

THE DEVELOPMENT OF VOWEL LENGTH IN SLAVIC

Though the importance of Stang's classic monograph (1957) is generally recognized, the consequences of his findings have not yet been properly understood by the majority of scholars in the field. In the pre-Stang era, scholars tried to derive the accentuation of Slavic word forms from inherent tonal properties of their constituent morphemes. According to Hirt's law, an acute vowel attracted the accent from a following syllable. According to de Saussure's law, an acute vowel attracted the accent from a preceding non-acute syllable. Since it has now become clear that the acute was not a tonal but a glottalic feature, the assumption of inherent tonal features of morphemes must be abandoned and replaced by the reconstruction of glottalized versus non-glottalized syllables.

The most important result of Stang's analysis is that the Slavic accent patterns must not be derived from inherent tonal properties of their constituents but, conversely, that the tones must be derived from the accent patterns (1957: 179). Stang showed that the acute is characteristic of paradigms with fixed stress (a), that the neo-acute developed from a retraction of the stress in paradigm (b), and that the circumflex is characteristic of paradigms with mobile stress between initial and final syllables (c). Dybo has shown that paradigm (b) developed from a paradigm with fixed stress as a result of an accent shift from a non-acute vowel to a following syllable (1962, 1968). Since paradigms (a) and (b) are in complementary distribution, they can be identified with the Lithuanian accent patterns (1) and (2).

Since the acute was glottalization, not a tonal movement, it follows that the rise of distinctive tone was a more recent development. This offers a simple explanation for the fact that the normal reflex of the acute is falling while the circumflex is rising in standard Lithuanian whereas the converse distribution is found in Latvian. It appears that the rise of distinctive tone was a development of the separate languages (cf. already Kortlandt 1977). It probably never reached Prussian (cf. Kortlandt 2009: 267). In Slavic, distinctive tone originated in initial syllables when the accent was retraced to a preposition or prefix in barytone forms of mobile paradigms (c) at stage 6.10 of my chronology (2011: 166, 301), e.g. in Russian *ná vodu* 'onto the water', *né byl* 'was not', *pródal* 'sold', *póvod* 'rein'. If the accent was a High tone, as it was in Sanskrit, this development is perhaps best understood as a generalization of the Low tone of pretonic syllables in barytone forms of mobile paradigms, which received a falling tone movement on the initial syllable. The result may be compared with the system

of standard Serbo-Croatian, which has a falling tone on initial syllables and a rising tone on non-final syllables.

In non-initial syllables, distinctive tone on long vowels originated as a result of Dybo's law at stage 8.7 of my chronology (2011: 171, 305) because newly accented long vowels received a falling tone movement, as opposed to stressed long vowels of an earlier date. Long falling vowels in final syllables (not counting final jers) lost the stress to the preceding accentuable syllable according to Stang's law (stage 9.3 of my chronology) and were shortened, as were all other long falling vowels except in Slovene monosyllables and Serbo-Croatian mono- and disyllabic word forms, e.g. *bôg* 'god', acc.sg. *rûku* 'hand' (stage 9.4 of my chronology). The combination of Dybo's law and Stang's law gave rise to accentual mobility between adjacent syllables in paradigm (b), with a rising tone in the first and a short vowel in the second syllable. Short rising vowels were lengthened under certain conditions in Russian, Czech, Upper Sorbian and Slovene (cf. Kortlandt 2011: 173f., 307f.), e.g. Czech *vûle*, Slovene *vôlja* 'will'. Finally, Slovene developed new long falling vowels under certain conditions, e.g. *okô* 'eye', *mladôst* 'youth', *bîtka* 'battle', *lêta* 'years', *osnôva* 'base' (stages 10.7-10.9 of my chronology).

