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INDO-EUROPEAN LONG VOWELS IN BALTO-SLAVIC

1. There are currently two main positions concerning the development of Proto-Indo-European (PIE) long vowels in Balto-Slavic:

i) According to the "traditional" theory, PIE long vowels are continued as long vowels with acute intonation. Circumflex long vowels reflect post-PIE contractions or new long vowels that arose within Balto-Slavic.[1]

ii) According to Kortlandt (1975, 21ff.; 1985) PIE long vowels yield long vowels with circumflex intonation. Acute long vowels go back exclusively to sequences involving a laryngeal or a "voiced" stop (Winter's law).[2]

In this article I will present a defence of the traditional view. I will first discuss Kortlandt's theory (background: PIE lengthened grade and Balto-Slavic accentology, §§ 2–3; evidence, §§ 4–5), as well as Rasmussen's proposal of a circumflex metatony in monosyllables (§ 6). I will then present evidence in favor of the traditional theory (§ 7).

2. Building on an earlier suggestion by Wackernagel (1896, 66ff.), Kortlandt has proposed that the PIE lengthened grade originated in the following two environments (Kortlandt 1975, 84ff.; 1985, 112; Beekes 1990):

i) Lengthening in monosyllabic word forms, accounting for the nom. sg. of root nouns (**pṓd-s* "foot", **ĥḗrd* "heart", **h₃rḗĝ-s* "ruler, king", etc.) and for the sigmatic aorist (3 sg. **u̯ḗĝʰ-s-t*).

ii) Lengthening in word-final position before resonants, accounting for the nom. and loc. sg. of stems ending in a resonant (nom. sg. **ph₂-tḗr* "father", nom.-acc. sg. n. **u̯éd-ōr* "water (coll.)"; *i*- and *u*-stem loc. sg. **-ēi*, **-ēu*).

[1] E.g. Rasmussen 1992, 186; Jasanoff 2004, 176; Hock 2006, 25f., among others. With the label "traditional theory" I am loosely referring to a modern version of it, one accepting achievements like the laryngeal theory, Winter's law, or the "new look" of Balto-Slavic accentology.

[2] Kortlandt's theory has become *doctrina recepta* among Leiden scholars. In recent years it has also been accepted by a number of scholars not working within the Leiden framework, e.g. Kim 2002, 115f.; Petit 2004, 180; Matasović 2005, 152; Ringe 2006, 75; Kapović 2006, 163ff.

Other instances of traditionally reconstructed lengthened grade would reflect post-PIE secondary developments.

While recognizing that it would be desirable to know why PIE long vowels had a much narrower distribution than short vowels, there are several reasons to doubt the correctness of this particular theory:

2.1. First, the theory predicts lengthened grade in forms in which it is not found: i) root nouns like Ved. *tvác-* "skin", *vís-* "settlement", Av. *spas-* "spy", Gk. φλέψ "vein", etc., ii) *t*-stem **nók^{w}-t-* / **nék^{w}-t-* "evening; night"; iii) monosyllables like **ne*, **so*, **toi*, **tu̯e*, etc.; iv) case endings like dat. sg. **-ei*, nom. pl. **-oi*, voc. sg. **-ei*, **-eu*, etc.; v) *u*- and *n*-stem loc. sg. **-eu* (YAv. *-ō*), **-en* (Ved. *-an*) beside **-ēu* (Ved. *-au*), **-ēn* (Av. *-ąm/n*); vi) athematic root aorist (contrasting with lengthened grade in the sigmatic aorist).[3] The list could easily be extended. Beekes' solutions (1990), involving possible restrictions to the law, relative chronology, or different types of analogy, need not be discussed here. The fact remains that the theory requires a large number of auxiliary hypotheses in order to account for part of the data.

2.2. Second, there are alternative explanations for some of the forms that the theory actually explains. Thus, Szemerényi's law (*-ERH/s > *-ĒR) explains nom. sg. **ph$_2$tḗr* (< ***ph$_2$-tér-s*) or nom.-acc. n. **u̯édōr* (< ***u̯éd-or-h$_2$*). The morphological advantages of this approach are self-evident.[4] In some cases it has more explanatory power. As per Beekes 1990, 45f., Kortlandt's theory accounts for 3 pl. perf. **-ēr* (Lat. *-ēre* < **-ēr-i*, Hitt. *-er*) beside **-r̥* (Ved. *-ur*, Av. *-arə̆*), but this leaves Indo-Iranian **-r̥š* unexplained (Ved. *-ur*, GAv. *-ərəš*). Jasanoff's account via Szemerényi's law (full-grade ***-ers* > **-ēr* beside zero-grade **-r̥s*, **-r̥* being a compromise between **-ēr* and

[3] Kortlandt (2004, 9) gives three cases of lengthening in the root aorist: Gk. ἔσβη "went out" (< **sg^{w}ēs-t*), OIr. *·mídair* "judged" (< **mḗd-t*), Lat. *uēnī*, Go. 1 pl. *qemum*, TB *śem* "came" (< **g^{w}ēm-t*). Gk. ἔσβη, however, can be trivially explained as an η-aorist σβ-η-, whereas OIr. *·mídair* simply needs not continue an aorist. The potential equation Lat. *uēnī* = TB *śem* remains striking, but see Kim 2001 for an attractive solution via Szemerényi's law (2/3 sg. **g^{w}ēn* < **g^{w}em-s*, **g^{w}em-d*).

[4] Beekes (1985, 151f.) offers two arguments against this approach: i) case endings like gen. sg. **-ei-s*, **-en-s* provide direct counterevidence against Szemerényi's law, ii) the *ā*-stem nom. sg. **-(e)h$_2$* proves the existence of animate nouns with asigmatic nominative singular. Analogical remodeling, however, would be most trivial in gen. sg. **-ei-s*, **-en-s*. Lack of **-s* in the nom. sg. of feminine *ā*-stems is readily explained by the collective origin of this formation (note also nom.-acc. du. **-eh$_2$-ih$_1$*).

*-r̥s; Jasanoff 2003, 32f.) accounts for this ending as well. Similarly, Kortlandt's lengthening accounts for loc. sg. *-ēi, *-ēu, *-ēn, but not for full-grade *-eu, *-en. Schmidt's principle ("the endingless locative had one ablaut grade higher than the weak stem", Schmidt 1885, 308) has the advantage of directly generating these and other variants (e.g. GAv. *dąm* < **dḗm* beside YAv. *duuarə* < **dʰu̯ér*).

2.3. Third, long vowels are by no means restricted to the environments that Kortlandt's theory predicts. Most scholars now accept the existence of an archaic layer of PIE formations characterized by apophonic or invariant lengthened grade: Narten presents (**stéu̯-ti* / **stéu̯-n̥ti* > Ved. *stáuti* / *stuvánti* "praise") and causatives (**su̯óp-e̯i̯e-ti* > Lat. *sōpiō*, *-īre* "put to sleep", ON *sófa* "kill"), heteroclits (**séh₂-u̯r̥* / **séh₂-u̯n̥-s* > Hitt. *šēḫur* / *šēḫunas* "urine"),[5] *s*-stem nouns (**ĝḗrh₂-(e)s-* > Gk. γῆρας "old age", γέρας "(token of) honor"), *vr̥ddhi*-derivatives (**su̯ēk̂uró-* > OHG *swāgur* "brother-in-law"), thematic nouns (**h₁éd-o-* > ON *át*, OHG *āz* "food"), *ā*-stem nouns (**kóm-eh₂-* > Gk. κώμη "village; district"), etc.

Reconstructions like these are systematically rejected by Leiden scholars. Kortlandt (2004, 9), for instance, derives Narten presents from reduplicated presents: Ved. *tā́ṣṭi* / *tákṣati* "fashion" < **te-tḱ-* (cf. Gk. τέκτων "carpenter", τίκτω "give birth"), *dā́ṣṭi* "worships" < **de-dḱ-*, whence analogical *mā́rṣṭi* "wipes" < **me(m)rg-*, *stáuti* "praises" < **ste(st)u-*, etc. It is unclear to me how Kortlandt arrives at *tā́ṣṭi* / *tákṣati* from his reconstruction of the reduplicated present (strong stem **u̯i-u̯ékʷ-*, weak stem **u̯i-u̯kʷ-*, 3 pl. **u̯é-u̯kʷ-n̥ti*). The analogy he posits in order to explain *mā́rṣṭi*, *stáuti* (an unproductive type that, *pace* Kortlandt, is not restricted to Indo-Iranian) is in any case far from obvious.[6] To give another example, the noun for "liver" is usually reconstructed as **Hi̯éḱʷ-r̥* / **Hi̯éḱʷ-n̥-s* on the basis of Gk. ἧπαρ, YAv. *yākarə* beside Ved. *yákr̥t*, Lat. *iecur*, Lith. dial. *jēknos*.[7] YAv. *yākarə* is ambiguous (cf. de Vaan 2003, 68f.), but the idea that Gk. ἧπαρ has borrowed its vocalism from ἦτορ,

[5] See Le Feuvre 2007 on Gk. εὐρώεις "humid" (ultimately going back to **sēh₂-ur-o-*) and other derivatives of **séh₂-u̯r̥* / **séh₂-u̯n̥-s*.

[6] The idea that Ved. *tā́ṣṭi* / *tákṣati* goes back to a reduplicated present is due to Rix (*apud* Harðarson 1993, 29[12]). The crucial step would be 3 pl. **té-tḱ-n̥ti* > **téḱþn̥ti* by regular sound change. This produced an irregular paradigm that was regularized through the replacement of the strong stem **té-to/eḱ-* by **téḱþ-*. Note that this analogy requires the model of an already existing class of Narten presents.

[7] Lat. *iocineris* probably does not continue an old *o*-grade, cf. de Vaan 2008, 296.

κῆρ "heart" (Beekes 1985, 3) is *ad hoc* and can only be seriously entertained if one has already decided on other grounds that **Hi̯ék^{w}-r̥* is a very problematic reconstruction.

3. Balto-Slavic accentology. The cornerstone of Kortlandt's conception of Balto-Slavic accentology is the identification of the traditional acute tone with a segmental glottal stop of two possible origins: the PIE laryngeals and the PIE "voiced" stops (Winter's law), which in Kortlandt's version of the glottalic theory were pre-glottalized stops.[8] The glottal stop was still preserved as a segmental phoneme in the individual prehistory of the Baltic and Slavic languages. The broken tone of Latvian and Žemaitian, for instance, is regarded as a direct continuant of the Balto-Slavic glottal stop. The development of vocalic quantity in Slavic is taken to be directly dependent on its gradual disappearance.

We can now understand the importance that the intonation of inherited long vowels has in Kortlandt's system, in spite of the reduced number of secure examples. The identification of the Balto-Slavic acute with some type of glottal feature is now a widespread idea, but there is an important difference between seeing glottalization as a vocalic feature and its identification with a glottal stop. If acuteness is linked exclusively to the previous presence of a glottal stop (e.g. Lith. *galvà* "head", *bė́gmi* "I run" < **golʔu̯áʔ*, **beʔg-mí*, with no length even in East Baltic), it would be difficult to imagine how long vowels could develop in the same manner. This would imply that a form like nom. sg. **ĝ^{h}u̯ēr* (the traditional antecedent of Lith. *žvėrìs* AP 3, Latv. *zvę̂rs*) somehow managed to end up as Balto-Slavic **źu̯eʔris* or **źu̯ēʔris*.

Kortlandt's views on Balto-Slavic accentology cannot be adequately discussed within the limits of this article. For present purposes it is enough to stress the following points: i) the notion that PIE long vowels received circumflex intonation in Balto-Slavic is demanded by the internal logic of his accentological system, which in part rests on problematic assumptions (e.g. the glottalic theory); ii) Kortlandt's treatment of the evidence is conditioned by a theory on the origin of the PIE lengthened grade that is equally dubious.

4. Having these considerations in mind, we can now examine the evidence that Kortlandt (1985, 112ff.; 1997, 26) has adduced in favor of his theory:

[8] E.g. Kortlandt 1977, 322ff.; 1985, 122f. The idea that the Balto-Slavic acute is to be identified with glottalization of laryngeal origin goes back to Vaillant 1936, 111ff.

1. Long vowels in word-final position before resonants:

Nom. sg. of stems ending in a resonant: Lith. *akmuõ* "stone", *duktẽ* "daughter", Latv. *âbuõls* "apple", SCr. *žȅrāv* "crane" < *-ōn, *-ēr, *-ōl, *-ōu.

