

Secondary Stress in Russian Compound Words:

Evidence from Poetic Metrics

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In this paper I argue that it is necessary to distinguish between stress which is inherent in words and stress which is assigned at a phrasal level. More specifically, I argue that secondary stress in Russian compounds is superimposed on the existing word stress contours by rhythm. Support in favor of this claim comes from the distribution of secondary stress in Russian poetry. I show that secondary stress in Tutčev's verse is assigned to the first constituent of compounds only in strong metrical positions.

1. INTRODUCTION

It is generally recognized that Russian compound words tend to have one stress. However, most linguists agree that, under certain conditions, compound words in Russian may have more than one stress. When this is the case, the primary stress usually falls on the rightmost stressed syllable, the other stresses being perceived as secondary ones. In this paper, I show that secondary stress is not inherent in Russian compound words, but is rhythmically overlaid on the existing word stress contour.

Attempts have been made to identify the factors determining presence or absence of secondary stress in particular words. Avanesov (1958) claims that Russian compound words have secondary stresses in the following cases:

a. If a word has a "specialized" (scientific or technological) meaning and is rarely used, or if the first constituent of a compound word is of foreign origin:

gal'vanoplastika ('electroplating'), *sudoverf'* ('shipyard'), *cel'nometalličeskij* ('all-metal'), *fotosnimok* ('photograph'), etc.:

b. If the two constituents are clearly separable in terms of meaning:

korablekrušenie ('ship-wreck'), *temno-zelenyj* ('dark green'), *samoletostroenie* ('aircraft construction'), etc.

c. If a potential stress is "very far" from the primary stress:

vodoneproniцаemij ('impermeable to water'), *vremjapreprovodženie* ('way of spending one's time'), *xlopkoočistitel'nyj* ('cotton cleaning'), etc.

It should be noted, however, that Avanesov provides long lists of exceptions to these general tendencies and points out that in many cases secondary stress is optional.

Some dictionaries (Avanesov and Ožegov 1960) show secondary stresses for compound words. Thus, these stresses appear to be lexical. Sometimes recommendations regarding secondary stress assignment are inconsistent. It is not clear, for example, why, according to Avanesov and Ožegov (1960), secondary

stress is not assigned to the words *photographičeskij* ('photographic'), *maloljudnyj* ('not crowded'), *starorežimnyj* ('of old regime'), *vneuróčnyj* ('extracurricular'), but is assigned to the words *phótotexničeskij* ('phototechnical'), *máločpytnyj* ('of little experience'), *stáropočáňnyj* ('of old style print'), *vněslužěbnyj* ('out-of-office') which have the same morphological and rhythmical structure. According to my informants, each of the above-mentioned words can be pronounced both with and without secondary stress. It appears that the contradictory data can be accounted for if we distinguish between two levels of prosody, i.e. word and phrase prosody.

According to Kalenčuk and Kasatkina (1993), the level of word prosody features a certain rhythmical organization of a word, "close intersyllable ties", clearly defined boundaries, and a single "accentual center" which defines a pattern of vowel reduction.

Phrase prosody has different characteristics. At the phrase level boundaries between words are usually less clearly defined and there can be several "accentual centers" within one word, giving rise to secondary stresses along with the primary stress.

It appears that lack of uniform treatment of the same language phenomenon stems from different understanding of the articulatory nature of secondary stress in Russian. Russian word stress is believed to be created by a

number of different phonetic means. The most frequently mentioned phonetic means are greater force of exhalation and associated tension of vocal cords, greater vowel length, and a special timber.

Among acoustic properties of secondary stress most linguists give priority to vowel quality (Avanesov 1958, Zlatoustova 1953, Loginova 1977, Žirmunskij (1925/1966). These linguists equate lack of vowel reduction with stress.

