Papers

A token-based investigation of verbal plurality in Lithuanian dialects

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Abstract. This paper examines the use of the verbal suffixes -(*d*)*inė*- and -*dav*- in Lithuanian dialects. Both suffixes express pluractionality, although of different types, and their distribution in Lithuanian dialects differs as well. Using corpus data, we find that in South Aukštaitian -*dav*- is rarer and -(*d*)*inė*- is more frequent than in East Aukštaitian; in Lithuanian dialects of Belarus -*dav*- is almost absent. We argue against the assumption that -(*d*)*inė*- forms have extended into the domain of the past habitual at the expense of -*dav*- forms; a slightly higher token frequency of -(*d*)*inė*- in South Aukštaitian seems to apply irrespective of any particular tense. We also argue that only token-based analyses can substantiate claims concerning areal distribution of certain grammatical forms and constructions.

Keywords: verbal plurality, iterativity, habituality, Lithuanian, dialectology, language contact, corpus linguistics

1 Introduction

Dealing with actionality and pluractionality (a.k.a. 'verbal plurality'),[1] this article takes up a rather well-known topic from Lithuanian morphology, which has also come up

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[1] The term 'verbal number' used, for instance, by Corbett (2000, 243–164) has become somewhat outdated. For surveys cf. Šluinskij (2006), Wood (2007), Bertinetto/Lenci (2012), Mattiola (2019).

several times as the subject of studies on dialect morphology at least since Fraenkel (1936); see §1.2. However, we are unaware of corpus-based studies targeting the role of token frequency and the light they can shed on the distribution of verbal suffixes and their functions in unconstrained discourse. We may therefore consider our study the first token-based investigation, at least of verbal morphology, in Lithuanian dialectology. Before presenting it, we want to clarify the main conceptual premises and give a brief survey of extant research.

Pluractionality "is a phenomenon that marks the plurality or multiplicity of the situations (i.e. states and events) encoded by the verb through any morphological mean that modifies the form of the verb itself" (Mattiola 2019, 4). It should be distinguished from event plurality, which refers to "any linguistic means of expressing a multiplicity of events", thus comprising also adverbials and other means outside the verb (Cabredo Hofherr & Laca 2012, 1). Pluractionality encompasses functions which are related either to the repetition of situations as a whole or to repetitions of sub-events within one global event (or occasion; for such distinctions cf. Cusic 1981, 61). The distinction hinges, of course, on the overarching time-frame (or interval) in relation to which distinct events can be "counted". We do not intend to go into any more detailed theoretical discussion (or ways of formalisation), but on a more intuitive account the distinction can be illustrated as linguistically relevant with examples such as the following ones from Russian:

(1) *Posle*   *obed-a*   *rebenok*
     after   1 unch-GEN.SG   child[M]-(NOM.SG)

     [*obyčno* [[*pryga-et*   *na* *tramplin-e*]   *po* *desjat' minut*]INT]EXT].
     usually   jump[IPFV]-PRS.3SG on trampoline-LOC.SG for 10   minute-(.GEN.PL)

     'After lunch the child usually jumps for ten minutes on the trampoline.'

(2) *V* *prošl-uju*   *noč'*   *bol'n-oj*
     in   last-ACC.SG.F   night[F]-(ACC.SG) sick-NOM.SG.M

     [[*dolgo*   *kašlja-l*]INT   *každ-ye*   *dvadcat'* *minut*]EXT
     long_time   cough[IPFV]-PST-(M.SG) every-ACC.PL   20   minute-(GEN.PL)

     'Last night the sick person coughed for a long time every twenty minutes.'

In these examples the verb forms *prygaet* 'jumps' and *kašljal* 'coughed' denote situations that are internally fragmented into sub-intervals; this fragmentability is part of the meaning of these verbs, which are therefore often called 'multiplicatives' (Xrakovskij 1987; 1997), and they have many features in common with progressive aspect. Concomitantly, in (1–2) the respective situation as a whole is marked by an adverbial either indicating habituality (*obyčno* 'usually') or a rate at which the repetition occurs (*každye dvadcat' minut* 'every 20 minutes'). These temporal adverbials scope over the internally fragmented situations

denoted by the verbs; in (1–2) the narrower (= internal) and wider (= external) scope is indicated by subscripted indexes. This scope relation corresponds to the semantic "insertion" of internal sub-intervals into larger external intervals and the different fine-grainedness, which cannot be reversed.[2] In this sense, the external interval sets a frame for the count of repetitions of sub-intervals inherent to the semantics of multiplicative verbs: in each single interval "counted" by the external time adverbial a certain "amount" of sub-events of the process denoted by the multiplicative verbs takes place. This also shows that external and internal event plurality operate independently from one another and, after all, that they represent two different types of repetition.

