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## RUSSIAN PHONOLOGICAL DESINENCES AS A CONDITIONING FACTOR IN ACCENTUAL PARADIGMS

This paper presents a morphophonemic method for marking stress in Modern Russian stress paradigms, with a comparison to Common Slavic. It proceeds from Zaliznjak's notion of Russian "trivial" and "non-trivial" stress, where trivial refers to constant paradigmatic stem-stress. Trivial stress (historically, AP A) can be marked on a constant syllable and is not of special interest to this paper, where the emphasis is on representing non-trivial stress.

Non-trivial stress has its basic mark on one of the extreme stem syllables, either stem-initial or stem-final; it is subject to only one rule: stress movement to the first desinential syllable. Basic stem-final stress can be identified with historical AP B; basic initial stress with AP C. There is a single mark for either B or C in any subparadigm (subparadigms refer to number for nouns and tense for verbs). For nouns, the realization of B or C stress can be predicted on the basis of the desinence in nominative and genitive cases, respectively. Type B is correlated with the genitive: a zero genitive implies no movement from basic stem-final. Type C is correlated with the nominative: desinences unmarked for height (zero or mid) imply no movement from basic stem-initial; a type C high-vowel nominative predicts oblique case desinential stress; a low-vowel nominative predicts full subparadigmatic desinential stress. Thus, AP B and C stress movement to the desinence is correlated with direct case sonority. In the verb, non-trivial stress has the B vs. C opposition only in the present tense; B moves stress to single-vowel desinences; C generalizes desinential stress. The

B vs. C opposition is neutralized in the past tense; i.e. it is predictable, based on the two criteria of stem size and stem-final consonant. AP B has had the major change, compared to Common Slavic: it was first closer to A, but now joins C as non-trivial, in joint opposition of B/C to trivial A.

## I. Introduction

This paper presents a morphophonemic method for marking basic stress in Modern Russian paradigms, with a brief comparison to Common Slavic. I proceed from Zaliznjak's notion of Russian "trivial" and "non-trivial" stress (Zaliznjak 1985: 17), where trivial refers to constant paradigmatic stem-stress. Trivial stress (historically, AP A) can be marked on the given syllable and is not of special interest to this paper, where the emphasis is on representing non-trivial stress.

I propose that the basic non-trivial stress of a given subparadigm always has its mark on one of the extreme stem syllables, either stem-initial or stem-final. It is subject to only one rule: stress movement to the first desinential syllable. Stem-final stress can be identified with historical AP B; initial stress with AP C. There is a single mark for either B or C in any subparadigm (subparadigms refer to number for nouns and tense for verbs). For nouns, the variant of B or C stress is predicted on the basis of the desinence in nominative and genitive cases, respectively. Type B is correlated with the genitive: a zero genitive implies no movement from basic accent on the stem-final syllable. Type C is correlated with the phonology of the nominative case ending. On the one hand, desinences which contain neither high nor low vowels (i.e. the zero and mid vowel desinences) condition no stress movement from the basic stem-initial accentual position. Conversely, a type C high-vowel nominative predicts oblique case desinential stress, and a low-vowel nominative desinence predicts desinential stress in both nominative and oblique cases. In other words, the rule of stress movement to the desinence is correlated with the sonority of nominative and genitive case endings in the given subparadigm.

In verbs, non-trivial stress maintains the B vs. C accentual opposition only in the present tense. In the present, type B stress has stress movement to desinences which contain a single vowel, as opposed to type C, which generalizes desinential stress. The B vs. C opposition is

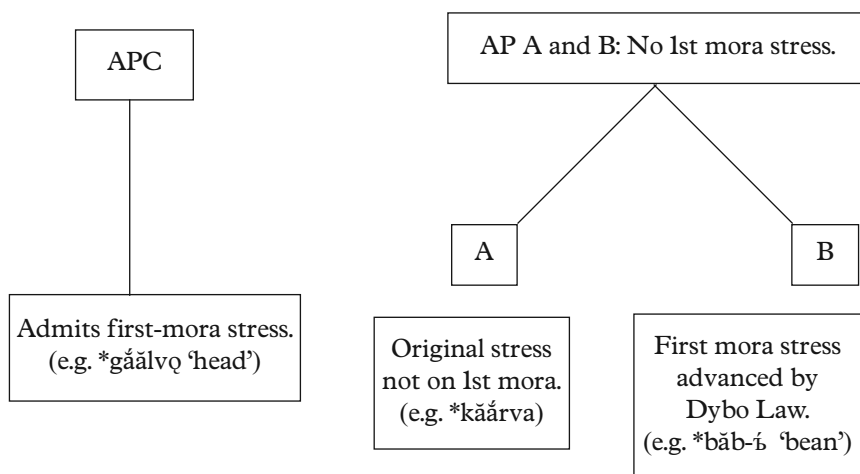
neutralized in the past, and is predictable, based on stem size and the stem-final consonant.