Kalenčuk and Kasatkina (1993) convincingly argue that vowel reduction and secondary stress take place at different levels of prosody: vowels are reduced at the level of word prosody, while secondary stress is assigned at the level of phrase prosody. This approach allows us to account for the "optionality" of secondary stress, as well as for the peculiar assignment of secondary stress to reduced vowels in both simple and compound words that appear in emphatic positions:

- (1) *v[i]likolépno* ('splendid'), *z[ə]mečátel'no* ('wonderful'),
p[ə]trjasájušč'e ('amazing'), *s[ə]obakovódstvo* ('dog breeding'),
m[ə]lokozavód ('milk plant')

Note that, contrary to expectation, the vowels that bear secondary stress in (1) are reduced. This fact suggests that vowel reduction applies to these words before secondary stress assignment. Also, in the compound words *sobakovodstvo* 'dog breeding' and *molokozavod* 'milk plant' the secondary stress is "misplaced". In

the root *-sobak-* the stress normally falls on the second syllable, but when it is part of a compound, its first syllable can be stressed, as shown in (1). The root *-molo-* is a post-accenting morpheme, but in (1) it is the first syllable of this root that has secondary stress. Again, the “misplacement” of the secondary stress can be explained by its assignment at the phrasal level.

In this paper I will provide additional evidence from Russian poetry to support the claim that secondary stress is not inherent in compound words, but is assigned at the phrasal level. On the one hand, the rhythm of Russian syllabic-accentual verse depends in part on the distribution of secondary, as well as primary stresses, as I will show below. On the other hand, under the influence of rhythm, secondary stresses in Russian compound words often acquire considerable prominence. I will use Halle and Idsardi’s (1995) theory for my analysis of stress in Russian compounds and show that, while their algorithm correctly predicts the placement of primary (lexical) stress, an additional rhythmic rule is required to account for the placement of secondary (non-lexical) stress.¹

2. SECONDARY STRESS IN RUSSIAN POETRY

2.1 Degrees of Stress in Russian Versification

Russian poetry uses three types of verse: syllabic verse, based on the sole constant principle of a given number of syllables in each line, accentual verse,

characterized by a set number of stresses in each line, regardless of its total number of syllables, and syllabic -accentual verse, which combines in each line a given number of stresses with a given number of syllables whose stresses are distributed regularly throughout the line. Syllabic-accentual verse has dominated Russian poetry for over two hundred years. It is this type of verse that I am concerned with in this paper.

In dealing with the Russian syllabic-accentual verse, one inevitably arrives at the question as to how various lines should be pronounced. In many cases there is no doubt whatsoever about the location of stresses, while other cases give rise to disputes. Thus, the verse of Tjutčev, an undisputed master of syllabic-accentual poetry, is believed to have a significant number of "deviations" from regular meters. Analysis of these "deviations" is outside the scope of this paper, but, since it is Tjutčev's poetry that I use for analysis of secondary stress assignment, a few remarks are in place here.

Žirmunskij (1925/1966) was the first to develop the idea of differentiating several degrees of stress in Russian verse. He distinguishes "obligatorily stressed", "absolutely unstressed" and "metrically ambiguous" word classes.

In the class of obligatorily stressed words belong nouns, adjectives, verbs (except auxiliary) and adverbs (except pronominal). When they occur in a metrically weak position in the line, these words still retain their stress, creating a

rhythmical stress which is outside the regular pattern, i.e. a hypermetrical stress.

However, according to Žirmunskij, the syllable bearing the hypermetrical stress is still weaker than the following (or preceding) syllable. Consider the example in

(2).²

- (2) Na staroj bašne, odinok, - / | - / | - - | - /
Dux rycarja stoit... (/) / | - - | - /

(Tjutčev 1987: 88)

Both words at the beginning of the second line are nouns and belong to the class of obligatorily stressed words. The monosyllabic noun *dux* occurs in a metrically weak position and its stress is weakened, but retained.

The class of absolutely unstressed words comprises particles, prepositions and conjunctions. They attach to the preceding or following word as absolute proclitics or enclitics. In a line of verse, they always remain unstressed both in metrically strong and metrically weak positions.

- (3) ...Veka **by** **za** vekami proxodili - / | - - | - / | - - | - / | -
I ja by vas vsju večnost' slušal i molčal.

(Tjutčev 1987: 272)

In the first line in (3) there are two absolutely unstressed words: the particle *by* and the preposition *za*. The former is in a metrically weak position, the latter is in a metrically strong position. Neither of these words has stress.

