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## Stress Placement in Russian Nouns

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In the following account of stress placement in Russian nouns I have tried to present some of the insights that have been gained in the last few years by research into the metrical structure of words and phrases. I have also tried to write about it in a fairly non-technical fashion so as to make the major results accessible to anyone with a scholarly interest in the Russian language, most especially to teachers of Russian, who—if my own experience as a Russian teacher is at all typical—expend enormous efforts on teaching Russian stress with results that in many cases are far from encouraging.

### 1. On Phonological Rules and Underlying Representations

From the viewpoint of the phonology of the language—the chapter of the grammar that deals with the phonetic aspects of words—the stems and affixes that make up the different words are sequences of phonemes. When stems and affixes—which in the linguistic literature are referred to by the technical term *morphemes*—are concatenated to form a word, they often undergo changes in their phoneme composition. The reason for this is that languages include rules that govern the pronunciation of phonemes in different contexts and that therefore modify more or less radically the phonemic composition of the different morphemes composing a word. As a consequence, for each morpheme there are at least two forms, an *underlying* one—i.e., the shape in which the morpheme is presumably stored in the speaker's memory—and a *surface* one—i.e., the shape in which the morpheme is actualized in a particular word. And in producing utterances speakers calculate the surface form of the morphemes making up the utterances given their underlying forms and the rules of the language. Knowing a language therefore involves not only knowledge of its morphemes but also of the phonological rules that relate underlying forms of morphemes to their surface forms.

One of the earliest and best examples of phonological rules and their effects is Jakobson's 1948 justly famous one-stem analysis of the Russian verb. The main problem that Jakobson solved in this paper is illustrated by the forms in (1).

- (1) znaj-u 'I know' zna-l 'knew' stoj-u 'I stand' stoj-a-l 'stood'

As readily seen in (1) the verb stem in the present tense form differs from that in the past tense. The fact that was troubling linguists since the very beginning of scientific study of the Slavic languages was that if the present stem is taken as underlying two distinct rules will be required to predict the past stem. In *zna-l* the rule needed is one deleting the stem final /j/, whereas in *stoj-a-l* the rule needed will insert the vowel /a/. Similarly, if the past stem is taken as underlying, a deletion rule will be needed to calculate the present tense form *stoj-u* and an insertion rule will be needed to derive the present tense form *znaj-u*.

Jakobson's solution involved a change in perspective. Rather than catalog the stem forms in the different tenses, as earlier investigators had done, Jakobson focused on the phonological environments in which the different stem forms figure. He noted that in the present tense the suffix following the stem begins with a vowel, whereas in the past tense the suffix following the stem begins with a consonant. And he proposed that the language was subject to the two rules in (2). The first of these deletes a morpheme-final vowel if the next morpheme begins with a vowel, whereas the second rule deletes certain morpheme-final consonants before a following consonant-initial morpheme.<sup>1</sup>

- (2) a. V → 0 in env. \_\_\_ + V  
b. j/v → 0 in env. \_\_\_ + C

Implicit in this account is the assumption that the underlying form of a stem that speakers store in memory is neither the past tense alternant nor the present tense alternant, but rather the alternant that is longer. Its surface actualization is then calculated with the help of the two rules in (2), as illustrated in (3).

- (3) *znaj-u* no rules apply      *znaj-l* (rule 2b) → *zna-l*  
*stoj-a-u* (rule 2a) → *stoj-u*      *stoj-a-l* no rules apply

## 2. The Basic Accentual System of Russian

Calculations of the sort just illustrated are involved also in determining the stress placement in Russian nouns. I assume that in its underlying form—i.e. in the form in which it is stored in speakers' memories—each Russian morpheme contains also accentual information in addition to information about its phonological composition. Since the Russian noun is always made up of at least two morphemes, a stem and a desinence (case ending), speakers must have access to accentual information about the stem and about the desinence. Following Idsardi 1992 I propose that this accentual information is coded in the form of a mark—specifically a left parenthesis—of which at most one can be placed inside a given morpheme, as illustrated in (4).

- (4) (*barxat* 'velvet'    *go(rox* 'pea'    *korol'* 'king'    *gorod* 'town')

In memorizing a morpheme the speaker is thus assumed to remember in addition to its phonemes also the placement of the parenthesis, if any. Parenthesis placement is subject to further restrictions deriving from the fact that in Russian stress can be assigned only to vowels.<sup>2</sup> As a result, bi-syllabic morphemes can have only the four parenthesis assignments illustrated in (4).

