INTRODUCTION

1. ORIGIN OF THE DICTIONARY

The dictionary is based on a database that was created within the context of the *Indo-European Etymological Dictionary* project (IED). The circumstance that the dictionary originates from a database is still apparent from the way the lemmata are structured. This type of rigid structure limits the author's freedom, but, as is confirmed by the reactions to my Slavic etymological dictionary, it also increases the value of the dictionary as a book of reference.

The main objective of the dictionary is to present an up-to-date etymological account of the Baltic inherited lexical stock. Fraenkel's *Litauisches etymologisches Wörterbuch* (1955-1965) is in many respects outdated and recent dictionaries such Karulis's *Latviešu etimoloģijas vārdnīca* (1992) and Mažiulis's *Prūsų kalbos etimologijos žodynas* (1988-1997) do not quite meet the standards of present-day Indo-European studies. Smoczyński's *Słownik etymologiczny języka litewskiego* (2007) is an important contribution to the field, but the differences in both scope and general outlook between Smoczyński's work and the present dictionary are such that they are to a great extent complementary. Smoczyński's dictionary includes far more derivatives and expressions than mine, for instance. For the differences in outlook I refer to my review of Smoczyński 2006 (Derksen forthc. a). An ongoing project is the *Altlitauisches etymologisches Wörterbuch* (ALEW) of the Lehrstuhl für Historisch-vergleichende Sprachwissenschaft der Humboldt-Universität zu Berlin in collaboration with the Lietuvių kalbos institutas (Vilnius). As the name suggests, it is an etymological dictionary of Lithuanian words that are attested prior to ca. 1700. The provisional results are made available on the website of the project.

The dictionary focuses on etyma that have been part of the scholarly discussion in the field of Indo-European linguistics, e.g. etyma that occur in Pokorny's *Indogermanisches etymologisches Wörterbuch* (IEW) or the *Lexikon der indogermanischen Verben* (LIV). Obviously, this selection includes a number of etyma that may be considered borrowings from a non-Indo-European substratum language (see 2.2). Excluding such etyma would not be very wise, as the classification of a word as, for instance, "North Indo-European" is merely provisional. Furthermore, even the possibly non-Indo-European elements of the Proto-Slavic lexicon usually meet the IED's criterion that an etymon must be attested in at least two branches of Indo-European in order to be included.

In comparison with other Baltic and Slavic etymological dictionaries, much attention is paid to prosody. In the case of Lithuanian, I have attempted to list all accent variants, mainly on the basis of the *Lietuvių kalbos žodynas* (LKŽ). In the case of Latvian, I list the variants presented in the dictionary by Mühlenbach and Endzelīns (ME) and its supplement (EH), with occasional additions from other sources (see below, section 5). Not only is the prosodic information in other

dictionaries incomplete, the accentuation of a form is sometimes presented in such a way that it may lead the reader astray. A case in point is the sign ², which indicates that a Latvian tone is historically ambiguous but is nevertheless routinely left out by Fraenkel and other scholars. An example is *liêgs²*, which without the addition of ² seems to be at odds with Lith. *leñgvas* but may actually just as well reflect *lìegs*. It is true that the theory about the origins of the Balto-Slavic acute and circumflex intonations that is followed in the present dictionary significantly increases the importance of Baltic and Slavic accentology for the reconstruction of Proto-Indo-European, but a correct representation of the accentuation of an etymon is, of course, a legitimate goal under any circumstances. For the Proto-Slavic etyma I have tried to reconstruct their prosodic properties, but the number of attested forms on which the reconstruction is seemingly based is smaller than in my Slavic etymological dictionary.

2. THE BALTIC LANGUAGES AND THEIR DIALECTS

2.1 East and West Baltic

Only three Baltic languages are known to us. They are Lithuanian and Latvian, which are still spoken today, and Old Prussian, which is only sparsely recorded and became extinct in the 18th century. Lithuanian and Latvian are closely related and grouped together as East Baltic. In contrast, Old Prussian is classified as a West Baltic language. The names of the Baltic languages that are assumed to have died out roughly between 1200 and 1600 are derived from tribal names, e.g. Couronian, Selonian, Semigallian, Yotvingian or (West and East) Galindian. The speakers of these languages, whose population was decimated during the Baltic crusade, were assimilated by neighbouring tribes. On the basis of onomastics, substratum features, as well as Baltic loanwords in Finno-Ugric, Couronian, Yotvingian and West Galindian are sometimes classified as West Baltic, whereas Selonian and Semigallian are assumed to have been East Baltic languages (cf. Dini 1997: 176-177). Dini classifies East Galindian as Dniepr Baltic, the easternmost branch of Baltic. We must keep in mind, however, that we know next to nothing about these languages. The eastern border of the Baltic territory has mainly been established thanks to the investigation of hydronyms by Russian scholars, such as Sedov, Otkupščikov and, most of all, Toporov.

Our impression of the Couronian language is for a significant part based on certain phenomena observed in the Latvian dialects of Kurzeme, for which a substratum origin has been assumed (cf. Endzelīns 1913-1914, Būga RR III: 156-251). One such phenomenon is the preservation of *Vn* before a consonant, e.g. Latv. *dziñtars* 'amber' for Latv. *dzītars*. A Couronian substratum has also been suggested in connection with a number of features of Žemaitian (cf. Būga o.c.: 235, 246, Girdenis 1981, Zinkevičius 2006: 207-226; see also below).

In addition to the indirect traces of extinct Baltic tribal languages, there is the vocabulary entitled *Pogańske gwary z Narewu*, which consists of a Polish side and a side that is written in a language identified as Yotvingian by some scholars (e.g.

Zinkevičius 1985), but as Lithuanian with a strong Yiddish influence by Schmid (1986). One of the problems connected with the vocabulary is the fact that we only have a manual copy at our disposal. The original, which had been included in a Latin prayer book, was thrown out by the parents of Vjačeslav Zinov, who had bought the book in 1978 and contacted Zinkevičius in 1983. Intriguing though it is, the vocabulary can hardly be regarded as a valuable linguistic monument.

2.2 Lithuanian

As was already recognized by Baranauskas and Jaunius, who made significant contributions to the beginnings of Lithuanian dialectology, the main division is between Žemaitian and Aukštaitian dialects. Their classifications of the Lithuanian dialects were superseded by the one that was established by Salys. The now generally accepted classification is based on Girdenis and Zinkevičius 1966. Here the Žemaitian dialect area consists of a northern, a western and a southern region, while the Aukštaitian area is divided into east, west and south. Furthermore, there are various subgroupings.[1] The modern standard language is based on the western varieties of Aukštaitian. The now extinct Lithuanian dialects of East Prussia, which played such an important role in the codification of Lithuanian, may also be classified as West Aukštaitian.

According to Salys (1933), the split between Žemaitian and Aukštaitian dialects originated in the middle of the 15th century. This seems uncomfortably late, cf. Būga's dating of Leskien's law, which was preceded by considerable dialectal differentiation, to the 13th century (1924: XXXIII = 1961: 46ff.). In a series of articles, Girdenis (a.o. 1991, 1994) has attempted to push the split back in time, arriving at 700 AD as a terminus ad quem. In his opinion, the breaking up of East Baltic into the tribal languages Selonian, Semigallian, Latgallian, Žemaitian, and Lithuanian was followed by a period of convergence, which in the case of the latter two languages was connected with the formation of a Lithuanian state. Ultimately, Žemaitian came to be perceived as a Lithuanian dialect, to be distinguished from Aukštaitian. This is compatible with Kortlandt's view (1977a: 325) that, while some of the isoglosses between Žemaitian and Aukštaitian must be quite old, the two dialect groups seem to have shared a series of comparatively late innovations.

There are other ways of looking at the Lithuanian dialect differentiation, however. In his new book on the origin of the Lithuanian dialects (2006, see also 1980), Zinkevičius identifies a number of early isoglosses, for instance the East and South Aukštaitian raising of $ą$ and $ę$ to $ų$ and $į$, respectively, which he dates to the 10th or perhaps even 9th century, and the Žemaitian change *$i̯a$- > e, which may have taken place before the 13th century. Here the distinction between Aukštaitian and Žemaitian dialects is not represented as a deep-rooted dialectal difference. It is rather the assimilation of neighbouring tribes at later stages that shaped the appearance of the Lithuanian dialects. In the case of Žemaitian, we are dealing with a Couronian

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[1] A convenient overview of the features of the various dialect groups can be found in Balode and Holvoet 2001a: 51-79.

substratum, which Zinkevičius holds responsible for the reflexes *ū, ī* (S), *ọu, ẹi* (N), *ọ̄, ẹ̄* (W) corresponding with Aukštaitian *uo, ie*. The northwestern East Aukštaitian dialects were partly shaped by Semigallian and Selonian substrata and South Aukštaitian was influenced by Yotvingian. Of course, one must be aware of the danger of circularity (the knowledge of the substratum languages being based on the very same dialect characteristics that are to be accounted for), but the extinction of Baltic tribal languages is certainly a factor to be reckoned with.

2.3 Latvian

One may distinguish three Latvian dialect groups (cf. Endzelīns 1922a: 1-6, Rudzīte 1964: 29, Gāters 1977: 13-14, Balode and Holvoet 2001b: 16-40). The Central dialect is spoken in Vidzeme, Zemgale, and the southern part of Kurzeme. The Tamian or Livonian dialect is spoken in the northern part of Kurzeme as well as in certain northern areas of Vidzeme. The High Latvian dialect group comprises the dialects of Latgale, East Vidzeme, and the so-called Selonian dialects of East Zemgale. The Central dialect and the Tamian dialect are regarded to be closer to one another than to High Latvian and for this reason they are sometimes grouped together as Low Latvian. The rise of the standard language is the subject of Rūķe-Draviņa 1977.

2.4 Old Prussian

As mentioned above, the Old Prussian language is only sparsely documented. Apart from the Elbing Vocabulary, Simon Grunau's Vocabulary, and the three catechisms (see 6.3), we merely have a number of fragments. The Elbing Vocabulary (EV), which dates from around 1400, and the catechisms (17th century) are often considered to represent different dialects. The dialect reflected by EV is called Pomesanian, while the dialect of the catechisms is called Samlandian or Sambian. The Old Prussian epigram (late 14th century) and an Old Prussian proverb (16th century) seem to reflect the Pomesanian dialect.

In the Duchy of Prussia, the Prussians constituted the lowest class. The position of the Lithuanians was stronger, if only because they belonged to a people that for the greater part lived in the neighbouring Grand Duchy of Lithuania. In the 16th and 17th centuries the Prussians were rapidly germanized. The final blow to their existence as a separate entity may have been the plague of the period 1709-1711. There are reasons to believe that the Prussians were partly assimilated by the Lithuanians. The 17th-century historian Matthäus Prätorius has provided us with examples of the Lithuanian of Nadrovia, which in his opinion was the true Prussian language, in contrast with what he calls the corrupt Prussian of the catechisms (cf. Young 2004, 2007). Prätorius's view was misguided, of course. The language of Nadrovia was clearly Lithuanian, but there are indeed a number of forms that must have originated from a Prussian substratum.

3. STRESS AND TONE IN BALTIC[2]

3.1. Lithuanian

The Lithuanian standard language[3] distinguishes between a sharply falling tone (acute) and a smoothly rising tone (circumflex), which occur exclusively on stressed long vowels and diphthongs[4], e.g. *mótina* 'mother', *káimas* 'village', *púodas* 'pot', *dárbas* 'work' vs. *pōnas* 'sir', *vaĩkas* 'child', *kuõpti* 'clean', *dařžas* 'garden'. Short stressed vowels are designated by a gravis, e.g. *ràsti* 'find', *dùrys* 'door'. Acute *i*- and *u*-diphthongs ending in a resonant have a gravis on the first element, e.g. *pìlnas* 'full', *žiùrkė* 'rat', because in the normative pronunciation the first element is short and lax. The prosodic systems of the Žemaitian dialects differ considerably from the Aukštaitian system. One of the main features is the broken tone as the reflex of an old accented acute. We shall have a closer look at the Žemaitian prosodic systems towards the end of this section.

In the Lithuanian standard language, in South Aukštaitian and many West and East Aukštaitian dialects as well as in a few Žemaitian dialects, stress is free and mobile. In the northern part of the Lithuanian linguistic territory, we find a gradual retraction of the stress from final syllables. In the southeastern parts of this area, including the South Žemaitian Raseiniai region, the stress is only retracted from short endings to a penultimate long syllable. In two small bordering areas, including another part of the South Žemaitian territory, the stress is retracted from short endings to the penultimate syllable, irrespective of its quantity. An unconditional retraction of the stress from short and circumflex final syllables is found in most Žemaitian dialects as well as in the northernmost West Aukštaitian and bordering East Aukštaitian dialects (cf. Grinaveckis 1961, Zinkevičius 1966: 37-40, 447).

While in the Aukštaitian dialects the stress is retracted to the preceding syllable, the Žemaitian dialects with an unconditional (or *visuotinis* 'general') retraction of the stress shift the ictus to the initial syllable, proclitics and prepositions included. The retraction may also affect syllables that had received the ictus as a result of apocope (cf. Zinkevičius 2006: 222). The originally stressed syllable receives secondary stress. It is possible for a word to have secondary stress on a number of syllables. Originally unstressed posttonic long endings, for instance, typically have secondary broken tone (cf. Zinkevičius 1966: 42-45, Young 1991: 27). In Standard Lithuanian and most Aukštaitian dialects, on the other hand, there is no secondary stress. Since acute syllables do not lose the ictus, Žemaitian never reaches the stage of Latvian, which has fixed stress on the initial syllable.[5]

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[2] This section is an adaptation of Derksen 1996: 9-17.

[3] Actually, Standard Lithuanian seems to be in the process of losing its tone, cf. Robinson 1984 and Young 1991a. From a dialectgeographical perspective one could say that tonal contrasts on long monophthongs as well as *ie* and *uo* are difficult to distinguish or absent in central and southern Lithuania, cf. Zinkevičius 1966: 33-36, Kazlauskas 1966-1967: 119.

[4] This includes tautosyllabic sequences of a short vowel and resonant, which are called mixed diphthongs or semidiphthongs.

[5] The stress is also not retracted from medial syllables.