In order to not mix them up, an indication of internal subinterval properties will be called 'repetitive' (following Cusic 1981, 80ff.), whereas the count of the external interval will be named 'frequentative'; 'iterative' will be employed as an unspecific umbrella term. These rather simple terminological decisions are meant to make maximally transparent the cut between event-internal and event-external pluractional meanings and to remain as close as possible to those terms which seem to have become most commonplace in the typological literature.[3] Moreover, on this account, habituals and unrestricted (regular or irregular) repetition of global events belong to event-external plurality. Habituals can acquire meanings of dispositional or circumstantial modality (compare *John repairs any car* ≅ *John is able to repair any car*), although this need not be the case (e.g., *Usually / Every Monday, John repairs cars* does not trigger a modal reading). On the other hand, multiplicative verbs, or verb forms, often yield progressive meanings (which refer to processes consisting of multiple phases without a natural segmentation), or the differences between repetitive and progressive interpretation are blurred; this happens if no identical subevents can be figured out or this is communicatively irrelevant (compare *The girls are giggling* or *They were pouring water into the pool*). We will indicate such problems in our analysis (§2.1.3).

Now, while verbs like Russ. *prygat'*, Lith. *šokti* 'jump' and Russ. *kašljat'*, Lith. *kosėti* 'cough' can readily be used as repetitive without any special morphology (just as their English equivalents), there are morphemes able to mark a verb as repetitive, i.e. as indicating event-internal plurality. One such morpheme is the Lithuanian suffix *-inė-*, which is productive both with unprefixed and prefixed verbs (e.g., *šokti* ⇒ *šok-inė-ti*

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[2] In addition, the external interval (*obyčno* 'usually') can itself be inserted in an even larger interval (*v prošluju noč'* 'last night' in ex. (2)). Alternatively, there may be another time adverbial which sets up a reference interval for each external repetition (*posle obeda* 'after lunch' in ex. (1) or an inclusive or distributive interval (*po desjat' minut* 'for 10 minutes' in ex. (1)). These considerations, however, are not essential for our analysis in §2.

[3] In particular, 'iterative' is among the vaguest terms of this domain (Šluinskij 2006), while 'repetitive' as employed here corresponds to the use in Cusic (1981) and is equivalent to 'multiplicative' (as a verb class) in Xrakovskij (1997). 'Frequentative' is similar to 'habitual', but the latter is usually associated with a modal nuance, which we want to avoid as a general feature of *-dav-* (see §1.1).

'jump', *prašyti* ⇒ *praš-inė-ti* 'ask, request'; ***at****-sakyti* ⇒ *atsak-inė-ti* 'answer'). Others, like Lith. *-dav-*, serve to mark event-external plurality; this meaning is syncretic with past tense (e.g., *ger-ti* 'drink' ⇒ *ger-dav-o* 's/he / they used to drink').

In the remainder of this section we will survey the state of the art on these two suffixes, both for the standard language and in the dialects (§1.1–1.2), and we will give a brief account of the corpus (§1.3) which serves as the basis for our analysis presented in §2. A summary will be given in §3.

1.1 The frequentative suffix {dav}

This suffix marks the past habitual. Even though traditionally verbal forms with *-dav-* are treated as a separate tense (Lith. *būtasis dažninis laikas* 'past iterative tense'), the opposition between simple past and *-dav-* forms has also been viewed as an aspectual one (Holvoet/ Pajėdienė 2004, 124). For comprehensive functional accounts cf. Arkadiev (2012, 78–84) and Sakurai (2015), from where these Standard Lithuanian examples are cited:

(3) *Vien-as*   *kit-as*   *turėj-o*   *automobil-į,*
     one-NOM.SG.M other-NOM.SG.M have-PST.3   car-ACC.SG

   bet   *daugum-a*   ***at.važiuo-dav-o***   *autobus-u*.
   but   majority-NOM.SG PVB.come-HAB-PST.3   bus-INS.SG

   'Some possessed a car, but the majority (of them) **came** [one after the other] by bus.'

(4) *Kai*   *moki-au-si*   *pradin-ėje*   *mokykl-oje*
     when   learn-PST.1SG-RFL beginning-LOC.SG.F   school-LOC.SG

   ir   *namo* ***grįž-dav-au***   *anksti,*
   and   home   return-HAB-PST.1SG   early

   miest-as   ***at.rody-dav-o***   *visiškai*   *kitaip*.
   town-NOM.SG   PVB.look-HAB-PST.3   entirely   differently

   'When I was a pupil in primary school and (when) I **used to return** home early, the town **looked** totally different.'

The habitual-past suffix is a rather recent innovation restricted to the Aukštaitian area and some adjacent Samogitian dialects (Stang 1942, 172f., Toporov 1961, 55, Zinkevičius 1966, 356). Historically it comes from an iterative suffix *-dau-* (Pakerys 2017). Consequently, *dav*-forms are attested only for some Lithuanian dialects, namely Aukštaitian and nearby Samogitian. It has been noted that South Aukštaitian dialects rarely use these forms or do not use them at all (Zinkevičius 1966, 356, Vidugiris 2004, 233).

1.2 The repetitive suffix {inė}

The suffix {dinė}[4] differs from {dav} in many respects. First, it is used in the derivation of stems with values usually associated with imperfective aspect, but it is only marginally employed to denote habitual actions. It rather marks repetitive meanings; compare examples from the Corpus of Contemporary Lithuanian (CCL: http://tekstynas.vdu.lt/):

(5) *Ji labai norėtų kūdikio,*

    tačiau vyr-as   *vis*   **į.kalb-inėj-a**   *pa.lūkė-ti*   (CCL)
    but   husband-NOM.SG   all.the.time PVB.speak-REP-PRS.3 PVB.wait-INF

    'She very much wants a child, but her husband **persuades** her all the time to wait a little bit.'