In the literature on Russian accentuation, accentless stems, like *gorod* in (4), are said to belong to accentual paradigm C, and accented stems like (*barxat* and *go(rox*, to accentual paradigm A. Stems like *korol'*, where the parenthesis is placed after the last syllable, are assigned to paradigm B. The parenthesis notation adopted here not only distinguishes the three accentual classes, it also indicates the different stress effects of the stems. The manner in which this is mechanically implemented is detailed below.<sup>3</sup>

The stems illustrated in (4) all are masculine in gender and are traditionally assigned to the second declension. This means that the stems take the case endings or desinences shown in (5).

	Singular	Plural
Nom	-O	-y or -i or -(a)
Gen	-a	-ov(O or -ej(O or -(O
Dat	-u	-(am)O
Instr	-omO	-(ami
Prep	-e	-(ax)O

Examination of the desinences in (5) shows a striking difference between the singular and the plural. Whereas in the plural all desinences except that of the nom. /-y/ or /-i/ have an accent mark, none of the singular desinence has such a mark.<sup>4</sup>

It will be noticed that some desinences, e.g. nom. sg. and dat. pl., include the phoneme /O/. The /O/ stands for the modern reflex of the proto-Slavic short [u] or 'hard yer', that in the pre-revolutionary Russian orthography was represented with the letter 'hard sign'. It has been shown that both the 'hard yer' /O/ and its 'soft' counterpart /E/ play a role in the synchronic phonology of all modern Slavic languages. (For a recent discussion and some literature, see Szpyra 1992.) These facts are accounted for by the rules (6) according to which yers are actualized as /o/ and /e/ respectively before a yer in the next syllable and deleted elsewhere.<sup>5</sup>

- (6) a. /O,E/ → /o,e/    in env. \_\_\_\_ C O/E  
 b. Delete /O,E/

Russian has many stems that have yer in their last syllable. Such stems include an extra syllable when followed by a yer-initial suffix, but surface without this syllable elsewhere. These effects of the rules (6) are illustrated in (7).

- (7)  
 turOk-O 'Turk' nom. sg. (rule 6a) → turok-O (rule 6b) → turok  
 turOk-a 'Turk' gen. sg. (rule 6b) → turk-a  
 kon-Ec-O 'end' nom. sg. (rule 6a) → kon-ec-O (rule 6b) → kon-ec  
 kon-Ec-a 'end' gen. sg. (rule 6b) → kon-c-a

We now turn to stress assignment in Russian nouns. Each of the four classes of stem in (4) may be followed by one of two kinds of



More strikingly exceptional are the following two groups. The first group consists of the four nouns: *gvozd'* 'nail', *grizd'* 'milk agaric' (mushroom), *kon'* 'horse', and *chern'* 'worm', which are post-accenting in the singular, but unaccented in the plural, as illustrated in (15).

(15)	sg.: gen.	kon'-á	dat.	kon'-ú	instr.	kon'-óm
	pl.: nom.	kón'-i	gen.	kon'-ej	instr.	kon'-ámi

The second group is larger. These nouns are stem accented in the singular, but unaccented in the plural. Since these nouns take as their nom. pl. desinence the accented /-(á)/, they exhibit desinential stress throughout the plural as shown in (16).

(16)	sg.: gen.	kondúktor-a	dat.	kondúktor-u	instr.	kondúktor-om
	pl.: nom.	kondúktor-á	gen.	kondúktor-óv	instr.	kondúktor-ámi

To account for these facts we postulate that stems of both groups are subject in the plural to a special rule of stem accent deletion (= parenthesis-deletion).

There are a number of additional groups of nouns with deviant stress patterns. Because of space limitations, however, they cannot be discussed here.

#### 4. Testing the Theory

The examples discussed in sec. 2 were all class 2 masculine nouns. In this, the concluding section of the essay, I review the other three major declension classes of Russian and show that the devices used above—accent marking of stems plus the four rules (6a), (11), (9) and (6b)—allow us readily to calculate the stress patterns of these three classes of nouns.

The simplest of these is that of the neuter nouns of class 2. These take the same desinences as their masculine counterparts; i.e., those in (5), with the one exception that in the nom. sg. neuter nouns take as their desinence unaccented /-o/, instead of unaccented /-O/. Moreover, an overwhelming majority of the neuter nouns take the accented suffix /-(á)/ in the nom. pl. and only a handful of neuter stems take unaccented /-y/ or /-i/. Neuter counterparts to the four actual classes of masculine nouns in (8) are illustrated in (17).

