

*A Volume to Honor William Edgerton on His Seventy-Fifth Birthday*

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## ON THE STRUCTURAL MOTIVATION FOR DYBO'S LAW

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## I. Introduction.

The Common Slavic accentual process that alternatively bears the name Illič-Svityč's Law (1963:160-1) or Dybo's Law (1962:7) assumes that Early Common Slavic, like Balto-Slavic, had two basic types of accentual patterns, immobile stem-stress and mobile stress and, further, specifies that a progressive stress shift to the following syllable occurred whenever two conditions were met: immobile stem-stress in the accentual paradigm and a type of syllable other than acute in the position of stress. However, Late Common Slavic and the modern Slavic languages give clear evidence of three types of accentual patterns, rather than two, as presented by Stang (1957:56 and Mathiasen 1983:108). They include two types of immobility, either with stress on the root syllable (paradigm A, e.g. *bāba*) or the first syllable following the root (paradigm B, e.g. *osa*); and mobile stress (paradigm C, *roka--rōko*).<sup>1</sup> Thus, the Illič-Svityč and Dybo Laws derive the two well-attested varieties of immobility (root immobility and post-root immobility) from a single proto-paradigm of root immobility, in which acute roots retained their pattern, while non-acute roots shifted accent forward, thereby acquiring post-root immobility. The picture is complicated by the fact that in certain positions (e.g. when the forward shifted stress occurred on a short high vowel known as a weak *jer*, as in the gen. pl. *osĭ*) this post-root immobility was later retracted back to the root (reassuming its proto-ictus position, but reappearing as the stress type known as neo-acute, due to reflexes in certain Slavic languages which differ from the original acute).<sup>2</sup>

<sup>1</sup>The diacritic *ˇ* is used to represent vowels under the old acute stem-stress, which belong to accentual paradigm (henceforth AP) A; finally stressed short vowels are represented with the ictus symbol *˘*, long and short neo-acute are represented by the long and short rising symbols *ˊ* and *ˋ*; the AP C types of initial stress, long falling and short falling, are symbolized as *ˊ* and *ˋ*, respectively. Stress on a particular mora is symbolized as *ˆ*.

<sup>2</sup>For example, in Polish and Slovak a long vowel under the neo-acute maintains a length reflex (Polish *mąk* 'types of flour,' gen. pl.), while an original acute displays a reflex of shortening (Polish *męk* 'torment,' gen. pl.). See Jakobson (1963) and Feldstein (1975) for further details.

Both Illič-Svityč and Dybo felt that the progressive stress shift was a phonetic, rather than morphological change, but they differed considerably in their further opinions on the subject. Illič-Svityč established the process only for the noun, but still felt that it was phonetic, rather than morphological, since only nouns with non-acute roots were affected (Illič-Svityč 1963:160 and Skljarenko 1985:55-6). He indicated that a morphological process would have had to affect all nouns, regardless of root type. This declaration that the stress shift was phonetic, rather than morphological, immediately raised an important and somewhat difficult question that had to be answered. Why were word-forms with non-acute roots in the immobile AP subject to stress shift, while word-forms with similarly non-acute roots in the mobile AP (i.e. AP C) not subject to stress shift? Specifically, why was a word such as \*osq changed to \*osq̄, while a word such as \*vodq experienced no accent shift at all? Illič-Svityč resorted to the only obvious type of differentiation between these stress types, use after a preposition, where osq maintains its stress, but mobile words such as vodq experience a retraction to the preposition. This would mean that the Illič-Svityč stress shift would have arisen phonetically only in prepositional usage, and would have had to spread by analogy to all other instances, such as nominative case and other prepositionless usage. This argument considerably weakened the case for the stress shift. Dybo (1962:8), like Illič-Svityč, strongly defended the notion that the progressive stress shift was based on a phonetic and not a morphological environment. He based this on evidence that the shift was not limited to nouns, as Illič-Svityč had implied, but that it also affected verbs. Thus, according to Dybo, an accentual process that equally affects both verbs and nouns had to be viewed as phonetic.<sup>3</sup> However, Dybo did not resort to Illič-Svityč' prepositional explanation to explain why only immobiles, and not mobiles,

shifted their stress forward by this rule. Instead, he proposed that the immobile non-acute (or circumflex) stress was "phonetically different from the circumflex of the mobile paradigm" (Dybo 1962:8). This required positing a third type of Common Slavic intonational type in addition to the generally recognized acute and circumflex, which Dybo described as "the analog of the Latvian broken tone."<sup>4</sup> Additional work by Dybo (e.g. 1981:5) has suggested that even the acute root intonation occurred in two phonetic varieties, depending on whether it was part of a mobile or immobile paradigm, which leads to the conclusion that there were two independent distinctive features of tone in Dybo's conception, one linked to paradigmatic mobility or immobility, and the other to the rising or falling nature of the syllable as inherited from such segmental properties as an original laryngeal or long quantity. However, Dybo's later work has been much less specific about the precise phonetic difference that existed between recessive (i.e. mobile AP) root-stress and non-recessive (immobile AP) root-stress.

