TOWARDS A UNIFIED FRAMEWORK OF RUSSIAN INTONATION

OLGA T. YOKOYAMA

Harvard University

ABSTRACT

A generative framework of Russian intonation is proposed that incorporates both semantically significant pitch contours and so-called sentential stress, two phenomena usually treated separately in existing accounts of Russian intonation.

The proposed framework involves at least two levels: a phonemic level consisting of both pitch level and contour tone sequences, and a phonetic level accessible to perceptual and instrumental analysis. The phonetic level is generated as a result of intonational level mapping processes and general implementation processes like downstep, upstep, or declination. The descriptive data include those observed by previous researchers, as well as the author’s own instrumental measurements of fundamental frequency.

In the following presentation, I consider both SS and certain melodic contours within an intonational system that involves (at least) two levels: a phonemic level that consists of both pitch level and contour tone sequences, and a phonetic level accessible to perceptual and instrumental analysis. The phonetic level is produced as a result of intonational level mapping processes, as well as general implementation processes like downstep, upstep, or declination. Specifically, I concentrate below on the following three points: (§1) characterization of SS in terms of the direction of the pitch in the stressed syllables of post-SS segmental material; (§2) accounting by means of downstep for iterated sequences of rising contours in non-utterance-final syntags; and (§3) positing separate phonemic pitch level boundary tones (BTs) not associated with lexical stress.

§1. As is well known, the concept of SS is indispensable for a comprehensive description of Slavic word order. In the absence of an explicit phonetic or phonological definition of this concept, however, it has been taken as a primitive by all scholars dealing with word order. In the actual process of investigation, this amounts to relying on an ill-defined introspective criterion, which has led to some misguided analyses of word order data. It is clear that neither absolute amplitude nor absolute pitch signals SS in Russian, since SS can be placed toward the end of the sentence, where both absolute amplitude and absolute pitch are always lower than they are at the beginning. Also, the duration of the syllable carrying SS is often shorter than that of some other intonational centers in the same sentence, especially the stressed vowel of the sentence-initial rising syntagm (neokončennaja sintagma ‘incomplete syntagm’ in [1], or načinatel’ naja melodema ‘initial melodeme’ in [4]). The direction of the pitch in the stressed syllable of the SS itself is not distinctive either, since SS can have either a rising or a falling pitch contour (cf. [1] and [7]). I suggest that the SS site is determined without reference to its own prosody, intensity, or duration, but rather relatively and
negatively, as the leftmost intonational center after which no syntagms and no rising contours occur. Thus in (1), SS is on the word dolžačik 'rain', on whose stressed syllable [d] a falling accent HL is implemented, the first syntagm has a rising intonation LH on its stressed vowel [i], while the other stressed syllable in the same syntagm with dolžačik 'rain', i.e., the post-SS stressed [e] , has falling pitch:

1 Nad Krakovom dolžačik nakryval.

'It was drizzling over Krakow.'

When the direction of the pitch in SS is rising or rising-falling (which happens mostly in introductory and exclamatory utterances), the pitch contour of the post-SS stressed vowels is still falling; consider (2), where the SS is on qulpany 'tulips', a word with a rising-falling pitch on its stressed [u], and the stressed [e] after the falling pitch again:

2 Tjulpany raspuščajutelj

'The tulips are opening!' (with stress on 'tulips')

When SS occurs in a monosyllabic utterance, it can be found nowhere in its syntagms. In monosyllabic utterances where SS falls on the first stressed syllable, no rising contours occur at all. In such cases, however, when the post-SS segmental material is too extensive, and the pitch cannot continue falling due to the limits imposed by the base line [9], upstep is implemented [5]. When SS appears in non-initial position within its syntagms, the pitch level before SS is generated by a phonemic pitch level accent, which stay to not generate phonetically rising word stresses. When SS occurs in a multisyllabic utterance, on the other hand, it is deep preceded by a syntagm with rising intonational core; significantly, segmentation into syntagms is not possible in the SS.

The definition of SS as formulated above constitutes previously made observations concerning lexical units [8] with Bzybghnovskas's [K] inventory. It becomes clear, for example, that when the intonational center in Wh-questions uttered with IK-2 is found on the Wh-word, the WH-word is the SS; or that the intonational center in IK-3 also turns out to be the SS. Moreover, since the function of SS is to mark that piece of information which is not part of the addressee's knowledge and current concern [11], this definition of SS sheds light on the functional dichotomy of certain utterance types. This with the SS on the Wh-word of IK-2 marks the rest; the rest of the information can automatically be judged to be part of the addressee's current concern. Similarly, in questions with IK-3, the SS marks the discontinuous information (i.e., x or y) that is outside the speaker's knowledge, and the rest of the proposition is also part of the addressee's current concern. In both cases, the SS status of the intonational center is not only consistent with the fact that the pitch contour of SS itself can be rising or falling, but it is also corroborated by the contour of the tail, which lacks rising contours and forms no syntagms.

These considerations indicate that some of the more specific meanings of IKs, specifically those associated with the open end of the discourse (such as demoihtere) as opposed to terminal factors (cf., some IK meanings like skepticism, disproportion, enthusiasm) constitute on the one hand a separate gap while the intonational lexicosis, while on the other, they must be considered as an integral part of the framework of Russian intonational as a whole.

3 As suggested by Ktorba and repeated by subsequent scholars, some utterances do not have SS at all; they are composed of one or more syntagms, each of which has its own syntagmatic (or phrasal) stress. Consider (3):

3) V našim komarny vošla poljačija šeščaka i
v bol'shik / muzikjx / apoxes.

