

# On the Distinctive Features of Byelorussian Utterance Accents

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## 1. Introduction

The present paper reports on an experimental investigation of linguistically relevant prosodic units and their distinctive features in Byelorussian. Utterance accentemes actualized as accents are the smallest elements of the accentual subsystem of utterance prosody. Paradigmatic types of accents are determined on the basis of their functioning in larger phonological complex-accentual structures, which stand out as models of syntagmatic organization or patterns of combination of the smaller elements.

It is widely accepted that in the accentual structure of an utterance accents are peaks of prominence, hierarchically ordered due to the differences in their functions.

In Byelorussian, like in Russian and English, and, presumably, in a number of other languages, functional differentiation of accents in an utterance, i.e. their paradigmatic classification, is based on the discrimination of the following types: nuclear accent, non-nuclear (full and partial), and zero accent.

The nuclear accent differs from the non-nuclear in its specific semantic and organizing role: it singles out semantically the most important word in an utterance and is its obligatory element. Non-nuclear accents give prominence to semantically less important words and function as optional elements. So, the relations between the nuclear and non-nuclear accents within the structure are those of subordinative syntagmatic hierarchy.

The basic characteristics of the paradigmatic relations of these accents are their qualitative distinctions. They manifest themselves in the predominant co-occurrence of the nuclear accent with the kinetic tone and the non-nuclear accent with the static tone. In addition, the nuclear and non-nuclear accents can be opposed to each other by the degree of pitch contrast - strong/weak.

Analogous to the above differentiation is the discrimination of non-nuclear accents into full and partial, which also reflects the semantic inequality of the words.

All the types of accents are represented in concrete speech realizations by definite phonetic variants, conditioned by positional and combinative factors. For example, the first and the second full pre-nuclear accents belonging to one functional type differ as positional variants by their pitch characteristics.

## 2. Method

In analysing the acoustic correlates of utterance accents it seems reasonable to consider each type of accent separately. In our investigation the nuclear, and non-nuclear full and partial accents were analysed in 114 statements and in 128 general questions, which were read by 5 native speakers of Byelorussian. The full non-nuclear accent was analysed in its two variants - the first and the second positions. Acoustic prominence was determined by relative values of fundamental frequency, intensity and duration of the accented syllables as compared to those of adjacent unaccented syllables.

## 3. Results

The data obtained demonstrate the greatest prominence of accented syllables in duration features: accented syllables in Byelorussian utterances are much longer than unaccented ones. Intensity contrast between accented and unaccented syllables appears to be weaker than duration contrast, whereas fundamental frequency contrast is the weakest.

The highest peak of duration prominence is with the nuclear syllable (in statements duration contrast is sharper than in questions), the second peak is with the first accented syllable. Intensity prominence increases from the first accented syllable to the nuclear one.  $F_0$ -prominence is the greatest with the nuclear syllable; the second peak of  $F_0$ -prominence is with the first accented syllable. Thus the nuclear accent is effected by the strongest contrasts in all the parameters.

The types of accents also differ in the combination of acoustic contrasts, i.e. in their acoustic structures. The nuclear syllable is most frequently effected by the structure for all the 3 parameters, whereas the structure of non-nuclear accent is most frequently constituted by 2 parameters (Metlyuk, 1976).

In creating the effect of utterance accent irrespective of their type the leading parameter, as to the frequency of occurrence of its contrast, is fundamental frequency (84% of the cases on the average). In the acoustic structure of the nuclear accent  $F_0$ -prominence occurs in 100% of the experimental utterances (both statements and questions). In the structure of the full non-nuclear accent it occurs in 76% of the cases (90% in the first accent and 62% in the second one). There is practically no  $F_0$ -prominence in the acoustic structure of the partial accent.

I-prominence appears to be more frequent (82% of the cases on the average) than t-prominence (68% of the cases). It occurs in 88% of the cases in the structure of the nuclear accent, and in 83% in the structure of the full-nuclear one, whereas t-prominence is observed in the structure of the nuclear accent in 72% of the cases, and in the structure of the full non-nuclear accent - in 63% of the cases.

In investigating the acoustic nature of utterance accents we are not equally

interested in all the existing differences between accented and unaccented syllables but mainly in those which are significant on the perception level. Therefore the data obtained as a result of the acoustic analysis were checked against the results of the auditory test of synthetic Byelorussian utterances - (statements and questions) which testified the validity of the above conclusions.

## 4. Discussion

From the linguistic point of view the results of our investigation can be interpreted in the following way.

The distinctive features of the above accent types are of a compound nature (cf. compound distinctive features of phonemes, Dzhaparidze, 1979). The acoustic structures of the compound distinctive features are essential for the perception of these accents. The components of the distinctive feature of the Byelorussian nuclear accent are fundamental frequency prominence and duration prominence,  $F_0$ -prominence playing the leading role. At the same time duration prominence can function as the only distinction in cases when there is no  $F_0$ -prominence (the so-called level tone).

The non-nuclear full and partial accents are differentiated by the prevalence of intensity or duration prominence in their acoustic structures, intensity prominence being more essential for the full accent and duration for the partial accent.

Qualitative distinctions of the accents are closely related to their quantitative distinctions: the degree of prominence increases from the zero to the nuclear accent. The quantitative characteristics of Byelorussian accents are less conspicuous than in Russian and even less so when compared to utterance accents in English.

## References

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