Although Dybo's Law<sup>5</sup> has been accepted by a number of prominent accentologists, others have expressed the view that it is lacking in structural "motivation" (e.g. Mathiassen 1983:109 and Johnson 1980:484). This paper will address the question of this structural motivation in the light of the inventory of stress paradigms of Common Slavic. We will see that the use of the mora, i.e. an interpretation of short vowels as units one mora in length

(V̄) and long vowels as two-mora units (V̄V̄), can deepen our understanding of the progressive accent shift. Kiparsky (1973) demonstrated innovative uses for the mora concept<sup>6</sup> in his reinterpretation of traditional laws of

<sup>3</sup>Unfortunately, the reasoning as to what can constitute a possible morphological stress change is very variable, even if one compares the work of closely connected accentologists such as Illič-Svityč and Dybo. Thus, Illič-Svityč (1963:160) felt that even if the stress shift were restricted to the noun, it could not have been morphological, since only non-acute root syllables were affected. Dybo (1962:4), on the other hand, expressed the view "if [the process] had encompassed not only nouns, but also other parts of the Protoslav system, one could assume its phonetic nature, but otherwise one would have to look for the explanation in certain morphological processes." In other words, for Illič-Svityč the shift's restriction to one part-of-speech was no proof of its analogical nature, but for Dybo such a restriction would have been sufficient grounds for assuming analogy.

<sup>4</sup>Curiously, Kortlandt has also resorted to a Slavic analog of the Latvian broken tone in his accentological reconstruction, but he assigns it to the acute (1988:301-2), rather than the circumflex, which is the opposite of what Dybo assumes. The major point of agreement for Dybo and Kortlandt, in contrast to Illič-Svityč, is that the "law requires the existence of a tonal opposition on non-acute stressed initial syllables at a stage which is anterior to the late Proto-Slavic retractions of stress" (Kortlandt 1978:74).

<sup>5</sup>Since Dybo's formulation of the stress shift represents a later and more comprehensive statement, we shall henceforth refer to it by the term Dybo's Law.

<sup>6</sup>Dybo himself does not use the mora in the interpretation of the stress shift that bears his name. Dybo (1981:4) defines the stress shift as movement to the next syllable, rather than the next mora, saying that "in AP B a shift of ictus to the next syllable apparently occurred." Kiparsky (1973:795) made full use of the mora as an ictus position, since he felt that "contour accents...are assigned by the same rule, operating within the moras of a syllable, that

accentology. Although he successfully related Balto-Slavic mobility to a marginal accentual paradigm, and linked the Lithuanian de Saussure Law to a type of central mobility (1973:824), he did not discuss the effects of the Dybo Law on the Slavic prosodic pattern. Skljarenko (1985) has offered the major interpretation of the Dybo Law based on the mora concept but, in spite of his use of the mora, he does not show the relation of Slavic ictus to morpheme boundaries which resulted from the progressive stress shift, a point that represents one of the objectives of this paper. In addition, Skljarenko's work is not explicit enough about the relative chronology of the quantitative change of diphthongs and the progressive stress shift which constituted the Dybo Law. This paper will indicate that in terms of relative chronology, the Dybo Law must be placed before the neutralization of diphthongal quantity. This chronology will allow us to suggest that the Dybo Law represented a generalization of second mora stress in the immobile accentual paradigms of Common Slavic. However, this conclusion ultimately depends upon whether instances of circumflex length in the immobile accentual paradigms are Balto-Slavic or innovations of Common Slavic, a point that will be examined based on Nikolaev's very recent work in Balto-Slavic accentology (1986).

## II. Assumptions on the prosodic system of Early Common Slavic.

Let us state some assumptions about the relationship between quantity and pitch in Early Common Slavic, at a point before the Dybo Law can be assumed to have occurred. Since this law gave rise to the AP B of Late Common Slavic, this will be the focus of our attention. As stated by Dybo (1981:19), "the overwhelming majority of AP B stems had roots which were original shorts or short diphthongs and sonants." Garde (1976:300) has indicated that although long circumflex vowels did exist in Balto-Slavic and Early Common Slavic, they were primarily found in desinences which resulted from contraction. As to non-desinential syllables, Garde states that "in all the roots and suffixes of the Balto-Slavic period, the long monophthongs  $\bar{I}$ ,  $\bar{E}$ ,  $\bar{I}$ ,  $\bar{O}$ ,  $\bar{U}$  always have acute tone; only the diphthongs can have either acute tone or circumflex tone. Of course, the dual nature of diphthongal tone results from the fact that Slavic inherited both long and short diphthongs, although at a certain point in Common Slavic this quantitative opposition of diphthongs was lost. If Garde is right that the long non-desinential vowels inherited from Indo-European invariably had acute in

Early Common Slavic, we can assume that the same relationship held for the first component of diphthongs before the loss of diphthongal quantity. In other words, outside of the desinence there was no tonal opposition, since acute tone occurred only on long vowels, while non-acute occurred on shorts. It was only later that long and short diphthongs underwent quantitative merger and developed a new opposition of acute vs. circumflex, respectively.

