

THE RHYTHMIC ORGANIZATION OF SPEECH IN CZECH AND RUSSIAN

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ABSTRACT - The subject of this research consists in describing perception as revealed in the process of segmentation of Czech and Russian speech into rhythmic structures (RS); in describing peculiarities of prosodic features of segmentation in Czech and Russian. In this investigation rhythm is defined as a regular recurrence of speech units in an utterance. These units comprise syllables, rhythmic structures (phonetic words), sense-groups (syntagmas) and phrases.

INTRODUCTION

Among diverse problems of oral speech, studied by comparative linguistic research the problem of rhythm is attracting more and more attention, i.e. not only the rhythmic structure on the whole, but also the rhythmic structure of units of rhythm in different languages and in different types of speech activity.

METHOD

Two native speakers of Czech took part in the experiment. After a preliminary preparation the text was read in a soundproof studio and recorded (the speed was 38 cm/sec). In three months' time the same subjects made the auditory analysis of the text. There were two programmes in the auditory analysis: the recording of the text was written in spelling and then segmented into sense-groups and RS, the subjects did this while listening to the recorded text; copies of the text, typed without capital letters and punctuation marks were to be segmented into RS without listening to the recording of the text. After a statistical analysis RS were classified into groups and types.

THE GENERAL DESCRIPTION OF ACOUSTIC-PHONETIC ANALYSIS

The conclusions after the 1st part of the analysis are as follows: in Czech speech there are six classes of RS; the number of the types of RS is limited, there are only 2: the first type with the first stressed syllable (this type dominates because the position of stress in Czech is fixed), the second type has stress on the second syllable, this type is rare; the analysis of the frequency of the types of RS has shown that the most frequent type in the analysed texts is RS which consists of 2 syllables, RS of 3 syllables come next and RS of 1 syllable rank third; RS of 2 and 3 syllables cover up the greater part of the text (85%), the rest (15%) is covered by RS of 4-, 5- and

6-syllabic RS; the data of the analysis of Czech speech has been compared with the analogous data of the analysis of Russian speech (Zlatoustova, 1981). This comparison has revealed some common features as well as some peculiarities in the segmentation of speech into RS typical of the Czech and Russian languages: 1) for both these languages RS of 2- and 3-syllables constitute the most frequent types; 2) but in Czech RS of 1-syllable is also one of the most frequent which is not characteristic of the Russian language; 3) the scope of variation of the types of RS is very limited in Czech but in Russian it is quite the opposite.

The second stage of the experiment consisted in the analysis of the prosodic features of stressed and unstressed syllables in different RS in Czech speech (Potapov, 1987). The results of the experiment showed that RS of different classes (ex. 2/1, 3/1, 4/1), which differ in their position in the phrase, are marked by the following prosodic features. RS of 2-syllables: 1) at the beginning of the sense-group the duration of stressed syllables is bigger than that of unstressed ones, but unstressed posttonic syllables are marked by a higher level of intensity; 2) in the middle of the sense-group stressed syllables have two patterns of the distribution of duration. Sometimes the duration of stressed syllable prevails, sometimes both the syllables are equal in their duration; 3) at the end of the sense-group stressed syllables have 2 different prosodic structures: stressed syllables may be marked by both increased duration and intensity, sometimes they are marked only by duration. RS of 3-syllables: 1) at the beginning of the sense-group all the syllables tend to be equal, the first syllable, as a rule, is marked by greater intensity; 2) in the middle of the sense-group prosodic features vary: intensity increase on the first stressed syllable, on all the posttonic syllables. As for duration, it is either distributed among all the 3 syllables equally, or the last syllable is marked by more duration. RS of 4-syllables: 1) at the beginning of the sense-group there is a tendency to increase the intensity of the first stressed syllable; 2) the duration of RS in the same position as indicated above has equal parameters; 3) syllabic sonorants are marked by a significant increase in duration and intensity; 4) there are no significant changes of F_0 at the juncture of the syllables and within RS. There are minor changes of F_0 parallel to a steady insignificant rise in pitch or fall in pitch within syllables in RS. Thus in Czech stressed and unstressed syllables are equal in their duration. Intensity and F_0 at the juncture of stressed and unstressed syllables changes insignificantly.

CONCLUSIONS

The results of the analysis of Czech speech have shown: 1) the most variable parameter is the duration of sonorants. At the end of a syllable after a vowel or a fricative the duration of a sonorant considerably exceeds the duration of the same sonorant placed at the beginning of a syllable before a vowel; 2) according to intensity one can differentiate between the syllabic and the non-syllabic sonorants. And the ratio of a syllabic

sonsonant to a non-syllabic consonant is 2:1. Non-syllabic sonorants in different position of a syllable (before a stressed vowel, after a stressed vowel) after an unstressed syllable do not differ considerably in J_{max} . Thus, the opposition n-n in Czech is characterised by prosodic features dynamic° (energetic) and quantitative (duration). Changes of F_0 are especially typical of sonorants at the beginning before front vowels; 4) in Czech intensity plays a very important role at the juncture of words in the following position: "a preposition + a notional word", "a notional word + a notional word". The parameter of duration is not important for the differentiation of vowels in different position, because Czech vowels tend to be isochronous. The same applies to F_0 , which does not vary much in Czech; 5) the comparison of the data on the segmentation of the material in particular vowels and sonorants in Czech and Russian has shown that duration and intensity are important in Russian to differentiate the type of juncture. In Czech intensity and duration are important to differentiate Czech vowels while segmenting the flow of speech into RS.

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