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ON STRESS AND THE VOWEL-ZERO ALTERNATION IN RUSSIAN

A number of recent studies¹ have discussed the effect a mobile vowel, followed by the zero-ending, has on a stem's stress pattern in Contemporary Standard Russian (CSR). The present paper re-examines the relevant data, as well as the solutions that have been proposed, and suggests a new representation of the stress patterns of stems with the vowel-zero alternation. In order to decide how best to handle the stress patterns of stems that have a vowel-zero alternation, let us first examine the more tractable behavior of stems that lack this alternation. Our attention shall primarily be directed at those cases which have the zero-ending as a desinence, since it is this ending that conditions the mobile-vowel when used with a stem that has the vowel-zero alternation. We shall consider instances of desinential stress on the zero-ending as well as pre-desinential stress² which precedes the zero. The specific zero-endings of importance here are the nominative singular and genitive plural endings of nouns, and the masculine singular ending of short-form adjectives.

Let us first consider cases where a stressed zero-ending occurs in the above mentioned morphological categories. When the paradigm of the noun (or, more rarely, the singular and oblique plural, or just the singular) has overt (surface) desinential stress, except for the stem-final stress that occurs before the nominative singular zero-ending, it has been "generally recognized"³ that the basic representation of the stress should indicate a stressed zero, which conditions a stem-final surface realization of the stress. For example, *богатырь* has desinential stress in all paradigmatic forms except for stem-final stress before the zero-ending; *конь* has desinential stress in the singular and oblique cases of the plural, with stem-final

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stress in the nominative singular, with a surface stem-final stress before the zero-ending. Thus, the forms nom. sing. богатырь конь казак and gen. sing. богатыря коня казакá, should be morphophonemically represented as bogatir'- \emptyset ,⁴ kon'- \emptyset , kazak- \emptyset , bogatir'-á, kon'-á, kazak-á, with end-stress on the zero.

A practical advantage of this approach is the presence of a single type of singular stress pattern to cover not only богатырь, конь, and казак, but also жена, лицо, etc., which have surface end-stresses throughout all singular case forms. If the surface non-desinential stress of the forms богатырь, конь, and казак were taken too literally, we would be forced to set up a new type of mobility, in which zero-endings co-occurring with end-stressed forms in the singular would always be found with stem-final, rather than desinential stress. As Halle has observed,⁵ forms that have a surface stress before a zero element have ambiguous stress at a higher phonological level, since the stress falls on the zero (which gets truncated, transferring the stress to the preceding syllable) or on the vowel that actually has the surface stress. The choice of the correct representation must be based on other regular patterns which already exist in the system, apart from cases that contain the zero-ending. In the cases we have considered, the surface pre-desinential stress before the zero is said to be predictable on the basis of the stressed zero-ending, while no novel pattern of stress mobility is required on the morphophonemic level.

The genitive plural zero-ending is also considered stressed, both when the entire plural has stressed endings (e.g., место, nom. pl. местá,⁶ чертá, as well as when the oblique case endings of the plural are all end-stressed, except for the surface pre-desinential stress found before the zero-ending of the genitive plural, e.g., головá, nom.-acc. pl. гóловы, loc. pl. головáх, dat. pl. головáм, instr. pl. головáми, and gen. pl. голóв. To simplify this paradigm with pre-desinential stress occurring only before the zero-ending (голóв), since it otherwise has the alternation of initial ~ desinential stress (гóловы ~ головáм, etc.), assume a stressed zero-ending in the genitive plural: голóв- \emptyset . This provides an additional economy when one considers that even mobile-stressed plurals that lack the genitive plural zero-ending have desinential stress precisely in all the oblique cases, including genitive plural, e.g., волк, where gen. pl. volk-*ov* agrees with the stress of gen. pl. голóв- \emptyset , yielding the same pattern of plural case mobility of stress in more than one declensional class.

When a short-form adjective has desinential stress in all forms with the exception of the one that has a zero-ending, it can be similarly assumed that we are dealing with a morphophonemically stressed zero, e.g., велик- has the end-stressed forms neut. великó, fem. великá, pl. великí, to go with masc. sing. велик, which leads to the latter form's representation as

velik- \emptyset , again allowing us to avoid complicating the system with another type of mobility on the morphophonemic level.

