Rule Ordering in Baltic and Slavic Nominal Accentuation

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There are obvious similarities in Baltic and Slavic nominal accentuation. Although the modern languages have undergone considerable changes, both can be reconstructed as having three types of accented syllables: a short accented vowel, a long vowel with rising intonation termed acute, and a long vowel with falling (fourth) intonation termed circumflex. In modern Lithuanian the original circumflex is now a rising accent, as in rūnas 'raven,' while the original acute is a falling accent, as in ėžėra 'crow.' In Slavic, which went through a stage where neither accent was rising, original intonation was recorded as length. In Serbo-Croatian, which will be used for most of the examples in this paper, length was preserved under circumflex accent, e.g., mrač 'raven' (long falling accent), while the acute was shortened, e.g., mraž (short falling accent). In Russian the original acute accent is reflected in "pseudoglotic" groups as stress on the second vowel (e.g., wers 'crow'), and the original circumflex is reflected as stress on the first (ožēra 'raven').

Both Baltic and Slavic had fixed and mobile accentual paradigms. In Slavic the accent could be fixed on any syllable of the word, although a fixed accent on the theme vowel (oxymonous accent) was in general limited to derived stems. In late Baltic the accent could be fixed on any vowel of the stem except the theme vowel. Kuryłowicz suggests that at one time Baltic also had theme-vowel accent but that the accent in this class was retracted one syllable. As evidence he cites cognates such as Lithuanian butadok (fixed in Lithuanian butok butow in Slavic: Liv. butok, butok; -ok (from "-ok") Slavic *-ok, *-ok, *-ok, *-ok. Exact cognates are Lith. butis, 1st de 'tailor'; Lith. pietūnas "writing," 1st. pietūnas "letter"; Lith. suogut, 1st. suogut "takel communism." 2 In the mobile paradigm the alternation in both Baltic and Slavic is basically between the first syllable of the stem and the last syllable of the designation. Following Roman Jakobson, we represent stems of this paradigm as morphophonemically unaccented. Desinences are either accented or unaccented, and it is the co-occurrence of an accented desinence with an unaccented stem which accounts for desinential accent. 3 In the case of the co-occurrence of an accented desinence with an accented stem, the accent on the stem predominates. This is accomplished by a rule which eliminates all accents after the first. When an unaccented stem co-occurs with an unaccented desinence, we have an unaccented word. In such cases accent is assigned to the initial syllable. Slavic had a rule which assigned initial accent in the case of total absence of accent. Morphophonemically unaccented words actually occur unaccented when used with prepositions: R ruku but na ruku, galoru but na galoru. Although words in Lithuanian never lose their accent to a preposition, it can be argued that initial accent in Lithuanian is assigned by a similar rule. 4 The rule differs from the Slavic rule only in that it ignored prepositions. Except for this, the morphophonemes of accent assignment in Baltic and Slavic is virtually identical.

The specific topic of this study is the distribution of acute and circumflex intonations on nominal stems in Baltic and Slavic. It is widely believed that acute intonation on stems in both languages is the direct phonetic reflex of Indo-European length and that circumflex intonation is the reflex of Indo-European short diphthongs or lengthened short vowels. 5 I have no quarrel with this analysis of Baltic. In Baltic the type of intonation seems to be independent of the accentual pattern. Both acute and circumflex stems have either fixed or mobile accent, thus forming four classes. The circumflex can occur on any syllable of the stem. In Slavic, however, there are only two classes. All the acute stems have fixed accent, and all the circumflex stems have mobile accent. Since stem accent in mobile stems is limited to initial position, the circumflex occurs only in that position.

