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## PROTO-INDO-EUROPEAN LONG VOWELS AND BALTO-SLAVIC ACCENTUATION

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### 0. Introduction

Proto-Indo-European long vowels are traditionally thought to be the source of acute intonation in Baltic and Slavic. After the discovery of the laryngeals and Winter’s law, this rule was reformulated to cover syllables containing a long vowel and syllables in which the syllabic nucleus is followed by a laryngeal or an Indo-European media, including cases in which the laryngeal or media was separated from the nucleus by a resonant. This view was challenged by Frederik Kortlandt, who maintains that Indo-European long vowels do not become acute in Balto-Slavic (cf. also Derksen 2008, 3ff.), while the other sequences do (including rare instances of a long vowel followed by a resonant and a laryngeal). Many scholars, however, continue to support the older view. Notable exceptions are Daniel Petit (2004, 180; 2010, 138f.), Ranko Matasović (2005, 152; 2008, 131ff.) and Ronald Kim in his unpublished dissertation (Ringe 2006, 75). Petit classifies the thesis that lengthened grade vowels become non-acute as “eine Vermutung, die über einen gewissen Wahrscheinlichkeitsgrad verfügt, aber nicht ganz unumstritten bleibt”. Matasović’s view differs from Kortlandt’s in that he believes that a lengthened grade that is not of Indo-European origin but arose in Proto-Balto-Slavic becomes acute.

Recently, Miguel Villanueva Svensson (2011a) challenged Kortlandt’s view in some detail. His article carefully analyzes all categories that

potentially shed light on the problem, adding various potentially relevant formations to the discussion. The conclusion of the article is that Kortlandt's theory does not explain all the data. Instead, building on proposals by Jasanoff 2002, 36ff. and Rasmussen 2007, Villanueva Svensson concludes that the intonation of Balto-Slavic syllables containing a long vowel or a laryngeal or ending in an Indo-European media depends on whether the syllable is word-final or not. He follows the traditional opinion that both long vowels and sequences containing a laryngeal become acute in non-final syllables. In final syllables, however, he follows Kortlandt in assuming that lengthened grade vowels regularly obtain circumflex intonation, while sequences containing a laryngeal become acute (thus also Jasanoff 2004, 249f.; Olander 2009, 114f.). Villanueva Svensson adopts Rasmussen's view (eventually going back to Endzelīns, cf. Olander 2009, 106) that monosyllabic forms regularly obtained circumflex intonation.

There is every reason to welcome Villanueva Svensson's thorough and critical survey of Kortlandt's view, especially because the discussion is entirely about the data involved and because all the (potentially) crucial categories are addressed. This unique opportunity for a serious discussion cannot of course be left unused. In the following, I will attempt to show that Villanueva Svensson's view cannot be maintained and that the data support Kortlandt's view that the Proto-Indo-European long vowels regularly became non-acute in Balto-Slavic.

The seeds for the present controversy were sown when the Indo-European laryngeals were discovered. This discovery has shown that in Proto-Indo-European there was a phonemic difference between a long vowel and a sequence of a vowel and a laryngeal. It follows that it could no longer be assumed that the two yielded the same results in the daughter languages. The central question of the present debate is thus whether or not the Indo-European phonemic difference was preserved in Balto-Slavic and, if so, whether this differentiation was limited to non-final syllables or not.

Villanueva Svensson's article discusses the following categories that could provide evidence to determine the regular prosodic outcome of lengthened grade vowels. I have added the section where the formations in question are discussed in the present paper:

- Nouns with a lengthened grade suffix such as Lith. *akmuō* (sections 3, 4 and fn. 1).
- Slavic sigmatic aorists, Baltic long vowel preterits and the Lithuanian future (sections 9 and 14).

- Root nouns (sections 4, 5 and 6).
- Intensive verbs (sections 6, 7 and 8).
- Indo-European Narten formations with a lengthened grade vowel (sections 10, 11 and 12).

Villanueva Svensson also discusses the possibility that monosyllabic forms regularly became non-acute in Balto-Slavic (section 14).

### 1. Acute accentuation and glottalization

A few matters of historical phonology and relative chronology must be discussed before we can proceed to discuss the relevant material. In Balto-Slavic, we find accentual differences that at least partially go back to a difference between glottalized and plain vowels. In Baltic this is shown by the fact that many varieties of Latvian and Žemaitian Lithuanian have glottalized vowels (i.e. vowels with a broken tone) in generally different sets of morphemes which only have in common that they correspond to an acute (= falling) tone in Aukštaitian Lithuanian. As is well known, the broken tone of Žemaitian Lithuanian generally corresponds to a stressed Aukštaitian acute in initial syllables and to any acute in non-initial syllables, while the Latvian broken tone generally corresponds to an originally unstressed Aukštaitian acute (which may have become stressed as a result of Saussure's law) (Young 1994; Derksen 1995, 166 with fn. 7).<sup>1</sup> In originally unstressed medial syllables, acute intonation is reflected as glottalization in Žemaitian and Latvian, e.g. north-west Žemaitian *aštōņe* 'eight', *pârbîekte* 'to come running', *lâstîte* 'to water', Latvian *astuõņi*, *pârbêgt*, *laistît* < \**aštôn'i*, \**p'ârbêgti*, \**l'âistîti*. If we disregard the substantial amount of secondary developments in both languages, they reflect a system in which the only tonal opposition in unstressed syllables was one between glottalized and non-glottalized long vowels (cf.

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<sup>1</sup> An exception is formed by post-tonic internal long vowels and diphthongs, which have a sustained tone if preceded by a syllable containing a broken tone, and a broken tone in other cases: *âbuõli* 'apples' (Lith. *obuolai*), *kuõduõls* 'kernel' (Lith. *kãnduolas*), but *džõluõns* 'sting' (Lith. acc. *gõluonj*), *devitãis* 'ninth' (Lith. *deviõntas*) (Endzelin 1922, 29; Young 2000). It is the broken tone which is secondary here, as becomes clear from a comparison with Lithuanian (Young 2000, 201). Its rise may be explained as a result of the tonal drop in the medial long syllable which was analysed as the (tonally falling) broken tone. One is reminded that the falling tone of Latvian is limited to the initial syllable (idem, 199f.). In examples with an initial broken tone, the tone was already low after the first syllable and the original non-broken tone on the second syllable was retained. I see no reason to posit a dissimilation of two broken tones in examples like *âbuõli* (thus Endzelin l.c., followed by Young 2000, 203).

already Illich-Svitych 1979, 52). The two different distributions of glottalization – in initial and unstressed non-initial syllables – leave little room for any other conclusion than that there is a direct link between glottalization and the Aukštaitian acute tone and that glottalization is the older of the two. For other arguments in favour of deriving the Aukštaitian falling tone from earlier glottalization see Kortlandt 2009, 77ff.

Earlier scholarship offers independent explanations for the rise of glottalization in Latvian and Žemaitian. The reverse explanation is much more straightforward: glottalization was lost in Aukštaitian and the most south-eastern Žemaitian dialects and became a falling tone in (originally) stressed syllables. In Latvian the loss of glottalization in stressed syllables yielded a weakly rising tone (cf. Derksen 1995, 165 on the phonetics). Introductions to the rise of the tonal oppositions in Baltic can be found in Derksen 1991 and Hock 2004, 13ff.

If the discussion had not been determined by the traditional view that departed from the idea that the glottalization was an innovation when compared to the Proto-Indo-European situation (and Aukštaitian Lithuanian), glottalization would likely have been commonly accepted as the source of the Baltic acute some time ago. This is of course not to say that all broken tones in Latvian and Žemaitian or every Lithuanian acute reflects Balto-Slavic glottalization, nor that recent phonetic processes cannot have resulted in broken tones. New broken tones arose when, e.g., the broken and falling tones merged in favour of the former in western Latvian. They were also introduced under Latvian influence into several Fennic dialects (Winkler 2000). In Žemaitian, secondary developments could cause a new broken tone, e.g. on short vowels before a resonant or glide as a result of the loss of a following syllable, e.g., *jâus* ‘grain’, *sêns* ‘old’, *gêrs* ‘good’, (Varniškiei) *k’êpâls* ‘loaf’, *mêdêms* dat. pl. ‘tree’, *rêkâls* ‘affair’, (Kretingiškiei) *vežêms* ‘cart’, *gôl* 3 pres. ‘to lie down’, *âudâm* 1 pl. pres. ‘to weave’ etc., and as the result of the loss of *-i-* as the second part of an unstressed diphthong, e.g. *vîrû* dat. sg., *vîrâ* nom. pl., *vîrâs* instr. pl. ‘man’<sup>2</sup> (Zinkevičius 1994, 97ff., 106ff.; Aleksandravičius 1957, 105; cf. also Stang 1966, 82f. and the examples in Grinaveckis 1973, 234ff.).

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<sup>2</sup> But not Žemaitian *matâ*, *matê* for standard Lith. *mataĩ*, *mateĩ* ‘sees, saw’, because here the Aukštaitian circumflex is an innovation (Kortlandt 2009, 19f., section 14 below).

These types of secondary developments can hardly be used as evidence against the equation of the Žemaitian and Latvian broken tones, as Poljakov (1997, 59) tries to do. The rise of the secondary broken tones must be dated after the rise of the broken tone in the first place. In the examples of secondary glottalization given above, speakers apparently associated certain phonetic sequences with the (intonation of the) glottalized syllables that were already part of their system. The shift of the Latvian falling tone to a broken tone in western dialects, e.g., is due to the automatic falling intonation of the second part of a syllable with a broken tone, which is also observed in Aukštaitian Lithuanian, where the acute became falling after it had lost its glottalization.

The reconstruction of earlier glottalization in East Baltic immediately accounts for the fact that Lithuanian appears to have had tonal opposition in unstressed syllables at a period preceding Saussure's and Leskien's laws (Stang 1966, 137). If we replace 'tonal opposition' by 'an opposition between glottalized and non-glottalized vowels', these laws become phonetically understandable and Aukštaitian can be compared directly to both Žemaitian and Latvian, where an acute in an unstressed medial syllable is in principle reflected as glottalization. The Lithuanian accentual innovations can be formulated as follows:

Saussure's law: a glottalized syllable attracts the accent from a preceding non-glottalized syllable (or, with Kortlandt 2009, 10f., from a non-falling vowel).

Leskien's law: a glottalized final syllable loses its glottalization and becomes short as a result.

The latter development finds a near parallel in Slavic, where the acute accent must be reconstructed as short during the last stages of Proto-Slavic (cf. Kortlandt 2011, 94f. on the long reflexes in Czech and Upper Sorbian and Greenberg 2000, 89f. on the long reflexes in Slovene), which can be explained by assuming that the loss of glottalization in stressed syllables co-occurred with shortening of the vowel in that syllable. Other originally long stressed vowels – regardless of whether they had a rising or a falling tone – remained long in Slavic, as did non-acute long vowels in final syllables in Lithuanian.

In Slavic, the sequence vowel plus laryngeal resulted in a short vowel in stressed position, but in a long vowel in post-post-tonic syllables. This is visible in, e.g., the neuter plural ending \*-ā which arose regularly in trisyllabic forms with initial stress and has been introduced analogically in other words,

e.g., Croatian dial. (Posavian, Novi) *imená*, Slovene *lěta* < \**lě̃tā* and was generalized in Slk. *-á* (Kortlandt 2011, 200, 271; Vermeer 1984, 374ff.). The long reflex is most easily explained if one assumes loss of a segmental glottal stop after an automatically lengthened vowel.

These observations point to a Proto-Balto-Slavic opposition between glottalized and plain vowels (long or short) or vowels followed by a glottal stop and vowels not followed by a glottal stop. To be sure, this has nothing to do with preconceived ideas about preglottalized consonants in Proto-Indo-European, as Villanueva Svensson (2011a, 8) and Matasović (2008, 134) suggest, nor is it dependent on the outcome of the question whether or not Proto-Indo-European long vowels became acute in Balto-Slavic. The reinterpretation of ‘acute’ as ‘glottalized’ in Baltic and Slavic has recently attracted a number of followers outside the “Leiden school”, notably Young 1994, Jasanoff 2004, 251 and Olander 2009, 14 for Baltic and Matasović 2005, 152 (and to some extent Holzer 2009, 152) for Slavic, with the reservation that some of them do so more reluctantly than others and that the details often differ. Villanueva Svensson kindly informs me that he does not believe that the Baltic acute must be necessarily reconstructed as glottalization.

## 2. Relative chronology

It has become clear that the laryngeals remained segmental phonemes (or merged into one segmental phoneme) for a considerable time in Balto-Slavic, e.g. because the operation of Hirt’s law is conditioned by the presence of a laryngeal directly adjacent to the syllabic nucleus (Illich-Svitych 1979, 62f.; Kortlandt 2011, 8f.). Further, a stress retraction has been proposed by Kortlandt to account for the root stress of forms like Lithuanian gen. sg. *vilko* ‘wolf’, dat. sg. *vilkui* as opposed to instr. pl. *vilkaĩs*, dat. sg. *galvai* ‘head’ as opposed to nom. sg. *galvà*, gen. sg. *galvõs*, 3 pres. *věda* ‘leads’ (2011, 11; 2009, 10f.). The retraction can be formulated as follows: in disyllabic word forms the stress was retracted from a final short or circumflexed vowel or diphthong unless the preceding syllable was closed by an obstruent (in a number of publications Kortlandt refers to the retraction as “Ebeling’s law”). The final stress of examples like *galvà* indicates that the original laryngeal was still present in the ending and that it still closed the syllable, thereby preventing retraction of the accent. The law can be dated after Hirt’s law, Winter’s law and the disintegration of the vocalic resonants and therefore appears to be one of the last common Balto-Slavic developments. It cannot be determined how much time passed between Hirt’s law or Kortlandt’s retraction and the disintegration of Balto-Slavic, but the fact that very few (if any)

sound laws can be dated to this period (cf. Kortlandt 2011, 161f.) suggests that it was relatively short.

It follows from the above that on the one hand, Proto-Balto-Slavic still had a segmental phoneme reflecting the laryngeals during its later stages,<sup>3</sup> while on the other hand we must reconstruct a late-Balto-Slavic glottalic feature or segment that would later give rise to ‘acute’ intonation.