We shall assume that a syllable can consist of only one or two moras, not three. Therefore, in order for a quantitative opposition of long vs. short diphthongs to exist, it is necessary that the first diphthongal element be part of the syllabic crest and consist of either one or two moras, while the second diphthongal component, typically a sonant or glide, cannot represent a mora at this stage.<sup>7</sup> We assume that acute syllables, which first arose after the loss of the laryngeal  $\bar{H}$  following vowels, were rising, and can be represented by

stress on the second of their two moras; e.g.  $\bar{V}\bar{V}$  (cf. Skljarenko 1985:56, who says that Protoslavic acute stress "fell on the beginning of the second mora of a long syllable"; see also Kiparsky 1973:796). A long diphthong would just be the very same vocalic type, followed by a sonant or glide, represented as

R:  $\bar{V}\bar{V}R$ . The corresponding short stressed monophthong and diphthong

would be:  $\bar{V}$ ,  $\bar{V}R$ . The Early Common Slavic (and Balto-Slavic) accentual paradigms, following Dybo, are assumed to have been the following:

1. Immobile root stress, either with a long root vowel (reflected as Lithuanian AP 1 and Slavic AP A) or a short root vowel (reflected as Lithuanian AP 2 and Slavic AP B).

<sup>7</sup>Meillet (1964:115) presents evidence that there was no triple opposition of one, two, and three mora sequences. However, in contrast to our assumption that short diphthongs represent one mora, and long diphthongs represent two moras, he indicates that both types may have represented two moras, with more relative length in the vowel of the long diphthong, but in the sonant of the short diphthong. Kiparsky (1973:845) writes that "three degrees of length are not known to be distinctive in any actual language." Garde (1976:3) states that as early as the Balto-Slavic period there was already a quantitative neutralization of diphthongs. This view does not consider Slavic phenomena, such as the evolution of \*art groups, which show that diphthongal quantity existed in Slavic "at an early stage of its prehistory" (Jakobson 1952:306).

2. Mobile stress, either with long root vowel (reflected as Lithuanian AP 3 and Slavic AP C) or short root vowel (reflected as Lithuanian AP 4 and also Slavic AP C).

III. Establishment of second mora stress as the invariant of Common Slavic accentual immobility.

If we consider the inventory of accentual paradigms and the placement of stress on moras in the earliest Slavic period (i.e. before the Meillet and Dybo Laws), we see that in the case of both immobile and mobile paradigms, there was no invariant for placement of stress, since both long and short roots could be stressed in either type. For example, the immobile acute type had

constant second mora stress of the type \*bā́aba,<sup>8</sup> \*kā́arva, and the immobile

non-acute type had constant first mora stress, as in \*ása (> osa), \*páistas (> pěstrě). Similarly, in the root-stressed variants of the mobile paradigm both

acute (\*gā́ilvan) and non-acute (\*páisan) types occurred, with second and first mora stress, respectively.

The two interrelated processes which dramatically changed this structure are the Meillet Law (Meillet 1902: 200) and Dybo Law.<sup>9</sup> Their ultimate structural motivation was to specify second mora stress in immobile accentual paradigms, but first or last mora stress in the mobile type. This is closely connected with the position of morpheme boundaries, since second mora stress was invariably not on the initial word boundary and generally was located on the boundary between the root and the post-root morpheme (either suffix or desinence). On the other hand, the absolute rule of first or last mora stress in mobile paradigms<sup>10</sup> guaranteed that the stress would be

<sup>8</sup>We are assuming that Early Common Slavic had a single /a/, both long and short, representing the merger of Indo-European ā and ǫ.

<sup>9</sup>Cf. Kolesov (1979:126), who states that "both processes are causally linked and therefore must be examined together."

