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*Vilniaus universitetas***BALTO-SLAVIC ACCENTOLOGY, AUSLAUTGESETZE, AND THE BALTIC SECONDARY LOCAL CASES**

Abstract. The article discusses the history of the Baltic secondary local cases within the framework of modern Balto-Slavic accentology and recent advances in our knowledge of the Baltic *Auslautgesetze*. The main factor determining the accent of the local cases was the development of Balto-Slavic enclitomena in Baltic. When the local cases were created enclitomena were still preserved, leading to word forms with stress on the original adposition (e.g. *o*-stem all. sg. **miškā+prēi*). When nominal enclitomena were lost the accent shifted to the immediate left with concomitant *métatonie rude*, yielding **miškāprei* (Lith. *miškóp(i)*, in contrast with gen. sg. *mìško*). This was the origin of unexpected stress position and unexpected acute intonation in the secondary local cases. Another important factor was Saussure's law, which took place at a much later stage in the immediate prehistory of Lithuanian. Other conclusions emanating from the accentological approach of this article include the following: 1) the illative, allative and adessive go back to Proto-Baltic and reflect Uralic influence. The inessive was created in East Baltic; 2) the adessive was built on the dative, as first proposed by Rosinas (2000); 3) the local cases underwent a number of innovations in East Baltic, most saliently in the illative plural and the locative; 4) the adpositional nature of the allative and adessive was perceived for a considerably longer period of time than that of the illative and inessive, which determined a partly different development of these cases; 5) finally, new accounts are proposed for some of the local cases (*i*- and *u*-stem dative and adessive singular; *ā*- and *ē*-stem locative and inessive singular; *u*-stem inessive singular; illative plural). **Keywords:** Baltic; Lithuanian; Balto-Slavic accentology; locative; inessive; illative; allative; adessive; metatony.

1. Introduction

One of the most salient features of Lithuanian in a comparative perspective is the existence of four secondary local cases, all of them going back to postpositional phrases: inessive (*miškè* 'in the forest'), illative (*miškaĩ* 'into the forest'), adessive (*miškíep* 'by the forest'), and allative (*miškóp* 'towards

the forest’). All four local cases were in normal use in Old Lithuanian (16th–17th c.). The modern standard language has only kept the inessive (called ‘locative’, Lith. *viētininkas*).¹ The illative is still alive in Eastern dialects, whereas the adessive and allative have only been preserved in the Lithuanian language islands of Gervėčiai, Lazūnai and Zietela in Belarus. Relics of the secondary local cases in the form of adverbs or other parts of speech are well attested in all dialects.

The case of Latvian is similar to that of Lithuanian, except that it is more evolved. The Latvian locative continues the inessive. The illative is well-represented in Old Latvian and the dialects, whereas the adessive and the allative have left traces in the form of adverbs ending in *-p*. An important question that will not be treated here is whether the Latvian locative *also* continues, in addition to the inessive, the illative (as proposed by Vanags 1994, 124f.) or the adessive (as recently proposed by Kalniņš 2020, 148, 393f.). Since Latvian has experienced a stronger phonological erosion in final syllables (much of which still remains unclear), the facts of this language are less informative than those of Lithuanian. Through this article they will only be mentioned if they contribute something to the argument. As generally recognized, the main value of Latvian is to guarantee that the Lithuanian local cases (or the postpositional phrases from which they evolved) go back at least to Proto-East Baltic.

It is more uncertain whether the secondary local cases go back to Proto-Baltic. Such a chronology is backed by two pieces of evidence: 1) the idea that the creation of the local cases reflects Uralic influence; 2) a potential relic in an Old Prussian fragment (*andangonsv'n* ‘in the heavens’). Both, needless to say, are insufficient to settle the issue beyond reasonable doubt.

The (East) Baltic secondary local cases have not been unattended in the secondary literature and much can be said to be reasonably clear. Nevertheless, important questions remain. In a historical perspective probably the main issue is that of chronology: when were the fixed postpositional phrases created?

¹ Use of the term ‘locative’ for the historical ‘inessive’, albeit fully appropriate for contemporary Lithuanian and Latvian, creates a terminological problem when dealing with the secondary local cases. Following common practice in this article I will use the term ‘inessive’ for the (historically) postpositional case (thus encompassing the standard Lithuanian and Latvian ‘locative’ as well), whereas ‘locative’ is reserved for the older, non-postpositional ending inherited from PIE.

When were they univerbated? How did they evolve after they became real cases? In addition, although the structure of the secondary local cases is generally clear, many formal problems remain (see below §2 for a complete survey). In this article I intend to make a contribution to these issues. My approach diverges from previous ones in two important respects:

- 1) The issue is addressed from the viewpoint of modern Balto-Slavic accentology. The article is actually framed as an attempt to provide answers to the accentological problems posited by the secondary local cases.
- 2) A second improvement is that the article incorporates recent advances in our knowledge of the Baltic and Balto-Slavic *Auslautgesetze*.

Although focus on accentology may seem like a narrow approach, I hope to show that it provides the key for a proper understanding of the history of the secondary local cases. As we shall see, the picture that emerges is almost surprisingly coherent and leaves practically no important questions unanswered. The article is structured as follows. Section 2 presents a sketch of the secondary local cases in Lithuanian, with focus on open problems from a historical point of view. Section 3 presents the main assumptions on which our study is based. The local cases are discussed in Sections 4–7. Section 8 summarizes the main results of this article.

2. The secondary local cases in Lithuanian: open questions

In this section I will present a sketch of the Lithuanian secondary local cases with focus on historical grammar. Matters not directly pertinent to the central topic of this article (including, *inter alia*, matters of syntax and semantics) are simply left out of consideration. No detailed exposition of the evidence from the old texts and the dialects is intended either. The reader is referred to the secondary literature for more information.²

2.1. The main purpose of this section is to provide a list of open problems posed by the local cases. Proper discussion and (hopefully) solutions are

² Good descriptions of the Lithuanian secondary local cases are readily available, e.g. Otrębski 1956, 76–81; Laigonaitė 1957; Stang 1966, 228–232, 290–292; Kazlauskas 1968, 150–165; Zinkevičius 1966, 200–203, 209–214, 231, 237–240, 248f.; 1980, 253–263. More specialized studies include, *inter alia*, Skardžius 1935, 131–138 (Daukša's accent); Rosinas 1995, 53–76 (pronouns); Ulvydas 2000, 268–303 (adverbs from local cases); or the relevant sections of descriptive surveys of old texts or dialects (e.g. Vidugiris 2014, 111–132).

postponed to sections 4–7. Since the focus is on accentuation it will be convenient to specify what constitutes ‘a problem’ from the viewpoint of historical accentology.

The local cases of immobile nouns (Lith. AP 1 and 2) are regularly accented on the root: iness. *tvárte*, ill. *tvártan(a)*, adess. *tvártiep(i)*, all. *tvártop(i)* (*tvártas* AP 1 ‘stable’), *rañkoje*, *rañkon(a)*, *rañkaip(i)*, *rañkosp(i)* (*rankà* AP 2 ‘hand’), etc. This is what we expect and thus constitutes no problem. Accordingly, immobile nouns will not be mentioned in this article unless there is some reason to do so.³ ‘Problems’ are thus limited to mobile nouns (Lith. AP 3 and 4). In mobile nouns the accent shifts between the first and the last syllable of the word according to stem-specific patterns that can be derived from Balto-Slavic with a high degree of certainty.⁴ I give the paradigm of the *n*-stem *vanduō* ‘water’ (AP 3^a) to exemplify the pattern:

	Singular	Plural
Nom.	vanduō	vándenys
Acc.	vándenį	vándenis
Gen.	vande ñs (< -en- ès)	vanden ŭ
Dat.	vándeniui	vanden ims (< - į -mus)
Instr.	vándeniū	vanden imìs
Loc.	vanden yjè	vanden yšè

Since the secondary local cases go back to phrases consisting of case + postposition, ‘unproblematic’ forms are those in which the accentuation of the local case coincides with that of its base case (e.g. all. pl. *miškuĩp(i)*, *šakuĩp(i)*, *akiuĩp(i)*, *danguĩp(i)* = gen. pl. *miškũ*, *šakũ*, *akiũ*, *dangũ*, all AP 4). ‘Problematic’ forms are those in which this is not the case:

³ There are two such cases, both only in nouns belonging to Accentual Paradigm 2 and both related to Saussure’s law: 1) the presence of Saussure’s law in the illative plural of AP 2 nouns in some dialects: *autuosna*, *giriósna*, *upésna*, *ugnýsna*, *turgúosna* for standard *aũtuosna*, *gĩriosna*, *ũpésna*, *ũgnysna*, *tuĩguosna* (*aũtas* ‘foot-cloth’, *girià* ‘forest’, *ũpè* ‘river’, *ũgnis* ‘fire’, *tuĩgus* ‘market’, all AP 2); 2) the absence of Saussure’s law in all other instances in which Saussure’s law could have been applied: (e.g.) adess. sg. *aũtiep*, *giriap*, *ũpeip* for expected (?) †*aũtiep*, †*giriáip*, †*ũpeíp*, cf. *miškiép*, *šakáip*, *katéip* (AP 4). We will return to these issues below in §4–6.

⁴ See below §2.6 for a more precise characterization of Balto-Slavic mobility.

- 1) Stress position does not coincide, e.g. ill. sg. *miškañ*, *šakōn* < *miškanà*, *šakonà*,⁵ with final accent in contrast to the initial accent of acc. sg. *mìškq*, *šākq*.
- 2) Intonation does not coincide, e.g. *o*-st. all. sg. *miškóp(i)*, with acute in contrast with the circumflex of gen. sg. *mìško* (with underlying /-ō/ as evidenced by the lack of Saussure's law).

In addition to 'problematic' forms with regards to accentuation (which in Balto-Slavic encompasses two different phenomena: stress position and intonation), I will also highlight 'problematic' forms from a morphological point of view. Most of them are traditional conundrums of Baltic historical grammar and thus require little emphasis. We can distinguish two different types of problems:

- 3) The local case is altogether unclear and/or unanalyzable within Lithuanian. This is the case, for example, of the *o*-stem iness. sg. *miškè* (for expected †*miškajè*) or the *u*-stem adess. sg. *sūnùp(i)* (with an *-u*- that has no pendant in the Lithuanian case system).
- 4) The local case is clear, but on closer inspection presents problems at a 'deep' level of historical analysis. The *ā*-stem ill. pl. *šakósna*, for instance, contains an *-os-* that is clearly related to acc. pl. *šak-às* (Latv. *maz-ās*), both from EBl. **-ā̄s*.⁶ But what about the *-n-* of the **-ā̄ns* that we most probably have to reconstruct for Proto-Baltic (cf. Lith. def. adj. *ger-ąs-ias*, OPr. *dein-ans*)?

Since this survey is focused on Lithuanian, I only note systematically problems of the first type (3). Problems of the second type (4) will figure more prominently in Sections 4–7.

Having these considerations in mind, we can now survey the evidence. The local cases are discussed in the following order: allative, illative, adessive and inessive. I regularly give the *o*-, *ā*-, *ē*-, *i*- and *u*-stems.⁷

⁵ The apocope *šakonà* > *šakōn* is very recent and will not be treated in detail in what follows. See further below §4.

⁶ Through this article I use the following conventions for Balto-Slavic and (East) Baltic prosodic features: \bar{E} = acute, \bar{E} = non-acute (or simply length, without specification of acuteness), \acute{E} = ictus in immobile and non-initially accented mobile word forms, \grave{E} = initially accented word forms of mobile paradigms, lending the ictus to clitics (= enclitomena). I have kept the traditional notation for 'Proto-Slavic' (in spite of its inadequacy; see Olander 2015, 42–45 for discussion).