Following the traditional scenario, late Balto-Slavic underwent the following innovations: the sequence vowel + laryngeal yielded a long vowel, merging with the existing long vowels, which subsequently became acute (= glottalized) phonetically. In Kortlandt’s scenario, the laryngeal (or glottal stop) lost its fixed position and became a (glottalic) feature rather than a segment after the disintegration of Balto-Slavic. It remained distinct from the existing long vowels. There is no doubt the second scenario is more economic, the question which will be addressed here again is whether it is supported by the data.

Let us briefly look at Villanueva Svensson’s conclusions as well. He concludes that long vowels merged with the sequence vowel plus laryngeal in Balto-Slavic, except in final syllables of polysyllabic forms (2011a, 33). This differentiation must have taken place in Proto-Balto-Slavic, because the merger is meant to have affected root-nouns which obtained a new nominative ending *\*-is* in Proto-Balto-Slavic times. Because Villanueva Svensson assumes a different reflex for  $-\tilde{V}-$  and  $-VH-$  in some positions, he cannot rely on the traditional idea that  $-VH-$  simply becomes a long vowel. Bearing the strong evidence for original glottalization in Balto-Slavic in mind, I tentatively rephrase Villanueva Svensson’s conclusion as follows (conceding that he would probably disagree with the formulation): long vowels become glottalized, except in final syllables (monosyllables are ambiguous). It is unattractive to assume an intermediate stage in which non-final  $-\tilde{V}-$  and  $-VH-$  obtain a different tone from  $-\tilde{V}-$  in final syllables and monosyllabic forms because this would be in conflict with the Baltic evidence that suggests that glottalization is older than tone. Now that the differences between the two theories have been established we can proceed to discuss the relevant data.

### 3. Lithuanian *várna*, Russian *voróna*

The alternation that is most often mentioned in relation to the hypothesis that a lengthened grade vowel became acute in Balto-Slavic is non-acute Lith. *vařnas* = Ru. *vorón* ‘raven’ versus acute Lith. *várna* = Ru. *voróna* ‘crow’.

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<sup>3</sup> There is no evidence for the preservation of three distinct laryngeals after they had coloured an adjacent vowel.

These forms would go back to \**uornos* and \**uōrneh*<sub>2</sub> respectively. This *Paradebeispiel* dates from pre-laryngealist times (cf. Hirt 1895, 140). It has often been suggested that the acute accent of Lith. *várna* is connected with the feminine gender (already by Fortunatov 1880, 583; cf. esp. Stang 1966, 157f.). The acute in *várna* may then be connected to that of Latvian *siēva* ‘wife’ and perhaps that of *stīrna* ‘roe’, Russian *koróva* ‘cow’ (although, because the last two nouns derive from an Indo-European root that is known to have variants with and without a root-final laryngeal, they are of little value). The acute of the well-known type Lith. *vil̃kė* ‘she-wolf’, *zùikė* ‘she-hare’ (as opposed to male *vil̃kas*, *zuĩkis*) cannot be equally old as that of the type *várna* because the fixed initial stress of *vil̃kė* as opposed to the non-initial stress of Skt. *vṛk̃í*, Ru. *volčícá* points to inner-Baltic origin of the Lithuanian accent (Pedersen 1933, 58; Derksen 1996, 196ff.; Petit 2004, 188ff.).

The reconstruction of a lengthened grade for Lithuanian *várna* and similar words is based exclusively on the accentuation, because all nouns involved have a root ending in a resonant and the vowel would probably have been regularly shortened (but see below). The comparison of the acute intonation of Lith. *várna*, Ru. *voróna* with the long vowel of Skt. *nárī-* ‘wife’ (thus Pedersen 1933, 55; Villanueva Svensson 2011a, 31) only becomes a possibility once it has been established that long vowels actually obtain acute intonation and that the Sanskrit type is of Indo-European origin. The Sanskrit word is often assumed to contain a lengthened grade, but it seems equally possible that it contains an *o*-grade that was lengthened as a result of Brugmann’s law (note that the meaning ‘pertaining to’ is already expressed by the suffix, cf. Lohmann 1932, 82). The lengthened grade cannot be proven and is in any case difficult to connect to the otherwise well-attested *vṛddhi*-derivatives in Sanskrit: “Leumann stellt wohl mit Recht *nárī-* mit denen [i.e. derivatives] auf *-āvī*, *-āyī* zusammen, bei denen *-ā-* nicht im erster Silbe steht, also nicht zur ableitenden *Vṛddhi* gerechnet werden kann” (Wackernagel, Debrunner 1954, 416). The derivational type that is referred to is that of Skt. *agnáyī-* to *agní-*, *manávī-* to *mánu-* etc.

In addition, the key example Lith. *várna* and its Balto-Slavic cognates are etymologically isolated and at best somehow related to Lat. *corvus* ‘raven’, *cornix* ‘crow’, Gr. *κορώνη* ‘crow’ (cf. Kortlandt 2009, 58f.; Petit 2004, 186ff.). The acute of the word for ‘crow’ is perhaps somehow connected to the suffix *-na*, either as part of the suffix or through analogical introduction from similar derivatives from roots in a laryngeal (ll.c., cf. Latvian *mēl̃nā dzil̃na* ‘black woodpecker’). Petit (2010, 120f.), on the other hand, assumes

that the acute variant is old, deriving the words for ‘raven’ and ‘crow’ from the set-root *\*uerh<sub>1</sub>-* ‘to burn’ (Lith. *vìrti*, pres. *vérda*, OCS *vbrěti* ‘to boil’, Hitt. *urāni*), with phonetic loss of the laryngeal in the *u*-stem *\*uorh<sub>1</sub>-u-* that would underlie Lith. *vařnas*.

Petit also points out that we might expect *\*urna* from a lengthened grade (ll.c., as in *pùlti* ‘to attack’ < *\*puolti*, *ařtuřtas* ‘eighth’ < *\*ařtuontas*, perhaps also the *o*-stem acc. pl. ending *-ùs* < *\*-uos* < *\*-uons*). This argument may not be decisive evidence against a lengthened grade as *pùlti* and *ařtuřtas* are “Wortbildungen jüngerer Datums” (Stang 1966, 77), but the analogy Villanueva Svensson (2011a, 31) assumes to counter it certainly further complicates the matter. One must conclude that the origin of the remarkable alternation between *vařnas* and *várna* remains problematic, but that there is no indication whatsoever that we are dealing with a lengthened grade in *várna*.

I do not adhere to the opinion that bird-names are generally unreliable when it comes to linguistic reconstruction (thus Villanueva Svensson 2011a, 10, fn. 10). In the case that evoked this remark from Villanueva Svensson – the word for ‘crane’ – the comparison between Lat. *grūs*, Lith. *gėrvė* and Cz. *žeráv* ‘crane’ suggests an ablauting *u(H)*-stem. The long vowel of the Czech form can hardly be anything else than a lengthened vowel. If it had been acute, it would have been shortened, irrespective of what the accentuation of the other Slavic forms is. The word thus does form a genuine example of a lengthened grade that became circumflex in Slavic. As far as the other forms of the same bird-name are concerned, the alternation between the suffixes *-u-* and *-n-* (cf. Gr. *γέγρανος* and OHG *kranuh*) is again strongly reminiscent of that between Lat. *corvus* and *cornīx* mentioned earlier.

#### 4. Root nouns and *i*-stems

Villanueva Svensson agrees with Kortlandt that long vowels obtained circumflex intonation in Auslaut.<sup>4</sup> Although the two scholars agree here, Villanueva Svensson chooses to discard some of Kortlandt’s examples that sup-

<sup>4</sup> The only counterevidence would come from the acc. pl. endings, which are acute in Lithuanian. Villanueva Svensson (2011a, 10f.) rightly points out the uncertainty about their exact prehistory. In any case they cannot be used as evidence here. Because the *i*- and *u*-stem endings cannot have contained a long vowel in the proto-language (Proto-Indo-European had no long *\*ī* or *\*ū*), acute intonation must have been introduced secondarily into the accusative plural ending of the *i*- and *u*-stems. The same may therefore have happened in the *o*-stems. Analogical spread of the acute from laryngeal stems would have been well-motivated (Kortlandt 2010, 100).

port their case, including Latvian *ābuōls* ‘apple’ and Cz. *žeráv* discussed above (fn. 1). He further discards most formations which Kortlandt (2009, 54f.) derives from original root-nouns as evidence. I will limit myself to some of the remarks made in this connection. The following argument, e.g., requires some discussion (2011a, 12):

“Kapović (2009) has shown that mobility spread among Slavic *i*-stems. Accordingly, even scanty evidence for AP *a/b* indicates original immobility, whereas AP *c* is basically ambiguous.”

Mobility may have spread in Slavic *i*-stems, but the evidence is mainly limited to two original root-nouns with a non-acute root, viz. *desēt̃b* ‘ten’ and *noč̃b* ‘night’, as was observed by Illich-Svitych (1979, 129f.). The fact that these two examples have immobile accentuation in part of Lithuanian but mobile accentuation in other Lithuanian dialects and part of Slavic is probably best explained as a result of the fact that their originally barytone accusatives \**dēs̃imtim* and singular \**nòktim*, plural \**nòktins* could be interpreted as mobile or barytone *i*-stem forms.

In Slavic, original barytony is reflected (indirectly) by Croatian *sèdam* ‘seven’, *òsam* ‘eight’, dialectal (e.g., Vrgada) *òganj* ‘fire’ (cf. *vòganj* ‘forge’), Slovene *pót* ‘path, way’ (Illich-Svitych, l.c.; Slovene (Pleteršnik) *òst* ‘spike’, also adduced by Illich-Svitych, does not reflect barytony but obtained its *o*- from *òst̃ar* ‘sharp’). Original root-stress has also been attested for the Lithuanian old root-noun *nakt̃is* ‘night’ and the *i*-stems Lith. *pilis* (*p̃ilis*) ‘castle’, *ùgnis* ‘fire’, *usñis* (*ùsnis*) ‘thistle’, *pàts* ‘self; husband’, *aṽis* ‘sheep’ and *kirm̃is* (*k̃irmis*) ‘worm’ (idem, 45ff.). Another example may be Lith. *nýtis*, S, Cr. *ñit* ‘thread’, if these words continue a *ti*-stem. A barytone neuter *u*-stem is continued by Lith. *p̃ekus* ‘cattle’, cf. OPr. *pecku*, Skt. *pású-* (n.) ‘cattle’, Goth. *faihu* (idem, 48) and Slavic barytone *u*-stems are continued by Cr. *ṽřh* ‘top’ and *ṽřl* ‘ox’.

All other *i*-stems, *u*-stems and root-nouns were probably mobile before Hirt’s law applied. As a result of Hirt’s law, the mobile *i*- and *u*-stems and root-nouns became barytone in all disyllabic forms. Most root-nouns that underwent Hirt’s law became barytone throughout the paradigm as a result, e.g. Lith. *lūš̃is* ‘lynx’, Cr. *m̃iš* ‘mouse’, *ř̃is* ‘lynx’ (with *r*- from ‘red’). Note that the word for ‘mouse’ must be reconstructed as PIE \**muHs-* on the basis of ToB *mašc̃itsi* ‘mice’ (Lubotsky apud Beekes 2010, 985). The *i*- and *u*-stems that underwent Hirt’s law, however, retained a mobile accentual paradigm that differed from mobile *i*- and *u*-stems with a root that did not contain a laryngeal because Hirt’s law had affected the disyllabic but not the trisyllabic

oxytone word-forms (instr. sg., gen., dat., ins., loc. pl.). This was resolved only after Baltic and Slavic had gone their separate ways, as is shown by the existence of Old Lithuanian (Daukša) predominantly barytone *sūnus* next to ‘normal’ mobile paradigms in Lith. *sūnùs*, S, Cr. *sin* ‘son’ (Kortlandt 2009, 89; 2001, 297).

Root-nouns and *i*-stems that underwent Winter’s law did not join the semi-mobile paradigm because they were not affected by Hirt’s law. They regularly show up as mobile paradigms, e.g. in Slovene *pâst* ‘trap’, *propâst* ‘decay’, *jêd* ‘food’, *rêz* ‘cut’, *gâz* ‘path through the snow’, and thus do not reflect secondary mobility in Slavic, as Kapović (2009, 242) would have it. The pattern they caused – non-acute *i*-stem derivatives from acute roots – did however become productive. This explains mobile *i*-stems such as Sln. *kâp* ‘drop’ and *dôlž* ‘length’ from roots containing a laryngeal (cf. *idem*, 241f.).

Other examples Kapović adduces to show that accentual mobility has been on the rise in Slavic are unlikely to do so. S, Cr. *smřt* ‘death’ does not reflect an acute but fixed stress on the second syllable of the stem as the result of the forward shift of the accent from the prefix known as Dybo’s law (*\*sǝmǝrtǝ* > *\*sǝmǝrtǝ* ‘death’, like *\*pǝtokǝ* ‘brook’ > *\*potǝkǝ* and *\*sǝdorǝvǝ* ‘healthy’ > *\*sǝdǝrǝvǝ*). Examples of the type Sln. *nît*, *nîti* ‘thread’, *žâl*, *žâli* ‘pity’ show a neocircumflex in the genitive, which cannot be due to a mixture with the mobile paradigm, as Kapović suggests, because we would then expect gen. sg. *\*nîfi*. The origin of the long vowel in the genitive of these nouns is unclear. If the form is not analogical to the locative (Dybo 2000, 26), these *i*-stems must originally have had a long ending (*\*nîti* > *\*nîti*). The long vowel may have been introduced analogically from the mobile *i*-stems, where we expect an original ending *\*-î* (cf. Lith. *-iês*, perhaps also Ru. *grudí* ‘bosom, chest’, *osí* ‘axis’, *pečí* ‘oven, furnace’ (next to barytone variants), cf. Stang 1957, 15). The short genitival ending is preserved in the originally masculine *i*-stem Sln. *mîš*, *\*mîši* > *mîši* ‘mouse’.

