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zur historisch-vergleichenden Sprachwissenschaft

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Harald Bichlmeier und Velizar Sadovski

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PROSODIC MARKS IN THE OLD PRUSSIAN *ENCHIRIDION* REVISITED

Vytautas Rinkevičius, Vilnius

1 Introduction

It¹ has long been known that the Samlandian dialect of Old Prussian had preserved reflexes of Proto-Baltic tones (acute vs. circumflex)² in stressed diphthongs.³ It has been traditionally assumed that in the orthography of the Third Old Prussian Catechism (*Enchiridion*, 1561), the reflex of the circumflex tone was marked by a macron on the first element of the diphthong and that of the acute tone—on the second, if not hindered by typographic obstacles. Based on this assumption, the Old Prussian circumflex has been interpreted as a falling tone and the acute—as a rising tone, as opposed to Lithuanian.⁴ Cf. the following examples:

	Old Prussian (<i>Enchiridion</i>)	Lithuanian
Circumflex	acc. sg. <i>āusin</i> ‘ear’	<i>ai̯si</i>
	acc. sg. <i>rānkan</i> ‘hand’	<i>rai̯ka</i>
Acute	acc. sg. <i>ai̯nan</i> ‘one’	<i>vieną</i>
	acc. pl. <i>kaūlins</i> ‘bones’	<i>kāulus</i>
	acc. sg. <i>pogalban</i> ‘help’	<i>pagālbą</i>

This interpretation was first proposed by Filipp Fortunatov in 1895 and later accepted in almost all grammars and standard reference books on Old Prussian,

¹ I am indebted to Mikhail Oslon and Steven Young for their valuable comments and editorial suggestions on the earlier version of this paper.

² The Proto-Baltic predecessors of East Baltic tones will be traditionally called *tones* in the present paper, regardless of their actual phonetic realization which might have involved not necessarily pitch, but perhaps some other phonetic feature (e.g., glottalization).

³ Including the so-called mixed diphthongs, or semidiphthongs—i.e., sequences of a vowel + tautosyllabic resonant. On mixed diphthongs in Lithuanian and Latvian respectively, see Ambrazas 2007: 26 and Nitiņa/Grigorjevs 2013: 52ff.

⁴ The traditional interpretation of Lithuanian tones as a rising (circumflex) vs. falling (acute) pitch is not based on phonetic reality. Experimental studies reveal that Lithuanian acute syllables are characterized, among other features, first of all by a more abrupt change of pitch (independently of contour) and shorter duration than the circumflex syllables (see, for example, Dogil 1999 with further references; Švageris 2015).

such as Trautmann 1910: 184ff.; Endzelīns 1943: 19ff.; Endzelin 1944: 25ff.; Schmalstieg 1974: 22ff.; Kaukienė 2000: 11;⁵ Mažiulis 2004: 13ff.; Mathiassen 2010: 33f. With minor revisions, it was further elaborated in works like Derksen 1998, Schmalstieg 2001, or Young 2008.

The traditional view was challenged by Zygmunt Rysiewicz (1938–1940), who, following Jerzy Kuryłowicz (Norbert Ostrowski, p.c.), doubted the ability of Abel Will, the German translator of the *Enchiridion*, to distinguish between tones in the Old Prussian speech and, after a thorough examination of the data, reached the conclusion that the macron was used only to indicate stress, typically in a non-initial syllable, and its actual placement on either the first or the second element of the diphthong had no relation to the distribution of tones in other Baltic languages. This assumption was later adopted by Wojciech Smoczyński in his theory of Old Prussian accentography (1990, accepted also in Ostrowski 1994).

In the present paper, I argue that the macron was indeed used not to indicate tone—i.e., distinctive pitch—but rather a lengthening of the first element in circumflex diphthongs. This implies that the reflexes of Proto-Baltic tones had been preserved in Old Prussian and were represented in the orthography of the *Enchiridion*, albeit in a different manner than proposed by Fortunatov. The idea is not entirely new: it is based on assumptions already introduced by various authors in earlier publications that have so far not received sufficient attention from other scholars, probably because those assumptions have usually been verbalized only in passing, either without proper argumentation (e.g., Girdenis 1973; Rinkevičius 2016), or with arguments presented in publications devoted to wider issues of Old Prussian studies than just accentuation (e.g., Kortlandt 2009). The aim of the present paper is to definitively formulate the idea in a straightforward manner and finally present all arguments in one place. The paper could also be regarded as a supplement to the chapter on tones in Rinkevičius 2015 and 2017, where full argumentation could not be provided due to lack of space and the introductory nature of the editions.

2 The function of the macron

The primary function of the macron in the Old Prussian *Enchiridion* was marking **length**, not tone (or even stress), as clearly stated by Abel Will in his German preface to the *Enchiridion*:

⁵ In Kaukienė/Pakalniškienė 2011 (a revised and supplemented edition of Kaukienė 2000) the paragraph on the use of the macron has been replaced with a long quotation from Rinkevičius 2009, which is in accordance with the view expressed in the present paper. However, the assumption on the reverse character of Old Prussian and Lithuanian tones, which is a direct conclusion of the traditional theory, has been left unchanged.

Damit aber der leser solche sprach nach jrer Natürlichen art verstendiglich lesen könne: vnd es die zuhörere verstehen / ist dieses fleissig zu mercken / das die Fünff Vocale gemeinlich durch **eine lange Pronunciation** außgesprochen werden / Derwegen solche buchstaben jhre sondere zeychen haben müssen / Wo nun diese nachfolgende verzeychnus / an einem solchen Buchstaben im wort erfunden / muß derselbige mit seinem gewöhnlichen accent Pronunciirt werden.