Long vowels in monosyllabic word forms:

2. Four formations are derived from the sigmatic aorist, which in Kortlandt's view had lengthened grade in the 2nd and 3rd singular, full grade elsewhere:

2.a) Slavic sigmatic aorist: SCr. 1 sg. *dònijeh* "brought", *ùmrijeh* "died", *zàkleh* "swore", *rȉjeh* "said".

2.b) Baltic long vowel preterit Lith. *bẽrė* "strewed", *lẽkė* "ran, flew", etc. (the *ē*-preterit has replaced an earlier *s*-aorist).

2.c) Slavic sigmatic aorist to roots ending in a laryngeal: SCr. 1 sg. *dàh* "gave", *lìh* "poured" vs. 3 sg. *dâ*, *lî* < 1 sg. *doHs-, *leHis- vs. 2/3 sg.*dōs-, *lēis- (< *dōHs-, *lēHis- through a Balto-Slavic rule *-ĒH- > *-Ē-).

2.d) Lithuanian future (going back to the injunctive of the sigmatic aorist) 1 sg. *dúosiu* "I will give", *líesiu* "I will pour" vs. 3rd person *duõs*, *liẽs* (cf. SCr. 3 sg. *dâ*, *lî*).

3. Original root nouns (continued as *o*-, *ā*-, or *i*-stems in Balto-Slavic):

3.a) SCr. *rȉječ* "word"; Lith. *gėlà*, Slvn. *žála* "pain" (OHG *quāla*); Lith. *žolẽ* "grass"; Lith. *mėsà*, SCr. *mêso* "meat" (Ved. *māṃsám*, *mā́s*); SCr. *jâje* "egg" (Lat. *ōuum*). Kortlandt recognizes that inherited root nouns are difficult to identify. Further candidates include OCS *mělъ*, *-ъ* "chalk", Lith. *smẽlis* "sand"; SCr. *vâl* "wave", Lith. *võlas* "roller"; SCr. *sâm* "alone", etc.

3.b.) In root nouns containing a laryngeal the rule *-ĒH- > *-Ē- applies: Latv. *sàls* "salt", *zùoss* "goose", *gùovs* "cow" < *sāls, *źāns, *g^{w}ōus (< nom. sg. *sēh$_2$ls, *$ĝ^{h}$ēh$_2$ns, *g^{w}ēh$_3$us).

3.c) The same rule explains Lith. nom. sg. *-ẽ* < *-ēh$_1$, generalized from root noun *-dẽ* < nom. sg. *d^{h}ēh$_1$(-s)* (: Ved. *-dhā́*, Lat. *-dēs*).

5. Part of this evidence can be discarded from the outset, as it is either too insecure to be used or depends on personal views of Kortlandt that other scholars simply need not accept. Thus, there is no compelling reason to assume that Baltic *ē*-preterits like *bẽrė* or the Baltic future must derive from the sigmatic aorist. The notion that the root aorist *déh$_3$-t / *dh$_3$-ént "gave" was replaced by *dŏH-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(tъ)*, SCr. *ùmrijeh* "died" from *mēr-s-t rather than from *mer-t (Hitt. *merzi*, Ved.

ámr̥ta). The majority of original root nouns listed in Kortlandt 1975, 73f.; 1985, 118 are suspect of being fairly recent creations (e.g. *nomina postverbalia* to iteratives and factitives, the solution generally favored by Vaillant 1974, 34ff.). The evidence thus reduces to Lith. *akmuõ*, *duktẽ* (§ 5.1), Slavic sigmatic aorists like OCS *vědsъ* "I led" (§ 5.2), and some nominals (§ 5.3). Kortlandt's rule **-ĒH-* > **-Ē-* will be discussed separately (§ 5.4).

5.1. The case of Lith. nom. sg. *akmuõ*, *duktẽ* is practically probative, as it is difficult to imagine how the circumflex could be secondary.[9] Kortlandt derives *akmuõ*, *duktẽ* directly from **-ōn*, **-ēr*, with regular loss of *-n*, *-r* after long vowels, whereas I prefer to start from Bl.-Sl. nom. sg. **-ō*, **-ē*. The issue (which cannot be pursued at greater length here) is important for the development of long diphthongs in auslaut.[10]

Lith. thematic dat. sg. *-uĩ* (< **-ōi* < **-o-ei*), inst. pl. *-aĩs* (< **-ōis*), gen. pl. *-ų̃* (< **-ōm* < **-o-om?*) point to circumflex intonation. To be sure, hiatal **-oei*, **-oeis*, **-oŏm* (*vel sim.*) or even **-oHei* etc. (cf. Beekes 1990, 38) cannot be categorically excluded, though I find this unlikely for the dat. sg. and the inst. pl. Lith. *ā*-stem acc. sg. *viẽtą* < **-ām* (< **-ah₂-m*, Stang's law) points in the same direction, but root accentuation could simply be analogical to the acc. sg. of the other stems.

Support for acute intonation, on the other hand, comes from acc. pl. *gerùs* (*gerúosius*), *geràs* (*gerą́sias*), *akìs*, *turgùs*, which have been variously derived from **-ōs*, **-ās*, **-īs*, **-ūs* or from **-ŏns*, **-āns*, **-ins*, **-uns* (*vel sim.*).[11]

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[9] There are two alternatives to simply taking Lith. *-uõ*, *-ẽ* as *lautgesetzlich* from **-ō(n)*, **-ē(r)*: i) the circumflex was adopted from monosyllabic *šuõ* "dog", *žmuõ* "man", ii) it was extended from nom. sg. **-o-Hō(n)* (weak stem **-o-Hn-*), with Hoffmann's suffix. Both scenarios offer too slender a basis for the analogy to be credible. Note that through this article I am tacitly disregarding the traditional view that PIE had contrastive intonations in word-final position.

[10] I leave out of consideration Latv. *âbuõls* and SCr. *žȅrāv*. Latv. *âbuõls* may be regular from nom. sg. **h₂abōl* (*vel sim*). I am not certain, however, that this implies **-õl(-)* rather than **-ól(-)*, cf. Endzelin 1923, 28. Sl. **žeravъ* "crane" is unreliable (like bird names in general; note that Lith. *gérvė*, Lat. *grūs*, Gk. γέρανος, OHG *kranuh* hardly allow for a neat PIE reconstruction). In Slavic there is evidence for AP *a* (SCr. *žèrav*, Slvn. *žerjàv*), *b* (Cz. *žeráv*, Ru. *žuráv'*) and *c* (SCr. *žȅrāv*), cf. Kapović 2006, 166.

[11] In this connection it is interesting to observe that Klingenschmitt (2008, 181, and other publications) has argued that short diphthongs in word-final position regularly received acute intonation in Balto-Slavic: i) Lith. nom. pl. *gerì*, *geríeji* < **-oi* (vs.

With due caution in the case of the accusative plural (the exact prehistory of which remains problematic) the evidence supports Kortlandt's theory in auslaut. It remains to be seen whether it can be maintained in inlaut as well.

5.2. As already observed, the evidence from the sigmatic aorist in reality reduces to SCr. 1 sg. *dò-nijeh* "I brought" (inf. *dò-nijeti*) and *rȉjeh* "I said" (inf. *rȉjet* in Dalmatian dialects, otherwise expected *rèći*), both continuing an old sigmatic aorist, cf. OCS *nĕsъ*, *rĕxъ*. The vocalism of inf. *dò-nijeti*, *rȉjet* can only have been borrowed from the aorist.[12] The preserved long vowel *-ije-* < *-*ĕ̄*-* unambiguously points to circumflex intonation and thus provides fairly strong support for Kortlandt's theory.

The question that now arises is whether the circumflex of *dò-nijeh*, *rȉjeh* can be explained in some other way. A possible phonological solution will be examined below (§ 6.3). An analogical solution has been essayed by Olander (2009, 138), who suggests that the Slavic sigmatic aorist acquired final accentuation in analogy with the infinitive (Sl. **nesti*): **|nēssu* → PSl. **nēs|su* > CSl. **nĕ́sъ* (Olander's notation), which would also lead to SCr. *dò-nijeh*. I don't know whether Kortlandt (2006, 365) is right in claiming that such an analogy is extremely unlikely.[13] I wonder whether one could not suppose analogy of aorists like 1 sg. **merxʲъ*, 2/3 sg. **mêr(tъ)* once the 2/3 sg. **nĕ* had been replaced by imperfect **nȅse*, both formations involving enclinomena in the 2nd/3rd singular.

5.3. Root nouns. Before discussing a representative sample of Kortlandt's evidence some general observations will be in order:

i) Kortlandt's derivation of a large number of length-grade *o-*, *ā-*, and *i-*stems from root nouns is conditioned by his views on the PIE long vowels (§ 2). Here I will also consider other possible sources.

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vilkaĩ < coll. **-ah₂-i*), ii) 2 sg. *vedì*, *vedíesi* < **-ei* (Balto-Slavic innovation), ii) adv. *ankstì* "early" < loc. sg. **-e/oi* (vs. *namiẽ* "at home" < disyllabic **-o-i*). This rule offers an attractive account of the contrast between adj. *gerì* and subst. *vilkaĩ*, but Klingenschmitt's explanation of the contrast between *ankstì* and *namiẽ* is *ad hoc*, whereas the 2 sg. ending remains too problematic to be used (the Baltic acute could be analogical to 1 sg. *vedù*, *vedúosi* < **-oh₂*). Klingenschmitt's rule is in any case directly contradicted by case endings like *i-* and *u*-stem Lith. gen. sg. *-eĩs*, *-aũs*, voc. sg. *-eĩ*, *-aũ*.

[12] See Vaillant 1966, 60 for the history of these two aorists in Serbo-Croatian.

[13] As Olander observes (2009, 138[141]) his scenario is not invalidated by the fact that influence of the aorist on the infinitive is also attested.

ii) Root nouns are normally continued as *i*-stems in Balto-Slavic, cf. Larsson 2001; 2002. Unless supported by firm evidence, derivation of *o*- or *ā*-stem nouns from earlier root nouns must be regarded as problematic.

iii) Root nouns from TEUH- and TERH-roots probably generalized zero grade already in PIE, cf. Nussbaum 1986, 66[53]. Accordingly, the reconstruction of length-grade root nouns to roots of these structures is also problematic.

iv) Slavic nouns belonging to AP *c* are ambiguous as a result of Meillet's law. Nouns like Sl. **rěčь* "speech" (SCr. *rìječ*), **mę̂so* "meat" (SCr. *mêso*) or **jâje* "egg" (SCr. *jâje*) are thus to be deleted from the evidence.

v) 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.

vi) Derivatives like Lith. *žolẽ*, *gėlà* are productive in Baltic and thus of little probative value. As per Larsson 2004, the type probably arose in nouns like Lith. *gẽris* 2 "goodness" < **ger-ìi̯o-*, with length and *métatonie douce* due to retraction of the ictus from **-ìi̯o-*, **-ìi̯ā-*, **-ìi̯u-*.

5.3.1. Sl. **mę̂so* AP *c* and OPr. *mensā* "meat" are ambiguous. East Baltic faces us with a notoriously problematic picture: Aukšt. *mėsà* AP 4, without *-n-*, beside Žem. *mensà* (*mẽisà*, *mẽsà*, *mæ̃·sà*), Latv. *mìesa* (< **mensā*), with *-n-*. Because of the lack of *-n-* Aukšt. *mėsà* is usually considered a Slavic borrowing (e.g. Fraenkel LEW, 442).[14] Žemaitian and Latvian present circumflex intonation, but it is uncertain whether they continue a form with long vowel. Vedic presents only lengthened grade in *māṁsá-* n., acc. sg. *mā́s* (2x). Arm. *mis*, Go. *mimz* are ambiguous, but TB *mīsa* must continue a form with short **e* and thus points to acrostatic ablaut **mḗms-* / **méms-*, cf. Ringe 1996, 70f. It follows that there is no particular reason to favor **mēms-ó/éh₂-* over **mems-ó/éh₂-* for Balto-Slavic.

[14] The traditional view has been challenged by Derksen (1998, 134f.). Derksen starts from a root noun **mēns-* and assumes that in Proto-East-Baltic *-n-* was lost through dissimilation in monosyllabic forms (nom.-acc. sg. n. **mēns* > **mēs*), but not in polysyllabic forms (coll. **mēnsaH*). Žemaitian and Latvian would continue **mēnsaH*. In Aukštaitian **mēs* would have been preserved long enough to trigger an analogical loss if *-n-* in the plural / collective **mēnsaH* → **mēsaH*. The preservation of a neuter (!) root noun at such a recent stage, however, is unparalleled. Both the recourse to dissimilation in only some word forms and the subsequent analogy leading to Aukšt. *mėsà* are simply *ad hoc*.