<sup>10</sup>Skljarenko (1987:22) states, "Protoslavlic accentual mobility...was based on the alternation of accent between the extreme syllables of the word-forms, more precisely between the extreme moras of the word-forms." However, there are some differences of opinion on the invariant nature of extreme mora stress in the mobile AP. Dybo (1981:39) has claimed that there was a very early retraction to penult stress, according to Hirt's Law, in certain desinences of the mobile AP, e.g. instrumental plural -ami > -ami. In any

contiguous to a word boundary. It is generally recognized that the Meillet Law acted to merge two separate accentual paradigms (acute mobility and non-acute mobility, corresponding to Lithuanian AP 3 and 4) into the single Common Slavic AP C, characterized by redundantly non-acute roots in a mobile paradigm. However, the Dybo Law can also be viewed as unifying the acute and non-acute immobile paradigms into a single immobile type, characterized by stress on the second mora, counting from the beginning of the root syllable.<sup>11</sup> It has usually been considered that the meaning of the Dybo Law is just the opposite of what we have stated. Let us illustrate how our conception differs from the other point of view. According to Dybo and Illič-Svityč, the acute and non-acute varieties of immobility start out with the common property of root stress throughout the paradigm. As a result of the progressive stress shift, the non-acute variety ceases to have root stress and acquires the stress placement characteristic of Slavic AP B: constant columnal stress on the first syllable of the desinence, or, more generally, stress on the syllable (or mora) following the root. Thus, in terms of the location of stress within a morpheme, the Dybo Law caused a unified paradigm of immobile root stress to bifurcate into immobile root stress and immobile post-root stress. However, in terms of the unity of ictus on a particular mora (i.e. the second), as well as the contiguity of stress to specific morpheme boundaries, the Dybo Law served to preserve the unity of both varieties of immobility by establishing their generalized second mora stress and by continuing their placement of stress on a mora contiguous to the boundary which marks the end of the root morpheme, the word position most likely to avoid contiguity to a word boundary. The complementary

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case, this would amount to a phonologically conditioned retraction from absolute end-stress. I would suggest that this eventually leads to the fact that only initial stress remains as a true surface invariant of AP C, not only in view of desinence retraction, but in consideration of the behavior of derivatives with AP C roots, in which the invariant seems to be non-contiguity with the root-final boundary, except in the case where this coincides with word-initial.

<sup>11</sup>Here we can observe that an important principle of accentual change is the evolving concept of what constitutes sameness and difference. Immobiles started out as unified on the basis of sharing stress on the last possible mora of the root syllable. However, in the case of one-mora syllables (short immobiles) the notion of last root mora coincided with first root mora, which became the distinctive feature of the root-stressed alternants of the mobile accentual type. Thus, a new principle of sameness evolved, viz. that of second mora stress, which avoided overlap between the stress of short immobiles and the initial stress of mobiles.

process, the Meillet Law, unified mobile paradigms by specifying that stress must be placed precisely on the first or last mora, which coincided with either boundary of the word, defined with its clitic elements.

The original phonetic expression of the Dybo Law called for the generalization of immobile stress on the second mora of the word, not counting proclitic elements, such as prepositions. This principle was the clearest sort of phonetic motivation for the progressive stress shift. According to Skljarenko (1985:57), the background for this process was a Balto-Slavic situation in which both long and short-root varieties of the immobile AP had acute tone (defined by Skljarenko as a two-mora sequence of rising plus falling pitch) as their invariant, with the long-root acute having both moras within the root syllable and the short-root acute having the two moras spread over two syllables, in the case of a monosyllabic root with the first mora in the root syllable and the second mora immediately following the root. Ictus could occur on either of the two moras which constituted the acute tone, according to Skljarenko. Therefore, in Skljarenko's interpretation, the Dybo stress shift turns out to be a result of the Common Slavic establishment of ictus on the second mora of acute sequences,<sup>12</sup> which led, of course, to barytonesis in long-root forms and oxytonesis in short-root forms. Skljarenko emphasizes that the invariant property of both barytonic and oxytonic immobile paradigms is the fact that they "were characterized by acute intonation" (1985:57), either of the one-syllable (for long-vowel roots) or two-syllable variety (for short-vowel roots). We have made the point that the second mora stress placement was the invariant property of the immobile accentual paradigm. The tonal curve (acute or circumflex) turns out to be just an automatic consequence of the stress on a particular mora in our interpretation, while for Skljarenko the syllabic intonation is completely independent of which mora has the ictus.

In order to make the case for a generalization of second mora stress as a result of the Dybo progressive stress shift, it is necessary to deal with the relative chronology of this shift vis-a-vis the loss of diphthongal quantity.

<sup>12</sup>This interpretation allows Skljarenko to say that Lithuanian placed ictus on the first mora of acute tonal sequences, thus accounting for the well-known fact that the Slavic acute is rising, but the Lithuanian acute is falling. Skljarenko's separation of the tonal aspects of the acute from its ictus seems overly mechanical. We are maintaining the view that an acute is defined as

ictus on the second mora ( $\overset{\uparrow}{\underset{\downarrow}{\text{V}}}\text{V}$ ).

Skljarenko deals with this issue (1987: 18-19) by tacitly assuming that oxytonic stress already was established when second diphthongal elements became part of the intonable part of the syllable. However, it is necessary to make this relative chronology explicit, since such prominent accentologists as Garde (1976: 3) claim that the loss of diphthongal quantity preceded the Dybo Law and that tonal, and not quantitative factors play the decisive role in the Dybo stress shift when it causes stress movement from originally short diphthongs.