While end-stress occurs on zero-endings in the nominative singular and genitive plural of nouns, and the masculine singular of short-form adjectives, morphophonemic pre-desinential stress only occurs with the zero-ending of the genitive plural, since it is only in the plural that the pre-desinential variety of stress (in alternation with paradigmatic end-stress) occurs. Since pre-desinential stress is also absent in the short-form adjective, the combination of a pre-desinentially stressed sub-paradigm⁷ and a zero-ending only appears in the genitive plural of nouns. Plural pre-desinential stress, alternating with desinential stress in the entire singular, occurs primarily in nouns whose nominative singular ends in -a and -o, although a few isolated instances exist for nouns with nominative singular in - \emptyset .⁸ For example, высотá has the following plural forms: nom.-acc. высоты, gen. высот, loc. высотах, dat. высотам, instr. высотами; веретенó and казак are o- and \emptyset -nouns with the same pre-desinential stress pattern in the plural, which alternates with their desinential stress in the singular. The fact that казак has the gen. pl. казáков lends weight to the argument that the zero-ending genitive plural forms высот and веретён are realizations of morphophonemic pre-desinential stress, i.e., visót- \emptyset , veret'ón- \emptyset . Nouns in -a can also have a mobile-stressed singular in alternation with plural pre-desinential stress (e.g., водá) while nouns in -o can have initial singular stress alternate with plural pre-desinential (e.g., óзеро, nom. pl. озéра). Instances of both desinential and pre-desinential stress in forms with zero-endings are summarized in tables one and two, respectively.

I. Nominative singular - \emptyset is stressed.

A. End-stress throughout.

N	богатырь- \emptyset	богатырь-й
A	=G	=G
G	богатырь-я	богатырь-ей
L	богатырь-е	богатырь-ях
D	богатырь-ю	богатырь-ям
I	богатырь-ём	богатырь-ями

B. Singular, oblique plural end-stress.

конь- \emptyset	кон-й
=G	=G
кон-я	кон-ей
кон-е	кон-ях
кон-ю	кон-ям
кон-ём	кон-ями

C. Singular end-stress.

N	казак- \emptyset	казáк-и
A	=G	=G
G	казак-á	казáк-ов
L	казак-е	казáк-ах
D	казак-у	казáк-ам
I	казак-óm	казáк-ами

Common denominator: Surface end-stress in oblique singular.

II. Genitive plural -Ø is stressed.

A. End-stress throughout	B. Plural end-stress, singular initial.
N черт-а́	черт-ы́
A черт-у́	=N
G черт-ы́	черт-Ø
L черт-е́	черт-а́х
D черт-е́	черт-а́м
I черт-о́й	черт-а́ми

C. End-stress in all oblique cases and nominative sing.

N	голов-а́	голов-ы́
A	го́лов-у	=N
G	голов-ы́	го́лов-Ø
L	голов-е́	го́лов-а́х
D	голов-е́	го́лов-а́м
I	го́лов-о́й	го́лов-а́ми

Common denominator: Surface end-stress in oblique plural.

III. Short-form adjective masculine singular -Ø is stressed.

M	велик-Ø
N	велик-о́
P	велик-а́
Pl	велик-ы́

Table 1. End-stress on zero-endings in stems lacking the vowel-zero alternation.

I. Nouns in -а.

A. End-stress in singular.	B. Mobile-stress in singular.
N высот-а́	высот-ы́
A высот-ю́	=N
G высот-ы́	высòт-Ø
L высот-е́	высòт-а́х
D высот-е́	высòт-а́м
I высот-о́й	высòт-а́ми

II. Nouns in -о.

A. End-stress in singular.	B. Initial-stress in singular.
N веретен-о́	веретён-а
A =N	=N
G веретен-а́	веретён-Ø
L веретен-е́	веретен-а́х
D веретен-у́	веретён-а́м
I веретен-о́м	веретён-а́ми

Common denominator: Predesinential throughout plural.

Table 2. Predesinential stress preceding the zero-ending in stems lacking the vowel-zero alternation.

The review of stems that lack the vowel-zero alternation indicates there are instances of both desinential as well as predesinential stress that occur in the environment of *stem + zero-ending*. As a rule, end-stress on the zero-ending must minimally be accompanied either by: 1. end-stress on the non-zero endings of the singular (e.g., богат-ы́рь, конь, каз-а́х) where the zero-ending is that of the nominative singular, or 2. end-stress on the non-zero plural oblique case endings, where the zero represents the genitive plural (e.g., черт-а́, ме́сто, голов-а́). Consequently, desinential stress in the non-zero oblique cases of either singular or plural implies a morphophonemic end-stress on the zero-ending within that particular subparadigm. As to predesinential stress, which is found before a zero-ending only in the noun plural, we can state that when it occurs before all plural non-zero desinences it implies predesinential stress before the zero-ending of the genitive plural.