(6) *(…) vis* **į.kalb-inėj-o**   *j-ą*   *pa.rašy-ti* *apie* *savo „kelion-es",*
    constantly PVB.speak-REP-PST.3 3-F.ACC.SG PVB.write-INF about REFL journey-ACC.PL

    bet *j-i*   *atkakliai* **at.si-sak-inėj-o** *(…).* (CCL)
    but   3-F.NOM.SG firmly   PVB.RFL-say-REP-PST.3

    'People constantly were **talking** her **into** writing about her "journeys", but she (all the time) firmly **refused**.'

(7) *Neleiskite, kad*

    k-as nors   **į.kalb-inė-tų**   *ar ginčy-tų-si*   *su* *j-umis,*
    anybody-NOM PVB.speak-REP-SUBJ.3 or argue-SUBJ.3-RFL with 3-INS.PL.M

    nes tada galite nukrypti nuo teisingų dalykų.   (CCL)

    'Don't allow anybody **to talk** you **into** something or argue with you, because then you can wander away from the right things.'

The stem *įkalbinėti* is derived from *įkalbėti* 'persuade, talk into' and primarily denotes goal-directed speech activity by which some addressee is to be persuaded to do (or to think) something. The present (ex. 5) and past tense (ex. 6) forms of *įkalbinėti* are compatible with repeated situations "counted" as a whole. However, the external interval for iterated actions has to be marked by some suitable adverbial, like *vis* 'always, all the time' in (5–6). Otherwise *įkalbinėti* just denotes intense goal-directed action within one larger interval. Thus, for instance, *įkalbinėjo ją parašyti apie savo keliones* (see ex. 6) would just mean 's/he / people were trying to persuade her to write about her journeys', and this is compatible with repetition over a couple of larger intervals, but does not denote it by itself. In (7) *įkalbinėti* is in the subjunctive and coordinated with the atelic activity verb *ginčytis* 'quarrel, argue'.

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[4] In the standard language, *-dinė-* is an allomorph (see §2.1).

Therefore, while {dav} belongs to the domain of event-external plurality, {inė} should be considered a marker of event-internal plurality, or even of actionality inasmuch as the borderline with the progressive meaning is fuzzy. As such, {inė} can non-redundantly combine with {dav}, but only in the order {inė}+{dav}; cf.:

(8) *Jie visaip proteguodavo savuosius kandidatus,*

    į.kalb-inė-dav-o   *žmon-es*   *ne-kel-ti*   *„netinkam-ų"*
    PVB.speak-REP-HAB-PST.3 people-ACC.PL NEG-raise-INF unsuitable-GEN.PL

    kandidat-ų (…).   (CCL)
    candidate-GEN.PL

    'They promoted their own candidates in every way, **repeatedly** they **tried to persuade** people to not propose "unsuitable" candidates.'

Second, {inė} is not restricted to the past domain, but freely combines with any tense and mood (see ex. 5–7). For these two reasons, {inė} has been compared to the Slavic suffix {iva} used to derive imperfective stems from prefixed perfective stems (so-called secondary imperfectivization). However, suffixation with {inė} is quite common also for simplex stems (Kardelis/Wiemer 2003, 65f.; see also §2.1.3), a phenomenon which in the neighboring Slavic languages occurs only rarely.

Third, the origin of {inė} and its spread within Aukštaitian markedly differ from the provenance and areal spread of {dav}. Suffixation with {inė} was apparently much more frequent in Lithuanian varieties surrounded by East Slavic (as in extinct or moribund insular dialects) or in closer vicinity to East Slavic. Thus, since Fraenkel (1936), attention has been drawn to an increased productivity of {inė} in the borderland with Belarus and in (now mostly extinct) insular Lithuanian dialects in Belarus (Vidugiris 1961; 1998; 2014, 224, Wiemer 2009, 361f.). Fraenkel (1936, 104) spoke of "exact imitations of Slavic differences of aspect and modes of action"[5] in the border region with Belarus, while Rozwadowski (1995, 130) noted that in the dialect of Zietela (Belarus) verbs in *-(d)inė-* were used without any particular actional values.[6] Anyway, it is not too difficult to show that even under intense contact conditions the relevant Lithuanian varieties do not use these resources in the derivation of verb stems with tightly-knit functions of grammatical aspect to the same extent as do Slavic languages (Kardelis/Wiemer 2002; 2003, 64, Pakerys/Wiemer 2007). In this respect, dialects do not very much differ from the standard language (for which cf. Wiemer 2001, Arkadiev 2012, 58–60, Arkadiev et al. 2015, 31–35). Nonetheless, there remains the (much more interesting) question of

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[5] "genaue Nachahmungen der slavischen Aspekt- und Aktionsartunterschiede."
[6] "Czasowniki z sufiksami iteratywnymi *-dinėti*, *inėti* mogą pełnić funkcję czasowników prymarnych (nienacechowanych co do rodzaju czynności)." Rozwadowski's fieldwork notes from the late 1920s and early 1930s were published rather recently.

whether contact with (East) Slavic enhances the propensity for using verbal suffixes to derive stems with changed actionality or functions of pluractionality – both on type and on token level. Only the type level has been studied to some extent (cf. Kardelis/Wiemer 2003, 59–66; Wiemer 2009, 361–363, 367–385), while the token level has not been studied at all. Our case study provides the first attempt at doing so.