5.3.2. Sl. **žálъ* "sorrow" > SCr. *žȁo* (secondarily mobile, cf. *nȁžao*, *nì žao*), Slvn. *žàl*, *žâli* (younger *žâl*) originally belonged to AP *a*, cf. Kapović 2009, 239. If **žálъ* is old (: OHG *quāla*, OS *quāla* "pain, torture"?), it turns out to be a counterexample against Kortlandt's theory. Lith. *gėlà* AP 4 "pain" is just a regular inner-Baltic derivative from *gélti* "ache, sting", cf. Larsson 2002, 102[17].

5.3.3. Sl. **čarъ*, **čara* "sorcery, magic" is clearly related to Lith. *keréti* "practice witchcraft", *keraĩ* AP 4 "witchcraft, spell". The evidence points to AP *c* (SCr. *čâr*) and AP *b* (SCr. *čára*, Cz. *čár*, Ukr. *čará*), which is probably older, cf. Kapović 2006, 167. This Balto-Slavic family is traditionally derived from **k^{w}er-* "cut" (Ved. *kr̥ṇóti* "makes" etc.; e.g. Fraenkel LEW, 241f.), Sl. **čarъ/a* being usually equated with YAv. *čārā-* "Mittel, Hilfsmittel" F. 19. If this equation is accepted (Av. *čārā-* is qualified as "unsicher" by Bartholomae 1904, 584), the derivational status of Sl. **čarъ/a* remains uncertain. From a root noun **k^{w}ēr-* one would expect an *i*-stem in Balto-Slavic. If one starts from a collective **k^{w}er-eh$_2$-* (cf. Lith. *keraĩ*), it is unclear why Slavic adopted the vocalism of the nom. sg. Schaffner (2001, 399f.) derives Sl. **čara*, Av. *čārā-* from a PIE type **k^{w}ēr-eh$_2$-* (Go. *tewa* "order", ON *gáfa*, MHG *gābe* "gift", etc.), but evidence for such a type is otherwise restricted to the northern languages and is thus likely to be a (not necessarily common) innovation. A reasonable alternative to this approach is provided by Vaillant (1974, 178), who considers Sl. **čarъ* / **čara nomen postverbale* to a lengthened grade iterative, cf. SCr. *čárati*, *čârām* (the primary verb is preserved in Lith. *keréti*).

5.3.4. Sl. **bělъ* AP *b* "white" (SCr. *bȉjel*, Ru. *bélyj*) may have a pendant in ON *bál*, OE *bǣl* n. "flame" (< **b^{h}ēlH-o-?*). In Latvian we have *bàls* / *bãls* "pale" (*bãlums*, *bãlgans*), as if from **b^{h}ālH-o-*. The derivational background of Sl. **bělъ* is unclear and should thus be used with caution.

5.3.5. Sl. **mę̌lъ* / **mę̌̀lъ* AP *c* "fine sand" (SCr. *mêlj*, Slvn. *mę̑lj*, Ru. *mel'*, *mel*, etc.) is ambiguous. If related, Sl. **mę̌́lъkъ* AP *a* "small" (Ru. *mélkij* etc.) points to an original acute long vowel. The circumflex of Lith. *smẽlis* AP 2, *smėlỹs* AP 4 "sand", Latv. *smēlis* "fine sand" need not be old. It may stem from **smę̌̀lio-*, see above § 5.3.vi. The etymology of these words is uncertain (they are traditionally derived from **melh$_2$-* "grind", but *s*-mobile variants of this root are otherwise unknown). Little clarity can be gained from North Germanic material like ON *melr* "sand-bank", Sw. dial. *mjåg* "sand-hill".

5.3.6. Doubts become maximal in the case of nouns that are still transparent derivatives in Baltic and Slavic. Some examples:

Lith. *võlas* AP 2/4 "roller", *volẽ* AP 4 "wooden tag, plug", Latv. *vàle* "sledge, hay-swath" (: Lith. *vélti* "beat, full", Latv. *veĺt* "roll over"). Sl. **vâlъ* AP *c* "wave" (SCr. *vâl*, Ru. *val*), probably *nomen postverbale* to *valiti* "roll".

Lith. dial. *võras* AP 2 "boiling water" (: *vìrti* "boil", *varùs* AP 4 "easily boiling"). Sl. **vârъ* AP *c* "heat" (SCr. *vâr*, Ru. *var*), cf. caus. *variti* "boil (tr.)" (: *vьrěti* "boil (intr.)").

Lith. *žolẽ* AP 4, Latv. *zâle* (with secondary acute from *zeĺt*), OPr. *sālin* (Ench.) "grass" (: Lith. *žélti* "grow green", *žãlias* "green", Latv. *zeĺt*, *zaļš*).

Sl. **žarъ* AP *b/c* "heat, glow" (SCr. *žâr*, *pòžār*, Ru. *žar*, etc.), **garъ* (SCr. *gâr* "soot", *ùgar* "black steam", Ru. *gar* "act of burning", etc.), *nomina postverbalia* to caus. *žariti*, impf. *-garati* (: *gorěti* "burn"), cf. Vaillant 1974, 69.

In brief, the probative value of most examples presented by Kortlandt is extremely low. Clear-cut evidence for original root nouns is limited to isolated *i*-stems like Latv. *sàls*, *gùovs*. These will be examined in the next section.

5.4. Part of Kortlandt's evidence involves a long circumflex vowel in roots ending in a laryngeal. In order to explain this fact he has posited a rule **-ĒH- > *-Ē-*.

As already observed (§ 5), the morphological background of Kortlandt's account of SCr. aor. 2/3 sg. *dâ* (vs. 1 sg. *dȁh*) and Lith. fut. 3rd person *duõs* (vs. 1 sg. *dúosiu*) is too problematic for these formations to be used as evidence (a different solution will be discussed below §§ 6.2, 6.4).

5.4.1. Kortlandt derives Lith. nom. sg. *-ẽ* from a root noun *-dẽ* (< **-d^hē* < **-d^hēh$_1$*) found in *arklìdė* "stable", *avìdė* "sheepfold", *alùdė* "beerhouse", *pelùdė* "chaff store", *žvaigždẽ* "star". Even if this account of *arklìdė* etc. is accepted, I doubt such a marginal type could impose its nominative singular on the whole class. Kortlandt (1985, 119) presents two objections to the traditional derivation of *-ẽ* from **-i̯ā* (e.g. Stang 1966, 204): i) the development **-i̯ā > -ẽ* is "phonetically improbable", ii) this doesn't explain the restriction of the metatony to the nominative singular (against *ā*-stem Lith. *-à* < **-ā́*).

The second objection is not valid. It is clear that the Baltic *ē*-stems follow the model of the *ā*-stems, but there is no reason to assume that the analogy had to embrace all case endings. Preservation of *lautgesetzlich* nom. sg. **-ẽ* (< **-i̯ā*) is not particularly surprising. As for the first objection, derivation of the *ē*-stem feminines from **-i̯ā-* (e.g. adj. *dìdelis*, *-ė* "big" < **-i̯o-*, **-i̯ā-*) finds an obvious parallel in the derivation of the *ē*-preterit from **-i̯ā-* (a

composite suffix obtained by adding the *ā*-preterit to a stem **-i-* extracted from *i̯e/o*-presents, cf. Villanueva Svensson 2005). Through Larsson's rule one may explain both the circumflex length of deverbatives and deadjectives like Lith. *gẽris* (< **gerìi̯o-*) and that of *ē*-preterits like *lẽkė* (< **lekìi̯ā*), cf. Larsson 2004. Note in addition that both *ē*-nouns and *ē*-preterits lack clear *comparanda* outside of Baltic.[15] The advantages of explaining all these facts in a single way are so obvious that in my view they almost prove a Baltic sound law **-ii̯ā* > **-ẽ*.

5.4.2. The case of Latv. *sàls* "salt", *zùoss* "goose", *gùovs* "cow" depends on the way one reconstructs their PIE paradigm and root shape. Kortlandt's reconstruction of a type nom. sg. **seh₂-ls*, acc. **sh₂-el-m*, gen. **sh₂-l-os* (with, I assume, secondary nom. sg. **sēh₂-ls*) is dictated by his refusal to accept a PIE phoneme **a*. The noun for "cow" is reconstructed as nom. sg. **gʷēh₃us*, acc. **gʷēh₃um*, gen. **gʷh₃ous*. According to a more widespread view these nouns are reconstructed as acrostatic **sā́l- / *sál-*, **gʷóu- / *gʷéu-*. I cannot here argue at length for my acceptance of the second option.

Latv. *zùoss*, Lith. *žąsìs* AP 4, Sl. **gǫ̑sь* AP *c* "goose" is irrelevant. There is no reason to start from **ĝʰāns-* rather than from **ĝʰans-* (or **ĝʰh₂ens-*). The length of Latv. *gùovs* must depend on nom. sg. **gʷōus* and / or acc. sg. **gʷōm*. Latv. *sàls* "salt" also seems to demand nom. sg. **sā́l-s* or strong stem **sāl-*. Sl. **sòlь* AP *c* derives from **sal-*, with short **a*.[16] The words for "cow" and "salt" cannot be separated from the word for "nose": Latv. *nãss*, Lith. *nósis* AP 1. Slavic, once again, has a short vowel in **nòsъ* AP *c* (*o*-stem!), note further Lith. *nasraĩ* AP 4 "jaws, mouth", SCr. *nȍzdra*, Ru. *nozdrjá* "nostril" (< **nás-reh₂-*). Kortlandt suggests that the acute of *nãss* / *nósis* was taken from the dual.

If we start from **gʷōu-*, **sāl-*, **nās-*, Kortlandt's general theory on the long vowels would account for Latv. *gùovs*, *sàls*, but not for *nósis*. The traditional view accounts for Lith. *nósis*, but not for Latv. *gùovs*, *sàls*. Similar

[15] I cannot here discuss the idea that the Baltic *ē*-stem nouns and the Italic 5th declension go back to a class of PIE *eh₁*-stems. See Schrijver 1991, 366–390 for a defence of this view.

[16] The often cited Lith. *sólymas* "brine" does not provide evidence for acute intonation in the word for "salt". It is only attested in some Žemaitian and Northern Aukštaitian dialects and is strongly suspect of being a borrowing from Latv. *sālīms*, cf. Būga 1959, 418, 584.

problems arise if one starts from *$g^{w}eh_{3}u$-, *$seh_{2}l$-, *$neh_{2}s$- without applying the rule *-$\bar{E}H$- > *-$\bar{E}$-. The words for "cow" and "salt" thus seem to support Kortlandt's proposal, but one must immediately add that this is the only good evidence and that it depends on an idiosyncratic reconstruction of the PIE paradigms. We will return to these words below (§ 6.6).

5.4.3. It would clearly be desirable to find independent evidence for or against the rule *-$\bar{E}H$- > *-$\bar{E}$-. One such case is Lith. *jėgà* AP 4 "strength", Latv. *jẽga* "sense" (: Gk. ἥβη "youth"). As argued by Nikolaev (2004, 213ff.), Aeol. ἄβα (Alc. 101), Dor. ἆβαι (Theoc. 5,109), and adj. ἁβρός "graceful" (< *$H_{\underline{1}}ag^{w}$-*ro*- < *$H_{\underline{1}}eh_{2}g^{w}$-*ro*-, "*Wetter*-Regel") point to Narten ablaut *$H_{\underline{1}}\breve{e}h_{2}g^{w}$-$eh_{2}$-. Lithuanian and Latvian curiously do not match each other. Since Latvian usually preserves the original accentual paradigm better, we can reconstruct a Proto-Baltic immobile noun with acute intonation. Another example may be Lith. *spė́ti*, *-ju* "be in time", Latv. *spẽt* "be able", Sl. **spě́ti*, *-jǫ* AP *a* "be successful" (: Gmc. **spōjan* "prosper", Ved. *sphāyate* "grows fat", Hitt. *išpai-*$^{\underline{ḫḫi}}$ "become sated"), if Jasanoff (2003, 108f.) is right in reconstructing a $h_{2}e$-conjugation *i*-present *$spéh_{2}$-*i*- / *$spéh_{2}$-*i*-.[17]

5.5. To sum up, the notion that PIE long vowels regularly received circumflex intonation in Balto-Slavic seems correct for auslaut (the evidence of Lith. nom. sg. *-uõ*, *-ẽ*, dat. sg. *-uĩ*, inst. pl. *-aĩs* can hardly be eliminated without forcing the data). In internal position it is only supported by SCr. *dò-nijeh*, *rȉjeh*. The rest of the evidence is extremely dubious. Latv. *gùovs*, *sàls* may support the theory, but they depend on a problematic rule *-$\bar{E}H$- > *-$\bar{E}$- for which counterevidence is available. The intonation of *gùovs*, *sàls*, on the other hand, can hardly be analogical. Before presenting evidence in favor of the traditional theory in inlaut (§ 7), I will discuss an alternative phonological solution for Latv. *gùovs*, *sàls* and SCr. *dò-nijeh*, *rȉjeh*.