Thus, we have an accent paradigm (a) with fixed stress on an acute vowel, an accent paradigm (b) with a rising tone (neo-acute) in some forms and a short accent on the following syllable in others, and an accent paradigm (c) with a falling tone (circumflex) on the initial syllable (or proclitic element) in some forms and a short or long rising tone on the ending (or enclitic element) in others. When final jers lost their stressability (stage 8.2 of my chronology), the preceding accentuable syllable received a long rising tone, e.g. Slovene gen.pl. *gôr* < **gorò* 'mountains', *dán* < **dnò* 'days', *ôvac* < **owbcò* 'sheep', Polish *rąk* < **rpkò* 'hands', Russian dat.pl. *détjam* < **dětmò* 'children', all (c). When the acute eventually lost its glottalic character (stage 9.2 of my chronology), it merged with the short rising tone, e.g. Slovene *dîm* 'smoke', *góra* < **gorà* 'mountain', Ukrainian *moróz* < **-orò-* 'frost' as opposed to gen.pl. *holív* < **-oló-* 'heads'. As a result of the loss of glottalization, the almost universal shortening of long falling vowels, and the widespread lengthening of short rising vowels, distinctive tone was limited to Slovene and Serbo-Croatian while vowel length remained distinctive everywhere up to a later stage (cf. Kortlandt 2011: 111-115 on Bulgarian).

The oldest type of long vowel in Balto-Slavic are Proto-Indo-European lengthened grade vowels, e.g. Lith. *duktė* 'daughter', *akmuõ* 'stone', Greek *θυγάτηρ*, *ἄκμων*, SCr. *žērāv* 'crane', sigmatic aorist 1st sg. *dònijeh* 'brought', *ùmrijeh* 'died', root nouns Lith. *gèlà* 'pain', *žolė* 'grass', *mèsà* 'meat', all (4), SCr. *rījēč* 'word', *čār* 'magic', *sâm* 'alone', Czech *čár*, *čára*, *sám* (b). In principle, these long vowels were never shortened (cf. Kortlandt 1985, Vermeer 1992). The second oldest type of long vowel in Balto-Slavic developed from the loss of a

laryngeal between two full vowels (*e, *o), e.g. Lith. gen.sg. *algōs* ‘salary’ < *-ās < *-aHes, Greek ἀλφῆς. This was a dialectal Indo-European development which Balto-Slavic shared with Indo-Iranian, but not with Greek, where the circumflex points to a disyllabic sequence at an earlier stage of the language. Other long vowels originated in the separate branches of Balto-Slavic. At that time, the remaining laryngeals had merged into a glottal stop, e.g. Lith. *algà* (4) < *-aʔ, *galvà* (3) ‘head’ < *golʔwaʔ < *golHuaH, and the Proto-Indo-European glottalic consonants had dissolved into a laryngeal and a buccal part (Winter’s law, stage 4.3 of my chronology), e.g. Latvian *pēds* < *peʔdom ‘footstep’, *nuōgs* < *noʔgʷos ‘naked’.

In Slavic, glottalization was lost in pretonic and post-posttonic syllables with compensatory lengthening of an adjacent vowel (stage 5.3 of my chronology), e.g. *golwàʔ < *golʔwàʔ ‘head’, *pīlàʔ < *pʔilàʔ ‘(she) drank’, inst.sg. *sūnumì < *suʔnumì ‘son’, *òpsnowā < *òpsnowaʔ ‘base’, inst.pl. *gènaʔmīš < *gènaʔmīʃ ‘women’. The long vowel in the final syllable of the latter words is reflected by the neo-circumflex tone of Slovene *osnōva* < *osnòwā, *ženāmi* < *ženàmi, where the middle syllable received the stress as a result of Dybo’s law. Glottalization was eliminated by analogy in barytone forms of mobile accent paradigms (Meillet’s law, stage 5.4 of my chronology), e.g. SCr. *sīn* ‘son’, acc.sg. *glāvu*, neuter *pīlo*, cf. Lith. *gálva*, *sūny*. Glottalization was preserved in stressed and first posttonic syllables up to a later stage.