ā ē ī ō ū ij

(see Mažiulis PKP 1: 137; 2: 105)

Thus, the assumption of some scholars that the primary function of the macron had been to mark stress rather than vowel length is obviously wrong. Nevertheless, since the macron is usually found only in one syllable of the word,⁶ and this syllable usually corresponds to the stressed syllable in Lithuanian cognate words (see § 4.1), we can assume that the macron may indirectly also indicate stress, although in long syllables only.

Note that among the vowel letters with the macron, Abel Will lists also a digraph ⟨ij⟩ which is merely an alternate spelling of ⟨ī⟩; cf. *wijran* ‘man (acc. sg.)’ : *wīrans* ‘men (acc. pl.)’. In the following, for the sake of simplicity, examples of words that contain this digraph will be discussed together with words containing letters with the macron without further notice.

3 The Lithuanian parallel

As correctly noted by critics of the traditional view, there is no need to assume that Abel Will, a native speaker of a non-tonal language, was able to hear tones—i.e., distinctive pitch contours—in the pronunciation of his Old Prussian informant and intentionally marked them in his text. However, he should have been able to hear length differences in separate elements of diphthongs. Such quantitative differences may well have arisen from earlier tonal differences in the Samlandian dialect of Old Prussian, as has happened, for example, in modern Lithuanian.

In standard Lithuanian and most Aukštaitian dialects, tones (or, at least, reflexes of Proto-Baltic tones) in diphthongs differ in the quantity of their first element. In acute diphthongs the first element is noticeably lengthened,⁷ as in:

āukštas [a:ʊkʃtas] ‘high’
kāltas [kailtas] ‘chisel’

In circumflex diphthongs, the first element is phonetically reduced while the second may be slightly lengthened, as in:

aukštas [ɔʊkʃtas] ‘storey’
kaltas [kəlʲtas] ‘guilty’
 (see Ambrazas 2007: 57; Daugavet 2015)

⁶ Excluding several compounds and possible misprints.

⁷ The high vowels *i* and *u* are lengthened in a much smaller area than non-high vowels *e* and *a* (cf. Zinkevičius 1966: 108).

That a speaker of German is able to hear these quantitative differences can be seen from the accent notation system used by August Schleicher in his *Handbuch der litauischen Sprache* (1856–1857) (see Young 2008). As a native speaker of German, Schleicher failed to distinguish tones in monophthongs and marked all stressed long vowels with the same diacritical mark (ˊ), independently of tone:

Schleicher	Standard Lithuanian
výras ‘man’	výras
výnas ‘wine’	výnas

Nevertheless, he succeeded in distinguishing tones in diphthongs, where he marked the lengthening of the corresponding vowel in diphthongs *ai*, *ei*, *au* with the same stressed-length-diacritic (ˊ) as in monophthongs:

Schleicher	Standard Lithuanian
áuksztas ‘high’	áukštas
áuksztas ‘field’	áukštas

In mixed diphthongs (i.e., sequences of a vowel + resonant, see fn. 3), Schleicher marked the lengthened first element of acute diphthongs with the stressed-length-diacritic (ˊ), and the non-lengthened first element of circumflex diphthongs with the stressed-brevity-diacritic (ˋ), as in *kàsti* ‘to dig’.⁸

Schleicher	Standard Lithuanian
káltas ‘chisel’	káltas
kàltas ‘guilty’	kàltas

A similar picture is to be expected in the Old Prussian *Enchiridion*, if its language had preserved similar quantitative reflexes of Proto-Baltic tones and if we assume that exactly this lengthening, and not the pitch contour, was the phonetic feature that Abel Will intentionally marked with the macron. Since Will, unlike Schleicher, used no diacritics for stressed short vowels and had no intention of marking stress on short syllables,⁹ cases without vowel lengthening (which would correspond to Schleicher’s *kàltas*) should have been left unmarked (*pace* Schmalstieg 2001 and Young 2008, who tend to think that the macron served as a stress marker in such cases).

4 The Old Prussian data

4.1 Monophthongs

Old Prussian monophthongs that are attested with the macron in the *Enchiridion* usually correspond to etymologically long stressed vowels in Lithuanian, as already shown by Fortunatov:

⁸ In mixed diphthongs with the first vowel *i* or *u*, this vowel is not lengthened in the dialects described by Schleicher (see fn. 7) and the tonal opposition is not reflected in his orthography, e.g., *pilkas* ‘grey’ : *vilkas* ‘wolf’ (cf. standard Lithuanian *pilkas* : *vilkas*).

⁹ *Pace* Trautmann 1910: 196f.; Kortlandt 1974 (see Rinkevičius 2009: 73ff. for criticism).

OPr.

gīdan ‘shame (acc. sg.)’
mergūmans ‘maidens (dat. pl.)’
iūrin ‘sea (acc. sg. masc.)’
mūti ‘mother’
kaimīnan ‘neighbor (acc. sg.)’
wīrins ‘men (acc. pl.)’
swīrins ‘beasts (acc. pl.)’
biātwei ‘to fear’
milijt ‘to love’
turrītwei ‘to have’
sālin ‘grass (acc. sg. masc.)’
īdis ‘meal’
dellīks ‘article’
gallū ‘head’
gīdings ‘shameful’ etc.

Lith.

gėdą
mergoms ‘girls’
jūra (fem.)
motė
kaimyną
vyrus
žvėris
bijoti
mylėti
turėti
žolė (fem.)
ėdis (dialectal and OLith.)
dalykas ‘thing’
galvą < *galvā
gėdingas (≠ OLith. *gėdingas*)¹⁰

As we can see, there is no evidence that can prove the existence of tones (or, at least, reflexes of Proto-Baltic tones) in long vowels. Pairs like *brāti* : *sālin* (cf. Lith. *brólis* : *žolė*), *gīdan* : *īdis* (cf. Lith. *gėdą* : *ėdis*) or *kaimīnan* : *dellīks* (cf. Lith. *kaimyną* : *dalykas*) rather show that all long vowels were spelled the same way, whatever the tones in cognate Lithuanian words.