6. Rasmussen (1992, 187ff.; 2007) has proposed that monosyllables regularly underwent "circumflex metatony" in Balto-Slavic. He builds his case on the following evidence:

i) Personal pronouns: Lith. 1 pl. nom. *jũs*; SCr. 2 sg. *tî*, 1 pl. *mî*, 2 pl. *vî*.

ii) Demonstrative pronoun **to*-: Lith. masc. inst. sg. *tuõ*, nom. pl. *tiẽ*, acc. pl. *tuõs*; Cz. fem. nom. sg. *ta*, masc. nom. pl. *ti*, acc. pl. *ty*.

iii) Sl. **krŷ* "blood" (Slvn. *krî*) < root noun **kruh*$_{2}$- (OIr. *crú*, Av. *xrū*-).

[17] These examples imply acceptance of Eichner's law, a sound law that is generally denied by Leiden scholars. The issue cannot be discussed in detail here.

iv) Original root nouns, e.g. Lith. *tvorà* AP 4, Latv. *tvàre* "fence", Sl. **tvârъ* AP *c* "creation" (< **tu̯ãr-s* < **tu̯ár-s* < **tu̯árə-s* < **tu̯órə-s*).

v) Preposition Lith. *nuõ* "from" (vs. preverb *núo-*, *nù-*).

vi) Slavic aorist SCr. 2/3 sg. *bî* "was", *dâ* "gave", *lî* "poured", etc.

vii) Slavic *s*-aorist SCr. 1 sg. *dò-nijeh*, with circumflex from 2/3 sg. **u̯éĝh-s-*.

viii) Lith. fut. 3rd person *duõs* "will give".

I will not discuss Rasmussen's list of original root nouns (1992, 188ff.). In my view they are all dubious for broadly the same reasons as those of Kortlandt's list (§ 5.3). Sl. **krŷ* AP *c* "blood" is irrelevant (but see Rasmussen 2007, 33).

6.1. Once the type *tvorà* / *tvàre* is dismissed the Baltic evidence comes exclusively from Lithuanian, which in addition is contradicted by the rest of Baltic: Lith. *jũs* vs. Latv. *jũs*, OPr. *ioūs*; Lith *tiẽ*, *tuõs* vs. Latv. *tiẽ*, *tuõs*; cf. also OPr. *toū* (vs. Lith. *tù*, Latv. *tu*, with short vowel).

Forms like Lith. *jũs*, *tiẽ*, *duõs* are usually explained through an exclusively Lithuanian *métatonie douce* in monosyllables (e.g. Stang 1966, 398). Petit (2002, 256ff.) offers two arguments against this view: i) Lith. *dù* "two" (< **du̯ố*), ii) the distribution of metatony and shortening in the 3rd singular of the Lithuanian future. *Pace* Petit, I find the notion that Lith. *dù* (for †*duõ*) reflects the influence of nom.-acc. du. *-ù* (< **-ố* < **-o-h*$_1$) entirely unremarkable. As for the future, Petit is certainly right in stressing that the traditional theory (metatony in monosyllables, shortening through Leskien's law in polysyllables) does not account for the data (e.g. *bùs* "will be", with no polysyllabic †*-úti* to serve as a model). In denying the existence of monosyllabic metatony, however, Petit (2002, 277f.) is forced to explain Lith. *jũs*, *tuõ*, *tiẽ*, *tuõs* through rather complicated analogy. A phonological account would certainly be preferable, be it at the Lithuanian or at the Balto-Slavic level. The last option depends on whether the intonation of Latvian and Prussian can be explained as secondary.

Old Prussian is less unambiguous than it might seem at first sight. As pointed out by Rinkevičius (2009, 83), in the *Enchiridion* there are no instances of diphthongized OPr. *ou* < **ū* with the macron in the first element, cf. also OPr. *doūsin* ~ Lith. *dũšią* (a Slavic borrowing, to be sure, and thus hardly probative). As for Latvian, I agree with Rasmussen (2007, 31) that pronominal nom. pl. *tiẽ*, acc. pl. *tuõs* may easily have adopted the acute from the adjective and nominal endings (the same holds for Lith. dial. *túo*,

tíe, *túos* / *tùs*). Less satisfactory is Rasmussen's account of Latv. *jũs* (and Lith. dial. *jū́s*) as due to leveling (gen. Lith. *jū́sų*, Latv. *jũsu*), or as arising when pronounced as part of a longer unit. On the other hand, Latv. *nùo* agrees with Lith. *nuõ* "from" and thus seems to support his theory.

6.2. The picture of Slavic is equally inconclusive. Personal pronouns are mobile in Slavic (cf. Kapović 2006, *passim*). I give the nominative and accusative as reconstructed by Kapović: nom. **já* / **jãzъ*, **tŷ*, **mŷ*, **vŷ*, **vě̂*, **vȳ*; acc. **mę̂*, **tę̂*, **nŷ*, **vŷ*, **nâ*, **vâ*. Accordingly, Sl. **tŷ*, **mŷ*, **vŷ* can simply be due to Meillet's law (so also Dybo 1981, 37). Kapović (2008, 64ff.) reconstructs two variants for the 1st sg. nominative: **já́* and **jãzъ* (< **jãzь̀*), going back to **(h₁)eĝ* and **(h₁)eĝh₂óm*, respectively (for Balto-Slavic we should reckon with a third variant **(h₁)eǩ* > Latv. *es*, Lith. *àš*, dial. *èš*). If this is correct, **já́* provides evidence against Rasmussen's rule, but it could also reflect an analogical reintroduction of the acute in **(H)ẽ́z* → **(H)é́z* after **(H)é́z̨om* (note that no Slavic language has the acute and the neo-acute side by side). The case of the demonstrative pronoun **tъ*, for which Dybo (1981, 35ff.) reconstructs a mobile paradigm, is equally ambiguous. As Rasmussen (2007, 31) recognizes, in Serbo-Croation and Slovenian **tъ* inflects as the definitive adjective and obviously has been influenced by the latter.

Slavic aorists like 2/3 sg. **bî*, **dâ*, **lî*, **pî* (inf. **bы́ti* "be", **dā́ti* "give", **lí́ti* "pour", **pí́ti* "drink") belong to verbs with AP *c* and can thus reflect Meillet's law. They contrast with aor. 2/3 sg. **bí́*, **ší́*, **čű́*, **krý́* (inf. **bíti* "beat", **šíti* "sew", **čű́ti* "hear", **krý́ti* "hide"), belonging to AP *a*. The latter group could, once again, provide counterevidence against Rasmussen's rule, but one can also assume an early intonational leveling in immobile verbs.

Rasmussen's evidence thus turns out to be of an extremely labile nature. Positive evidence is practically restricted to Latv. *jũs* vs. *nùo*. The rest is either ambiguous or susceptible of different explanations. It remains to be seen whether Rasmussen's rule can account in a reasonable way for part of Kortlandt's evidence in inlaut, most of it involving paradigms with pivotal monosyllabic word forms.

6.3. Sigmatic aorist. Rasmussen (1992, 192) suggests that the circumflex of the sigmatic aorist SCr. 1 sg. *dò-nijeh*, *rìjeh* originated in monosyllabic 2 sg. **h₁nḗk-s-s*, 3 sg. **h₁nḗk-s-t* > Sl. **nȇ*, whence 1 sg. **nȇsъ* → **nȇsъ*. We do not know when the 2/3 sg. **ně* was replaced by imperfect *nese*, but there is no particular reason to think that this was a very old development.

6.4. Baltic future. As correctly emphasized by Kortlandt (1985, 115) and Petit (2002, 259f.), the traditional view does not account for the distribution of metatony and shortening in the 3rd person of the Lithuanian future (see above § 6.1).[18] From this Kortlandt deduces that the metatony of *duõs*, *kalbẽs* must be older than that of *tiẽ*, *tuõs* (which in fact need not be recent either), whereas Petit prefers to see it as a recent phenomenon. As stated above, I find the phonology behind Petit's account dubious. His formula (shortening in long vowels, metatony in diphthongs), in any case, accounts for the facts only at the cost of extensive analogy (the same criticism, to be sure, applies to all theories on Lith. *duõs*, *bùs*, etc.). The origin of the Baltic future cannot be discussed here (my views are presented in Villanueva Svensson 2010, 219ff.). I agree with Kortlandt and Rasmussen (2007, 29f.) in starting from Balto-Slavic 3 sg. **CĕH-s-t*, although for different reasons. If one accepts Rasmussen's rule, 3 sg. **dṓ-s(-t)* would give **dõ̃-s(-t)* beside **dṓ-s-* in the rest of the paradigm, later extended to polysyllabic stems. As for the shortening in *bùs*, *gìs* (and dial. *sakìs*, if old), it can reflect an early leveling of the acute in stems in °*ū̀*-, °*ī́*-.

6.5. Lith. *dẽvi*. Kortlandt (1989, 111) equates Lith. *stovéti*, *stóvi* "stand", *dėvéti*, *dẽvi* "wear (clothes)" with Vedic 1/3 sg. perfect *tastháu*, *dadháu*. The acute of *stóvi* can easily have been borrowed from *stóti(s)* "stand up", whereas the circumflex of *dẽvi* is unexpected and thus probably old. Kortlandt reconstructs the PIE perfect to roots *ultimae laryngalis* as 3 sg. **sth₂ēu*, with **-ēu* taken from the loc. sg. of a deverbal *u*-stem. It would certainly be preferable to derive the type Ved. *tastháu* from a canonical perfect **ste-stóh₂-e*, no matter how one arrives at the apparent **ste-stóh₂-u̯*. In Villanueva Svensson 2008, 193[43] I have suggested the following development: PIE 3 sg. **dʰe-dʰóh₁-u̯* (*vel sim.*) > Bl.-Sl. **dʰe-dʰéu* (with vocalism from aor. **dʰé-t*) → **dʰéu* (dereduplication) > **dʰẽu* (Rasmussen's rule), which served as the basis for rebuilding the paradigm. Needless to say, the uncertainties surrounding the origin of the perfect type Ved. *tastháu* render this proposal very insecure.

6.6. Latv. *sàls*, *gùovs*. Finally, Rasmussen's rule may account for Latv. *sàls*, *gùovs*, with circumflex long vowel extended from nom. sg. **sál-s*, **gʷóu-s* > **sãl-s*, **gʷõu-s*. As Kortlandt (2007, 233) observes, however, it is unclear

[18] See Petit 2002, 247–256 for a complete survey of the Lithuanian 3rd person future to verbs containing an acute long vowel or diphthong.

why the metatony affected some nouns, but not others (e.g. Latv. *zvẽrs* "wild beast", Sl. **mýšь* AP *a* "mouse"). Rasmussen (2007, 30) suggests that when the law applied some nouns had already been fully transferred to the *i*-stems, whereas others had not. This is *ad hoc*. A more systematic answer to Kortlandt's objection may come from closer inspection of the original paradigms. Since the accusative served as the *Scharnierform* for the transfer of root nouns into *i*-stems, it is reasonable to suppose that the root vocalism usually followed that of the accusative as well.[19]

If this is correct, Latv. *zvẽrs*, Sl. **mýšь* would stem directly from acc. sg. **źvḗrin*, **mū́šin*. The word for "cow", on the other hand, inherited an irregular accusative **g*^{w}*ṓm* that actually proved quite resistant (Ved. *gā́m*, Dor. βῶν). Balto-Slavic could still have acc. sg. **g*^{w}*ṓm* > **g*^{w}*õm* when Rasmussen's rule applied. As for Latv. *sàls*, this word, like *zùoss* (Lith. *žąsìs* AP 4), differs from *nãss* (Lith. *nósis* AP 1) and *zvẽrs* (originally immobile, see below § 7.5.1) in one important respect. Whereas lengthened grade is very well-attested in the words for "nose" and "wild animal", there is very little comparative evidence for lengthened grade in "goose" and "salt" (only Lat. *sāl*, *sălis*). This suggests that Balto-Slavic inherited two different paradigms: i) acrostatic **nā́s-* / **nás-*, **ĝ*^{h}*u̯ḗr-* / **ĝ*^{h}*u̯ér-*, ii) nom. sg. **ĝ*^{h}*án*s, **sā́l-s* beside acc. sg. **ĝ*^{h}*áns-m̥*, **sál-m̥*. As expected, Latv. *zùoss*, Lith. *žąsìs*, Sl. **gǫ̀sь* derive from **ĝ*^{h}*áns-m̥* and Sl. **sòlь* from **sál-m̥*. Latv. *sàls*, then, must have generalized its vocalism from nom. sg. **sā́l-s* > **sãl-s*, though it remains unclear why the nominative was favored in this particular word.