New long vowels originated from the monophthongization of diphthongs: *ē < *ai, *ĕ < *ei, *ō < *au (my stage 6.5). The rise of nasal vowels *iN, *eN, *aN, *oN, *uN can be dated around the same time. The same holds for the rise of glottalized vowels *ĩ*, *ẹ̆*, *ạ́*, *ộ*, *ũ*, which had the timbre of the corresponding long vowels, as in the case of the Latvian broken tone in *ĩ*, *iệ*, *ẹ̆*, *ậ*, *uộ*, *ũ*. At a later stage (7.8), the rounded vowels *u, *ū, *uN and their glottalized counterparts were delabialized to *y, *ȳ, *yN, after palatalized consonants *i, *ī, *iN, and the long mid vowels *ĕ and *ō were subsequently raised to *ĩ and *ū (stage 7.9). This resulted in the following vowel system (cf. Kortlandt 2011: 106):

| | | | | | | |
|----------|----------|----------|-----------|-----------|----------|----------|
| <i>ĩ</i> | <i>ȳ</i> | <i>ū</i> | <i>eN</i> | <i>oN</i> | <i>i</i> | <i>y</i> |
| | <i>ē</i> | <i>ā</i> | | <i>aN</i> | <i>e</i> | <i>a</i> |

Here the long vowels and the nasal vowels could be either glottalized (acute) or not. In initial syllables, the non-acute vowels could be either falling (circumflex) or not.

At this stage (7.13), the loss of glottalization in posttonic syllables gave rise to a series of new short vowels *i*, *ĕ*, *a*, *u*, *y* which were opposed to the older short vowels *ʋ*, *e*, *o*, *ʋ* by timbre and vowel height. The result is the following vowel system (cf. Kortlandt 2011: 107):

syllables (Stang's law, stage 9.3) yielded new long rising vowels and short rising diphthongs ⁱè, ^uò, e.g. *w^uòl̥a < *woł̥â < *wòl̥ā (Dybo) < *wòl̥ja (Van Wijk), Czech *vůle*, Slovak *vôla*, Slovene *vólja*, SCr. *vòlja*. These developments were followed by lengthening of short rising vowels and shortening of long falling vowels under certain conditions and by the rise of new long falling vowels in Slovene. The distinction between diphthongized jat *ie* < *ě* and the new diphthong ⁱe < *e* has been preserved as *ię* versus *i̇ę* in the Slovene dialect of Soča (cf. Greenberg 2000: 171).

Summarizing, we can say that in pretonic syllables long vowels originated from Dybo's law while in stressed and posttonic syllables long vowels continue Proto-Indo-European lengthened grade vowels and dialectal Indo-European contractions and arose from the Slavic monophthongization of diphthongs, and after the rise of the new timbre distinctions resulted from Van Wijk's law and contractions in posttonic syllables, in accent paradigm (c) from the retraction of the stress from final jers and from lengthening in monosyllables, in accent paradigm (b) from Stang's law, and only in post-posttonic syllables from the loss of laryngeals. It may now be useful to see how these developments are reflected in nominal case endings. Here I give the paradigms of *krava* (a) 'cow', *konj̆b* (b) 'horse', *põt̆b* (b) 'way', *volja* (a/b) 'will', *igo* (c) 'yoke' and *dět̆ę* (b/c) 'child' in the pre-Slovene dialect of Slavic at stages 8.0 (after Van Wijk's law), 9.0 (after lengthening in monosyllables) and 10.0 (after merger of the jers; for a fuller account see Kortlandt 2011: 277-309).

SLOVENE (8.0, 9.0, 10.0)

