Final Posttonic Vowels in Different Prosodic Positions in Standard Russian:
Phonetic Realization and Phonological Implementation
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The rhythmical structure of the phonological word is one of the most distinctive typological characteristics of Modern Standard Russian (MSR). Traditionally, it is described as a three-term system 112311, where 1 means radical reduction, 2 means moderate reduction and 3 means no reduction. However, the vowels’ realization can deviate from the classic scheme and can be significantly variable both in MSR and dialectal systems.

The vowels’ realization in unstressed final open syllables may considerably differ from the same vowels’ realization in non-final and/or closed syllables: it is supposed that within a phrase these vowels undergo radical reduction and surface as [ə], but before a pause they can surface as [a] found in the first pretonic syllable.

The factors responsible for such a wide range of possible vowel implementations in the final posttonic syllable are still unknown, but we suggest, that the rhythmical structure of a phonological word is conditioned not only by the place of stress in an isolated word but also by the position of the word in a phrase.

This paper reports some results of experimental study of the vowel length in the final unstressed syllable as a function of the following factors: 1) the presence/absence of the stress on the first syllable in the word following the experimental one; 2) the syllable type in the experimental word; 3) the presence/absence of the phrasal accent on the word following the experimental one. Seven informants from seven regions took part in the experiment. The sentences, formulated as experimental material, comprised 26 pairs of within-phrase word combinations. The first word of each combination consists of three syllables with the stress on the first one; all vowels were the phonemes’ /a/, /o/ implementations after the non-palatalized consonants.

The lengths of the stressed, the first posttonic and the second posttonic vowels in the first words of each combination were measured. The results of the rhythmical structure analysis for each studied factor are presented in Figures 1–3.

This data permits to formulate that in all the variants of MSR the final unstressed vowel in the word following the phonological word with the stressed first syllable is significantly longer as compared with the position preceding the word with the unstressed first syllable. As for two other studied factors, the statistical analysis has revealed that there is no remarkable correlation between the length of the final unstressed vowel and the syllable type or the phrasal accent realization.

Thus, the factor determining the relationship between the stressed vowel and the vowel preceding it in MSR seems to be so strong that it can influence the posttonic vowel of the phonological word across the word boundaries. So, the final unstressed vowel of the phonological word and the stressed vowel in the first syllable of the following phonological word create the structure similar to the ‘prosodic nucleus’ of a phonological word. This can serve as evidence that between the phonological word and the phrase there is one more intermediate level of combining the segment units.
Figure 1. The average relative length of posttonic vowels (as a percentage of the length of the stressed vowel) for all informants as a function of presence/absence of the stress on the first syllable in the following word.

Figure 2. The average relative length of posttonic vowels (as a percentage of the length of the stressed vowel) for all informants as a function of open/closed final syllable in the experimental word.

Figure 3. The average relative length of posttonic vowels (as a percentage of the length of the stressed vowel) for all informants as a function of presence/absence of the phrasal accent on the following word.