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The rhythm – intonation relation

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Abstract

This paper is dedicated to the problem of the relation and interaction between intonation and rhythm in Bulgarian language. According the theoretical model of the suprasegmental system in Bulgarian language, described in another paper by the same author, the rhythm and the intonation are considered as elements (or subsystems) of the language system, which play the role of instruments for the realization of the temporal (structuring) and the semantic (concerning the meaning) relations in the process of speech (or the language realization).

The review of the basic studies on intonation in Bulgarian language shows, that Bulgarian phonetic and phonological research treats the intonation in its phonetic and syntactic aspect as related to the expression of certain linguistic meanings (semantic relations). The Bulgarian linguists do not usually perceive intonation as an element of the language's phonological system. In contrast, modern West-European and American linguistic research regard the intonation not only in the context of various semantic theories, but also as a component of the phonological system of the respective language. Authors like Liberman (1975), Selkirk (1984), Hayes (1989), Halliday (1994) and others even connect intonation to rhythm. They consider both the intonation and the rhythmic systems connected to the language phonological system. In this respect it can be indicated that a certain tradition in the Russian linguistics exists, examining the rhythm – intonation relation, which has its roots in comparing rhythm and intonation between poetry and prose (Timoffeev 1958; Peshkovskij 1959; Tomashevskij 1959; Zhirmunskij 1966; Aihenbaum 1969; Zinder 1979; Zlatoustova 1983; Antipova 1984; Cheremissina 1989; Zadoenko 1993 and others). Almost all studies on this subject though are either examining its phonetic aspect or are studying the rhythm as a component of intonation. Furthermore, it can be said that the so called "syntactic phonetics" in Russian linguistics, as a specific approach to prosodic phenomena, has influenced to a great extent both the studies on rhythm and rhythmic organization characteristics and the studies on links and relations between rhythm and intonation.

The suprasegmental organization of the language realization along the temporal axis is defined by the respective rhythmic system of language, i.e. the functioning of the languages along the temporal axis differs and is dependent on the characteristics of the particular language. It is known that the rhythmic system is implemented through the rhythm of speech. Not only the representatives of the metrical phonology, but a considerable number of other linguists too, assume that the speech rhythm is the realization of the time metric grid, that exists for the speakers of a given language and serving them to measure precise time intervals in the flow of speech, which is based on experimental research (Liberman 1975; Liberman and Prince 1977; Selkirk 1984; Hayes 1989 and others). In other words, the relation between the metric grid and the speech rhythm is similar to the relation langue – parole, competence – performance or language – speech.

There are numerous definitions for speech rhythm, among which the most wide-spread definition describes the speech rhythm as a periodicity of similar and isochronal speech phenomena. According to their rhythmic organization, languages are classified into stress-timed, syllable-timed and mora-timed languages. Traditionally, rhythmic differences between languages have been attributed to the tendency towards isochrony of the prosodic domains of the foot, the syllable, and the mora respectively. Pike (1945) and Abercrombie (1967) claim that linguistic rhythm was either based on the isochrony of interstress intervals, or on the isochrony of syllables, for all languages throughout the world. Further work generally classify Germanic and Slavonic languages, as well as Arabic, as stress-timed, Romance languages as syllable-timed, and hypothesized a third category of mora-timed languages, including Japanese and Tamil. Besides, a scale exists that "measures" the extent to which the different rhythmic tendencies (stress-, syllable- and mora-) are present in a particular language. According to this scale the Bulgarian language may be defined as a stress-dominating language. Its rhythmic organization is based on the regular periodicity of stresses in the flow of speech along the temporal organization. Therefore, the rhythmic system functions along the horizontal, i.e. the syntagmatic axis. Since both systems (intonational and rhythmic) reflect different relationships it is logical to assume that the intonation system functions along the other axis – i.e. the paradigmatic one as well. Such hypothesis may explain the existing possibility different intonation contours to result in the expression of different semantic relations when "applied over" one and the same suprasegmental units. This phenomenon suggests that intonation units exist, that due to different grouping (combination) along the syntagmatic axis and through different inner oppositions on the paradigmatic axis allow expression of different semantic relations. The experimental research on intonation shows that, irrespective of the meaning of the lexical units, organized in an identical syntactic way, one and the same semantic relation is expressed when the intonation contour is modified in one and the same way. There are lexical units though, (e.g. interrogative pronouns and others), the presence of which always results in the expression of the same or similar semantic relations, irrespective of the intonation contour. Hence, lexical markers like these are able to produce certain meaning, which can not be utterly transformed under the influence of the type of the intonation contour. Some perceptive experimental studies on intonation in Bulgarian language (literary and dialect) related to the subject are available (Vodenicharov, Kurlova and Tsonev 1989, 1990; Kurlova, Vodenicharov and Tsonev 1991; Tsonev 2005a, 2005b and others). They corroborate the hypothesis of the existence of a hierarchy among the semantic information bearing characteristics in the speech signal processing. It is proven, for example (Kurlova, Vodenicharov and Tsonev 1991:558), that for the speakers of the Bulgarian literary language, the melodic contour has a crucial role in distinguishing between the different types of communicative phrases, but when lexical markers are present in the phrase, they play greater role in identifying the phrase as an announcement, question, etc. Moreover, the results of the study quoted above prove that both the speakers and the non-speakers of a particular Bulgarian dialect use one and the same prosodic characteristics in the semantic processing of the information, but assign a different weight to them. The type of the melodic contour and its modification in its beginning and end are of highest importance for the non-speakers of a dialect, while the rhythmic structure and the

number of melodic contours (which might as well be interpreted as a rhythm-generating factor) are dominating for the speakers of the dialect.

According to the theoretical model of the suprasegmental system in Bulgarian language, described in another paper by the same author (Tsonev 2005c), rhythm and intonation may be considered elements (or subsystems) of the language system, which play the role of instruments for realization of temporal (structuring) and semantic (concerning the meaning) relations in the process of speech (or the language realization). Assuming that the speech rhythm is the link between the "stream of consciousness" (the thinking) and the "language discreteness" (Drogalina and Nalimov 1978; Kurlova and Tsonev 2004), and that the intonation is the discrete realization of the "meanings" of the conceptual structures and their corresponding semantic structures through the system of language (Kurlova and Padareva 2004), then we can argue that the main function of the rhythmic system is organizational, while the one of the intonation is semantic. As mentioned above the rhythmic system accomplishes the "organizing" and "arranging" of the discrete language units in their realization along the temporal axis in compliance to the language rules affecting the syntagmatic axis. The intonation system, on the other hand, permits the realization of various "types of meanings" able to "express" and "substitute" each other within the same context defined by the language unit characteristics and "organization", thus being able to affect the paradigmatic axis. These facts though, do not exclude the possibility basic elements of intonation, such as phonemes for example, to express relations of contrast and distribution, affecting the syntagmatic axis.

In this respect, experimental examinations of the suggested assumptions and hypotheses on rhythm and intonation nature might be able to confirm or reject "old" as well as to discover "new" objective laws of relation and interaction between them.

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