Lithuanian nouns belong to one of four accent paradigms, of which AP 1 is barytone, whereas AP 2, 3 and 4 are mobile. In the case of nouns with a monosyllabic stem, there is a connection between the tone of the root and the accent paradigm to which a word belongs. The root is acute in AP 1 and 3 but short or circumflex in AP 2 and 4, e.g. *výras* 1 'man', *rãtas* 2 'wheel', *dárbas* 3 'work', *draũgas* 4 'friend'. For the curves of the accent paradigms in the various nominal formations I refer to Ambrazas et al. 1997 (126-133, 159-164) or any other Lithuanian grammar or manual.

Nouns with a polysyllabic stem belong to AP 2 if there are case forms which are stressed on the last syllable of the stem and if this syllable is short or circumflex, e.g. *mokyklà* 2, Asg. *mokýklą* 'school'. Otherwise, nouns with a polysyllabic stem may only belong to AP 1 or 3. In the latter case, the tone of the root is usually indicated by the addition ᵃ (acute) or ᵇ (non-acute), e.g. *vanduõ* 3ᵃ (Asg. *vándenį*) 'water' vs. *akmuõ* 3ᵇ (Asg. *ãkmenį*) 'stone'. If the stem is trisyllabic, we sometimes find an extra addition, e.g. *auksakalỹs* 3⁴ᵃ (Asg. *áuksakalį*) 'jeweller' vs. *pasiuntinỹs* 3⁴ᵇ (Asg. *pãsiuntinį*) 'minister', where the ⁴ indicates that in the barytone case forms the stress falls on the fourth syllable from the end.

The distribution of nouns over the accent paradigms according to the intonation of the syllable preceding the ending suggests that it is possible to reconstruct a stage with a smaller number of accent paradigms. It was Ferdinand de Saussure who showed that the accent paradigms 2 and 4 can be derived from the paradigms 1 and 3, respectively, by means of a stress shift from a circumflex or short syllable to an immediately following acute syllable (1896: 157). The progressive shift must have operated at a stage prior to Leskien's law (1881), according to which acute vowels in final syllables were shortened.

It follows from what has been said above that in AP 2 final stress is always due to Saussure's law, that in AP 3 final stress is old, and that AP 4 combines the final stress of AP 2 and 3. In the singular of the *ā*-stems, for instance, the end-stressed forms are:

AP 2: N. *rankà*, I. *rankà*
AP 3: N. *galvà*, G. *galvõs*, L. *galvojè*, Ill. *galvõn*
AP 4: N. *algà*, G. *algõs,* I. *algà*, L. *algojè*, Ill. *algõn*.

An originally acute ending has usually been preserved in the compound adjective, because here Leskien's law did not operate, e.g. Nsg. f. *geróji*, Isg. f. *gerája* (from *gẽras* 'good'). For more details about the four accent paradigms I refer to Derksen 1991: 67-72.

In the finite verbal forms, final stress is limited to the first and second persons of the singular. The place of the stress in these forms is completely predictable on the basis of Saussure's law, with the exception of the future tense, where the law apparently did not operate. Thus, we find 1sg. *áugu*, 2sg. *áugi*, 3 *áuga* (*áugti* 'grow') vs. 1sg. *metù*, 2sg. *metì*, 3 *mẽta* (*mèsti* 'throw'), cf. the reflexive forms 1sg. *skutúos(i)*, 2sg. *skutíes(i)*, 3 *skùtas(i)* (*skùstis* 'shave').

The original distinction between verbs with fixed stress and verbs with mobile stress can be observed in a limited number of instances only, e.g. *sãko, nesãko* (2) vs. *vẽda, nèveda* (4). The equivalent of AP 3 has largely been eliminated as a

consequence of Saussure's law, which entailed a stress shift from proclitics to a following acute root. The only remnants of this class in Lithuanian are end-stressed participial forms, such as *duodąs*, *ėdąs*, cf. Latv. *duômu, ę̃mu* with a broken tone reflecting earlier accentual mobility (Kortlandt 1977a: 327).

Saussure's law and Leskien's law are comparatively recent developments, which affected all Lithuanian dialects. We must therefore start from a Proto-Lithuanian system with four accent paradigms (cf. Illič-Svityč 1963: 11 = 1979: 9). In dictionaries such as the LKŽ and in studies that are not actually dialect descriptions, it is common practice to convert dialect forms and their accentuation to Standard Lithuanian forms. In spite of their daunting appearance, even Žemaitian forms generally allow us to recover their original accentuation. The intricate interplay of stress and tone in this area is extremely interesting.

In most Žemaitian dialects, originally stressed acute syllables have broken tone (*laužtinė priegaidė*), i.e. a rising-falling tone which at its peak is interrupted by a glottal stop. The realization of the broken tone is not free of variation, glottalization being more prominent in the West.[6] The dialects in the South and the East of the Žemaitian territory as well as the neighbouring Aukštaitian dialects have Stoßton (*stumtinė priegaidė*). Here the glottal stop is absent from the rising-falling contour. Dissimilation of a broken tone to *stumtinė* is common in the North of the Žemaitian territory, e.g. *ví·râ·* Npl. 'men' vs. *vî·rs* Nsg. (Zinkevičius 1966: 34, 2006: 241-242).

Generally speaking, the Žemaitian circumflex (*tvirtagalė* or *tęstinė priegaidė*) differs from its Aukštaitian counterpart by having the peak of intensity on the first part of the syllable (and therefore the first component of diphthongs), rendering the falling element of the rising-falling contour more prominent. In the South Žemaitian Raseiniai and Varniai regions (excluding the latter's northwestern and northeastern areas) as well as in the West Aukštaitian Kaunas region, the circumflex is a level tone. In diphthongs both components are pronounced with equal intensity.

The opposition broken tone vs. circumflex does not occur in syllables that received the ictus as a result of the Žemaitian stress retraction. The distinction between acute and circumflex is nonetheless preserved in the area around Mosėdis and Salantai, the northeastern part of the North Žemaitian Kretinga region.[7] Here newly-stressed acute syllables have *stumtinė*, while newly-stressed circumflex syllables have either *tęstinė* or *vidurinė priegaidė* ('middle tone'[8]), depending on whether the ending is long or short. To the south of this area, around Kretinga, Plungė, and Kuliai, the tonal opposition is lost. Before long endings *stumtinė* has been generalized, while the middle tone is found before short endings. In the southernmost part of the Kretinga region, around Endriejavas and Rietavas, we find *tęstinė* before short endings and *vidurinė* before long endings (Zinkevičius 1966: 40-

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[6] Cf. Girdenis 1967 (= KD I: 76-88), where it is argued that in the dialect of the Mažeikiai the acute is primarily characterized by pharyngalization.

[7] There may be additional North Žemaitian areas where the phenomenon is attested, cf. Grinaveckis 1973: 97.

[8] The middle tone seems to refer to the quantity of the syllable rather than to a specific tone contour.

41, Bacevičiūtė et al. 2004: 259). The situation may be illustrated in the following way:

Standard Lith.	Mosėdis, Salantai	Kretinga, Plungė	Endriejavas, Rietavas
galvà Nsg.	gálvᵃ	gálvᵃ	gā·lvᵃ
galvõs Gsg.	gá·lvuōs	gá·lvuōs	gålvuōs
mergà Nsg.	mē·rgᵃ	mérgᵃ	mē·rgᵃ
mergõs Gsg.	mérguōs	mé·rguōs	mérguōs

It should be noted that Aleksandravičius's description of the prosodic system of the dialect of Kretinga (1957), which thanks to the fact that it features in Stang 1966 has acquired iconic status, falsely pretends that this dialect has a distinction between newly-stressed acute and newly-stressed circumflex syllables.[9] A description of the system of the Mosėdis area is Rokaitė 1961.

The situation in the area around Mosėdis and Salantai shows that in pretonic syllables the inherited distinction between acute and circumflex syllables was still preserved at time of the retraction of the stress to the initial syllable. In posttonic syllables, too, traces of this distinction are attested (cf. Grinaveckis 1964: 6). In this respect Žemaitian resembles Latvian. A difference between Žemaitian and Latvian is the fact that in Žemaitian the tonal alternations within a paradigm are usually retained, e.g. sù·n⁰s (sūnùs) Nsg. 'son' vs. sû·nᵘs (sū́nus) Apl. (Bacevičiutė et al. 2004: 197).

Another characteristic of Žemaitian is the early shortening of unstressed short and circumflex endings, e.g. nèš (nḗša) 'carries', ká·klᵃ (kãklo) Gsg. 'neck', žḗ·m⁽ᵉ⁾ (žẽmė) 'earth' (ibid.). The apocope of *a seems to have preceded the lengthening of a and e in stressed non-final syllables, e.g. làps (lãpas) 'leaf'. Examples such as coastal Žemaitian mēdis 'tree' : Apl. mèḋùs (medžiùs) show that the lengthening occurred prior to the Žemaitian stress-shift. We find no lengthening before a synchronically long ending, e.g. mèdʠu Dsg. (with secondary broken tone), which may be due to a recent development. Lengthening does occur before shortened circumflex endings, e.g. mēḋu (medžių̃) Gpl. The lengthening is more restricted in the West Žemaitian area, where the tendency to shorten and eliminate final syllables is particularly strong.

3.2 Latvian

With a few minor exceptions, the Latvian standard language as well as all Latvian dialects have fixed initial stress (cf. Gāters 1977: 23-24). Long vowels and diphthongs have a tone, irrespective of their position in the word. The most elaborate tone system consists of three tones: the sustained tone, which is slightly rising, the falling tone, and the broken tone, which is characterized by glottal constriction, e.g. mãte 'mother', duõna 'bread' vs. tàs Gsg. f. 'that', rùoka 'hand' vs. âzis 'goat', duôt 'give'. In

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[9] See Aleksandravičius 1961: 125 fn. and Zinkevičius 1966: 40 fn. The original description was apparently adapted at the instigation of a number of unnamed linguists.

the case of tautosyllabic sequences of a vowel and a resonant, quantitative oppositions are indicated in the following way: *stìr̃na* 'roe' : *vĩrs* 'man', *bàlss* 'voice' : *bãls* (or *bāls*) 'pale', *ceĨt* 'lift' : *vę̃ls* 'late'. Thus, length is indicated by the place of the accent mark in diphthongs[10] with a sustained or broken tone, whereas in falling diphthongs length is indicated by an additional macron. Over falling monophthongs the macron is not written because it is redundant, cf. *tàs* (= *tãs*) vs. *bãls*.

In my examples of diphthongs containing a long vowel, the resonant had become tautosyllabic as a result of apocope, cf. Lith. *výras, vėlùs*. We find a quantitive opposition in original diphthongs as well, e.g. *kaĨt* 'forge', *vę̃lns* 'devil' vs. *dzērve* 'crane', *bārt* 'scold', *vãrds* 'word', *vę̃rpt* 'spin'. Insofar as these diphthongs continue East Baltic **VRC* (cf. Lith. *kálti, vélnias, gérvė, bárti, vaĩdas, veĩpti*), it appears that length only occurs in the diphthongs *ārC, ērC, ãrC, ę̃rC*. We may now formulate the rule that at a certain period in the history of Latvian, *a* and *e* were lengthened before a tautosyllabic *r* under the sustained and falling tones (Endzelīns 1922a: 102). This rule explains such alternations as *vìlkt, vę̀lku* 'drag' vs. *pìrkt, pę̃rku* 'buy'. Apparent exceptions, such as *peĩve* 'paint', *pę̀rsuonisks* 'personal' or *taĩba* 'bag', are recent borrowings or neologisms (ibid.).

The marking of length in diphthongs is slightly more complicated than it seems. Since in old diphthongs ending in a resonant we hardly ever find *ī* or *ū*, length is not marked in falling long diphthongs which result from apocope, e.g. *ḷùns²* = *ḷūns* (Lith. *liúnas*) vs. *lę̃ns* 'slow' (Lith. *lěnas*). Short diphthongs resulting from apocope, by the way, automatically receive a falling tone, which is not indicated (Endzelīns 1922b: 4). Thus, *zęms* 'low' (Lith. *žěmas*) is actually *zèms*. Fortunately, Endzelīns's suggestion to leave out the macron in falling long diphthongs resulting from apocope is not followed in ME: whereas Endzelīns proposed to write *ķę̀ms* 'ghost' instead of *ķę̃ms* (l.c.), ME uses the latter spelling.[11]

The system with three tones is original, as can easily be demonstrated (see 1.3). It has been preserved in two unconnected areas, viz. in Burtneek, Wohlfahrt, Ermes, Walk, Trikaten, Wolmar, Papendorf, Wenden, Arrasch, Ronneburg, Smilten, Serbigal, Palzmar, Drostenhof, Serben, Schujen, Nitau, Jürgensburg, and a few other places in Vidzeme (Livland), as well as in Neuenburg, Schmucken, Blieden, Kumbern, Lut(t)ringen, and Gaiken in Kurzeme and Zemgale (which together constitute Kurland) (Endzelīns 1922a: 22-23).

The remaining Latvian dialects possess a system with two tones. We may distinguish two areas. In the western part of Latvia the falling tone merged with the broken tone, whereas in East Latvia the sustained tone merged with the falling tone. If a form contains a tone which is from a historical point of view ambiguous, it is provided with the sign ². Thus, we find Central Latvian *traũks, dràugs, raũgs*, corresponding to West Latvian *traũks, draûgs², raûgs²* and East Latvian *tràuks²,*

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[10] The term "mixed diphthong" is usually reserved for tautosyllabic sequences of a short vowel and a resonant. It is convenient, however, to regard tautosyllabic sequences of a long vowel and a resonant as diphthongs as well.

[11] The vocabulary of Endzelīns 1922c is inconsistent, as we find *mę̃ms* 'stumm' alongside *lę̀ns* 'langsam, sanft, mild'.

dràugs², raûgs (Endzelīns 1922c: 58). Note that this division into three areas applies exclusively to the tone systems and that in a geographical sense it is only roughly accurate.

I shall not go deeply into the phonetics of the West and East Latvian tone systems, for which I refer to Andronov 1996. We could say that in West Latvian the opposition is between sustained and non-sustained (Zeps 1970: 12-13). The realization of the ambiguous broken tone resembles a broken tone in the Tamian dialects of Kurzeme but a falling tone in the Tamian dialects of West Vidzeme (Gāters 1977: 24). In East Latvian, the opposition is between interrupted (glottalized) and non-interrupted, though in a part of the East Latvian territory, we find a rising tone instead of the broken tone (Zeps: l.c.).