### 5. Proto-Indo-European *\*ǵ<sup>h</sup>u(e)h<sub>1</sub>r-*

Villanueva Svensson discusses the word for ‘beast, wild animal’, stating that it “has traditionally figured among the clearest examples against Kortlandt’s theory (if the root contained a laryngeal Hirt’s law would have yielded an immobile paradigm)” (2011a, 28). The word is mobile and acute in Baltic (Lith. *žvėris* (3) and Latv. *zvērs*) and mobile in Slavic. The original intonation cannot be determined on the basis of the Slavic material because acute and circumflex merged in mobile paradigms as a result of Meillet’s law (which Kortlandt attractively formulates as phonetic loss of the laryngeal in

pretonic position and subsequent analogical loss in stressed position within the same paradigm, 2011, 15f.). The evidence Kapović (2009) adduces in favour of an original acute root in Slavic cannot be taken seriously. The Croatian derivative *zvjère*, *zvjèreta* clearly arose through levelling of earlier \**zvjèjere*, \**zvjèjèreta*, \**zvjèjèretu* etc. The original paradigm is preserved in, e.g., Čakavian (Novi, Vrgada) *zviire*, *zviireta*. Similar polysyllabic forms with a shortened first syllable can easily have given rise to the denominal verb *zvjèrati*. The Sandžak Serbian paradigm \**zvèr*, gen. *zvèri* / *zvèra* which is cited by Kapović as the decisive piece of evidence in support of a Proto-Slavic acute may not exist. The source these forms come from, Barjaktarević (1966, 83), observes that the dialect in question has *i*-stem and *o*-stem forms reflecting a number of originally masculine *i*-stems. In this connection he gives a number of examples, including “*zvèr-i*, *zvèr-a*”, adding that these (or such?) forms are found in the whole dialect area. The notation with a hyphen appears to indicate that the nominative was *zvèr*, but this appears to be contradicted by forms elsewhere in the article: Novopazarski, Sjenički *zviijer*, Pešter *zviijer*, cf. also the form *zviijeri* in the Štavički dialects west of Novi Pazar elsewhere in the article (Barjaktarević 1966, 31–32). These forms have a diphthong, which is incompatible with an original acute. Whatever the source of the short vowel in the genitive forms *zvèri* and *zvèra*, it cannot be used for the reconstruction of an original acute.

In Kortlandt’s framework, variation between acute and non-acute intonation in a root noun such as the word for ‘wild animal’ is not unexpected, as Derksen (2008, 550) points out. One would mechanically reconstruct nom. \**g<sup>h</sup>ueh<sub>1r</sub>*, acc. \**g<sup>h</sup>ueh<sub>1r</sub>-m*. In Balto-Slavic, the nominative would have become circumflex by loss of the laryngeal after a long vowel (Kortlandt 2011, 20, 22, 55; this development is based on forms like Latv. *sàls*, *gùovs* from otherwise acute roots, cf. Lat. *sāl*, S, Cr. *gàvèz*, Sln. *gàvez* ‘comfrey’, lit. ‘cow-tongue’ < \**g<sup>w</sup>eh<sub>3u</sub>-*, Gr. βόσκω < \**g<sup>w</sup>h<sub>3-</sub>*, Skt. gen. pl. *gávām* < \**g<sup>w</sup>h<sub>3-eu-</sub>*, cf. Beekes 2010, 227f.). The root would have become acute in forms with a full grade of the root. This type of variation does not, however, explain the attested forms of the word for ‘wild animal’, because it is difficult to see how the circumflex root-variant would have ended up in oxytone case forms before Hirt’s law, without completely eliminating the variant \**g<sup>h</sup>ueh<sub>1r</sub>-*.

I therefore wish to propose an alternative explanation for the accentuation of Lith. *žvėrìs* etc. Assuming the root can indeed be reconstructed as \**g<sup>h</sup>ueh<sub>1r</sub>-*, we expect most oxytone forms of the paradigm to undergo Hirt’s law, but not all of them. The instr. sg. \**g<sup>h</sup>u(e)h<sub>1r</sub>-mì*, dat. pl. \**g<sup>h</sup>u(e)h<sub>1r</sub>-mùs*,

loc. pl. \**ǵ<sup>h</sup>u(e)h<sub>1</sub>r-sù* and instr. pl. \**ǵ<sup>h</sup>u(e)h<sub>1</sub>r-mìHs* would remain oxytone because the *-r-* in the preceding syllable was syllabic. This follows from the fact that the preceding laryngeal must still have been a segmental phoneme at the time Hirt's law operated (Kortlandt 2009, 44). The paradigm for 'son' remained mobile in most of Balto-Slavic on the basis of the final stress of the same trisyllabic case-forms (see section 4). It is therefore reasonable that the same explanation applies to the word for 'wild animal'.

The Proto-Indo-European noun \**ǵ<sup>h</sup>ueh<sub>1</sub>r-* thus regularly developed a mobile paradigm with an acute root in Baltic. The reconstruction with a laryngeal is not contradicted by its cognates. The Balto-Slavic words are traditionally connected to Gr. θήρ 'wild beast', Lat. *ferus* 'wild' and sometimes (to my mind convincingly) to OHG *bero* 'bear' and its Germanic cognates (Bammesberger 1990, 176; Ringe 2006, 106). The short root vowel of Latin *ferus* and OHG *bero* is due to later regular shortening, cf. De Vaan 2008, 215; Villanueva Svensson 2011a, 28. Puhvel has connected Hittite *kūrur-* 'enmity, hostility' to the etymon, which is also rather attractive (cf. the discussion in Kloekhorst 2008, s.v.). Young (2002) has argued that the same root is also reflected in Lith. *žiaurùs* 'fierce' and the mobile Slavic verb reflected in Czech *zuřit* 'to rage' Polish *zúrzyć się* 'to be angry', Russian *žurít* 'to scold', Serbian, Croatian, Slovene *žúriti se* 'to hurry'. Young thinks of Schwebeablaut of the type PIE \**dieu-* next to \**deiu-*, but it seems more likely to me that we are dealing with a secondary full grade of Balto-Slavic origin (even though the zero-grade has not been preserved). For the Lithuanian adjective one may also think of analogy with *šiaurùs* 'harsh, cold, northern'. These considerations have no implications for the explanation offered above for the accentuation of Lith. *žvèrìs* etc.

### 6. *ā*-stems with a lengthened grade

Villanueva Svensson follows Larsson (2001; 2002; 2004; cf. also 2005) in dismissing Balto-Slavic *ā-* and *ē-*stems as evidence for the establishment of the original tone of long vowels because the long vowel in these words would be secondary. Larsson objects against identifying words of the type *kovà*, *kōvé* 'fight', *lomà*, *lōmé* 'hollow' with root-nouns because of "the lack of external evidence supporting such a reconstruction" and because known root-nouns are often reflected as *i-*stems in Balto-Slavic (2005, 59). Although the latter is true, it does not mean that root-nouns cannot also be reflected as (*i*)*ā*-stems, especially in view of the productivity of the collective in Balto-Slavic. This productivity is reflected in the high number of *pluralia tantum* in Lithuanian. In Slavic, often new neuter *o*-stem singulatives were formed to these, e.g.

Lat. *mare* < \**mori*, Lith. pl. *mārios* < \**mori-h<sub>2</sub>*-, OCS *o*-stem *morje* < \**mor-i-o*- ‘sea’. It is thus in principle possible that at least some of the words in question continue a collective to a root-noun.

The root noun and its collective became a productive device to derive abstract nouns in Balto-Slavic, e.g. OCS *rěčb* ‘speech’, Lith. *bylā* ‘case, speech’, OCS *tvarb* ‘creation’, Lith. *tvorā* ‘fence’ (the meaning of these cognate nouns was influenced by related verbal forms), OCS *žalb* ‘monument of the dead’, Ru. *žal’* ‘pity’, Lith. *gėlā* ‘pain’ (idem). These formations (or the model they were created on) continue a lengthened grade of at least Balto-Slavic origin which did not become acute. The acute accent of S, Cr. *žào* (cf. Kapović 2009, 13) can be attributed to the fact that the root \**g<sup>w</sup>elH-* contained a laryngeal. The same applies to the acute accent of Latvian *lāma* ‘hollow’ as opposed to the circumflex root of Lith. *lomà* ‘hollow’ (Derksen 2008, 268). Lithuanian *núoma*, Latvian *nuõma* ‘rent’ cannot be separated from Russian *naëm*, S, Cr. *nájam*, Cz. *nájem* < PSl. \**na(j)bm̃* ‘rent’ and reflects a Balto-Slavic syntagm \**nō h<sub>1</sub>m-* lit. ‘take from’. The Baltic acute may be due to the laryngeal. For the derivation of verbal abstracts from collectives cf. the Germanic verbal abstracts in \**ga-* (see, e.g., Von Bahder 1880, 198ff.).

Larsson explains the long vowel in forms like *lōmē* as a result of the retraction of the accent from the ending \*-*ija-* onto the initial syllable with associated lengthening (idem, 60). The long vowel of the *ā*-stem forms would be analogical after the *ē*-stems. I agree with Larsson that the long vowels of *lomà* and *lōmē* cannot be separated from each other. I will discuss the formation of the *ē*-stems at another occasion and will here concentrate on the *ā*-stems.

The *lomà* type has mobile accentuation and the *lōmē* type belongs to accentual paradigm 2 (secondarily also 4) and therefore used to be barytone. The analogical spread of the long vowel from barytone *lōmē* to mobile \**lamà* >> *lomà* assumed by Larsson seems unlikely to me because there is no trace of an earlier \**lamà* or of a secondary immobile \**lōma* (> \**lomà*). This suggests that the association of the two types with each other is older than the stress retraction in *lōmē*. More importantly, we find similar formations in Proto-Slavic \**trěvā*, \**trāvā* ‘grass’ (with *-ā-* after the verb \**trāviti*, cf. Derksen 2008, 496), \**děrà*, \**dīrà* ‘hole’ (with *-ī-* after the verb \**dīrati*) and Slavic did not have metatonical *ē*-stems to provide the long vowel. The long root vowel of at least the *ā*-stems therefore appears to date back to Balto-Slavic.

The formation underlying the Balto-Slavic lengthened grade *ā*-stem abstracts is shared with Germanic, e.g. OHG *bāra* ‘stretcher’, *chāla* ‘ailment’, *fuora* ‘feeding, food’, G *Sprache*, ON *sát* ‘seat’, OE *wrāc* ‘persecution’ etc.

(cf. Bammesberger 1990, 110f.). Bammesberger explains the lengthened grade formations as inner-Germanic innovations (*idem*, 119). It seems to me that the lengthened grade  $\bar{a}$ -stems in Germanic and Balto-Slavic must have been built on the same model, i.e. a set of inherited  $\bar{a}$ -stems with a lengthened grade in the root.

Next to the verbal abstract  $\bar{a}$ -stems, Balto-Slavic has a category of lengthened grade intensive verbs with a present tense in  $*-aH-je-$ . Formally, these can be analyzed as denominatives to the abstract  $\bar{a}$ -stems. The intensive or imperfective semantics of these denominative verbs derived from an abstract noun is not unexpected, cf. English constructions of ‘to be’ with an abstract noun in *-ing*. I therefore think that the *type* Lith. *bylėti* ‘to speak’, Slavic *čarati* ‘to enchant’ is derived from nouns of the *type* Lith. *bylė* ‘speech’, Slavic *čara* ‘enchantment’. The derivational pattern is identical to that of Indo-European denominatives like Skt. *pṛtanāyāti* ‘to do battle’, Gr. *τιμάω* ‘to honour’, Latin *operāri* ‘to be at work’, Old Irish *berbaid* ‘to boil’, Goth. *salbon* ‘to anoint’ etc. In both cases we are dealing with the derivational process noun > collective (> abstract / concrete noun) > denominative verb (and noun / adjective > collective > denominative verb in the case of factitives of the *type* Hittite *nēuahḫ-*, Latin *novāre* ‘to renew’).

In Baltic and Slavic we naturally find many nominal  $\bar{a}$ -stems that are recent deverbal nouns from verbs in  $*-aH-$ . Also, many intensives in  $*-aH-$  must have been derived directly from a verbal root without the intermediate  $h_2$ -stem. The creation of deverbal lengthened grade verbs is likely to date back to (dialectal?) Proto-Indo-European because we find a similar pattern in Italic (De Vaan 2012) and Greek (Tucker 1990, 226ff.). However, as stated above, the morphological make-up of the intensive verb suggests that it is originally denominal.<sup>5</sup>

Not only the derivational pattern  $eh_2$ -stem > denominative present in  $-eh_2-je/o-$ , but also the lengthened grade of the root in these verbs (and the

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<sup>5</sup> The old theory that the long vowel of the Balto-Slavic intensives is of “iconic origin” (Schmalstieg 1993, 409) is unconvincing. Schmalstieg (*l.c.*) compares the long vowel of the Balto-Slavic intensives to the geminate in Germanic intensive verbs. These Germanic geminates, however, arose through regular sound change (Kroonen 2011, 93ff.) and the same must be assumed for the Balto-Slavic long vowel. The “iconic” semantics of the long vowel, which spread beyond its original domain in Lithuanian (cf. the examples in Schmalstieg 1993, 408), clearly post-dates the rise of the long vowel in the intensive verbs under scrutiny. It can safely be assumed that these verbs formed the model for the other “iconic” formations in Baltic.

underlying nominal formation) can be traced back to Proto-Indo-European. In Greek and Latin, potential archaic examples are Latin *cēlāre* ‘to conceal’, *vēnārī* ‘to hunt’, *sōlārī* ‘to console’, *sēdāre* ‘to restrain, cause to lie down’ and Homeric Greek *νομάω* ‘to distribute’, *πηδάω* ‘to leap, beat’, *πυτάομαι* ‘to fly’ (also *ποτάομαι*), perhaps also *τροπάω* ‘to turn’ (Kuryłowicz 1956, 303). Like the Balto-Slavic type, these are best explained as denominal verbs (cf. Schrijver 1991, 121, 124–128; Tremblay 1996, 23ff., esp. fn. 55, although De Vaan 2012, 329 recently proposed that we are in some cases dealing with deverbal derivatives from a perfect stem (cf. *sēdāre* next to perf. *sēdī*)). The underlying nouns may be preserved in Lat. *cella* ‘store, larder’, Goth. *wens* ‘hope, expectation’, Lat. *sēdēs*, ON *sát* ‘seat’, Gr. *νομή* ‘distribution’, *πηδόν* ‘oar’, *ποτή* ‘flight’, *τροπή* ‘turn’, but some of these may have been created from the corresponding verb at a later stage. The fact that these nouns do not all reflect a lengthened grade vowel can be attributed to the generalization of a different ablaut grade of the root (see below).