Pronouns and pronominal adverbs, auxiliary verbs and interjections form the class of metrically ambiguous words. These words are not wholly enclitic or proclitic. In the immediate vicinity of a stress, they lose their stress. In the vicinity of an unstressed syllable they retain a more or less noticeable stress, but it has less force than that of an obligatorily stressed word. Thus, the possessive pronoun *moj* has no stress in (4) where it appears between two stressed syllables, but has a considerable degree of prominence in (5) where it appears at the end of the line and is preceded by an unstressed syllable.

- (4) Drug **moj** milyj, vidiš li menja? / - | / - | / - | - - | /

(Tjutčev 1987: 222)

- (5) Kakije pesni, milyj **moj**, - / | - / | - / | - /
Kogda vokrug liš nenavisti krika...

(Tjutčev 1987: 282)

Žirmunskij points out that in the binary meters a special place is occupied by certain "very weakly stressed" disyllabic conjunctions and prepositions, such as *ili*, *čoby*, *čerez*, *pered*, *meždu*, *protiv*, etc. While in prose they are completely subordinate to the stress of the following word, in verse they have a weak stress, sometimes on the first, sometimes on the second syllable, depending on which of the syllables happens to be in a metrically strong position. For example, the preposition *pered* has a very weak stress on the first syllable in the example in (6) and on the second syllable in the example in (7).

- (6) Zelenejuščije bregi
Pered nami razdalis'. (Δ) - | / - | - - | /

(Tjutčev 1987: 68)

- (7) ...
Pered toboj, svjatoj istočnik slez (Δ) | - / | - / | - / | - /
 Rosa božestvennoj dennici!..

(Tjutčev 1987: 66)

Žirmunskij proposes to set up at least two degrees of stress for the stressed syllables (strong and weak stress) and two degrees of stress for the unstressed ones (completely unstressed and very slightly stressed). Given the relative degrees of stress, the cases of so-called “omitted stress” or “supplementary stress” are to be considered as cases in which certain syllables are made more or less prominent, but in no sense are they disruptions of the basic metrical pattern. The ideal pattern in our mind makes us perceive the syllables in the actual line as stressed or unstressed and is, in most cases, also realized in actual pronunciation. Where it is not realized (e.g. when the stress is shifted from a metrically strong to a metrically weak syllable³), we perceive a disruption in the rhythm.

While I agree with Žirmunskij in many respects, I believe that it is necessary to distinguish between stresses inherent in words and stresses assigned at the phrasal level. For example, secondary stresses in Russian compounds are superimposed on the existing word stress contours by rhythm. On the other hand, lack of stress on a particular word can be either inherent or result from

suppression of lexical stress at the phrasal level. In this context, the words classified by Žirmunskij as metrically ambiguous are, in fact, words that undergo lexical stress suppression more readily than the obligatorily stressed ones.⁴

It appears to me that in stress assignment at the phrasal level not only grammatical categories of words are taken into consideration, but their morphological structure and the position of lexical stress, as well. The first constituents of compound words, as well as prefixes of simple words, for that matter, generally receive a stronger stress in metrically strong positions than any of the suffixes following the primary word stress. According to my informants, placement of secondary stress on the suffixes following the primary stress sounds very artificial. Thus, I will posit a secondary (rhythmical) stress in those cases where there is a perceptible stress on the first constituent of a compound or on a prefix of a simple word, and I will consider suffixes following the primary stress to be unstressed even in metrically strong positions.

It should also be noted that, for the purposes of this paper, I will posit only one degree of stress - primary stress - for the obligatorily stressed words and I will disregard the very light stress on disyllabic conjunctions and prepositions.

Two types of meter modifications used by Tjutčev should be pointed out here. Unbegaun (1963) gives a few relevant examples.

(8)	Molči, skryvajsja i tai	- / - / - - - /
	I čuvstva i mečty svoi:	- / - - - / - /
	Puskaj v duševnoj glubine	- / - / - - - /
	Vstajut i zaxodjat one	- / - - / - - /
	Bezmolvno kak zvezdy v noči -	- / - - / - - /
	Ljubajsja imi i molči.	- / - / - - - /

“Silentium”

The verse is clearly iambic, but in the fourth and fifth lines in the third foot the stress is shifted onto a weak syllable, which transforms both into ternary amphibrachic lines.