1.3 The *TriMCo*-corpus

Our research is based on the Lithuanian part of the *TriMCo*-corpus, which was created in connection with the *TriMCo*-project (www.trimco.uni-mainz.de).[7] The corpus consists of dialectal texts transcribed in *ELAN* (https://tla.mpi.nl/tools/tla-tools/elan/). The largest part of the texts belongs to mixed Belarusian varieties from the Slavic-Baltic contact zone in Belarus, Lithuania and Latvia (Latgalia). Smaller portions come from Russian dialects in the Pskov region and from Latgalian. The Lithuanian part, although considerably smaller than the Belarusian one, is currently much better prepared for token-based research, as it has been annotated morphologically at a sufficiently reliable level by one of the authors of this article. It is planned to make the corpus publicly accessible; it forms part of the network *SpoSla* (*Corpus-based Research into Sociolinguistic and Dialectal Variation in Slavic Languages*); see http://parasolcorpus.org/Spoken-Slavic/. For more details see Table 1 and Wiemer et al. (2019).

variety; region	hours:minutes	number of informants	number of tokens (word forms)[8]
Belarusian; Belarus, borderland with Lithuania (Lida – Braslav)	27:00	83	179,041
Belarusian; South and East Lithuania	17:12	71	122,273
Belarusian; Latgalia	7:00	9	40,476
Russian; Pskov region (oblast')	14:00	30	88,458
Σ East Slavic	**65:12**	**193**	**430,248**
Lithuanian; Ignalina district	10:19	41	65,593
Lithuanian; Dzūkija	06:06	24	42,319

[8] These figures include a comparatively small amount of interviewers' turns. Relevant tokens occurring in such turns have been excluded in the counts of the case studies (see §2).
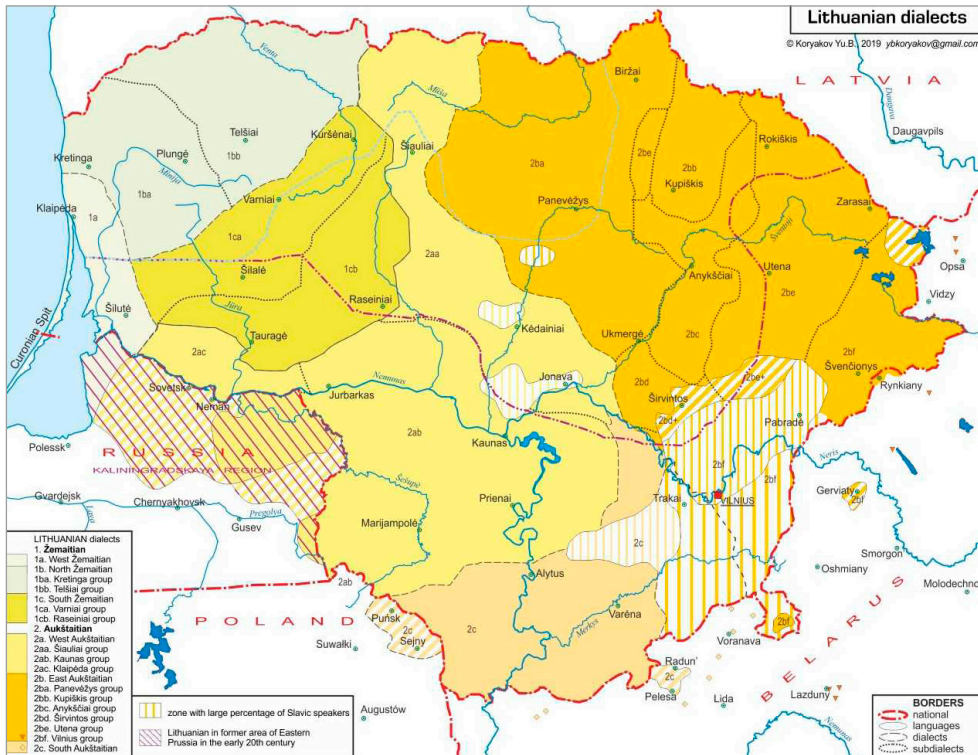
variety; region	hours:minutes	number of informants	number of tokens (word forms)[8]
Lithuanian; Pelesa, Ramaškonys (Ramaškancy, Belarus)	05:00	17	34,989
Latgalian	13:00	22	94,107
Σ **Baltic**	**34:25**	**104**	**237,008**
altogether	**99:37**	**297**	**667,256**

Table 1. The *TriMCo* corpus (stage: May 2017).