AP B has had the major change, compared to Common Slavic: it was first closer to A, but now joins C as non-trivial, in joint opposition of B/C to trivial A.

## II. Binary Split In The Period Of Dybo's Law

I assume that the original situation which gave rise to the Dybo Law (Dybo 1981: 18-20) was the fact that the recessive stress paradigm could have stress on the first mora of the word. In the case of a short non-recessive paradigm, there was a threat of merger, which meant that accentual paradigms A and B became marked for the absence of mora-initial stress, as opposed to type C, which could receive mora initial stress. In other words, AP A and AP B were in complementary distribution (Dybo and Illič-Svityč 1963: 74-75), in opposition to AP C, as is well known (see table 1).

Table 1. Original distribution of AP A, B, and C.



### III. Modern Russian Trivial And Non-Trivial Stress

The Modern Russian reflexes of B and C paradigms are structurally related, possessing the common property of non-trivial, in opposition to the trivial stress of AP A, to use Zaliznjak's terms. Since trivial stress refers to immobile stress across the entire paradigm, it can be morphophonemically represented as a simple stress mark on the vowel and is the Modern Russian reflex of AP A. However, Modern Russian AP B and C have non-trivial accentual paradigms as their reflexes. If we divide accentual paradigms into their two component subparadigms (e.g. of number for nouns, tense for verbs, and attributive/predicative for adjectives), it turns out that AP B and C often experience paradigmatic interference, i.e. AP B can occur in one subparadigm of the word and AP C in the other (see Feldstein 1980: 132 and 1984: 504).

The main goal of this paper is to show that the Modern Russian reflex of AP B can be morphophonemically represented as underlying stress on the stem-final syllable; AP C stress is best represented as underlying stress on the stem-initial syllable. Both AP B and AP C are then subject to a single type of phonological rule, which moves the stress from the stem (either stem-initial or stem-final) to the first syllable of the desinence. The conditions for this forward movement will be demonstrated both for noun and verb paradigms.

Note that the AP B and C basic stress marks occur on the stem-final and stem-initial syllables, respectively. They could also be interpreted as belonging to the stem-initial and stem-final morpheme boundaries. For a previous placement of stress on boundaries, rather on syllables in Serbian and Croatian, see Pavle Ivić 1965: 135-136.

### IV. Rules For The Russian Forward Stress Shift

#### A. Noun.

In both singular and plural subparadigms of the noun, the major determining factor for AP B is the desinence of the **genitive case**; for AP C it is the **nominative case** desinence. More precisely, for AP C there is a somewhat complex interplay between the form of the nominative and the rest of the paradigm.

The rule for AP B is rather simple and depends on the genitive case of the subparadigm. As seen in table 2, a zero genitive conditions no movement of stress in the subparadigm, while a non-zero genitive causes a forward shift in the entire subparadigm. Thus, it can be seen that a sonority difference in the genitive case desinence is correlated with the stress of AP B.

Table 2. Examples of AP B, in which a non-zero genitive conditions stress advancement to the desinence.

<b>Base accent: AP B</b>	<b>Genitive Singular</b>	<b>Predicted Stress in Singular Subparadigm</b>	<b>Genitive Plural</b>	<b>Predicted Stress in Plural Subparadigm</b>
<b>kaban'-(Ø)</b>	Non-zero: <b>kaban-á</b>	Advance to end-stress.	Non-zero: <b>kaban-óv</b>	Advance to end-stress.
<b>dolot'-(o)</b>	Non-zero: <b>dolot-á</b>	Advance to end-stress.	Zero: <b>dolót-Ø</b>	No advance to end-stress.
<b>kolbas'-(a)</b>	Non-zero: <b>kolbas-ý</b>	Advance to end-stress.	Zero: <b>kolbás-Ø</b>	No advance to end-stress.