'A middle-aged woman in big men's boots wildly into our room.'

In (3), which can easily be uttered with as many as 5 syntagms, each of which has the last has a rising center, the only falling stress is realized on the final syntagm suppos 'boots', which is nevertheless clearly not the carrier of SS. I will call this intonational "Type I".

Type I intonation brings us to the second problem, that of downstep. The intonational contour described for (3) is essentially that of Moskovske vremja i štarnnacat' Štavn i jnatsnca mina. 'Moscow time is fourteen hours and fifteen minutes', which is analyzed as IK-6 / IK-4 / IK-1 (2-195).

Note that the number of rising stresses (like those in IK-6 and IK-4) in sentences with Type I intonation can easily be increased; in (3), for example, four rising stresses are quite possible, depending on the rhythm of the speaker, and this number can be increased by lengthening the sentence. Any rise in the set of possible phonemic IK that differs from the preceding one only in having a slightly lower rise mimics the grammatical that so intermediately rising "slope" calls for. I suggest that this pattern of Type I intonation can be accounted for in terms of downstep.2 If downstep is accepted as part of the Russian intonational system, the invariable core of Type I intonation can be described as [LHₙ HL], where n is the number of non-final syntagms, and ( ) indicates the implementation of downstep. The surface pitch level is then presented as a result of a combination of downstep, intonational pitch mapping between adjacent phonemic tones, and the general definition of the intonation.3

This solution eliminates the ad hoc assignment of different phonemic rising IKs that gradually decrease in height to an open end of syntagms, which runs counter to the obvious fact that the nature and height of the intermediate pitch levels is nothing more than a function of the length of the sentence and its division into syntagms. This solution accounts, moreover, for numerous redundancies observed in the current system of IKs, such as the otherwise unexplained synonymy of IK-3, IK-4, and IK-6, all three of which are said to signify "tomrooomness", among other things. An additional benefit of such a deep structure is the fact that it also accounts for our intuitions that intonational Type I intonation and so-called "intonation inversion" for single words (cf. also Bzybghnovskas's observation that IK-1 is used as "idle" intonation [3]) are quite similar. Thus we posit a core phonemic representation for both Type I and intonational intonation as [LHₙ HL], where n = 0 in citation situations.2

5. I suggested in #2 that the underlying sequence of current tones (LHₙ), and HL constitutes the core of Type I intonation. This core, however, is not entirely sufficient for generating all intonations that should be considered Type I. Consider the contrast between (4) and (5):

4) Tut mostrolik. 'There is a trip here.'

5) Tut podvozhit. 'There is a pedale here.'

Both (4) and (5) have Type I intonation LH HL. But the post-tonic pitch levels in the final syntagms of (4) and (5) differ significantly. To account for this, as well as the phonemic differences realized on unstressed material, I propose phonemic pitch level boundary tones (BTs).3 Thus, if we posit utterance-final BTs H₉ for (4) and L₉ for (5), we can capture both the Type I intonation that (4) and (5) clearly share, as well as the non-finite nature of (4), as expressed by the H₉. The phonemic realization of BTs is of course affected by the adjacent tone level, as well as by the overall declination of the base line.

BTs can also account for similarities and differences between several other contours that must otherwise be distinguished as a whole. For example, the difference between the first and the second type of syntagmatic stress as described in (1) can be reduced to LH for the first type, versus LH₉ H₉ for the second. Similarly, the difference between "qualificational..."
IK-3 and IK-6 (as in Kako ih zap redoviti?) “What a yummy soup!” I can be reduced to that of the BT, which is L# in IK-3 and H# in IK-6.

The specific points discussed above do not of course exhaust the theoretical questions associated with the description of Russian intonations. Among remaining problems, the problem of the definition of a syntagm is crucial for the understanding of the generative process of utterance intonation. Of the many suggestions for defining a syntagm, as least the intonational definition, as the domain of a single intonational center, appears to be generally valid (with the exception of the “bicentral” IK-3, cf. fn. 4). But this leaves at least two important questions unanswered: (a) how the boundaries of syntagmas are determined (cf. e.g. [8]), and (b) what determines the position of the intonational center within the syntagm itself. Although various authors have offered speculations on both questions, no rules have yet been proposed that would generate a correct segmentation in a given context. There are also general descriptive issues to be addressed, such as whether or not Russian intonation is best represented by a sequence of pitch level and/or contour tones (as assumed in this paper) or by head-nucleus-tail configurations (this is essentially the approach taken by Soviet scholars), or how many basic tone levels can be posited for Russian, or which tones, if any, can spread. The answers to these questions would enable us to determine the underlying tones for various IKs, and to incorporate all of the items of the intonational lexicon, including discourse features marked by SS, into a unified framework of Russian intonation.

NOTES

1. The graphs given in (1), (2), (4), and (5) were produced by a computerized analysis of changes in fundamental frequency over time. The informant was an ethnic Russian female from Leningrad in her thirties; the graphs use a regular (i.e. not a logarithmic) scale. This instrumental research was supported by NSF Grant BNS 8200664.

2. Downstep, which is an important feature of the tonal systems of many African and native American languages (see e.g. [15]), has also been proposed for English [9].

3. For declination, see [9].

4. The only bicentral in the system, namely IK-4, may also be essentially represented by the same phonemic sequence, where it is perhaps the intonational meaning of this IK that

obligatorily requires n = 1, along with some other peculiarities in the underlying structure of this contour.

5. For boundary tone, see [6].

REFERENCES