In non-initial syllables, the system with three tones is reduced to an opposition between glottalized and non-glottalized, i.e. the opposition between the sustained and falling tones is neutralized. The result is written as a sustained tone. I must add, however, that some speakers seem to preserve the threefold distinction in non-initial root syllables. In the native dialects of P. Schmidt (between Ronneburg and Smilten) and J. Cīrulis (Drostenhof), for instance, there is a tonal distinction between *pazīt* 'kennen' and *nùozìegtiês* 'sich vergehen' (Endzelīns 1922a: 23), whereas in Wolmar, and therefore in Endzelīns's speech, the tonal distinction between *sēju* 'I sowed' and *sèju* 'I bound' is lost in *apsēju* 'I sowed, I bound up' (l.c.; 1922c: 57). As I occasionally pointed out in my dissertation (1996), the material provided by Schmidt and Cīrulis contains quite a few sustained tones in non-initial root syllables which alternate with a falling tone in other forms. It is implausible that these are all examples of *métatonie rude*.

In suffixal syllables there is a tendency towards the generalization of a certain tone, e.g. Lsg. *pupā, vagā* (Wolmar, Schmidt) vs. *pupâ, vagâ* (Drostenhof).[12] This holds true for dialects with two tones as well. In the West Latvian dialect of Neu-Autz, which is represented by Bielenstein, as well as in most dialects of Southwest Kurzeme, all suffixal syllables have the broken tone (Endzelīns 1922a: 27-28). An interesting recent publication on tones in non-initial syllables is Seržants 2003.

Finally, I would like to return to the subject of vowel lengthening before a tautosyllabic *r*. Lengthening is found in most dialects[13] but under varying conditions. In its most limited form the lengthening exclusively affected *a* and *e* before a tautosyllabic *r* in syllables with a sustained or falling tone. Under these conditions the lengthening operated in most dialects which are situated in the middle part of Latvia, including those on which the literary language is based. In the dialects of this area in which the falling tone merged with the broken tone, i.e. in West Vidzeme and the neighbouring parts of central Zemgale,[14] the original tonal difference is betrayed

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[12] The second broken tone in Lpl. *gaĨvâs* (Lith. *galvosè*) is not analogical after *pupâs* (Lith. *puposè*), if one takes the view that the broken tone reflects an unaccented acute (cf. 3.3).

[13] Some of the dialects in which there is no lengthening developed an anaptyctic vowel after the *r*, e.g. in Nieder-Bartau *zirags, kurape* for *ziȓgs, kuȓpe* (Endzelīns 1922a: 105).

[14] On page 52 of Derksen 1991, I wrote "central Kurzeme (Kurland)" to refer to the same area. This is a consequence of the fact that in older publications "Kurland" is used as a designation for an area comprising both Kurzeme and Zemgale.

by a quantative difference in the case of *a* and *e* before a tautosyllabic *r*, e.g. *dârzs²* 'garden', *pêrt²* 'whack' < *dãrzs*, *pḕrt* vs. *daȓbs* 'work', *dzeȓt* 'drink' (Endzelīns 1922c: 58). The merger of the sustained and falling tones was therefore posterior to the lengthening.

In High Latvian, not only *e* and *a* but also *i* and *u* have been lengthened (and often diphthongized) under the same conditions as I have specified above, e.g. *ìer²*, *ùor²* vs. *iȓ*, *uȓ* in Marienburg, Schwaneburg, Gr.-Buschhof, etc. (Endzelīns 1922a: 104). In all Tamian dialects and in the dialects of Kurzeme which belong to the central dialect group, we find lengthening of *a*, *e* before a tautosyllabic *r* irrespective of the tone of the syllable. Lengthening or diphthongization of *i* and *u* under the same conditions is also quite common in this area, though a little less widespread. In a few dialects only *iȓ* and *uȓ* have been lengthened (o.c.: 103-104).

The above-mentioned rules regarding vowel lengthening before a tautosyllabic *r* apply to old diphthongs of the structure *VrC*. In principle they do not apply to diphthongs originating from apocope or to the sequence -*Vr* in auslaut, cf. *ar* 'with', *gars* 'vapour, spirit'. In certain dialects in Kurzeme, we find vowel lengthening in these cases as well, e.g. *gâȓš²*, *tûrs²* 'there'.

Though in ME and EH dialect forms are normalized to a large extent, the presence or absence of lengthening before *r* is a feature which is usually represented.

3.3 The relationship between the Lithuanian and Latvian prosodic systems

As I stated in section B 2, the relationship between the Lithuanian and Latvian prosodic systems was essentially clarified by Endzelīns (1899). He showed that the Lithuanian system must be compared with the Central Latvian system with three tones. The Latvian falling tone corresponds to the Lithuanian circumflex, whereas both the sustained and the broken tone correspond to the acute. As to the distribution of the sustained and the broken tone, Endzelīns (1899: 125ff.) observed that, as a rule, the former occurs in nouns and verbs which correspond to Lithuanian words with fixed stress, whereas the latter occurs in nouns and verbs corresponding to Lithuanian mobilia. Thus, in nouns with a monosyllabic stem, the Latvian sustained tone corresponds to Lithuanian AP 1 and the broken tone to AP 3, e.g. Latv. *duōna, saūle, brālis, gaȋva, âzis, siȓds* : Lith. *dúona* 1, *sáulė* 1, *brólis* 1, *galvà* 3, *ožŷs* 3, *širdìs* 3. The Latvian falling tone corresponds to both AP 2 and 4, e.g. Latv. *rùoka, dràugs, àuss* : Lith. *rankà* 2, *draũgas* 4, *ausìs* 4 (for more examples, see Derksen 1991: 50-51).

While it is clear that the Latvian sustained tone is the regular reflex of the acute intonation in stressed syllables, opinions greatly differ as to the origin of the broken tone. According to the classical explanation, the broken tone originated when the stress was retracted to an acute vowel, for instance in the oxytone case forms of a mobile paradigm. The retraction yielded a rising tone, which was preserved in certain High Latvian dialects (the so-called "Selonian dialects") but developed into a broken tone elsewhere (Endzelīns 1922a: 21-22, 25-26; 1922c: 62, cf. Stundžia 1981: 62).

An attempt to provide a more detailed phonetic explanation for the rise of the broken tone was made by Ekblom. Starting from the traditional view that the Latvian

acute was a rising tone, as it was in Old Prussian or Slavic, Ekblom (1933: 69) assumed that a retraction of the ictus onto an initial acute syllable caused an abrupt rise in pitch, which brought about a glottal stop. The rise of the Danish *stød* is generally explained along the same lines (o.c.: 49, cf. Rasmussen 1992: 88).

I consider the traditional explanation for the rise of the broken tone highly unsatisfactory. I shall confine myself to offering a few arguments against it. Firstly, forms such as *gaĺvâs* imply that the stress was retracted in two stages, as was pointed out by Stang (1966: 142-143), who basically subscribed to Endzelīns's view. Secondly, originally posttonic broken tones are problematic by definition, which forces Endzelīns to assume numerous analogies (cf. Young 1994: 103-106). Thirdly, the traditional theory prevents us from establishing a common origin for the connection between the Latvian and the Žemaitian broken tone, as the latter primarily reflects an originally stressed acute.

The view that the rising tone of the Selonian dialects represents a more archaic stage than the broken tone has been disputed repeatedly. It was questioned, for instance, by Zeps (1970: 14), who on the basis of the areal configuration of the Latvian tones considered the rising tone to be an innovation. Kortlandt actually establishes the broken tone as an archaism and claims that the Latvian and Žemaitian broken tones continue the original East Baltic acute. In his view, the East Baltic acute intonation was a glottalic pitch, which arose when the glottal stop resulting from the merger of the laryngeals and the glottalic part of the preglottalized stops became a vocalic feature (1974a: 302, 1975: 25, 1977a: 324). In Latvian, the broken tone was preserved in syllables which were unstressed after the retractions marking the end of the East Baltic period, such as the retraction of the ictus from prevocalic *i*. The later Latvian fixation of the stress on the initial syllable did not affect syllables with a broken tone (cf. Derksen 1995, 2001a).

3.4 Old Prussian

Following Kortlandt 1974, I assume that in Old Prussian, to be more precise in the *Enchiridion*, there are two indications for the place of the stress. Firstly, a long stressed vowel and the prominent part of a stressed diphthong are designated by a macron: *mūti* 'mother', *turīt* 'have', *wijrs* 'man' (with *ij* equivalent to *ī*), *rānkan* Asg. 'hand', *kaūlins* Apl. 'bones'. Secondly, stressed vowels are regularly preceded by a double consonant. This applies to short vowels as well as to long vowels and diphthongs, e.g. *kadden* 'when', *gennan* Asg. 'woman', *semmē* 'earth', *dessīmts* 'tenth' *ettrāi* 'answer'. The same usage is found in certain Lithuanian publications from Königsberg where a double consonant indicates that a preceding *a* or *e* is short and therefore usually unstressed, e.g. Asg. *rásą* (=*rāsą*), Gsg. *rassôs* (=*rasōs*) in the *Prayer Book* of 1705, or Gpl. *pádû* (=*pādų*), *naggû* (= *nagų*) (Illič-Svityč 1963: 20-21 = 1979: 17-18, 152, cf. also Bense 1958: 657). This orthographic convention was first pointed out by A. Baranauskas (1898: 13) with respect to Haack's vocabulary (1730), where we find *sukkù*, *lippù*, etc. It must be emphasized that double consonants are not to be regarded as a conscious effort on the part of the scribe to mark the place of the ictus (Kortlandt 1999: 76).

Kortlandt's hypothesis that a double consonant can be considered an indication that the next vowel is stressed challenged the traditional assumption that a stressed short vowel is generally followed by a double consonant. It now appears that the debate was postponed until the late nineties, when the topic was addressed in a series of articles (Parenti 1998, Kortlandt 1999, 2000a, Young 1999, Schmalstieg 2001), sometimes in connection with Kortlandt's progressive shift (see below), which was formulated independently of the hypothesis regarding the function of the double consonants. The arguments put forward in favour of the traditional view give me no reason to abandon my earlier agreement with Kortlandt's hypothesis.

Old Prussian stress was free and mobile: *spigsnā* Nsg. vs. *spīgsnan* Asg. 'bath', *mērgan* Asg. vs. *mergūmans* Dpl. 'maid', *laikūt* inf. vs. *lāiku* 3pl. ind. 'hold'. According to Kortlandt, "it can be demonstrated that Old Prussian shared the common Balto-Slavic accentual innovations" (1974: 299). At a recent stage stressed short vowels lost the ictus to the following syllable (o.c.: 302, cf. also Kortlandt 2000a). This progressive shift is sometimes designated as "Kortlandt's law", e.g. Dybo 1998: 6.[15]

It is likely that the Balto-Slavic opposition between acute and circumflex intonation in one way or another was preserved in Old Prussian. Unfortunately, only the accentuation of diphthongs offers any information about the existence of such an opposition. In Old Prussian, diphthongs can be stressed on the first or on the second element (Trautmann 1910: 187-192), e.g. *āusins* Apl. 'ears', *kaūlins* Apl. 'bones', *lāiskas* 'booklet', *aīnan* Asg. m. 'one'. The macron, however, never appears over one of the resonants *m, n, l, r*, though it is very probable that they were stressable as the second element of diphthongs. A comparison with Lithuanian shows that diphthongs with a macron on the first element regularly correspond to circumflex diphthongs in Lithuanian, while diphthongs with a macron on the second element correspond to acute diphthongs or, in the case of *eī* < *$^*ī$ and *oū* < *$^*ū$, to *ý* and *ū́*, respectively (Schmalstieg 1974: 22-23; Stang 1966: 143-144), e.g.

> *ēit* 3sg. subj. 'may go': *eīti* 'go'
> *īmt* inf. 'take' : *im̃ti* 'id.'
> *rānkan* Asg. 'hand' : *rañką* 'id.'
> *pogaūt* inf. 'receive' : *pagáuti* 'catch'
> *aīnan* Asg. m. 'one' : *víeną* 'id.'
> *boūt* inf. 'be' : *bū́ti* 'id.'
> *geīwans* Apl. m. 'alive' : *gývas* 'id.'

It is therefore quite possible that in Old Prussian the circumflex was falling and the acute rising, as in Latvian and Slavic. Kortlandt (2009a), on the other hand, argues that the language of the catechisms indicates that Old Prussian had a quantitative but not a tonal opposition in the vowel system.

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[15] Dybo (1998: 6 fn.) claims that he discovered the shift independently and discussed the law in lectures on Baltic accentology presented in 1973. Furthermore, he subscribes to the view that double consonants are preceded by unstressed short vowels.

4. THEORETICAL FRAMEWORK[16]

4.1 General considerations and Proto-Indo-European

Not surprisingly, the ideas about the structure of the Indo-European proto-language underlying this book conform with the theories propagated by Leiden based Indo-Europeanists such as Beekes, Kortlandt, and Lubotsky. The best introduction to this theoretical framework is Beekes 1995, which is the English edition of Beekes 1990. The existence of this introductory work largely relieves me of the obligation to present an outline of the theories on which my Proto-Indo-European reconstructions are based. Thus, I shall confine myself to representing some of the main aspects.

It is a well-known fact that Leiden Indo-Europeanists tend to deny that there was a Proto-Indo-European phoneme *a (see especially Lubotsky 1989). Nevertheless, it is quite possible that a Proto-Slavic etymon derives from a form containing *a. The Proto-Slavic lexical stock contains numerous elements that do not have an Indo-European origin. These may have been borrowed from a substratum language, possibly at an early stage. The *a that these words may contain is sometimes called "European *a" because the substratum language was located on European soil.

I subscribe to the hypothesis that Proto-Indo-European did not have an opposition between palatalized and plain velars (cf. Meillet 1894, Steensland 1973). The latter arose from depalatalization in certain constellations, in particular after *s (though not before *i) and after *u, where the opposition between the palatovelar and labiovelar series was neutralized. Depalatalization before resonants unless followed by a front vowel occurred in Balto-Slavic and Albanian (cf. Kortlandt 1978a: 240-242). The latter development is to a considerable extent responsible for the variation between velar stops and sibilants that we observe in both Baltic and Slavic.