⁷ I regularly exemplify with Lith. *miškas* 'forest', *šakà* 'branch', *katė* 'cat', *akis* 'eye'

2.2. The **allative** derives from genitive + postposition (EBL.) **p̄ē*: all. sg. *miškóp(i)*, *šakōsp(i)*, *katēsp(i)*, *akiēsp(i)*, *dangaũsp(i)* (< **-ā-p̄ē*, **-ās-p̄ē* etc.),⁸ all. pl. *miškuṃp(i)*, *šakuṃp(i)*, *kačiuṃp(i)*, *akium̄p(i)*, *danguṃp(i)* (cf. gen. pl. *miškū*, *šakū* etc.). EBL. **-p̄ē* is traditionally derived from EBL. **-p(r)ē* < Bl. **-prei* ‘by, at’ (Lith. *priē*, OPr. *prei*, OCS *pri*).⁹ The acute of **-prei* and the loss of *-r-* by some type of dissimilation are problematic, but certainly not enough to doubt the traditional (and self-evident) etymology. The loss of *-r-* is also seen in Latv. *piē* and in Lith. dial. *piē*. Forms with preserved *-pie^o* (e.g. *tofpiēg* Daukša 94₅₃, with particle *-g(i)* ‘indeed’) are exceedingly rare in Old Lithuanian. Forms in *-pi*, *-pi^o* are well attested, but from the oldest records the common form is apocoped *-p*. The final *-pi* is *never* accented in Lithuanian.¹⁰ What stands before the *-p(i)* transparently corresponds to the Lithuanian genitive. The allative plural agrees in accentuation with the genitive (all. pl. *miškuṃp(i)* = gen. sg. *miškū* etc.). The same holds true for the singular, with one exception: all. sg. *šakōsp(i)*, *katēsp(i)*, *akiēsp(i)*, *dangaũsp(i)* = gen. sg. *šakōs*, *katēs*, *akiēs*, *dangaūs*. The only exception (and thus *the* problem with the allative) is the *o*-stem all. sg. *miškóp(i)*, which disagrees in both stress position and intonation with gen. sg. *miško*.

2.3. The **illative** derives from accusative + postposition **nā*: ill. sg. *miškañ*, *šakōñ*, *katēñ*, *akiñ*, *danguñ* < *miškanà*, *šakonà*, *katènà*, *akinà*, *dangunà* (< **-an-*

and *dangus* ‘sky’, all AP 4. *ijo*-stems (*žōdis*, *-džio* ‘word’) and consonant-stems (*vanduō*, *-eñs* ‘water’) add nothing substantial to the general picture and have not been included in the survey.

⁸ Through this article I will not discuss the reconstruction of the PIE and Balto-Slavic endings (e.g. *ā*-stem gen. sg. pre-PIE **-eh₂-es* > PIE **-ah₂-as* > Bl.-Sl. **-ās* > Lith. *-os*) unless there is some reason to do so and/or my reconstruction diverges from the traditional one. Global reference is made to Olander (2015) for more information on the nominal endings.

⁹ All three postpositions involved in the secondary cases were acute (**-prei*, **-nā*, **-en*). The acute is unetymological in at least **-prei* and **-en* < PIE **prei*, *(*h*₁)*en* (the etymology of Bl. **-nā* is disputed; see below fn. 33). The issue will not be discussed at length in this article. Unetymological lengthening and/or unetymological acute are well-known among Baltic local adverbs (e.g. Lith. *priē* ‘by, at’/ *prie-das* ‘addition’/ *pri-dėti* ‘add’ (PIE **prei*); *prō* ‘through, by’/ *prō-trūkis* ‘outburst’/ *pra-trūkti* ‘burst’ (PIE **pro*), etc.). There is no *communis opinio* concerning the origin of this phenomenon. See most recently Le Feuvre 2011; Petit 2011; Hill, Kölligan, Scheungraber, Frotscher 2019, 160–172, 192–195; all of them with literature.

¹⁰ See Laigonaite (1957, 22f.) for discussion.

nā, **-ān-nā* etc.), ill. pl. *miškúosna*, *šakósna*, *katésna*, *akýsna*, (*dangúosna*)¹¹ (< **-q̄s-nā*, **-ā̄s-nā* etc.). The postposition was almost certainly **-nā*, without clear cognates in Balto-Slavic (see below §5). In the singular forms with preserved (and accented) °*a* are well represented in the old texts and the dialects. In the plural final °*a* is consistently preserved (apocoped °*sn* being quite rare in Old Lithuanian), but never accented. The segment that precedes the postposition unproblematically corresponds to the Lithuanian accusative.¹² From an accentological point of view, the accent of all. sg. *miškanà* and all. pl. *miškúosna* (both consistent in all stems) contrasts with the initial accent of the accusative (e.g. acc. sg. *lángq̄*, acc. pl. *lángus*, to *lángas* AP 3 ‘window’). Thus, the whole accentuation of the illative is problematic. It should be noted that this affects only stress position (where, in addition, the illative singular and plural diverge from each other). The intonation of the illative agrees with that of the accusative and is thus unproblematic.

2.4. The background of the **adessive** is more problematic. The adessive singular is traditionally derived from locative + postposition (EBL.) **pē*: *miškíep(i)*, *šakáip(i)*, *katéip(i)*, *akíp(i)*, *dangùp(i)*. Since the locative was lost in the prehistory of Lithuanian (its place was taken by the inessive), this is hard to control in detail. Lith. adv. *namīē* ‘at home’ (< PIE loc. sg. **-oī*) is clearly reminiscent of *o*-stem *mišk-íe-p(i)*, whereas *ā*- and *ē*-stem *šak-ái-p(i)*, *kat-éi-p(i)* can be identified with iness. sg. *šak-oj-è*, *kat-éj-è* (derivation of the inessive from the locative is uncontroversial; see below §7). The *i*- and *u*-stem *akíp(i)*, *dangùp(i)*, however, cannot be derived from the locative without special pleading. According to an alternative theory the adessive is based on the dative. This would explain the *i*-stem *akíp(i)* (cf. OLith. *i*-stem dat. sg. *āki/ākie*), but the *o*-stem *mišk-íe-p(i)* seems to pose an unsurmountable problem (contrast *o*-stem dat. sg. *miškui* < PIE **-ōī*). We will return to this issue below §6.

The adessive plural *miškúosemp(i)*, *šakósemp(i)*, *katésemp(i)*, *akýsemp(i)*, *dangúosemp(i)* seems to go back to inessive plural + **pē*. This face-value analysis would imply a different structure from the other local cases and is

¹¹ The *u*-stem illative plural regularly uses the *o*-stem form. ‘Real’ *u*-stem forms are very sparsely attested in the dialects, cf. Zinkevičius 1966, 251.

¹² As often observed, *ā*-stem ill. sg. *šakonà/šakōn* vs. *šākq̄* implies that univerbation took place before long final diphthongs were shortened, but this is anyway known to be a recent development.

contradicted by the internal history of the inessive plural itself (see below §2.5). Variants of the adessive plural include *miškúosump(i)* and *miškúosamp(i)*, both, like *miškúosemp(i)*, clearly reminiscent of the inessive plural (see below).

The postposition $*-p\bar{e}$ is that of the allative and has been treated in §2.2. As in the allative, adessive $-pi$ is never accented. The issues posited by the adessive make it hard to give a list of problems here. If the traditional, ‘locative theory’ is followed, the *i*- and *u*-stem *akìp(i)*, *dangùp(i)* are formally problematic, the *o*-stem *miškìep(i)* has unexpected acute, whereas our judgment on \bar{a} - and \bar{e} -stem *šakáip(i)*, *katéip(i)* will depend on how we reconstruct the locative at the relevant stage of Proto-Baltic and Proto-East-Baltic. If one opts for the alternative (but essentially marginal) ‘dative theory’, the \bar{a} - and \bar{e} -stem *šakáip(i)*, *katéip(i)* have unexpected stress position and unexpected acute (contrast dat. sg. *šákai*, *kátei*), the *i*- and *u*-stem *akìp(i)*, *dangùp(i)* have unexpected stress position (contrast *ākiai* (OLith. *āki/ākie*), *daņgui*) and, finally, the *o*-stem *miškìep(i)* seems to have everything wrong (contrast *miškui*). In the case of the adessive plural the uncertainties concerning even its immediate prehistory make a list of problems impossible.

2.5. The **inessive** singular goes back to locative + postposition $*\underline{en}$: *miškè*, *šakojè*, *katèjè*, *akyjè*, *dangujè*. The postposition $*\underline{en}$ ‘in’ is evidently cognate with Lith. \tilde{i} ‘into’, Latv. *īe-*, OPr. *ēn*, OCS *vb* ‘in, into’ and other well-known material (Gk. *ēv*, Lat. *in* etc.). The acute, as already noted, must be accepted as a fact for the secondary local cases (and for other environments in Baltic), even though its ultimate explanation remains unknown. Except for the \bar{a} - and \bar{e} -stems *šakojè*, *katèjè* ($< *-\bar{a}\tilde{i}+\underline{en}$, $*-\bar{e}\tilde{i}+\underline{en}$) all stems raise issues of one or another sort. The *o*-stem *mišk-è* (East Aukšt. *mišk-i*) $< *-\check{\underline{e}}n$ is a classical *locus desperatus*. The *i*- and *u*-stem iness. sg. *akyjè*, *dangujè* is known to be an innovation. The original endings $*-\bar{e}\tilde{i}+\underline{en}$, $*-\bar{o}(u)+\underline{en}$ are attested in Žemaitian and Old Lithuanian authors from Žemaitija and surrounding areas: Žem. $-\bar{i}\check{e}$ ($< *-\bar{e}\tilde{i}+\underline{en}$), $-\hat{o}u$ ($< *-\bar{o}\tilde{i}en$). It should be noted, finally, that the inherited locative has left clear traces in Lithuanian adverbs (e.g. *namiē* ‘at home’, dial. *oriē* ‘outside’ $<$ PIE *o*-stem loc. sg. $*-oi$).

The inessive plural presents problems of a different sort. OLith., dial. *miškuosù*, *šakosù*, *katèsù*, *akysù*, *dangūsù* seem to preserve the PIE locative plural untouched, except that at some point *o*-stem $*-oi-su$ (preserved in relics like *keturìesu* ‘in four’) was replaced by $*-\bar{o}-su$ and *i*- and *u*-stem $*-i-su$, $*-u-su$ by $*-\bar{i}su$, $*-\bar{u}su$ (*-isu*, *-usu* are very rare). Standard Lithuanian has

miškuosè, *šakosè* etc., with final °*e* almost certainly taken from the inessive singular (an alternative theory derives this variant from accusative plural + postposition **en*). A third, relatively widespread variant is *miškuosà*, *šakosà* etc., with final °*a* almost certainly taken from the illative (ill. pl. *miškúosna*, *šakósna*). Penultimate accent is also widespread (*miškúosu*, *miškúose*, *miškúosa*), especially in Eastern dialects.

Formal problems with the inessive thus include the precise (pre)history of the *i*- and, especially, *u*-stem singular endings, the stem vowel **-ō-*, **-ī-* and **-ū-* of the inessive plural, and, above all, the *o*-stem singular ending *mišk-è*. From an accentological point of view the final accent of *miškuosù*/*miškuosè* etc. seems to continue that of Balto-Slavic (Sl. loc. pl. **-xǔ*), whereas that of *miškúosu*/*miškúose* requires some type of explanation. As for the singular, the desinential stress of *šakojè*, *katějè*, *akyjè*, *dangujè* must be regarded as problematic if it was not moved there by Saussure's law. If this is what happened, the original ending **-āi*, **-ēi*, **-ēi*, **-ōu* must have been non-acute, which will be regarded as problematic or not depending on one's position concerning the development of PIE word-final sequences like **-ah₂-i* or **-ēi* in Balt(o-Slav)ic. Because of the obscurity that surrounds the *o*-stem iness. sg. *mišk-è*, it is hard to say whether the acute of this ending is also problematic.

2.6. We can now summarize the results of this section. In §2.1 I presented four types of problems posed by the local cases. I will review them now in the opposite order to the one given there, with some notes on previous scholarship:

- 1) As noted above, I have not systematically reported 'deep' issues of historical grammar like the 'lack of *-n-*' in the illative plural. In previous scholarship they are often used as arguments to determine the chronology of the local cases. Thus, the 'lack of *-n-*' can be used as an argument to postulate that the illative was formed in Proto-East Baltic or even later, not in Proto-Baltic. Issues like this will be discussed below in §4–7. Here I will limit myself to note that arguments like the 'lack of *-n-*' are certainly relevant, but do not usually suffice to fix matters of chronology in a conclusive way.
- 2) Problematic cases like the *o*-stem iness. sg. *miškè* or the *u*-stem adess. sg. *sūnūp(i)* have profusely figured in the literature. The main accounts that have been proposed will be discussed in sections §4–7. It should

be noted that problems of this sort affect the adessive and the inessive, not the allative and illative.