In another poem we find a deviation of a different kind:⁵

(9)	O, kak na sklone našix let	- / - / - / - /
	Nežnej my ljubim i suevernej...	- / - / + - - - / -
	Sijaj, sijaj, proščal'nyj svet	- / - / - / - /
	Ljubvi poslednej, zari večernej!	- / - / + - / - / -

“Poslednjaja ljubov”

This stanza begins with a perfectly regular iambic line. The third line too is regular. The second and the fourth lines show a regular iambic beginning, but in the middle they are modified by the introduction of hypermetrical syllables which are shown in the diagram by a plus sign.

2.2 Secondary Stress in Compounds

It is a general rule of Russian to admit the use of compound words in verse under the same conditions as those governing the use of simple words, i.e. the

primary word stress is aligned with the required metrical stress, regardless of any possible distribution of secondary stresses. As to the secondary stresses, they appear to be assigned in accordance with the metrical constraints of a poem and can be found both on the root vowel of the first constituent and the linking vowel, which is not normally stressed in colloquial speech. In both cases the vowel bearing secondary stress tends to be reduced, as shown in (10) and (11) below. This fact suggests that secondary stress assignment takes place after primary stress assignment and vowel reduction.

In the following example the metrical stress falls on the vowel of the first root *blag-*, resulting in a secondary stress on that vowel.⁶

- (10) I donosilisja poroj -- | - / | -- | - /
 Vse zvuki žizni bl[ə]godatnoj, - - / | - / | - () - / | -
 I vse v odin slivalos' stroj, - / | - / | - / | - /
 Stozvučnyj, šumnyj - i nevnjatnyj. - / | - / | -- | - / | -

(Tjutčev 1987:85)

In the example provided in (11) the secondary stress is perceived on the vowel of the root *perv-* which is in the strong metrical position of the trochaic line.

- (11) ...
 P[i]rvorodnyx pokolenij, () - | / - | -- | / -
 Glasu božiix velenij... / - | / - | -- | / -

(Tjutčev 1987:90)

In the following examples the metrical stress and a perceived secondary stress fall on the linking vowel of compounds which use the same roots *blag-* and *perv-*.

- (12) ...
 I kto - nedarom - providen'em
 Na mnogotrudnom ix puti,
 Postavljen novym pokolenjam
 V **blag**[ə]**nadežnye** voždi...
- $\begin{array}{cccc} -\acute{\quad} | & -\acute{\quad} | & -- & | & -\acute{\quad} | & - \\ -\grave{\quad} | & -\acute{\quad} | & -- & | & -\acute{\quad} | & - \end{array}$

(Tjutčev 1987:90)

- (13) Predan'è ožilo svjatoe
Perv[ə]**načal'nyx** lučšyx dnej...
- $\begin{array}{cccc} -\acute{\quad} | & -\acute{\quad} | & -- & | & -\acute{\quad} | & - \\ -\grave{\quad} | & -\acute{\quad} | & -\acute{\quad} | & -\acute{\quad} | & -\acute{\quad} | & - \end{array}$

(Tjutčev 1987:254)

Within the root of the first stem a secondary stress can fall on a syllable other than the normally stressed one:

- (14) Sveršaetsja zaslužennaja kara
 Za tjažkij grex, **tysjač**eletnij grex...
- $\begin{array}{cccc} -\acute{\quad} | & -- & | & -\acute{\quad} | & -- & | & -\acute{\quad} | & - \\ -\acute{\quad} | & -\acute{\quad} | & -\grave{\quad} | & -\acute{\quad} | & -\acute{\quad} | & -\acute{\quad} | & -\acute{\quad} | & - \end{array}$

(Tjutčev 1987:237)

The root *tysjač-* normally has stress on the first syllable, not on the second one as in the above-given example.