The traditional Proto-Indo-European system of voiceless, voiced, and aspirated voiced stops has repeatedly been challenged on typological grounds. As an alternative, it was proposed that the unaspirated voiced stops were actually glottalic (e.g. Gamkrelidze and Ivanov 1984: 5-84). The glottalic hypothesis was applied to great effect by Kortlandt, who employed it to tackle a diversity of issues in various branches of Indo-European (cf. Kortlandt 1985a). Crucial to the present publication is Kortlandt's interpretation of the Balto-Slavic development known as Winter's law as the merger of the glottalic element of the traditional mediae with the reflex of the Proto-Indo-European laryngeals (see 4.2.2.3).

In Proto-Indo-European, the lengthened grade vowels *ē and *ō occurred in a limited number of categories, which can ultimately be reduced to monosyllables and forms ending in a resonant (cf. Beekes 1990: 204, 1995: 167, Kortlandt 1986: 154-155). Contrarily to what is generally assumed, lengthened grade vowels are regularly circumflex in Balto-Slavic. Forms presented as counter-examples contain either a laryngeal or can be regarded as examples of Winter's law. Another source of

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[16] Section 4 is largely identical with section 2 of the introduction of Derksen 2008a (2-15).

circumflex long vowels is contraction. A special case is the constellation $*\bar{e}H$ ($*\bar{o}H$), where according to Kortlandt the laryngeal was lost (Kortlandt 1985b: 115, 118-120).

As can be gathered from the preceding paragraphs, I adhere to the view that there once existed a Balto-Slavic linguistic unity. It can be demonstrated that Baltic and Slavic underwent a sequence of common developments, a number of which relate to the place of the stress. In view of its complexity as well as the important role it plays in this dictionary, Balto-Slavic accentology will be the subject of a separate section.

4.2 Balto-Slavic accentology

4.2.1 Introduction

As stated above, Kortlandt's theory about the origins of the Balto-Slavic acute and circumflex intonations significantly increases the relevance of Balto-Slavic accentology for etymological studies. This is reflected in numerous publications by Indo-Europeanists from Leiden, for instance in several monographs that appeared in the *Leiden Studies in Indo-European* series. A good example is Schrijver 1991, where a conscious effort is made to take the Balto-Slavic accentual evidence into account.[17] My own book in the series, Derksen 1996, is a slightly different matter, as it deals with an accentological subject, the problem of metatony in Baltic. It contains a brief survey of Balto-Slavic accentology,[18] which partly coincides with Derksen 1991. I shall here repeat some of the points I tried to make in these two publications.

4.2.2 Balto-Slavic developments

Over the years Kortlandt has devised a detailed relative chronology of developments ranging from Proto-Indo-European to disintegrating Slavic. It was first published in a Serbo-Croation translation in 1989. The English version, which was marred by many misprints, appeared in 1994, to be followed by a corrected version on the World Wide Web (2002), which finally ended up in Kortlandt 2011a (157-176). Articles reproducing and discussing large parts of the relative chronology are Kortlandt 2005a and 2006a. Kortlandt's chronology might be called the backbone of my investigations in the field of Balto-Slavic historical linguistics, which is not to say that it will be treated as if it were carved in stone.

The Balto-Slavic section of Kortlandt's relative chronology contains a number of developments that concern accentology. These are conveniently listed in Kortlandt 2006b (349):

"1. Loss of PIE accentual mobility, of which there is no trace outside the nominal flexion of the consonant stems, e.g. Lith. *duktě* 'daughter', *piemuõ* 'shepherd', and the flexion of the athematic verbs, e.g. *duodàs* 'giving' (cf. Kortlandt 1985b on the latter).
2. Pedersen's law: the stress was retracted from medial syllables in mobile accent paradigms, e.g. acc.sg. *dùkterį*, *píemenį*, Greek *thugatéra*, *poiména*.

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[17] We may draw a comparison with the thematically similar dissertation Beekes 1969, where Balto-Slavic accentology did not yet play any role of significance.

[18] A recent introduction to Balto-Slavic accentology is Sukač 2013.

3. Barytonesis: the retraction of the stress spread analogically to vocalic stems in the case forms where Pedersen's law applied, e.g. acc.sg. *ãvį* 'sheep', *sū́nų* 'son', *diẽvą* 'god', *žiẽmą* 'winter'.

4. Oxytonesis: the stress is shifted from a medial syllable to the end of the word in paradigms with end-stressed forms, e.g. inst.sg. *sūnumì*, inst.pl. *žiemomìs*.

5. Hirt's law: the stress was retracted if the vowel of the pretonic syllable was immediately followed by a laryngeal, e.g. *dúona* 'bread', *výras* 'man', *dū́mai* 'smoke', Vedic *dhānā́s*, *vīrás*, *dhūmás*.

6. Winter's law: the PIE glottalic stops dissolved into a laryngeal and a buccal part. The former merged with the reflex of the PIE laryngeals and the latter with the reflex of the lenes stops, e.g. Latvian *pê̦ds* 'footstep' < **pedóm*, *nuôgs* 'naked' < **nogʷós*, *duômu* 'I give' < **dodH₃mí*.

7. Retraction of the stress from final open syllables of disyllabic word forms unless the preceding syllable was closed by an obstruent, e.g. Lith. gen.sg. *viĨko* 'wolf', dat.sg. *viĨkui*, *gálvai* 'head', *nẽša* 'carries', Serbo-Croatian *vûka*, *vûku*, *glâvi*, *nȅse* 'carried', neuter *pȋlo* 'drank', but Lith. gen.sg. *aviẽs*, gen.pl. *vilkų̃* < **-òm*, nom.sg. *galvà* < **-àH*, Russian *pilá* 'she drank' < **-àH*, neuter *nesló*, infinitive *nestí*, where syllable-final consonants (including word-final laryngeals) prevented the retraction of the stress."

4.2.2.1 *The rise of the mobile paradigm*

The developments 1-4 and 7 are intended to account for the accentual curve of the Balto-Slavic mobile paradigm. Here a few words on the historical background of the problem are in order. According to Saussure (1896), the Lithuanian opposition between barytona and mobilia continues an Indo-European opposition between barytona and oxytona. As the identity of the Lithuanian and Proto-Slavic mobile paradigms is beyond doubt, this implies that the Balto-Slavic mobile paradigm arose from an oxytone paradigm. Saussure's explanation for the origin of the Lithuanian mobile paradigm started from consonant stems of which the number of syllables did not remain constant within the paradigm. In Kortlandt's chronology it appears under the name Pedersen's law in view of Pedersen's effort (1933: 25) to reformulate the law proposed by Saussure.

The prehistory of the Balto-Slavic accentual system has been the subject of much debate (see Olander 2006 and 2009 for an overview). Kortlandt's development (1) places him at the same starting-point as Saussure: the early Balto-Slavic system mainly had an opposition between barytona and oxytona. The few traces of original accentual mobility that survived only played a modest role. The question is if it is possible to strengthen the link between the Balto-Slavic accentual mobile paradigm and Proto-Indo-European accentual mobility. We may note that Illič-Svityč, when he set out to provide comparative proof for Saussure's hypothesis on the Indo-European background of the Balto-Slavic barytone and mobile paradigms (1963, English translation 1979), tried to gain a better understanding of Pedersen's law by suggesting a link with the survival of mobile root nouns. With respect to the Indo-European situation he preferred the term "mobile-oxytone" to "oxytone".

It so happens that Kortlandt himself (2009b) has recently modified his account of the rise of the Balto-Slavic mobile paradigm. Instead of assuming an early loss of Proto-Indo-European accentual mobility, he now starts from the Late Indo-European hysterodynamic and proterodynamic paradigms. The first step is the replacement of the isolated root stress of the Nsg. of the hysterodynamic paradigm by final stress. The sigmatic Nsg. of the proterodynamic paradigm then underwent the same development, creating a clear accentual opposition between end-stressed masculines and feminines on the one hand and root-stressed neuters on the other. The medially stressed case-forms, viz. the Asg., Lsg., Apl., and Npl. forms of the hysterodynamic paradigm and the Dsg. and Npl. forms of the proterodynamic paradigm, subsequently retracted the stress to the initial syllable. Kortlandt's objective here is to reformulate Pedersen's law as a phonetic development. Furthermore, the scope of the barytonesis has been limited:

"The barytonesis did not affect acc.sg. *āvį* 'sheep', *sū́nų* 'son', which had preserved Indo-European radical stress, nor *žiẽmą* 'winter', which was built on the original nom.sg. form *$*ǵʰeim$ (cf. Beekes 1985: 44), but did yield the retraction in *diẽvą* 'god', cf. Vedic *devám*, because the *o*-stems had fixed stress from the outset." (Kortlandt 2009b: 77)

Finally, the existence of oxytonesis as a Balto-Slavic development is put into doubt. The accentuation of Lith. *sūnumì* Isg. and *žiemomìs* Ipl. may be old because it replaces the end-stressed instrumental in *$*-bʰi$. On the whole, the new scenario links the Balto-Slavic state of affairs more closely to Late Indo-European nominal accentuation.

The retraction listed as number 7 was first formulated by Kortlandt in 1975 (5-7). Since it was inspired on a retraction formulated by Ebeling, it was baptized "Ebeling's law", but in recent publications by Kortlandt this designation tends to be avoided. An interesting consequence of the condition that the stress was not retracted to syllables ending in an obstruent is the rise of a class of oxytone neuters. In Slavic, these oxytona ended up in AP (b). If the root contained the reflex of a laryngeal or the laryngeal part of a PIE glottalic stop, it was lost in pretonic position. In Baltic, the oxytone neuters became barytone when the stress was retracted from final *$*-à$, yielding metatony (Derksen 1996: 96-128, 229-232, see also 2004: 87-89, 2011a). Words belonging to this class were occasionally misinterpreted by Illič-Svityč (1963). The effects of what The Late Balto-Slavic retraction, as we may now call this development, can also be observed in masculine *o*-stems (Derksen 2009).

4.2.2.2 Hirt's law[19]

Hirt's law, which is listed above as development 5, was proposed in order to account for the large number of correspondences between Baltic and Slavic barytona and nouns which considering the Sanskrit, Greek, and Germanic evidence had

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[19] The sections on Hirt's law and Winter's law as well as section 2.2.3.2 on progressive shifts in Baltic and Slavic are adaptations of the corresponding sections in Derksen 2004.

mobile/oxytone accentuation in PIE. In Hirt's original formulation (1895) the stress was retracted to long root syllables. Since then the law has been reformulated a remarkable number of times, among others by Hirt himself (1899). An important observation was made by Bonfante (1935, 1937), who showed that the stress was only retracted to non-apophonic long vowels, i.e. to sequences of a short vowel and a laryngeal.

After a thorough investigation of the "Hirt-Bonfante hypothesis", Illič-Svityč (1963: 80 = 1979: 63) concluded that the retraction was indeed limited to non-apophonic long syllabic elements, i.e. to non-apophonic long vowels, long resonants and long diphthongs. He contrasts syllables containing "new length" from laryngeal loss after a syllabic element with syllables containing apophonic length or an original sequence of a short vowel followed by a resonant and a vocalized laryngeal, e.g. *tenəµós < *tenHµós, cf. Gk. ταναός 'outstretched, tall', Latv. tiêvs 'thin'. This invites the conclusion that at the time of the retraction the laryngeals were still present, as has indeed been argued by some scholars (cf. Kortlandt 1975: 2, Rasmussen 1985: passim). In that case one might simply say that the stress was retracted to an immediately preceding syllable containing a vocalic element followed by a laryngeal. That the position of the laryngeal plays an essential role was demonstrated by Kortlandt in connection with the accentuation of the Slavic l-participle (1975: 2-4). He suggested that in instances such as Ru. pilá f. 'drank' the laryngeal must originally have preceded the i of the root. His reconstruction *pHiláH is supported by full grades of the type *pe/oh₃i- or *pe/oh₃- e.g. Skt. pāyáyati. An opposition between *-HI- and *-IH- can also be demonstrated for Greek and Italo-Celtic, where we find indications that pretonic *-HI- yielded a short reflex (Schrijver 1991: 512-536). In Balto-Slavic, *-HI- seems to have yielded the same reflex as *-IH-, which suggests that posterior to Hirt's law, *-HI- was metathesized. It may be clear that Hirt's law is a strong argument for a Balto-Slavic linguistic unity.

4.2.2.3 Winter's law

Winter's law, which in its original formulation is vowel lengthening before PIE unaspirated voiced stops (Winter 1978), is without doubt a sound law of major importance. So far, however, it has not quite received the recognition it deserves. The main reason for this is probably the fact that a number of appealing examples seem to violate the law. Since a survey of the evidence clearly indicates that the law is essentially correct (cf. Young 1990, 2008, Rasmussen 1992, and especially Dybo 2002), the next logical step is to look for special circumstances which might provide an explanation for the apparent exceptions. For 'water' (cf. OCS voda vs. Lith. vanduõ 3ª) and 'fire' (cf. Lith. ugnìs, OCS ogn'ъ), Kortlandt has proposed that the law did not affect the clusters ndn and ngn (1979: 61, 1988: 388-389). The nasal infix which may be reconstructed for Balto-Slavic must have developed from a nasal suffix in PIE times already (cf. Thurneysen 1883). Another major exception is Slavic *xodъ 'going, course'. Here the absence of Winter's law may originate from a reduplicated present stem *sizd-, where the law was blocked by an intervening z (Kortlandt 1988: 394).

This is not the place to discuss the various attempts to modify the formulation of Winter's law, for which I refer to Derksen 2003a, 2004, and 2007. I would like to elaborate, however, on Kortlandt's interpretation of Winter's law and its relationship to the Balto-Slavic prosodic system. According to the traditional doctrine, the Balto-Slavic acute intonation, which is usually reconstructed as a rising tone, reflects length, i.e. original length or length resulting from the loss of a laryngeal. If Winter's law is interpreted as vowel lengthening, the fact that the law yields acute long vowels and diphthong is only to be expected. The regular reflex of a lengthened grade, however, is circumflex in Balto-Slavic, as Kortlandt has argued on numerous occasions (e.g. 1985b, 1997a). The main reason why this is not generally recognized is the ease with which some Indo-Europeanists postulate lengthened grades, thereby obscuring the original situation. Since both the presence of a laryngeal and Winter's law generate acute syllables, one may try to link this observation to the hypothesis that the PIE voiced unaspirated stops were actually (pre)glottalized (Kortlandt 1978b). In Kortlandt's interpretation, Winter's law is the merger of the laryngeal element of the glottalic stop with the reflex of the Indo-European laryngeals, which had become a glottal stop in Balto-Slavic.