| | | | |
|----------|----------------|----------------|---------------------------|
| nom.sg. | <i>kràwa</i> | <i>kràwa</i> | <i>kràwa</i> |
| gen.sg. | <i>kràwy</i> | <i>kràwy</i> | <i>kràwy</i> |
| dat.sg. | <i>kràwā</i> | <i>kràwẹ</i> | <i>kràwẹ</i> |
| acc.sg. | <i>kràwON</i> | <i>kràwON</i> | <i>kràwON</i> |
| inst.sg. | <i>kràwoǾN</i> | <i>kràwōN</i> | <i>kràwōN</i> |
| loc.sg. | <i>kràwä</i> | <i>kràwẹ</i> | <i>kràwẹ</i> |
| nom.pl. | <i>kràwy</i> | <i>kràwy</i> | <i>kràwy</i> |
| gen.pl. | <i>kràwɔ</i> | <i>kràwɔ</i> | <i>kràwɔ</i> |
| dat.pl. | <i>kràwamɔ</i> | <i>kràwamɔ</i> | <i>kràwamɔ</i> |
| acc.pl. | <i>kràwy</i> | <i>kràwy</i> | <i>kràwy</i> |
| inst.pl. | <i>kràwamī</i> | <i>kràwamī</i> | <i>kràwamī</i> |
| loc.pl. | <i>kràwaxɔ</i> | <i>kràwaxɔ</i> | <i>kràwaxɔ</i> |
| nom.sg. | <i>kòḡē</i> | <i>kòḡɔ</i> | <i>kòḡɔ</i> |
| gen.sg. | <i>kòḡā</i> | <i>koḡà</i> | <i>koḡà</i> |
| dat.sg. | <i>kòḡū</i> | <i>koḡù</i> | <i>koḡù</i> |
| acc.sg. | <i>kòḡɔ</i> | <i>kòḡɔ</i> | <i>kòḡɔ</i> |
| inst.sg. | <i>kòḡēmɔ</i> | <i>koḡēmɔ</i> | <i>koḡēmɔ</i> |
| loc.sg. | <i>kòḡī</i> | <i>koḡī</i> | <i>k^uòḡī</i> |
| nom.pl. | <i>kòḡī</i> | <i>koḡī</i> | <i>koḡī</i> |
| gen.pl. | <i>kòḡɔ</i> | <i>kòḡɔ</i> | <i>kòḡɔ</i> |
| dat.pl. | <i>kòḡēmɔ</i> | <i>koḡēmɔ</i> | <i>koḡēmɔ</i> |
| acc.pl. | <i>kòḡeN</i> | <i>koḡeN</i> | <i>koḡeN</i> |
| inst.pl. | <i>kòḡī</i> | <i>koḡī</i> | <i>k^uòḡī</i> |
| loc.pl. | <i>kòḡīxɔ</i> | <i>koḡīxɔ</i> | <i>k^uòḡīxɔ</i> |
| nom.sg. | <i>róntɔ</i> | <i>róntɔ</i> | <i>róntɔ</i> |
| gen.sg. | <i>róntī</i> | <i>rōntī</i> | <i>rōntī</i> |
| dat.sg. | <i>róntī</i> | <i>rōntī</i> | <i>rōntī</i> |
| acc.sg. | <i>róntɔ</i> | <i>róntɔ</i> | <i>róntɔ</i> |
| inst.sg. | <i>róntɔmɔ</i> | <i>rōntɔmɔ</i> | <i>rōntɔmɔ</i> |
| loc.sg. | <i>róntī</i> | <i>rōntī</i> | <i>rōntī</i> |
| nom.pl. | <i>róntɔe</i> | <i>rōntɔe</i> | <i>rōntɔje</i> |
| gen.pl. | <i>róntiɔ</i> | <i>rōntiɔ</i> | <i>rōntī</i> |
| dat.pl. | <i>róntɔmɔ</i> | <i>rōntɔmɔ</i> | <i>rōntɔmɔ</i> |
| acc.pl. | <i>rónti</i> | <i>rōnti</i> | <i>rōnti</i> |
| inst.pl. | <i>róntɔmī</i> | <i>rōntɔmī</i> | <i>rōntɔmī</i> |
| loc.pl. | <i>róntɔxɔ</i> | <i>rōntɔxɔ</i> | <i>rōntɔxɔ</i> |