- 3) Mismatches in intonation are certain for at least two cases: the *o*-stem all. sg. *miškóp(i)* and adess. sg. *miškiép(i)*.¹³ Whether metatony was present in other cases as well (e.g. *ā*-stem adess. sg. *šakáip(i)* and/or iness. sg. *šakojè*) will depend on each scholar's reconstruction of these endings. The undisputable cases only involve *métatonie rude*. No instances of *métatonie douce* or secondary lengthening are found among the secondary local cases. Although the metatony of *miškóp(i)* and *miškiép(i)* has often been noted,¹⁴ no properly argued solution has ever been presented.¹⁵
- 4) Mismatches in stress position between the local cases and their base cases, finally, are very common. This is the case of the *o*-stem allative singular, the whole illative (both singular and plural), the inessive singular (if the final accent is not due to Saussure's law) and, perhaps, the adessive singular (if it is based on the dative). In addition, stress variation (e.g. iness. pl. *miškuosè/miškúose*), mismatches within cases (e.g. ill. sg. *miškanà* vs. ill. pl. *miškúosna*), and mismatches between (original) postpositions (accented ill. *-nà*, iness. *-(j)è* vs. unaccented all./adess. *-pi*) also occur. The position that dominated the field till the middle of the 20th century was that the non-initial accent of (e.g.) ill. sg. *miškañ* or all. sg. *miškóp* is a relic of original oxytone paradigms.¹⁶

¹³ In the forms with unexpected acute there is some tone variation in the dialects (e.g. *o*-st. all. sg. *miškóp/miškōp*, adess. sg. *miškiép/miškiēp*, *ā*-st. adess. sg. *šakáip/šakaīp*). The acute is *lectio difficilior* and is, generally speaking, better attested. When enough evidence is available, the circumflex can be explained as secondary; cf. Zinkevičius 1966, 210f., 222, with references.

¹⁴ E.g. Endzelīns 1948, 143f.; Zinkevičius 1980, 259, 262; to mention just two widely used handbooks.

¹⁵ Scattered 'explanations' can be gathered in the literature, e.g. Būga (1923, 433, *métatonie rude* in the process of adverbialization); Stang (1966, 169, *métatonie rude* through reduction without stress retraction); Jasanoff (2017, 70 fn. 82, 'analogical copying of Hirt's law'); Kortlandt (2019, 109, metatony due to apocope of unaccented final *-i*). It is very easy to find counterevidence against these suggestions. To be fair, they were all made in passing and only highlight the fact that no obvious solution offers itself for the acute of *miškóp(i)* and *miškiép(i)*.

¹⁶ E.g. Būga 1924, 31f.; 1961, 43; and other publications; Endzelīns 1916, 302f;

Such an approach became obsolete with the revolution in Balto-Slavic accentology of the late fifties and early sixties.¹⁷ It has not been replaced by a new *communis opinio*, but several authors have hinted at a fairly reasonable alternative.¹⁸ All Balto-Slavic inflected words belonged to one of two possible accentual classes: mobile and immobile. This principle, as noted above (§2.1), is regularly followed by the secondary local cases as well. In mobile words, it is important to note, the stress did not alternate between initial and final syllables, as in Lith. acc. sg. *gálvq* vs. gen. sg. *galvōs*. Word forms that surface with initial accent in Lithuanian mobile paradigms were, at the Balto-Slavic level, phonologically unaccented word forms that lent the stress to clitics and received a default initial stress when no clitic was present. These are called *enclinomena* in the accentological literature. The system is well preserved in the oldest accented Slavic manuscripts. The stress of gen. sg. **golvŷ* (: Lith. *galvōs*) always stays in place, but that of acc. sg. **gōlvq* (: Lith. *gálvq*) shifts to clitics whenever there is one (**golvq žė*, **na golvq žė*, **nā golvq*; cf. Ru. *ná golovu*, SCr. *nà glāvu* ‘on the head’).¹⁹ From this point of view, it is naturally tempting to interpret the final accent of (e.g.) ill. sg. *galvonà* as a relic of ‘enclinomenon behavior’. This approach, almost a direct consequence of the ‘new look’ of Balto-Slavic accentology, seems almost intuitively correct to me and is the one I will apply in what follows.²⁰

1974, 598f.; van Wijk 1923, 45f.; Nieminen 1922, 136f., 161f.; Torbiörnsson 1924, 22f.; Skardžius 1935, 135f.; among others. Stang (1966, 291ff.) was the last major authority to endorse a variant of this view.

¹⁷ The classical works are Stang 1957; Dybo 1962; Illič, Svityč 1963. See e.g. Olander (2009, 30–34), with references, for an assessment of the advances in this period.

¹⁸ Illič-Svityč 1963, 12; Garde 1976, 9, 20; Kim 2002, 124; Olander 2009, 103f.; Jasanoff 2017, 69f.

¹⁹ The sketch of Balto-Slavic mobility presented here may be safely qualified as standard, at least within the now equally standard ‘Moscow school’ framework. See Lehfeldt (2009) for a general presentation.

²⁰ Only for completeness do I mention two other approaches I have found in the literature: 1) the original postpositions *always* attracted the accent (Specht 1925; Kazlauskas 1968, 40–42); 2) accent position is due to ‘analogy’ (e.g. Seržant 2004, 114f.; Kortlandt 2005; both proposing that the accent of the illative is analogical to that of

3. The history of the Baltic secondary local cases: introduction

We are now in a position to present our scenario for the origin and development of the secondary local cases. Before discussing each case in detail, it will be convenient to make explicit the assumptions on which my approach is built.

1. The agreement between Lithuanian and Latvian allows for only one possible reading:²¹ the creation of the secondary local cases goes back to Proto-East Baltic, if not earlier. The possibility that Proto-East Baltic still had non-univerbated postpositional phrases can perhaps not be categorically excluded, but seems extremely unlikely to me. See below §4–6 for more specific arguments. It follows that accounts of the local cases operating with very recent univerbations (affecting different Lithuanian dialects at different times and entailing, sometimes, a post-Leskien's law chronology) must be considered problematic on a priori grounds.
2. There are good reasons to believe that the creation of the secondary local cases goes back to Proto-Baltic. Besides OPr. *andangonsu^en* (on which see below §5), the often-repeated idea that the Baltic secondary local cases reflect Uralic influence is in my view hard to deny.²² The strongest indication is the very existence of an adessive and an allative, which are exceedingly rare cases for a *bona fide* Indo-European language. As we shall see below, the widespread counterargument that some of the local cases *must* be recent is simply not true. Another counterargument is that the creation of new postpositional cases is not so exceptional among the Indo-European languages. This, again, is not exactly true. What is paralleled is univerbation of the locative with a postposition, not the creation of new adessives and allatives. The agglutinative case

the inessive). Analogy is of course possible in a given case, but it cannot account for the whole accent system of the secondary local cases.

²¹ I cannot devote the necessary space to the Latvian evidence, which, as noted above (§1), seem to have a rather moderate contribution to make to Proto-Baltic reconstruction. The existence of clear relics of all four secondary local cases was perfectly clear in Endzelīns (1923, 292ff., 339f., 524). Kalniņš' exhaustive study of the Latvian locative (2020, 273–395) has clearly confirmed this fact (e.g. Kalniņš 2020, 376, 395, and *passim*).

²² E.g. Thomason, Kaufman 1988, 242f.; among many others.

inflection of Tocharian almost certainly reflects substratum influence, most probably also from Uralic (see most recently Peyrot 2019, 91–94). It is thus, like the local cases of Baltic, a special case and not a true parallel. One cannot categorically deny the possibility that the Baltic local cases arose through internal development alone, but if a typological oddity can be explained through an independently established contact phenomenon I would put the burden of proof on scholars thinking otherwise. This immediately implies a Proto-Baltic date for the local cases.²³ As we shall see, accentology fully supports this view.

3. The preceding observations, it is important to note, do not necessarily imply that *all* four secondary local cases were created at exactly the same time. As we shall see (§7), there are good reasons to believe that the inessive was created at a later date than the other three.
4. A more difficult question is whether the local cases could suffer the influence of their original base cases and/or the original postpositions after univerbation had taken place. This issue will figure prominently in Sections §4–7.
5. Turning back to accentuation, there are two main issues to handle: unexpected stress position (e.g. ill. sg. *miškanà* vs. acc. sg. *miškq*) and unexpected intonation (all. sg. *miškópi* vs. gen. sg. *miško/-õ/*). The latter, it will be recalled, has never been explained. One of the main proposals of this article (see below §4) is that it is directly related to the other problem: unexpected stress position. Here we find ourselves on safer ground. Unexpected stress position is always to the right. There are two main principles explaining a rightward accent shift between reconstructed Balto-Slavic and Lithuanian. One of them, Saussure’s law, requires no presentation. It was an exclusively Lithuanian sound law that moved the accent one syllable to the right if the first syllable was non-acute and the second acute.²⁴ The other principle is ‘enclimena

²³ After Proto-Baltic there is no evidence for contacts between Baltic and Uralic till the influence of Finnic in Proto-Latvian.

²⁴ It is now generally agreed upon that Saussure’s law was exclusively Lithuanian; see Olander (2009, 116f.), with references. Strictly speaking, it cannot be proved that Saussure’s law did not take place in Latvian and goes back, accordingly, to East Baltic. A clear indication that this was not the case is that Saussure’s law is almost exceptionless in Lithuanian, a fact that by itself points to a recent date.

behavior'. Since no certain traces of nominal enclitica are otherwise found in Baltic, accent shift according to this principle must be considerably old. This conclusion is backed by the obvious fact that the historical Baltic languages have prepositions and not postpositions. Although the potential importance of enclitica for the accentuation of the local cases has occasionally been noted, to my knowledge no extensive study has ever been published and the logical consequences of such an approach have never been explored in detail. This is the main task of this article.

In what follows I will present my scenario as a narrative from Proto-Baltic to Lithuanian. For reasons that will become apparent as the argument evolves, I discuss the local cases in the following order: allative, illative, adessive and inessive. I only give *o-*, *ā-*, *i-* and *u-*stems, which allow for consistent comparison with Slavic.²⁵

4. The allative

As already noted (§2.2), the allative derives from the genitive + postposition **prej*. In Balto-Slavic mobile nouns the genitive plural always bore the accent on the ending: Lith. *langū*, *galvū*, *žvėriū*, *sūnū* (all AP 3) = Sl. **vozьb*, **golьb*, **kostьb*, **synovь* (all AP *c*). Since this case ending had lexical accent, the stress stood in place when the postposition was added: PBl. **miškōn+prej*, **galvōn+prej*, **žvēriōn+prej*, **dang(u)ōn+prej*. To judge by Lith. *miškuṃp(i)*, *galvuṃp(i)*, *žvēriuṃp(i)*, *danguṃp(i)*, nothing happened in the development from Proto-Baltic to Lithuanian as far as stress position is concerned. The same picture obtains for the singular except for the *o-*stems: Lith. gen. sg. *galvōs*, *žvēriēs*, *sūnaūs* = Sl. **golьy*, **kosti*, **synū*.²⁶ We can thus safely start from PBl. all. sg. **galvās+prej*, **žvērēis+prej*, **dangāus+prej*, which directly yield Lith. *galvōsp(i)*, *žvēriēsp(i)*, *dangaūsp(i)*. Again, the stress remained in the position in which it stood from the very inception of Balto-Slavic mobility.

²⁵ I exemplify with Lith. *lāngas* 'window', *galvā* 'head', *žvēris* 'beast', *sūnis* 'son' (all AP 3), Sl. **vōzьb* 'cart', **golvā* 'head', **kōstьb* 'bone', **synь* 'son' (all AP *c*). AP 4 nouns like Lith. *miškas* 'forest', *šakā* 'branch' will also be used in the text.

²⁶ The Slavic *i-*stem genitive singular is an enclitica (SCr. *kōsti*, Ru. *kōsti*), but this is known to be a very recent innovation that has left abundant final-accent relics, cf. Stang 1957, 87f. There is little direct evidence on the accentuation of the *u-*stem genitive singular, but we expect it to have been the same as that of the *i-*stems.