We can now turn our attention to those stems which consist of at least one non-mobile vowel, followed by the vowel-zero alternation in the next (and stem-final) syllable. It would obviously be most economical if such stems could be treated in exactly the same way, in terms of stress, as the stems that lack mobile vowels. This would avoid the inexpedient recognition of complementarily distributed units as independent entities. Interestingly, if the stress of stems that have the vowel-zero alternation in stem-final position is considered, the categories of stress are precisely the same as those considered above, with the exception of those forms which take the zero-ending in the syllable immediately following a mobile vowel. When the non-zero vocalic endings appear, they condition a stem-final zero rather than a mobile vowel, so that these stems all end in stem-final consonant clusters.

Corresponding to end-stress in both singular and plural there are, for example, gen. sing. уз-а́, gen. sing. ог-н-я́; gen. sing. уг-л-я́ is an instance of end-stress in singular and oblique plural; end-stress throughout the plural is found in кочер-г-и́ non. pl. (кочер-г-а́, nom. sing.), мас-л-а́ non. pl. (мас-л-о, nom. sing.), серд-ц-а́ non. pl. (сер-д-ц-е nom. sing.); end-stress in oblique plural forms is found in дос-к-а́ (loc. pl. дос-к-а́х, dat. pl. дос-к-а́м, instr. pl. дос-к-а́ми). Among short-form adjectives, end-stress is found in смеш-н-ы́ pl., боль-н-ы́ pl. Instances of predesinential stress in stems with the vowel-zero alternation can also be cited. Within the class of o-nouns, there are, коль-ц-о́ (plural forms коль-ц-а, коль-ц-ах, коль-ц-ам, коль-ц-ами) and чис-л-о́ (plural чис-л-а, чис-л-ах, чис-л-ам, чис-л-ами); a-nouns have such cases as ов-ц-а́ (plural ов-ц-ы, ов-ц-ах, ов-ц-ам, ов-ц-ами) and вес-н-а́ (plural вёс-н-ы, вёс-н-ах, вёс-н-ам, вёс-н-ами). In other words, based on use with non-zero endings, each of these stems with vowel-zero alternations corresponds exactly to a specific stress-type as found in those stems that lack the vowel-zero alternation. Thus, the stress of gen. sing. уз-а́, ог-н-я́

corresponds to that of богатѣря; углѣ corresponds to коня; ном. pl. кочерги, сердца are like черты and места, respectively; доска matches the stress of голова; and смешны, больны correspond to the stress of велики. Within the pre-desinential stress-type, кольцо and число have stress comparable to веретено, while овца and весна correspond to высота. These correspondences are recognized in the stress paradigm classifications of both Red'kin⁹ and Fedjanina.¹⁰

The controversial aspect of the stress of stems with mobile vowels that appear before the zero-ending is due to the fact that for each single stress type found in stems lacking the vowel-zero alternation, there correspond *two subtypes* in stems that do have this alternation. Thus, while regular end-stress on a zero is realized by surface stress on the stem-final vowel (богатѣрь, etc.), we find both stem-final as well as stem-penultimate realizations of end-stress when the stem-final vowel is a mobile followed by the zero-ending, e.g., огонь but узел (nom. sing.). This pattern exists not only in the single stress-type just cited but in the other types as well. Corresponding to end-stressed мест, (gen. pl.) with no vowel-zero alternation, we have both сердце and масел which do have the vowel-zero alternation. The two mobile-vowel realizations of short-form adjectival end-stress, corresponding to велик, are смешон and болен. The same applies to cases of pre-desinential stress in which stem-final stress regularly occurs in stems lacking the vowel-zero alternation. But both stem-final and stem-penultimate types occur in stems where the mobile vowel appears before the zero-ending. Thus, corresponding to the o-noun genitive plural веретѣн are both колец and чисел; a comparable situation is found in the a-nouns, where gen. pl. высот stands next to the two mobile-vowel stresses of овец and вѣсен. The 1:2 correspondence between stress patterns of non-mobile-vowel stems and those with a mobile vowel has been depicted in table 3.

	Stems Without Vowel-Zero Alternation		Stems With Vowel-Zero Alternation
I. End-stress			
A. Zero in nominative singular:	богатѣря богатѣрь	=	огня, узя огонь узел
B. Zero in genitive plural:	места мест	=	сердца, масла сердец масел
C. Zero in masculine singular:	велико велик	=	смешно, больно смешон болен

II. Pre-desinential stress

A. Nouns in -o:	веретѣна веретѣн	=	кольца, числа колец чисел
B. Nouns in -a:	высоты высот	=	овцы, вѣсны овец вѣсен

Table 3. The 1:1 correspondence of non-mobile to mobile-vowel stems before non-zero-endings, compared to the 1:2 correspondence before zero-endings.