The obvious question at this point is: How do the four stem-classes in Baltic relate to the two in Slavic? The great majority of the correspondences with circumflex intonation are mobile circumflexes in Baltic as well as Slavic, and to sum the great majority of correspondences with acute in Slavic are acute, with fixed accent, in Baltic. This leads Kuryłowicz (116-17) to argue that among non-derived stems in Balto-Slavic, stems with long vowels fixed the accent while stems with short vowels were mobile. These are a small group of stems which is acute but mobile in Balto-Slavic and which has Slavic cognates which are also mobile, although circumflex. Examples are Lith. šiltas 'head,' 1st. šiltas 'head,' 1st. šiltas 'strip,' 1st. šiltas 'face,' 1st. šiltas 'cut'; SC Glanu 'head,' 1st. Glanu 'head,' 1st. Glanu 'head,' 1st. Glanu 'head,' 1st. Glanu 'head,' 1st. Glanu 'head,' 1st. Glanu 'head,' 1st. Glanu 'head,' 1st. Glanu 'head,' 1st. Glanu 'head.' Several of the nouns in this group are clearly derived from verbs: šid is from šidat 'head'; rid and rid are from ridat 'cut.' In Slavic there was a general pattern of mobile accent for derivatives of this type; e.g., SC šidat 'head,' šidat 'head,' šidat 'head,' šidat 'head,' šidat 'head,' šidat 'head.' Kuryłowicz (p. 201) postulates mobility also for Baltic derivatives of this type (e.g., Lithuanian mobile darbas 'work' from dēbas 'to work'); it therefore seems reasonable to assume that mobile stems with long vowels in Balto-Slavic were derivational.

As for the reverse situation, i.e., fixed accent and circumflex intona-
tion, outside of those words which Kuryłowicz explains as Balto-Slavic oxytons with retracted accent in Lithuanian, there are essentially no Slavic cognates for Lithuanian words with fixed accent and circumflex intonation. The Baltic and Slavic are too close lexically for this lack of cognates to be accidental. If Kuryłowicz's postulation of Balto-Slavic oxytons is correct, then we may safely say that Balto-Slavic had no class of stems with fixed accent on short vowels.

Within Slavic, examples of original short diphthongs with derivationally fixed accent are plentiful. These are stems which have acute intonation instead of the expected circumflex. Examples are Lith. ąbūnas, SC ąbr, R ąbr but SC ąbrą (from *ąbrą); Lith. ąvūna, SC ąvūn but SC ąvūn (from *ąvūn); Lith. verbal root ąbr- but SC ąbr, ąbrą 'snow-storm'; Lith. bažys, SC bažys, R bažys 'beard' (acc.) but SC bažý (from *bežý); and R bažys 'beard.' We might attempt to explain this by assuming a Slavic rule which changed circumflex to acute in non-initial position. This would almost work. However, the comparative suffix -j fixes the accent of a mobile adjective in prepositional position, e.g., R dežé, dežé (dežé). On a monosyllabic stem, this accent is fixed in initial position, and the intonation is acute: SC drąga, drąźe, mítulo, mítulo. We then have the acute occurring freely on original short diphthongs and the circumflex occurring on original long vowels whenever these long vowels are in initial position in an unaccented word. This means that the circumflex is not the simple reflex of accent on an original short diphthong. It is in Slavic merely the intonation of an accented long syllable which has had its accent assigned by the initial accent rule. Any other accent on a long syllable is acute. The relationship between quantity and intonation is only indirect. In nonderived words, length in a stem vowel fixed the accent, while stems with short vowels were unaccented. Thus in nonderived words length shows up as acute intonation, while short diphthongs have the circumflex. Since most of the cognates are of this type, and since there has been a tendency to ignore derivationally conditioned changes, it has long been thought that Slavic and Baltic had basically the same system. However, if we look at the Slavic system as a whole, taking derived words into consideration, we find that, whatever the historical source of intonation, the system had been reorganized so that morphophonemic accent on any long vowel determined acute intonation, while only unaccented words took the circumflex.