Since originally long diphthongs which occurred in roots of the immobile

paradigm did not shift stress (e.g. \*pārgas > \*pōrg<sup>↓</sup>), but short diphthongs did so (e.g. \*pāistas > \*pēst<sup>↓</sup>),<sup>13</sup> there was obviously a difference between these diphthongal types at the time of the shift. If these diphthongs had already become quantitatively identical at this time, a tonal difference would have been the cause of the differing behavior, i.e. the originally long

diphthongs could have been of the type  $\overset{\uparrow}{\underset{\downarrow}{\text{V}}}\overset{\uparrow}{\underset{\downarrow}{\text{R}}}$  (where  $\overset{\uparrow}{\underset{\downarrow}{\text{R}}}$  represents a second

diphthongal component), and the short type  $\overset{\uparrow}{\underset{\downarrow}{\text{V}}}\overset{\uparrow}{\underset{\downarrow}{\text{R}}}$ . However, in this case one could only put forth Dybo's own weaker formulation that the stress shift advanced stress to the next syllable, with no possible generalization about the second mora stress being the invariant of originally immobile words as a result of the Dybo shift. The relative chronology which assumes that the Dybo Law had to precede the merger of diphthongal quantity permits a much more satisfying and unified treatment of the stress shift,<sup>14</sup> which implies the following stages:

1. Long and short root vowels, analogous to long and short diphthongs with non-moraic second diphthongal component. The element  $\overset{\uparrow}{\underset{\downarrow}{\text{R}}}$  can be parenthesized in our model to show its irrelevance to the Dybo Law at the moment of its occurrence, since the shift works the same regardless of its

<sup>13</sup>See Dybo 1981: 20-6 for more examples.

<sup>14</sup>This is in accord with Skljarenko's observation (1987:17) that "a syllable with a short vowel and a syllable with an originally short diphthong...accentually behaved identically, which is explained by the fact that both types of syllables were originally short." Also, consider the fact that Mathiassen, who rejects the Dybo Law on other grounds (1983:109), still opts for a rather late (post-Balto-Slavic) shortening of long diphthongs (1970:332).

presence: long  $\overset{\downarrow}{\text{C}}\overset{\downarrow}{\text{V}}\overset{\downarrow}{\text{V}}(\text{R})\text{C}$  roots retain their stress with no change in the

immobile paradigm, but short  $\overset{\downarrow}{\text{C}}\overset{\downarrow}{\text{V}}(\text{R})\text{C}$  roots advance the stress to the mora following the root.

2. Diphthongal quantity is abandoned, with long  $\overset{\downarrow}{\text{V}}\overset{\downarrow}{\text{V}}\text{R} > \overset{\downarrow}{\text{V}}\overset{\downarrow}{\text{R}}$  and

short  $\overset{\downarrow}{\text{V}}\text{R} > \overset{\downarrow}{\text{V}}\overset{\downarrow}{\text{R}}$ .<sup>15</sup> The change of the long diphthong can be nicely captured by assuming that first there was a syllabification of second diphthongal

components ( $\text{R} > \overset{\downarrow}{\text{R}}$ ); following this, an uninterrupted sequence of three syllabic elements becomes simplified by the deletion of the first element

( $\overset{\downarrow}{\text{V}}\overset{\downarrow}{\text{V}}\overset{\downarrow}{\text{R}} > \overset{\downarrow}{\text{V}}\overset{\downarrow}{\text{R}}$ ), and finally the second mora stress of immobiles is re-established by shifting the ictus from the  $\overset{\downarrow}{\text{V}}$  to the  $\overset{\downarrow}{\text{R}}$ . Since the change of  $\text{R} > \overset{\downarrow}{\text{R}}$  does not violate such sequential constraints in the short diphthongs (where  $\overset{\downarrow}{\text{V}}\text{R} > \overset{\downarrow}{\text{V}}\overset{\downarrow}{\text{R}}$ ), we can assume that no deletions or further changes ensued.

It was also possible that the phonetic syllabification of second diphthongal components had begun in certain styles of speech even before the Dybo stress shift was completed. In this sense, the existence of merged diphthongal quantity would have so upset the prosodic system as to hasten the Dybo stress shift. Immobiles had as an invariant the contiguity of the mora under ictus to the root-final boundary. If any short diphthongs (with ictus on the first diphthongal component) converted the second diphthongal component to a full-fledged mora, this would have represented the first violation of the principle of contiguity to the root-final boundary, or the principle that immobile stress fell on the last possible mora of the root (which covered both long and short varieties). In shifting the ictus to that of the first mora of the next syllable, the principle of stress on the last mora of the root was abandoned, but a new relationship came about, which can be considered either second mora stress or stress on the continuation of the rule that the stressed mora had to be contiguous to the root-final boundary.

