

## 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 (nonrising) intonation termed circumflex. In modern Lithuanian the original circumflex is now a rising accent, as in *vařnas* 'raven,' while the original acute is a falling accent, as in *vārna* 'crow.' In Slavic, which went through a stage where neither accent was rising, original intonation was recoded 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., *vrān* 'raven' (long falling accent), while the acute was shortened, e.g., *vrāna* (short falling accent). In Russian the original acute accent is reflected in "polnoglasié" groups as stress on the second vowel (*voróna* 'crow'), and the original circumflex is reflected as stress on the first (*vóron* '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 (oxytonic 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 Kuryłowicz suggests that at one time Baltic also had theme-vowel accent but that the accent in this class was retracted one syllable.<sup>1</sup> As evidence he cites cognate suffixes which have suffixal accent in Lithuanian but had theme-vowel accent in Slavic: Lith. *-ik-as*, *-ik-as*, *-im-as*, *-at-à* (from *\*-at-a*); Slavic *\*-ьсѣ*, *\*-ькѣ*, *\*-ьмѣ*, *\*-отѣ*. Exact cognates are Lith. *siuvikas*, R *švec* 'tailor'; Lith. *piesimas* 'writing,' R *pis'mó* 'letter'; Lith. *nuogatà*, R *nagotà* 'nakedness.'<sup>2</sup>

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 desinence. Following Roman Jakobson,<sup>3</sup> 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.<sup>4</sup> 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 *rūku* but *zà ruku*, *gólovu* but *ná golovu*. 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.<sup>5</sup> The rule differs from the Slavic rule only in that it ignores prepositions. Except for this, the morphophonemics of accent assignment in Baltic and Slavic is virtually identical.<sup>6</sup>

The specific topic of this study is the distribution of acute and circumflex intonation 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.<sup>7</sup> 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 in turn 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. There is a small group of stems which is acute but mobile in Baltic and which has Slavic cognates which are also mobile, although circumflex. Examples are Lith. *galva* 'head' (acc.), *sūny* 'son,' *rúoža* 'strip,' *vėida* 'face,' *rėža* 'cut'; SC *glàvu* 'head,' *sìn* 'son,' *râz* 'moldboard,' *víd* 'sight,' *rêz* 'cut.' Several of the nouns in this group are clearly derived from verbs: *víd* is from *vīdėti* 'see'; *râz* and *rêz* are from *rêzati* 'cut.' In (Slavic there was a general pattern of mobile accent for derivatives of this type; e.g., SC *sād* ~ *sěsti*, *gléd* ~ *glėdati*, *mâz* ~ *măzati*. Kuryłowicz (p. 151) postulates mobility also for Baltic derivatives of this type (e.g., Lithuanian mobile *dárbas* 'work' from *dĩrbti* '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 oxytona with retracted accent in Lithuanian, there are essentially no Slavic cognates for Lithuanian words with fixed accent and circumflex intonation.<sup>8</sup> Baltic and Slavic are too close lexically for this lack of cognates to be accidental. If Kuryłowicz's postulation of Balto-Slavic oxytona 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. *gārdas*, SC *grād*, R *górod* but SC *Beògrad* (from \**Beogrād*) and R *ogoród*; Lith. *mīrti* but SC *smřt* (from \**sumřrti*); Lith. verbal root *meřt-* but SC *smřta* 'snow-storm'; Lith. *bařzda*, SC *brādu*, R *bórodu* 'beard' (acc.) but SC *belòbrad* (from \**belobrād*) and R *beloboródyj*. We might attempt to explain this by assuming a Slavic rule which changed circumflex to acute in non-initial position.<sup>9</sup> This would almost work. However, the comparative suffix *-j-* fixes the accent of a mobile adjective in presuffixal position, e.g., R *děševu*, *děševle* (\**děševje*). On a monosyllabic stem, this accent is fixed in initial position, and the intonation is acute: SC *drāgo*, *drāže*; *mlād*, *mlādi*. 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. Stang<sup>10</sup> attributed to analogy the shift of mobile acutes to circumflex in Slavic. Illič-Svityč (p. 156) associates 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 posi-

tion. 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 neoacute. It is therefore hard to justify calling the intonation on the /ū/ in \**sūnumū* circumflex. It should be phonetically rising. The other change, from circumflex to acute in derivatives, in comparatives, and in inflectional endings such as that of the imperative, is generally attributed to special metatony.<sup>11</sup> 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. Phonetically it involved the shortening of long vowels before tautosyllabic sonorants; 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 bimoric.