SLOVENE (8.0, 9.0, 10.0)

| | | | |
|----------|--------------------------|-------------------------|--------------------------------------|
| nom.sg. | <i>wòlā</i> | <i>wołā</i> | <i>w^uòł̄a</i> |
| gen.sg. | <i>wòłe_N</i> | <i>wołe_N</i> | <i>w^uòłe_N</i> |
| dat.sg. | <i>wòłī</i> | <i>wołī</i> | <i>w^uòł̄i</i> |
| acc.sg. | <i>wòłö_N</i> | <i>wołö_N</i> | <i>w^uòł̄o_N</i> |
| inst.sg. | <i>wòłeö_N</i> | <i>wołö_N</i> | <i>w^uòł̄o_N</i> |
| loc.sg. | <i>wòłī</i> | <i>wołī</i> | <i>w^uòł̄i</i> |
| nom.pl. | <i>wòłe_N</i> | <i>wołe_N</i> | <i>w^uòłe_N</i> |
| gen.pl. | <i>wòłb</i> | <i>wołb</i> | <i>wòłb</i> |
| dat.pl. | <i>wòłām̄b</i> | <i>wołām̄b</i> | <i>w^uòł̄am̄b</i> |
| acc.pl. | <i>wòłe_N</i> | <i>wołe_N</i> | <i>w^uòłe_N</i> |
| inst.pl. | <i>wòłāmī</i> | <i>wołāmī</i> | <i>w^uòł̄amī</i> |
| loc.pl. | <i>wòłāx̄b</i> | <i>wołāx̄b</i> | <i>w^uòł̄ax̄b</i> |
| nom.sg. | <i>īyo</i> | <i>īyo</i> | <i>īyo</i> |
| gen.sg. | <i>īyā</i> | <i>īya</i> | <i>īya</i> |
| dat.sg. | <i>īyū</i> | <i>īyu</i> | <i>īyu</i> |
| acc.sg. | <i>īyo</i> | <i>īyo</i> | <i>īyo</i> |
| inst.sg. | <i>īyom̄b</i> | <i>īyom̄b</i> | <i>īyom̄b</i> |
| loc.sg. | <i>īzā</i> | <i>īze</i> | <i>īze</i> |
| nom.pl. | <i>īyā</i> | <i>īyā</i> | <i>īyā</i> |
| gen.pl. | <i>īȳb</i> | <i>īȳb</i> | <i>īȳb</i> |
| dat.pl. | <i>īyom̄b</i> | <i>īyóm̄b</i> | <i>īyòm̄b</i> |
| acc.pl. | <i>īyā</i> | <i>īyā</i> | <i>īyā</i> |
| inst.pl. | <i>īyý</i> | <i>īyý</i> | <i>īyý</i> |
| loc.pl. | <i>īzāx̄b</i> | <i>īzēx̄b</i> | <i>īzēx̄b</i> |
| nom.sg. | <i>dāte_N</i> | <i>dēte_N</i> | <i>dēte_N</i> |
| gen.sg. | <i>dātente</i> | <i>dētēnte</i> | <i>dētēnte</i> |
| dat.sg. | <i>dātenti</i> | <i>dētēnti</i> | <i>dētēnti</i> |
| acc.sg. | <i>dāte_N</i> | <i>dēte_N</i> | <i>dēte_N</i> |
| inst.sg. | <i>dātent̄om̄b</i> | <i>dētēnt̄om̄b</i> | <i>dētēnt̄om̄b</i> |
| loc.sg. | <i>dātente</i> | <i>dētēnte</i> | <i>dētēnte</i> |
| nom.pl. | <i>dāti</i> | <i>dēti</i> | <i>dēti</i> |
| gen.pl. | <i>dātīb</i> | <i>dētí̄b</i> | <i>dētī</i> |
| dat.pl. | <i>dāt̄om̄b</i> | <i>dēt̄om̄b</i> | <i>dēt̄om̄b</i> |
| acc.pl. | <i>dāti</i> | <i>dēti</i> | <i>dēti</i> |
| inst.pl. | <i>dāt̄omí</i> | <i>dēt̄omí</i> | <i>dēt̄omí</i> |
| loc.pl. | <i>dāt̄ox̄b</i> | <i>dēt̄ox̄b</i> | <i>dēt̄ox̄b</i> |