The Balto-Slavic *o*-stem genitive singular, on the other hand, diverged from *all* other stems in being an enclinenomenon: Lith. *miško* = Sl. **vòza*. It must be stressed that Balto-Slavic mobile paradigms did not have initially accented word forms. The alternation was between word-final accent and phonologically unaccented word-forms that only received a default initial accent when no clitic was present. Underlyingly unaccented $\{ *miškā + prēj \}$ thus surfaced as $*miškā + prēj$, with final stress. By (quasi) regular sound change $*miškā + prēj$ should have given Lith. †*miškopi*/*miškōp*, which is not what we have. When matters are so framed it is hard to avoid the suspicion that both unexpected features of *miškōp*, stress position and intonation, have a common explanation. Let us now follow the thread to see where it leads us.

It cannot be the case that the acute of *miškōp* is due to a recent apocope of unaccented word-final *-i* (*miškōpi* > *miškōp*). In this case the consistent circumflex of *galvōsp*, *žvēriēsp* etc. would be difficult to explain. We cannot be dealing with a recent accent retraction from $*miškopi$ on analogy with the other stems (*galvōsp*, *žvēriēsp* etc.). The acute would be equally unexpected. The same holds true if one postulates a recent retraction not due to analogy: *all* instances of demonstrably recent stress retraction from the original postposition surface as circumflex (ill. sg. *šakonà* > *šakōn*, iness. sg. *šakoje* > *šakōj*, iness. pl. *šakosè* > *šakōs*).

The picture that emerges is that the retraction leading to *miškōp(i)* is not a (pre-)Lithuanian phenomenon. It took place at a much older stage: in Proto-Baltic ($*miškā - prēj$ > $*miškā̇ - prēj$) or Proto-East-Baltic ($*miškā - prēj$ > $*miškā̇ - prēj$). This immediately raises two new questions: what was the nature of this stress retraction and why did it provoke *métatonie rude*? I will take up the last question first.

The retraction of the stress in $*miškā - prēj$ > $*miškā̇ - prēj$ (or $*miškā - prēj$ > $*miškā̇ - prēj$) seems to be unique and there is thus nothing it can be compared to outside of the secondary local cases themselves (where, as we shall see, it is regular).²⁷ But it is not difficult to envisage a scenario. It should by now be regarded as well-established that the traditional assumption that Balt(o-Slavic) possessed a contrast between acute and circumflex ‘tones’ is incorrect.

²⁷ Other known instances of Baltic stress retraction like the one from $*-iā-$, $*-iā-$, $*-iū-$ (cf. e.g. Larsson 2004) or the one from $*-ās$ (Nieminen’s law) took place at different periods and had a different motivation from the one we are discussing here.

As indicated by Saussure’s law and other phenomena, the contrast between ‘acute’ and ‘circumflex’ was present in both stressed and unstressed syllables, which would be exceptional for real tones. The now standard alternative is to identify ‘acuteness’ with ‘glottalization’ (broadly, a vocalic feature comparable to the Danish *stød* or the Latvian broken tone).²⁸ Since the terms ‘acute’ and ‘circumflex’ are potentially misleading, I use ‘acute’ and ‘non-acute’ when referring to Proto-Balto-Slavic, Proto-Baltic, and Proto-East Baltic. ‘Acute’ and ‘circumflex’ are used for Lithuanian alone.

So far these considerations do not seem very *einleuchtend*, but there was more to the realization of the acute than just ‘glottalization’. In Lithuanian the acute is falling, whereas the circumflex is rising.²⁹ As is well known, this is exactly the opposite of the realization of the acute and non-acute in Slavic, Old Prussian, Latvian and even, in part, Žemaitian. There can be no doubt that the non-acute (the traditional ‘circumflex’) was realized as falling. The testimony of the daughter languages is less uniform as far as the realization of the acute is concerned, but, in addition to being ‘glottalized’, there are good reasons to believe that it was rising (it was certainly non-falling). It is thus reasonable to assume that the result of the stress retraction from Bl. **miškā-prėj* was a rising *-ā- (otherwise put, the stress shifted to the closest mora to the left). This new rising *-ā- contrasted with the falling non-acute *-ā- and was immediately reinterpreted as acute (glottalized) *-ā̇-, whence **miškā̇-prėj*.³⁰

The accent retraction **miškā-prėj* > **miškā̇-prėj* is the most problematic step in this scenario, as it cannot have been a sound law. It must be stressed that it seems to have been regular in the secondary local cases (see below §5–6), which implies that it had something to do with the secondary

²⁸ E.g. Olander 2009, 145f.; Jasanoff 2017, 70f., 74–83; both with references.

²⁹ See Rinkevičius 2015, 22f., with literature, for a more precise description of the realization of the Lithuanian tones.

³⁰ A close parallel is provided by Lithuanian. As per Stang (1966, 169), recent reduction with stress retraction led to circumflex (as in *šakonà* > *šakōn*, *šakoję* > *šakōj*, mentioned above in the text), no doubt because in Lithuanian all unstressed syllables are realized as circumflex. Reduction without stress retraction lead to acute (e.g. dat. sg. *gerām* < OLith. *gerāmui*, *vėlnias* ‘devil’ < OLith. *vėlinas*), no doubt because the Lithuanian acute is falling and the already accented short vowel was felt as stress on the first mora of the new diphthong.

local cases themselves. It is well known that grammaticalization instances like that of the Baltic secondary local cases are gradual processes in which key developments like desemantization, decategorialization or phonetic reduction may take place at different times. Formally ambivalent structures may be preserved for long stretches of time and overlap with advanced stages of semantic grammaticalization. A form like *miškóp* is fully opaque in modern Lithuanian. This was certainly the case in Old Lithuanian, even before the apocope *miškópi* > *miškóp* took place. It is more difficult to decide whether pre-Lithuanian **miškápie* was already formally opaque, but what about Proto-East-Baltic **miškáp(r)ē* or Proto-Baltic **miškáprei*? For a considerable period of time the postposition of the emerging local cases must still have been clearly perceived as such (certainly in Proto-Baltic and most probably also in Proto-East Baltic). My proposal is that when Baltic lost enclitomena in the nominal system the **-prei* of **miškā-prei* was still perceived as a postposition.³¹ In the case of the base case, the genitive singular, the transition from the enclitomenon **miškā* to **miškā*, with fixed initial accent, was unproblematic. In the case of **miškā-prei* its grammaticalization as an allative was well underway and perhaps already completed, but **-prei* must have been clearly remindful of the local adverb **prei* (~ **prei*?) and its status was thus ambivalent between postposition and case ending. As quasi-postposition the **-prei* of **miškā-prei* now violated the emerging rule that the stress cannot trespass word boundaries to move to clitics. The solution was to move the stress of **miškā-prei* one syllable to the left to the boundaries of the phonological word, whence the reconstructable Proto-Baltic **miškā-prei*.

Summing up the results achieved so far, when the emerging secondary local cases were formed no accent shift took place in word-forms with lexical accent. These included all word-forms of immobile nouns (e.g. all. sg. *tvártop(i)*, *piřštop(i)* from *tvártas* AP 1 ‘stable’, *piřštas* AP 2 ‘finger’; cf. gen. sg. *tvárto*, *piřšto*) and final-accented word-forms of mobile nouns (e.g. all. sg. *galvōsp(i)*, *řakōsp(i)* from *galvā* AP 3 ‘head’, *řakā* AP 4 ‘branch’, cf. gen. sg. *galvōs*, *řakōs*). Accent shift to the original postposition was limited to enclitomena, which *ex hypothesi* were a regular part of the early Baltic

³¹ That at some point Baltic lost enclitomena behavior in the noun is just a fact. None of the relics of enclitomena that have been proposed for Old Prussian is certain, cf. Rinkevičius 2015, 73f., 78, with references. On the other hand, enclitomena in the verb have been preserved till modern Lithuanian.

nominal system just as they still were in the oldest Slavic texts. It was precisely the loss of nominal enclitics in Baltic that complicated the picture. Stress retraction from Proto-Baltic **miškā-prēi* led to an ending with accent on the stem-vowel and acute intonation ('glottalization'), whence Lith. all. sg. *kelmóp(i)*, *miškóp(i)* (to *kélmās* AP 3 'stump', *miškas* AP 4 'forest'; contrast gen. sg. *kélmo*, *miško*).

In the following sections we will check whether the scenario just sketched for the *o*-stem allative singular accounts for the other local cases as well. Before leaving the allative, however, it is necessary to address a few issues that emanate, in part, from the thesis developed in this article:

- 1) As we shall see below (§6), Osthoff's law applied at an early date of East Baltic, not in Balto-Slavic. It follows that a sufficiently old all. pl. PBl. **miškôn-prēi*, **galvôn-prēi* should have been shortened to EBl. **miškân-prē̄*, **galvân-prē̄* > Lith. †*miškaĩp(i)*, †*galvaĩp(i)*. Lith. *miškuĩp(i)*, *galvuĩp(i)* imply that **miškôn-prē̄*, **galvôn-prē̄* were restored at some stage of East Baltic after Osthoff's law had taken place.³² This, in turn, implies that the compositional nature of **miškôn-prē̄*, **galvôn-prē̄* was still clearly felt in East Baltic. We will return to this issue below §6, after the adessive has been discussed.
- 2) The second issue is directly related to the previous one. If East Baltic had all. sg. **galvās+prē̄*, **žuērēs+prē̄*, **dangāus+prē̄*, with non-acute accented **-ā-*, **-ē-*, **-āu-* before acute **-p(r)ē̄*, why did Saussure's law not operate in the prehistory of Lithuanian (yielding †*galvospi* etc.)? The answer, again, must be related to the segmentability of **-p(r)ē̄* and will be postponed to §6.
- 3) The third issue is also related to Saussure's law, though not to the previous two. If the East Baltic *o*-stem allative singular was underlyingly acute *{*-ā-pē̄}*, why did Saussure's law not operate in AP 2 all. sg. *pirštop(i)*, with no variant †*pirštóp(i)* attested? Two obvious answers come into question: i) PBl. acute **-ā-prēi* arose in mobile paradigms and was never transferred to immobile nouns. Accordingly, the East

³² Here I am tacitly assuming that the Balto-Slavic genitive plural was **-ōn* (as traditionally assumed; see most recently Jasanoff 2014; Kapović 2019, 92–100; for Sl. *-v* < Bl.-Sl. **-ōn*) and not **-un* (as proposed by Kortlandt 1978; Hill 2013; with very different argumentation in each case). The issue cannot be discussed at length within the limits of this article.

Baltic form was **pirštāpē* and there was no room for Saussure's law to apply; ii) the transfer of acute **-ā-prej* to immobile nouns *did* take place. Saussure's law regularly applied, but its effects were completely removed by analogy in the prehistory of Lithuanian. We will return to this issue below in §5, where it will be argued that only the first option is correct.

5. The illative

As in the case of the allative, the analysis of the illative has never been problematic. It goes back to the accusative + postposition **nā* (more specifically **nā*, see below). The Balto-Slavic accusative was an enclinenomenon in all stems: Lith. AP 3 acc. sg. *lángq, gálvq, žvérj, súnų* = Sl. AP c **vðzv, *gólvoq, *kòstv, *sýnv*; Lith. acc. pl. *lángus, gálvas, žvéris, súnus* = Sl. **vðzy, *gólvy, *kòsti, *sýny*. Accordingly, the postposition **nā* always received the stress in mobile paradigms: ill. sg. **miškan+nā, *galvān+nā, *žuėrin+nā, *dangun+nā*, ill. pl. **miškōns+nā, *galvāns+nā, *žuėrīns+nā, *dangūns+nā*.

The next step was the same as in the *o*-stem allative: Baltic lost nominal enclinenomena and the stress moved from the original postposition to the left, yielding ill. sg. **miškānā, *galvānā* (or **galvānā?*), **žuėrinā, *dangūnā*, ill. pl. **miškōnsnā, *galvānsnā, *žuėrīnsnā, *dangūnsnā*. According to what we have seen in §4 the *ā*-stem illative singular should have received a secondary acute: **galvānā* > **galvānā*, which is not what we have in Lith. *galvonā/galvōn*. Restoration of the non-acute in **galvānā* > **galvānā*, however, is very easily explained as analogical after the other stems at practically any stage between Proto-Baltic and pre-Lithuanian.