Let us now consider the attempts that have been made to account for the two realizations of both end-stress and pre-desinential stress when a mobile vowel is followed by a zero-ending. Halle's first treatment of the subject¹¹ considered stress on the stem-final mobile vowel to be the regular realization of both end-stress and pre-desinential stress in a form with the zero-ending (having a "yer" desinence, in Halle's system). Thus, end-stressed nom. sing. огонь and gen. pl. колец are regular manifestations of end-stress and pre-desinential stress, respectively. To account for such cases as nom. sing. узел and gen. pl. чисел, which are derived from underlying end-stressed and pre-desinential-stressed forms, respectively, Halle resorted to a special "Retraction Rule,"¹² which was given the task of idiosyncratically marking certain lexical items (e.g., узел, число) as being subject to it.¹³ In his later 1973 treatment of the subject,¹⁴ Halle reversed the earlier approach by asserting that the presence of a stem-final mobile vowel automatically conditions a stress retraction, leading to a stem-penultimate stress that corresponds to stem-final stress in stems lacking the vowel-zero alternation;¹⁵ it is referred to as "Metatony-B."

According to this revised treatment, a stem with a mobile vowel that realizes end-stress or pre-desinential stress as stem-final before a zero-ending is no longer considered regular and must be relegated to the list of exceptions,¹⁶ e.g., колец. Unfortunately, Halle did not distinguish stem-penultimate stress that realizes basic end-stress (e.g., узел) from stem-penultimate as a realization of pre-desinential (e.g., чисел). Therefore, the very same rule (Metatony) that normally assigns pre-desinential stress to the entire plural must now be called upon (in its subtype Metatony-B) for the nominative singular instances of stem-penultimate stress in a stem with the vowel-zero alternation.¹⁷ In other words, while the stem-final surface stress of богатѣрь and высот is derived by totally different rules to reflect deep end-stress and pre-desinential stress, respectively, in the analogous mobile-vowel examples (e.g., узел and чисел) the stem-penultimate stress is derived by the *identical* rule (Metatony-B). If one compares the solutions advanced for the same problem in

Halle's studies of 1971 and 1973, it appears that a consistent attempt has been made to declare one of the two mobile-vowel subtypes as regular and the other as exceptional. Curiously, a different type is purported to be regular in each of the two studies. In both instances we have one type which is derivable from the phonological rules and one which requires special lexical marking.

Worth¹⁸ considers stems with mobile vowels which realize pre-desinential stress as stem-penultimate (e.g., *чѣсел*, *сѣсен* gen. pl.) to be regular manifestations of pre-desinential stress, conditioned by the vowel-zero alternation. On the other hand, the other subtype we have mentioned (e.g., *колѣц*) is treated "as a small but independent stress group,"¹⁹ in which the forms *кѣльца* (nom. pl.), *колѣц* (gen. pl.) are not two cases of pre-desinential stress, but, supposedly, an instance of initial and end-stress, respectively. In the first place, this approach relies on the accidental fact that the instances of stem-final stress on a mobile vowel (*колѣц*) all occur in two-syllable words,²⁰ so that *кѣльца* (nom. pl.) can ambiguously be treated as initial as well as pre-desinential. By treating this form as initially stressed, Worth must recognize a new "stress group," to which he also assigns the stress of the suppletive plurals *дѣти* and *лѣди*, in spite of their instrumental forms *дѣтьми* and *лѣдьми*,²¹ in contrast to *кѣльцами*. Secondly, the analogy of *колѣц* and *сѣсен* to *огѣнѣ* and *узел* is not dealt with, since this would argue against *кѣльцо* as a completely independent new stress type, in view of the fact that *узел*, *узла* would hardly be put forth as yet another new stress type. If we compare Halle's approach to that of Worth, we see that of the two mobile vowel subtypes, Halle has never departed from the assertion that one is regular and the other exceptional. Worth, however, states that both types are regular, with one subtype belonging to a hitherto unrecognized stress type with a small, somewhat dubious membership (*дѣти*, *лѣди*, and *хлѣпѣты*, the latter of which has been inconsistently normalized for stress in recent Soviet sources²²).