4.2 Diphthongs

4.2.1 Introductory remarks

One has to distinguish between two types of diphthongs in the Samlandian dialect of Old Prussian:

a) Inherited Proto-Baltic diphthongs *ei*, *au*, *ai*, *VR* that are consistently spelled with digraphs in the *Enchiridion*; for example:

deiws ‘god’ < PBalt. **deiwas*
laucks ‘field’ < PBalt. **laukas*
lāiku ‘holds to’ < PBalt. **laikā*
rānkan ‘hand (acc. sg.)’ < PBalt. **rankan*

b) ‘Diphthongized’ Proto-Baltic long vowels **ī*, **ū*, that may be spelled with either a single letter or a digraph; for example:

gīwas (gen. sg.) / *geīwans* (acc. pl.) ‘life, alive’ < PBalt. **gīwa-*
būton / *boūton* / *baūtan* ‘to be’ < PBalt. **būtan*

Differences in spelling between these two types of ‘diphthongs’ (regular digraphs vs. variation between single letters and digraphs) show that the ‘diphthongized’ reflexes of PBalt. **ī*, **ū* (type b) had not merged in pronunciation with the reflexes of real, inherited, diphthongs (type a). On the other hand, the variation in spelling of the type b ‘diphthongs’ (single letter vs. diphthong) shows that these

¹⁰ Cf. for example, nom. pl. *gėdigi* in M. Daukša’s *Postilla* (Skardžius 1935: 156; Kudzinowski 1977 1: 218).

sounds were probably not real diphthongs—i.e., sequences of two different phonemes—but rather long vowels, i.e., monophonemic units that were probably phonetically (not phonemically) slightly diphthongized and therefore sometimes (and only sometimes) spelled with digraphs (cf. Mažiulis 2004: 16f.; Rinkevičius 2017: 102).¹¹

4.2.2 Inherited diphthongs

4.2.2.1 Circumflex

In inherited circumflex diphthongs, the macron is usually attested on the first element of the diphthong:

OPr.	Lith.
<i>āusins</i> ‘ears (acc. pl.)’	<i>aišį</i> (acc. sg.)
<i>driāudai</i> ‘forbade’	<i>draiūde</i>
<i>ēi</i> ‘to go’	<i>ėi</i>
<i>gēide</i> ‘waits’	<i>geĩdžia</i> ‘wishes’
<i>lāiku</i> ‘holds to’	<i>lai̯ko</i> ‘holds’
<i>pra-kāisnan</i> ‘sweat (acc. sg.)’	<i>kaĩsti</i> ‘to get warm, sweat’
<i>rānkan</i> ‘hand (acc. sg.)’	<i>raĩnką</i>
<i>āntran</i> ‘second (acc. sg.)’	<i>aĩtrą</i>
<i>per-bānda</i> ‘tries’	<i>baĩdo</i>
<i>ālgas</i> ‘wage (gen. sg.)’	<i>al̯gą</i> (acc. sg.)
<i>wāldnikans</i> ‘rulers (acc. pl.)’	<i>val̯do</i> ‘rules’
<i>mārtin</i> ‘bride (acc. sg.)’	<i>maĩčią</i>
<i>au-skiēndlai</i> ‘drown (conj.)’	<i>skeĩdo</i> (praet. 3)
<i>piēnctis</i> ‘fifth’	<i>peĩnktas</i>
<i>tiēnstwei</i> ‘to pull’	<i>tē̯sti</i> ‘to continue’
<i>mērgan</i> ‘girl (acc. sg.)’	<i>meĩrgą</i>
<i>gērbt</i> ‘to speak’	<i>geĩrbti</i> ‘to honour’
<i>dessīms</i> ‘tenth’	<i>dešīmtas</i>
<i>īmt</i> ‘to take’	<i>īmti</i>
<i>newīnts</i> ‘ninth’	<i>deviĩntas</i>
<i>wīrst</i> ‘becomes’	<i>vīřsta</i>

See also examples with less exact correspondences in other languages or less secure etymologies:

<i>wēisin</i> ‘fruit (acc. sg.)’	<i>vai̯sių</i>
<i>per-rēist</i> ‘to bind’	<i>ri̯šti</i> (: PBalt. <i>*reis-</i>)
<i>tēmpran</i> ‘expensive (acc. sg.)’	<i>teĩ̯pti</i> ‘to pull, stretch’
<i>kīrdimai</i> ‘we hear’	<i>gĩ̯rdime</i>
<i>prēi-pīrstans</i> ‘rings (acc. sg.)’	<i>pi̯řštas</i> ‘finger’
<i>tīrts</i> ‘third’	(PIE <i>*t̥rt-</i>)
<i>sen-rīnka</i> ‘gathers’	<i>surĩ̯kti</i> (inf.)
<i>kūmpina</i> ‘hinders’ etc. ¹²	<i>kuĩ̯pas</i> ‘hooked’

¹¹ For an alternative interpretation, dealing with two different types of real diphthongs (closed *ou* < **ū*, *ei* < **ī* vs. open *au* < **au*, [æi] < **ei*), and re-monophthongization *ei* > *ī* in the dialect of the *Enchiridion* (but not in the dialects of the other two catechisms), see Kortlandt 2009.

¹² See Fortunatov 1895 or Derksen 1998 for more examples.