There is an important exception for a series of foreign loan words which have a zero genitive in the plural, but which, nevertheless, shift stress to the end in all subparadigmatic forms, e.g. **tamadá**, **murzá**, etc. This class has been previously noted in the literature, see Zaliznjak 1967: 166 and Feldstein 1980: 128-129 for details.

The rule for stress advancement in AP C is more complex. In this case, the form of the **nominative desinence** is the major factor in conditioning the stress advancement. However, there is additional complication, in comparison with AP B, where there is only one conditioning factor for stress shift within the entire subparadigm (i.e. a non-zero genitive). In the case of AP C, there are two subparadigmatic possibilities for stress advancement, based on the high or low vowel sonority of the nominative case, as follows:

1. A **low** vowel nominative desinence (**-a**) is conditions stress advancement to the ending in **both the nominative and oblique** cases (i.e. all forms, except a non-syncretic (independent) accusative, if one

occurs). E.g. the singular subparadigm of **golová** or the plural subparadigm of **zérkalo** (**zermalá**).

2. A **high** vowel nominative (-i) is correlated with stress shift to all **oblique** cases, conditioning no stress advancement in the nominative (e.g. the plural subparadigms of **volk** (**vólki**), **úxo** (**úši**), **rožók** (**róžki**).

When the nominative desinence is neither high nor low (e.g. a zero desinence or mid vowel -o), there is no stress advance, as expected, and the stress remains on its underlying word-initial position. Table 3 illustrates the three possibilities of high vowel, low vowel, and other nominative desinences within the given singular or plural subparadigm.

Table 3. Examples of AP C: high-vowel nominative conditions stress advance to oblique cases and low-vowel nominative conditions advance to both nominative and oblique.

Base accent: AP C	Nominative Singular	Predicted Singular Stress	Nominative Plural	Predicted Plural Stress
'volos-(Ø)	Non-high/ Non-low	No advance.	High: <b>vólos-y</b>	Advance to oblique.
'zermal-(o)	Non-high/ Non-low	No advance.	Low: <b>zermal-á</b>	Advance to nominative/ oblique.
'golov-(a)	Low: <b>golov-á</b>	Advance to nominative/oblique. (No advance to non-syncretic accusative: <b>'golov-u</b> .)	High: <b>gólov-y</b>	Advance to oblique.

The similar behavior of both AP B and AP C non-trivial types can be seen in the fact that mixed AP B/C or C/B paradigms can occur, with an AP B singular and AP C plural, or with an AP C singular and AP B plural, as illustrated in table 4. Since singular and plural subparadigms operate independently, each subparadigm can have its own underlying B or C representation.

Table 4. Examples of mixed AP B/C and AP C/B, combining the principles of pure AP B and AP C in the different numbers.

A. AP B singular/AP C plural.

Base accent: AP B/C	Genitive Singular	Predicted Singular Stress	Nominative Plural	Predicted Plural Stress
'gvozd'-( $\emptyset$ ); 'gvozd'-(i)	Non-zero: gvozd'-á	Advance to end-stress.	High-vowel: gvózd'-i	Advance to oblique endings.
suščestv'- -(o); 'suščestv-(a)	Non-zero: suščestv-á	Advance to end-stress.	Low-vowel: suščestv-á	Advance to nominative/oblique.
'gub'-(a); 'gub'-(i)	Non-zero: gub-ý	Advance to end-stress.	High-vowel: gúb-y	Advance to oblique endings.

B. AP C/B.

Base accent: AP C/B	Nominative Singular	Predicted Singular Stress	Genitive Plural	Predicted Plural Stress
'dar'-( $\emptyset$ ); dar'-(y)	Non-high/ Non-Low	No advance to end-stress.	Non-zero: dar-óv	Advance to end-stress.
'ozer-(o); ozer'-(a)	Non-high/ Non-low	No advance to end-stress.	Zero: ozěr- $\emptyset$	No advance to end-stress.
'vod-(a); vod'-(y)	Low: vod-á	Advance to nominative/oblique.	Zero: vód- $\emptyset$	No advance to end-stress.

B. Verb

In the case of the verb, AP B vs. AP C are opposed only in the present tense subparadigm. The past tense (l-participle) experiences a complete neutralization of AP B and AP C stress, in which stress is predictable, based on the phonological form of the stem. In the present

tense, the phonological composition of verbal desinences determines the nature of the stress shift. In the case of the AP B present, the shift occurs whenever the desinence consists of a single vowel: e.g. in the present subparadigm of **prosi-**, the shift occurs in the 1sg (**prošú**), the imperative (**prosí**), and the gerund (**prosjá**); otherwise, stress remains on the stem-final (**prosiš'**, **prosit**). AP C has the shift in all present forms (**govorjú**, **govorit**).

