant acquires a secondary place of articulation on the palatal region of the mouth [1]. Palatalizing the consonant also affects the preceding vowel. Previous research ([2,3] on the quality of Estonian vowels found that this /i/-like transition in the end of the vowel raises the F2 and F3 values and lowers F1 values. This was also confirmed for Swedish, English and Russian [4].

Palatalization can be used to differentiate meaning in Estonian. We have a rich inventory of words which are differentiated only by palatalization. This phonemic distinction is not expressed in orthography and palatalization can only be recognized from the context. On the other hand, palatalization is in some cases optional and the degree of palatalization can vary regionally and idiomatically [5,6].

To study the effect of palatalization on the quality of vowels preceding them, 43 subjects with various dialectal backgrounds were asked to read carrier sentences in which palatalization differentiated meaning in minimal pairs. Analyzing those minimal pairs gives a comparable dataset from which F1, F2, F3 frequencies of the vowels can be analyzed.

Preliminary results of this study verify that palatalization affects the quality of the vowels preceding the palatalized consonant. Vowel allophone that precedes palatalized consonant has a higher F2 values and F1 values were lower. Contrary to previous findings, F3 values were lower, not higher, than the vowel allophone that precedes non-palatalized consonant. Dialectal background did not have a significant effect on the quality of vowels that precede palatalized consonants.

Keywords: Estonian, palatalization, vowels, formants

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