The above described loss of diphthongal quantity represented a major restructuring of the prosodic system of Common Slavic; it initiated the use of pitch as a distinctive feature and modified the regular second mora position of stress in the immobile accentual paradigms, which we have been examining. Now, former instances of second mora stress were transformed into stress on the third mora, if they happened to contain originally short

diphthongal roots (e.g.  $^*\text{gv}\overset{\downarrow}{\text{a}}\overset{\downarrow}{\text{i}}\text{zd}\overset{\downarrow}{\text{a}}\overset{\downarrow}{\text{a}} > ^*\text{gv}\overset{\downarrow}{\text{a}}\overset{\downarrow}{\text{i}}\text{zd}\overset{\downarrow}{\text{a}} > ^*\text{gv}\overset{\downarrow}{\text{a}}\overset{\downarrow}{\text{i}}\text{zd}\overset{\downarrow}{\text{a}}$ ).<sup>16</sup> Thus, if the phonological basis of stress advancement was the unification of stressed moras in the immobile paradigm, by the time of the loss of diphthongal quantity this was no longer the case. Therefore, the combined structural effect of both the Meillet and Dybo Laws, taken together, can be fully appreciated only when seen against the background of a system in which long monophthongs and long diphthongs are structurally similar, as are short monophthongs and short diphthongs. In this sense Skljarenko's dating of the Dybo Law as "belonging to the Early Protoslavic period" (1987:20) should be viewed as more accurate than such other extremely late datings of the very same process as Kortlandt's, who listed it as chronologically following "retraction of the ictus from final jers" (1975:XII). Clearly, any assignment of the Dybo Law to Late Common Slavic cannot assume a regular immobile stress assignment to the second mora after the initial root boundary, as we have done.

#### IV. Prosodic behavior of the post-root morpheme in the Dybo Law.

Since there is a divergence of opinion on the age of the Dybo shift, directly linked to the issue of whether the shift assigned stress to the second mora, let us examine the prosodic behavior of the post-root morpheme, since it reveals important evidence which can be adduced in favor of a shift to the second mora. Dybo's Law (Dybo 1981:260) specifies that "ictus belongs" to the first (or leftmost) morpheme that bears a positive stress mark. In the case of roots, only immobiles bear such a stress mark, while mobile (or "recessive") roots bear a negative specification. If the root bears a negative mark and a following suffix or desinence bears a positive mark, then the stress is assigned in accordance with the properties of that suffix or desinence; i.e. if the suffix or desinence is an original long vowel, it receives acute stress, or stress on the second mora of that morpheme. However, if an originally short root morpheme is the first with a positive specification, and our contention is correct that Dybo's Law will assign stress to the second mora after the initial boundary of such a root, we should expect the stress to fall on the first mora of the post-root morpheme (whether suffix or desinence). Even if this post-root morpheme is an original long vowel, it should still bear first mora stress, as assigned from the root, and come down as a circumflex, rather than acute.

<sup>15</sup>In mobiles, which stressed the short diphthong,  $\overset{\downarrow}{\text{V}}\text{R} > \overset{\downarrow}{\text{V}}\overset{\downarrow}{\text{R}}$ .

<sup>16</sup>The question of which mora is stressed in the -a desinence, as well as other desinences, will be dealt with below.

However, Slavic retained circumflex stress (i.e. stress on the first of two moras in a single syllable) only in initial syllables and later retracted the stress of other circumflexes (according to Stang's Law, see Stang 1957:109), producing a neo-acute reflex; e.g. \*kupiši > kúpiši. Therefore, as proof that the Dybo Law indeed did shift stress to the mora directly after the root, creating a post-root circumflex when the post-root syllable was long, we should find instances of neo-acute retraction in AP B, which experienced the forward stress shift.

Skljarenko's study of long inflectional endings (1981:60) concluded that "in our opinion, in Late Common Slavic a stressed long inflectional (thematic) vowel in AP B of any word-class always had circumflex intonation." However, it must be noted that not all inflectional endings can be proved to be circumflex, since this is only possible when length has been retained and stress has retracted to the previous syllable. Skljarenko encounters difficulty explaining instances when final length has not been retained in spite of his assumption of an earlier circumflex in this position. I would suggest that this is based on a logical flaw in his basic conditions for the shortening of final vowels: he (1981:54) rejects Šaxmatov's traditional rule of a regular phonetic shortening of final vowels in Common Slavic, but the substitute rule offered by Skljarenko is not phonetic, but morphological (he states that final length could be retained, but only when stressed in both AP B and C). Therefore, in those instances where there was desinential stress in both AP B and C, such as the *a*-stem nominative singular (e.g. *osa*, *voda*) but no evidence of length retention in the form of a neo-acute retraction, Skljarenko is forced to assume many later morphological and analogical changes. For example, in the case of the above cited AP B singular of *a*-stems, which does not provide evidence of neo-acute retraction, Skljarenko (1981:58) can only state that "*a*- and *ja*-stems of AP B experienced the very strong influence of AP C, as a result of which the circumflex intonation of a long inflectional vowel of AP B was changed to acute." Let us suggest that it might be better to retain the general concept of a final shortening, but state that it is subject to certain morphological restrictions. In fact, Stang (1957:13) establishes the regular neo-acute retraction from circumflexes in "inner," not final position. Taking this into account, we can retain the general premise that the Dybo shift created new post-root circumflexes when the post-root vowel was long, but that eventually there are two possibilities (which are not incompatible with the notion of stress shift to the second mora):