An advantage of Kortlandt's interpretation of Winter's law is the possibility to regard the Latvian and Žemaitian broken tones as direct continuations of a Balto-Slavic glottal element (Derksen 1995, Kortlandt 1998a). This does not imply that already in Balto-Slavic glottalization existed as a vocalic feature. I am not aware of any indications that in the Balto-Slavic period the glottal stop lost the status of a segmental phoneme which it must still have had when Hirt's law operated (see 4.2.2.2), though Kortlandt (2010: 37) now assumes that syllable-medial and syllable-final glottal stops developed into a syllable-final feature of constriction. The Balto-Slavic distinction between acute and circumflex syllables, which was clearly independent of the place of the (free and mobile) ictus, was originally the distinction between the presence and absence of a glottal stop. It most certainly was not a tonal distinction originating from PIE (cf. Kortlandt 1985b, Nassivera 2000). The rise of tonal distinctions must probably be dated to the separate branches of Balto-Slavic, as will be argued in the next sections.

4.2.3 The rise of the East Baltic tones

In Kortlandt's view (1977a: 324), the Balto-Slavic glottal stop became a vocalic feature in the East Baltic period. This may have been simultaneous with the monopthongization of stressed *ai and *ei to *ē and the rise of nasalized vowels. Distinctive tone arose when the stress was retracted from prevocalic *i and from *a in final syllables (o.c.: 325-326, cf. Derksen 1996: 374-376, 2011d: 17).[20] The retraction yielded a rising tone on both plain syllables and syllables with glottal constriction. In Lithuanian, the newly stressed constricted syllables lost the glottalization, while in Latvian the glottalization was weakened and developed into a creaky voice quality,

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[20] Kortlandt (2011b: 93, cf. 2012) has occasionally referred to the retraction from *-à as "Derksen's law", a designation which, for obvious reasons, will not be adopted in this dictionary.

which resulted in a falling tone (Kortlandt 2010: 240). The unconstricted newly stressed syllables remained rising in Latvian but acquired a middle (or level) tone in Lithuanian. In Aukštaitian, the middle tone merged with the falling tone which had developed from a creaky voice quality in originally stressed constricted syllables. Originally stressed unconstricted syllables acquired a rising tone, which merged with the metatonical rising tone. In Latvian, originally stressed constricted syllables acquired a stretched or sustained tone when glottalization was lost, while originally stressed unconstricted syllables became falling, as was the case in Žemaitian (ibid.). As can be gathered from the above, the rise of distinctive tone and the phenomenon of metatony originate from the same process.

   Glottal constriction has been preserved as the so-called broken tone in Žemaitian syllables that were stressed and Latvian syllables that were unstressed after the East Baltic retractions of the ictus. There are several indications for a long-lasting preservation of glottalization in Lithuanian unstressed syllables (see 3.1). In Aukštaitian, glottalization was ultimately lost altogether. In Latvian, the fixation of the stress on the initial syllable led to a three-way tonal opposition. Developments such as the generalization of mobility in neuter o-stems (cf. Derksen 1995) or the secondary presence of the broken tone in sta-presents (cf. Derksen 2011b) must have preceded the rise of the sustained tone.

4.2.4 Slavic accentology

4.2.4.1 Introduction: Stang 1957

The starting-point of modern Slavic accentology is the publication of Stang's *Slavonic accentuation* (1957).[21] In this study Stang effectively did away with a number of concepts of what is often called "classical accentology", though in particular the interbellum witnessed many unrealistic theories. Stang ends his book with a list of conclusions (1957: 179), which I shall now try to rephrase and provide with comments (cf. Derksen 1991: 53-55).

   Stang established three (Late) Proto-Slavic accent paradigms, each with its own prosodic characteristics:

(a)   Fixed stress on the stem. If the stem is monosyllabic, the stressed syllable is "acute", i.e. we find a short rising tone on a historically "long" syllable, which is equivalent to saying that the nucleus of the root syllable is not constituted by monophthongal *e, *o, *ъ, or *ь. A special class is formed by nouns of the so-called *vòļa type, where the root has neo-acute intonation. Stang discusses these nouns within the context of (j)ā-stems belonging to AP (a), but there are good arguments to classify them as belonging to AP (b), which is what will be done in this dictionary.

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[21] See especially Vermeer 1998, which deals with the place Stang's monograph occupies in the history of the field.

   If the stress is on a medial syllabe, there is a greater number of possibilities regarding the prosodic qualities of the root. Since these cases are not crucial for understanding the three basic types, I shall not go into the matter here.

(b)   The stress alternates between the last syllable of the stem and the first syllable of the ending. Stem-stressed forms have a rising tone with retention of the old quantity of the syllable. This tone is called "neo-acute". Forms with stress on the ending have a short rising tone.

(c)   The stress alternates between the first syllable of the stem and the ending. Stem-stressed forms have a falling tone and lose the stress to a clitic. End–stressed forms usually have a short rising accent, but in some cases a long rising accent. The falling tone is sometimes referred to as "circumflex". This is potentially confusing because the same designation has been used to refer to any non-acute long syllable or even to any non-acute syllable (cf. Derksen 1991: 55).

In classical accentology, an acute or a circumflex tone changed under certain conditions into a neo-circumflex and a neo-acute tone, respectively. This process, called metatony, yielded four distinctive tones (Kortlandt 1978c: 271). In Stang's system there are three tones, which are all connected with a specific accent paradigm. Stang now showed that the neo-acute originated from a retraction of the stress.[22] He also showed that the neo-circumflex is an innovation of Slovene and the Kajkavian dialects of Serbo-Croatian rather than a Proto-Slavic tone.[23] The next question that we must address is the relationship between the Slavic and the Baltic accent paradigms.

4.2.4.2 Progressive shifts

As mentioned in section 3.1, Lithuanian nouns belong to one of four accent paradigms, of which 1 is barytone, while 2, 3, and 4 are mobile. Monosyllabic stems are acute in 1 and 3, while they are circumflex or short in 2 and 4. If the stem is polysyllabic, the situation is slightly more complicated, but that need not concern us here. The four accent paradigms can be reduced to a barytone and a mobile paradigm if one takes into account the progressive shift which is commonly referred to as Saussure's law. Employing the method of internal reconstruction, Saussure (1896) demonstrated that at a certain point in the history of Lithuanian accentuation the stress shifted from a circumflex or short syllable to an immediately following acute syllable. This development was independently discovered by Fortunatov (1897), who applied the law to Slavic as well. Hence, Saussure's law, when applied to both Baltic and Slavic, is sometimes referred to as Fortunatov's law. Propagated by none other than Meillet,[24] Saussure's law came to occupy an important place in classical

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[22] Cf. Ivšić 1911.

[23] The neo-circumflex also occurs in Northwest Čakavian (cf. Vermeer 1982).

[24] Actually, Meillet had already suggested the operation of the progressive shift in Slavic at the very same session where Saussure presented his discovery (CIO 1894).

accentology. The law was often considered a Balto-Slavic innovation, though Meillet regarded the progressive shifts in Baltic and Slavic as parallel developments (1900: 350-351, 1924: 145).

The decline of Saussure's law as a Balto-Slavic development may be said to have started with Kuryłowicz (1931: 75ff, 1952), who denied its operation in Slavic, albeit basically without addressing the facts. A much heavier blow, one might argue, was delivered by Stang (1957: 15-20), who by presenting a series of factual arguments undermined the at the time prevailing view that Saussure's law had also operated in Slavic. Now as we have seen, Stang reconstructed three Proto-Slavic accent paradigms, whereas the Lithuanian situation points to a system with two paradigms, one of them barytone and the other mobile. Since AP (a) corresponds to Lithuanian AP 1, while AP (c) corresponds to 3 and 4 (see the next section), the core of the problem is the relationship between AP (b) and AP 2. As shown by Stang, the neo-acute tone originates from a retraction of the stress, a development now generally referred to as Stang's law. This means that AP (b) was originally oxytone. AP 2, however, is a mobile paradigm originating from a barytone paradigm as a result of Saussure's law. Stang did not have an answer for this discrepancy, but he made it clear that the answer most certainly was not Saussure's law.

A solution was proposed by Dybo and Illič-Svityč, who argued that the oxytone paradigm which must have existed prior to Stang's retraction had been generated by a progressive stress shift that cannot be identified with Saussure's law (see especially Dybo 1962, Illič-Svityč 1963: 157-161 = 1979: 140-144). According to Dybo's law, also known as Illič-Svityč's law,[25] a syllable which was neither acute nor falling lost the stress to the following syllable, causing a split of the Proto-Slavic immobile paradigm. The syllable that received the stress became falling, which provided the input for Stang's law, the retraction of the stress from long falling vowels in final syllables.[26]

The scenario proposed by Dybo and Illič-Svityč allows us to derive the Baltic and Slavic accentual systems from a stage when there were only an immobile barytone and a mobile or oxytone paradigm. As later publications from the Moscow accentological school have shown (see especially Dybo 1968a), it is possible to distinguish between dominant ("strong") and recessive ("weak") morphemes at this stage. The place of the stress is governed by the valency of the morphemes that constitute a given form (cf. Dybo 1981: 260-262, 2000: 10-14, Lehfeldt 2001: 67-69). Whether a morpheme is dominant or recessive cannot be predicted on the basis of its phonological structure: the distribution of morphemes over the two classes is

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[25] The designation Illič-Svityč's law is also used to indicate the transfer of masculine *o*-stems belonging to AP (b) to the mobile accent paradigm.

[26] This is actually the formulation of Stang's law as it appears in publications of Dutch accentologists. Stang himself did not limit the retraction to final syllables. In order to account for the *vòļa* type, he also assumed that the stress was retracted from semi-vowels. For Kortlandt's solution, which is connected with a development that he baptized "Van Wijk's law", see Kortlandt 1975: 30-32.

"traditional" (Dybo 2000: 10, but cf. Lubotsky 1988, which makes a case for the opposite view).[27]

4.2.4.3 Illič-Svityč's law and the neuter o-stems[28]

In his monograph on nominal accentuation in Baltic and Slavic, Illič-Svityč tried to explain why so many PIE neuter o-stems appear to have become masculine in Slavic, an observation which was first made by Hirt. A comparison with accentual data from Baltic, Greek, Sanskrit and Germanic led Illič-Svityč to conclude that PIE barytone neuter o-stems correspond with Slavic masculine o-stems belonging to the barytone class in the case of "long" roots and to the oxytone class in the case of "short" roots (in Stang's terminology to accent paradigms a and b, respectively). As we have seen, AP (a) and (b) continue a single barytone paradigm, which allows the conclusion that PIE barytone neuter o-stems became barytone masculine o-stems in Slavic. This shift of gender must be rooted in Balto-Slavic (see below). In originally masculine mobile o-stems with a non-acute root, accentual mobility has been generalized (Illič-Svityč 1963: 109-119 = 1979: 94-104), a development that is sometimes called Illič-Svityč's law. Thus, Slavic masculine o-stems belonging to AP (b) in principle continue old neuters. I consider it possible, however, that masculine o-stems that were oxytone in Late Balto-Slavic, i.e. after the Late Balto-Slavic retraction of the stress (formerly known as Ebeling's Law), escaped the transfer to the mobile class (cf. Derksen 2009).

Whereas the barytone neuter o-stems became masculine, PIE oxytone neuter o-stems remain neuter in Slavic. According to Illič-Svityč, the majority of the Slavic neuter o-stems belong to the oxytone class, Stang's AP (b). Mobile neuter o-stems (c) contain, as a rule, a historically long root or have a i̯o-suffix. In my opinion, the distribution between AP (b) and (c) is not completely clear. We can say with a high degree of certainty, however, that originally oxytone neuters of the structure $CVC_1C_2\text{-}ó$ (where C_1 is an obstruent) belong to (b), in conformity with the Late Balto-Slavic retraction (see 4.2.2.1). Proto-Slavic neuter o-stems belonging to AP (a) originate from the retraction generally known as Hirt's law, which generated a new class of neuter o-stems with fixed root stress in Balto-Slavic times already.

It is remarkable that Illič-Svityč, who reaches the conclusion that the Baltic and Slavic accent paradigms were identical, does not make an attempt to connect the Slavic NAsg. -o with the Lithuanian ending -a, which now only occurs in adjectives, participles and pronouns but must have been the East Baltic NAsg. ending of neuter o-stem nouns, as is evident from Baltic borrowings in Finnic. While he follows

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[27] It should not be left unmentioned that in the last few decades the concepts of the Moscow accentological school have undergone significant modifications, on which see Vermeer 2001. Since at present it is doubtful whether these modifications can be regarded as improvements, a discussion of the relevant issues fall outside the scope of this dictionary. I shall confine myself to the remark that the new scenario of for the rise of AP (b) comes close to a rehabilitation of Saussure's law for Slavic. As to Dybo's claim (1998) that Old Prussian offers evidence for a modified version of Saussure's law, I refer to Andronov and Derksen 2002: 215-217.

[28] This section derives from a paper that was presented at the Fachtagung of the Indogermanische Gesellschaft in Cracow (October 2004) and eventually gave rise to Derksen 2011a.

Nieminen (1922) in deriving the East Baltic ending from pronominal *-od, Illič-Svityč assumes that Slavic -o continues stressed *-om, a development advocated by Hirt (1893). In my opinion, it would be natural to look for a common origin. Since I do not believe that *-om ever yields Balto-Slavic *-o, the best option would be to assume that in Balto-Slavic the ending *-om was replaced by *-od in oxytone neuters (cf. Kortlandt 1975a: 45. In that case one would expect Old Prussian neuter o-stems to correspond to Slavic neuter o-stems and end-stressed neuters in other Indo-European languages. The evidence seems indeed to point in that direction (cf. Kortlandt 1983: 183).

Illič-Svityč's law implies that barytone neuter o-stems were still distinct from masculine o-stems. Though the above-mentioned bifurcation of neuter o-stems seems to be Balto-Slavic, suppletive neuter plurals may have existed both in Baltic and Slavic. The existence of suppletive neuter plurals may also explain why we find so much vacillation between neuter and masculine o-stems belonging to (a) and (b). Illič-Svityč's law must have preceded the rise of distinctive tone in mobile paradigms because the transfer to the mobile class was based on the identity of the barytone case forms. For the same reason, Illič-Svityč's law must have preceded Dybo's law.