It is generally assumed that the system reconstructed for Baltic is the original one. Stange attributed to analogy the shift of mobile acute to circumflex in Slavic. Illis-Svírylo (p. 156) annotates the change with the loss of acute intonation in unaccented position in the mobile paradigm. There are problems with this explanation which are independent of the question as to whether acute intonation ever existed in unaccented position. Jakobson argues that Slavic had a pitch accent and that the pitch contour or the word rose toward that accent. He uses this to explain the fact that late common Slavic retraction of accent produced rising intonation—the neumce. It is therefore hard to justify calling the intonation on the /s/ in *máusawcircumflex. It should be phonetically rising. The other change, from circumflex to acute in derivatives, in comparative, and in inflectional endings such as that of the imperative, is generally attributed to special metatony. These explanations are lacking in generality and do not connect one change with the other. They do not adequately express the fact that the Slavic system was reorganized so that intonation was no longer based on quantity.

I would like to suggest that we can account for the differences in the two languages by postulating differences in rule ordering. There are three relevant rules:

1. Assign initial accent in unaccented words;
2. Make accented long syllables rising;
3. Neutralize length distinctions in diphthongs.

The neutralization of length in diphthongs was a complex process. Phenetically it involved the shortening of long vowels before tautosyllabic sonora, but the phonological consequences were more far-reaching. Kuryłowicz (p. 112) argues that short diphthongs did not originally take rising intonation because the sonorant could not take intonation. For accentual purposes, a short diphthong was a one-mora syllable. This amounts to saying that accentually diphthongs were not diphthongs at all, but sequences of vowel plus nonsyllabic sonorant. With the shortening, or perhaps before the shortening, the intonation of the long vowel spread to the sonorant. This created an opposition between rising and falling (nonrising) intonation on diphthongs and is normally described as the phonemicization of intonation in Balto-Slavic. With sonorants accentually relevant, all diphthongs were interpreted as two-mora syllables. It is crucial to this analysis that after this change originally short diphthongs were long syllables which could be subject to Rule 2. For convenience I will refer to the whole process as one rule: (3) Make all diphthongs binomic.

To account for the facts of Baltic, we apply the rules in the order: 1, 2, 3. Rule 2, which assigns rising intonation, applies after the initial accent rule, so that long syllables are rising even under absolute initial accent. The fact that length distinctions are neutralized after the assignment of rising intonation preserves the underlying length distinction as a surface difference in intonation. That is, underlying short diphthongs show up as long but nonrising syllables. Examples follow. Accepted long syllable: SC rągs → RULE 1 → no change → RULE 2 → rągs → RULE 3 → no change, Lith. rągs 'crow' (acc.). Accepted short syllable: rągs → RULE 1 → no change → RULE 2 → no change → RULE 3 → rągs, Lith. rągs 'hand.'
We can still preserve Kiparsky's thesis if we assume the specific order:
1. Make accented long syllables rising;
2. Assign initial accent in unaccented words;
3. Make all diphthongs bimoric.
We must, however, assume that before the chronological neutralization of length distinctions, the rule assigning initial accent had been reordered in Balte, so that the underlying long diphthongs were rising at the time of the neutralization. This works for Balte and is not logically contradictory for Slavic, but it is probably unsatisfactory to most Slavists. The chronological application of first the rule making accented long syllables rising, then assigning initial accent would imply the existence of a rising-nonrising opposition in intonation prior to the neutralization of length in diphthongs. It is generally assumed that the opposition in intonation was a phonetic accident resulting from the neutralization in length. If we accept Kurylovič's analysis, this situation could not have occurred. He arrives at initial accent by a series of retractions which automatically made long vowels rising. I do not find this very compelling." Others suggest that Indo-European had accentual alternations between initial and final position. The question of actual chronological order would then depend on whether or not Indo-European had rising intonation on long vowels. My objection to the existence in Balto-Slavic of an order which would make Kiparsky's thesis correct is based on a strong feeling that in a language which automatically has rising intonation on long vowels it would take more than just a new accent-assignment rule to produce accented long vowels which were not rising. It would take something like what happened in the process of the neutralization of length in diphthongs. Actually, this process did not produce new nonrising long vowels; it produced new diphthongs with rising intonation from sequences of long rising vowel plus sonorant. This produced an opposition in tone which spread to nondiphthongal long vowels.