3. Let us now review the historical origin of the two mobile-vowel subtypes (*колѣц* vs. *чѣсел*). As Kolesov²³ has observed, the neo-acute retraction of stress from word-final stressed jers occurred "before the rise of new (non-organic) inserted jers, which regularly appeared between such consonant clusters as "obstruent + sonorant."²⁴ Thus, an East Slavic word such as *узлѣ* (assuming, with Kolesov,²⁵ that the "loss of nasal vowels preceded the stress retraction") first experienced a retraction to become *узль*, only after which an inserted (front) jer appeared, yielding *узълѣ*, which gave the eventual reflex *узел* in CSR; in the cases which had non-jer desinences, no retraction took place and the final stress remained, e.g., *узла* > *узъла* > *узла*. This accounts for that sub-type of mobile-vowel stem which has stem-penultimate stress when followed by a zero-ending in CSR. The second subtype of

mobile-vowel stem simply had an original non-inserted jer, so that the neo-acute retraction caused the stem-final vowel to become stressed, e.g., *осълѣ* > *осълѣ* > *осѣл* > CSR *осѣл*. Thus, the presence of an original vs. a secondarily inserted jer-vowel led to the ultimate emergence of the two much-debated stress types of CSR. In the subsequent history of East Slavic, however, there were frequent redistributions of these two stress types, so that not every modern instance of stem-penultimate stress before a mobile vowel goes back to a stem with an inserted vowel (e.g., *полѣтен* gen. pl. < *полѣтънѣ*). Conversely, stem-final stress on a mobile vowel may go back to an inserted vowel (e.g., *сестрѣ* gen. pl. < *сестрѣ*). It should be noted here that a stem-final obstruent + sonorant consonant cluster was usually found in those cases where the original-jer subtype was changed to the inserted-vowel subtype, since the latter subtype originally consisted largely of stems ending in obstruent + sonorant.

Our historical note has indicated that a difference in relative chronology first led to the two mobile-vowel stress subtypes. This provides a clue for treating these stems synchronically in CSR. We can consider that there are two sorts of -# elements: one appears in the basic morphophonemic shape and receives stress that is retracted from a -# desinence; the other -# is inserted only after the final -# stress has already been retracted. The inserted -# would be sensitive to the consonant cluster involved, since the vast majority of cases where -# is to be inserted are either original instances of insertion or secondarily evolved insertion in the same consonantal environment that first conditioned insertion. Let us illustrate the specific operations that set off the two surface subtypes. The stem subtype that goes back to an original jer appears at the deepest level with a -#, e.g., *os' # l*. A stressed -# ending has its stress retracted to the preceding syllable: *os' # l - #* → *os' # l - #*. Next, the # in this case is realized as the vowel *o*, in view of its occurrence before hard *l*: *os' # l - #* → *os' ol*. Lastly, of course, the rules for vowel reduction take effect, yielding [*as' ol*]. The second stress subtype lacks a # at the morphophonemic level, e.g., *uzl*-. The stress on final -# is retracted, yielding *uzl - #*, only after which an insertion rule operates, placing # between the *z* and *l* (and palatalizing the *z* as well): *uz' # l - #*. This insertion rule must be ordered before the rule which interprets the value of #, in this case as the vowel *o*, which gets reduced to *i* in unstressed position after a palatalized consonant: *uz' # l - #* → *uz' ol* → *uz' il*. The rules applying to these two subtypes have been summarized in Table 4.

	I. Basic # type	II. Inserted # type
1. Stress retraction.	os' #1- ɨ	uzl- θ
2. #-insertion with palatalization.	os' #1- θ	úz1- θ
3. #-realization and \emptyset -deletion	os' ó1	úz' o1
4. Vowel reduction	as' ó1	úz' i1

Table 4. Rules applying to two mobile-vowel stem subtypes.

The advantage of our approach is that now mobile-vowel stems have stress patterns on the morphophonemic level which in no way differ from those of other stems. The existence of two stress subtypes within the class of stems with the vowel-zero alternation is neither a case of one or the other subtype being "exceptional" (as in Halle's system), nor of one subtype being in an "independent stress group" (cf. Worth). Rather, the two subtypes are the natural consequence of a rule ordering which distinguishes between deep # and inserted #.

Let us examine the strongest argument against our proposal for an inserted #. This argument is implicit in several statements of Worth,²⁶ to the effect that no insertion rule is possible in the environment *obstruent + sonorant*, among others, for the reason that some clusters of this type do not undergo insertion; cf. Worth's examples *остѣр*, but *óстр*, *свѣтел* but *подл*. However, the existence of forms lacking vowel insertion is not a definitive argument against such a rule. Isačenko²⁷ pointed out that cases of non-insertion are really due to the influence of the Church Slavonic (called "Slavonian" by Isačenko) morphophonemic system which "did not share in many respects the morphophonemic development of" Russian. This means that forms such as *остр*, may be regarded as Church Slavonicisms in CSR, and, as such, must be marked for this fact in the lexicon. This mark is obviously needed for many rules besides that of vowel insertion, e.g., the lack of *e* → *o* in *нѣбо* vs. *нѣбо*, the *т* → *щ* mutation in *отвращу́* first pers. sing. vs. *лечу́* first pers. sing., as well as many other well-known Church Slavonic departures from Russian phonology. Therefore, the acceptance of an insertion rule to interpret the difference between the stress of *осѣл* and *úзел* not only provides the simplest explanation for the stress of mobile-vowel stem subtypes but also explains the difference between *úзел* and *жеэл* as due to the fact that the latter is part of the Church Slavonic word stock.²⁸ Previous approaches have not linked these two separate facts by means of a single rule.