The above-mentioned developments may be illustrated with the following examples:

PSl. *tȳlъ (a) 'back of the head, back' (e.g. Ru. tyl, Cz. týl) < *túHlom, cf. Skt. tū́la- n. 'tuft, reed, panicle'. Secondary *tȳlo in Slk. tylo.
PSl. *dvòrъ (b) 'courtyard, door' (e.g. Čak. dvōr, Cz. dvůr) < *dʰuórom, cf. Skt. dvā́ra- n. 'door, gate, passage'.[29]
PSl. *zǫ̑bъ (c) 'tooth' (e.g. Čak. zûb, Sln. zọ̑b) < *ǵómbʰos, cf. Skt. jámbha- m. 'tooth', Gk. γόμφος 'pin, nail', Lith. žam̃bas 'sharp edge' 2/4.

PSl. *jàto (a) 'flock, herd' (e.g. SCr. jàto) < *i̯áHto < *i̯eh₂tód << *i̯eh₂tóm, cf. Skt. yātá- n. 'course, motion'. Secondary *jàtъ in Ru. jat (dial.) 'shoal of fish'.
PSl. *però (b) 'feather' (e.g. Ru. peró, SCr. pèro) < *pèro < *peró < *peród << *perHóm (*tperóm?), cf. Gk. πτερόν 'feather, wing'.
PSl. *mȩ̃so (c) 'meat, flesh' (e.g. SCr. mȇso, Pl. mięso) < *mēmsó < *mēmsód << *mēmsóm, cf. Skt. māṃsá- n. 'id.'.

4.2.4.4 The fate of the Balto-Slavic acute and circumflex in Slavic

As I explained in the section on Winter's law, the Balto-Slavic opposition between acute and circumflex syllables is in Kortlandt's framework equivalent with the respective presence or absence of a glottal stop. Before discussing the fate of the glottal stop in Slavic, I would like to present a concise account of the rise of the East Baltic tones (see also 4.2.3 above).[30] The crucial point is that the broken tone is an archaism.

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[29] One could argue, however, that Skt. dvā́ra- is a late replacement of a root noun dvā́r-.
[30] Since our knowledge of West Baltic is based on a limited number of Old Prussian documents, the accentual developments in this branch of Balto-Slavic cannot be determined in detail (see 3.4. above).

In East Baltic, the glottal stop became a feature of the neighbouring vowel, yielding the laryngeal pitch that in Baltic linguistics is known as "broken tone". Tonal oppositions arose when the stress was retracted from prevocalic *-i* and word-final *-a*. In the Aukštaitian varieties of Lithuanian, retraction onto glottalized syllables yielded a rising tone and loss of the laryngeal feature, e.g. *ė̆dis* 'food, fodder', cf. *ė̆sti* 'eat (of animals)'. In originally stressed syllables, the glottalic pitch changed into a falling tone, e.g. *sė̆ti* 'sow', whereas the non-glottalic pitch merged with the new rising tone, e.g. *duktė̃* 'daughter'. Retraction of the stress onto non-glottalized syllables yielded a middle tone, which later merged with the falling tone, e.g. *vìlkė* 'she-wolf', cf. *vil̃kas* 'wolf'. In unstressed syllables, glottalization was eventually lost. In Žemaitian, the broken tone was preserved under the old ictus, e.g. *ômžios* (Kretinga) 'age, century' = *ámžius*.

In Latvian, the retractions of the stress yielded a rising tone on both plain and glottalized vowels. The other stressed vowels became falling *per oppositionem*. Subsequently, glottalization was lost under the falling tone. The result was a stretched tone, which later merged with the rising tone, e.g. *sēt* 'sow' with the same tone as *sniēdze* 'snow-bunting', cf. *snìegs* 'snow'. The remaining glottalized stressed vowels, which had lost their distinctive tone when the glottalic feature was lost under the falling tone, lost their glottalization as well and became falling, e.g. *dêsts* 'plant', cf. *dēstît* 'plant', *dêt* 'lay (eggs)'. In originally unstressed syllables, glottalization was preserved as a broken tone, e.g. *gal̂va* 'head', Lpl. *gal̂vâs*, cf. Lith. *galvà*, Lpl. *galvosè*. This scenario is in conflict with the widespread view according to which the broken tone results from retraction of the ictus. The system with a threefold tonal opposition only survives in certain Central Latvian dialect areas (see 3.2).

Apart from the fact that it is not always easy to tell if the tone of a given syllable is metatonical, the way in which the Balto-Slavic acute and circumflex are reflected in East Baltic is fairly straightforward.[31] It is often insufficiently realized that this is not the case in Slavic. A common misapprehension, for instance, is the idea that the "Serbo-Croatian" short falling tone indicates that the syllable was originally acute. In reality, the situation is much more complex. If the form belongs to the neo-Štokavian variant of Serbo-Croatian, the short falling tone indicates that the syllable was already stressed before the neo-Štokavian retraction of the ictus and that it is short. The quantity may be related to the fact the syllable was originally acute, but it may also have been originally short or originate from a comparatively late shortening, for instance the shortening of long falling vowels in forms counting more than two syllables. The fact is that the history of Slavic quantity is immensely complicated. Both the vowels that on qualitative grounds are considered "historically long" and the ones considered "historically short" may be reflected as either long or short. In order to establish the origin of a morpheme in terms of acute and circumflex, one must evaluate the information offered by the individual Slavic languages regarding stress,

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[31] In this account the term "circumflex" refers to non-acute long vowels and diphthongs. In my description of the Balto-Slavic situation I, strictly speaking, used the term as a designation of every non-acute syllable. It may be clear, however, that there is no distinction between acute and circumflex short vowels.

tone and quantity within the context of the Proto-Slavic accent paradigms, which is
by no means simple (cf. Vermeer 1992, Kortlandt 2005a).

In the classical view, sequences of vowel plus laryngeal merged with lengthened
grade vowels. Subsequently, long vowels acquired an "acute" tone movement,
probably a rising tone.[32] Thus, the Balto-Slavic acute is about vowel length. As one
might expect, Winter's law, insofar as the law is accepted, is interpreted as vowel
lengthening. The difficulties raised by the classical scenario are numerous (cf.
Vermeer 1992: 125-126). In Kortlandt's theory, sequences of vowel plus laryngeal
(including the glottal stop that arose from Winter's law) remain essentially distinct
from lengthened grade vowels up to the end of the Proto-Slavic period. With the
exception of certain positions where the distinction was lost (see below), the original
contrast is reflected by a quantitative difference. I shall now give an overview of the
fate of the laryngeals in Slavic (cf. Kortlandt 1975: 21-37, Vermeer 1992: 127-130):

(1)   The laryngeals were lost in pretonic and postposttonic syllables with compen-
satory lengthening of the adjacent vowel. In mobile paradigms the loss of the
laryngeals gave rise to an alternation between long vowels and sequences of vowel
plus laryngeal. In root syllables the long vowel was generalized. This is Kortlandt's
explanation of Meillet's law, according to which mobilia with an acute root under-
went metatony (Meillet 1902).

(2)   The laryngeals were lost in the first posttonic syllable without compensatory
lengthening. In stressed syllables the glottal stop became a feature of the adjacent
vowel. Since the new short vowels had the same timbre as the long vowels and the
glottalized vowels and therefore did not merge with the old short vowels, the timbre
distinction became phonemically relevant. In pretonic syllables, where the laryngeals
had been eliminated at stage (1), quantitative oppositions were rephonemicized as
qualitative oppositions. In other words: pretonic long vowels were shortened. At a
later stage, Dybo's law reintroduced phonemic length in pretonic syllables.

(3)   Glottalized vowels lost their glottalic feature and became distinctively short
rising. This development must have been posterior to Dybo's law because the
progressive shift only applied to non-acute non-falling syllables.

Summarizing, we could say that originally acute syllables are reflected as short
vowels in syllables which prior to Dybo's law were stressed or immediately followed
the stressed syllable. In originally pretonic or postposttonic position acute and non-
acute long syllables merged. Non-acute long vowels and original diphthongs are long
in AP (b), whereas in AP (c) they often fell victim to the widespread shortening of
falling vowels. Length was preserved in monosyllabic and disyllabic word-forms in
Serbo-Croatian and in Slovene monosyllables.

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[32] Note that in the traditional view the distinction between the rising acute and falling circumflex
must have existed in unstressed syllables as well.

4.3 Substratum borrowings

The Indo-Europeans who populated Europe must have come into contact with speakers of non-Indo-European languages, who to a certain extent were assimilated to the invading tribes. Consequently, we expect to find traces of non-Indo-European substrata in the attested Indo-European languages. In Leiden, the study of substratum influences received an impetus from Kuiper 1995, where mainly on formal grounds three substratum layers were distinguished (see also Beekes 1996: passim, Boutkan and Siebinga 2005: XIII-XVII). What these layers have in common, is the frequent occurrence of the vowel *a, which did not belong to the Proto-Indo-European phoneme inventory (see 2.1). One of the layers, labelled A3, is the language of Krahe's hydronymy and is usually called "Old European". It is, among other things, characterized by the vocalism *a and the high frequency of continuants and *s. Substratum A2, qualified as "European", only had aspirated voiced stops in antevocalic position, or rather the antevocalic stops were identified with the traditional mediae aspiratae. Furthermore, there seems to have been variation between labial and velar stops. The vowel *a was frequent and there probably was no distinctive vowel length. Another characteristic feature are vowel alternations of the type *a :*ai and *a : *au. Substratum A1, which is mainly reflected in Germanic, but also left traces in Italo-Celtic and Balto-Slavic, is claimed to have had *a : *i : *u vocalism, prenasalization, initial consonant clusters *Kn- and *Kl-, as well as a remarkable alternation of root-final stops, including geminates.

While A3 did not prove to be a fruitful subject of investigation, one might say that as far as Kuiper's substratum layers A1 and A2 were concerned, the hunt was on, e.g. Beekes 1996, Schrijver 1997, Boutkan 1996, 1998, 2003, Derksen 1999, 2000. Kuiper's criteria for identifying substratum borrowings were applied to various Indo-European languages and attempts were made to establish more phenomena indicative of non-Indo-European origin, of which Schrijvers prefix *a- (1997: 307-312) is among the most spectacular.[33] At the same time, Kuiper's distinction between A2 and A3 was called into question by Beekes (1996: 217), who proposed to group these two together under the name "European". I am inclined to agree with him that in this respect Kuiper's classification seems premature. Beekes (ibid.) also suggested the designation "Helladic" for the non-IE substratum language that left so many traces in Greek, but he himself now seems to prefer "Pre-Greek". Without question, Beekes deserves great credit for his attempt to reconstruct Pre-Greek through a careful analysis of the Greek material (see now 2010: XIII-XLII, cf. Furnée 1972). A different approach is applied by Schrijver (2007), who tries to link the Pre-Greek substratum to "Minoic" (attested in Linear A) and Hattic. In his view, we are dealing here with the language of the first agriculturalists, who migrated from Asia Minor to Central Europe through Greece and the Balkans and whose language left traces in Anatolian, Greek, Albanian, Germanic, Balto-Slavic and Italo-Celtic.

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[33] Interestingly, this type of prefixation seems to occur both in Greek (and possibly Anatolian) as well as in "North European".

Undeniably, it makes perfect sense to look for formal characteristics of non-Indo-European elements in the vocabulary of the individual Indo-European languages. Within a couple of years after the publication of Kuiper's article, however, the limitations and inherent dangers of this new line of research became apparent, in particular with regard to the Pre-Germanic substratum, where there was a tendency to pay insufficient attention to the role played by specifically Germanic developments, such as Kluge's law (see Kroonen 2011a, 2011b). Though it seems to me that the Indo-European origins of Balto-Slavic etyma which in view of their Germanic cognates seem to violate Winter's law are suspiciously often unclear, it cannot be denied that the typically Germanic alternation of root-final consonants may at least partly result from Proto-Germanic sound laws. Nevertheless, the question why Germanic underwent these specific developments (the rise of geminates, for instance) is still legitimate.

5. STRUCTURE OF THE ENTRIES

5.1 Headword

For practical reasons, the headwords have been left unaccented. In principle the headwords are Lithuanian, but in those cases where a Latvian form does not have a Lithuanian counterpart the headword is Latvian. Old Prussian headwords have neither a Lithuanian nor a Latvian counterpart. The three types of headwords belong to separate sections. The alphabetical order of the Lithuanian forms conforms with the order that is used for the standard language. For Latvian, I have maintained the alphabetical order as well as the orthography used in the dictionaries by Mühlenbach and Endzelīns (ME) and Endzelīns and Hausenberg (EH), which is *a, ā, b, c, č, d, dz, dž, e, ē, g, ģ, i, ī, ie, j, k, ķ, l, ļ, m, n, ņ, p, r, ŗ, s, š, t, u, ū, uo, v, z, ž*. Old Prussian forms are arranged according to the alphabetical order used in Trautmann 1910.

5.2 Lithuanian

Headwords that also occur in modern Standard Lithuanian forms are quoted according to the fourth edition of the DLKŽ, in which case I provide no additional information on the attestations of these forms. The most important source for Lithuanian, however, is the LKŽ, which has incorporated data from older periods and dialect data. The abbreviations used to indicate particular dialects and old texts are generally the same as in the LKŽ (see also 6.1), which is not to suggest that I reproduce all attestations of a given form.

I have kept the grammatical information to a minimum. It is clear, for instance, that a noun in -*as* is a masculine *o*-stem or that a form in -*ti* is an infinitive. In the case of a noun in -*is*, which could either be a masculine *io*-stem or a masculine or feminine *i*-stem, I follow the common practice that in the absence of any specification the noun is to be taken as an *io*-stem. The first number (or numbers) indicating the accent class refers to the immediately preceding form and. In the case of a headword that is not marked as Old Lithuanian or as a dialect form this is the normative accentuation. Accentual variants are given between square brackets and

include the accent class belonging to the cited form. I have only specified the accentuation of the nominative connected with the accentual variants if it is not entirely evident. In the case of verbs, accentual variants of the infinitive are given between square brackets. Note that the alternative stress and tone also apply to the finite forms, even though here the accentual variants are not explicitly mentioned. If the infinitive does not reveal the tone of the root, I also give the present and the preterite of the accentual variant, but in that case I do not use square brackets.