Let us assume that the original order was that of Balte:
1. Assign initial accent in unaccented words;
2. Make long accented syllables rising;
3. Make all diphthongs bimoric.
We must then assume that Slavic made two innovations. One innovation was to put the rule assigning initial accent after the rule assigning rising intonation. This had the effect of treating all unaccented stems the same. A second innovation put the neutralization rule before the rule assigning intonation. This had the effect of treating all accented stems the same. Thus one innovation neutralized distinctions in unaccented stems, another did the same in accented stems. The cumulative effect was that all diphthongs, indeed all long syllables, were treated alike. The two innovations may justifiably be considered part of a single process, a process which
might logically have been triggered by the neutralization of length in diphthongs. Once the neutralization of length in diphthongs had undergone the dependence of intonation on quantity, Slavic moved in the direction of making intonation predictable from the type of accentual

Let us go back to the original state, when in non-derived words there was a three-way correlation of length, accent, and intonation: long stem vowel — accented stem — rising intonation, short stem vowel — unaccented stem — short (non-rising) intonation, long diphthong — accented stem — rising intonation, short diphthong — unaccented stem — non-rising intonation. At this stage both the morphophonemic accent and the intonation were predictable from the quantity of the stem vowel. After the neutralization of length in diphthongs we got: long stem vowel — accented stem — rising intonation, short stem vowel — unaccented stem — short non-rising, but diphthongal stem either — accented stem — rising intonation or — unaccented stem — non-rising intonation. The three-way correlation has been destroyed. The only valid intonational correlation for all non-derived stems is: accented stem — rising intonation, unaccented stem — non-rising intonation. The Slavic changes amount to a spread of this correlation so that it applied to all stems, derived as well as non-derived. The effect of this change can be reflected as a change in the order of the rules, but the motivation cannot be found in natural tendencies in rule ordering.

Let us now return to Baltic. If, as I have asserted, the neutralization of length in diphthongs undermined the relationship between quantity and intonation in Slavic, it is reasonable to expect that it would have had some effect on Baltic. If we look at Lithuanian we find that indeed, as in Slavic, the relation between quantity and intonation has been totally destroyed. Lithuanian, however, has developed in the opposite direction. Whereas Slavic rearranged the system so as to make intonation predictable from morphophonemic accent rather than from original quantity, Lithuanian rearranged its system so that clearly intonation became an underlying feature. Originally only non-rLane intonation could occur on long monosyllables in stems. In modern Lithuanian we find oppositions in intonation on all long vowels. The sources of circumflex intonation on long vowels are not clearly understood. Some circumflex long vowels are the result of accent retraction such as that which produced *-anes from *-ânies. Others have come from borrowings. Whatever the sources of circumflex long vowels, their existence rendered intonation in Lithuanian unpredictable and therefore a part of the underlying system.

The differences between Slavic and Lithuanian are significant. In Slavic the accent underwent a major change without losing its ability to create consistent patterns of intonation, whereas in Lithuanian the accent underwent a minor change with a loss of consistent patterns of intonation. The Slavic accent became predictable from morphophonemic accent, whereas the Lithuanian accent became predictable from original quantity. This difference is significant because it suggests that the Slavic accent is more closely related to the accent of the Indo-European languages, whereas the Lithuanian accent is more closely related to the accent of the Baltic languages.

Baltic and Slavic Nominal Accentuation

NOTES


2 V. K. Illis-Svielys, *Joninės abejonės ir šaltinis* (M.: AN SSR, 1935), 137-61, accounts for the same facts by proposing that Balto-Slavic (and Indo-European) nouns with stem accent on short vowels became accented on the theme vowel (eousmic) in Slavic. The crucial difference between Illis-Svielys and Kuryłowicz is that Illis-Svielys has no way of accounting for Slavic stems with long vowels and orsonomic accent. Both stems exist: *dvijukas, male, prielieti, and nouns with the suffixes *āk-, *ēk-, *āk-, and *āk- also and *ak-. In Lithuanian we find cognates for these suffixes: *ak-, *ek-, *ak-, *ak-, *ek-, *ek-. Since these suffixes contain long vowels, we would expect them to have acute intonation in Baltic. Christian S. Lang, *Vergleichende Grammatik der baltischen Sprachen* (Oulu: Universitetsforlaget, 1916), 486, explains both the difference in the position of the accent and the metanalysis by assuming that these forms at one time had theme vowel accent, that this accent has been retracted, and that the retracted accent consistently yields circumflex intonation, even on originally long vowels. It seems that the evidence is on the side of Kuryłowicz.