The PBl. ill. pl. **miškōnsnā, *galvānsnā, *žuėrīnsnā, *dangūnsnā* is confirmed by the only relic of the local cases in Old Prussian (see below), but Lith. *miškūosna, galvūosna, žvėrysna, (dangūosna)* continue **miškōnsnā, *galvānsnā, *žuėrīnsnā, *dangūnsnā*, without *-n-* in the original accusative plural ending. The obvious inference is that in the development from Proto-Baltic to East Baltic the *-n-* was lost: **miškōnsnā, *galvānsnā, *žuėrīnsnā, *dangūnsnā* > **miškōsnā, *galvāsnā, *žuėrīsnā, *dangūsnā*. There are two different ways to explain this fact, both operating at the relevant stage of East Baltic but with diametrically opposed implications as far as the status of the original postposition **-nā* is concerned:

- 1) The Baltic illative plural **miškōnsnā, *galvānsnā, *žuėrīnsnā, *dangūnsnā* was analogically adapted to the East Baltic accusative

plural **miškōs*, **gālvās*, **zūērīs*, **dāngūs* (< **-ōns*, **-āns*, **-īns*, **-ūns*), yielding EBl. ill. pl. **miškōsnā*, **gālvāsnā*, **zūērīsnā*, **dāngūs**nā*. As argued in Villanueva Svensson (fthc.), following Yamazaki (2016, 172–175), the loss of **-n-* in word-final **-ōns*, **-āns* > **-ōs*, **-ās* etc. was one of the first East Baltic changes, still before Osthoff’s law and the monophthongization of Bl. **eĭ* and **aĭ* to EBl. **ē*. This point needs not be insisted upon here, as both the presence of **-n-* in the Proto-Baltic accusative plural and its absence in East Baltic are independently established (OPr. *deiw-ans* vs. Lith. *diev-ūs*, *ger-úos-ius*). If correct, this implies that the compositional nature of **miškōns-nā* was still clearly felt, which would be surprising in view of two facts: i) the illative singular must have been degeminated at an early date: **miškan+nā* > **miškán(n)ā* > **miškānā*; ii) the original postposition **nā* has no pendant in East Baltic (Lith. *nuõ*, Latv. *nūo* ‘from’ are synchronically and, almost certainly, historically unrelated) and its possible relation with OPr. *no*, *na* and Sl. *na* ‘on(to)’ is also problematic.³³ This makes the second option preferable:

- 2) At some stage of East Baltic **miškōnsnā*, **gālvāsnā* etc. lost their first **-n-* by dissimilation, whence **miškōsnā*, **gālvāsnā*. This is *ad hoc*, but dissimilation certainly occurs in natural languages and one can hardly think of a better target than forms like **miškōnsnā*. This accords well with the fact that the composite nature of the illative was most probably not felt anymore from an early stage of (East) Baltic, which, as we shall see below, is supported by independent evidence.

Both the Balto-Slavic antiquity of the illative plural and the innovative character of the East Baltic lack of **-n-* are confirmed by the only relic of the secondary local cases in Old Prussian. It is found in a 15th c. fragment of the Lord’s Prayer, edited by Mikalauskaitė (1938). I give the text in full,

³³ The ultimate etymology of **-nā* is not of prime importance for the purposes of this article, but the closest formal match I can think of is with Gk. *ἀνά* ‘up, along’, Av. *ana* ‘upwards, along’, Gmc. **ana* ‘on(to), by’ (cf. Dunkel 2014, 50f., with a different reconstruction of this local adverb than the one assumed here). If this goes back to PIE *(*h*₂)**an-h₂a* (*vel sim.*, with directive **-h₂a*) one would have to assume apheresis (an *ad hoc* assumption, but not unlikely for local adverbs) and a secondary, inner Balt(o-Slavic) lengthening **°a* > **°ā* (as, e.g., in PIE **pro* > Bl.-Sl. **pra* > Lith. *prõ*, *prõ-*). The original adposition would have been lost as an independent word in early Baltic.

which is probably the best way to warn against overambitious interpretation of the spelling of individual items: *Towe Nu'sze kās esse andangonsv'n swyntins* 'Pater noster qui es in caelis sanctificetur'. *andangonsv'n* is clearly used as a locative, which at this stage of the development of Old Prussian and in such a text does not imply that it necessarily continues a locative or an inessive. The *-ons-* of *andangonsv'n*, on the other hand, implies that the base was the accusative plural **-ūns*, which automatically points to an illative. Scholars familiar with Lithuanian dialects will not find the locative use of an original illative particularly surprising. It is regular in South Aukštaitian (*buvaū miškañ* 'I was in the forest'; standard Lith. *buvaū miškè*) and, of course, transfers of directives to locatives and *vice versa* are typologically well attested. Nor will the ending *-(ons)v'n* be too surprising. Besides *miškúosna*, Lithuanian dialects present the variants *miškúosnan*, *miškúosen*, *miškúosan*, *miškúosun*, most of them evidently influenced by the inessive plural.³⁴ Although the details leading to OPr. *andangonsv'n* will probably never be recovered, *-ons-* is *lectio difficilior* and practically proves that we are dealing with an illative.

Turning back to East Baltic, from what has been said it is clear that this branch had ill. sg. **miškánā*, **galvānā*, **žūērīnā*, **dangūnā*, ill. pl. **miškūsnā*, **galvāsnā*, **žūērīsnā*, **dangūsnā*. In the prehistory of Lithuanian, they were affected by two major sound laws: Saussure's law and Leskien's law. According to Saussure's law the stress was advanced to the right in the singular (**miškánā*, **galvānā*, **žūērīnā*, **dangūnā* > **miškánā*, **galvānā*, **žūērīnā*, **dangūnā*), but not in the plural (**miškūsnā*, **galvāsnā*, **žūērīsnā*, **dangūsnā*, with preserved stress in the acute long vowel). The acute final vowel was then shortened according to Leskien's law (**ōā* > *ōa*). This gives us the state of affairs of Old Lithuanian: ill. sg. *miškánà*, *galvonà*, *žvėrinà*, *dangunà*, ill. pl. *miškúosna*, *galvósna*, *žvėrysna*, (*dangúosna*). It should be stressed that Saussure's law is the only reasonable way to account for the contrast in accentuation between singular and plural.

We can now return to the questions with which we ended section §4. As for questions 1 and 2, the relatively transparent history of the illative indicates that Saussure's law operated in the local cases as expected. As we shall see below (§7), it also took place in the inessive. The reasons why Saussure's

³⁴ Cf. Zinkevičius 1966, 212f.

law did not apply to $*-p\bar{e}$ ($< *-prej$) in the allative and adessive must have something to do with this concrete adposition and will be discussed below (§6).

As for question 3 (whether the absence of Saussure’s law in *pirštop(i)* (AP 2) implies underlying non-acute $\{-\bar{o}pi\}$, in contrast with *kelmóp(i)* (AP 3) or is due to analogy) the illative speaks in favor of the first option. Saussure’s law *did* operate in the illative plural, as evidenced by dialectal forms like *autúosna*, *giriósna* for standard *aũtuosna*, *gĩriosna* (to *aũtas* ‘foot-cloth’, *girià* ‘forest’, AP 2). The Balto-Slavic accusative plural had ‘inherent’ acute intonation and this was inherited by the illative plural. Accordingly, Saussure’s law regularly took place. Its results were then removed by analogy. *All* other secondary local cases that display acute intonation acquired it as a result of the development detailed in §4 for the *o*-stem allative singular: PBl. $*mišk\bar{a}-prej > *mišk\acute{a}-prej > EBl. *mišk\acute{a}-p(r)\bar{e} > Lith. miškóp(i)$. The acute here arose in mobile paradigms alone and, to judge by the complete absence of Saussure’s law in Lithuanian, it was never analogically extended to immobile paradigms. This scenario, as we shall see immediately, is confirmed by the adessive.

6. The adessive

The adessive is the most problematic of the secondary local cases. The terms of the debate can be briefly presented as follows. The almost universal view is that the adessive goes back to locative + postposition $*prej$. Rosinas (2000) was probably alone in deriving it from dative + $*prej$. Rosinas’ main argument is of a syntactic nature: in Old Lithuanian *priẽ* governs the dative in a meaning essentially comparable to that of the adessive. This, however, does not prove that $*prej$ governed the dative already in Proto-Baltic and Rosinas’ treatment of the formal side of his proposal was weak.³⁵ The reason to begin this section by highlighting an essentially marginal theory is that I believe that Rosinas was right and that prosodics strongly confirm the ‘dative theory’. Before presenting my arguments it will be convenient to take an unbiased look at the facts.

In the singular the \bar{a} - and \bar{e} -stems *šak-ái-p(i)*, *kat-éi-p(i)* are ambiguous between the dative and the locative (though see below on the accent). The *i*-stem *ak-ì-p(i)* clearly favors the dative (cf. OLith. dat. sg. *ãki/ãkie*; contrast

³⁵ See Seržant (2004b); Petit (2007, 344–352); Kalniņš (2020, 122–124) for explicit criticism of Rosinas’ proposal.

loc. sg. $*\bar{e}\bar{i}$ in iness. sg. $*\bar{e}\bar{i}\text{-en}$, see below §7), but the *o*-stem *mišk-ie-p(i)* favors the locative in an even clearer way (cf. Lith. adv. *namiē* ‘at home’ < PIE loc. sg. $*\bar{o}\bar{i}$; contrast dat. sg. *mišk-ui* < $*\bar{o}\bar{i}$). The *u*-stem *tuŗg-u-p(i)*, finally, must be secondary under any theory. The plural *miškúosemp(i)* seems to be built on the inessive and thus depends, in some way, on the locative. This is clearly confirmed by the variants *miškúosamp(i)*, *miškúosump(i)*. No matter how one handles the details, the adessive plural is not built on the dative (Lith. *miškáms* < OLith. *miškàmus*).

One must concede that, overall, till very recently the evidence favored the traditional ‘locative theory’.³⁶ But recent advances in our understanding of the Baltic and Balto-Slavic *Auslautgesetze* now allow us to see Rosinas’ ‘dative theory’ in a more favorable light. In Villanueva Svensson (fthc.) I have argued that Osthoff’s law took place at an early stage of East Baltic, not, as traditionally assumed, in Balto-Slavic. There I have tried to establish the following relative chronology of early East Baltic sound changes:

- 1) loss of *-n-* in Bl. $*\bar{ō}\bar{n}s$, $*\bar{ā}\bar{n}s$, $*\bar{i}\bar{n}s$, $*\bar{u}\bar{n}s$ > EBl. $*\bar{ō}s$, $*\bar{ā}s$, $*\bar{i}s$, $*\bar{u}s$;
- 2) Osthoff’s law;
- 3) fronting $*a\bar{i}$ > $*e\bar{i}$;
- 4) monophthongization $*e\bar{i}$ (including $*a\bar{i}$ > $*e\bar{i}$) > $*\bar{e}$.