As can be inferred from Table 1, the three Lithuanian subcorpora belong to different regions of the Aukštaitian area and are of rather unequal size. The East Aukštaitian and South Aukštaitian parts are of comparable size only if we unite the two smaller parts, which, though belonging to the South Aukštaitian dialect area, are separated by the state border between Lithuania and Belarus.
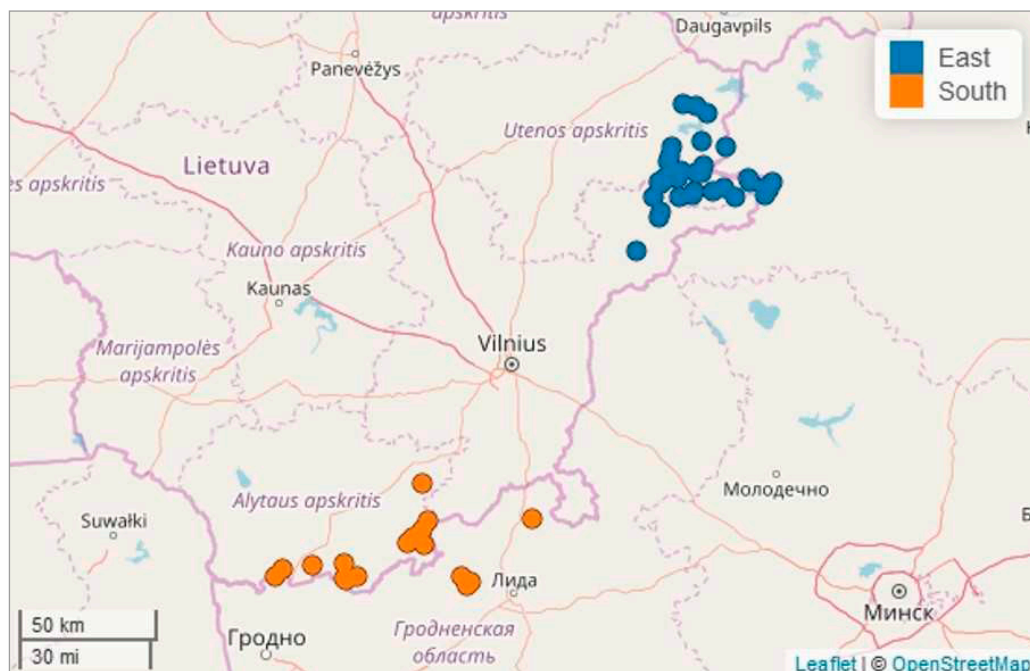
Map 1 shows the Baltic dialect continuum, Map 2 zooms into Map 1 and illustrates how the spots where the texts of the corpus were recorded relate to this continuum.

Map 1. Lithuanian dialects[9]

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[9] We would like to thank Yury Koryakov for providing us with this map.

Map 2. Places of recordings used in the Lithuanian part of the TriMCo Corpus (East Aukštaitian vs. South Aukštaitian)[10]

2 Token-based investigation of the suffixes

Here we offer our analysis of the two suffixes that mark pluractionality in Lithuanian dialects — -(*d*)*inė*- and -*dav*-. There are some other suffixes that can add a pluractional meaning to a verb, namely -*dy*-, as in *atei-ti* 'come' : *atei-dy-ti* 'come repeatedly', and -*o*-, as in *neš-ti* 'carry' : *neši-o-ti* 'carry repeatedly; wear'. But since these are less productive, we did not take them into account.

2.1 -*inė*- vs -*dinė*-

There has been some inconsistency in how to treat the segments -*inė*- and -*dinė*- — as two distinct suffixes or as allomorphs of one and the same suffix. In Standard Lithuanian, the solution is rather straightforward, as the distribution is practically complementary: -*inė*- appears if the stem ends in a consonant, whereas -*dinė*- occurs with stems ending in a vowel; compare, for instance, *šok|ti* 'jump' : *šok-inė-ti* 'jump repeatedly' and *jo|ti* 'ride' : *jo-dinė-ti* 'ride repeatedly'. They thus should be regarded as allomorphs of the same

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[10] The map was created using the package *lingtypology* in *R* (Moroz G (2017). lingtypology: easy mapping for Linguistic Typology. <URL: https://CRAN.R-project.org/package=lingtypology>).

suffix. The data from Lithuanian dialects are less straightforward: for instance, in the South Aukštaitian part of the *TriMCo* corpus, both *-inė-* and *-dinė-* can be attached to the same root; compare *mušinėti* (1 token) : *mušdinėti* (3 tokens) 'beat repeatedly', *pirkinėti* (1 token) : *pirkdinėti* (4 tokens) 'buy repeatedly' etc.[11] We therefore start by discussing the differences and similarities between the two variants in the *TriMCo* corpus.

2.1.1 Areal distribution

Let us first check if these two variants are evenly distributed across the dialect areas represented in the TriMCo corpus (East Aukštaitian vs. South Aukštaitian divided into two parts, i.e. on either side of the Lithuanian–Belarusian border). Table 2 shows that there is a statistically significant dependency between the variant of the suffix and its areal distribution. The variant *-dinė-* is very rare in East Aukštaitian, whereas in either part of South Aukštaitian its frequency is considerably higher. Although still *-inė-* clearly outnumbers *-dinė-*, the distance is much closer.