Other Greek verbs in *-άω* with a long root vowel need not be old. Greek *στρωφάω* ‘to twist’ is probably analogical after *τροπάω* because it has no Indo-European etymology and in Homer there is no corresponding noun from which it could have been derived. Similarly, Gr. *τροχάω* ‘to run’ (also *τροχάω*) may be an analogical formation, although a possible corresponding nominal form with lengthened grade is found in Arm. *durn* ‘potter’s wheel’ (see further Beekes 2010, 1506; Martirosyan 2010, 245). Villanueva Svensson (2011a, 28) further adduces Arm. *mnam* ‘to remain’ and *ansam* ‘to put up with’ as possible examples of a lengthened grade formation. The other examples he adduces are less certain because they need not reflect a lengthened grade or because the long vowel need not be old (see, e.g., Kloekhorst 2008, 481 on CLuw. *kiš-* ‘to comb’).

I reconstruct the following collective paradigm for the noun underlying Latin *cēlāre* (on the ablaut-pattern see Beekes 1985, 28ff.):

nom.	* <i>kēl-h<sub>2</sub></i> > * <i>kēl-h<sub>2</sub></i>	Lat. <i>cella</i> , <i>cēlāre</i>
acc.	* <i>k(o)l-eh<sub>2</sub>-m</i>	Lat. <i>clam</i> ‘secretly’ (De Vaan 2008, s.v.)
gen.	* <i>k(o)l-h<sub>2</sub>-os</i>	

The root vowel of the nominative form underwent regular lengthening within Proto-Indo-European because the form was monosyllabic (as in Sanskrit *dyáus* < \**dīēus* < \**dieus*, cf. Wackernagel 1896, 66; Nassivera 2000, 60). The laryngeals were consonants in the proto-language, as is shown by their loss in interconsonantal and word-final position in several branches

of Indo-European. Alternatively, one could explain the long vowel as a result of Szemerényi's law (loss of final post-consonantal  $*-h_2$  or  $*-s$  with compensatory lengthening of the vowel in the preceding syllable), but I agree with Beekes (1990) that this law is questionable.

The non-nominative forms of the paradigm formed the basis of most hysterodynamic (or, in Eichner's terms, amphikinetic)  $h_2$ -stems in the daughter-languages (but cf. Greek  $\kappa\tilde{\omega}\lambda\alpha$  'members, limbs' <  $*k^w\tilde{o}lh_2$ ). They often have an  $o$ -grade vowel in the root which can be explained as an early secondary full grade. The reconstructed lengthened grade nominative can, in my view, be regarded as the predecessor of the lengthened grade abstract nouns and denominatives discussed above. Roots of the structure  $*CeuiC-$  or  $*CeRC-$  generalized the zero grade of the root, rather than the lengthened grade of the nominative. This generalization may have taken place within Proto-Indo-European already in view of the correspondence between Latin and Balto-Slavic in this respect, e.g. Latin *dedicāre*, *ēducāre*, Slavic *sypati*, *gybati* (Kuryłowicz 1956, 302). In Balto-Slavic derivatives with zero-grade  $-u-$  or  $-i-$ , a secondary lengthened grade  $-ū-$  or  $-ī-$  was introduced in analogy to the type with lengthened grade  $-ē-$  or  $-ō-$ . The lengthened grade of a zero-grade root containing  $-u-$  or  $-i-$  became a productive device to derive Balto-Slavic iteratives in  $*-aH-$ . Thus we find Slavic *birati*, *-zyvati*, *-žimati* etc. from roots containing a vocalized resonant and even *-ricati*, *-žizdati* from the roots  $*rek-$  and  $*žeg-$  on the basis of the zero-grade imperatives, cf. OCS *rbci* and *žbzdi* (Kuryłowicz, l.c.). Villanueva Svensson (2011a, 28, fn. 30) refers to the similar Germanic type of iteratives with a lengthened zero-grade of the type ON *skúfa* and tentatively suggests that we may be dealing with a common Germano-Balto-Slavic innovation. I find this idea attractive.

As stated, the zero-grade derivatives appear to have been restricted to roots with the structure  $*CeuiC-$  or  $*CeRC-$  in Proto-Indo-European. De-verbatives from abstract nouns to these roots continue the root-shape of the non-nominative cases. The fact that derivatives from abstract nouns with a root-structure  $*CeR-$  or  $*CeC-$  generalized the lengthened grade of the nominative rather than the zero grade of the other case-forms must be attributed to the fact that the root was hardly recognizable in the other case-forms (cf. Lat. *clam*). This was not the case with roots with the structure  $*CeuiC-$  (cf. Lat. *-dicāre*, *-ducāre*) or  $*CeRC-$ . A similar distribution with regard to zero-grade and full grade is found in other *ie/o*-presents, cf. Skt. full grade *pásya-* 'to see', *ásya-* 'to shoot', *náhya-* 'to bind', but zero-grade *yúdhya-* 'to fight', *vidhya-* 'to damage', *dṛghya-* 'to fix'.

The distribution of the lengthened grade denominatives in Latin and the distribution of the lengthened zero grades in Balto-Slavic offer independent support for the scenario sketched above with regard to the origin of the long vowel. The first step was the derivation of a  $h_2$ -stem abstract noun from a verbal root. The nominative of this abstract noun had a long root vowel. A new imperfective or intensive verb was derived from the abstract noun with the denominative suffix *\*-ie/o-*. Depending on the structure of the root, this denominative verb had a lengthened grade or a zero-grade of the root. Because in most cases these derivatives existed next to the original verbal stem, the suffix *\*eh<sub>2</sub>-ie/o-* could be used to derive imperfective or intensive verbs directly from a verbal stem. The two-step process explains the imperfective, intensive or iterative (in Italic also atelic, transitive or factitive, cf. De Vaan 2012) semantics of the suffix. The *o*-grade of the root that is typical for the  $h_2$ -stems in a number of languages (cf. Gr. νομή ‘distribution’, ποτή ‘flight’, τροπή ‘turn’ mentioned above) reflects a late Proto-Indo-European introduction of the full grade into the oblique cases (Beekes 1985, 158ff.) and can be dated after the creation of the first denominal verbs in *\*-h<sub>2</sub>-ie/o-*.

We may conclude that the circumflex long vowel reflected in S, Cr. *tráva* ‘grass’, Slk. *diera* ‘hole’, Lith. *lomà* ‘hollow’ and similar formations continues a lengthened grade vowel of Proto-Indo-European origin. The fact that the vowel did not become acute supports Kortlandt’s theory. In the following sections the accentuation of the intensive verbs that were derived from nouns of this type will be discussed.

### 7. The accentuation of intensive verbs in Slavic

In Slavic, intensive verbs with a lengthened grade in the root regularly receive non-acute intonation and belong to accent paradigm *b*. This is indicated most clearly by the long reflexes of the root vowel in West- and South Slavic, but also indirectly by suffix-stress in East and South Slavic. The following intensive verbs can securely be reconstructed with a non-acute long vowel on the basis of these criteria (this is only a selection of verbs of this type): *badati*, *birati*, *garati*, *gatati*, *karati*, *drapati*, *-magati*, *drěmati*, *lětati*, *mětati* (Cz. *mítati*, Sln. dial. *-mítati*), *ricati*, *vidati* (cf. Van Wijk 1927, 98), *byvati*, *dyxati*, *gybati*, *kyxati*, *slyxati* (ibidem), *žyvati* etc., cf. also *-našati*, *-prašati*, *-hadjati*, *-gadjati*, *-ganjati*, *valjati*, *-věšati*, *nyrjati* etc. < *\*-i-ā-*, derived from verbs with an *i*-present. These verbs generally have a present in *\*-aHīe/o-*, but we also find plain *-ie/o-* presents of the type *skakati*, *skačō* which are due to contamination with imperfective verbs of the type *jōmati*, *jemljō*, *pъsati*, *pišō* etc. (cf. Meillet 1965, 296).

There are a number of intensive verbs which appear to have an acute root, i.e. root-stress, a short root vowel in Serbian, Croatian and Czech and a falling tone in the present in Slovene. These can all be shown to be secondary. S, Cr. *čàkati*, Sln. *čákati*, *čákam* ‘to wait’ is clearly a contamination of non-acute *\*čĕkati* and acute *\*čĕjati*. The other exceptions are verbs that occur frequently with a verbal prefix, such as Cr. *-tjecati* (= Cz. *tĕkat*, Sln. *-tĕkam*, but Sln. dial. *tíakati* must reflect a non-acute vowel), *-mirati* (but Cz. *-mírat*), *-virati* (= Sln. *-vîram*, but Cz. *-vîrat*), *sìpati* (= Cz. *sypat*), *mìcati* (but Ru. *mykát’*), *vrâcati* (= Cz. *vracet*, but Sln. *vráčam* suggests an originally long vowel), Cz. *lehati* (but Cr. *lijĕgati*, Sln. dial. *l-ptc. m. sg. pĕliĕgaw*, Ru. dial. *legát’*) (Slovene dialectal forms from Pronk 2009). The exceptions are explained by assuming that some of the prefixed verbs obtained initial stress analogically in Proto-Slavic before the operation of Dybo’s law. The model for this analogy were mobile verbs and derived postverbal nouns, which were barytone if they were prefixed but mobile if they were not (Kortlandt 2011, 69, 314; cf. also Pronk forthc.). The prefixed form subsequently underwent Dybo’s law and regular shortening of the resulting internal long falling vowel: *\*pòsýpa-* > *\*posýpa-* > *\*posýpa-* > Čakavian *posîpa-*, Neoštokavian *pòsipa-*. The original distribution is preserved in Neoštokavian *bíрати*, but *pòbirati*, *prèbirati* etc. The analogical spread of the prefixed variant with a short stressed root vowel affected more verbs in South Slavic than in West Slavic. It is not restricted to the iterative type with a long root vowel, cf. Sln. *(-)bòdam* and S, Cr. *hvàtati* reflecting root-stress, but more archaic Ru. *bodát’*, *xvatát’*.

Because the Slovene data are less transparent than those from Štokavian or Czech, I will discuss them in more detail. In Slovene, some intensives are attested with a rising tone on the root (with corresponds directly to the non-acute long vowel elsewhere), while others have a falling tone on the root in the present (1 sg. pres. forms from Pleteršnik 1894–1895, the overview is not intended to be exhaustive, for more material see Valjavec 1884a, 202ff.; 1884b; 1885):

*bégam*, *sédam*, *jédam*, *drémam*, *-práoljam*, *-rážam*, *vráčam*, *drápam*, *váljam*, *-prášam*, *káram*, *bívam*, but *-nâšam*, *-gânjam*, *-klânjam*, *-hâjam*, *-gâjam*, *râjam*, *stâjam*, *vrâčam*, *-lâgam* *-bîram*, *-mĕtam*, *sĕkam*, *grĕbam*, *-bâdam*, *tâkam*, *-mâkam*, *-pâjam*

In the preterit stem of originally acute roots and forms derived from it (including the infinitive), the accent is always rising. In the non-acute group it is mostly rising, except in verbs with a falling tone in the present and a root

containing *-a-*, where it is falling (e.g., *-bâdati*, *-nâšati*, *-gâratī*). In dialects we find a rising tone in these forms.

The distribution of the forms is twofold: we find a falling vowel in verbs that i) exist next to verbs with a historically short vowel (e.g. *nosīti*, *-nâšati*), with the exception of *-mêtam*, *sêkam*, *-prâšam* and *kâram*, and ii) occur always or predominately with a prefix (e.g. *od-*, *pre-*, *u-*, *v-*, *po-*, *izsêkati*) with the exception of *-prâšam*, *-rážam* and *-prâvljam*. The second distribution is the older one in view of the fact that there are three cases in which a simple verb has a rising vowel in the present tense but the corresponding prefixed verb has a falling tone: *lêgati*, *lêgam* but *-lêgam*, *lêtam* but *-lêtam*, *gîbam*, but *-gîbam* (cf. the corrections in Pleteršnik 1894–1895, volume 2, *Dodatki in popravki*); present day Slovene has generalized the falling tone in *lêgam* and the rising tone in *nagîbam* (SSKJ, s.vv. *lêgati*, *nagîbati*). These three verbs do not synchronically correspond to a short vowel in a related verb and are likely to preserve the original distribution.

The alternation between rising and falling accentuation must therefore be derived from an earlier alternation between simple forms with a paradigm inf. *\*lêgati*, pres. *\*lêga-* (also *\*lêže-* = Cr. *lijègati*, *lijèžē*) and prefixed forms with a paradigm inf. *\*oblêgati*, pres. *\*oblêgā-* (also *\*oblêže-*, cf. S, Cr. *sîpati*, *sîpām* / *sîpljēm*). The prefixed verb regularly developed into Sln. *oblêgati*, *oblêgam*. The simple verb apparently generalized the root stress from the present tense, as is more often the case in verbs with a long root vowel originally belonging to accent paradigm (b) in Slovene (e.g. *vêzati*, *sôditi* as opposed to Russian *vjazát'*, *sudít'*). We can conclude that the Slovene data confirm that the lengthened grade in the root of Slavic intensive verbs was non-acute.