It follows that a dative-based *o*-stem adessive singular Bl. $*\bar{o}\bar{i}\text{-pre}\bar{i}$ would have given Lith. *-ie-p(i)* by regular sound change: $*\bar{o}\bar{i}\text{-pre}\bar{i}$ > $*\bar{a}\bar{i}\text{-p}(r)\bar{e}\bar{i}$ (Osthoff’s

³⁶ The major difficulty for the ‘locative theory’ were the *i*- and *u*-stem endings. The idea that Lith. *-i-p(i)*, *-(u)-pi* reflect a very late univerbation, after Leskien’s law had taken place (loc. sg. $*\bar{e}\bar{i}$, $*\bar{o}\bar{u}$ > $*\bar{e}$, $*\bar{o}$ > $*\bar{i}\bar{e}$, $*\bar{u}\bar{o}$ > $*\bar{i}$, $*\bar{u}$, *vel sim.*), is incompatible with the early chronology of the local cases that the rest of the evidence demands. See Kazlauskas (1968, 160); Seržant (2004b, 49) for attempts in this direction. Note, in addition, that inherited word-final long diphthongs almost certainly were non-acute (see below §7). The relatively popular idea that the *i*-stem adess. sg. *-i-p(i)* was taken from the consonant stems and continues, in the last instance, PIE loc. sg. $*\bar{i}$ (e.g. Stang 1966, 196, 211) is contradicted by the robust evidence indicating that loc. sg. $*\bar{i}$ was apocopated already in Balto-Slavic (cf. Villanueva Svensson 2017–2018, 291–296). Petit (2007, 346–350), finally, suggests that after the loss of the locative the \bar{a} - and \bar{e} -stem adess. sg. *-aip(i)*, *-eip(i)* were reanalyzed as built on the dative. The *i*-stem ending would be analogical: dat. sg. *-ai* : *-ei* : *-i* = adess. sg. *-aip* : *-eip* : X, where X = *-ipi*. The *u*-stem adess. sg. *-upi* would be analogical to the *i*-stem ending. Such a possibility cannot be denied on formal grounds. One may wonder, however, what the motivation was to replace the inherited *i*-stem adessive ending or why the *o*-stem adess. *-iep(i)* was bypassed in the process.

law) > $*-e\bar{i}-p(r)\underline{e\bar{i}}$ (fronting $*a\bar{i}$ > $*e\bar{i}$) > $*-\bar{e}-p(r)\underline{\bar{e}}$ (monophthongization $*e\bar{i}$ > $*\bar{e}$) > Lith. $-ie-p(i)$. The \bar{a} - and \bar{e} -stem endings $\check{s}ak-\acute{a}i-p(i)$, $kat-\acute{e}i-p(i)$, as noted above, unproblematically continue the dative, cf. Lith. dat. sg. $\check{s}\acute{a}kai$, $k\acute{a}tei$ (< Bl.-Sl. $*-\bar{a}\bar{i}$ < PIE $*-ah_2-ai$). A minor complication that now arises is the lack of expected monophthongization $*-\bar{a}\bar{i}-pre\bar{i}$ > $*-a\bar{i}-p(r)\underline{e\bar{i}}$ > $*-e\bar{i}-p(r)\underline{e\bar{i}}$ > $*-\bar{e}-p(r)\underline{\bar{e}}$ > Lith. $\check{\dagger}-ie-p(i)$. The $-ai-$ of $\check{s}ak-\acute{a}i-p(i)$, however, is very easily explained as restored on analogy with the other endings. Unlike the much more heterogeneous o -stems (EBL. nom. $*-as$, acc. $*-an$, gen. $*-\bar{a}$, dat. $*-\bar{o}\bar{i}$, instr. $*-\bar{o}\bar{a}$, loc. $*-\bar{e}$, all. $*-\bar{a}p(r)\underline{\bar{e}}/*-\bar{a}p(r)\underline{\bar{e}}$, ill. $*-an\bar{a}$) the \bar{a} -stems had a clearly segmentable $*-\bar{a}$ - in all case endings: EBL. nom. $*-\bar{a}$, acc. $*-\bar{a}n$, gen. $*-\bar{a}s$, dat. $*-\bar{a}\bar{i}$, instr. $*-\bar{a}n$, loc. $*-\bar{a}\bar{i}$, all. $*-\bar{a}sp(r)\underline{\bar{e}}/*-\bar{a}sp(r)\underline{\bar{e}}$, ill. $*-\bar{a}n\bar{a}$. The \bar{e} -stems, as always, followed the model of the \bar{a} -stems. The main advantage of the ‘dative theory’, as already noted, is that it accounts for the i -stem ending in a way that the ‘locative theory’ cannot. The prehistory of the Old Lithuanian i -stem dat. sg. $-i$ has also been satisfactorily explained in recent years. As argued by Hill (2016, 214–222), the PIE i -stem $*-e\bar{i}-e\bar{i}$ (Ved. dat. sg. $\acute{a}gn-aye$) gave Bl.-Sl. $*-\bar{i}$ by regular sound change (OCS dat. sg. $kost-i$). In Baltic word-final non-acute $*-\bar{i}$ was regularly shortened to $*-i$, which directly gives OLith. dat. sg. $\check{a}k-i$. The variant $\check{a}k-ie$ was taken from the consonant-stems (PIE dat. sg. $*-e\bar{i}$) and reflects the gradual merger of i - and consonant-stems in East Baltic. See Villanueva Svensson (2019, 202–205) for a more detailed defense of this view. Since the Proto-Baltic dative singular was $*ak-i$ (< PIE $*h_3ok^w-e\bar{i}-e\bar{i}$), the adessive was regularly $*ak-i-pre\bar{i}$, whence Lith. $ak-\grave{i}-p(i)$. As for the u -stem $tu\check{r}g-u-p(i)$, it is most likely analogical to the i -stems, as often assumed. As is well known, the Proto-Baltic u -stem dative singular cannot be reconstructed on the available evidence (this ending is not attested in Old Prussian; Lith. $s\acute{u}n-ui$ has the o -stem ending; Latv. $t\acute{u}rg-um$ is analogical). A distinct possibility is that it was $*-u$ already in Proto-Baltic, which would make the adessive $*s\acute{u}n-u-pre\bar{i}$ > Lith. $s\acute{u}n\grave{u}p(i)$ completely unproblematic.³⁷ This cannot be proved (the only argument is the adessive $tu\check{r}gup$ itself), but such an analogy would square well with the total absence of full-grade ‘ eu -cases’ in the Baltic u -stems (Lith. dat. sg. $s\acute{u}n-ui$, nom. pl. $s\acute{u}n-\bar{u}s$, gen. pl.

³⁷ A close parallel is provided by Italo-Celtic, where the u -stem dat. sg. $*-eu$ > $*-ou$ (Lat. $corn-\bar{u}$, Um. $trif-o$, Gaul. $Taqav-oo$) is analogical to i -stem dat. sg. $*-ei$ (Lat. $turr-\bar{i}$, Um. $ocr-e$, Gaul. $Ucuet-e$). The latter ending reflects an exclusively Italo-Celtic haplology from PIE $*-e\bar{i}-e\bar{i}$.

sūn-ŭ vs. OCS *syn-ovi*, *syn-ove*, *sun-ovъ* < PIE *-eu-eĭ, *-eu-es, *-eu-oHom [vel sim.]). Note that at least the *u*-stem nominative plural ending *must* be analogical to the *i*-stem ending (Lith. *ākys* < Bl.-Sl. *-īs < PIE *-eĭ-es).

In short, the adessive singular can be satisfactorily derived from the dative in all stems. Derivation from the dative is of course impossible for the adessive plural, but this can now be easily explained as an East Baltic or pre-Lithuanian innovation. Once Bl. adess. sg. *-ōĭ-*preĭ*, *-āĭ-*preĭ*, *-ēĭ-*preĭ*, *-i-*preĭ*, *-u-*preĭ* had given EBl. *-ē-p(r)ē, *-āĭ-p(r)ē, *-ēĭ-p(r)ē, *-i-p(r)ē, *-u-p(r)ē (or pre-Lith. *-ie-*pie*, *-ai-*pie*, etc.), the crucial *o*-stem ending lost any synchronic connection with the dative (Lith. *miškuī*) and was naturally reinterpreted as built on the locative (Lith. *namiē*; see below §7). The *ā*- and *ē*-stem endings were essentially ambiguous, whereas the *i*- and *u*-stems (which, synchronically, were *not* built on the locative) could not outweigh the influence of the *o*-stems. The result is that the adessive plural was fully rebuilt on the locative, eliminating any trace of what the inherited Proto-Baltic adessive may have looked like. Old Lithuanian presents three variants of the adessive plural, all of them clearly reminiscent of the inessive plural: *miškuosemp(i)*, *miškuosamp(i)*, *miškuosump(i)* (cf. iness. pl. *miškuose*, *miškuosa*, *miškuosu*). As per Rosinas (1995, 64), followed by Petit (2007, 335f.), the first step probably was a non-attested adess. pl. *-su-*pie*. When the iness. pl. *-su was replaced by *-*sen* (with *-*en* taken from the inessive singular), the adessive plural was remade to *-*sem-pi*, which quickly became the dominant ending. It imposed its -*m*- on the variants *-su-*pi* and *-sa-*pi*, yielding -*sump(i)*, -*samp(i)*. The locative and inessive endings on which this account is based will be dealt with below §7.

Now that the origin of the adessive has been clarified, we can turn to accentuation. The Balto-Slavic dative singular was an enclinenomen: Lith. AP 3 *lāngui*, *gālvai*, *žvēriui*, *sūnui* = Sl. AP *c* **vòzu*, **gòlvě*, **kòsti*, **sýnovi*. Accordingly, the postposition **preĭ* received the stress in mobile paradigms: PBl. adess. sg. **miškōĭ+preĭ*, **galvāĭ+preĭ*, **žūēri+preĭ*, **dangu+preĭ*. The next step should already be familiar: Baltic lost nominal enclinenomena and the stress moved from the original postposition to the left, yielding **miškōĭ+preĭ*, **galvāĭ+preĭ*, **žūēri+preĭ*, **dangū+preĭ*. In the case of the non-acute long syllables of the *o*-, *ā*- and *ē*-stems, stress retraction was accompanied by *métatonie rude*. These processes directly explain Lith. *miškíep(i)*, *šakáip(i)*, *katéip(i)*, *akíp(i)*, *dangùp(i)*.

It should be stressed that the ‘locative theory’ cannot account for the acute of *miškíep(i)*, *šakáip(i)*, *katéip(i)*, just as it cannot account for the ending of *akìp(i)*, *dangùp(i)*. The locative singular was not an enclinenomenon, but had lexical accent on the ending (see below §7). Accordingly, the stress would have stayed in place in Proto-Baltic and there would have been no room for the metatony to take place. Note that the acute cannot be explained in a different way, but *must* be due to the same process that generated a secondary acute in the *o*-stem all. sg. *miškóp(i)* (as detailed above §4). This is implied by the total absence of Saussure’s law variants in AP 2 nouns (see above §5). If one nevertheless derives *ā*-stem adess. sg. *šakáip(i)* from the locative and assumes that the acute was an inherent feature of this ending (in spite of the absence of Saussure’s law in AP 2 nouns), this would be in blatant contradiction with iness. sg. *šakojà < *-āi-én*, with a final accent due to Saussure’s law that, precisely, implies that the ending had *non-acute* **-āi-*.

I will not discuss the accentuation of the adessive plural in detail. As argued above, this ending has been completely renewed and the accent of *miškúosemp(i)* is that of the illative, which became dominant in the plural of the local cases (see below §7). In addition, the adessive plural is the most poorly attested local case of all and this may not have been the only accent pattern associated to it (see below §7 for variation in the inessive).

Before leaving the adessive we can finally answer the question that was left pending in Sections 4 and 5: how is the contrast between accented *-nà* and *-(j)è* and always unaccented *-pi* to be explained? It should be stressed that all three original postpositions were acute (**-nā*, **-ēn*, **-prej*).³⁸ Accordingly, Saussure’s law should have operated in all three of them. In the case of the adessive the absence of †*akipì*, †*dangupì* could conceivably be due to analogy with *miškíepi*, *šakáipi*, *katéipi*, but analogy will not account for the

³⁸ Through this article I have tacitly assumed that the traditional identification of all./adess. *-pi* with the preposition Lith. *priē* ‘at’ (OPr. *prei*, OCS *pri* < Bl.-Sl./PIE **prej*) is correct. The loss of *-r-* by some type of dissimilation is not a regular development, but variants of *priē* without *-r-* are known in Lithuanian dialects and Latv. *pie* is the normal form in Latvian. If one nevertheless prefers to operate with etymologically different adpositions (e.g. Dunkel 2014, 247; ALEW, 815), this does not directly affect the problem we are discussing. Lith. *-pi/-p* is most naturally derived from pre-Lith. **-pie* via Leskien’s law and this is supported by scattered instances of preserved *-ie-* in Old Lithuanian, e.g. *tofpiēg* Daukša 94₅₃ (with *-g(i)* ‘indeed’).

constant stem accentuation of the allative, where *o*-stem *miškópi* was the only acute ending. Although this *may* have been a factor, the divergent accentual behavior of *-pi vis-à-vis -na* and *-(j)e* must have something to do with the postposition itself. The main factor cannot have been the original form of the postpositions (they were all acute), but their *status* when Saussure's law took place. Ill. **-nā* was lost as a free adposition before (at least) East Baltic. This and other factors made the illative synchronically opaque and Saussure's law applied as in any other word form of the language (see above §5). Iness. **-en* could perhaps be related to the adposition (Lith. *ĩ* 'into', Latv. *īe-*. OPr. *ēn* 'in; into'), but most probably this was not the case. In East Baltic the inessive replaced the inherited locative. As a result, the inessive could not be constructed with adpositions anymore. The adposition **en/*in* was limited to constructions with the accusative and specialized in the meaning 'into'. Thus, the inessive was not synchronically related to an adposition and was treated as a unit, just like the illative. Saussure's law freely applied.