In brief, although Rasmussen's rule of monosyllabic metatony cannot at present be regarded as proven, I believe it offers an attractive solution for a number of problematic forms (see further below § 7.8). Its appeal naturally depends on one's previous acceptance of the view that PIE long vowels are, under normal conditions, continued as long vowels with acute intonation in Balto-Slavic.

7. In this section I will present evidence in favor of the traditional theory. Before proceeding further, it will be convenient to specify what I consider a reasonable instance of inherited lengthened grade. I believe it should fulfill the following requirements: i) we are dealing with an isolated word, ii) the

[19] So e.g. Larsson 2001, 54. Latv. *sàls*, *nãss* beside Sl. **sòlь*, **nòsъ* shows this to be too simplistic, at least at the Balto-Slavic level, but Baltic generally conforms to this pattern.

root etymology is not in doubt, iii) Baltic and Slavic do not contradict each other, iv) the lengthened grade is justified in an Indo-European perspective.

Ideally one should add a fifth requirement: the lengthened grade is supported by firm evidence outside Balto-Slavic. This is rarely the case, but the lack of direct cognates can be compensated by a recent finding of comparative grammar. In what follows I will make extensive use of the concept of the "Narten derivational system".[20] According to this notion a number of formations with unexpected lengthened grade are derivationally dependent on an original Narten present, e.g. pres. **sḗd-ti* / **séd-n̥ti* (Ved. *sādád-* "sitting" < ptcp. **sēd-n̥t-*) beside caus. **sōd-éi̯e-ti* (OIr. *sáidid* "sets, fixes") and *s*-stem **sḗd-(e)s-* "seat" (Lat. *sēdēs*, OIr. *síd*). In practice this notion allows us to go a step beyond the limits of the comparative method. If the "Narten character" of a given root is reasonably well established, this provides a rationale for the appearance of an isolated lengthened grade – even if direct cognates are missing.

The evidence is broadly classified according to its PIE source. For obvious reasons I have excluded from consideration items that can be explained through Winter's law, as well as uncertain material of one or another sort.[21]

7.1. Narten presents.

7.1.1. Sl. **sěčі*, **sě̀kǫ* AP *c* "cut" (OCS *sěšti*, *sěkǫ*, SCr. *sjȅći*, *sijèčēm*, Ru. *seč'*, *sekú*) has often been derived from a Narten present **sḗkH-ti* / **sékH-n̥ti* (e.g. LIV, 524). In Baltic the verb is only attested in OLith. *į-sě̀kti* "cut in", *iš-sě̀kti* "carve" (Bretkūnas). An acute long vowel is made virtually certain by its derivative *pa-sékelis* AP 1 "big axe". The possibility that the vocalism of both Baltic and Slavic is analogical (as suggested by Kortlandt 1997, 28) is vanishingly small. Outside Balto-Slavic Hitt. *šā̆kk-* / *šekk-*$^{\underline{ḫḫi}}$ "know" implies a *molō*-present **sókH-e(i)* / **sékH-r̥s*. Lat. *secō*, *-āre* "cut" can continue the

[20] See Villanueva Svensson fthc. a § 5, with references, for a brief presentation of this concept. Evidence for "Narten behavior", to be sure, is usually quite sparse. This may be taken to indicate that the whole notion is a mirage (this is basically Leiden's position), but the argument can easily be reversed. Sparse attestation can be attributed to the fact that we are dealing with archaic morphology and derivational patterns that had become obsolete already within the parent language.

[21] See Petit 2010, 121ff. for an overtly skeptical discussion of items like Latv. *dùore* "ein von Natur hohler Waldbaum, in welchen Bienen hausen können, ein Loch, eine Höhlung, Vertiefung", Lith. *juõkas* AP 4, Latv. *juõks* "joke", Lith. *kuõlas* "pole", or Lith. *súolas*, Latv. *suôls* "bench".

weak stem of both presents alike. "Narten behavior" of **sekH-* is supported by Lat. *sēcula* "sickle, scythe" (cf. *rēgula* "rod, rule", to the Narten root **h₃reĝ-*), and perhaps by Hitt. *šeknu-* "cloak", *šēkan-* "span", cf. Eichner 1979, 42f.[4].

7.1.2. Sl. **smъjáti*, **sm̆ějǫ sę* AP *c* "laugh" (OCS *smijati*, *sm̆ějǫ sę*, SCr. *smìjati*, *smìjēm se*, Ru. *smejáť sja*, *smejús'*) and Latv. *smiêt(iês)*, *smeju*(*ôs*), pret. *smêju*(*ôs*) "id." have been derived from a Narten present **sméi̯-ti* / **méi̯-n̥ti* by Rasmussen (1989, 161, followed by LIV, 568). Ved. *smáyate*, TB ptcp. *smimane* "smile" are compatible with such a reconstruction. The root **smei-* did not contain a laryngeal (cf. Ved. *vi-smita-*).

Latvian and Slavic agree in having a lengthened grade in their paradigm (Slavic is ambiguous as to the intonation), but curiously in different places. For Balto-Slavic we can posit a paradigm pres. **smēi̯-e/o-*, inf. **smi-téi-*, aor. **sm(i)i̯-ā-*,[22] directly continued in Slavic with expected generalization of the second stem in **-ā-*. In Baltic the vocalism of the present was generalized through the whole paradigm, leading to **smēi-ti*, **smēj-a*, **smēj-ā*. Later the present **smēj-a* was replaced by **smej-a* on analogy with *all* other verbs of this class (Latv. pres. *leju*, *skreju*, *sleju* etc., in contrast with a long-vowel infinitive / preterit stem).[23]

7.1.3. Sl. **čắjati*, **čắjǫ* AP *a* "expect, wait" (OCS *čajati*, *čajǫ*, SCr. *čȁjati*, Ru. *čájat'*) has a direct *comparandum* in Ved. *cā́yati* "perceives" (thematized from pres. **kʷéi̯-ti* / **kʷéi̯-n̥ti*). The root **kʷei-* did not contain a laryngeal (Ved. *citá-*, *ni-cirá-*, cf. Mayrhofer EWAia 1, 531). Sl. **kắjati*, **kắjǫ* AP *a* "repent" (SCr. *kȁjati*, Ru. *kájat'sja*) may continue a "Narten-causative" **kʷōi̯-(e)i̯e/o-* (cf. LIV, 378[8], with reference to Koch).

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[22] See Villanueva Svensson 2011, 318ff. for a justification of this type of paradigm.

[23] An alternative account of Sl. **smъjáti sę*, Latv. *smiêt(iês)* has been recently proposed by Petit (2010, 129f.; fthc.). Petit starts from a thematic present **méi̯-e/o-*. In Slavic **smъjati*, **smejǫ* would have been replaced by **smъjati*, **sm̆ějǫ* on analogy with **lьjati*, **lějǫ* "pour" and **zьjati*, **zějǫ* "gape". In Latvian **smìet*, **smeju*, **smeju* would have been replaced by *smiêt*, *smeju*, *smêju* on analogy with *liêt*, *leju*, *lêju* "pour". The motivation would have been the desire to avoid homonymy between present and preterit in the 1st and 2nd singular. This, however, is tolerated in Latvian, and the expected preterit to **smìet*, **smeju* was in any case **smèju*. It is curious that the analogy affected only *smiêt*, but not *skrìet*, *skreju* / *skrìenu*, *skrèju* "run" or *slìet*, *sleju* / *slìenu*, *slèju* "lean (tr.)" (I doubt *iêt* / *iẽt* "go" provides an adequate parallel). I am grateful to Daniel Petit for sending me a copy of his forthcoming article.

7.1.4. Sl. **-rȇ̋sti*, **-rę̋štǫ* / **-rę̋tǫ*, aor. **-rȇ̋tъ* AP *a* "find" (OCS *ob-*, *sъ-rěsti*, *-ręštǫ*, SCr. *srȅsti*, *srȅtēm*, *obrèsti*, *obrètēm*, Slvn. *srẹ́sti*, *obrẹ́sti*, Ru. *obrestí*, *obretú*). The best etymology of Sl. *-rěsti* remains that of Vaillant (1966, 184f.): from the root **ret-* "run" of OIr. *rethid* "runs", Lith. *rãtas*, Lat. *rota* "wheel", etc. The semantic development "go, run" > "find" is unremarkable (cf. Lat. *in-venīre*, *oc-currere*, Ru. *na-jtí*, ORu. *ob-iti*, Lith. dial. *su-eĩti*, *su-bégti*, etc.). Vaillant derives the Slavic vocalism from a lengthened grade perfect **rēt-*, but such a type is unknown in Slavic (**sȇ̋sti* "sit down" reflects Winter's law). In Villanueva Svensson fthc. a, § 6.3 I have proposed deriving Sl. **-rȇ̋sti* from a Narten present **rȇ́t-* / **rét-*, with lengthened grade extended through all the paradigm and strong remodeling of the present stem. More evidence for "Narten behavior" of the root **ret-* will be given below (§ 7.6.2).

7.1.5. In Lithuanian we have a number of *ia*-presents with acute long vowel of non-laryngeal origin, usually with circumflex variants, e.g. Lith. *ap-répti*, *-répia* beside *-rẽpti*, *-rẽpia* "take, embrace". Other examples: *grébti* / *grẽbti* "snatch, rake", *trékšti* / *trẽkšti* "crush", *plėšti* / *plẽšti* "tear" (Latv. *plêst*), *žébti* / *žẽbti* "chew", *kvépti* / *kvẽpti* "inhale" (Latv. *kvêpt*), *čiáupti* / *čiaũpti* "close (mouth, lips)", *síekti* / *siẽkti* "try to reach", *plíekti* / *pliẽkti* "beat".

Variation of this sort is also found among verbs with acute intonation due to a laryngeal (e.g. *réžti* / *rẽžti* "cut", PIE **u̯reh$_1$ĝ-* [LIV, 698]; *júosti* / *juõsti* "gird", Latv. *juôzt*, PIE **i̯eh$_3$s-* [LIV, 311]), or to Winter's law (e.g. *skíesti* / *skiẽsti* "dilute", Latv. *šķiêst*, PIE **sḱeid-* [LIV, 547f.]; *spę́sti* / *spẽsti* "set traps", PIE **(s)pend-* [LIV, 578]). Roots with circumflex intonation, on the other hand, do not show any tendency to acquire acute variants. As per Klingenschmitt 2008, 201ff., variants like *júosti* / *juõsti* point to an original paradigm with both intonations: an etymological acute, and a secondary circumflex that arose through retraction of the ictus.

It follows that the acute of *-répti* / *-rẽpti* etc. must be taken seriously (*pace* Kortlandt 1988, 393, who takes *-rẽpti* as the older form; *-répti* would be analogical to *grébti*). The LIV sets up a PIE Narten present for *-répti*, *síekti*, *trékšti*, *čiáupti*. Of these only *-répti* (: Gk. ἐρέπτομαι "devour, snatch away", Alb. *rjep* "tear off, rob", Lat. *rapiō*, *-ere* "seize, take away"; LIV, 501) and *síekti* (: Gk. ἵκω, ἱκάνω "reach", TB pres. *siknaṃ* "steps"; LIV, 522) have a usable etymology. I am not aware of any evidence supporting the reconstruction of a Narten present for *síekti*. The antiquity of *-répti* is mildly supported by Alb. aor. *ropa*, if it continues a displaced imperfect **(h$_1$)rḗp-t* (as in pres.

mb-ledh "gather, collect" < **lé$\hat{g}$-e-ti* : aor. *mb-lodha* < **lé$\hat{g}$-t* [: Lat. *lēgī*, TA impf. *lyāk* "saw"], cf. Jasanoff 1998, 306f.).