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. Accented long syllable: *vārnā* → RULE 1 → no change → RULE 2 → *vārnā* → RULE 3 → no change, Lith. *várnā* 'crow' (acc.). Accented short syllable: *rānkā* → RULE 1 → no change → RULE 2 → no change → RULE 3 → *rānkā*, Lith. *rañkā* 'hand'

(acc.). Unaccented long syllable:  $\acute{s}\acute{u}n\acute{y} \rightarrow \text{RULE 1} \rightarrow \acute{s}\acute{u}n\acute{y} \rightarrow \text{RULE 2} \rightarrow \acute{s}\acute{u}n\acute{y} \rightarrow \text{RULE 3} \rightarrow \text{no change}$ , Lith.  $\acute{s}\acute{u}n\acute{y}$  'son' (acc.). Unaccented short syllable:  $\acute{v}a\acute{r}n\acute{a}s \rightarrow \text{RULE 1} \rightarrow \acute{v}a\acute{r}n\acute{a}s \rightarrow \text{RULE 2} \rightarrow \text{no change} \rightarrow \text{RULE 3} \rightarrow \acute{v}a\acute{r}n\acute{a}s$ , Lith.  $\acute{v}a\acute{r}n\acute{a}s$  'raven.'

In Slavic the order is just the opposite—3, 2, 1. Initial accent is assigned in unaccented words after the rule which makes accented vowels rising. Therefore no vowel with absolute-initial accent can have rising intonation. This makes all mobile stems circumflex. Length distinctions are neutralized before long vowels become rising, and thus all accented long vowels are treated the same, regardless of their origin. This of course makes all accented stems acute. Here are some examples. Accented long syllable:  $\acute{v}\acute{o}r\acute{n}\acute{o} \rightarrow \text{RULE 3} \rightarrow \text{no change} \rightarrow \text{RULE 2} \rightarrow \acute{v}\acute{o}r\acute{n}\acute{o} \rightarrow \text{RULE 1} \rightarrow \text{no change}$ , SC  $\acute{v}r\grave{a}nu$ . Accented short syllable:  $\acute{s}um\acute{r}ti \rightarrow \text{RULE 3} \rightarrow \acute{s}um\acute{r}ti \rightarrow \text{RULE 2} \rightarrow \acute{s}um\acute{r}ti \rightarrow \text{RULE 1} \rightarrow \text{no change}$ , SC  $\acute{s}m\acute{r}t$ . Unaccented long syllable:  $\acute{s}\acute{u}n\acute{u} \rightarrow \text{RULE 3} \rightarrow \text{no change} \rightarrow \text{RULE 2} \rightarrow \text{no change} \rightarrow \text{RULE 1} \rightarrow \acute{s}\acute{u}n\acute{u}$ , SC  $\acute{s}\acute{in}$ . Unaccented short syllable:  $\acute{v}or\acute{n}u \rightarrow \text{RULE 3} \rightarrow \acute{v}\acute{o}r\acute{n}u \rightarrow \text{RULE 2} \rightarrow \text{no change} \rightarrow \text{RULE 1} \rightarrow \acute{v}\acute{o}r\acute{n}u$ , SC  $\acute{v}r\grave{a}n$ .

Paul Kiparsky has attempted to define limitations on possible changes in rule ordering.<sup>12</sup> He claims that all changes in rule ordering are in some sense simplifications. He terms some types of order marked and others unmarked and claims that the only possible changes are from marked to unmarked rule order. One example of unmarked order is what he calls feeding order. If there are two rules, (1)  $A \rightarrow B$  and (2)  $B \rightarrow C$ , then 1—2 is feeding order, since the output of (1) provides the input of (2). This order is unmarked, whereas the opposite order is marked. Order 2—1 can change to 1—2, but 1—2 could never change to 2—1. Marked order then has to reflect chronological order.