For circumflex diphthongs in suffixes:

skell-ānt-s ‘owing’
druw-īng-in ‘believer (acc.sg.)’

ved-ǣ-s ‘leading’
klib-iñg-is ‘lame man’ (Skardžius 1943: 121)
 (metatonical circumflex in some nouns beside
 original acute in adjectives like *laim-īng-as*
 ‘happy’; see van Wijk 1924, and Rinkevičius
 2016 for the same metatony in Old Prussian)

This shows that **in the Old Prussian reflexes of Proto-Baltic circumflex diphthongs, the first sound of the diphthong was lengthened and regularly marked by the macron** in the *Enchiridion* (so far, in accordance with the traditional view). In addition to the above-mentioned examples, several cases of inherited circumflex diphthongs are attested with the macron on the second element. Having in mind the general inconsistency of Old Prussian orthography (see, e.g., Rinkevičius 2017: 101, 106ff.), all these examples can be confidently interpreted as misprints, since all are attested only once (or, in one case, twice) and all have other forms attested with the macron placed correctly—i.e., on the first element of the diphthong:

Misprint

perēilai 1x
preī 1x
kaīdi 1x
schlaīts 1x, *schlaītskai* 1x
weijsewingi 1x

Correct spelling

ēit etc. ‘to go’ 10x
prēi ‘by, near’ 32x
kāigi ‘how’ 41x
schlaīts etc. ‘but’ 34x
wēisin ‘fruit (acc. sg.)’ 1x

4.2.2.2 Acute

If we exclude phonetically diphthongized monophthongs (<PBalt. *ī, *ū, see § 4.2.3) that have often been provided as evidence supporting Fortunatov’s claim about marking acute with the macron on the second element of the diphthong, we are left with only four clear examples of acute diphthongs in root syllables attested with the macron on their second element:

OPr.

aīnan ‘one (acc. sg.)’ 1x
kaūlins ‘bones (acc. pl.)’ 1x
po-gaūt ‘to catch’ 1x
per-traūki ‘covered’ 1x

Lith.

vieną
kāulus
(pa-)gāuti
trāukė ‘pulled’

All are attested only once. Moreover, three have other attested forms that are spelled differently, usually without the macron and, in one case, even with the macron on the first element:

<i>aīnan</i> 1x	: <i>ainan</i> , <i>ains</i> etc. 67x	
<i>kaūlins</i> 1x	: <i>kaulan</i> , <i>kaulei</i>	
<i>pogaūt</i> 1x	: <i>pogauts</i> etc. 8x	: <i>pogaūnai</i> 1x

It looks as though in originally acute diphthongs, the macron is usually absent, and the forms attested with it (*aīnan*, *kaūlins*, *pogaūt*, *pertraūki*, *pogaūnai*) could

be interpreted as misprints, similar to the above-mentioned misprints in words with circumflex diphthongs.

A similar picture appears in affixes. The use of the macron in *aū-pallai* ‘finds’¹³ (1×) can hardly be seen as correct in light of other attested forms of this word without the macron, such as *aupallai* (4×) and *aupallusis* (1×, partic. praet. act.), as well as the fact that verbal prefixes were probably never stressed in Old Prussian and therefore all other prefixed verbs are attested either with the macron on another morpheme or without macron at all (e.g., *au-dāst* ‘happens’, *au-lāut* ‘to die’, *ett-rāi* ‘(they) answer’, *per-rēist* ‘to bind’, *au-gaunimai* ‘(we) win, obtain’, *en-gaunai* ‘receives’, etc.; see Trautmann 1910: 200; Rinkevičius 2009: 208f.). On the other hand, the prefix *au-* acquires stress in the noun *āuschautins* ‘sins, trespasses (acc. pl.)’ (1×), but in this case the macron is placed on the first element of the stressed diphthong, which possibly indicates a circumflex.

The macron on the second element of the diphthong in *rik-aū-snan* ‘government (acc. sg.)’ (1×, derived from the verb **rīk-au-* ‘rule’, cf. praes. 3 *rikawie*) seems, at first glance, to correspond to the acute in the Lithuanian verbal suffix *-áu-* (cf. Lith. dial. *ryk-áu-ti* etc.), but, again, it looks quite suspicious here, if we take into account several dozen other verbs with *-au-* or verbal nouns in *-au-sna* attested without the macron (in at least some of them the suffix could have been stressed, such as *grikaut* ‘to sin’, *grikausna* ‘sin(ning)’, etc.; see Rinkevičius 2009: 200f.; 2011: 136f. for more details).

There are also single occurrences of etymologically acute diphthongs with the macron placed on their first element (usually alongside more numerous attestations with no macron). See first, examples in root syllables:

OPr.¹⁴

no-sēil-is ‘spirit’ 1×

au-lāu-t ‘to die’ 1×

po-gālb-enikan ‘saviour’¹⁷ 1×

īns-an ‘short’ 1×

: *no-seil-is* etc. 18×¹⁵

: *au-lau-uns* ‘dead’ etc. 5×¹⁶

: *po-galb-an* ‘help’ etc. 5×

Lith.

stela ‘soul’

liāutis ‘to stop’

pagālbā

*īsas*¹⁸

¹³ In *sien* [...] *aūpallai* ‘is located (Germ. *sich befindet*)’.

¹⁴ Girdenis (1973) mentions also the form *pūrmonnien* ‘the first (acc. sg.)’, and comments in a footnote in the 2000 reprint of his publication that the diacritic on the letter *i* appears to be so clear in the *Enchiridion* (p. 89, line 3) that it could be securely interpreted as the macron (see also Young 2008: 124, 128). This is actually a misunderstanding, because the diacritic is in fact not clear at all in the original edition of the *Enchiridion* (see the facsimile in Mažiulis PKP 1: 201, or at <http://www.prusistika.flf.vu.lt/public/texts/KIII/89.jpg>).