The case of *grébti* / *grə̃bti* "snatch, rake" (: Ved. *gṛbhṇáti*, aor. *ágrabhīt* "seize") is particularly involved.[24] The root is reconstructed as **g^{h}rebh$_2$-* (e.g. LIV, 201), in which case *grébti* is due to Winter's law, and as **g^{h}reb^{h}h$_2$-* (e.g. Jasanoff 2003, 81), in which case it must continue a Narten present. Since **b* was rare in PIE, one would in principle favor **g^{h}reb^{h}h$_2$-*. The abundance of lengthened grade forms in Balto-Slavic (e.g. Sl. **grā̃biti* "seize", Lith. *gróbti* "seize", *grúobstas* "armful", etc.) favors **g^{h}rebh$_2$-*, but there is no reason to deny the possibility that Balto-Slavic generalized the length of pres. **g^{h}ré̃b^{h}h$_2$-ti*, caus. **g^{h}rōb^{h}h$_2$-éi̯e-ti* in this particular word-family. If they do not reflect neo-ablaut or secondary contamination with **g^{h}reb^h-* "dig", full-grade forms like Lith. *grebóti*, *grabóti* "rake", *grabstýti* "snatch, rake; steal", *grabùs* "skilful" may support this view.[25]

7.2. "Narten causatives".[26]

It is difficult to identify potentially old cases of this type in Balto-Slavic, as iteratives with root vocalism Sl. *a*, Lith. *uo* (*o*) have clearly enjoyed a mild productivity in both branches. In Slavic they typically derive causatives from primary verbs with *o*-grade (e.g. **palíti* AP *b* "burn, singe" to *polěti* "flame").

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[24] Hitt. *karp(iya)-^{mi}* "take (away), lift" almost certainly does not belong, cf. Kloekhorst 2008, 453. I am also skeptic about a connection with Hitt. *karăp-* / *karip-^{ḫḫi}* "devour, fressen" (favored by Jasanoff 2003, 81 and Kloekhorst 2008, 442f.).

[25] Derksen (2008, 185), following Kortlandt (1988, 393), relates Sl. **grā̃biti*, Lith. *gróbti*, Latv. *grâbt* "seize" to ON *grápa* "pilfer" (root **g^{h}reb-*), whereas Lith. *grébti* "snatch, rake", Ved. *gṛbhṇáti* "seize" are related to Latv. *grebt* "scrape, excavate", OCS *greti*, *grebǫ* "dig", Go. *graban* "dig" (root **g^{h}reb^h-*). Both roots were mixed in Balto-Slavic, the acute of Lith. *grébti* being taken from *gróbti*. There are several reasons to doubt this reordering of the data. First, the Germanic evidence is too unclear to support the reconstruction of a "northern" root **g^{h}reb-* "seize". Seebold (1970, 237f.), for instance, places ON *grápa*, OE *grápian* "grope, touch" under **greipan* "seize". Second, it is unattractive to separate Lith. *gróbti*, Sl. **grā̃biti* from Lith. *grébti*, which in turn can hardly be separated from Ved. *gṛbhṇáti*. Latv. *grebt*, OCS **greti*, Go. *graban*, on the other hand, present a different meaning "dig" and a different morphological profile (*molō*-present **g^{h}rób^h-* / **g^{h}réb^h-* against aor. **g^{h}reb$^{(h)}$h$_2$-t* pared with pres. **g^{h}ṛb$^{(h)}$-né-h$_2$-ti* and eventually **g^{h}ré̃b$^{(h)}$h$_2$-ti*).

[26] The existence of a causative type **su̯ŏp-i̯e-ti* "put to sleep" (Lat. *sōpīre* "cause to sleep", ON *sófa* "kill") was established by Klingenschmitt (1978). This type was probably regularized as **su̯ŏp-ei̯e-ti* already within the parent language, cf. Vine fthc., 477ff.

This type never has acute intonation (cf. **varíti* AP *b/c* "boil, cook", **davíti* AP *b* "suffocate", etc.). In Baltic *ia*-presents like Lith. *čiuõžti*, *-ia* "skate" are common in the *u*-series of ablaut (: *čiaũžti*, *-ia* "slide"). I will limit myself to some potentially interesting cases.

7.2.1. Sl. **kájati*, **kájǫ* AP *a* "repent" and Sl. **grábiti* AP *a* "seize, grab" (SCr. *grȁbiti*, Ru. *grábit'*), Lith. *gróbti*, Latv. *grâbt* "seize" (with secondary ablaut) have already been discussed (§§ 7.1.3, 7.1.5).

7.2.2. Sl. **váditi* AP *a* (OCS *vaditi* "accuse", Ru. *vádit'* "lure, slander, deceive", Slvn. *váditi* "repport, quarrel"). If **váditi* is derived from the root **u̯ed^{h}-* of Ved. aor. *ávadhīt* "beat" etc. (so Vaillant 1966, 429f.), it can be directly equated with Gk. ὠθέω "push" < **u̯ōd^{h}-éi̯e/o-*. The Narten character of **u̯ed^{h}-* is well known, cf. pres. **u̯éd^{h}-ti* / **u̯éd^{h}-n̥ti* (Gk. ἔθων "smiting, wasting", Hitt. *wezzai* "strikes"), iterative **u̯ēd^{h}-ah$_{2}$i̯e/o-* (GAv. *vādāiiōiṯ* "might break through", CLuv. *widā(i)-* "strike"). A connection of Sl. **váditi* with Ved. *vádati* "speaks", Gk. αὐδή "voice" (**h$_{2}$u̯edH-*, LIV, 286), however, can hardly be discarded.

7.2.3. Lith. *pláuti*, *pláuja/-na* "wash, rinse", Sl. **pláviti* AP *a* "float" (SCr. *plȁviti*, Ru. *práviť*). The Narten affinities of **pleu-* are well-known, cf. TB subj. *plyewaṃ* "will float" (< **plēu-*), Gk. πλώω "swim", OE *flōwan* "flow" (< **plōu-*). As per Jasanoff 2003, 224, it is gratuitous to reconstruct a laryngeal variant in order to explain forms like Gk. πλώω. The possibility that Lith. *pláuti* continues a causative **plōu-éi̯e-ti* is supported by its meaning and transitivity, contrast OCS *pluti*, *plovǫ* "swim, sail", Ved. *plávate* "swim, float", etc. As for Slavic, Vaillant (1966, 424) considers **pláviti* an inner-Slavic causative to **plýnǫti* "flow, stream" (Pol. *płynąć*, Cz. *plynouti*), secondary **plýti* (SCr. *plȉti*, *plȉjēm*, Ru. *plyt'*, *plyvú*; cf. Vaillant 1966, 233), with a root vocalism that is itself difficult to explain.

7.2.4. A similar case is Sl. **sláviti* AP *a* "glorify" (SCr. *slȁviti*, Ru. *sláviť*) beside **slýnǫti* "become known" (Pol. *słynąć*, Cz. *slynouti*), **slýti* (Ru. *slyt'*, *slyvú*), which Vaillant explains in the same way (*loc. cit.*). There is no evidence for Narten behavior of **ĥleu-*.[27] Reconstruction of a variant with laryngeal (e.g. Derksen 2008, 453) would in any case be *ad hoc*.[28]

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[27] *Pace* Widmer 1998. Widmer's derivation of GAv. *srāuuahiieitī* "seeks glory" from **ĥléu̯-es-i̯e/o-* is dubious, cf. de Vaan 2003, 63f.

[28] Sl. **sláviti* cannot be separated from the noun **sláva* AP *a* (SCr. *slȁva*, Ru. *sláva*), Lith. *šlóvė* AP 1, *šlovẽ* AP 3/4 "glory, fame". The idea that Sl. **sláva*, Lith. *šlóvė* go back to a *vr̥ddhi*-derivative is unlikely, cf. Darms 1978, 354f. Derksen's assumption of an

7.2.5. Lith. *púošti*, *-ia* / *puõšti*, *-ia* "adorn", Latv. *puôst*, *-šu* / *pùost*, *-šu* "prepare, adorn". Klingenschmitt (2008, 202) relates *púošti* to the Germanic family of ON *fága*, OFr. *fēgia*, MDu. *vāgen* "clean" (< **fēgōjan*), OS *vegōn* "id.", MHG *vegen* "sweep" (< **fegōjan*). LIV, 467 prefers a connection with OE *-fēon* "rejoice" (< **fehan*), Go. *fulla-fahjan* "satisfy" (< **fahjan*), and ON *fógja* "clean" (< **fōgijan*), which is directly compared to *púošti*. Under either etymology the root is limited to Germanic and Baltic, which leaves Lith. *púošti* without much probative value.

7.2.6. Klingenschmitt (2008, 194ff.) derives Lith. *tuõkti*, *-ia* "marry" from **tṓk*^{w}*-i̯e/o-* (**tōk*^{w}*-éi̯e/o-* is also possible), a Narten-causative to the root **tek*^{w}- "run, flow" of Lith. *tekéti*, OCS *tešti*, OIr. *techid*, etc. (see Jasanoff 2003, 135[18] for the possible Narten character of this root). If this is correct, the consistent circumflex intonation of *tuõkti* could be taken as an argument in favor of Kortlandt's theory. As argued above (§ 7.1.5), however, *tuõkti* is best seen as secondary to an unattested **túokti* (cf. *ruõžti* "scratch" beside *rúožtas* "stripe", implying a lost **rúožti* beside *réžti* "cut", with inherited acute).

7.3. Narten desideratives.

Lith. *ieškóti*, *íeškau* (OLith. *ieszku*) "look for, search", Latv. *iẽskât* "look for lice", Sl. **jьskáti* AP *b* "look for, search" (OCS *iskati*, *iskǫ* / *ištǫ*, SCr. *ìskati*, *ìštēm*, *ískati*, *îštēm*, Ru. *iskát´*, *iščú*). The *sḱe/o-*present is clearly inherited, but the languages present a surprising variation in root vocalism: Ved. *iccháti*, YAv. *isaiti*, Um. *e-iscurent* (< **h₂is-sḱé/ó-*), Arm. *haycʿem*, OHG denom. *eiscōn* "ask" (< **h₂ais-sḱe/o-*). The acute of *íeškau* has no possible analogical source within Baltic. The disagreement in root vocalism between Baltic and Slavic can be explained by positing a Balto-Slavic paradigm pres. **ēisko/e-* : inf./aor. **iskā-*, cf. Villanueva Svensson 2008, 183ff.

As per Jasanoff 2003, 192, the case of **h₂eis-* is best compared to that of the *sḱe/o-*present of **ĝneh₃-* "recognize, know": **ĝnēh₃-sḱe/o-* (Alb. *njoh*), **ĝneh₃-sḱe/o-* (OPers. *xšnāsa-*, Lat. *(g)nōscō*), **ĝn̥h₃-sḱe/o-* (Arm.

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original root noun with lengthened grade and secondary laryngeal (2008, 453) is equally doubtful. Note that if Sl. **slā́va*, Lith. *šlóvė* continue an ancient lengthened grade the Lithuanian vocalism poses an obvious problem. I am thus inclined to consider Sl. **slā́va* a back formation from the causative **slā́viti*. Lith. *šlóvẽ* would then be a Slavic borrowing, with *š-* taken from inherited *šlãvẽ* AP 2/4, cf. Latv. *slava*, *slave*, OCS *slovo*, *-ese* (so e.g. Smoczyński 2007, 646).