In accent paradigm (a), e.g. *krava*, we have fixed stress throughout and loss of glottalization toward the end of the prehistoric period. In accent paradigm (b), e.g. *konĵb*, *p̂ot̂b*, *volja*, *dě̂t̂e*, the accent shifted from the first to the second syllable (but not to a final jer) as a result of Dybo's law and was retracted in accordance with Stang's law in the loc.sg., inst.pl. and loc.pl. forms of *konĵb* and in the majority of case forms of *volja* (and analogically in the other forms of this paradigm). In accent paradigm (c), e.g. *igo* and *dě̂ti*, there is a falling tone (which was eventually shortened) on the initial syllable in some forms and final stress (which was retracted from final jers) elsewhere. The accent pattern of mobile nouns (c) is identical with that of Lithuanian (3) except in the inst.sg. form of the *aH*-stems, where **-òĵo* was taken from the pronoun, and the nom.pl. form of the *o*-stems, where end-stressed Lith. *-aĩ* replaced the original neuter ending (cf. Kortlandt 1993).

We can now identify the origin of long vowels in Slavic nominal case endings as follows. Proto-Indo-European lengthened grade vowels can be reconstructed for the loc.sg. endings **-ēi* and **-ēu*, which appear as long *-ī* and *-ū* after the monophthongization. Long vowels from dialectal Indo-European contractions were shortened in gen.sg. *-a* < **-ōd* and dat.sg. *-u* < **-ōi* and *-ě* < **-āi*, Lith. *-o*, *-ui*, *-ai*, which were never stressed, but length was preserved in inst.pl. *-ȳ* < **-ōis*, Lith. *-aĩs*, where it is reflected as length (c) and by Stang's law (b) and Slovene neo-circumflex (a), e.g. *st̂ab̂r̂i* 'pillars', *k̂on̂ji* 'horses', *òkni* 'windows', *r̂aki* 'crabs', *l̂eti* 'years'. The Early Slavic loss of glottalization in post-posttonic syllables yielded long vowels which are reflected by the Slovene neo-circumflex in trisyllabic word forms where Dybo's law shifted the accent to the middle syllable, e.g. *osn̂ova* < **òpsnowā* 'base', *zab̂ava* < **zābařwā* 'amusement', inst.pl. *žen̂ami* < **gènařm̂iš* 'women', inst.du. *žen̂ama*, nom.pl. *tel̂eta* < **tèleNtā* 'calves', fem.sg. *noŝila* < **nòsiřlā* 'carried'. Length spread analogically in the neuter pl. ending, e.g. *l̂eta* (a) 'years', *p̂olja* (c) 'fields', also Slovak *mestá* 'cities', *srdcia* 'hearts', Čakavian and Posavian *vr̂imená* 'times', *imená* 'names', *ramená* 'shoulders', *telesá* 'bodies', and to a limited extent in other categories, e.g. Slovene inst. *gor̂ami*, *gor̂ama* (c) 'mountains', *kostm̂i*, *kost̂ema* (c) 'bones', in a limited area also *žel̂ela* 'wished', *m̂islila* 'thought', *vid̂ela* 'saw' beside regular *ž̂el̂ela*, *m̂islila*, *vid̂ela* (cf. Rigler 1970).

New long vowels from the monophthongization of diphthongs were shortened in dat.sg. *-i* < **-ei*, loc.sg. *-ě* < **-oi* and nom.pl. *-i* < **-oi-s* (cf. Kortlandt 2011: 128), which were never stressed, but preserved to a limited extent in gen.sg. **-ī* < **-e/ois*, **-ū* < **-e/ous*, loc.sg. **-ī* < **-ēi*, **-ū* < **-ēu*, and loc.pl. Slovene *-ēh* < **-oišù*. Long **-ī* is reflected by the neo-circumflex in the oblique form *n̂iti* of *n̂it* (a) 'thread' and long **-ū* as Slovincian *-ū* and in the Slovene locative by the neo-circumflex in *or̂ehu* (a) 'nut' and the retraction according to Stang's law in *k̂on̂ju* (b) 'horse' (which has an analogical neo-circumflex). The long vowel of the loc.pl. ending is also reflected by the neo-circumflex in *r̂akih*