¹⁵ Note that a secondary circumflex which could have arisen by metatony in an *ijo*-stem derivative (as in words with *-īng-*; see § 4.2.2.1) cannot be excluded here (cf. Lith. adj. *besiēlis* ‘soulless’); if so, see § 4.2.2.4b and fn. 33 for a possible explanation of the regular absence of the macron. Cf. also *noseilīs* 1×.

¹⁶ Cf. also partic. praet. act. *aulauūsins* 1×.

¹⁷ Here and elsewhere in this chapter, OPr. forms in *-an* are acc. sg.

And then, in the verbal suffix *-in-* (cf. Lith. *aug-ĩn-ti* ‘to raise, grow’):

<i>kak-ĩn-t</i> ‘to attain’ 1×	: <i>kack-ĩn-t</i> 1×
<i>polaip-ĩn-snan</i> ‘order’ 1×	: <i>polaip-ĩn-ton</i> ‘ordered (partic. acc. sg.)’ 1×
<i>muk-ĩn-snan</i> ‘teaching’ 1×	: <i>muk-ĩn-t</i> etc. 5×, <i>muk-ĩn-snan</i> 1×
<i>polas-ĩn-snan</i> ‘chapter’ 1×	

In addition to the four cases mentioned above with the macron in the suffix *-in-* and the 14 cases with the macron in the root syllable (e.g., *dĩl-in-ai* ‘works’, etc.), 53 forms¹⁹ of 37 different words²⁰ are also attested without the macron (e.g., *gallintwei* ‘to kill’, *iaukint* ‘to train’, *dirbinsnan* ‘trembling [acc. sg.]’, etc.). At least some of these forms could have been stressed on the suffix (see Rinkevičius 2009: 197ff.; 2011: 134ff.).

To sum up, in the Old Prussian reflexes of Proto-Baltic **acute diphthongs**, probably neither of the sounds was lengthened. Therefore, **the macron is usually absent**; it only appears sporadically either on the first or on the second element of the diphthong (in contrast to the traditional view).

4.2.2.3 Problematic cases

In the following three examples, the original tone of the syllable marked by the macron on the first element of the diphthong is unclear, due to tone variation in different dialects of Lithuanian; for example:

OPr.	Lith.
<i>kārtai</i> ‘bitter (nom. pl.)’ 1×	<i>kārtų, kaŗtų</i> (acc. sg.)
<i>lāiskas</i> ‘book’ 1×	<i>lāiŗkas, laiŗkas</i> ‘letter’
<i>erdēŗkts</i> ‘contaminated’ 1×	<i>dēŗgti, deŗgti</i> ‘to foul, defile’

In previous literature, these words have often been used as an argument both for and against Fortunatov’s theory, depending on which Lithuanian variant is taken into account (see, e.g., Fortunatov 1895: 258, 260 vs. Girdenis 1973: 74 on *kārtai* and *lāiskas*).

In the words *wĩngriskan* ‘cunning (acc. sg.)’ 1× and *enwāngiskan* ‘finally’ 1×, acute is sometimes suggested on the basis of Lith. *vėngti* ‘to avoid’ (< IE **ueng-* with Winter’s law, cf. Young 2008: 124), but metatony—that is, a shift from etymological acute to a secondary circumflex—in intermediary stages of the derivational chain cannot be excluded; cf. Lith. *viŗgrų* (beside *vĩngrų*) ‘winding (acc. sg.)’ and *vaŗgu* ‘sluggish (acc. sg.)’. On the other hand, if *enwāngiskan* was still acute in Samlandian and the macron appears here by mistake, the acute could be supported by the absence of the macron in (en) *wangan* ‘(in the) end’ 3×.

¹⁸ See the note “Akut niejasny” in Smoczyński SEJL: s.v.

¹⁹ Only forms with tautosyllabic *in* were counted (forms like praes. 3 *muk-in-a* were excluded).

²⁰ 28 verbs and nine verbal nouns.

A single attestation to the macron on the first element of the diphthong in the etymologically acute root **uēld-*, i.e., *sendraugiwēldnikans* ‘coheirs (acc. sg.)’ (cf. Lith. praes. 3 *vėldi* ‘inherits’), is insufficient for any serious interpretation (be it a misprint, a marker of stress in a long word, a result of metatony, etc.). An expected acute of the oblique demonstrative stem *stei-* ‘the, that’ (e.g., dat. sg. *steismu*, gen. pl. *steison*, dat. pl. *steimans*, etc.) (cf. Lith. dat. pl. *tėms* ‘those’), is only partly supported by the attested Old Prussian forms. Cf. the distribution:

stei- 49× : *stēi-* 25× : *steī-* 3×

On the other hand, the following forms with the macron on the second element of the diphthong could hardly serve as good examples of stressed acute due to their scarce attestation and lack of exact formal correspondences in Lithuanian:

sēiti ‘be (imp. 2 pl.)’ 2× : *seiti* 5×
teĩks ‘make (imp. 2 sg.)’²¹ 1×
swaīan ‘his, own (acc. sg.)’ 1× : *swaian* 29×

Finally, the word *āūgus* ‘greedy’, spelled with two macrons in the same diphthong, is in any case a misprint and cannot be compared with any of the proposed cognates (see Mažiulis PKEŽ: s.v. for a list of competing etymologies).