Following the form that is also the headword I often mention variants, such as forms that belong to a different flexion class. If the meaning is the same, the gloss is not repeated. The variants are separated by a semicolon.

5.3 Latvian

Latvian data are quoted from the dictionary by Mühlenbach and Endzelīns (ME) and the supplement by Endzelīns and Hausenberg (EH). The orthography used in these works deviates from modern Standard Latvian orthography but is still customary in the scholarly literature. No attempt has been made to indicate whether a form belongs to the modern standard language or not. Abbreviations referring to dictionaries, old texts, and placenames are in principle the same as in ME and EH.

Forms followed by ² originate from a dialect with two tones (instead of three), where the tone of that particular form is ambiguous from a historical point of view (see 3.2 above). Tonal variants are given between square brackets and include the tone of the form that is actually presented. The variants almost exclusively originate from the above-mentioned dictionary. Though I also include conflated tones that may continue the same tone as the one found in the area with three tones (in order to obtain a completer picture I do not confine myself to variants that do not correspond with each other), I have not looked actively for West and East Latvian tonal variants, with the exception that I have occasionally added a variant from the East Latvian dialect of Kalupe (see Reķēna 1998) or the West Latvian dialect described by Bielenstein (1863-1864). Thus, if for a central Latvian form with, for instance, a sustained tone, no variant with a conflated falling tone is listed, this does not imply that it does not exist.

With respect to grammatical information and the presentation of variants, the principles mentioned in the preceding section apply to Latvian as well. Note that forms in -is are masculine io-stems. The Nsg. of i-stems has the ending -s. If a noun in -s is not provided with grammatical information, it is an o-stem.

5.4 Old Prussian

The Old Prussian evidence stems from the Enchiridion (or Third Catechism) unless indicated otherwise: I write "I" for the First Catechism, "II" for the Second Catechism, "III" for the Enchiridion, "EV" for the Elbing Vocabulary, and "Gr." (GrG, GrA, GrF) for Simon Grunau's Vocabulary. The forms are quoted from Trautmann 1910 and Mažiulis PKEŽ. Emendations are mentioned between square brackets.

5.5 Balto-Slavic

Since I adhere to the view that there was a Balto-Slavic proto-language, I found it atttractive to include a field "Proto-Balto-Slavic" in order to obtain a modernized version of Trautmann 1923a (cf. Derksen 2011c). As I explained above, I follow Kortlandt in not reconstructing any Balto-Slavic tones. The stage represented by my reconstructions is posterior to Winter's law. The reflex of the laryngeals and the glottal element of the (pre)glottalized stops is indicated by ʔ, the IPA symbol for a glottal stop. The phonological system is as follows (cf. Kortlandt 1994a):

p	b		m				
t	d	s	n	l	r		
ś	ź						
k	g						
ʔ				j	w		
		i	ī			u	ū
		e	ē			o	ō
			a	ā			

With respect to morphology, it is important to note that the barytone neuters have a Nsg. in *-um < *-om, while the originally oxytone neuters have *-o < *-od << *-om.

   Notwithstanding my comparison with Trautmann's *Baltisch-slavisches Wörterbuch*, it is my opinion that these reconstructions in themselves do not have independent evidential value for the Balto-Slavic hypothesis, as striking formal similarities between Proto-Baltic[34] and Proto-Slavic etyma usually relate to those common developments on the basis of which the Balto-Slavic linguistic unity was postulated. We must reckon with the possibility that seemingly Balto-Slavic etyma are actually old borrowings from Slavic into Baltic or vice versa. In particular, Baltic substratum words in Slavic are a factor that is to be taken into account (cf. Nepokupnyj 1976).

   The assumption that there was a Proto-Baltic-Slavic stage raises the question how to act if an inherited Proto-Slavic etymon does not have a Proto-Baltic counterpart? Does it make sense to reconstruct a Balto-Slavic form anyway, thereby assuming that the etymon was lost in the other branch? In my opinion, it does not. The main point of the field Balto-Slavic is to get an impression of the number of lexical items shared by Baltic and Slavic. A Proto-Balto-Slavic reconstruction of an etymon that is exclusively found in Baltic or Slavic would just be one of many intermediate stages.

   Another, quite common problem is the determination of the orginal stem class of a noun in those cases where Baltic and Slavic diverge. Unless there are clear indications which stem class is more archaic, I considered it best to allow the variation to be reflected in the Balto-Slavic reconstructions.

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[34] Actually, I am not convinced that it is justified to reconstruct a Proto-Baltic stage. The term Proto-Baltic is used for convenience's sake.

5.6 Proto-Slavic

The reconstructed etyma represent a late stage of Proto-Slavic, posterior to the loss of glottalization under the stress and Stang's law. Quantity, tone and stressed are marked accordingly (see 3.5) The most recent development that I have taken into account is the shortening of the falling tone in word-forms of more than two syllables, e.g. *sьȑdьce. With respect to the metathesis of liquids (and the East Slavic *polnoglasie*), which shows dialectal differentiation, I had no option but to let the forms reflect the stage where the syllable was still closed, even though the metathesis preceded the above-mentioned developments.

Please note the following:

- The results of the second and third palatalizations of velars (*k, *g, *x) are written *c, *dz and *ś. This may seem inconsistent, but I considered that there was nothing to gain by using *ć and *dź or *ʒ́. The introduction of *ś, on the other hand, could not be avoided, cf. *vьśь 'all' vs. *vьsь 'village'.
- I have employed the signs *ļ, *ņ and *ŗ to render sequences of resonant + *j. In the alphabetical order these signs are equivalent to *lj, *nj and *rj, respectively.
- I follow the ESSJa in writing anachronistic *tj, *dj rather than *tć, *dʒ́ vel sim.
- Word-initially, I do not distinguish between *e- and *je-. I simply write *e- because the *j- was automatic before front vowels from a certain stage onwards. I also write *ě- for etymological *ě- and *ja-, which merged after the rise of prothetic *j-. I do distinguish between *u- and *ju-. Initial *jь- < *i- is more complicated. I have argued that we basically had stressed *ji- vs. unstressed *jь- with generalization of the latter in mobile paradigms (Derksen 2003b). Nevertheless, I have decided in favour of a uniform spelling *jь-, which is more conventional.

5.6.1 Grammatical information

Following the reconstruction, there is an indication of the word class the etymon belongs to. In the case of substantives, the stem class is preceded by an indication of gender, e.g. "m. n" for "masculine *n*-stem". The flexion types to which OCS *mlьn'i(i)* 'lightning' and *svekry* 'church' belong are designated with *ī* and *ū*, respectively.

For the sake of readability, the attested Slavic forms are generally speaking only provided with grammatical information if they belong to a different word class than the reconstructed etymon.[35] This practice extends to non-Slavic forms insofar as it does not cause confusion.

5.6.2 Accent paradigm

In those cases where I deemed it justified to reconstruct the accent paradigm of a noun or verb, the paradigm is indicated by Stang's (a), (b) or (c). I am not convinced

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[35] In the case of original *u*-stems it is assumed that the reader is familiar with the fact that in the attested languages the *u*-stem and (masculine) *o*-stem paradigms have merged into a single paradigm, which here will be referred to as the *o*-stem paradigm.

that there ever was a Proto-Slavic paradigm (d) (Bulatova, Dybo, and Nikolaev 1988, cf. Vermeer 2001). I have occasionally resorted to designations such as (b/c) in those cases where there is strong evidence for two accent paradigms.

Tone and quantity are indicated in the same way as is conventional for literary Serbo-Croatian:

short rising: *màti (a) 'mother', *mǫka (a) 'torment, torture', *nòžь (b) 'knife'
long rising: *bě̃lъ (b) 'white', *pǫ̃tь (b) 'way'
short falling: *sь̏rdьce (c) 'heart'
long falling: *mę̑so (c) 'flesh, meat', *bôgъ (c) 'god'
long unstressed: *mǭkà (b) 'flour', *osnòvā (a) 'base, foundation'

Thus, I have not adopted any of the special signs that are sometimes used to indicate the original acute, e.g. *mǎti or *maˀti.

5.6.3 Meaning

Unlike the ESSJa, I have attempted to provide a reconstruction of the Proto-Slavic meaning of an etymon. In principle, attested forms meaning the same as the reconstructed etymon have not been glossed, though occasionally the meaning has been retained for the sake of clarity. This holds good for both the Slavic and the non-Slavic forms.

5.7 Slavic

In order to make the presentation of the Slavic forms more compact, I have merged the Church Slavic, East Slavic, West Slavic, and South Slavic fields of my Slavic etymological dictionary, where the subdivision had more relevance. The order of the forms has remained the same. The subsections below, which contain information on the sources of the Slavic forms, correspond with the original fields.

5.7.1 Church Slavic

In principle the Slavic field starts with forms that occur in texts belonging to the Old Church Slavic canon as well as forms that occur in Church Slavic texts whose language was influenced by the local vernacular. The latter varieties of Church Slavic are called recensions. With the aid of the *Slovník jazyka staroslověnského*, which, by the way, includes a number of texts that fall outside the canon, and the *Staroslavjanskij slovar'*, I have tried to keep Old Church Slavic and Church Slavic forms apart. Here I should also mention Birnbaum and Schaeken 1997, where attention is paid to the lexicon of the manuscripts that were discovered at the Monastery of St. Catherine at Mount Sinai in 1975.

It is not unusual to present Old Church Slavic forms in a normalized shape and this is the practice I have adopted here. If an etymon is only rarely attested, however, I usually present the form as it occurs in the manuscript(s). If an etymon occurs in a

fairly limited number of manuscripts, the latter have been mentioned. I have used the following abbreviations:

Ass.: Codex Assemanianus	Ps. Dim.: Psalter of Dimitri
Boj.: Bojana Evangeliary	Ps. Sin.: Psalterium Sinaiticum[36]
Cloz.: Glagolita Clozianus	Ril.: Rila Folios
En.: Enina Apostol	Sav.: Sava's Book
Euch.: Euchologium Sinaiticum	SPbOkt.: St. Petersburg Oktoich
Hil.: Hilandar Folios	Supr.: Codex Suprasliensis
Hilf.: Macedonian Folio[37]	Zogr.: Codex Zographensis
Mar.: Codex Marianus	Zogr.²: Codex Zographensis palimpsest

5.7.2 East Slavic

East Slavic comprises three living languages: Russian, Ukrainian, and Belorussian. Furthermore, an important place is occupied by Old Russian, which can sometimes hardly be distinguished from Russian Church Slavic. Here I generally follow the ESSJa. For Old Russian accentual data I have relied completely on Zaliznjak 1985: 131-140. The accentuation of a noun or verb in Old Russian is chiefly mentioned in those cases where it deviates from the modern Russian standard language.

My main sources for Russian dialect material are the classic dictionary by Dal' and the *Slovar' russkix narodnyx govorov* (SRNG). To indicate the region where a form is attested I have used a number of abbreviations: Psk. (Pskov), Olon. (Olonec), Arkh. (Arxangel'sk), Novg. (Novgorod), Smol. (Smolensk), Rjaz. (Rjazan').

5.7.3 West Slavic

Czech forms may belong to the literary language, for which the SSJČ is an important source, or originate from dialects. Dialect material generally stems from the ESSJa or from Machek's etymological dictionary (1957, 1971). A special category is formed by the 18th century dictionaries of Jungmann and Kott, which include archaic and dialectal forms, but also borrowings from other Slavic languages and neologisms. An analysis of the material from these dictionaries is beyond my competence, so I have confined myself to indicating Jungmann (Jg.) or Kott as the source. Slovak forms, insofar as they are not dialectal, are generally quoted according to the *Slovník slovenského jazyka* (SSJ). Since the juxtaposition of Czech and Slovak forms is interesting from an accentological point of view (cf. Verweij 1993), the collection of Slovak material is relatively comprehensive.

Upper Sorbian is one of the languages that are not heavily represented in this dictionary. Nevertheless, the language has retained a number of features which may provide additional information about Proto-Slavic prosody (cf. Dybo 1963, 1968b, Derksen 2008b). In this respect Lower Sorbian has less to offer. Schuster-Šewc's

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[36] Ps. Sin. MS 2/N refers to the part of the *Psalterium Sinaiticum* that was discovered in 1975 at the Monastery of St. Catherine. The other part (MS 38/O) was discovered in 1850 at the same location.

[37] Discovered by Hilferding.

Sorbian etymological dictionary (1978-1996) deals with both languages and may also function as a source of older attestations and dialect forms.

A considerable portion of the Polish material in the ESSJa, which subsequently found its way to the present dictionary, is quoted from the voluminous dictionaries by Karłowicz et al. (1900-1927) and Doroszewski (1958-1969). For Old Polish the main source is, of course, the yet unfinished *Słownik staropolski*. The etymological dictionaries by Sławski (unfinished) and Bańkowski provide a lot of information about the earliest attestations of an etymon. In this context the *Słownik języka polskiego XVII i 1. połowy XVIII wieku* (Karplukówna and Ambrożewicz 1999-) is also worth mentioning.

Within West Slavic, Slovincian – now extinct – and the North Kashubian dialects are unique in having preserved accentual mobility, albeit with certain restrictions. Furthermore, old quantitative distinctions have been transformed into qualitative distinctions, like in Polish. In Slovincian and Kashubian, however, this phenomenon (called *pochylenie* in Polish) applies to a greater number of vowels. Our most important source for Pomeranian, as Slovincian and Kashubian are sometimes called, are the works of Friedrich Lorentz (e.g. 1903, 1908-1912, 1958-1983).

The westernmost attested Lechitic language, Polabian, only plays a marginal role in this dictionary. Forms will be quoted according to Polański and Sehnert 1967.