čanačᶜem). The curious variation in root vocalism would reflect crossing of a *sk̂e/o*-present **ĝn̥h₃-sk̂é/ó-* and a Narten-desiderative **ĝnéh₃-s-* / **ĝnéh₃-s-* (Hitt. *ganeššš-*^{mi} "recognize, find", Arm. aor. *caneay*, cf. Jasanoff 2003, 133). A parallel is furnished by Lat. *pāscō*, *-ere* "pasture", seemingly a cross of **péh₂-s-* (Hitt. *paḫḫš-*, OCS *pasti*, *pasǫ*) and **ph₂-sk̂é/ó-* (TB *paskenträ*). In Villanueva Svensson fthc. b I have likewise explained Lat. *crēscō*, *-ere* "grow" as a cross of desid. **k̂reh₃-s-ti* / **k̂reh₃-s-n̥ti* and *sk̂e/o*-present **k̂r̥h₃-sk̂e/o-* (HLuv. *zarza-* "grow"). It is thus reasonable to assume that Lith. *íeškau*, Gmc. **aiskōn* etc. reflect a contamination of inherited **h₂is-sk̂é/ó-* and **h₂éis-s-* / **h₂éis-s-*.[29]

7.4. Lengthened grade iteratives.

Deverbative iteratives with suffix **-ah₂i̯e/o-* are attested in a variety of languages, e.g. Lat. *occupāre* "seize" (: *capere* "take"), Gk. νωμάω "handle" (: νέμω "distribute"), Go. *ƕarbon* "walk about" (: *ƕairban* "walk"), etc. Nowhere are they as productive as in the northern area. Slavic imperfectives in *-ati*, *-ajǫ* regularly present lengthened grade of the root. The almost unbounded productivity of this formation renders its testimony unreliable, but there is abundant evidence for acute intonation (SCr. *ùmirati*, Ru. *voróčat'*, etc.). Lithuanian iteratives in *-oti*, *-o(ja)* normally display lengthened zero grade **-ū-*, **-ī-* and acute intonation: *kýboti* "hang (intr.)" (: *kìbti* "stick to"), *klū́poti* "be kneeling" (: *klùpti* "kneel down"), etc. Of particular interest are a small group of Latvian iteratives with *ē*-grade: *nę̃sât*, *-ãju* (: *nest* "carry"), *tę̃kât* (: *tecêt* "flow"), *lę̃kât* (: *lèkt* "jump"), *mę̃tât* (: *mest* "throw"), cf. Lith. *métyti*, *méto*, obviously regularized from **métoti*, *-oja*.

There are two reasons for taking the type *nę̃sât* seriously. First, the curious type of *ē*-grade *ah₂i̯e/o*-iteratives is well-represented all over the family (e.g. Gk. πηδάω "leap, spring", Lat. *uēnārī* "hunt", *cēlāre* "conceal", CLuv. *kīšā(i)-* "comb", Gmc. **fēgōjan*), including some potential word-equations: GAv. *vādāiiōiṯ* = CLuv. *widā(i)-* (< **u̯ēd^{h}-ah₂i̯e/o-*), Gk. ληκᾶν · τὸ πρὸς ᾠδήν

[29] Other accounts of Lith. *íeškau* are *ad hoc*. Klingenschmitt (1982, 67[5]), for instance, explains its vocalism as due to univerbation with a preverb (**eh₁-h₂is-sk̂é/ó-*) or, alternatively, as taken from the sigmatic aorist **h₂éis-s-t* (cf. GAv. *āiš*). Derksen (1996, 294, 337; 2008, 214) suggests that the full grade of *íeškau* is of denominative origin and that the acute intonation implies that the suffix **-sk̂e/o-* was substituted by **-Hsk̂e/o-*. The last point depends on a problematic derivation of the Baltic *sta*-presents from PIE *sk̂e/o*-presents. Criticism in Villanueva Svensson 2010, 214ff.

ὀρχεῖσθαι Hsch. = Latv. *lę̃kât* (< **lēk-ah₂i̯e/o-*), Argolic ἐπιμεμηνακαντι "they have been content to wait" = Arm. *mnam* "remain" (< **mēn-ah₂i̯e/o-*), Latv. *nę̃sât*, *-âju* = Arm. *ansam* "put up with" (< **h₁nēk̂-ah₂i̯e/o-*, cf. Klingenschmitt 1982, 91ff.), OCS *-mětati* = Latv. *mę̃tât* (restricted to Balto-Slavic and thus of little weight). Second, the characteristic lengthened zero grade of OCS *-zyvati*, *-mirati*, Lith. *klū́poti*, *kýboti* must rest on a common Balto-Slavic innovation. It most probably arose through a proportional analogy **-e-* : **-ē-* : = **-u-* : X, X = **-ū-*, which requires an already existing type with *ē*-grade to serve as a model.[30] With due caution the type Latv. *nę̃sât* can thus be added to the list of examples in favor of the traditional theory.

7.5. Root nouns.

Latv. *sàls*, *gùovs*, *nãss* have already been discussed (§§ 5.4.2, 6.6).

7.5.1. Lith. *žvėrìs* AP 3, Latv. *zvę̂rs*, Sl. **zvě̑rъ* AP *c* (SCr. *zvijêr*, Slvn. *zvę̑r*, etc.) "beast" 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). Kapović (2009, 240) has recently argued that this word originally belonged to AP *a* in Slavic, cf. SCr. dial. *zvèr*, *zvjère*, denom. *zvjèrati* "look around". The spread of mobility in **zvě̑rъ* AP *a* → **zvȇrъ* AP *c* is well-paralleled among Slavic *i*-stems. It is curious that no traces of mobility are attested in Baltic, but Sl. **zvě̑rъ* is *lectio difficilior* and must probably be projected back into Balto-Slavic. If this is correct, there is no way to decide between **ĝʰu̯ér-* / **ĝʰu̯ér-* and **ĝʰu̯eh₁r-*(/**ĝʰuh₁r-*). Gk. θήρ, -ός can continue both **ĝʰu̯ēr-* and **ĝʰu̯eh₁r-*. Lat. *ferus* "wild", *fera* "wild animal", and Gmc. **beran-* "bear" (OE *bera*, OHG *bero*; cf. Ringe 2006, 106) can derive both from **ĝʰu̯ér-* and from **ĝʰu̯ēr-* / **ĝʰu̯eh₁r-* via Dybo's law (cf. Schrijver 1991, 337).

7.5.2. Sl. **mýšь* AP *a* "mouse" (SCr. *mìš*, Slvn. *mìš*) is equally uncertain. Cognates like Ved. *mū́ṣ-*, Gk. μῦς, Lat. *mūs*, OHG *mūs* present only *-ū-* and could thus derive from **muHs-*, a reconstruction that would be practically proven if TB *maścitse* "mouse" belongs here and goes back to **mās-* < **m(u̯)as-* < **muHs-* (cf. de Vaan 2008, 396). On the other hand, derivatives like Lat. *mŭsculus* "muscle; mussel", In.-Ir. **muš-ká-* (Ved. *muṣká-* "testicle", etc.)

[30] Iteratives with *ū*-vocalism are also attested in Germanic, e.g. ON *skúfa* "shove" (: Go. *af-skiuban* "reject"). Due to the monophthongization PIE **ei* > Gmc. **ī* it is impossible to know whether Germanic also had iteratives with *ī*-vocalism. It remains a task for the future to see whether this type was an innovation of "Northern Indo-European".

have often been taken to imply a derivational base **mŭs-*, in which case the length of the root noun must have been generalized from nom. sg. **mūs* (e.g. Mayrhofer EWAia 2, 370). The noun for "mouse" has been related to the root **meusH-* of Ved. *muṣnáti* "steals", but this is merely a possibility.

7.5.3. Sl. **vě́ra* AP *a* "faith, belief" (OCS *věra*, SCr. *vjèra*, Ru. *véra*) is clearly related to Lat. *uērus* "true", Celtic **u̯īro-* "id." (OIr. *fír*, MW. *gwir*), Gmc. **u̯ēra-* "id." (OHG *wār*, ON *værr*), **u̯ērō-* (OHG *vāra* "truth", ON *várar* pl. "oaths"). Gk. ἦρα (acc. sg. or acc. n. pl.) in Hom. (ἐπὶ) ἦρα φέρειν "please" is usually included here as well. As shown by García Ramón (2006, with references) a further cognate is found in the Anatolian family of Hitt. *warri-* "helpful; help", *warriššа-^{ḫḫi}* "come to help", CLuv. *warraḫit-* "help", HLuv. *wariya-* "help". Accordingly, Sl. **vě́ra*, Lat. *uērus*, etc. are to be analyzed as *ē*-grade derivatives from **u̯erH-* "favor, give preference", not as **u̯eh$_1$-ro-* (*ro*-adjective to an otherwise unknown root **u̯eh$_1$-*). The rationale behind the lengthened grade of **u̯ērH-o-*, **u̯ērH-ah$_2$-* is unclear. It could perhaps be based on an acrostatic root noun **u̯ḗrH- / *u̯érH-*.

7.6. "Narten nouns".

7.6.1. A well-known case is Sl. **bě́rmę* AP *a* "load, burden" (OCS *brěmę*, SCr. *brème*, Ru. *berémja*), Ved. loc. sg. *bhárman* "bei der Darbringung" RV 8.2.8, pointing to an acrostatic *men*-stem **b^{h}ér-men-*. The Narten character of **b^{h}er-* "carry" is well-known: TA impf. *pārat* < **b^{h}ēr-(a)to* (← impf. **b^{h}ér-t*), OIr. *birit* "sow" (< ptcp. **b^{h}ĕr-n̥t-ih$_2$*), YAv. *bāšar-* "rider" (< **b^{h}ēr-ter-*, but see de Vaan 2003, 54f.), OHG *bāra* "bier" (< **b^{h}ēr-*), etc., cf. Jasanoff 1998, 305. Derksen (2008, 37) reconstructs **b^{h}erH-men-*, but *seṭ*-variants of **b^{h}er-* are extremely dubious (Ved. *bhárīman-* "maintenance" RV 2x is almost certainly secondary, cf. Mayrhofer EWAia 2, 249).[31]

7.6.2. Vine (1998) has established a small class of *eh$_2$*-stem collectives with *ō*-grade of the root, some of them clearly built to Narten roots: **kṓm-eh$_2$-* (Gk. κώμη "village; district"), **lṓĝ-eh$_2$-* (Gk. λώγη · καλάμη, καὶ συναγωγὴ σίτου Hsch.), etc. In Villanueva Svensson fthc. a I have argued that iteratives like Gk. νωμάω continue old denominatives to nouns of this type. In Balto-Slavic it is represented by two clear examples.

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[31] Further evidence for Narten character of **b^{h}er-* in Balto-Slavic is very dubious. Sl. **bě́rdjь* AP *a* "pregnant" (OCS *brěždа*, SCr. *brèđ*, Ru. *berézaja*) could continue something like **b^{h}er-di̯ah$_2$-* (e.g. Derksen 2008, 36). See below (§7.7) on the acute of Lith. *bérnas* AP 3 "lad".

Lith. *núoma* AP 1, Latv. *nuõma* "lease, rent" (< **nṓm(h₁)-eh₂-*). In Slavic we have ORu. *namъ* "interest" (Novgorod), probably back formed to coll. **nṓmā*. The antiquity of **nṓm(h₁)-eh₂-* is almost guaranteed by its original denominative Gk. νωμάω "handle" (synchronically iterative to νέμω "distribute"). The Narten character of **nem(h₁)-* is supported by nominals like Gmc. **nēma-* n. (Go. *andanem* "receiving", ON *nám* "learning"), TB *ñemek* "harvest" (< **nēm(h₁)oko-*). The thematic present **ném(h₁)-e-ti* (Gk. νέμω, Go. *niman*, Latv. *nęmu* / *ņęmu*) is probably an inner-PIE replacement of a Narten present **nḗm(h₁)-* / **ném(h₁)-*, cf. Villanueva Svensson 2011, 321; fthc. a, § 6.2, building on Jasanoff 1998, 305ff.[32]

As argued above (§ 7.1.4), Sl. **-rḗsti* "find" is best derived from a Narten present **rḗt-* / **rét-* "turn, run". Supporting evidence comes from Latv. *ruõta* "adornment; toy" (< **rṓt-eh₂-*) and its original denominative *ruõtât*, *-ãju* "turn, hop" (< **rōteh₂-i̯e/o-*). Mild support outside Balto-Slavic comes from OIr. pret. *ráith* (< perf. **(re-)rṓt-e?*), fut. *ress-* (< desid. **rḗt-s-?*), to *rethid* "run", cf. Jasanoff 2003, 31, 135[18]. Note also OIr. *ráithe* "quarter (of year)", *sam-rad* "summer(time)", *gaim-red* "winter(time)", MW *gaeafrawd* "id." < PCelt. **rāto-* < PIE **rōt-o-*.

7.7. *Vr̥ddhi* derivatives.