4.2.2.4 The *deiws*-type

As already noted by Fortunatov (1895: 271f.), a group of nouns and adjectives usually corresponding to words with circumflex roots and mobile accentuation in Lithuanian (and other Balto-Slavic languages) regularly lack the macron in the *Enchiridion*; for example:²²

OPr.	Lith.
<i>deiws</i> ‘god’ 70× ²³	<i>diēvas</i> (a.p. 4)
<i>deinan</i> ‘day (acc. sg.)’ 8× ²⁴	<i>diēna</i> (a.p. 4)
<i>dangon</i> ‘heaven (acc. sg.)’ 13× ²⁵	<i>dañgu</i> (a.p. 4)
<i>laucks</i> ‘field’ 4× ²⁶	<i>laūkās</i> (a.p. 4)
<i>swints</i> etc. ‘holy’ 43× ²⁷	<i>šveñtas</i> (a.p. 4/2)
<i>waix</i> ‘servant’ 4× ²⁸	<i>vaĩkas</i> ‘child’ (a.p. 4)

²¹ Cf. Lith. *teĩkti* ‘give, offer, render’ (see Mažiulis PKEŽ: s.v.).

²² The list may vary in different publications devoted to this issue, depending on each author’s interpretation of the phenomenon.

²³ Including forms like nom. sg. *deiwas*, acc. sg. *deiwān*, voc. sg. *deiwe*, *deiwa*, acc. pl. *deiwans*, but excluding gen. sg. *deiwas* (with possibly unstressed root).

²⁴ Including acc. pl. *deinans*.

²⁵ Including spellings like *dangan* 1× and *dengan* 1×.

²⁶ Including acc. sg. *laukan*.

²⁷ Including acc. sg. *swintan*, acc. pl. *swintans*, but excluding nom. pl. *swintai*, gen. pl. *swintan* (with possibly unstressed root).

²⁸ Including acc. sg. *waikan*, but excluding nom. pl. *waikai*, *waikui*, dat. pl. *waikammans* (with possibly unstressed root).

wargan ‘evil (acc. sg.)’ 8×²⁹
wirds etc. ‘word’ 24×³⁰

vařgas ‘misery, trouble’ (a.p. 4/2)
vařdas ‘name’ (a.p. 4)

Several explanations of the phenomenon have been proposed in earlier literature:

a) Traditionally, these words were interpreted as having oxytonic accentuation (i.e., always stressed on the ending, such as acc. sg. *deiwan*), continuing either old oxytona that turned into mobilia in Lithuanian (Fortunatov l.c.;³¹ van Wijk 1923: 46) or a separate class of oxytona that existed alongside mobilia (Stang 1966: 292, 300). This interpretation can no longer be upheld, not only because it does not meet current standards of Balto-Slavic historical accentology (cf. Olander 2009a; Kapović 2015; Jasanoff 2017 for some most recent treatments), but also because it cannot explain the absence of the macron in endings, such as acc. sg. *deiwan* (30×, never **deiwān*), and in the roots of monosyllabic forms, such as nom. sg. *deiws* (34×), *laucks* (1×), *waix* (3×).³²

b) According to some scholars (e.g., Rysiewicz 1956 [1938–40]: 135; Girdenis p.c., etc.), the absence of the macron can be explained by the semantics of some of the above-listed words and pragmatic factors. The pronunciation of various words with religious meaning (e.g., *deiws* ‘god’, *dangon* ‘heaven’, *swints* ‘holy’, *wirds* ‘word’, *teisin* ‘honour’)³³ with which German priests (i.e., the main addressees of the *Enchiridion*) certainly had to be familiar even if they did not speak Old Prussian sufficiently well, need not to be purposely expressed in the orthography;

c) T. Olander (2009a: 125f.; 2009b) interprets most of the above-listed words as possible traces of enclitomena—i.e., “phonologically unaccented”³⁴ forms of words belonging to the mobile accentual paradigm in Proto-Balto-Slavic that later acquired initial accentuation in individual languages (e.g., PBalt.[-Sl.] acc. sg. **deiuan* > Lith. *diēva*). According to Olander, only enclitomena with circumflex roots had retained their ‘unaccentedness’ in Old Prussian; the theory, however, does not explain the appearance of the macron in other circumflex roots of clearly accentually mobile words (e.g., acc. sg. *mērgan* : dat. pl. *mergūmans* ‘maiden’, acc. sg. *āntran* : nom. sg. fem. *antrā* ‘second’, nom. sg. masc. *piēnckts* : fem. *piēncktā* ‘fifth’ etc.);

²⁹ Including acc. sg. *wargan*, acc. pl. *wargans*, but excluding dat. sg. *wargasmu*, adv. *wargu* (with possibly unstressed root).

³⁰ Including acc. sg. *wirdan* and acc. pl. *wirdans*, but excluding nom. pl. *wirdai*, gen. pl. *wirdan* and dat. pl. *wirdemans* (with possibly unstressed root). See also nom. sg. *wirds* 1×.

³¹ Fortunatov actually applies the same explanation for the absence of the macron in some mobile nouns with acute roots, such as *deickton* ‘place; something (acc. sg.)’ 4× (including *deicton*, *deicktan*, but excluding gen. sg. *deicktas*), as well as *ains* and *pogaut* (cf. § 4.2.2.2).

³² See Rinkevičius 2009: 109ff. for the problem of ending-stressed nominal paradigms in Old Prussian.

³³ One could also add words like *wargan* ‘evil’ or *noseilis* ‘spirit’ (with acute *ei*, see § 4.2.2.2; cf. fn. 15) etc. to the list.