Suffixes	East		South		Belarus		Total	
	raw numbers	%	raw numbers	%	raw numbers	%	raw numbers	%
-inė-	56	40%	44	31%	40	29%	140	100%
-dinė-	2	5%	19	49%	18	46%	39	100%
Total (% *-inė-* vs. *-dinė-*)	58 (100%) 97% vs. 3%		63 (100%) 70% vs. 30%		58 (100%) 69% vs. 31%			

Table 2. Distribution of the variants *-inė-* and *-dinė-* across dialectal zones, Pearson's χ^2-test: χ^2 (2) = 16.948; p = 0.0002; Cramér's V = 0.308

Importantly, the most frequent lexeme with the suffix *-inė-* is *važinėti* 'drive'. It makes up 49% of all repetitives with the suffix *-inė-*; see Table 3.

Suffixes	East		South		Belarus		Total	
	raw numbers	%	raw numbers	%	raw numbers	%	raw numbers	%
-inė-	56	100%	44	100%	40	100%	140	100%
važinėti	17	30%	27	61%	24	60%	68	49%

Table 3. The percentage of the verb *važinėti* 'drive' of all repetitives across dialect zones

We may thus assume that the higher percentage of the verb *važinėti* among all repetitives with the suffix *-inė-* in South Aukštaitian is the result of an extensive spread of the variant

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[11] Probably this is one of the arguments that led Vidugiris (1998) to consider these variants as two distinct suffixes in South Aukštaitian dialects. However, he did not consider the possibility of free variation.

-*dinė*-, i.e. verbs ending with a consonant that would take -*inė*- in Standard Lithuanian or East Aukštaitian, combine with -*dinė*- in South Aukštaitian, but *važinėti* remains as a lexicalized variant.[12] However, we see that in East Aukštaitian the variant -*inė*- shows a less skewed distribution across lexemes than in the other zones. Let us exclude the biasing lexeme *važinėti* from the statistics and look at the resulting figures:

	East		South		Belarus		Total	
Suffixes	raw numbers	%	raw numbers	%	raw numbers	%	raw numbers	%
-*inė*-	39	54%	17	24%	16	22%	72	100%
-*dinė*-	2	5%	19	49%	18	46%	39	100%
Total (% -*inė*- vs. -*dinė*-)	41 (100%) 95% vs. 5%		36 (100%) 47% vs. 53%		34 (100%) 47% vs. 53%			

Table 2a. Distribution of the variants -*inė*- and -*dinė*- across dialectal zones (*važinėti* excluded), Pearson's χ^2-test: χ^2 (2) = 26.117; $p < 0.0001$; Cramér's $V = 0.485$

After the biasing lexeme is excluded, we can ask whether -*dinė*- is more productive in the Southern zone. Support for this is provided by the number of different lexemes attested with each variant in the different dialect zones:

	East	South	Belarus
-*inė*-	19	11	8
-*dinė*-	2	11	12

Table 4. Number of distinct lexemes with each suffix, Pearson's χ^2-test: χ^2 (2) = 12.408; $p = 0.002$; Cramér's $V = 0.444$

The lexical diversity of -*inė*- is significantly larger in the East than in the other regions, while the lexical diversity of -*dinė*- shows an opposite distribution. All these observations indicate that the two variants -*inė*- and -*dinė*- are possibly not allomorphs; instead they clearly tend toward complementary areal distribution.

2.1.2 Derivational properties

As already stated, the dialectal distribution of the variants -*inė*- and -*dinė*- is different from the standard language. However, it is only the variant -*dinė*- that broadens its derivational properties: -*inė*- always follows a stem ending with a consonant, while -*dinė*- can follow both consonants and vowels; cf. Table 5.

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[12] Still, the lexeme *važiuodinėti* is also present in South Aukštaitian.

Suffixes	stems ending with a consonant		stems ending with a vowel		Total	
	raw numbers	%	raw numbers	%	raw numbers	%
-inė-	140	100%	0	0%	140	100%
-dinė-	17	44%	22	56%	39	100%

Table 5. Distribution of *-inė-* and *-dinė-* over stems[13], Fisher's exact test: $p < 0.00001$; Cramér's $V = 0.709$

Another difference between the two variants suggested in the literature is that *-inė-* derives stems based on the past tense, while *-dinė-* attaches to the infinitival stem (Vidugiris 1961, 220). According to the TriMCo data, this claim holds true for *-dinė-*, whereas *-inė-* can derive verbs from various stems (not only from the past tense stem); compare the present tense stem *išein-**inė**-dam-i* 'leaving' (*ei-ti*.INF ~ *ein-a*.PRS-3 ~ *ėj-o*.PST-3) (East Aukštaitian, Kalv), the widespread verb *važ-**inė**-ti* 'drive' derived from *važiuoti* (*važiuoj-a*.PRS-3 ~ *važiav-o*.PST-3) (here, however, it is not clear from which stem), or *dav-**inė**-ti* 'give' which is clearly derived from the past stem (*duo-ti*.INF ~ *duod-a*.PRS-3 ~ *dav-ė*.PST-3).