As Kortlandt (1985, 121) observes, the majority of traditional cases of *vr̥ddhi* in Balto-Slavic are highly dubious or must be explained in some other way. The best example remains Lith. *varnas* AP 4, Sl. **vôrnъ* AP *c* (SCr. *vrân*, Ru. *vóron*) "raven" beside Lith. *várna* AP 1, Sl. **vőrna* AP *a* (SCr. *vràna*, Ru. *voróna*) "crow", traditionally interpreted as **u̯or-no-* : **u̯ōr-nā-*.[33]

In Baltic the metatony of Lith. *varnas* : *várna* cannot be separated from that of *vil̃kas* "wolf" : *vìlkė* "she-wolf", *zuĩkis* "hare" : *zùikė* "she-hare", *šeřnas* "wild boar" : *šérnė* "wild sow", as well as from the slightly more common

[32] Kortlandt (1988, 392f.) separates Lith. *núoma*, Gk. νωμάω, OIr. *námae* "enemy" from the root **nem-*. He seems to reconstruct a parallel root **nemh₁-* (cf. Gk. νέμεσις "retribution"), but I fail to see how this would account for Lith. *núoma* within Kortlandt's system (unless he is assuming **neHm-*).

[33] As an argument against the traditional account of *várna* / **vőrna* Petit (2004, 182) observes that **u̯ōrnā* would have given Lith. †*vuornā* > †*(v)urna*. I am not certain that this is correct (cf. Lith. inst. pl. *-aĩs* < **-ōis*). Cases like Lith. *pùlti* "fall" (< **puolti* < **pōlti*) or *aštuñtas* "eighth" (< **aštuontas* < **aštōntas*) do not prove that long diphthongs were kept intact into (pre-)Lithuanian. Their long vowel can easily have been restored from pres. **pōla* (Lith. *púola*) and cardinal **aštō(ni)* (Lith. *aštuonì*).

métatonie douce of *añtinas* "drake" : *ántis* "duck", *geřvinas* : *gérvė* "crane" etc. (see Petit 2004, 174ff. for a clear presentation of the data). Kortlandt (1977, 324f.) and Derksen (1996, 210f.) assume that the acute of *vìlkė* is due to retraction of the stress from **u̯ilkíHaH*. Retraction of the stress, however, is usually associated to *métatonie douce* (see above § 5.4.1). Petit (2004, 188ff.) suggests that metatony spread from *vařnas* : *várna*, the only case that is inherited with certainty. I doubt an isolated case like this could trigger such a widespread analogy.

As for *várna* / **vőrna*, Kortlandt (1985, 121) compares *vařnas* : *várna* to Gk. κόραξ : κορώνη, Lat. *coruus* : *cornīx* and starts from Bl.-Sl. **u̯or-u̯o-* : **u̯or-Hn-aH*, with replacement of the root **ḱor-* by **u̯or-*. Petit (2004, 187f.; 2010, 121) starts from two independent derivatives of **u̯erH-* "burn" (Lith. *vìrti*): adj. **u̯orH-u-* "burned, black", subst. **u̯orH-neh₂* "black animal" → Bl.-Sl. **var-u-* : **vār-nā-* → **var-va-* : **u̯ār-nā-*. Both scholars assume that *vařnas* secondarily adopted the suffix of *várna*. There is no need to emphasize the *ad hoc* nature of these scenarios. Derksen (2008, 528) observes that this is a unique case and that, accordingly, the possibility cannot be discarded that it reflects a unique and complex prehistory.

One may ask whether the metatony of *várna* / **vőrna* is really so unique. Cases like Lith. *viĨkas* : *vìlkė*, *añtinas* : *ántis* are clear inner-Baltic creations, but the ultimate origin of this pattern may well be older. *Vr̥ddhi* in feminines is well attested in Indo-Iranian (Ved. *nár-* "man" : *nā́rī-* "woman") and may easily have developed out of the genitival value of *vr̥ddhi*-derivatives in Balto-Slavic as well. There are at least some candidates for Balto-Slavic antiquity of this type (cf. Vaillant 1974, 21f.): Lith. *šárka* AP 1, Sl. **s(v)őrka* AP *a* (SCr. *svràka*, Ru. *soróka*) "magpie" (probably related to Gk. κόραξ, Lat. *coruus*), Lith. *kárvė* AP 1, Sl. **kőrva* AP *a* (SCr. *kràva*, Ru. *koróva*) "cow" (cf. Lat. *ceruos* "stag" etc. < **ḱ̂er-u̯o-*),[34] Lith. *stìrna* AP 1, Latv. *stiřna*, Sl. **sъrna* (Ru. *sérna*, but SCr. *sŕna*) "roe" (cf. Lat. *cornŭ* "horn", etc.). As shown by Nussbaum (1986, 2ff.), terms for horned animals with suffix **-n(o)-*, **-u(o)-* always demand an *aniṭ*-variant **ḱ̂er-* of the root for "head and horn". Accordingly, it is *ad hoc* to reconstruct a laryngeal for the words for "cow" and "roe" (so e.g. Derksen 2008, 236, 485).

[34] The *Gutturalwechsel* of *kárvė* / **kőrva* poses an obvious problem, but perhaps not a fatal one. If this word is a borrowing, the acute could still reflect a specifically Balto-Slavic *vr̥ddhi*.

Evidence for "feminine *vr̥ddhi*" is not restricted to terms for animals. A particularly clear case is Latv. *siẽva* "wife", which can hardly be interpreted otherwise than as a *vr̥ddhi*-derivative of **k̂éi-u̯o-* "socially close" (: Ved. *śéva-* "dear", *śivá-* "friendly", Lat. *cīuis* "citizen", Gmc. **heiwa* "household").[35] Lith. *sváinis* / *svaĩnis* "brother-in-law", *sváinė* / *svaĩnė* "sister-in-law" can perhaps be explained starting from *svaĩnis* : *sváinė*, if they go back to **su̯oi-no-* : **su̯ōi-nā-* (cf. Fraenkel LEW, 947f.; otherwise Smoczyński 2007, 617). Petit (2004, 177f.), with reference to Mikulėnienė, mentions the same possibility for Lith. *bérnas* "lad" / Latv. *bẽrns* "child" (< **beĩnas* : **bérna*?) and Lith. *veĩgas* / *vérgas* : *veĩgė* / *vérgė* "slave" (< **veĩgas* : **vérgė*?).

Although the issue clearly deserves further study, I conclude that there are good reasons to assume that cases like *várna* / **vőrna*, *kárvė* / **kőrva*, Latv. *siẽva* reflect a Balto-Slavic "feminine *vr̥ddhi*" that was preserved and further elaborated in Baltic.

7.8. We can finally mention two cases of monosyllabic lengthening, both taken from Kapović 2006, 171.

Sl. **nýně* "now" (OCS *nyně*, Ru. *nýne*, OCz. *nýnie*; also **nъně* > CS *nъně*), Lith. *nūnaĩ*, *nūnái*, *nữn* "now, today" (< Bl.-Sl. **nūnoi*) beside Lith. *nù*, *nữ*, *nujaũ*, Latv. *nǔ*, "now, today", Sl. **nъ* "but" (OCS *nъ*, Ru. *no* etc.). The comparative evidence (Ved. *nù*, *nú́*, *nūnám*, Gk. νύ, νύν, νῦν, Lat. *num*, *nunc*, *nūper*, etc.) suggests that all variants attested in Balto-Slavic are inherited: **nu*, **nū*, **nŭ-m*,[36] as well as several extensions with other particles or adverbial endings.

Sl. **nĕ́kъto*, **nĕ́čъto* "nobody, nothing" (OCS *nĕkъto*, SCr. *njȅtko*, *njȅšto*, MBulg. *nĕkto*, *nĕšto*), Lith. dial. *nẽkas* "id." beside Lith. *ne*, *nẽ*, Sl. **ne* "not" (also Sl. **nekъto*, **nikъto*, Lith. *niẽkas*). As in the case of **nŭ*, both **ne* and **nē* are probably inherited (cf. Lat. *ne-que*, *nē*, etc.) and both entered into longer units.

There is evidence for both acute and circumflex intonation of the variants with long vowel. This is probably best explained through Rasmussen's rule

[35] So also Neri *apud* Vine 2006, 139[1]. A laryngeal is precluded by Ved. *śivá-*. Lubotsky (1988, 94f.) separates Ved. *śéva-* from *śivá-*, but the argument is entirely aprioristic (*pace* Lubotsky, Latv. *siẽva* does *not* prove a laryngeal). See Vine 2006, 147ff. for the PIE background of **k̂éi̯u̯o-*

[36] See Dunkel 2004, 293f. for a survey of the various strategies to reconcile the *-n-* of Ved. *nūnám*, OCS *nyně*, Lith. *nūnaĩ* with PIE **nŭ-m* (demanded by Lat. *num* and better justified from a morphological point of view).

of monosyllabic metatony (see above § 6): **nū̃* beside **nū́-*, **nē̃* beside **nḗ-*. Contamination of both variants (clearly seen in the replacement of **nū́-*, **nḗ-* by **nū̃-* **nē̃-* in Lithuanian) was only to be expected. If one starts from Bl.-Sl. **nū̃(-)*, **nē̃(-)* alone, Sl. **nȳně*, **nȇkъto* are left unexplained. If from Bl.-Sl. **nū́(-)*, **nḗ(-)*, at least Lith. *nūnaĩ*, *nūnái*, *nū̃n* would be difficult to account for.

8. Conclusion. Examples like Sl. **sȇći* / Lith. *pa-sékelis*, Sl. **-rȇsti* / Latv. *ruõtât*, Sl. **bȇrmę*, **nȳně*, Lith. *núoma* or Latv. *siẽva* (to mention only some particularly strong cases) clearly support the traditional theory: PIE long vowels received acute intonation in Balto-Slavic. The number of examples may not seem large, but this is predicted by the very nature of the evidence: PIE long vowels were in any case not common, and Baltic and Slavic are recently attested branches that have undergone massive lexical renewal. In addition, large portions of the evidence automatically qualify as ambiguous (roots ending in a voiced stop, Slavic mobile nouns, etc.). Circumflex intonation in original long vowels is restricted to two specific environments: i) word-final position (Lith. *akmuõ*, *duktẽ*, inst. pl. *-aĩs*), ii) monosyllables (Latv. *sàls*, *gùovs*, Lith. *duõs*, *nuõ*, perhaps SCr. *dò-nijeh*).

INDOEUROPIEČIŲ ILGIEJI BALSIAI BALTŲ IR SLAVŲ KALBOSE

Santrauka

Šiuo metu vyrauja dvi pagrindinės teorijos apie ide. ilgųjų balsių raidą baltų ir slavų kalbose: i) pagal „tradicinę“ teoriją ilgųjų balsių refleksai turi akūtinę priegaidę, ii) pagal Kortlandto teoriją – cirkumfleksinę priegaidę. Straipsnyje ginama tradicinė teorija. Kortlandto teorija, ko gero, yra teisinga žodžio galo pozicijoje (plg. lie. *akmuõ*, *duktẽ*, vns. naud. *-uĩ*, dgs. įnag. *-aĩs*). Žodžio viduryje Kortlandto teoriją remia tik slavų sigmatinis aoristas s.-kr. *dò-nijeh*, *rȉjeh* ir turbūt la. *sàls*, *gùovs* (šiuo atveju veikiant gan problemiškam dėsniui **-ĒH- > *-Ē-*). Kiti faktai, remiantys Kortlandto teoriją, yra abejotini dėl vienos ar kitos priežasties. Dalis Kortlandto medžiagos yra vienskiemenės paradigmos formos (pvz., lie. *duõs*, *jũs*, *tuõ*, la. *gùovs*, s.-kr. *dâ*, *lȋ*). Jas galima paaiškinti Rasmusseno teorija, pagal kurią bl.-sl. vienskiemeniai patyrė cirkumfleksinę metatoniją. Kita vertus, tradicinę teoriją remia tokie pavyzdžiai kaip sl. **sȇći* / lie. *pa-sékelis*, sl. **-rȇsti* / la. *ruõtât*, sl. **bȇrmę* (: s. i. *bhā́rman*), **nȳně* (: s. i. *nūnám*), lie. *núoma* (: gr. νωμάω), la. *siẽva* šalia kitų atvejų. Taigi galima išvada, kad ide. ilgieji balsiai dėsningai gavo akūtinę priegaidę baltų ir slavų kalbose. Cirkumfleksinė priegaidė apsiriboja dviem specifinėmis pozicijomis: i) žodžio galas, ii) vienskiemenės žodžių formos.

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