In those cases where an original consonant cluster has a

stress pattern of the original-jer subtype, we can say that the morphophonemic shape has changed in the history of the language; e.g., the genitive plural *сестѣр* causes us to represent the stem as *сест' #r-* morphophonemically, in spite of the fact that it derives historically from *сестр-*. Conversely, although the genitive plural *полóтен* once possessed a jer vowel between *т* and *н*, its stress behavior indicates that morphophonemically it is now *полотн-*, with later inserted #.

We have already indicated the difference between end-stress and pre-desinential stress as it applies to stems with and without mobile vowels. As we have seen, when a zero-ending is present, the stress can ambiguously be considered to be either end-stress or pre-desinential at the morphophonemic level. The decision can only be based on the behavior of other paradigmatic forms. Historically, both end-stress and pre-desinential stress are derived from end-stress. When a jer-desinence was used and carried the stress, the neo-acute retraction rule caused end-stress on the jer to automatically be realized as stem-final. In certain stem types, such as neuter *o*-stems, this stem-final neo-acute stress (e.g., *сѣл-ъ*) morphologically spread to all plural cases (*сѣл-а*, etc.), creating the first instance of morphologically conditioned pre-desinential stress throughout the plural.²⁹ Although the genitive plural stress remained the same (*сѣлъ*), we assume that the appearance of pre-desinential stress changed the morphophonemic shape from *селъ* to *сѣлъ*. The reason for the change of end-stress to pre-desinential may be the fact that end-stress had been a columnal type, opposed to the marginal mobile type.³⁰

The neo-acute retraction created the first instance of non-columnal stress in this paradigm (*селá*, but *сѣлъ*), which led to the columnalization of stress in all plural forms. Thus, pre-desinential stress is also columnal; the cases of end-stress that were preserved, however, had a non-columnal character on the surface (e.g., *стóль*, *столá*). The existence of stems with the vowel-zero alternation that arose after the fall of the jers posed a threat to the columnal principle of the pre-desinential stress. The vowel which was stressed before a zero-ending (e.g., *колѣц*) would not receive the stress (due to its absence) in other forms of the plural (e.g., *кóльца*). This explains the fact that within the class of pre-desinentially stressed stems with the vowel-zero alternation, original-jer type stems have tended to take on the characteristics of inserted-vowel stems, especially when the stem-final consonants matched those of the inserted-vowel type. Cf. the following neuter *o*-nouns of CSR which originally had stem-final jer syllables but now stress the stem-penultimate instead of the stem-final before the zero-ending: *полотнó*, gen. pl. *полóтен*; *пятнó*, gen. pl. *пятен*; *сукнó*, gen. pl. *сúкон*; *окнó*, *óкон* (also *окón*); *гумнó*, gen. pl. *гúмен* (also *гумѣн*); *волоknó*, gen. pl. *волóкон*; *копѣ*, gen. pl. *кóпий*; *ружѣ*,

gen. pl. руже́й; седло́, gen. pl. се́дел.

In contrast to the above consonantal environments that were similar to the environment for regular insertion, we should note that the mobile-vowel neuter stems which depart from this by having stem-final obstruents instead of sonorants all present cases of preserved stem-final stress before zero-ending, which we are considering the regular evolution of the original-*jer* stress subtype, e.g., кольцо́, gen. pl. коле́ц, берцо́, gen. pl. берёц, яйцо́, gen. pl. яйц. 31 A-nouns converted the surface end-neo-acute stress alternation of the plural (e.g., жену́, жён) at a much later date than did the neuter o-nouns.³² While the neuters took on plural pre-desinential stress in Late Common Slavic, according to Stang,³³ Hingley³⁴ presents evidence to the effect that a-nouns changed plural end-stress to pre-desinential only in the 19th century. This fact may have been reflected in the distribution of stress in stems with mobile vowels, for older pre-desinential neuter plurals have no cases of inserted-vowel stems changing to the original-*jer* stress type, although they have changed all the original-*jer* types to inserted-vowel types where the consonant environments matched. On the other hand, the more recently pre-desinentially stressed plurals of nouns in -a have two cases of inserted-vowel types which have changed to the original-*jer* type (gen. pl. сестёр, земéль), as well as several instances of preserved original-*jer* type stress in spite of final consonant clusters which match the obstruent + sonorant environment for insertion (cf. the a-nouns судья́, gen. pl. судей, свинья́, gen. pl. свиней, семья́, gen. pl. семей vs. neuter nouns ко́пий, руже́й, cited above). Thus, in the pre-desinential plural stress, neuters in -o tend to generalize columnar stress, corresponding to the morphophonemic inserted-vowel stress types we have introduced. This tendency is more weakly discerned in a-nouns, where only the nouns метла́, ветла́ present cases of the original-*jer* type which has changed to the inserted-vowel type (gen. pl. ме́тел, ве́тел).