In the past tense, in which the non-trivial (AP B vs. C) stress opposition is neutralized, two factors are of most importance for the prediction of stress, as follows:

1. The first criterion, related to the stem's syllabic weight, predicts an immobile stress in the past-tense subparadigm for longer stems, i.e. those that have a syllabic root plus a suffix and those which are non-suffixed, with root ending in an obstruent (e.g. **govori-** and **n'os-**). On the other hand, a mobile past-tense stress is predicted for shorter stems: those with a non-syllabic root plus suffix and those which are non-suffixed, with a root ending in a sonorant (e.g. **rva-** and **živ-**).

2. The second criterion, related to the suffixed or non-suffixed property of the stem, predicts generalization of AP B for suffixed stems (e.g. **govori-** and **rva-**) and AP C for non-suffixed (e.g. **n'os-** and **živ-**). The neutralized AP B, which encompasses both **govori-** and **rva-**, admits stem-final and desinential stress, but not initial (**govoríli**; **porváli**, **porvalá**), following the general definition of AP B. Neutralized AP C, including both **n'os-** and **živ-**, admits initial and desinential stress, but not stem-final, in cases where stem-final can be distinguished from initial (e.g. **nesló**, **neslá**; **prožilo**, **prožilá**).

In other words, in the past tense, the stem's weight is correlated to mobility, while its suffixed/non-suffixed property is correlated to AP B/C. See Feldstein 1987: 589-90 for further details.

Since the only accentual opposition in the verb occurs in the present, a single morphophonemic mark can be placed on AP B verbs at the stem-final position (**mog'**-) and on AP C verbs in stem-initial position (**n'os-**). One might argue against the use of an initial underlying mark where no initial stress actually occurs, but it is really a morphophonemic index, rather than a phonetic symbol. The past tense needs no mark to differentiate AP B and C, since the non-trivial past stress is largely predictable.



In comparison with the noun, the rules for the the verb's stress shift are rather different. The most striking difference is that the noun's two subparadigms are comparable and both observe the same rules of stress. Since only the present tense of the verb is conjugated into persons, its stress pattern is not comparable to that of the past subparadigm. This lack of correlation may have contributed to the absence of any AP B vs AP C opposition in the past tense. In addition, the past -I desinence, in addition to the adjectival desinence of gender and number, creates a derived situation, in which AP B and C typically are not opposed (see Feldstein 1984: 509).

Another major difference between noun and verb is the greater complexity of noun stress. In the noun, AP B is split into two types, depending on zero or non-zero genitive and AP C is split into three types, based on high, low and mid/zero nominative endings; in the verbal present, there is only one AP B type and one AP C type, while the verbal past has only a single neutralized non-trivial stress type, in joint opposition to trivial stress. As noted above, the specific nature of non-trivial past stress can be predicted on the basis of the morphophonology of the stem. These realizations of AP B and C stress in the present tense are shown in table 5.

Table 5. Verbal Present Tense Stress Opposition of AP B vs. C.

AP B		AP C	
<b>Stem-Final Stress</b> Desinence: -VC... (i.e. desinence consists of a vowel followed by a consonant)  E.g. <b>prósiš'</b> , <b>prósjat</b>	<b>End-Stress</b> Stress is advanced when desinence is -V# (i.e. desinence is a single vowel)  E.g. <b>prošú</b> , <b>pro-sí</b> , <b>prosjá</b>	<b>Stem-Initial Stress</b>  Does not occur in present.	<b>End-Stress</b> Stress is advanced to all desinences.  E.g. <b>govorjú</b> , <b>govoríš'</b> , <b>gov-orját</b>

Table 6 summarizes the behavior of the major stem classes in the past tense. The table is split into two halves, representing past immobil-

ity and mobility, with each half split on the basis of a type B or type C past tense stress realization.

Table 6. Verbal Past Tense Subparadigm (non-trivial AP B and C merge and stress is predictable).