Slavic also has a number of causatives in *\*-iti* with long *\*-ō-* in the root. These verbs originally had a mobile paradigm (Stang 1952) and therefore do not provide any information about the original intonation of the root: *gasiti* 'to extinguish' < *\*g<sup>w</sup>ōs-*, *paliti* 'to light' < *\*pōl(H)-*, *valiti* 'to roll' < *\*uōlH-*, *variti* 'to boil' < *\*uōrH-*, *daviti* 'to suffocate' < *\*d<sup>h</sup>ōu-*, perhaps *kaniti* 'to intend' < *\*kōn-* (cf. Gołąb 1967, 775f.). The formation of these verbs is similar to that of Latin *sōpīre* 'to put to sleep, lull' (Meillet 1896, 143f.; perhaps also ON *sæfa* 'to kill', if not an inner-Germanic innovation). The Latin type is thought to be denominal in origin (De Vaan 2008, 575 following Nussbaum), although this is not universally agreed on (cf. Vine 2012). Kortlandt derives the lengthened grade in the Slavic verbs from a PIE monosyllabic 1 sg. perfect of the type *\*dh<sub>3</sub>-ēu* 'put', cf. Skt. *dadháu* (2009, 178).

The same formation but with an acute root is found in Slavic *baviti* ‘to linger’ and *staviti* ‘to put’. Kortlandt (ibidem) explains *baviti* from PIE *\*b<sup>h</sup>eh<sub>2</sub>u-ei-* and argues that the acute of *staviti* is analogical after that of *baviti* or *stati*. A similar formation is *plaviti* ‘to float, make flow’. The causative *saditi* probably owes its acute to Winter’s law, while Slavic *slaviti* ‘to honour, celebrate’ is a denominal verb and the formation and etymology of *vaditi* ‘to accuse’ are disputed (cf. Derksen 2008, s.v.). On *grabiti* ‘to grab’ see below.

### 8. The accentuation of intensive verbs in Baltic

Lithuanian intensive verbs are most often characterized by the acute suffix *-au-*, which regularly became *-uo-* when stressed (cf. Kortlandt 2009, 183f.). Corresponding Latvian verbs in *-uoju* preserve the original denominal character of the formation, see Endzelin 1922, 626. Less frequently we also find Lithuanian intensives in *-oti*, present *-o(ja)* with a lengthened *-y-* or *-ū-* in the root, e.g., *bylóti* ‘to speak’ (3 pres. *bylója* / *bỹlo*), *klúpoti* ‘to kneel’, *kýboti* ‘to hang’ and with a *yod-*present *pliópoti* ‘to chatter’, *rékoti* ‘to whoop’, *šáukoti* ‘to whoop’ (also *šáukoti*, *-óti*), *švìlpoti* ‘to whistle’, *súpoti* ‘to rock’. The presents in *-oja* were replaced by *o-*presents within Lithuanian (cf. Kortlandt 2009, 171ff.). The Lithuanian intensives correspond to the much more frequent Latvian lengthened grade iteratives in *-ât*, *-âju* such as *brĕkât* ‘to cry repeatedly’, *nĕšât* ‘to carry back and forth’, *knâbât* ‘to peck’, *sûkât* ‘to suck’ etc. (see Derksen 1996, 338, 341f.).

The type Lith. *-o(ja)*, Latv. *-âju* corresponds to Slavic imperfective verbs in *-ati*, the type Lith. *-auja*, *-uoja*, Latv. *-uoju* to Slavic imperfective verbs in *-ovati*, which normally do not have a lengthened grade in the root. It is therefore most likely that the lengthened grade originated in Lithuanian verbs in *-oti* and spread to those in *-auti* / *-uoti*. We find a number of intensive verbs that have variants with *-oti* and *-auti* (Derksen 1996, 344): *dúsauti*, *dúsoti*, *klýkauti*, *klýkoti*, *rékauti*, *rékoti*, *súpauti*, *súpoti* etc. The lengthened grade subsequently spread as a derivational marker to verbs with other suffixes such as *-ėti* and *-inti*.

The acute accent of the root in Baltic intensive verbs contrasts with the non-acute root in the cognate Slavic formation. Derksen (1996, 339f.) has argued that the acute of the Baltic intensive verbs is due to regular metatony in verbs with the suffix *-ioti* (such as *tásioti* next to *tásýti*, these verbs correspond to the Slavic type *-našati* etc.) which spread to those in *-oti*. Most intensives in *-ioti* that show *metatonie rude* also have a secondary full grade *-ai-* (e.g. *gáinioti*) which suggests the formation has been rebuilt. According to Derksen root-stress is recent in these forms because the diphthong *-ai-* has

not become *-ie-*, which means the accent was on the suffix rather than the root. Remarkably, this contrasts with Slavic where the accent was on the root before Dybo's law.

While the Slavic intensive verbs have a non-acute long root vowel, the Baltic intensive verbs generally have an acute root (unless there is a corresponding nominal form, e.g. *bylóti* 'to speak', 3 pres. *bylója* / *bỹlo* next to *bylà* 'speech'). Because the Slavic forms cannot be explained as secondary, while there are indications that the Baltic acute is the result of recent metatony, I conclude that the intensive verbs receive a satisfactory explanation in Kortlandt's framework. They remain unexplained, however, if one assumes that a (non-final) lengthened grade vowel regularly becomes acute in Balto-Slavic.

### 9. The aorist

Villanueva Svensson discusses a number of preterits which according to Kortlandt show that a lengthened grade vowel does not become acute in Balto-Slavic. He dismisses Baltic long vowel preterits as possible evidence on the following grounds:

“there is no compelling reason to assume that Baltic  $\bar{e}$ -preterits like *bě̀rè* or the Baltic future must derive from the sigmatic aorist”

Perhaps not, but the long circumflex vowel of *bě̀rè* will have to be explained. As Kortlandt points out, roots ending in a laryngeal have acute intonation in this formation, e.g., *gérè*. This opposition suggests a difference between  $*b^h\bar{e}r-C-$  and  $*g^w\bar{e}rH-C-$ , where the acute intonation is caused by the tautosyllabic laryngeal.<sup>6</sup> It is hardly unreasonable to think of the *s*-aorist in this context, because it provides the required consonantal suffix (although its later loss remains problematic) and the lengthened grade. Note that the Baltic type strongly resembles the Slavic sigmatic aorist (both occur predominantly with transitive roots, cf. Kortlandt 2009, 186). As an anonymous reviewer suggests to me, one could assume that the accentual difference between *bě̀rè* and *gérè* is based on the accentual difference in the infinitive, which as a rule has the same intonation as the preterit. An original  $*b\acute{e}r\acute{e}$  could therefore have been adapted to circumflex *bě̀rti*, while an original  $*g\acute{e}r\acute{e}$  could have been adapted to *gér̃ti*. However, such an analogy is unlikely in the case of

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<sup>6</sup> Petit's (2010, 135f.) suggestion that *bě̀rè* has analogical length after *gérè* <  $*g\acute{e}r-s-$  <  $*gerH-s-$  is unnecessarily complicated. Because Petit accepts that the type partially goes back to *s*-aorists and the *s*-aorist paradigm is known to have had forms with a lengthened grade in the root, there is no reason why the long root vowel of *bě̀rè* should be younger than that of *gérè*.

*iṛ̃ti*, pret. *ēme* ‘to take’ because of the different root vocalism of the infinitive. This preterit, then, receives a natural explanation in Kortlandt’s scenario. For the other long vowel preterits Kortlandt’s phonetic explanation is more straightforward than the assumption of recent analogies with the infinitive (providing one is prepared to accept that the type continues a sigmatic aorist), but the latter cannot be ruled out.

About the Slavic aorist Villanueva Svensson states that:

“The notion that the root aorist *\*déh<sub>3</sub>-t* / *\*dh<sub>3</sub>-ént* ‘gave’ was replaced by *\*dōH-s-* in Balto-Slavic (not only with secondary *s-* suffix, but also with adoption of the original ablaut of the sigmatic aorist) is equally difficult to maintain. The same holds for the alleged derivation of OCS *mrě(tv)*, SCr. *ùmrijeħ* ‘died’ from *\*mēr-s-t* rather than from *\*mer-t* (Hitt. *merzi*, Ved. *ámṛta*).”

The fact that these aorists go back to a root-aorist is confirmed by OCS *mrětv*, *dastv* with the ending *-tv* that appears to be regular for original root-aorists (Stang 1957, 135, cf. also Van Wijk 1926). At least the aorist of ‘to give’, however, still provides evidence in favour of Kortlandt’s theory, because the 2<sup>nd</sup> and 3<sup>rd</sup> singular forms of the root-aorist can also be reconstructed with a lengthened grade vowel in Proto-Indo-European, cf. Lat. *vēnit*, Goth. *qem-*, ToB *śem* ‘came’ < 3 sg. aor. *\*g<sup>w</sup>ēm-t* (Kortlandt 2010, 132).<sup>7</sup>

The fact that S, Cr. *dā* has a long vowel can hardly be explained in any other way than by assuming it contained a lengthened grade vowel that did not become acute. If it contained a sequence *\*-eh<sub>3</sub>-* the paradigm would have become immobile as a result of Hirt’s law and we would have expected *dā̄* (which is incidentally attested as an analogical form after the 1 sg. *dāħ*, Daničić 1896, 17 with fn.). Kortlandt compares the alternation between the aorist *dā* and the infinitive *dāti* to that between Lith. fut. *duōs*, inf. *dúoti* (2010, 56, on the Lithuanian future see section 14 below).

Aorists with a non-acute monosyllabic stem ending in a resonant have root-stress in the first person singular and desinential stress in the plural: Cr.

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<sup>7</sup> Alwin Kloekhorst points out to me that Vedic 3 sg. aor. *ásvait*, 3 pl. *ásvitan*, ptc. med. *śvitāna-* ‘to shine’ and 2, 3 sg. aor. *adyaut*, ptc. med. *dyutāna-* ‘to beam’ must also preserve a root-aorist with a lengthened grade vowel in the singular forms. Villanueva Svensson cites Kim’s suggestion to derive the long vowel in ToB *śem* from a 1 sg. *\*g<sup>w</sup>ēm* < *\*g<sup>w</sup>em-m* (2001, the idea was also advocated by Schindler and Pinault, see Widmer 2001, 183), which is virtually impossible because ToB *śem(o)* is attested as a 2 sg. and 3 sg. form only, the 1 sg. form appears to be *kamau*. Also, the proposed development is contradicted by ToA *tkam* and ToB *kem* ‘earth’ < acc. sg. *\*d<sup>h</sup>gom-m*.

*mri̇jeh, mri̇je, mri̇je, mrijèsmo, mrijèste, mrijèše* ‘to die’. The 1 sg. form originally had a neoacute, cf. Posavian *zabl̃e* ‘I swore’. Prefixed forms regularly reflect fixed stress on the prefix which shifted to the root as a result of Dybo’s law (with introduction of the long vowel from the simplex), e.g. 1 pl. *ùmri̇jeh, ùmrijèsmo* (cf. Leskien 1976, 158f., 542). The 2, 3 sg. differs from the rest of the paradigm because it has a falling tone on the prefix: *ùmri̇je*. This points to the same pattern as in 1 sg. *dàh*, 2, 3 sg. *dâ* ‘gave’, *pìh, pî* ‘drank’ etc. (cf. Stang 1957, 134): mobility in the 2, 3 sg., which goes back to a root-aorist, but fixed stress in the other forms, which go back to an s-aorist. Original sigmatic aorists have the same paradigm, except for the supplet 2, 3 sg. which reflect older imperfect forms: *r̃jeh, rijèsmo, rijèste, rijèše* ‘to say’, 2, 3 sg. *rèče, dònijeh, dònijèsmo* 2, 3 sg. *dònese* ‘to bring’.

On the basis of the above, it seems that the sigmatic aorist had root-stress to begin with. This would be in accordance with the Sanskrit active sigmatic aorist injunctive, which was root-stressed when accented. The root-stress was shifted to the following syllable in accordance with Dybo’s law: 2 pl. *\*něste > \*něstè*. We are then dealing with a lengthened grade vowel which did not become acute in Slavic. There is, however, an alternative explanation.

Stang (1957, 133) assumes that the 1 sg. *mri̇jeh* had end-stress to begin with, like pl. *mrijèsmo, mrijèste, mrijèše*, and that the 1 sg. form obtained stem-stress as a result of the regular retraction of the accent from the final jer. This retraction would then also account for the length of the root vowel; the root vowel would have been shortened at an earlier stage as a result of pretonic shortening (cf. Sln. *róka* ‘hand’, *gréda* ‘beam’, Pol. *ręka, grzędą < \*rōkà, \*grędà < \*rōkà, \*grędà*, Kortlandt 2011, 29f.).<sup>8</sup> If the long vowel is due to the retraction from a jer in the 1 sg. (*\*něšṽ* (with a short root vowel) *> \*něšṽ*), the long vocalism of the plural forms must be due to analogy with the 1 sg. form. Because Serbian and Croatian tend to eliminate length alternations in disyllabic forms in favour of long vowels it is not unexpected that there is no trace of a short root vowel. Old Czech has variants with long and short root vowels in the asigmatic aorist (Gebauer 1958, 123; Vaillant 1966, 61). This situation could reflect an original mobile paradigm with length alternations in the root, but the short vowel may of course also be based on the present, imperfect etc., which always had a short root vowel. Stang’s scenario implies that the prefixed paradigm was originally 1 pl. *ùmri̇jeh, ùmri̇je, \*um-*

<sup>8</sup> The conditions of the shortening are not universally agreed on (see, e.g., Kapović 2005, 105f., fn. 120 and Kortlandt’s reply in 2011, 261ff.).

*rijèsmo* etc. and that the plural obtained initial stress in analogy to the 1 sg. This may be confirmed by the Serbian Church Slavic forms cited by Dybo 2000, 490f., 551ff. Most of the prefixed forms there have the same accentuation as the simple forms, e.g. 1 pl. *umrě̀xòmb*, 3 pl. *umrě̀šè* (twice), but we also find *umrě̀te* with stem-stress.

It seems, then, that the data allow the sigmatic aorist to be reconstructed with either stem stress or desinential stress. I am inclined to favour the former on comparative grounds: inherited final stress in the 1 sg. form is unexpected on the basis of the Sanskrit data and the fact that the root had an *e*-grade.<sup>9</sup> I conclude that S, Cr. *dā* reflects a non-acute lengthened grade vowel and that it is more likely than not that *ùmrijuh*, *dònijeh*, *řijeh* etc. do so as well.