³⁴ Instead of the term ‘phonological unaccentedness’, I would prefer a notion of an accent with a different phonetic realization than in other words. Cf. the ‘left-marginal accent’ of Jasanoff 2017: 55, 67.

d) F. Kortlandt, who argues for the same interpretation of the use of the macron as presented in this paper, explains the absence of the macron in the above-mentioned etymologically circumflex roots by the elimination of vowel length (see § 5) due to analogy with ending-stressed forms where the length on the first element of the circumflex diphthong was lost (or perhaps had not even appeared) in unstressed syllables, such as nom. sg. **dēiws* : nom. pl. **deiwāi* ⇒ *deiws* : **deiwāi*. The analogical nature of the phenomenon would explain why the leveling did not affect all words with circumflex roots (see exceptions above).

If one accepts the idea that the lengthening of the first element in circumflex diphthongs was the only reflex of Proto-Baltic tones in Samlandian and typologically compares it with a similar picture in modern spoken Lithuanian (see § 5), the last explanation seems to be the most plausible. A number of similar examples of recent length elimination in accentually mobile nouns in modern spoken Lithuanian (in traditional terms, change of acute to circumflex, and never the other way round) could be added here, for example:

šārvas 3 /šārvas/ ‘armor’³⁵ → *šaŗvas* 4 /šarvas/
kārdas 3 /kārdas/ ‘sword’ → *kaŗdas* 4 /kardas/³⁶
žāltį 3 /žālti/ ‘grass snake (acc. sg.)’³⁷ → *žālť* 4 /žalti/
vāistas 3 (< 1) /vāistas/ ‘medicine, drug’ → *vaŗistas* 4 /vaistas/³⁸ etc.

4.2.3 ‘Diphthongized’ monophthongs

In digraphically spelled ‘diphthongized’ Old Prussian reflexes of PBalt. **ī*, **ū*, the macron is consistently placed only on the second element of the digraph (i.e., on the same letter that is used in non-digraphic spellings of the vowel) and, most probably, marks only the length of the corresponding vowel—just as with all other long vowels (see 4.1), for example:

PBalt. **ū*:

OPr.

būton : *bou̯ton* / *baūton* ‘to be’

(*sunun*)³⁹ : *soūnon* / *saūnan* ‘son (acc. sg.)’

Lith.

būtu (conj. 3)

sūnu (acc. sg.)

³⁵ Plurale tantum *šarvai* (with most forms stressed on the ending) when used as a military term. The circumflex (a.p. 4) variant of this word has not yet been included into DLKŽ (the Dictionary of Standard Lithuanian), although it has certainly been the most widely used variant in colloquial Lithuanian for at least several decades already. The non-plurale tantum word *šaŗvas* (used mostly in non-military meanings) was included only in the seventh edition of DLKŽ (2012).

³⁶ The circumflex variant (without vowel lengthening) had not been included in DLKŽ until its seventh edition (2012).

³⁷ The *ijo*-stem a.p. 3 word (cf. nom. sg. *žaltys*), which means that the majority of forms in the paradigm have stress on the ending. The circumflex variant (i.e., without vowel lengthening) *žālť* was included in DLKŽ only in its seventh edition (2012).

³⁸ The circumflex variant (without vowel lengthening) has been included in DLKŽ since its second edition (1972).

³⁹ Non-digraphic spelling attested only in the First Catechism (1545).

PBalt. *ū:
OPr.

<i>iūmans</i>	: <i>ioūs</i> , <i>ioūsan</i> , <i>ioūmans</i> / <i>iaūs</i> ‘you’
<i>tū</i>	: <i>toū</i> / <i>tau</i> ‘thou’
<i>nūmans</i>	: <i>noūson</i> , <i>noūmans</i> / <i>naūmans</i> ‘us’
<i>tūlan</i>	: <i>toūls</i> , <i>toūlan</i> ‘more/much’
<i>dūsin</i>	: <i>doūsin</i> / <i>daūsin</i> ‘soul (acc. sg.)’
<i>sallūb-</i>	: <i>salaūb-</i> ‘marriage, spouse etc.’

Lith.

<i>jūsų</i> (gen. pl.)
<i>mūsų</i> (gen. pl.)
<i>tūlas</i> ‘many a’
(<i>dūšių</i>)
(<i>šliūbas</i>)

PBalt. *ī:
OPr.

<i>gīwas</i> , <i>gījwans</i>	: <i>geīwans</i> ‘alive, life’
<i>malnīku</i> , <i>malnījks</i>	: <i>malneijkans</i> ‘child’
<i>debeikan</i> , <i>debijkan</i>	: <i>debeīkan</i> ‘large’
<i>etnīwings</i> , <i>etnījwings</i>	: <i>etneīwings</i> ‘merciful, kind’

Lith.

<i>gývas</i>
<i>-inýkas</i>
<i>-ýkas</i>
<i>nytis</i> ‘harness’

These forms have often been provided as examples of acute diphthongs in previous literature and compared to Lithuanian cognates, cf. OPr. *boūton* : Lith. *būtu*; OPr. *geīwans* : Lith. *gývus*, etc. (cf. Fortunatov 1895: 263f., etc.). However, the evidence does not show any traces of tonal opposition in these vowels—just as in all other long vowels (see § 4.1): Firstly, there are no clear cases of these vowels spelled differently that could prove the existence of a different tone (e.g., with the macron on the first element of the digraph, with regular absence of the macron, with consistent non-digraphic spelling, or any other orthographic feature). Secondly, the macron is consistently placed on the second element of the digraph in those cases where the circumflex could be at least hypothetically expected, judging from the comparative evidence. In the case of the reflex of PBalt. *ī, the circumflex could be expected, e.g., in *malneijkans* or *debeīkan* (cf. Lith. *darb-inýkas* ‘worker’, *dal-ýk-as* ‘thing, matter’). In the case of the reflex of PBalt. *ū, the vowel is acute in all the inherited words (cf. Lith. *būtu*, *sūnu*, *jūsų*, *mūsų*, *tūlas*, PIE **tuH*⁴⁰). The circumflex in the Lithuanian Slavisms *dūšių* and *šliūbas* does not necessarily imply that the corresponding Old Prussian Slavisms also had the circumflex; but even if they had, this potential circumflex was still not marked in the orthography of the *Enchiridion*.