In the case of the Baltic and Slavic rules under discussion, both Rule 1, which creates accented syllables, and Rule 3, which creates long syllables, can feed Rule 2, which makes long accented syllables rising. In Slavic Rule 1 is in marked order with respect to 2, and in Baltic Rule 3 is in marked order with 2. If marked order reflects chronological order, and if there was original Balto-Slavic accentual unity, then Rule 2 was originally in marked order with respect to both Rules 1 and 3. It therefore was chronologically the first rule. There is, however, a problem. If the rule marking accented syllables rising applied before the rule accenting the initial syllable, then at the time of the neutralization of length distinctions in diphthongs, originally long diphthongs in mobile paradigms would not have rising intonation, and the neutralization would have resulted in the irretrievable loss of information about Indo-European length. Baltic does preserve this information, however, so the rules never applied in this order.

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 Baltic, so that the underlying long diphthongs *were* rising at the time of the neutralization. This works for Baltic 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 Kuryłowicz'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.<sup>13</sup> Others suggest that Indo-European had accentual alternations between initial and final position.<sup>14</sup> 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 Baltic:

- 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 undermined the dependence of intonation on quantity, Slavic moved in the direction of making intonation predictable from the type of accentual paradigm.

Let us go back to the original state, when in nonderived words there was a three-way correlation of length, accent, and intonation: long stem vowel  $\sim$  accented stem  $\sim$  rising intonation, short stem vowel  $\sim$  unaccented stem  $\sim$  short (nonrising) intonation, long diphthong  $\sim$  accented stem  $\sim$  rising intonation, short diphthong  $\sim$  unaccented stem  $\sim$  nonrising 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 get: long stem vowel  $\sim$  accented stem  $\sim$  rising intonation, short stem vowel  $\sim$  unaccented stem  $\sim$  short nonrising, BUT diphthongal stem EITHER  $\sim$  accented stem  $\sim$  rising intonation OR  $\sim$  unaccented stem  $\sim$  nonrising intonation. The three-way correlation has been destroyed. The only valid intonational correlation for all nonderived stems is:<sup>16</sup> accented stem  $\sim$  rising intonation, unaccented stem  $\sim$  non-rising intonation. The Slavic changes amount to a spread of this correlation so that it applied to all stems, derived as well as nonderived. The effect of this change can be reflected as a change in the order of the rules, but its motivation cannot be found in natural tendencies in rule reordering.<sup>16</sup>

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 acute intonation could occur on long monophthongs 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 *-ōkas* from *\*-okās*. Others have come from borrowing. Whatever the sources of circumflex long vowels, their existence rendered intonation in Lithuanian unpredictable and therefore a part of the underlying system.

I have elsewhere stated that even from the point of view of generative phonology we cannot adequately explain historical change without assuming that when a feature becomes phonemic it changes status.<sup>17</sup> Phonemics

is basically an indication of what is unpredictable in the surface phonology. Whenever a feature becomes unpredictable in the surface, it becomes a potential underlying feature. It may become an underlying feature by leveling or by wholesale borrowing of words where the feature exists but cannot be predicted. In Lithuanian we have a clear example of a feature progressing from phonemic to morphophonemic status, but we have no proof as to any causal relationship. The fact that the neutralization in length created an opposition in intonation is crucial for both Slavic and Lithuanian. If the shortening of long vowels in diphthongs had resulted in nonrising intonation, the system would probably have been stable. Post-vocalic sonorants would still have been treated as unable to bear intonation, and the system would have retained automatic rising intonation on long vowels and nonrising intonation on diphthongs. As it was, both languages, taking different paths, developed in such a way as to eliminate the original ties between intonation and quantity.

## NOTES

- 1 Jerzy Kuryłowicz, *Indogermanische grammatik*, II (Heidelberg: Carl Winter, 1968), 151. Kuryłowicz's earlier *L'Accentuation des langues indo-européennes*, 2nd ed. (Wrocław: Ossolineum, 1958) could also be cited. For convenience I will consistently cite his most recent work.
- 2 V. M. Illič-Svityč, *Imennaja akcentuacija v baltijskom i slavjanskom* (M.: AN SSSR, 1963), 157-61, 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 (oxytonic) in Slavic. The crucial difference between Illič-Svityč and Kuryłowicz is that Illič-Svityč has no way of accounting for Slavic stems with long vowels and oxytonic accent. Such stems exist: *\*ključb*, *\*bělb*, *grězb*, and nouns with the suffixes *-akb*, *-jaktb*, *-ačb*, and probably *-ikb* and *-nikb*. In Lithuanian we find cognates for these suffixes: *-ōkas*, *-iōkas*, *-ōkias*, *-įkias*, *-inįkias*. Since these suffixes contain long vowels, we would expect them to have acute intonation in Baltic. Christian S. Stang, *Vergleichende Grammatik der baltischen Sprachen* (Oslo: Universitetsforlaget, 1966), 166, explains both the difference in the position of the accent and the metatony 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 then that the evidence is on the side of Kuryłowicz.
- 3 "Opyt fonolgičeskogo podxoda k istoričeskim voprosam slavjanskoj akcentologii," *American Contributions to the Fifth International Congress of Slavists* (The Hague: Mouton, 1963), 153-78.
- 4 Desinences which take the accent in the mobile paradigm are either listed as accented or have accent assigned by a rule. But the intonation pattern on desinences is a separate problem.
- 5 Bill J. Darden, "Accent in the Lithuanian Noun Declension," *Baltic Linguistics*,