### 10. Lengthened grade and metatony in verbs with a yod-present

Villanueva Svensson lists a number of Baltic verbs which derive from a non-acute root and have a long root vowel or diphthong which is attested with acute and with circumflex accentuation (2011a, 23):

Lith. *aprėpti*, *-rėpia* beside *-rėpti*, *-rėpia* “take, embrace”. Other examples: *grėbti* / *grėbti* “snatch, rake”, *trėkšti* / *trėkšti* “crush”, *plėšti* / *plėšti* “tear” (Latv. *plēst*), *žėbti* / *žėbti* “chew”, *kvėpti* / *kvėpti* “inhale” (Latv. *kvēpt*), *čiąpti* / *čiąpti* “close (mouth, lips)”, *siėkti* / *siėkti* “try to reach”, *pliekti* / *pliekti* “beat”.

We may add, e.g., *diegti* / *diėgti* ‘to plant’ (Latv. *diēgt*), *dėngti* / *deņgti* ‘to run’ (Latv. *diēgt*), *glėbti* / *glėbti* ‘to embrace, clasp’ (Latv. *glēbt*), *glóbt* / *glóbt* ‘to surround, envelop, care’ (Latv. *glābt*), *gróbt* / *gróbt* ‘to snatch’ (Latv. *grābt*) and *griėžti* / *griėžti* ‘to cut, carve’ (Latv. *griēzt*).

All examples have a root ending in an occlusive and have a *ie/o*-present and *ē*-preterit, both of which are in accordance with the fact that these verbs are transitive. They show accentual variation and must be explained in both frameworks. Next to the paradigms with the same vowel and intonation in all forms, we find the following paradigms: *trėkšti*, *trėškia*, *trėškė*, *kvėpti*, *kvėpia*, *kvėpė*, *grėbti*, *grėbia*, *grėbė*, *plėšti*, *plėšia*, *plėšė*. These suggest that the long vowel of these verbs originates in the preterit stem and from there spread to the present stem. This immediately renders Villanueva Svensson’s opinion that we may be dealing with “Narten-presents” (following Jasanoff 2003,

<sup>9</sup> Villanueva Svensson proposes to explain the accentuation of Cr. *dònijeh* from an analogical oxytone *\*doněšb̂* (for *\*doněšb̂*) after *\*uměr(x)b̂*, in which case the form would originally indeed have had fixed root-stress. The proposal is not particularly attractive because the 2, 3 sg. forms that would provide the basis for the analogy – *\*mrě(tb̂)* and *\*nese* – have very little in common.

81) highly unlikely. The hypothesis is compromised even further by the fact that there are no corresponding “Narten-presents” in other Indo-European branches (the long vowel reflected in the Albanian aorist *ropa* ‘to flay, peel’ is naturally most easily explained from a lengthened grade in the aorist).

In Villanueva Svensson’s framework, the acute regularly reflects a lengthened grade vowel, while he assumes that the circumflex variants arose through “retraction of the ictus”, referring to an article by Klingenschmitt I do not have at my disposal. It is unclear to me which retraction is meant here (in the preterit?), but it is not evident from the material that the circumflex should be secondary. In fact, the accentual variation receives a more satisfactory explanation if one accepts that the circumflex is the expected reflex of the Proto-Indo-European long vowel. In these verbs it would originate in the root- and sigmatic aorists. The introduction of the acute can be linked to the fact that all verbs in question form *ie/o*-presents (Petit 2010, 128). As is well-known, *ie/o*-presents built from roots ending in a resonant plus laryngeal regularly show metatony, e.g. *árti*, *ãria* ‘to plough’, *skélti*, *skēlia* ‘to split’ etc. This is due to the loss of the final laryngeal before the suffix *\*-ie/o-* and is of Proto-Indo-European date (Pinault 1982). The data at the beginning of this section show that this pattern – circumflex *ie/o*-present, acute preterit stem – became productive in Baltic. Assuming that the acute accent reflects glottalization, it is not unexpected that the variation between, e.g., the preterit stem *\*aʹr-* < PIE *\*h<sub>2</sub>erh<sub>3</sub>-C-* and the present stem *\*ar-j-* < PIE *\*h<sub>2</sub>erh<sub>3</sub>-i-* was extended to other verbal roots. This hypothesis is confirmed by a number of examples in which the acute was introduced in a similar manner into the preterit stem of roots ending in a resonant and forming a *ie/o*-present:

Lith. *skìrti*, *skìria*, *skýrė*, Latv. *šķiřt* ‘to separate’ (cf. Skt. *ákṛtas*, although LIV reconstructs two roots *\*(s)kerH-* and *\*(s)ker-* with derived *\*(s)kert-*), Lith. *atvėrti*, *àtveria*, *atvėrė*, Latv. *atvėrt* ‘to open’ (cf. Skt. *ápāvṛta-*, see also Lubotsky 2000, 317f.), Lith. *dirti*, *dìria*, *dýrė* ‘to skin’, dial. *dĩrti*, *dėra* (Derksen 2008, 135) (cf. Skt. 3 sg. aor. inj. *dárt*), Lith. *nėrti*, *nėria*, *nėrė* ‘to dive’ (cf. Latv. *nirt*, Gr. *δενδύω* if < *\*-nr-*), Lith. *šėrti*, *šėria*, *šėrė* ‘to feed’ (cf. *šėrmen(y)s* ‘funeral meal’, Pedersen 1933, 46), Latv. dial. *vėrtiēs*, *veŗuōs* ‘to look’ (cf. ToB *warṣṣām* ‘smells’), probably also Lith. *bėrti*, *bėria*, *bėrė* next to *beŗti*, *bėria*, *bėrė*, Latv. *bėrt*, *bėrt* ‘to pour, strew’, Lith. *lėmti*, *lėmia*, *lėmė*, also *leĩnti*, *lėmia*, *lėmė*, Latv. *leĩnt*, dial. *lėmt* ‘to decide, determine’, Lith. *rėmti*, *rėmia*, *rėmė*, also *reĩnti*, *rėmia*, *rėmė* ‘to support’.

According to Derksen (1996, 285f.) the acute of Lith. *bėrti*, *lėmti* and *rėmti* originates in the *sta*-present reflected in Lith. *birsta*, *limsta* and *rimsta* of

the intransitive verbs *birti*, *limti* and *rimti*, cf. also Lith. *žėrti*, *žėria*, *žėré*, next to *žėrti*, *žėria*, *žėré* ‘to strew’ and the *sta*-present of *žirti*, *žirsta*. Although Derksen’s explanation cannot be ruled out, it seems more likely to me that the acute is due to the same process as in *skirti*, *atvérti*, *dirti* and *nérti*. A further possible example with a secondary acute on the basis of a *yod*-present is Lith. *vėlti*, *vėlia*, *vėlé*, Latv. *vēlt* ‘to felt’. In this case it is rather uncertain whether the root contained a laryngeal. LIV reconstructs two roots *\*uel-* and *\*uelH-*. Gr. ἔλυτρον ‘envelop, shell, container’ is most easily explained from *\*uel-*, while Skt. *ūrmí-*, YAv. *varəmi-* ‘wave’ and perhaps Gr. ἄλυσις ‘chain’ point to *\*uelH-*.

In view of the metatony described above, the verbs cited by Villanueva Svensson are likely to have undergone the following analogy: 1. *trėkšti*, *trekšia*, *trėškė* >> 2. *trė̇kšti*, *treškia*, *trė̇škė* >> 3. *trė̇kšti*, *trė̇škia*, *trė̇škė*. The reverse of the first step, leading to a paradigm identical to the one under 1., is found in some verbs that had undergone Winter’s law or contained a laryngeal in the first place. There the present tense form – and eventually the whole paradigm – secondarily became non-acute. The pivotal form is again the *ie/o*-present and this time the development is limited to Lithuanian:

Lith. *rėžti*, *rėžti* ‘to cut’ (Latv. *riēzt*), *úosti*, *uōsti* ‘to smell’ (Latv. *uōst*), *júosti*, *juōsti* ‘to gird’ (Latv. *juōzt*), *skíesti*, *skiēsti* ‘to dilute’ (Latv. *šķiēst* ‘to waste’), *spėsti*, *spēsti* ‘to set traps’ (Latv. *spiēst* ‘to press’), probably also *rėngti*, *reñgti* ‘to prepare, equip, dress’, *rùngti*, *ruñgti* ‘to try to win, overcome’ (Lith. *rángčia* ‘enthusiasm, zeal’).

Some verbs with an acute diphthong *-au-*, a root in an occlusive and a *yod*-present apparently did not develop a circumflex variant: *gráužti* ‘to gnaw’, *snáusti* ‘to slumber’, *láužti* ‘to break’. It appears that the *metatonie douce* affected only roots containing a monophthong or nasal vowel but not roots containing diphthongs (at least not *-au-*). Other exclusively acute verbs with a *yod*-present are late formations, such as Lith. *léisti*, *lėidžia* ‘to let’, which still formed an athematic present in Old Lithuanian, or *grústi*, *grúdžia* ‘to pound’, which has a primary thematic present *grúda*.

The opposite metatony, viz. that of *trėkšti* >> *trė̇kšti*, also affected Latvian and is therefore of at least Proto-East-Baltic date. There is one possible parallel case in Slavic that I am aware of, viz. S, Cr. *plākati*, *plāčēm* ‘to cry’, which may be cognate with Lith. *plėšti*, *plėšti* ‘to tear’ discussed above (see De Vaan 2008, 469 on the possible connection with Latin *placeō* ‘I please’). This is, however, hardly enough reason to date the metatony to Proto-Balto-Slavic, especially because it is also possible that we have to reconstruct a root con-

taining a laryngeal (quasi-Indo-European *\*pleHk<sup>(w)</sup>-*) and that the Lithuanian present tense *plėšia* is analogical to similar cases like *kovpia* and *trėškia*.

### 11. Slavic *\*grabiti* ‘to grab’ and *\*sěk-* ‘to cut’

There are two Slavic verbs that may reflect a lengthened grade vowel and that have an acute root. These verbs are reflected in Cr. *gràbiti* ‘to grab’ and *sjěci* ‘to cut’. The first is cognate to Lith. *grėbti* and *gróbtì* ‘to snatch’ discussed in the previous section. I share Villanueva Svensson’s scepticism with regard to the reconstruction of a root *\*g<sup>h</sup>reb-* ‘to grab’ to account for the acute root of Lith. *grėbti*, *gróbtì*, OCS *grabiti*. The voiceless occlusive of ON *grápa* ‘to grab’ can easily be secondary (cf. now Kroonen 2011, 106ff.) and it is not particularly likely that the clearly related Skt. *gr̥bhñāti* ‘to seize’ obtained its *-bh-* analogically. I am not convinced by LIV’s solution to reconstruct *\*g<sup>h</sup>rebh<sub>2</sub>-* under the assumption that this would yield Indic *\*ghrabh<sup>i</sup>-*. Kortlandt (2009, 69) proposes to reconstruct two roots, viz. *\*g<sup>h</sup>reb-* and *\*g<sup>h</sup>reb<sup>h</sup>-*, which seems equally unlikely. I hesitate to attribute the Slavic acute to the same metatony that can be assumed to have affected the Baltic cognates, Lith. *grėbti* and *gróbtì*, because – as we have seen above – there are no other certain cases of this metatony in Slavic and because the *yod*-present is not attested in Slavic. The possibly cognate verb *\*grebti* ‘to dig, row’ (e.g., OCS *greti*, *grebo*, Russian *grestí*, 1 sg. pres. *grebú*, related to Latvian *grebt*, Gothic *graban* ‘to dig’) has a simple thematic present, but if the verbs for ‘to grab’ and ‘to dig’ are related, there was probably a split between ‘to dig’ and ‘to grab’ at a relatively early stage (cf. LIV s.vv. *\*g<sup>h</sup>rebh<sub>2</sub>-* and *\*g<sup>h</sup>reb<sup>h</sup>-*), so the Slavic thematic present may be of little value for the present discussion. I conclude that the most likely reconstruction of the root is *\*g<sup>h</sup>reb<sup>h</sup>H-* and the Balto-Slavic acute long vowel must be of secondary origin. A possible source for the vocalism is the semantically similar root *\*g<sup>h</sup>eh<sub>1</sub>b<sup>(h)</sup>-* (or *\*g<sup>h</sup>ab<sup>(h)</sup>-*?) ‘to take, hold’ that is reflected in Latin *habēō* ‘to have, hold’ and OIr. *gaibid* ‘to take’ (cf. De Vaan 2008, 277; LIV, 195 on the reconstruction and other possible cognates).

The second verb with an unexpected long acute root vowel is OCS *sěšti*, *sěkō* ‘to hack, hew’, with the reflex of an acute *jat’* in the infinitive and *l*-participle and mobility in the present tense of Cr. *sjěci*, *sijěčem*, Ru. *seč’*, *sekú*, Sln. *sěči*, *sěčem*, but with a short vowel in OCS *sekyra* ‘axe’. This is one of the most convincing possible examples of an acute accent from a lengthened grade. The synonymous Latin *secō* clearly suggests that the Slavic verb contains a lengthened grade. We find the same lengthened grade in the scarcely attested Lithuanian (Bretk.) *išsėkti* ‘to carve’, *įsėkti* ‘to dig into’ (accentuation unknown). Villanueva Svensson further adduces Lith. *pasėkelis*, which he

translates as ‘big axe’. According to the LKŽ, however, the word designates a large hammer used by blacksmiths. Although it is theoretically quite possible that the noun derives from the verb ‘to cut, mow’ (cf. OHG *hamar* < PIE \**h<sub>2</sub>ek-* ‘sharp’), this is not entirely certain.

Kortlandt (2009, 62) comments that the Slavic verb “adopted the long root vowel for disambiguation from the root which is preserved in Lith. *sekti* ‘to watch, follow’ and Slavic *sočiti* ‘to indicate, pursue’ (cf. Vaillant 1966, 163). The shortened length of SCr. *sjěci* was original in the infinitive and the *l*-participle, which had final stress before they adopted the accent pattern of *jěsti* ‘eat’ and *sjěsti* ‘sit down’”. The introduction of a lengthened grade in order to disambiguate the verb from an otherwise homonymic formation is rather *ad hoc*.