(17)	sg. in.	(tópliv-omO	bo(łót-omO	toržestv-(ómO	zékál-omO
	pl. in.	(tópliv-ámi	bo(łót-(ámi	toržestv-(ámi	zékál-(ámi
		'fuel'	'mud'	'festivity'	'mirror'

As noted previously class 2 neuter has a large subset of post-accenting stems that are subject to rule (14) in the plural. All these examples are readily dealt with by the devices developed to this point, and there are among this class of nouns no instances that require substantial adjustments of any kinds.

The remaining two classes are composed almost entirely of stems of feminine gender: class 1 and class 3. These nouns have the same plural desinences as the class 2 nouns; i.e., those listed in (5). Their singular desinences are given in (18).

(18)		Class 1	Class 3
	Nom.	-(a)	-E
	Gen.	-(y)	-i
	Dat.	-(e)	-i
	Acc.	-(u or -u	-E
	Instr.	-(o)E	-Eju
	Prep.	-(e)	-i

The desinences of class 1 nouns are almost all inherently accented. The only unaccented suffix is one of the two variants of the accusative, which according to Zaluzniak (1967:164) is selected by only 31 stems, including *golova* 'head' (19a). The major stress patterns of class 1 nouns are shown in (19). The stem in (19a) is accentless, *korova* 'cow' (19b) is stem-accented, *gospozha* 'lady' (19c)—post-accenting, and *kolbasa* 'sausage' (19d)—post-accenting and subject to rule (14).

(19)	singular		plural
	nom.	acc.	nom.
a.	golov-(á)	gólov-u	gólov-y
b.	ko(róv)-(a)	ko(róv)-(u)	ko(róv-y
c.	gospož-(á)	gospož-(ú)	gospož-(y
d.	kolbas-(á)	kolbas-(ú)	kolb(ás)-(y
		gen.	dat.
		gol(óv)-(O	golov-(ámO
		ko(róv)-(O	ko(róv)-(ámO
		gosp(óž)-(O	gospož-(ámO
		kolb(ás)-(O	kolb(ás)-(ámO

As shown in (18) above all class 3 desinences are accent-less. Hence we expect to find here essentially the same stress distribution as in class 2 nouns. As illustrated in (20) these expectations are borne out: *plóshchad'* (20a) 'place, square' has an accentless stem, *terrad'* 'note book' (20b)—an accented stem, and *libov'* 'love' (20c)—a post-accenting stem.

(20)	singular	plural		
	gen.	instr.	nom.	dat.
a.	plóščad'-i	plóščad'-Eju	plóščad'-i	plóščad'-(ámO
b.	te(trád'-i	te(trád'-Eju	te(trád'-i	te(trád'-(amO
c.	l'ubOv'(-i	l'ub(Ov'(-Eju	l'ubOv'(-i	l'ubOv'(-ámO

Stress assignment to the forms in (20) by rule (9) should at this point be transparent. It might be worth noting here that in the instr. sg. /l'ub(Ov'(-Eju/ the first parenthesis is inserted by rule (11), which applies after the yer rule (6a) but before stress assignment by rule (9) and yer deletion (6b).

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#### Notes

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1. Jakobson thought that in addition to *j'v* the nasals *m/n* were also subject to deletion. Subsequent research has shown that the disappearance of the nasals before consonantal suffixes is accounted for by a different rule. The correct solution was first proposed by R. Kayne in 1969 in a paper that was never published.
2. Note that stress is a phonetic property that is not to be confused with the abstract parenthesis. Underlying representations have no stresses. They may contain parentheses, but even that is not obligatory; e.g., *gorod* in (4) has no parenthesis.
3. What is perhaps the most important discovery in Indo-European phonology of the past half century concerns accentual paradigm B. It was shown by Illich-Svitych 1963 that paradigm B is a Slavic innovation. The majority of stems belonging to paradigm B are cognates of IE stems with short accented vowel in the stem-final syllable. In the notation that is utilized here, this means that in Slavic stems with short final vowel the parenthesis was shifted from the left edge of the last syllable to its right edge, a simple and plausible development.
4. A small number of nouns has the special loc. sg. desinence /-(u/ which is inherently accented.
5. Rule (6) is a highly simplified version of the actual rule, which involves the syllabification of Russian phoneme sequences. As syllabification has only marginal relevance to the issues under discussion here, I have omitted it from the discussion.

6. This stress shift is known to students of the history of Slavic accentuation as the source of the so-called *neo-acute accent*. For details see Gardé 1976:221ff.

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