- (15) Gljažu s učast'em umilennym,
 Kogda, probivšis' iz-za tuč,
 Vdrug po derevjam ispeščrennym,
 S ix vetxim list'em iznurennyim,
Molnievidnyj bryznet luč!
- $\begin{array}{cccc} -\acute{\quad} | & -\acute{\quad} | & -- & | & -\acute{\quad} | & - \\ -\grave{\quad} | & -\acute{\quad} | & -\acute{\quad} | & -\acute{\quad} | & -\acute{\quad} | & - \end{array}$

(Tjutčev 1987:167)

In the root *molni*- it is usually the first, not the second vowel that bears stress.

The distribution of secondary stresses in the examples above - some secondary stresses appear on the root vowel of the first constituent of a compound, some are placed on the linking vowel - and the easy migration of secondary stress from one vowel to another within the root of the first constituent, provides evidence that they are not part of the lexicon and are assigned in accordance with the rhythmic constraints of a particular line.

3. HALLE AND IDSARDI'S (1995) ALGORITHM FOR STRESS ASSIGNMENT

3.1 Building the Grid

In constructing metrical grids, Halle and Idsardi employ only placement of abstract marks and placement of parenthesis. The mechanism implementing the interface between the metrical grid and the string of phonemes is called *projection*. Projection adds an element to the grid and links it to the element which is projected. Projection involves both phonemes and syllable boundaries. Only phonemes that can bear stress are projected onto the metrical plane. In most languages the stress-bearing phonemes are the phonemes that are heads of syllables.

Halle and Idsardi argue that a limited number of parameters and constraints can account for stress contours found in different languages. These parameters are as follows:

(16) *Syllable Boundary Projection parameter*

Project the {left/right} boundary of *certain syllables* onto line 0.

(17) *Edge-Marking parameter*

Place a {left/right} parenthesis to the {left/right} of the {left/right}-most element in the string.

(18) *Head Location parameter*

Project the {left/right}-most element of each constituent onto the next line of the grid.

For languages with alternating stress they set the additional Iterative Constituent Construction parameter, given in (19).

(19) *Iterative Constituent Construction parameter*

Insert a {left/right} boundary for each pair of elements.

Going from left to right, ICC inserts right parentheses. Going from left to right, it inserts left parentheses. According to Halle and Idsardi, (19) actually governs the application of two rules in (20).

(20) $ICC:L = \emptyset \rightarrow (/ \text{ ______ } xx$ (right to left)

$ICC:R = \emptyset \rightarrow) / \text{ ______ } xx$ (left to right)

The ICC rules do not have the option of generating constituents with less than two elements. In a string with an odd number of syllables the application of a binary rule leaves the furthest element unmetrified.

Creation of certain disfavored grid configurations in Halle and Idsardi's framework is prevented by addition of *Avoidance* Constraints. For example, the constraint in (21) specifies the metrical configuration - "stress clash"-that some languages do not tolerate:

(21) Avoid (x(

According to Halle and Idsardi, the constraints act as output conditions on the rules. The rules are the only means of constructing metrical grids, while the function of the constraints is to limit the application of these rules.

One of the most important innovations of Halle and Idsardi's theory is the procedure for placement of parentheses. "Superfluous" parentheses have been eliminated. In their framework a single parenthesis is sufficient to delimit a metrical constituent. Thus, metrical constituents can be open-ended and can be modified later in the derivation. Moreover, no exhaustive parsing of the sequence of elements is required, i.e. it is not the case that every element must belong to some constituent.

Another major innovation is the Edge-Marking parameter which, among other things, captures word-initial and word-final stress, extrametricality, pre- and post-accenting morphemes.

3.2 Halle and Idsardi's Analysis of Russian Stress

In Russian, stress is an idiosyncratic property of individual morphemes.

The description of Russian stress is provided in (22).

(22) When a word has one or more inherently stressed morphemes, stress surfaces on the left-most accented vowel. Otherwise, stress falls on the initial syllable.

Halle and Idsardi assume that in Russian the Syllable Boundary Projection parameter is triggered not by a phonetic property of the syllable, but by an idiosyncratic property of certain morphemes. They set the parameters for Russian as follows:

(23) **Line 0**

Syllable Boundary Projection parameter.