5.7.4 South Slavic

The name "Serbo-Croatian" will occasionally be used as a generic designation for all varieties of the language spoken in Serbia, Croatia, Bosnia-Hercegovina and Montenegro. The abbreviation "SCr.", however, refers in principle to neo-Štokavian, i.e. to those Štokavian dialects that underwent the neo-Štokavian retraction of the stress. A prominent example is the language that was codified by Vuk Karadžić and Đuro Daničić in the 19th century and subsequently became the basis of normative grammars and dictionaries, for instance the *Rječnik hrvatskoga ili srpskoga jezika* (RJA). The Serbo-Croatian (neo-Štokavian) forms presented in this dictionary usually conform to aforementioned normative tradition. In some cases I have quoted directly from Vuk Karadžić's dictionary (abbreviated as "Vuk").[38]

The Čakavian dialects of Serbo-Croatian are mainly represented by Jurišić's description of the Vrgada (Vrg.) dialect (1966-1973), Kalsbeek's description of the dialect of Orbanići (Orb.) near Žminj (1998) and Belić's description of the dialect of Novi (1909), which is the best-known description of a Čakavian dialect. In addition, I have occasionally added data from Hvar (Hraste 1937), Cres (Tentor 1909, 1950), and Orlec[39] (Houtzagers 1985). The Kajkavian dialects are represented by Jedvaj's description of the Bednja dialect.

The Slovene material originates almost exclusively from Pleteršnik's dictionary (1894-1895), which is a compilation of data from a great variety of sources presented

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[38] For practical reasons, I have used the third edition of Vuk's dictionary (Belgrade 1898) instead of the second, which appeared in Vienna in 1852. The latter would have been preferable, as the later editions are marred by misprints (Vermeer, p.c.).

[39] A village on the island of Cres.

in a historical spelling, i.e. in a spelling that reflects dialectal differences that are absent from many dialects, including the ones underlying the modern standard language. The reader will therefore be confronted with the spectacular dialectal differentiation that is characteristic of Slovene (cf. Greenberg 2000).

Bulgarian and especially Macedonian provide little information on the prosody of Proto-Slavic.[40] Nevertheless, it is clear that this corner of the Slavic territory must not be neglected. The material presented here is chiefly modern Standard Bulgarian.

5.8 Proto-Indo-European

The field "PIE" basically contains forms that may have belonged to the Proto-Indo-European vocabulary. I do not wish to condemn the practice of reconstructing quasi-Indo-European forms, as the latter may contain useful information, even in the case of etyma that may have been borrowed from a non-Indo-European language, but I personally prefer to let this information be part of the discussion of the etymology.

5.9 Indo-European cognates

It is not my intention to present an exhaustive list of cognates from other branches of Indo-European. One may expect to find quite comprehensive lists of cognates in the dictionary that is the ultimate goal of the *Indo-European Etymological Dictionary* project. I have tried to mention forms that are in all respects close to the Baltic lemma, but occasionally I had to settle for forms that merely contain the same root.

5.10 Discussion of the etymology

As a rule, the etymology of a given root is discussed under a single lemma. If the eymology is perfectly clear, there may be no discussion at all. Instead, only a Proto-Indo-European reconstruction is given.

5.11 Cross-references

The last field mentions all cognate lemmata in this dictionary except the ones that are referred to in the discussion of the etymology. If the discussion of the eymology contains a reference to a cognate lemma, the field is omitted.

6. DICTIONARIES, GRAMMARS, AND OLD TEXTS

6.1 Lithuanian

In the Grand Duchy of Lithuania, the chancellery language was a northwestern variety of Russian Church Slavic. One must keep in mind that at the time the Lithuanian state covered a huge area, which was largely inhabited by Eastern Slavs. After the Union of Lublin (1569), when the personal union between Poland and

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[40] This does not hold good for Middle Bulgarian, which is the language of a number of accented texts. Since Middle Bulgarian is on a par with Russian Church Slavic etc., it belongs to my category Church Slavic.

Lithuania was replaced by a Polish-Lithuanian commonwealth, Polish culture came to occupy a dominant position among the upper classes. After the third partition of Poland (1795), Lithuania fell under czarist rule.

Since the arrival of the Teutonic Order in the early 13th century an important number of Lithuanians had lived outside the Duchy of Lithuania. There was a substantial Lithuanian minority in the Duchy of Prussia (1525-1701), which eventually became the province of East Prussia. The northern part of East Prussia is sometimes even designated as Lithuania Minor. This circumstance turned out to be crucial to the development of the Lithuanian language.

In 1525, Albert, Grand Master of the Teutonic Knights, accepted protestantism and transformed Prussia into a secularized state. This had a favourable impact on the Lithuanian language. Pastors had to preach in Lithuanian and religious texts were translated. Among the books published in Königsberg was the first Lithuanian book, Mažvydas's catechism (1547). Mažvydas had arrived from Lithuania (Maior) at the request of Duke Albert. His language betrays a South Žemaitian origin. Other notable publications from the same century were religious works by Vilentas, another settler from the Duchy of Lithuania, and Bretkūnas (or Bretke), who had been born in Prussia and is reported to have had a Prussian mother.

In the Duchy of Lithuania, the higher classes had largely been polonized and the status of the Lithuanian language was accordingly low. Now the Reformation had to be countered by the publication of Catholic literature in Lithuanian, for example Daukša's *Katechismas* (1595) and *Postilla Catholicka* (book of sermons, 1599), in the preface of which Daukša explicitly condemned the polonization of the aristocracy. It should be noted, however, that in Lithuania, too, Reformist literature was printed. As to the language of these publications, we may distinguish a central and an eastern variant. The latter was centered around Vilnius, where in 1579 the jesuits founded a university.

Daukša's texts are by far our most valuable sources for Old Lithuanian accentuation, even though only the place of the stress is indicated. The amount of data is so large, however, that it is often possible to determine the accent paradigm of a word. It should be noted that the language of Daukša's translations is unbalanced and that we find considerable accentual variation. This may have something to do with the fact that Daukša originated from a Central Aukštaitian area but lived among Žemaitians during the latter half of his life. It has been suggested that Daukša strived to establish a common Lithuanian literary language (Senn 1957: 166). However, we must reckon with alterations made by the corrector or the type-setter. The classical study of Daukša's accentuation is Skardžius 1935, which includes a selection of forms. The interested accentologist may want to study the complete material of Daukša's *Postilla*, which can be accessed in Kudzinowski 1977. I must admit, however, that I have reservations about the accuracy of this work. A state-of-the-art edition of the *Postilla* remains a desiderandum.

In 17th-century Prussia, the necessity to preach Protestantism in the native language of the parishers resulted in a call for elementary grammars and vocabularies. This led to the first grammar of Lithuanian (the Latin version was

published in 1653, the smaller German version in 1654), written by Daniel Klein, a pastor in Tilsit (Tilžė). This work exceeded the requirements of the government grammars and became the foundation of a Prussian Lithuanian tradition of grammars (and dictionaries), for example those by Haack (1730), Ruhig (1774), Ostermeyer (1791), and Mielcke (1800).

The system of accent marking which prevails in Prussian Lithuanian texts of the 17th and 18th centuries can be traced back to Klein's Lithuanian grammar. The accent marking is sporadic and rarely serves to indicate the tone of a syllable (Buch 1961: 6-8). The first document in which tone differences are systematically marked is the anonymous grammar of 1737, which was edited by Rozwadowski (1896). This grammar seems to be based on a Central Aukštaitian dialect (Illič-Svityč 1963: 20 = 1979: 17).

Friedrich Kurschat's *Littauisch-deutsches Wörterbuch* (1883) faithfully represents the southern dialect of Prussian Lithuania, which became the literary language of the whole region (Senn 1966: 54). Other publications which contributed to the rise of this dialect's status were Schleicher's *Litauische Grammatik* (1856), Kurschat's *Grammatik der littauischen Sprache* (1876) and Nesselmann's reissue of the poems of Donelaitis (1869). It can be shown that the accentuation which is reflected in Donelaitis's poetry differs only marginally from Kurschat's (Buch 1961: 124-125).

By the time of Kurschat's publications the use of Lithuanian in East Prussia was on the decline. The process of germanization was sped up significantly by a number of measures taken after the founding of the German Empire (1871). Lithuanian was gradually banned from public life. Meanwhile in Lithuania the use of the Latin alphabet had been banned by the czarist regime following the uprising of 1863. The ban lasted from 1864 to 1904 and went hand in hand with an attempt to replace polonization by russification. Though at some point Lithuanian was proclaimed officially dead, the government's policy was not entirely successful: books were smuggled into the country and Lithuanian was illegally taught. The heart of the revivalist movement was located in the Suvalkija district, in the South West. The dialects of this area, the southern dialects of West Aukštaitian, were very similar to Prussian Lithuanian, as the latter had been before the enforced germanization. It was only natural that the propagators of the Lithuanian language used the descriptions by Schleicher and Kurschat as a model, while trying to adapt this variety of Lithuanian to the needs of the society and freeing it from foreign influences. A crucial role in this process was played by Jonas Jablonskis, who is often called "the father of the Lithuanian language". After the Lithuanian independence in 1918 (apart from the Vilnius area, which became Polish), the language used and propagated by Jablonskis became the standard language.

Kurschat's dictionary has been incorporated in the Lithuanian-German dictionary (1968-1973) by his nephew Alexander Kurschat. This is a comprehensive work but, being a compilation of earlier dictionaries, it is necessarily heterogeneous in many respects. For the accentuation of a word one is often referred to other publications. Another dictionary which I would like to mention is the *Litovskij Slovar'* of Juškevič, which was an important source for Būga's article on metatony

(1923-1924). For linguists who are not well versed in Baltic accentology this is perhaps not a recommendable dictionary, as the orthography, including the accent marking, is quite unorthodox. Juškevič's dictionary is based on the West Aukštaitian dialect of the Veliuona region.

The most comprehensive dictionary of the Lithuanian language is the *Lietuvių kalbos žodynas* (LKŽ), which was begun in 1941 and completed in 2002. The attestations include such indirect sources as Fraenkel's etymological dictionary (1955-1965) or the Latvian dictionary by Mühlenbachs and Endzelīns. Nonetheless, the LKŽ is of utmost importance to Indo-European and Baltic studies. Commendably, a corrected version of the dictionary has been made available online and can be consulted at http://www.lkz.lt. The designated abbreviation for the (first) electronic edition of the LKŽ is LKŽe. Since I have gradually switched from the LKŽ in its original shape to the online edition, I have decided to retain LKŽ in those cases where I probably consulted the original dictionary, but only if I am unaware of any differences between the original text an its digital counterpart.

Leaving the LKŽ aside, the most important dictionary is the *Wörterbuch der litauischen Sprache* (NdŽ) by Niedermann, Senn, Brender and Salys (1932-1968). Senn, who was initially in charge of the accentuation, was guided by Būga's principle that the accentuation of the standard language should reflect the accentuation of the majority of speakers. From p. 449 of volume 2 on, when Salys had taken charge of this area, the standard shifted to the West Aukštaitian accentuation, as had been propagated by Jonas Jablonskis (Balaišis 1969: 206-207). Accentual variants are often provided with the designation "dialectal".

6.2 Latvian

We can be brief on Latvian dictionaries, grammars and old texts that are relevant to our purposes. The dictionary of Mühlenbachs and Endzelīns (1923-1932), together with the sizeable supplement by Endzelīns and Hauzenberga (1934-1946), has no rivals among Latvian dictionaries. Among other things, it provides a wealth of information about the accentuation of Latvian forms throughout the dialects. Earlier dictionaries, such as Ulmann's *Lettisch-Deutsches Wörterbuch* (1872), have found their way into ME and have therefore no special significance for us. Worth mentioning is the *Ērģemes izloksnes vārdnīca* (1977-1983) by Kagaine and Raģe, which contains the vocabulary of a dialect with three tones, and Reķēna's *Kalupes izloksnes vārdnīca* (1998), which describes the vocabulary of an East Latvian dialect with two tones. Furthermore, I would like to remind the reader that the Latvian material in Fraenkel's Lithuanian etymological dictionary cannot be used for accentological purposes, which is largely due to the omission of the vital ² sign. The recent Latvian etymological dictionary by Karulis includes an incomplete rendering of the accentual variants which are listed in ME.

Endzelīns's monumental *Lettische Grammatik* (1922) is, of course, our chief source for the grammar of Latvian. The Latvian edition, which appeared in 1951, contains some additions and corrections. Bielenstein's grammar of 1863, which once was highly influential, is interesting as a representative of West Latvian.

6.3 Old Prussian

For a long time the most important edition of the major Old Prussian texts was Trautmann 1910, aptly called "the scholar's workhorse" by Jules Levin (1982: 202). It was superseded by Mažiulis 1966 (facsimile) and 1981. We are very fortunate that Mažiulis's edition of the various texts, along with a corrected edition of his etymological dictionary, can now conveniently be accessed at www.prusistika.flf.vu.lt. The Old Prussian documents are the following:

1. The Elbing Vocabulary: a German-Old Prussian vocabulary consisting of 802 thematically arranged lexical items which is part of the Codex Neumannianus (pp. 169-185). The codex, which was lost in the Second World War, dates from ± 1400, but the vocabulary may be a copy of a significantly older original.

2. Simon Grunau's Vocabulary: a list of 100 Old Prussian words with German translations. The list is incorporated in Grunau's *Preussische Chronik*, which was written in the period 1517-1526. The vocabulary reflects the author's characteristic unreliability and contains some Polish and Lithuanian forms. Many words have either a distorted ending or no ending at all. There are eight copies, one of which was discovered as recently as 1970.

3. The First Catechism: 12 pages of parallel German and Old Prussian text preceded by a title page and two pages of introduction in German. The catechism was printed in Königsberg in 1545 in an edition of 197 copies, eight of which have survived. The German text on which the translation is based is Luther's Smaller Catechism published in 1531.

4. The Second Catechism: a "corrected" edition of the first catechism that appeared the same year. Of this edition 192 copies were printed, three of which have survived.

5. The Third Catechism or Enchiridon: 98 pages of parallel German and Old Prussian text preceded by a title page and 9 pages of introduction in German. The Enchiridion, based on the 1543 edition of Luther's Smaller Catechism or Enchiridion, was published in Königsberg in 1561. The translation was prepared by the clergyman Abel Will with the aid of a certain Paul Megott.

6. Probably the most important of the minor Old Prussian documents is the Basel Epigram, which occurs in a manuscript dated 1369 (cf. Kortlandt 1998b, 1998c, 1998d):

Kayle rekyse. thoneaw labonache thewelyse.
Eg. koyte. poyte. nykoyte. pēnega doyte.

Among the other fragments is a proverb that occurs in the 1583 Onomasticum published by the alchemist Thurneysser (cf. Kortlandt 1998b):

Deues does dantes, Deues does geitka.