The case of **-prej* in the allative and adessive was different. Modern Lithuanian *-p(i)* is synchronically unrelated to any preposition of the language and this was probably also the case in Old Lithuanian, but at a stage of the language prior to Leskien's law **-p(r)ē* must have been felt as related to the preposition **p(r)ē* (which, it must be recalled, was constructed with the genitive and the dative in meanings very similar to those of the allative and adessive). Even if the preposition was regularly **prē*, with *-r-*, and the allative/adessive **-pē*, without *-r-*, there are several indications suggesting that speakers intuitively related them:

- 1) the allative/adessive is occasionally attested as *-pri* in Old Lithuanian, with an *-r-* that was most probably taken from the preposition *priē*;
- 2) the preposition is *piē*, without *-r-*, in Latvian, and an *r*-less *piē* is also attested in Lithuanian dialects;
- 3) in the Lithuanian language island of Gervėčiai in Belarus the allative and adessive end in *-k*, not *-p* (e.g. *dukterik* 'dukterip, by the daughter').³⁹ The best explanation of this fact I am aware of is due to Rosinas (1995, 71), who operates with an emphatic particle *-gi* 'indeed' and a series of subsequent reductions: all./adess. **-pie-gi* → **-pi-gi* > **-pig* > **-pk* > *-k* (or, conceivably, **-pi-gi* > **-pgi* > **-pk* > *-k*). The particle

³⁹ See Kardelytė (1975, 41f.) for the details.

-gi was almost certainly taken from the preposition, which in Old Lithuanian is often *prieg(i)*. Forms like *topig*, *topgi* are well attested in the old texts.

Since speakers could still relate allative/adessive $*-p(r)\bar{e}$ to the adposition $*p(r)\bar{e}$, its status was ambivalent between case ending and postposition. At the stage of pre-Lithuanian in which Saussure's law took place enclitomena behavior had long been lost. Saussure's law thus did not trespass the boundaries of the phonological word to move to clitics. The result is that Saussure's law did not operate in the allative and adessive. It should be stressed that this was not due to the prosodic or semantic properties of the allative and the adessive as such, but to the circumstance that the independent adposition was perfectly well preserved at this stage.

7. The inessive

The inessive presents a different picture from the other local cases. The illative, allative and adessive, it will be recalled, were created at an early stage of Baltic. In the case of the inessive there are several indications suggesting that it was created at a later date. First of all, it fully coincides in meaning with the old locative on which it was based. Since the locative singular has left a relatively large number of traces in Lithuanian adverbs (*namiē*, *oriē* etc.), it was probably preserved until relatively recently. From a formal point of view, the *o*-stem inessive singular $*-\bar{e}n$ (*miškē*) is best derived from $*-\bar{e}+en$.⁴⁰ Since there is no reason why an old, Proto-Baltic $*-ai+en$ would not have been preserved (Lith. †*mišk-ajē*), this implies that the inessive was created at a stage of East Baltic posterior to the monophthongization $*e_i$ ($*ai$) > $*\bar{e}$.⁴¹ Another, hitherto unnoticed formal argument comes from the \bar{a} - and \bar{e} -stem endings. As argued in Villanueva Svensson (2016) the regular development of the locative singular was as follows: PIE $*-ah_2-i$ > Bl.-Sl./PBl. $*-ai$ > EBl. $*-\bar{e}$ > pre-Lith. $*-ie$ > Lith. †-i. It follows that the ending

⁴⁰ This is probably the most widespread account of the *o*-stem inessive singular, going back to Būga (*apud* Stang 1957, 182, fn. 56) and accepted by Stang (1957, 75; 1966, 182f.) or Kazlauskas (1968, 159), among others. None of the alternatives I am aware of is attractive (see e.g. Mažiulis 1970, 132; Rosinas 2001, 70; Petit 2007, 356f.; Jasanoff 2017, 144).

⁴¹ The *o*-stems also present an ending $*-ie-ien$ (OLith. *Diewieie*, Žem. *tókie šáltie*), which must have been formed by adding $*-ien$ to the original loc. sg. $-ie$ < $*-\bar{e}$ (< Bl.-[Sl.] $*-ai$ < PIE $*-oi$). This implies that in specific usages the old locative was preserved as a productively used adverb formation until very recently (see Ulvydas 2000, 274–281).

*-āī that *šak-øj-è* requires is analogical to the rest of the paradigm (as stressed above §6, the whole singular had clearly segmentable *-ā-). It was most probably created in East Baltic, when regular sound change led to a formally opaque locative singular (PBl. *-āī > EBl. *-ēī > *-ē̄). This squares well with the chronology already arrived at from the *o*-stem iness. sg. *-ēn < *-ē+en. As in the *o*-stems, the original ā-stem ending has left traces in adverbs (Lith. *ankstì* ‘early’, *tolì* ‘far’ etc.).⁴² The final (and strongest!) argument is fairly simple: the Old and dialectal Lithuanian iness. pl. -*su* (*miškuosù*, *šakosù* etc.) evidently continues PIE loc. pl. *-*su* untouched.

The picture that emerges is that Proto-Baltic possessed the four local cases of Old Lithuanian, with the formal peculiarity that the place of the locative was occupied by the inherited locative and not by a postpositional ending (which for obvious reasons was not actually needed). In East Baltic the locative singular was recharacterized by a postposition **en*, whereas no postposition was probably ever attached to the locative plural. The creation of the inessive thus took place at a different period than the other local cases and cannot be attributed to Uralic influence. It has been proposed that the addition of the postposition **en* was a device to distinguish the locative from the dative.⁴³ This was only necessary in the ā- and ē-stems (EBl. dat. sg. *-āī, *-ēī = loc. sg. *-āī, *-ēī) and may well have been a contributing factor. One may wonder, in any case, whether there is any necessity to look for a motivation in the first place. The recharacterization of the locative with a postposition is well-paralleled in the Indo-European languages.⁴⁴ Unlike the grammaticalization of the allative and adessive (a rather unusual development demanding a special motivation, like the one provided by Uralic influence), the development of an ‘inessive singular’ out of the locative is not a problematic development.

⁴² See Villanueva Svensson (2019, 209–211) for a possible relic of the ē-stem loc. sg. *-ēī, later replaced in East Baltic by analogical *-ē̄. The ē-stem ending is fully parallel to ā-stem loc. sg. Bl. *-āī → EBl. *-āī.

⁴³ E.g. Rosinas 2000, 179f.; Petit 2007, 358f.

⁴⁴ Clear cases include the univerbation of the locative with the postposition ā in Iranian (e.g. YAv. *zastaiia*, OPers. *dastayā* ‘on the hand’ < In.-Ir. *-āī + *ā; cf. Hoffmann, Forssman 2004, 116) and with the postposition *en* in Sabellian (e.g. Os. **hurtīn kerrīūn** ‘in the precinct of Ceres’, Um. *ocrem fisiem* ‘on the Fisian mount’; cf. Wallace 2007, 23f.).

Before turning to accentuation it is necessary to specify the *form* of the locative at the relevant stage of East Baltic in which it was univerbated with the postposition **en*. The *o*-stem PIE **-oi* > Bl.-Sl./PBl. **-ai* > EBl. **-ei* > **-ē* is unproblematic. The *ā*- and *ē*-stem endings **-āi*, **-ēi* have already been discussed. They are the East Baltic replacement of PBl. **-ai*, **-ei* (< Bl.-Sl. *ā*-stem **-ai* < PIE **-ah₂-i*), an innovation most probably motivated by the desire to obtain an ending with clearly segmentable stem vowel **-ā-*, **-ē-*. The non-acute character of the innovated **-āi*, **-ēi* probably reflects the fact that word-final long diphthongs were typically non-acute (unlike short diphthongs, which could be both acute and non-acute). The PIE *i*-stem loc. sg. **-ēi* was preserved untouched. The same holds probably true for the *u*-stem PIE **-ēu* > Bl.-Sl. **-ōu*.⁴⁵ The PIE consonant stem ending **-i*, finally, had most probably been apocopated already in Balto-Slavic (cf. Villanueva Svensson 2017–2018, 291–296). In East Baltic consonant stems have the same ending as the *i*-stems.

We can thus start from the following endings when univerbation took place: **-ē+en*, **-āi+en*, **-ēi+en*, **-ēi+en*, **-ōu+en*. It should be stressed that all locative endings at this stage were non-acute (see further below). The sequence **-ē+en* of the *o*-stem inessive was unique. We can thus not test whether its outcome **-ēn* was regular, but this is not contradicted by any theoretical argument. It is probably worth remembering that at this stage of East Baltic the acute was still rising in addition to being glottalized. Although one expects the contraction product of **-ē+en* to be long, this is impossible to prove (or disprove) from Lith. *mišk-è*, East Aukšt. *mišk-ì*. The case of *ā*-stem **-āi+en* > Lith. *šak-ojè* and *ē*-stem **-ēi+en* > Lith. *kat-ėjè* is unproblematic. The *i*-stem **-ēi+en* is preserved in Žemaitian *širdīe* (= ‘širdē’), in Old Lithuanian texts from authors of Žemaitija and neighboring areas (*schirdie*), and more rarely in Aukštaitian as well (*-ėje*).⁴⁶ It is also attested in dialectal Latvian *-ei*, *-ē*. Standard Lithuanian *ak-yjè*, dial. *ak-ijè* and standard Latvian *av-ī* are clearly innovated. Since these forms do not compromise the reconstruction

⁴⁵ The rationale for the *-ō-* of Bl.-Sl. loc. sg. **-ōu* < PIE **-ēu* is not of prime importance in the present context. In my view it was analogical to the cases in which heterosyllabic PIE **-eu-* had given Bl.-Sl. **-ou-* by regular sound change (e.g. PIE dat. sg. **-eu-ei* > Bl.-Sl. **-ou-ei*, OCS *syn-ovi*).

⁴⁶ See Kazlauskas (1968, 150–156) for an extended treatment of the Lithuanian *i*-stem inessive.

of EBl. **-ējen*, I will not discuss them in detail here. The *u*-stem ending is more problematic. Žemaitian *tōrg-ōu*, *tōrg-û* (= ‘*turguo*’) < **-uoje* goes back to **-ōjen*, not to the expected **-ōuen*. The same holds probably true for Latv. dial. *-uo*. The more or less standard solution is that **-ēn* was added to loc. sg. **-ō*, an ending that is usually thought to be the regular development of **-ōu* (be it via monophthongization **-ōu* > **-ō* or via loss of the glide).⁴⁷ Word-final long diphthongs, however, seem to have been stable until very recently in the prehistory of Lithuanian.⁴⁸ In my view **-ōjen* can be easily explained as analogical. After contraction in the *o*-stems (which rendered the ending unanalyzable) the inessive of the *ā*-, *ē*- and *i*-stems was reanalyzed as containing a final sequence **-ien*, a reanalysis that must have been practically unavoidable in the *ā*- and *ē*-stems (**-āi-en*, **-ēi-en* → **-ā-ien*, **-ē-ien*) and that evidently was responsible for the creation of the innovated *i*-stem ending **-i-ien*. My claim is that this reanalysis led the *u*-stem ending **-ōuen* to be remade as **-ōjen*, with the final **-ien* now felt as the regular inessive ending. The replacement of this ending by the innovated **-ū-ien* at a still later stage (Lith. *dang-ujè*, Latv. *al-ū*) falls outside of the scope of this article and will not be discussed here.⁴⁹

We can now turn to accentuation. Leaving aside, for the moment, the *o*-stems, Slavic indicates that the locative singular had lexical accent on the ending (Sl. AP *c* **golvě*, **kosti*, **synù*). No accent shift is thus expected and we can safely start from EBl. **galvāi+en*, **zūērēi+en*, (**dangōu+en* →) **dangōi+en*. The original locative endings were non-acute.⁵⁰ Since the grammaticalization of the inessive entailed the loss of the locative, these forms were treated as ‘normal’ morphological units (like the illative but unlike the allative and adessive). Saussure’s law thus took place as expected, yielding **galvājèn*, **zūērējèn*, **dangōjèn* > Lith. *galvojè*, *žvėryjè*, *dangujè*. The

⁴⁷ E.g. Endzelīns 1923, 327; Stang 1966, 215f.; among others. So also Villanueva Svensson 2016, 177.