Cases where an end-stress morphophonemically exists on a noun zero-ending, as noted, are found in the nominative singular and genitive plural. The retention of end-stress, in contrast to the development of pre-desinential stress, does not use the columnar principle. End-stress, therefore, regularly involves a surface alternation of pre-desinential (before zero-ending, e.g., сто́л) and desinential (e.g., столá, gen. sing.). As a result, the model of the historical original-*jer* type fits the end-stress pattern better than the historical inserted-vowel type. However, in the case of plural pre-desinential stress the situation is the reverse. Consequently, there have been no instances of end-stressed nouns with original *jer*s taking on the inserted-vowel stress type, although the opposite development has frequently occurred. For example, original-*jer* type stress has been preserved in осёл (gen. sing. ослá), отец (gen. sing. отцá), орёл (gen. sing. орлá); a-noun genitive plurals копе́н (nom.

sing. копна́), княжо́н (nom. sing. княжна́), мошо́н (nom. sing. мошна́); o-noun genitive plurals серде́ц (nom. sing. сердце́), крыле́ц (nom. sing. крыльцо́), etc. The inserted-vowel type has taken on the original-*jer* stress type in: nominative singulars оро́нь, добо́р, вихо́р; a-noun genitive plurals кочере́г, досо́к, сере́г, etc.

Exceptions to this pattern involve those cases in which an inserted-vowel type has remained as such within an end-stressed singular, plural, or oblique plural, producing a stem-penultimate ~ desinential stress alternation on the surface. There are four nouns of this type in the nominative singular, all beginning in *y*:- *y*зел, *y*горь, *y*гол, *y*голь; in the genitive plural there is one such neuter o-noun, ма́сел, dat. pl. масла́м; a single instance of an a-noun (which may also be interpreted as belonging to the class of *pluralia tantum* on the basis of its current meaning), gen. pl. де́нер, dat. pl. де́нѣр. The end-stressed short-form adjective, which does not have the category of case, in contrast to the noun, behaves differently from the noun in the sense that there are many original-*jer* type stems which have now changed their stress to the inserted-vowel type: e.g., во́лен, бо́лен, те́мен, ра́вен, дли́нен, ле́гок, коро́ток. Only two short-form adjectives have changed their inserted-vowel type to the original-*jer* type: остёр, житёр.

Based on the general directions of change, it can be tentatively stated that for the noun's pre-desinential stress type the inserted-vowel variety is emerging as dominant (with stem-penultimate stress conditioned by a mobile vowel), while end-stressed nouns tend towards the original-*jer* type (with surface stem-final before a zero-ending, regardless of whether the stem contains a mobile vowel). Although both nouns and adjectives may have end-stress, the noun tends to generalize the original-*jer* subtype within the end-stressed paradigm, while the short-form adjective combines end-stress with the inserted-vowel subtype. Typical examples of these dominant types, in morphophonemic transcription, are as follows: noun pre-desinential *jadn-*, *sovn-*, *polotn-*; noun end-stress *os'ʃl*, *serd'ʃe*, *kn'azʃn*; short-form adjective end-stress *poln-*, *ram-*, *bol'n-*.

4. As observed, there are two subtypes of stress in stems containing the vowel-zero alternation. When these stems are found with non-zero endings, they can easily be identified with the regular stress patterns of CSR. However, the two subtypes emerge in the position preceding the zero-ending, where the mobile vowel is conditioned. The subtypes, which we have termed *original jer* and *inserted-vowel*, based on their historical origin, can be dealt with synchronically if one recognizes vowel insertion not as an idiosyncratic property of each lexical item, but as a rule of Russian phonology, contrasted to Church Slavonic phonology. Rather than arbitrarily selecting one of the stress subtypes as regular, we prefer to consider that both are regular

consequences of different morphophonemic base forms to which retraction from a stressed zero-ending applies.