Project the *left* boundary of the stress-bearing syllable of an inherently accented morpheme onto line 0.

Edge-Marking parameter

Place a *right* parenthesis to the *right* of the *right*-most element in the string.

Head Location parameter

Project the *left*-most element of each constituent onto the next line of the grid.

Line 1

Edge-Marking parameter

Place a *left* parenthesis to the *left* of the *left*-most element in the string.

Head Location parameter

Project the *left*-most element of each constituent onto the next line of the grid.

An example of distinctive stress patterns in the nominal inflection of Russian nouns is given in (24).

(24)

	cow	head
nominative singular	koróv-a	golov-á
accusative singular	koróv-u	gólov-u

The morphemes *korov-* and *-a* are inherently accented and lexically marked to trigger Syllable Projection on one of their syllables. The derivations for the stress patterns of the words in (24) are given in (25).

(25)

Line 0	Project:L	x(x (x korov-a	x(x x korov-u	x x (x golov-a	x x x golov-u
	Edge:RRR	x(x (x) korov-a	x(x x) korov-u	x x (x) golov-a	x x x) golov-u
	Head:L	x x x(x (x) korov-a	x x(x x) korov-u	x x x (x) golov-a	x x x x) golov-u
Line 1	Edge:LLL	(x x x(x (x) korov-a	(x x(x x) korov-u	(x x x (x) golov-a	(x x x x) golov-u
	Head:L	x (x x x(x (x) korov-a	x (x x(x x) korov-u	x (x x x (x) golov-a	x (x x x x) golov-u

Notice that by setting the Edge-Marking parameter to RRR, i.e. by placing a *right* parenthesis to the *right* of the *right*-most element we get initial stress in words without inherently accented morphemes. In words with at least one inherently accented morpheme, the placement of a right parenthesis at the end of the word does not define a constituent distinct from the one defined by the right-most accented vowel. This prevents assignment of stress to the initial syllable in these words.

In addition to primary stress, the settings in (23) also generate secondary stresses which are not present in the words under consideration. According to Halle and Idsardi, Russian is subject to a special rule of Conflation which eliminates all but primary stress in the word.⁷

4. RUSSIAN COMPOUNDS REVISITED

As shown in sections 1 and 2, Russian compound words can have secondary stresses. We have seen that their placement is determined by the rhythmical constraints of an utterance or, in case of Russian poetry, by the meter chosen by a poet. Given certain additional assumptions, primary (lexical), but not the “misplaced” secondary stress in Russian compounds can be accounted for in Halle and Idsardi’s (1995) framework.

Following Halle and Vergnaud (1987), I assume that secondary stresses are generated in both constituents dominated by a lexical category and that assignment of stress in compounds requires addition of a new line to the metrical grid. It should be noted, however, that, unlike English compounds, most Russian compounds are formed with the help of a *linking vowel*. I assume that the linking vowel is inserted by a morphological process after the derivations at line 0 and 1.

It is at line 2 that the metrical constituents constructed at lines 0 and 1 are united into a larger constituent and the linking vowel comes into play. I set two parameters for line 2:

(26) Line 2 Edge:RRR⁸
 Head:R

After the derivation at line 2 is completed, lines 1 and 2 are conflated and all but the primary stress are eliminated.

Let us consider the derivation for the word *molnievidnyj* with a primary stress on the penultimate syllable and a secondary stress on the second syllable perceived in one of Tjutčev's (1987: 167) poem with iambic meter. Both stems *molni-* and *vidn-* are inherently accented, the suffix *-yj* is inherently unaccented.

(27)

Line 0	Project:L	(x x x (x x molni- -vidnyj
	Edge:RRR	(x x) (x x) molni- -vidnyj
	Head:L	x x (x x) (x x) molni- -vidnyj
Line 1	Edge:LLL	(x (x (x x) (x x) molni- -vidnyj
	Head:L	x x (x (x (x x) (x x) molni- -vidnyj
Line 2	Edge:RRR	x x) (x (x (x x) x (x x) molni- e -vidnyj
	Head: R	x x x) (x (x (x x) x (x x) molni- e -vidnyj
	Line Conflation	x x) (x x x x (x x) molni- e -vidnyj

The application of the parameter settings in (23) and (26) has generated the correct primary stress for the word *molnievidnyj*. However, Halle and Idsardi's theory does not predict the secondary stress in this word⁹ as used by Tjutčev (1987:167), since it is not the first, but the second syllable that is stressed and

“undoing” the Line Conflation would produce a secondary stress on the first syllable.