⁴⁸ The clearest case is the PIE *o*-stem dat. sg. **-ōi*. The difference between Aukštaitian *-ui* (< **-uoi* < **-ōi*) and Žemaitian *-uo* (< **-ō* < **-ōi*) can hardly be explained other than by assuming that the Proto-Lithuanian ending was still **-ōi*. Note also *ā*- and *ē*-stem dat. sg. *šakai*, *kātei* < EBl. **-āi*, **-ēi*.

⁴⁹ See Kazlauskas (1968, 156–159) for an extended treatment of the variants of the *u*-stem inessive singular in Lithuanian.

⁵⁰ I cannot here devote the necessary space to argue for this view. See Villanueva Svensson 2016, 174–177; fthc., §3.2.

Balto-Slavic accentuation of the *o*-stem locative singular is more debated:⁵¹ Slavic **vòžě* points to an enclinenomen, whereas Lith. adv. *namiẽ* points to final accent. Since the whole *o*-stem singular has initial accent in Slavic, the accent of Sl. loc. sg. **vòžě* is easily explained as secondary. The final accent of Lith. *namiẽ* is *lectio difficilior* and this is now confirmed by iness. sg. *miškè*. If Proto-Baltic had loc. sg. **miškaj*, it would have given a form with initial accent in Lithuanian. Enclinenomen behavior was lost already in Proto-Baltic, whereas the inessive was an East Baltic creation. Its final accent must thus reflect ending accentuation in the locative: Bl.-Sl./PBl. **miškáj* > EBl. **miškĕ*[̇] → **miškĕ+en* > **miškĕn* > Lith. *miškè*.

The last case to be discussed is the inessive plural. From what has been said it is evident that the locative plural was preserved into East Baltic with only low-level changes: PIE *-*oi-su*, *-*ah₂-su*, *-*i-su*, *-*u-su* > Bl.-Sl. *-*ai-šù*, *-*ā-su*, *-*i-šù*, *-*u-šù* (Sl. **vozěxъ*, **golváxъ*, **kostъxъ*, **synъxъ*) >→ PBl. *-*ai-sù*, *-*ā-sù*, *-*i-sù*, *-*u-sù* >→ EBl. *-*ā-sù*, *-*ā-sù*, *-*ī-sù* (**i-sù*?), *-*ū-sù* (**u-sù*?) > Lith. dial. *miškuosù*, *šakosù*, *akysù*, (*pietūsė*). The exact order of some innovations may be disputed, but this does not affect the general picture. At a presumably early stage two regularizations took place: 1) the accent of *ā*-stem loc. pl. *-*ā-su* (due to Hirt's law and preserved in Slavic) was normalized to *-*ā-sù*; 2) the *ruki*-rule alternation between *-*su* and *-*šu* was solved in favor of the non-*ruki* variant *-*su*, as regularly in Baltic (cf. Andersen 1968).

Of more importance is the innovation leading to East Baltic *-*ā-sù*, *-*ā-sù*, *-*ī-sù*, *-*ū-sù*. The final vowel of the ending *-*su* remained intact, but the *o*-stem stem vowel **mišk-ai-sù* was remade to **mišk-ā-sù* (Lith. dial. *miškuosù*, Latv. *cīvoķkuōs*) according to a proportion ill. pl. *-*āsnā* : *-*āsnā* = loc. pl. *-*āsu* : X, where X = *-*āsu*. The agreement between Lithuanian and Latvian proves that the common ancestor of both languages had loc. pl. **mišk-ā-sù*.⁵² The *form* of the illative that this analogy demands (*-*āsnā*, without *-n-*) points to an East Baltic date. It follows that relics of *-*oi-su* in Lithuanian numerals (*keturėsu*, *penkiesu*/*keturėse*, *penkiėse* etc. 'in four,

⁵¹ See e.g. Stang 1966, 298f.; Olander 2009, 177; Jasanoff 2017, 143.

⁵² As often assumed, e.g. Stang 1966, 186. The old idea that forms like iness. pl. *miškuosė* were built on the accusative (still accepted by Kazlauskas 1968, 161; Zinkevičius 1980, 212) has nothing to recommend it. By now it seems to have been generally abandoned.

in five') were relics already at the East Baltic stage. Although forms like *keturíesu* are used as adverbs, their connection with the inessive is still self-evident (as clearly indicated by standard Lith. *keturíese*, with 'inessive' °e). The unetymological acute of *keturíesu*/*keturíese* must thus have been taken from *miškúose*, *šakóse* etc. Whether the same analogy took place in the *i*- and *u*-stems (as tacitly assumed above) is uncertain. The bulk of the East Baltic evidence points to **-ī-su*, **-ū-su* (e.g. *i*-stem Lith. *akysù/akýsu*, *akysè/akýse*, Latv. *avîs*). Forms like *akisù*, with short *-i-*, are attested in the dialects, but they are very rare (cf. Zinkevičius 1966, 237f.). They are usually taken as archaisms. This may be true, but it is equally possible (and perhaps more likely) that they are analogical after the short stem vowel *-i-* of (e.g.) dat. pl. *akìms* (< *akimus*) or instr. pl. *akimìs*.⁵³

The influence of the illative on the locative continued after Proto-East Baltic. It is practically impossible to know whether iness. pl. **miškq̄sù*, **galvā̀sù*, **žūērī̀sù*, **dangūsù* (or **-i-sù*, **-u-sù*) were preserved intact in Latvian (something must have fallen after *čilvķkuṑs*, but we do not know what). The Lithuanian inessive plural was heavily influenced by the inessive singular and the illative plural.⁵⁴ The older forms *miškuosù*, *šakosù* etc. are well attested in Old Lithuanian and are also found in the dialects (mostly in Eastern Aukštaitian). Standard Lith. *miškuosè*, *šakosè* etc. has °e from the inessive singular (*miškè*, *šakojè*). A third variant, *miškuosa*, *šakosa* (mostly from Western Lithuania), has °a from the illative (*miškúosna*, *šakósna*). There are two main accentual patterns: 1) final stress *miškuosè*, *šakosè*, mostly in Western Lithuanian, 2) stem-vowel stress *miškúose*, *šakóse*, mostly in Eastern Lithuanian. It is usually assumed, doubtless correctly, that the first one is that of the inherited locative plural (*miškuosù*, *šakosù*), whereas the second one has been taken from the illative plural (*miškúosna*, *šakósna*). Needless to say, the dialects attest different combinations (e.g. *miškúosu*, *šakósu*). The final accent of *miškuosù*/*miškuosè*, as noted above, is inherited from Balto-Slavic (**vozěx̄b̄*).

Finally, it should be mentioned that shortened forms of the inessive singular are fairly common in Lithuanian: *šakōj* (< *šakojè*), *akỹj*/*akij* (< *akyjè*/

⁵³ In Lithuanian the *u*-stems have mostly adopted the *o*-stem inessive plural (e.g. standard *tuŕguosè*) and are thus less informative than the *i*-stems. See Zinkevičius (1966, 251) for relics of the original *u*-stem inessive plural.

⁵⁴ The inner-Lithuanian development of the inessive plural presented here is traditional, cf. e.g. Zinkevičius 1966, 237–240.

akijè) etc. They are also found in the plural, were they are rarer (*miškuōs*, *šakōs*, *akỹs*). As in the case of the illative (Lith. *miškañ* < *miškanà*, *galvōn* < *galvonà* etc.), we expect recent shortenings like these to surface with circumflex intonation and this is what we get.

8. Conclusions

We can now summarize the main results of this article. The illative, allative and adessive were created in Proto-Baltic due to Uralic influence. Their accentuation was determined by the development of Balto-Slavic enclinae in Baltic. When the local cases were created enclinae were still fully preserved, leading to word forms with stress on the original adposition (e.g. *o*-stem all. sg. **miškā+prēj*). When nominal enclinae were lost the accent shifted to the immediate left with concomitant *métatonie rude*, yielding **miškāprēj* (Lith. *miškóp(i)*, in contrast with gen. sg. *miško*). This was the origin of unexpected stress position and unexpected acute intonation in the secondary local cases. Another important conclusion of this study is that the adessive was built on the dative, as first proposed by Rosinas (2000), not, as generally assumed, on the locative.

In their way to East Baltic the local cases underwent a number of innovations, most saliently in the illative plural (**miškōnsnā* → **miškōsnā*) and in the locative (*ā*- and *ē*-stem **-āj*, **-ēj* → **-āi*, **-ēi*; adaption of the plural stem vowel to the illative). The most important East Baltic innovation, however, was the creation of the inessive singular, which replaced the inherited locative. In Lithuanian the local cases were affected by two major sound laws: Saussure's law and Leskien's law. Saussure's law shifted the accent to the right in the illative (e.g. **miškānā* > **miškānā̃* > *miškanà*) and the inessive (**šakājen* > **šakājēn* > *šakojè*). The fact that this did not happen in the allative and adessive indicates that **-p(r)ē* was still segmentable as an adposition at this stage. Leskien's law gave rise to forms ending in a short vowel that was prone to be apocopated (e.g. *miškanà* > *miškañ*, *šakojè* > *šakōj*). Other developments of the local cases in Lithuanian (e.g. extension of iness. sg. *°e* to the plural: *miškuosù* → *miškuosè*) overlap with the beginnings of the recorded history of this language.

BALTŲ-SLAVŲ AKCENTOLOGIJA, AUSLAUTGESETZE IR BALTŲ KALBŲ POSTPOZICINIAI VIETININKAI

Santrauka

Straipsnyje aptariama baltų kalbų postpozicinių vietininkų istorija, remiantis šiuolaikine baltų-slavų akcentologija ir baltų *Auslautgesetze*. Pagrindinis veiksnys, nulėmęs vietos linksnių kirčiavimą, buvo baltų-slavų *enclinomena* raida baltų kalbose. Kai formavosi postpoziciniai vietininkai, *enclinomena* dar buvo kalbos sistemos dalis. Tai davė pradžią galūniniams tokių formų, kaip *o*-kam. vns. all. **miškā+prėj*, kirčiavimui. Kai *enclinomena* išnyko vardažodžio sistemoje, kirtis buvo atitrauktas į artimiausią skiemenį, lydymas akūtinės metatonijos (plg. **miškā+prėj* > **miškāprej*, lie. *miškóp(i)*). Tokiu būdu atsirado postpozicinių vietininkų formos su nelaukta kirčio vieta ir (ar) nelaukta akūtinė priegaide. Kitas svarbus faktorius buvo Sosiūro dėsnis, kuris vyko gerokai vėlesniu laikotarpiu lietuvių kalbos priešistorėje. Kitos išvados, kylančios iš šio straipsnio išėities pozicijos: 1) iliatyvas, aliatyvas ir adesyvas atsirado prabaltų laikais dėl uraliečių kalbų įtakos. Inesyvas buvo sukurtas rytų baltų laikotarpiu; 2) adesyvas buvo sudarytas iš datyvo, kaip pirmasis siūlė R o s i n a s (2000); 3) lokatyvas ir daugiskaitos iliatyvas patyrė svarbių inovacijų rytų baltų laikais; 4) aliatyvo ir adesyvo adpozicinė prigimtis buvo jaučiama gerokai ilgiau nei iliatyvo ir inesyvo, kas lėmė iš dalies skirtingą šių linksnių raidą; 5) kai kurių vietininkų formos aiškinamos naujai (*i*- ir *u*-kam. vns. datyvas ir adesyvas; *ā*- ir *ē*-kam. vns. lokatyvas ir inesyvas; *u*-kam. vns. inesyvas; dgs. iliatyvas).

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