- ed. Thomas F. Magner and William R. Schmalstieg (University Park: Pennsylvania State Univ. Press, 1970), 47-52.
- 6 In a talk at the 1968 LSA Linguistic Institute, Eric P. Hamp proposed a similar analysis for Sanscrit, except that in unaccented words the accent was assigned in stem-final rather than stem-initial position.
  - 7 It does not matter whether we consider the rising intonation to be the result of a spontaneous change in a long vowel, or as in Kuryłowicz, 113, the result of an accent retraction onto a long vowel. The levelings which Kuryłowicz postulates amount to 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.
  - 8 SC *vráta* (from \**vratā*), cognate with Lith. *vařtai* 'gate,' is ambiguous. It is attested only in the plural, and the desinential accent in a neuter plural can indicate either oxytonic or mobile accent. Only SC *rūku*, Lith. *raņka* clearly indicates circumflex mobile accent, but here we may assume that *rūka* was an old oxytone which shifted to mobile accent after it was no longer conceived as a derivative. Kuryłowicz (p. 154) suggests that the lack of mobility in Lith. *ranka* is secondary.
  - 9 This suggestion comes from Edward Stankiewicz. This is conceivable only if Stang is wrong in assuming that the Slavic neoacute is the result of retractions from nonfinal circumflexes. All of the postulated circumflex vowels are theme vowels and are not of 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 after the acute had been shortened and had lost its rising intonation. I hope to deal with this problem in a later publication.
  - 10 Christian S. Stang, *Slavonic Accentuation* (Oslo: Universitetsforlaget, 1957), 9.
  - 11 For example, in Kuryłowicz, 160, and in Stang, *Slavonic Accentuation*, 42-43.
  - 12 "Linguistic Universals and Linguistic Change," *Universals in Linguistic Theory*, ed. Emmon Bach and Robert T. Harms (New York: Holt Rinehart & Winston, 1968), 170-202.
  - 13 Kuryłowicz (p. 113) postulates a phonetic retraction from short internal syllables which applied only in "unmotivated" words. Edward Stankiewicz has suggested (personal communication) that rather than trying to arrive at the Slavic situation by a set of phonetic accent retraction and advancement rules, we postulate a straightforward accentual reorganization, with accent falling on the first 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 Stankiewicz's suggestion to say the first long vowel in the *stem*, excluding the theme vowel. Forms like *ōba* (from \**obō*) 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.
  - 14 Antoine Meillet, *Introduction à l'étude comparative des langues indo-européennes* (Paris, 1934), 316; Stang, *Slavonic Accentuation*, 175.
  - 15 There can still be a rule which fixes the accent on a long monophthongal stem, but it is the fixed accent rather than the quantity directly which determines the intonation.
  - 16 Kiparsky 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, MIT, 1968; Indiana Univ. Linguistics Club) he discusses Finnish dialects which have a vowel harmony rule and a rule which diphthongizes /aa/ to /oa/ and /ää/ to /eä/. Dialects have both possible orders. His example for the original order is: *jätt-aa* → vowel harmony → *jätt-ää* → diphthongization → *jätt-eä*. Innovating dialects have: *jätt-aa* → diphthongization → *jätt-oa* → vowel harmony → *jätt-öä*. 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 as analogical leveling, based on back-vowel stems which always have /-oa/.
- 17 Bill J. Darden, "Diachronic Evidence for Phonemics," *Papers from the Seventh Regional Meeting of the Chicago Linguistic Society* (Chicago: Chicago Linguistic Society, 1971), 323-31.

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