To account for the placement of secondary stresses in Russian compounds I propose a language-specific Metrical Rhythm Assignment Rule. I formulate it in (28).

(28) **Metrical Rhythm Assignment Rule:**

Going from left to right, align an abstract mark x^R on line 1 with every abstract mark x on line 0 that matches a strong metrical position. Enhance the primary stress, signaled by the presence of an abstract mark x on line 1, by aligning an abstract mark x^R on line 2 with the abstract mark x on line 1.

Note that the Metrical Rhythm Assignment Rule in (28) makes no reference to syllables or terminal segments.¹⁰ It makes use of a “matching process”: abstract marks are placed in accordance with a “preexistent” metrical pattern which, in poetic language, is highly constrained and determined by binary or ternary feet.

I assume that, before the Metrical Rhythm Assignment Rule is applied, all constituency information in the metrical grid is eliminated. Only two minimally required lines - line 0 and line 1 - and the abstract mark on line 1 indicating primary stress are preserved.

The application of the proposed Metrical Rhythm Assignment Rule is illustrated in (29).¹¹

(29)

Constituency Information Elimination

Lines 1 and 2 Metrical Rhythm Assignment Rule (for iambic meter)

x
x x x x x
molni- e -vidnyj
○ - ○ - ○ -

x ^R x
x x x x x
molni- e -vidnyj

The Metrical Rhythm Assignment Rule in (28) has generated the correct secondary stress on the second syllable in (29). However, in some cases, the Metrical Rhythm Assignment Rule alone cannot produce correct secondary stresses. Consider the stress contour of the word *blagonadežnyje* in (12), repeated here as (30).

(30) ...
I kto - nedarom - providen'em
Na mnogotrudnom ix puti,
Postavljen novym pokolenjam
V **blagonadežnyje** voždi...

-- / | - / | -- | - / | -
-(Δ) | - / | -- | - /

(Tjutčev 1987:90)

The stems *blag-* and *nadežn-* and the suffix *-ye* are all inherently stressed. The primary stress in the word *blagonadežnyje* falls on the second syllable of the second stem. A secondary stress can be perceived on the linking vowel in this word. The derivation of the primary and secondary stresses is provided in (31).

(31)

Line 0	Project:L	(x x (x (xx blag- - nadežnye
	Edge:RRR	(x) x (x (xx) blag- - nadežnye
	Head:L	x x x (x) x (x (xx) blag- - nadežnye
Line 1	Edge:LLL	(x (x x (x) x(x (xx) blag- - nadežnye
	Head:L	x x (x (x x (x) x(x (xx) blag- - nadežnye
	Line 2	Edge:RRR
	Head: R	x x x) (x (x x (x)x x (x (xx) blag-o- nadežnye
	Line Conflation and Constituency Information Elimination	x x x x x xx blag-o- nadežnye
Lines 1 and 2	Metrical Rhythm Assignment Rule (for iambic meter)	∪ - ∪ - ∪- ----- x ^R x ^R x x ^R x x x x xx blag-o- nadežnye

The parameter settings in (23) and (26) have correctly located primary stress on the second syllable of the second stem. The Metrical Rhythm

Assignment Rule has generated two secondary stresses in the word *blagonadežnye* - on the linking vowel and on the suffix, following the primary stress. However, as noted in section 2.1, secondary stress on suffixes, following the primary stress is not likely to be perceived. To account for the stress contour of the word *blagonadežnye*, it is necessary to take into consideration the phonological and morphological factors and suppress the secondary stress on the suffix *-ye*.

It appears that there exists a scale of stress suppression preferences: certain morphemes in certain positions are more likely to be suppressed than others.