4 See examples of intonation in the mobile paradigm are either listed as accented or have accent assigned by a rule. But the intonation pattern on de

5 Bill J. Dowder, "Accent in the Lithuanian Nom Declension," *Balto-Litaukietiškas,

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In a talk at the 1968 12A Linguistic Institute, Eric R. Denny proposed a similar analysis for Serbo-Croat, except that in unaccented words the accent was assigned in stem-final rather than stem-initial position.

It does not matter whether we consider the raising intonation to be the result of a spontaneous change in a long vowel, or as in Kuryłowicz, 111, the result of an accent retraction onto a long vowel. The levelling which Kuryłowicz proposes accounts for the generalization of a rule which makes all accented long syllables rising in non-final position. There are problems in final position which no one has adequately solved. I will ignore final position, since this paper deals with intonation on stems. I will also ignore the possibility that there might have been intonation on unaccented syllables.

SC words (from “œeal,” cognate with Lith. eitut “eate”), is ambiguous. It is attested only in the plural, and the deaccentual accent in a second plural can indicate either oratory or mobile accent. Only SB words, Lith. rašti clearly indicates circumflex mobile accent, but here we may assume that word was an old oratory which shifted to mobile accent after it was no longer considered as a derivative. Kuryłowicz (p. 130) suggests that the lack of mobility in Lith. rašti is secondary.

This suggestion comes from Edward Stackhouse. This is conceivable only if Stang is wrong in assuming that the Slavic accent is the result of retractions from nominal circumflexes. All of the porticated circumflexes vowels are theme vowels and are set aside for immediate concern for this paper. I believe that these were not inherited circumflex intonations but, if they existed at all, were the result of secondarily reintroduced length. The acute was therefore shortened and had rising raising intonation. I hope to deal with this problem in a later publication.


For example, in Kuryłowicz, 160, and in Stang, Slavonic Accentuation, 42-43.


Kuryłowicz (p. 131) postulates a phonetic retraction from short/initial syllables which applied only in “unmotivated” words. Edward Stackhouse has suggested (personal communication) that rather than trying to arrive at the Slavic situation by a set of phonetic accent retractions and advancement rules, we postulate a straightforward accentual reorganization, with accent falling on the second long syllable in the word. Derivational processes could delete the accent from long-vowel stems and fix the accent on short stems. I would amend Stackhouse’s suggestion to say the final long vowel in the stem, excluding the theme vowel. From the “œeal” clearly show that long vowels in endings did not attract the accent in Slavic (Stang, Slavonic Accentuation, 17). The fact that the rule applies only to stems makes all the more powerful the argument for accentual reorganization as opposed to phonetic change.


There can still be a rule which has the accent on a long monophthongal stem, but it is the fixed accent rather than the quantity directly which determines the intonation.

Kipnisky himself presents an example of a change in order which cannot be explained in terms of marked vs. unmarked rule order. In “How Abstract is phonology” (mimeographed, MT 7, 1958, Indiana Univ. Linguistics Club) he discusses Finnish dialects which have a vowel harmony rule and a rule which diphthongizes /ai/ to /oi/ and /au/ to /ou/. Dialects have both possible orders. His example for the original order is: jafras — vowel harmony — jafras — diphthongization — jafras — vowel harmony — jafras. Since the diphthongization rule applies equally to both the input and the output of the harmony rule, marked order is impossible. Both the original and the innovating order are unmarked. The change can only be explained by analogical levelling, based on back-vowel stems which always have /ai/.


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