The origin of the long vowel remains unclear. One may think of the aorist (Old Church Slavic has an *s*-aorist *sěšę*; LIV (s.v. \**sekH-*) reconstructs a Proto-Indo-European root-aorist on the basis of Latin *secuī*), but a clear motivation for the spread of the long vowel to the present (other than the one suggested by Kortlandt) is missing. An analogical source for the acute cannot be ruled out. Baltic has a noun of unknown origin that denotes freshly mown grass for feeding animals, viz. Lith. *šėkas*, Latv. *sēks*. In Slavic the word may have merged with the root \**sek-* ‘to cut, hew’, which would explain the root vocalism of the Slavic forms. Slavic \**sěkti* is attested with the meaning ‘to mow’ in all of West Slavic, Old Russian and in Slovene dialects. The question of the origin of the acute vowel of *grabiti* and *sěsti* remains open.

## 12. Balto-Slavic verbal roots ending in a glide

On the acute reflexes of \**k<sub>1</sub>leu-* ‘to hear; be known’, Villanueva Svensson (2011a, 25) comments that “[r]econstruction of a variant with laryngeal (e.g. Derksen 2008, 453) would in any case be *ad hoc*”, The contrary is true: all instances of the root \**k<sub>1</sub>leu-* and (probably analogically) most instances of its extended variant \**k<sub>1</sub>leu-s-* (with the exception of Lith. *klausyti* and *paklūsti*, Latv. *klāusīt*) contain an acute vowel or diphthong in Balto-Slavic. Except if one wishes to posit a lengthened grade for all forms deriving from the root (i.e. for Slavic \**slava*, \**slaviti*, \**sluti*, \**sluxati*, \**slušati*, \**slyšati*, \**slyti*), one has to reconstruct a Balto-Slavic root-final laryngeal.

Verbal roots ending in a glide often behave as if they end in a glide plus laryngeal, irrespective of whether they contained a laryngeal in Indo-European. Thus, it appears that, apart from \**k<sub>1</sub>leu-* ‘to hear; be known’, \**smei-* ‘to laugh’ (Latv. *smiēt* vs. Skt. *-smita-*, Villanueva Svensson 2011a, 22), \**k<sup>w</sup>ei-* ‘to observe’ (if not from \**k<sup>w</sup>eh<sub>1</sub>-*, Beekes 2010, 1490) and ‘to pun-

ish, repent' (Cr. *čàjati* 'to wait', *kàjati se* 'to repent' if the Slavic acute is not analogical to acute *\*bajati* 'to tell', *\*lajati* 'to bark', *\*majati* 'to wave', *tajati* 'to melt', *\*gajati*, *\*grajati*, *\*rajati* all 'to caw, croak'), *\*pleu-* 'to float' (Lith. *plúti*, Cr. *plìti* 'to swim, sail' vs. Ru. *plot*, Pl. *plet* 'raft' < *\*plbtv*, if not contaminated with the synonymous *\*pleh<sub>3-</sub>*, cf. Derksen 1996, 116-117; 2008, 403, 405-407; LIV, 485, 487), and perhaps *\*kou-* 'to strike' (Lith. *káuti* 'to beat, hew, slay' vs. Slav. *kòznb* 'skill') and *\*krou-* 'to pile up, cover' (Lith. *kráuti* 'to pile up', Cr. *krìti* 'to cover' vs. Gr. *κρύπτω* 'to cover', ToB *krauptär* 'to gather' with an unexplained labial, cf. Adams 1999, 219f.)<sup>10</sup> obtained a laryngeal in Balto-Slavic.<sup>11</sup> Exceptions are the roots *\*ei-* 'to go' and *\*au-* 'to put on footwear', which are generally circumflex (but cf. Latv. *iêt* 'to go', on which see Pronk 2011, 317). The accentuation of Slavic *-uti* 'to put on shoes' is ambiguous because the fixed accent on its root may be the result of the regular forward shift of the accent from the prefix onto the root (Dybo's law).

### 13. Other potential lengthened grade formations

Villanueva Svensson presents a number of examples in which we would find an acute from a long vowel that have not been discussed so far. Of these, OCS *ob-*, *sv-rěsti*, present *-rěšto*, and *nyně* and cognates are irrelevant because they cannot be shown to have an acute root in Slavic. The analysis of Cr. *vjěra* 'faith' and cognates as reflecting *\*uērH-* rests entirely on the connection with Hitt. *uarri-* 'helpful, help', which is far from secure because of the semantics. Its acute is therefore of no relevance to the present discussion. For the acute root of Slav. *\*jbskati* 'to look for' I refer to Young 2006 and Pronk 2011 where a number of words reflecting initial *\*H(e)i-* or *\*H(e)u-* are discussed that turn up with an acute initial syllable in Balto-Slavic. A more detailed discussion is required for the following set of forms (Villanueva Svensson 2011a, 32):

"Sl. *\*něk<sub>vo</sub>*, *\*něč<sub>vo</sub>* "nobody, nothing" (OCS *něk<sub>vo</sub>*, SCr. *njětko*, *njěšto*, MBulg. *někto*, *něšto*), Lith. dial. *nėkas* "id", beside Lith. *ne*, *nė*, Sl. *\*ne* "not" (also Sl. *\*nek<sub>vo</sub>*, *\*nik<sub>vo</sub>*, Lith. *niėkas*)."

<sup>10</sup> Mir. *crúach* 'stack, heap', ON *hraukr* 'heap' < *\*krou(H)-ko-*, which provide no information about the presence of a laryngeal, probably derive from this root as well.

<sup>11</sup> Further note the similar variation between apparent *\*krei-* and *\*kreh<sub>1i-</sub>* 'to separate' (Ru. *kroít* 'to cut out', *kraj* 'edge', Latv. *krìet* 'to skim', *krìts* 'a type of net', Derksen 1996, 271f.; 2008, 248). At the Fachtagung of the Indogermanische Gesellschaft in Copenhagen, September 2012, Villanueva Svensson proposed that the acute in the Balto-Slavic reflexes of *\*kleu-* and *\*pleu-* arose in a *sta*-present.

The Slavic forms mean ‘someone, something’, rather than ‘nobody, nothing’. Here acute intonation is difficult to prove. The S, Cr. prefix \**ně-* is indeed stressed and has a short vowel, but this may rather indicate an original initial circumflex in trisyllabic forms (cf. *nĭtko* ‘no-one’, where Ru. *nĭktó*, Sln. *nihčè* < \**ni-kvt-žè*, gen. *nikôgar* point to a mobile paradigm). Slovene also has forms with stressed *ně-* in *nĕkaj* ‘something’, *nĕkam* ‘somewhere’, *nĕkak* ‘somehow’, which could reflect an acute initial syllable, but *nekôd* ‘from somewhere’, *nekatĕri* ‘some’, *nekôlik* ‘of some measure’ may indicate that root stress is rather the result of an accent retraction from a short syllable (Greenberg 2000, 143f., cf. Cr. *kàk*, *kàj*). In some environments, the acute should be reflected as a neocircumflex in Kajkavian Croatian and Slovene. An example of this could be Kajkavian (Bednja) *nĕki* ‘someone’ (gen. *nĕkega*, Jedvaj 1956, 308), but these forms may also go back to a mobile paradigm. Other dialects such as Kajkavian (Mraclin) *nĕki* (Šojat 1982, 458) and Sln. *nĕki* do not show the expected neocircumflex. Similarly, Kajkavian (Prigorje) *nĕčer* ‘someone’ < \**nĕ-čbto-že* (gen. *nĕkega*, Rožić 1893, 137) and (Gola) *nĕščè* ‘someone’ < \**nĕ-kvt-že* (Večenaj, Lončarić 1997, 219) would be expected to have a circumflex if the initial syllable originally had an acute accent. In all these cases the short vowel may have been introduced analogically from the oblique cases. We must conclude that the prefix \**ně-* may very well have contained an acute vowel, but this is far from certain.

In any case there is no reason to assume that the inherited form did not contain a laryngeal. Outside Balto-Slavic, the long vowel is matched by Lat. *nē* and resembles that of the negation Gr.  $\mu\acute{\eta}$ , Skt. *mā́*, ToAB *mā* < \**meh<sub>1</sub>* (cf. Kloekhorst 2008, 523). The circumflex of Lith. *nĕkas* ‘nobody, nothing’ may have arisen through regular accent retraction and metatony in the neuter \**neh<sub>1</sub>k<sup>w</sup>ó(d)* (cf. Derksen 2011, 62f.). The broken tone of Latvian *nē-* need not be old (Endzelin 1913, 104f.).

#### 14. Metatony in monosyllabic words

In Kortandt’s framework, the Proto-Indo-European lengthened grade vowels regularly became long non-acute vowels in Balto-Slavic. In Villanueva Svensson’s framework, on the other hand, the long non-acute vowel of the Baltic preterit and the Slavic s-aorist or that of root nouns (created within Balto-Slavic or earlier) requires an explanation. Villanueva Svensson adopts Rasmussen’s idea that Balto-Slavic monosyllables obtained non-acute intonation (2007). Both in the case of the aorist and in the case of root nouns one might indeed envisage a scenario in which the monosyllabic forms of the paradigm regularly became non-acute. However, Rasmussen’s rule is not

supported by the other evidence, as was pointed out by Kortlandt (2007) and also by Villanueva Svensson himself (2011a, 16ff.), cf. further Petit (2002) against the assumption of inherited metatony in monosyllabic words.

It appears that some sort of metatony is limited to part of Lithuanian, where we find pronominal forms like instr. sg. *tuõ*, nom. pl. *tiẽ*, acc. pl. *tuõs*, corresponding to Latvian acute nom. pl. *tiẽ*, acc. pl. *tuõs* (instr. sg. dial. *tuõ* merged with the acc. sg. *tùo* in most dialects, Endzelin 1922, 387). The Latvian acute shows that the Lithuanian forms cannot be used in favour of Rasmusen's monosyllabic metatony. A similar situation is found in the Lithuanian 3<sup>rd</sup> person future, where we find shortening of an acute according to Leskien's law in roots containing *-ý-* or *-ú-* (*gìs* 'will heal', *bùs* 'will be'), but metatony in roots containing *-ie-*, *-úo-*, *-é-*, *-ó-* (*liẽs* 'will pour', *duõs* 'will give', *dẽs* 'will put', *jõs* 'will ride'). Petit (2002) gives an overview of the dialectal material and to my mind convincingly argues that the metatony was originally limited to diphthongs. Cases like *dẽs* and *jõs* to *dėti*, *jóti* are analogical, the original shortened forms are found in dialectal *dès*, *jàs*. The introduction of *dẽs* and *jõs* on the model of the more widespread *liẽs* and *duõs* was motivated by the desire to eliminate the difference in vowel timbre between *dès*, *jàs* on the one hand and *désiù*, *dési*, *jósiù*, *jósi* etc. on the other (idem, 267, 270). The same explanation applies to the introduction of metatony in polysyllabic verbs in *-ėti*, *-óti* and *-úoti*. It accounts for the southern and eastern dialects which have metatony in polysyllabic verbs in *-ėti*, *-óti* but shortening in polysyllabic verbs in *-ýti* (cf. Zinkevičius 1966, 361; Kortlandt 2010, 54).

The purely Lithuanian secondary circumflex of *tuõ*, nom. pl. *tiẽ*, acc. pl. *tuõs*, 3 fut. *liẽs* and *duõs* is reminiscent of the Aukštaitian metatony of final diphthongs, which can be connected to Leskien's law. I repeat the formulation of Leskien's law given above: a glottalized final syllable loses its glottalization and becomes short as a result. The diphthongs *-au*, *-ai* and *-ei* also lost their glottalization in Aukštaitian after Saussure's law, but they were not shortened: *geriaũ* (adv.) 'better', *sukaũ* 'I turned', *sukaĩ* 'you turned', *vedeĩ* 'you led' (Zinkevičius 1998, 95). Their metatony can be viewed as part of Leskien's law, which preceded the general loss of glottalization. This is basically the view of Brugmann that was recently revived by Petit (2002, 274f.).

A direct connection of the circumflex of *tuõ*, *tiẽ*, *tuõs*, *liẽs*, *duõs* with that of *geriaũ*, *sukaũ*, *sukaĩ*, *vedeĩ* is hampered by the fact that in final syllables of polysyllabic forms we find shortened (and therefore acute) *-i* and *-u* instead of circumflex *-ie* and *-uo* in the verbal endings of the 1<sup>st</sup> and 2<sup>nd</sup> sg. and in the instr. sg., nom. du. and ill. pl. of *o*-stem nouns, in the nom. pl of *o*-stem

adjectives etc. (*gerì* vs. *geríjeji*). When Leskien's law applied, the acute long vowels in question were probably still monophthongal, i.e. *\*ē* and *\*ō* (Petit 2002, 269f.). Note that Žemaitian reflexes of *\*ē* and *\*ō* (viz. *ē*, *ō* in the West and *iē*, *ōu* in the North) indicate that the change *\*ō* > *uo* is a post-Proto-East-Baltic development. Long *\*ē* and *\*ō* were shortened to *\*e* and *\*o* in accordance with Leskien's law and the resulting short vowels *\*e* and *\*o* apparently merged with *\*i* and *\*u* at a later stage (*kitù*, *kitì*, *kitùs* 'other'). Because the Aukštaitian metatony of *tuō*, *tiē*, *tuōs*, *liēs*, *duōs* is so reminiscent of that of *geriaũ*, *sukaũ*, *sukaĩ*, *vedēĩ*, it seems likely to me that the former already had a diphthong when Leskien's law operated. This contradictory state of affairs may be explained by assuming that the diphthongization of *\*ē* and *\*ō* to *ie* and *uo* was earlier in monosyllabic forms or initial syllables than in final syllables of polysyllabic forms (at least at a phonetic level).<sup>12</sup> The circumflex diphthong of the monosyllabic pronouns spread to other pronominal forms such as instr. sg. *anuō* 'that', *katruō* 'which', nom. pl. *aniē*, *katriē*, acc. pl. *anuōs*, *katruōs*, while the acute was restored in *dù* 'two' of the basis of *abù* and *o-* and *u-*stem duals in *-ù* (as is also assumed in the framework that operates with monosyllabic metatony, cf. Zinkevičius 1966, 309f.; 1998, 131).