Just like real diphthongs, the digraphically spelled monophthongs are not free of some more or less obvious misprints, such as:

<i>gēīwan</i> ‘life (acc. sg.)’ 1×	: <i>gīwas</i> , <i>gījwan</i> , <i>geīwans</i> etc. 14×
<i>dēīgi</i> ‘also’ 1×	: <i>dīgi</i> 36× / <i>deīgi</i> 2×

⁴⁰ See Dunkel LIPP 2: 806.

5 Did tones exist in Old Prussian?

Bearing in mind that:

- a) No reflexes of Proto-Baltic tones have been attested in Samlandian monophthongs and
- b) Only quantitative (i.e., not prosodic) reflexes have been attested in diphthongs,

a question may naturally arise as to whether tones existed at all in the Samlandian dialect of Old Prussian.

There are two possible ways to interpret the data and explain how Proto-Baltic tones may have evolved in Samlandian:

First of all, one may assume that there was no real tonal opposition (i.e., no distinctive pitch) in Samlandian, and the reflex of Proto-Baltic tones in diphthongs was a purely quantitative opposition—i.e., only a contrast between vocalic phonemes of different quantity not accompanied by any other prosodic feature (e.g., differences in pitch). In such a case, the Samlandian situation would be typologically very similar to the situation observed in modern spoken Lithuanian and the majority of Aukštaitian dialects, where only quantitative reflexes of Proto-Baltic tones have been preserved in diphthongs (cf. Kortlandt 2009). In these varieties of Lithuanian, a purely prosodic opposition of pitch has not been maintained, and therefore no traces of tone have been preserved in monophthongs (cf. Kazlauskas 1968: 5, 14).⁴¹ From a historical point of view, the two systems would differ from one another only in terms of which tone was reflected in vowel lengthening: circumflex in Samlandian vs. acute in Lithuanian:

Proto-Baltic	Standard Lithuanian ⁴²	Spoken Lithuanian	Samlandian
Circumflex	<i>āŭsī</i>	<i>ausī</i>	<i>āusins</i>
Acute	<i>kāulq</i>	<i>kāulq</i>	<i>kaulins</i>

On the other hand, one could also assume that the tonal opposition had been preserved in Samlandian and it was present in both monophthongs and diphthongs. The distinctive pitch was not captured by Abel Will’s ear, and only a secondary phonetic feature of this opposition (non-phonemic vowel lengthening in diphthongs) was reflected in his orthography. In this scenario, the Samlandian system can be compared with that of the neighboring Lithuanian Žemaitian dialects⁴³ (cf. Girdenis 1973), where the distinctive pitch has been preserved and the Proto-Baltic tones still have prosodic reflexes in both monophthongs and

⁴¹ See Švageris 2018 for the most recent experimental research.
⁴² As described in standard grammars and textbooks—e.g., Ambrasas 2007: 55ff.
⁴³ Many features of them have often been attributed to the substrate of Curonian, an extinct Baltic language neighboring on and sharing a number of features with Old Prussian (see Zinkevičius 2006: 207–226; Girdenis 1981; Pronk 2017; 2018).

diphthongs (in the latter, with significant non-phonemic lengthening of the first sound in circumflex diphthongs and little or no lengthening of the same sound in acute diphthongs):

Proto-Baltic	Standard Lithuanian	North Žemaitian	Samlandian
Circumflex	<i>āŭsi</i>	<i>āusi</i> (<i>ā u si</i>)	<i>āusins</i>
Acute	<i>kāulq</i>	<i>kāula</i> (<i>kāula</i>)	<i>kāulins</i>

6 Conclusions

a) The primary function of the macron in the Old Prussian *Enchiridion* was marking length, not tone (i.e., distinctive pitch). Therefore, there is no evidence that Proto-Baltic distinctive pitch was preserved as such in the Samlandian dialect of Old Prussian.

b) There are no reflexes of Proto-Baltic tones in Old Prussian long vowels (including the ‘diphthongized’ Proto-Baltic *ī, *ū, occasionally spelled with digraphs in the *Enchiridion*).

c) In the Samlandian reflexes of Proto-Baltic circumflex diphthongs, the first sound of the diphthong was lengthened. The length was regularly marked by the macron, such as *rānkan* (in accordance with the traditional view).

d) In the reflexes of acute diphthongs, both sounds remained unlengthened. Therefore, the macron is usually missing in such diphthongs, e.g. *ainan* (contrary to the traditional view).

e) Among both types of diphthongs, as well as digraphically spelled monophthongs, a number of cases with the macron in the ‘wrong’ place could be found (i.e., on the second element of circumflex diphthongs, such as *perēilai*, on any of the elements of acute diphthongs, such as *pogaūnai*, *pogaūi*, or on the first element of the digraph in long vowels, such as *gēiwan*). Most (if not all) cases are obvious misprints.

f) The fate of Proto-Baltic tones in the Samlandian dialect of Old Prussian could be either typologically compared with the reflexes of Proto-Baltic tones in contemporary spoken Lithuanian and the majority of Aukštaitian dialects (presuming the loss of tones in Samlandian), or areally/genetically compared with the prosodic system of some Žemaitian dialects (presuming the preservation of tones in Samlandian and their phonetic realization similar to that of Žemaitian).

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