(a) ‘crabs’ and the retraction according to Stang’s law in *kónjih* (b). In Kajkavian, the long vowel of the loc.sg. ending is found in *noći* ‘night’, *pečī* ‘stove’, *kostī* ‘bone’ (cf. Vermeer 1984: 380). The acute loc.sg. ending $*-ě < *-aHi$ is always short. While the nasal vowels of acc.sg. $-ǫ$ and nom.acc.pl. $-ę$ are always short because they were never stressed, the original distribution of long and short reflexes is preserved in gen.sg. Slovene *kráve* (a) ‘cow’ (without neo-circumflex) versus *goré* (c) ‘mountain’ and Susak (Croatian) *sestrè* (b) ‘sister’ versus *vodiè* (c) ‘water’, and in inst.sg. Slovene *kostjó* (c) ‘bone’, where the neo-circumflex of *nítjo* (a) ‘thread’ is due to the lost jer, not to the following nasal vowel.

Van Wijk’s law gave rise to new long vowels in endings in the paradigms of *konjb* and *volja*. These were subsequently shortened in the gen.sg. $-a$, dat.sg. $-u$, nom.pl. $-i$ and acc.pl. $-ę$ forms of *konjb* because these endings were never stressed, and analogically in inst.sg. $-em̃$ and dat.pl. $-em̃$. Length was preserved in loc.sg. $*-ī$, inst.pl. $*-ī$ and loc.pl. $*-īx̃$, which were later shortened in accordance with Stang’s law. In the paradigm of *volja* there is no evidence for analogical shortening, which may or may not have taken place before the general phonetic shortening according to Stang’s law. A new long nasal vowel developed from contraction in the posttonic inst.sg. ending $-oj̃$, cf. Polish acc.sg. *rybę* (a) ‘fish’, inst.sg. *rybą*, Slovene *ríbo*, *ríbo* (with neo-circumflex reflecting a long ending). The long vowel of gen.pl. *kostí* (c) ‘bones’ $< *-ĩ < *-bj̃$ developed from the retraction of the accent from the final jer.

REFERENCES

- Dybo, Vladimir A. 1962. O rekonstrukcii udarenija v praslavjanskom glagole. *Voprosy slavjanskogo jazykoznanija* 6, 3-27.
- Dybo, Vladimir A. 1968. Akcentologija i slovoobrazovanie v slavjanskom. *Slavjanskoe jazykoznanie: VI meždunarodnyj sbezd slavistov, Praga, 1968* (Moskva: Nauka), 148-224.
- Greenberg, Marc L. 2000. *A historical phonology of the Slovene language* (Wiesbaden: Harrassowitz).
- Kortlandt, Frederik. 1977. Historical laws of Baltic accentuation. *Baltistica* 13/2, 319-330.
- Kortlandt, Frederik. 1985. Long vowels in Balto-Slavic. *Baltistica* 21/2, 112-124.
- Kortlandt, Frederik. 1993. Tokie šalti rytai. *Baltistica* 28/1, 45-48.
- Kortlandt, Frederik. 2009. *Baltica & Balto-Slavica* (Amsterdam: Rodopi).
- Kortlandt, Frederik. 2011. *Selected writings on Slavic and general linguistics* (Amsterdam: Rodopi).
- Rigler, Jakob. 1970. Akcentske variante. *Slavistična Revija* 18, 5-15.
- Stang, Christian S. 1957. *Slavonic accentuation* (Oslo: Universitetsforlaget).

Vermeer, Willem. 1984. On clarifying some points of Slavonic accentology: The quantity of the thematic vowel in the present tense and related issues. *Folia Linguistica Historica* 5/2, 331-395.

Vermeer, Willem. 1992. In the beginning was the lengthened grade: On the continuity of Proto-Indo-European vowel quantity in Slavic. *Rekonstruktion und relative Chronologie: Akten der VIII. Fachtagung der Indogermanischen Gesellschaft, Leiden, 1987* (Innsbruck: Institut für Sprachwissenschaft), 115-136.