Žemaitian preserved glottalization in final diphthongs and lost it in final monophthongs. In Žemaitian and West Aukštaitian the 3<sup>rd</sup> person future the long acute vowel of the rest of the paradigm was introduced, unlike in the

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<sup>12</sup> Petit (2002, 269f., 277f.) employs different analogical scenarios for the pronominal forms and the future forms to explain why they were not shortened. This in itself is unattractive because it does not account for the fact that Žemaitian and western Aukštaitian behave differently in all these forms, just as in the case of other final acute diphthongs. Neither does it take into account that all examples of *\*ē* and *\*ō* in monosyllables except *dù* 'two' have become circumflex in Aukštaitian (except the western-most dialects). The traditional assumption that the *-ù* of the word for 'two' is due to influence from the nom. acc. dual of the *o-* and *u-*stems seems plausible to me. Finally, the analogical explanation Petit provides for the pronominal forms does not convince me. Petit assumes analogical restoration of the diphthong in the 3<sup>rd</sup> person pronoun nom. pl. m. *jiē*, acc. pl. *juōs* to avoid merger with nom. sg. f. *ji* and acc. pl. *jùs* 'you (pl.)'. My objections are the following a) especially the former merger is rarely likely to cause confusion, b) it does not explain the circumflex of the instrumental singular forms (as Petit himself observes), c) the model for the restoration is unclear and d) the spread of the restored diphthong to nom. pl. *tiē* and acc. pl. *tuōs* is poorly motivated. I therefore agree with Villanueva Svensson (2011a, 17) that a phonological account for the metatony of these forms would be preferable.

rest of Aukštaitian (Zinkevičius 1966, 361).<sup>13</sup> North-West Žemaitian had a monophthong in pronominal forms, which were shortened: *tò*, *tùs*. The acute diphthong is preserved in North-West Žemaitian *bovâ.u* vs. Aukštaitian *buvaũ*. South-East Žemaitian and neighbouring West Aukštaitian shared the general loss of glottalization with the (other) Aukštaitian dialects, but they have a falling tone in the type *buováu*, in West Aukštaitian also in the pronominal forms *túo*, *tíe*, *túos* (idem, 310, 343). Apparently, these dialects preserved the glottalization in forms ending in a diphthong when Leskien's law operated and lost it later when all glottalized syllables obtained a falling tone.

Kortlandt (2009, 19f.) gives an alternative explanation of the future forms. His point of departure is the fact that *gìs*, *bùs* reflect a zero-grade, while *liēs*, *duōs*, *dēs*, *jōs* must reflect a full or lengthened grade.<sup>14</sup> He reconstructs a lengthened grade that is regularly continued by the non-acute intonation of the latter category. Although there appear to be no formal objections against this scenario, I am inclined to favour Petit's explanation. Villanueva Svensson assumes monosyllabic metatony and early restoration of the acute in roots containing *-ý-* or *-ú-* (2011a, 19). Why only the latter category should have been restored remains unclear. It seems more logical to me that, in Villanueva Svensson's framework, the zero-grade forms would have remained acute because they originally occurred in non-final syllables only (1 pl. *\*b<sup>h</sup>h<sub>2</sub>u-s-me*, 2 pl. *\*b<sup>h</sup>h<sub>2</sub>u-s-te*) and therefore did not trigger his metatony. This does, however, imply that the ablauting paradigm still existed when the metatony worked.

Taking the dialectal Lithuanian metatony mentioned into account, I see little evidence in favour of an earlier, Proto-Balto-Slavic metatony. Most

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<sup>13</sup> It seems more likely to me that this was to avoid the quantitative alternation in the root that resulted from Leskien's law than that it served to eliminate an accentual alternation between circumflex and acute variants of the root within the same paradigm. The latter type of alternation is quite common in Žemaitian due to the secondary broken tones that were discussed in section 1 of this article. The model for the introduction of the long acute vowel into the 3<sup>rd</sup> person future form may have been forms with a diphthong such as *gáus* 'will get' (in West Aukštaitian also *dúos* and *líes* etc.), where the acute was regularly preserved.

<sup>14</sup> The opposition between zero-grade in roots containing *-i-* or *-u-* and full or lengthened grade in other roots suggests that different ablaut grades were generalized, depending on the shape of the zero-grade. The paradigm *\*b<sup>h</sup>ēh<sub>2</sub>u-s-*, *\*b<sup>h</sup>h<sub>2</sub>u-s-* generalized the zero-grade, Lith. *bùs*, which was not an option in the paradigm of, e.g., *\*dēh<sub>3</sub>s-*, *\*dh<sub>3</sub>s-*, Lith. *duōs*.

forms that would otherwise provide evidence in the matter are part of paradigms that also contain polysyllabic forms which could have influenced the intonation of the monosyllabic form (cf. the analogies proposed by Villanueva Svensson 2011a, 16ff.). Most value should therefore be attributed to isolated monosyllabic forms.

The main piece of evidence against Rasmussen's rule is the acute accentuation of Latvian *jūs*, Old Prussian *ioūs*. These forms can hardly be analogical. Lithuanian *jūs*, on the other hand, can easily have received a secondary long vowel after *\*jūs* became *\*jūs* and became identical to the accusative form. The model for the new length may have been provided by the *u*-stems, e.g. nom. pl. *dañgūs*, acc. pl. *dangūs* 'sky, heaven' (Petit 2002, 277), or by nom. *mēs*, acc. *mūs* 'we, us' (Kortlandt 2007, 234). The assumption that the nominative *jūs* is built on the accusative form is perhaps supported by the nasal vowel in the form *jūs* that is found in Žemaitian dialects (Arumaa apud Stang 1966, 255). In Slavic, it is difficult to determine the original accentuation of *\*vy* 'you (pl.)', but a Proto-Slavic short vowel from an original acute appears to be a likely option. We find a short vowel in West Slavic, a long falling vowel in Slovene *vī* and a long rising vowel in Croatian dial. *vī*. This is reminiscent of the various reflexes of *\*k̑vto* 'who' in Sln. *kdó* next to *kdó*, Cr. *kō* and USorb. *štó* showing secondary lengthening of the short vowel that is preserved in Cr. *tkò*, Cz. *kdo*, Pol. *kto*.

Truly isolated monosyllabic forms are otherwise hard to find. A good example may be Lith. *be-* 'while', which can be compared to the aorist of 'to be': OPr. *bēi*, Cr. *bjēh*. The Lithuanian form must have undergone Leskien's law and thus have been acute. We can reconstruct an old stative aorist *\*b<sup>h</sup>eh<sub>1</sub>* (Vaillant 1966, 65f.). The original acute is confirmed by the intonation of the South-Slavic form.

I conclude that there are at least two isolated Balto-Slavic monosyllabic forms that speak against the rule that all monosyllabic forms automatically become non-acute (Latv. *jūs*, Old Prussian *ioūs* and Lith. *be-*). We have already seen above that the Lithuanian 3<sup>rd</sup> person future forms were acute and monosyllabic. Villanueva Svensson's statement that "Rasmussen's evidence thus turns out to be of an extremely labile nature" (2011a, 18) is therefore more than justified. It is, then, surprising to see that Villanueva Svensson follows Rasmussen in employing the unlikely scenario of monosyllabic metatony to account for the circumflex intonation of the Slavic sigmatic aorist, Baltic 3<sup>rd</sup> person futures of the type Lith. *duōs*, Lith. *dēvi*, Balto-Slavic root nouns with a lengthened grade vowel, Latv. *sāls* 'salt' and *gūovs* 'cow'.

For all these Baltic examples, Kortlandt assumes that a laryngeal was lost after a lengthened grade (2009, 20, 22, 55, 178, see also above).

### 15. Conclusion

The hypothesis that lengthened grade vowels did not merge with a sequence of a vowel plus a laryngeal in Balto-Slavic is supported by all formations containing a lengthened-grade vowel that can reasonably be traced back to Proto-Indo-European (the type Lith. *duktė́*, *akmuō*, athematic aorists, abstracts nouns of the type *lomà* and the denominal intensive verbs based on them). Kortlandt's additional assumption that laryngeals were lost after a lengthened grade vowel explains a number of otherwise seemingly unrelated and unexpected non-acute roots such as Lith. *dė́vi* 'wears', Latv. *sàls* 'salt', *gùovs* 'cow', S, Cr. *dà* 'gave' etc., where in each case the presence of a lengthened grade can be shown to be plausible. One may add Lith. *duōs* 'will give' to this list, although I am in favour of explaining the circumflex accent of this form as an Aukštaitian innovation.

Villanueva Svensson (2011a, 21ff.) posits several Indo-European lengthened grades on the basis of Balto-Slavic acute long vowels, proposing that the lengthened grade arose in a "Narten" type formation. However, the habit of positing a "Narten formation" or using a "Narten derivational system" wherever one finds a long vowel is methodologically unsound if one does not substantiate the existence of a "Narten present" to a particular root and if one does not provide the motivation for the spread of the long vowel to other formations. Villanueva Svensson's prime example of the "Narten derivational system" clearly shows this:

"pres. \**séd-ti* / \**séd-nti* (Ved. *sādád-* 'sitting' < ptcp. \**sēd-nt-*) beside caus. \**sōd-éje-ti* (OIr. *sáidid* 'sets, fixes') and s-stem \**séd-(e)s-* 'seat' (Lat. *sēdēs*, OIr. *síd*)."

The "Narten" character of the root is unmistakably denied by the old reduplicated present reflected in Skt. *sídati*, Gr. ἵζω, Lat. *sīdō* and derivatives of the type OHG *nest*, Lat. *nīdus*, Skt. *nīḍá-* 'nest' < \**ni-sd-o-*. Sasha Lubotsky points out to me that the Vedic form *sādád-* that allegedly shows the "Narten present" only occurs once in the compound *sādádyonim* (RV 5.43.12). This compound can be regarded as a nonce-formation on the basis of the frequent collocation *sad-* + *yónim* 'sitting in the lap'. The long vowel is clearly taken from the preceding word *sādayadhvam*. The long vowel of Lat. *sēdēs* is usually explained from a monosyllabic nominative \**sēd(-s)* of a root-noun (cf. NIIL 593f., fn. 2), while OIr. *síd* may reflect a nominative \**sēd(-s)* of an s-stem (idem, 597, fn. 44) if it belongs here at all (idem, fn. 45). In spite

of Villanueva Svensson's attempts to explain a significant number of Balto-Slavic lengthened grades as remnants of a "Narten derivational system", I do not think a single "Narten present" can be posited on the basis of the Balto-Slavic evidence and no "Narten derivational system" can be set up on the basis of any of the Balto-Slavic lengthened grades discussed here.

There are some examples of acute syllables in Balto-Slavic which cannot be directly connected with the presence of a Proto-Indo-European laryngeal or voiced stop, such as S, Cr. *gràbiti* 'to grab', *brème* 'burden', Cr. *sjěci* 'to cut, chop', perhaps also Latv. *siēva* 'wife', Lith. *várna*, Ru. *voróna* 'raven'. These formations cannot, however, be directly connected with a lengthened grade either. Villanueva Svensson links *brème* to the Skt. hapax *bhárman* 'supporting board' (RV, also once *bhárman-*) (the long vowel is unexplained and matches that of the hapax *śákmanā* 'help' (usually *śákman-*) and *káršman* 'goal of a racing-course'). However, the identification of the two forms is not as good as it may seem, because *bhárman* denotes that what bears, while *brème* denotes that what is borne. The words are therefore better regarded as independent derivatives. The exceptions mentioned above cannot be used to determine whether or not a lengthened grade vowel became acute in Balto-Slavic.

Villanueva Svensson offers an alternative that is more complex than Kortlandt's theory because it predicts different outcomes in three different environments, viz. non-final syllables (always acute), monosyllabic forms (always circumflex) and other final syllables (acute or circumflex depending on the origin of the long vowel). It does not offer a better explanation of the material in return, because acute monosyllabic forms such as Latv. *jūs*, OPr. *ioūs*, Lith. *be-*, *bùs* and non-acute non-final syllables such as in the Slavic intensive verbs, aorists and in a number of Baltic *ā*-stems remain unexplained.

## **PROTOIDE. ILGIEJI BALSIAI IR BALTŲ BEI SLAVŲ KALBŲ KIRČIAVIMAS**

### *Santrauka*

Straipsnyje pateikiama kritinė medžiagos, susijusios su protoide. ilgųjų balsių re-fleksais baltų ir slavų kalbose, apžvalga. Teigiama, kad baltų ir slavų kalbose paveldėti ilgieji balsiai gauna cirkumfleksinę priegaidę visose žodžio pozicijose. Tokie pavyzdžiai kaip lie. *várna*, *žvèrìs* ar *grébtì*, kuriuose tradiciškai manoma protoide. ilguosius bal-

sius įgijus akūtinę priegaidę, turi būti aiškinami kitaip. Galima įrodyti, kad nemažai *-ja* prezenso veiksmazodžių šaknų patyrė akūtinę metatoniją latvių bei lietuvių kalbose ir cirkumfleksinę metatoniją lietuvių kalboje. Nėra argumentų, galinčių pagrįsti mintį, kad baltų-slavų viensiemeniams žodžiams visada buvusi būdinga cirkumfleksinė priegaidė. Lietuvių kalbos pavyzdžiai, kuriuose galima būtų išvelgti tokią raidą, patyrę vidines pačios lietuvių kalbos inovacijas. Pagaliau, baltų-slavų *ā* kamienams bei intensyviniams veiksmazodžiams su ilguoju vokalizmu paprastai būdinga cirkumfleksinė priegaidė ir galima parodyti, kad ji atspindi protoide. darinius su ilgaisiais balsiais.

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