NOTES

1. Cf. D. Worth, "Grammatical Function and Russian Stress" (*Language*, XLIV, No. 4 [1968], 784-791); M. Halle, "A Minor Accentual Rule of Contemporary Standard Russian," in *Form and Substance*, R. Jakobson, L. Hammerich et al., ed. (Copenhagen, 1971), pp. 211-218; and M. Halle, "The Accentuation of Russian Words" (*Language*, XLIV, No. 2 [1973], 312-348).
2. See Ju. R. Kurilovič (J. Kuryłowicz), "Sistema russkogo udarenija," in *Očerki po lingvističeskoj nauke* (Moscow, 1962), pp. 436-444, for the introduction of the concept of *stem-final* stress, which is now often referred to as *predesinential*. We recognize a rule by which a stressed zero element retracts the stress to the preceding syllable, e.g., *stol-Ń* is realized as *стол*.
3. D. Worth, "Notes on Russian Stress, 2: *ljubov'*, *voš'*, etc.," in *Studies in Slavic Linguistics and Poetics in Honor of Boris O. Unbegaun* (New York-London, 1968), p. 279.
4. We are following Worth's convention that \emptyset represents a non-alternating zero, while # represents the vowel-zero alternation morphophonemically.
5. Halle, "A Minor Accentual Rule..." pp. 215-16.
6. Worth, "Grammatical Function..." p. 789.
7. The noun paradigm consists of the singular and plural *sub-paradigms*. This term was introduced as "*poluparadigma*" in N. A. Fedjanina, *Udarenie v sovremennom russkom jazyke* (Moscow, 1976), p. 22.
8. Cf. Kurilovič, "Sistema..." p. 438.
9. V. A. Red'kin, *Akcentologija sovremennoego russkogo literaturnogo jazyka* (Moscow, 1971).
10. Fedjanina, *Udarenie...*, p.
11. Halle, "A Minor Accentual Rule..." p.
12. *Ibid.*, p. 214.
13. Apparently as a result of a single exceptional case of stem-penultimate instead of stem-final in a stem *lacking* the vowel-zero alternation (*кружев*, gen. pl.; *кружева*, nom. pl.), Halle could not take advantage of the almost regular appearance of a mobile vowel in such cases.
14. Halle, "The Accentuation of Russian Words," p.
15. *Ibid.*, pp. 320-22.
16. *Ibid.*, p. 322.
17. *Ibid.*, p. 322.
18. Worth, "Grammatical Function..." p.
19. *Ibid.*, p. 788.
20. The non-standard Russian *волокон* (gen. pl., cited in R. I. Avanesov and S. I. Ožegov, *Russkoe literaturnoe proiznošenie i udarenie* [Moscow, 1960], p. 82), when compared to nominative plural *волоконна*, shows that we are dealing with plural predesinential, rather than initial - desinential stress, a fact that should be used in the analysis of *колец*, *кольцо*.
21. Worth, "Grammatical Function..." p. 790.
22. *Ibid.*, p. 786.
23. V. V. Kolesov, *Istorija russkogo udarenija* (Leningrad, 1972), p. 224.
24. Cf. A. V. Isačenko, "East Slavic Morphophonemics and the Treatment of the Jers in Russian: A Revision of Havlik's Law," *International Journal of Slavic Linguistics and Poetics*, XIII (1970), 79; and K. Meyer, "Zur Entstehung der sekundären Halbvokale im Ostslavischen," *Archiv für slavische Philologie*, XXXVIII (1923), 253.
25. Kolesov, p. 224.
26. Worth, "Notes on Russian Stress, 2..." p. 282; and Worth, "Vowel-Zero Alternations in Russian Derivation," *International Journal of Slavic Linguistics and Poetics*, XI (1968), 115.
27. Isačenko, p. 82.
28. *Ibid.*, p. 82.
29. Cf. I. G. Xazagerov, *Razvitie tipov udarenija v sisteme russkogo imennogo sklonenija* (Moscow, 1973), pp. 66, 97.
30. C. Stang, *Slavonic Accentuation* (*Skriifter utgitt av Det Norske Videnskaps-Akademi i Oslo, I. Hist.-Fil. Klasse*, No. 3 [1957]), Oslo, 1957, pp. 60, 82-83.
31. The stress *озёрец* for the genitive plural of *озерцо*, nom. pl. *озёра*, is given by some sources, e.g., Avanesov and Ožegov, although the official Soviet Academy grammar (*Grammatika russkogo jazyka* [Moscow, 1960], p. 196) lists this word as taking constant end-stress in both singular and plural.
32. R. Hingley, "The Stress of Russian Nouns in -a/-ja under Inflection," *Slavonic and East European Review*, XXXI, No. 76 (1952), 197.
33. Stang, p. 82-83.
34. Hingley, p. 197.