1. either a post-root long vowel (with a circumflex due to the Dybo shift) keeps its length long enough to undergo the retraction from circumflex, such as in internal position (e.g. \*kupiši, \*pisān-), or

2. the long circumflex vowel is in a position, such as word-final, in

which the vowel shortens (i.e.  $\acute{V}\acute{V} > \acute{V}$ ) before the loss of non-initial circumflexes occurs.<sup>17</sup>

V. Relative chronology of the rise of long circumflex roots and the Dybo stress shift.

Dybo, Skljarenko, Garde, and other accentologists have proceeded from the assumption that the Balto-Slavic circumflex regularly goes back to an Indo-European short. This assumption, plus the further assumption that the lengthening of originally short diphthongs follows the Dybo stress shift, allows one to conclude that the Dybo shift places all immobile stress on the second mora. However, recent work by Nikolaev (1986:13-17) has suggested that metatonic circumflexes existed in the immobile paradigm of Balto-Slavic at a time which precedes the Dybo stress shift. If this is so, the Dybo shift did not exclusively produce second mora stress in immobile paradigms (i.e.

$\acute{C}\acute{V}\acute{C}\acute{V} > \acute{C}\acute{V}\acute{C}\acute{V}$ ), but also would have to have produced third mora stress in such cases as  $\acute{C}\acute{V}\acute{V}\acute{C}\acute{V} > \acute{C}\acute{V}\acute{V}\acute{C}\acute{V}$ . In other words, in order for our assumption of a generalized second mora stress in immobile accentual paradigms to hold up, it is necessary that at the moment of the Dybo stress

<sup>17</sup>Of course, there are morphological deviations from these two rules, such as the word-final instrumental *y/i* ending, which still yields retraction and, hence no evidence of early shortening (Skljarenko 1981:55). In like manner, there are instances of derivational suffixes not discussed by Skljarenko, which, presumably, also had circumflex stress after AP B roots as a result of the Dybo Law, but which have the non-retracted acute reflex instead of the expected neo-acute retraction. These include the suffixes *-ic(a)*: \**vedovica*, *-in(a)*: \**travina*, *-iti(b)*: \**korjiti*, *-at*: \**ženat* (Dybo 1981:172-4). The secondary nature of this acute seems obvious when we compare the behavior of other two-mora derivational suffixes which extend over two syllables: AP B *sigovina*, *volovina* vs. AP C *rogovina*, *domovina*, in spite of the non-circumflex AP B suffixes indicated above. Most likely, certain processes of morphological generalization at the derivational level have been responsible for the absence of retraction here (assuming the ultimate accuracy of Dybo's Common Slavic accentual reconstruction in these cases).

shift long roots with immobile stress were invariably acute (i.e.  $\bar{V}V$ ). The existence of long circumflexes at that time, and their stress shift to the third mora by the Dybo Law, would have meant that immobile second mora stress was not a general principle. Nikolaev's data which is accessible to me in the *Avtoferat* of his dissertation seems somewhat fragmentary and ambiguous. The examples are based on the notion that many mobile acute roots, when followed by suffixes such as  $-dl\bar{o}$ , changed into immobile circumflex as early as Balto-Slavic. However, several of Nikolaev's posited oxytones give ambiguous evidence of this stress e.g. Slovak *bydl\bar{o}*, *stadl\bar{o}* contradict the idea of end-stress, while  $*\bar{z}edl\bar{o}$ , according to Bulaxovskij, belongs to a nominal type in which "accentual variations are relatively numerous" (1980:288). While a full evaluation of Nikolaev's data is beyond the scope of this paper, we can say that even if his findings turn out to be correct and Common Slavic possessed long-vowel circumflex roots before the Dybo Law, the immobiles would still have established the invariant of stress on a mora contiguous to the root-final boundary. However, it would be necessary to revise our assumed preliminary stage of second mora stress, which, in any case, was no longer in effect by the time of the merger of diphthongal quantity.