Consider, for example, suppression of secondary stresses in the word *čelovekonenavistničestvo* ("hatred of mankind"). The primary stress in this word falls on the third (root) syllable of the second constituent. The Metrical Rhythm Assignment Rule places four secondary stresses on the word in a phrase based on iambic meter.¹²

(32) Čelovèkonènavístničèstvo

The secondary stress that falls on the suffix *-estv*-following the primary stress is very unlikely to be pronounced, i.e. it is most likely to be suppressed. The next most likely secondary stress to be suppressed is the one located on the first (root) syllable of the second constituent. Out of the two remaining secondary stresses, both of which are located on the first constituent root syllables, the stress

on the initial syllable is more likely to be suppressed than the one on the third syllable.

Further study is required to determine why the tendency to stress the initial syllable fails in words like *človekonavistničestvo* and whether the scale of suppression preferences which manifests itself in the pronunciation of the word *človekonavistničestvo* is applicable to many other Russian words.

5. CONCLUSION

In this paper I have shown that secondary stress in Russian compounds is a rhythmic phenomenon. It is superimposed on the existing stress contour in accordance with the rhythmical constraints of an utterance or, in case of Russian verse, the meter.

In view of the limited scope of this study I have analyzed primarily the assignment of secondary stress in Tjutčev's verse based on iambic meter. My analysis has shown that secondary stress on the first constituent of compound words is placed only in strong metrical positions.

In my analysis I have used Halle and Idsardi's (1995) framework which allows a large number of distinct stress patterns to be generated by setting a limited number of parameters that interact with universal and language-specific constraints.

Halle and Idsardi (1995) do not provide an algorithm for stress assignment in compound words. I have shown that, provided another line is added to the metrical grid and parameters are set for this line, it is possible to extend the theory to account for the lexical (primary) stress assignment in Russian compounds. To account for the assignment of secondary stresses, I have posited a language-specific Metrical Rhythm Assignment Rule. This Rule interacts with stress suppression which is governed by phonological and morphological factors to generate secondary stress in Russian compounds.

FOOTNOTES:

¹ In this paper I do not provide translations of examples from Russian poetry. Even a faithful rendering of the poetic excerpts would have failed to meet their true purpose, which was to illustrate the effect of rhythm and meter on the assignment of stress.

² I have selected my own examples to illustrate the points that Žirmunskij (1925/1966) makes, since references to authors are often abbreviated or missing in the original, as well as the later edition.

³ See the example in (8) below.

⁴ Alternatively, it is possible to argue that variably stressed words do not have lexical stress and can acquire stress at the phrasal level. It seems to me, however, that the considerable degree of prominence that these words can have in metrically strong position cannot be accounted for by rhythmical stress.

⁵ Note that in the third foot of the second line the prefix *sue-* appears in a metrically strong position and can be easily pronounced with a secondary stress.

⁶ In the diagrams secondary stresses will be shown with a grave accent sign in parentheses.

⁷ According to Halle and Vergnaud (1987), line conflation is a rule that collapses adjacent lines in the grid through suppression of material on the lower line. A

constituent on the lower line is preserved only if its head is also the head of a constituent on the higher line.

⁸ A different setting of this parameter is possible: Edge: LLL. I am not aware of any evidence that makes either of the possible settings preferred.

⁹ While in the iambic line by Tjutčev (1987:237) the secondary stress in the word *molnievidnyj* is placed on the second syllable, it can be predicted that in a line with a ternary meter the secondary stress will be placed on the first syllable. Also, in colloquial speech the secondary stress in this word is more likely to be placed on the first syllable which is, probably, due to the tendency to stress the initial syllable in compound words noted in section 1.

¹⁰ I believe that the actual text in the line is considered only when stresses are suppressed: it is then that the syntactic and morphological factors that were mentioned in section 2.1 come into play. Whether the Rhythm Rule and Stress Suppression are applied simultaneously or whether the latter applies after the former is an open issue.

¹¹ In (29) I use a standard system of signs to show feet: the breve [˘] indicates a normally unstressed (weak) position, the macron [—] stands for an ictus (strong position).

¹² Mills (1988) claims that Colloquial Russian has iambic nature.

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