It has also been claimed that in South-Eastern Lithuanian dialects verbs with the suffix *-(d)inė-* are usually prefixed (Vidugiris 1998, 185). Furthermore, at least in the Zietela dialect, the variant *-dinė-* is more often attached to prefixed verbs than *-inė-* (Vidugiris 1961, 220).

Our corpus data show that both variants combine with prefixed verbs quite often, but the difference between them is not so straightforward. At first sight, the data from the TriMCo corpus covering both East and South Aukštaitian dialects show that *-dinė-* is attached to prefixed verbs more often than *-inė-*; see Table 6.

Suffixes	Non-prefixed		Prefixed		Total	
	raw numbers	%	raw numbers	%	raw numbers	%
-inė-	64	54%	76	46%	140	100%
-dinė-	5	13%	34	87%	39	100%

Table 6. Distribution of *-inė-* and *-dinė-* over prefixed and non-prefixed lexemes, Pearson's χ^2-test: $\chi^2 (1) = 12.579$, $p = 0.0003902$; Cramér's $V = 0.279$

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[13] We also ran the test excluding the Eastern Aukštaitian data, but the results turned out to be the same: *-inė-* never follows a stem ending with a vowel, and *-dinė-* can combine with both types of stems (more or less evenly).

However, if we exclude the non-prefixed stem *važinėti*, the difference between the two suffixes is not significant anymore.

Suffixes	Non-prefixed		Prefixed		Total	
	raw numbers	%	raw numbers	%	raw numbers	%
-inė-	16	22%	56	78%	72	100%
-dinė-	5	13%	34	87%	39	100%

Table 6a. Distribution of *-inė-* and *-dinė-* over prefixed and non-prefixed lexemes (*važinėti* excluded), Pearson's χ^2-test: $\chi^2(1) = 0.90924$, $p = 0.3403$; Cramér's $V = 0.115$

The preference for prefixed verbs that both variants demonstrate might have to do with the actional classes of the stems they attach to. We followed the classification of Lithuanian actional verb classes offered in (Arkadiev 2009; 2011; 2012), which itself is based on Tatevosov (2002; 2005); cf. also Tatevosov (2016). Thus, we coded the verbal stems to which *-inė-* and *-dinė-* attach as strong telic (as in (9), where the verb is derived from *parduoti* 'sell'), weak telic (as in (10), where the verb is derived from *šokti* 'jump'), and processual[14] (as in (11), where the verb is derived from *važiuoti* 'drive'). The difference between the telic classes is that weak telic in the simple past forms can have either a process or an event interpretation, while strong telic verbs yield only an event interpretation.

(9) *višt-As   perdav-inĖ:-sʲ-me*
     chicken-ACC.PL sell-REP-FUT-1PL

     'we will sell chickens' (east, Laz)[15]

(10) *raIk-e   šo·k-inĖ:-c   apʲliNk*
     need-PRS.3   jump-REP-INF   around

     'one needs to jump around' (east, Vile)

(11) *dabaR   mašIn-o·m   važ-iniEj-e*
     now   car-INS.PL   drive-REP-PRS.3

     'now they drive (around) in cars' (south, Dru)

Again, at first glance, our data show that in most cases the suffix *-inė-/-dinė-* is attached to telic (strong or weak; i.e. those that can or must have an event interpretation in the simple past) verbs (72%, i.e. 128 out of 179 tokens). If the lexeme *vazinėti* (derived from

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[14] We use this term here (as does Arkadiev) in order to avoid confusion with progressive grams (as in English).

[15] See notes on the dialectal Lithuanian transcriptions under Abbreviations.

the processual verb *važiuoti*) is excluded, the percentage of derivations from telic verbs grows even bigger (98%, i.e. 109 out of 111 tokens).

Now, if we compare the two variants with regard to the telicity of the verbs they are attached to, the results are similar to the test on compatibility with (non)prefixed verbs: the difference is significant only if the biasing lexeme *važinėti* is included in the count; see Tables 7 and 7a.

	Strong telic		Weak telic		Processual		Total	
Suffixes	raw numbers	%	raw numbers	%	raw numbers	%	raw numbers	%
-inė-	82	59%	6	4%	52	37%	140	100%
-dinė-	38	97%	1	3%	0	0%	39	100%

Table 7. Distribution of *-inė-* and *-dinė-* with different actional classes, Fisher's exact test: $p < 0.00001$; Cramér's $V = 0.347$

	Strong telic		Weak telic		Processual		Total	
Suffixes	raw numbers	%	raw numbers	%	raw numbers	%	raw numbers	%
-inė-	63	88%	6	8%	3	4%	72	100%
-dinė-	38	97%	1	3%	0	0%	39	100%

Table 7a. Distribution of *-inė-* and *-dinė-* with different actional classes (*važinėti* excluded) Fisher's exact test: $p = 0.2507$; Cramér's $V = 0.171$

That is, the suffix *-(d)inė-* is rarely attached to processual verbs (if we exclude the lexeme *važinėti*, there are only two examples). We may also infer that the main function of the suffix is to make telic stems available for marking ongoing processes.