#### VI. Phonetic vs. morphological basis of Dybo's Law.

Assuming that there is good evidence to posit that the Dybo stress shift established ictus on the second mora of the word, counting from the initial root boundary, let us now return to the important issue of whether this law is phonetic or morphological. As noted above, both Dybo and Illič-Svityč felt that the stress shift had to be phonetic, though for different reasons, and each, in turn, proposed a different solution in order to prove the phonetic nature of the shift. Illič-Svityč's idea that the shift only arose from prepositional usage has been largely abandoned (see Skljarenko 1985:55-6), and Dybo's assumption that there was a third pitch (besides acute and circumflex) remains as the only way to maintain a purely phonetic interpretation of this stress shift. I would suggest that the introduction of a third pitch would not be the best way of solving this problem, since the other pitches (acute and circumflex) can be simply explained (cf. Kiparsky 1973:796) as either first or second mora stress in a two-mora sequence, but a third pitch entails an additional element, such as a glottal stop, which (as noted above) has been used by accentologists to explain a range of different phenomena. Since the Dybo shift makes consistent reference to the placement of ictus in terms of the initial root boundary, placing it on the second mora after this point, I believe that the environment for this rule can

be understood as morphological not in the sense of applying to only one part-of-speech, but in its direct reference to the most important of morphological boundaries, that of the root. In this way, the Meillet Law establishes the rule that mobile words (of any part-of-speech) have ictus that lies on the word-boundary, including clitics, while the Dybo Law specifies that immobiles stress the second mora which is, remarkably, the one position which excludes their contiguity to a word boundary in any word consisting of three or more moras. Dybo and Illič-Svityč appear to deny that a morphological rule can make reference to abstract boundaries, apart from any specific part-of-speech. However, Kiparsky (1973:844), argues for an independent treatment of prosodic patterns in their own right, since "in the material at hand there are no regular correspondences, in the usual sense, and no analogical changes to speak of."

We have seen that as a result of the Dybo Law Common Slavic immobile stress became bound to the second mora after the root-initial boundary. However, the ensuing change of diphthongs, which syllabified the second component of all diphthongs, modified this relationship. After this change, immobiles have second mora stress in roots which do not derive from diphthongs, but they now have third mora stress in words with roots that

come from short diphthongs (e.g.  $*gv\bar{a}i\bar{z}d\bar{a}\bar{a}$ ). At this point a new and significant principle comes into effect. The stress of immobiles is no longer associated with the second mora after the initial root boundary, but with the root-final boundary, since now both AP A and B ictus is contiguous to the boundary between the root and the morpheme which follows it. AP C stress was often found contiguous to either the word-initial or word-final boundary, but there were instances in which this was not so, e.g.

1. The retraction of stress in certain endings, such as  $-am\bar{i} > -\bar{a}\bar{a}mi$  (Dybo 1981:38)
2. The presence of root-acute infinitives and other forms in certain verbal paradigms, such as *kr\bar{a}sti*, *kr\bar{a}do*.
3. Suffixal stress after AP C roots, e.g.  $*mold\bar{i}ca$  (Dybo 1981:173).

These cases point to the fact that a marked/unmarked relationship may well have developed, according to which the immobiles were marked for contiguity to the root-final boundary (i.e. either the root-suffix or root-desinence boundaries), while words with AP C roots were unmarked, since their stress was not totally restricted to word-boundaries, and even could

occur contiguous to the root-final boundary in short-root enclitomena (e.g. *vođo*). Thus, after merger of diphthongal quantity, the second mora principle no longer holds, but is replaced by the link of roots with stress placement near boundaries. Looking at non-derived plus derived, it turns out that immobile are marked for stress on the second root boundary, while mobile can only touch on this boundary if they simultaneously touch on word-initial.

## VII. Conclusions.

This paper has suggested that the progressive stress shift known as Dybo's Law had far more structural meaning than an isolated change of the ictus in certain words. We have argued that, acting in tandem with the Meillet Law, the forward stress shift introduced an important invariant on the level of individual word-forms which served as a supplementary feature for the immobile vs. mobile accentual paradigms. This invariant consisted of second mora stress for the immobiles and first or last mora stress for mobiles. Ensuing developments, such as the loss of the diphthongal quantity, erased the invariant of second mora stress, but accentual paradigms remained bound to particular positions of ictus in relation to morpheme boundaries.<sup>18</sup> Lastly, we have pointed out that the relation of the Meillet and Dybo processes to word boundaries is evidence of the morphological nature of these laws and that it is preferable to view them in terms of the association of stress with such concepts as the initial, medial, and terminal points of root, suffixal, and desinential morphemes, in preference to the assumption of additional distinctive tones in the prosodic system of Common Slavic.

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<sup>18</sup>In several previous papers (Feldstein 1980, 1984, 1986), I have suggested that the link between accentual paradigm and stress on particular morpheme boundaries is a fact of Contemporary Standard Russian, not only of Common Slavic. The applicability of these ideas to both present-day and historical periods was also suggested to me by the Moscow accentologist Elena Georgievna Ustinova (personal communication).

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