Longer, heavier stems. Non-suffixed obstruent stems and syllabic root+suffix.  <b>Stress: No stress mobility</b> in past subparadigm.		Shorter, lighter stems. Sonorant stems and non-syllabic root+suffix.  <b>Stress: Mobility</b> occurs in past subparadigm, with advancement to the -a desinence.	
Non-suffixed with mid vowel root.	Syllabic Suffixed and non-suffixed with high/low vowel root.	Non-suffixed	Non-syllabic suffixed
Obstruent stems (with mid-vowel root): e.g. <b>moglá, mogló; velá, veló.</b>	1. Syllabic suffixed stems: e.g. <b>govoríla, govorílo; prosíla, prosílo.</b>  2. Non-suffixed with high or low root vowel: e.g. <b>grýzla, strígla, krála, klála.</b>	Sonorant Stems: e.g. <b>próžilo, prožilá; náčalo, načalá.</b>	Non-syllabic root plus suffix: e.g. <b>sobrálo, sobralá; porválo, porvalá; prospálo, prospalá.</b>
Generalization of same <b>AP C pattern</b> as in present tense: stress shift to all desinences.	Generalization of <b>AP B stress</b> on stem-final syllable: no stress shift from stem-final.	Generalization of <b>AP C</b> , with rule that shifts stress to -a desinence (prožilá). Before other endings, stress generalizes AP C stem-initial: <b>próžilo, prožili.</b>	Generalization of <b>AP B</b> , with rule that shifts stress to a-desinence ( <b>rvalá</b> ). Before other endings, stress generalizes AP B stem-final: <b>porválo, porváli.</b>

Table 7 presents a summary of the intersecting categories of verbal accent in the Russian past tense. Note that non-suffixed verbs are similar in their use of an AP C type stress pattern (except for the high/low root obstruent type), and that the two shorter stem types (with no root vowel or with constantly deleted stem-final sonorant) share the use of past mobility.

Table 7. Stem-size vs suffixation as accentual criteria in the Russian past tense.

Stem	Longer Stem: Syllabic Suffixed or Obstruent Type	Suffixed Stem	Resulting Past Stress
mog-	+	—	End-stress in all forms. (Follows AP C pattern.)
govori-	+	+	Stem-final in all forms. (Follows AP B pattern.)
živ-	—	—	Initial with shift to <b>-a</b> . (Follows AP C pattern.)
rva-	—	+	Stem-final with shift to <b>-a</b> . (Follows AP B pattern.)

This chart does not include the tiny class of obstruent stems with non-mid vowels (**strig-**, **krad-**, etc.), which are exceptional in that they follow the AP B pattern in the past tense, in spite of their lack of a suffix. Their past-tense stem-final stress can be observed when a prefix is used, e.g. **ukrála/ukráli**.

I conclude with a summary table which presents the AP B and C behavior of the three main groups covered above: nouns, verbal present tense, and verbal past tense, each of which follows differing structural principles.

Table 8. Summary of rules for movement of stress to desinence in AP B and AP C. If no movement to desinence, AP B stress remains on stem-final and AP C stress remains on stem-initial.

	AP B	AP C
Noun	If genitive=non-zero: Subparadigm → end-stress (e.g. <b>stol'-a</b> → <b>stolá</b> ).	1. If nominative=high-vowel: Subparadigmatic oblique cases → end-stress (e.g. (e.g. <b>'golov-am</b> → <b>golová</b> m, but <b>'golov-i</b> → <b>gólov</b> y ).  2. If nominative=low-vowel: Subparadigmatic nominative/oblique → end-stress (e.g. <b>'zermal-a</b> → <b>zermalá</b> ).
Verb Present	If desinence=-V#, present → end-stress (e.g. <b>prosi'-u</b> → <b>prošú</b> )	All desinences → end-stress (e.g. <b>'govori-at</b> → <b>govorját</b> )
	AP B/C are neutralized	
Verb Past (l-part.)	Suffixed stems (plus <b>strig-</b> obstruent class) are realized as AP B.  Non-syllabic suffixed: If desinence=-a, stress → end-stress (e.g. <b>porvalá</b> )	Non-suffixed stems are realized as AP C.  Mid vowel root obstruent stems: Past subparadigm → end-stress. (e.g. <b>mog-ló</b> )  Sonorant stems: If desinence=-a stress → end-stress. (e.g. <b>próžilo</b> )

Note that the extra length of a -sja particle can change the stem from a “short” stem class, which admits past mobility, to a “long” stem class, with no past tense mobility; cf. end-stress **rvalás'/rvalós'**, but mobility in **rválo/rvalá**.

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