It is worth noting that certain prefixed verbs with the suffix *-(d)inė-* are not derived with the suffix from prefixed verbs but are rather prefixed derivatives of repetitive verbs. That is, the prefix is the last member in a derivational chain which telicizes the already suffixed stem. This is often the case especially for the prefixed derivatives of *važinėti*; compare *važi-uo-ti* 'drive' (processual) > *važ-**inė**-ti* 'drive repeatedly; in different directions' (processual) > ***pra**-važinėti* 'spend by driving' (telic):

(12) kIek   pra.važ-inĖ·j-e   t-u·   pinig-U:
      how.much   PVB.drive-REP-PRS.3   that-GEN.PL   money-GEN.PL

      'how much money [he] spends by travelling!' (Belarus, Pelesa)

This order of derivational steps can be assumed since the prefix does not introduce a border (goal, source, or whatever) of some directed movement, but only puts a temporal

limit to the atelic action or, as in (12), marks the achievement of some non-spatial boundary which follows from this action.

2.1.3 Semantics

In accordance with the meanings distinguished in Geniušienė (1989), but adapted to the terminology introduced in §1, we coded the semantics of the verb forms suffixed with -inė-/-dinė- as follows:

(i) frequentative meaning: Prototypical multiple events presuppose the same participants of the situation; see (13). However, sometimes different multiple subjects or multiple objects can be involved; see (14). Finally, the repetition of events often yields the meaning of ability; see (15).

(13) *ankšʲičeU*   *labai*   *teN*   *dažnaI*   *važ-inĖːj-oˑm*
     earlier   very   there   often   drive-REP-1PL.PST

     'we used to drive there very often' (south, Var)

(14) *Aˑn-as*   *važʲUoːj-e*   *lask-uːt-Us*   *su-pirʲk-inĖːj-e*
     he-NOM.SG   drive-PRS.3   scrap-DIM-ACC.PL   PVB-buy-REP-PRS.3

     'He drives around, buys scraps' (east, Kalv)

(15) *vien-A*   *mOːter-Is*   *at-kalʲb-inIeːjʲ-oˑ*
     one-NOM.SG.F   woman-NOM.SG   PVB-speak-REP-PST.3

     'one woman could charm [against diseases]' (east, Mald)

(ii) repetitive meaning; see (16).

(16) *taI*   *dėˑlʲ kOː*   *jUs*   *cA*   *at-Aˑj-oˑt*   *klaus-inĖː-t*
     so   why   you.NOM.PL   here   PVB-go-PST.2PL   ask-REP-INF

     'so why did you come here to ask questions?' (south, Var)

(iii) processual meaning; see (17).

(17) *kai*   *Aˑn-iˑs*   *až-ei-dinĖːj-oˑ* |
     when   3-NOM.PL.M   PVB-go-REP-PST.3

     naˑ   *manIːs*   *acʲ-kʲrIˑd-a* | *du*   *telʲOːk-us*   *ažUˑ-muš-eˑ*
     on   1.GEN.SG   PVB-run-PST.3   two   calf-ACC.PL   PVB-beat-PST.3

     'when they [the Germans] were occupying, [they] attacked me, and killed two calves'   (east, Kalv)

Not all examples are straightforward. See (16), where one could also argue for event-external pluractional meaning ('several asking events occurring in one larger interval').[16] Or compare (18), in which even the broader context does not allow for a specific interpretation, i.e. both repetitive (multiple actions in a specific situation) and habitual ('when someone marries an alcoholic, they have to…') are possible:

(18) *nu-veIn-a*   *aš*   *ko·kʲ-O:*   *pijO:k-o·*   *do· |*
       PVB-go-PRS.3   behind   what-GEN.SG.M   alcoholic-GEN.SG   even

       raIk-e   *šo·k-inĖ:-c*   *apʲliNk*
       need-PRS.3   jump-REP-INF   around

       '[they] marry some alcoholic, and one has to jump around [him]' (east, Vile)

Such cases were coded separately (as 'NA') and excluded from the further statistics.

As regards the semantics of the verb forms, the comparison of the two variants did not yield any significant difference; see Table 8.

suffixes	frequentative		repetitive		processual		total	
	raw numbers	%	raw numbers	%	raw numbers	%	raw numbers	%
-inė-	97	73%	25	19%	11	8%	133	100%
-dinė-	35	90%	3	8%	1	2%	39	100%

Table 8. The suffixes *-inė-* and *-dinė-* and semantics of the verb forms they are attached to Fisher's exact test: $p = 0.1146$; Cramér's $V = 0.167$

2.1.4 Interim conclusions

Even though the variants *-inė-* and *-dinė-* differ in their areal distribution (the variant *-dinė-* is much more frequent in South Aukštaitian) and in some derivational properties (*-dinė-* is always attached to the infinitival stem, whereas *-inė-* shows some variation), there is no ground to view them as two separate suffixes. The apparent difference between the two variants in their compatibility with various types of verb stems (with respect to their actionality class or derivational structure: prefixed vs. non-prefixed) turns out to be illusory once the biasing lexeme *važinėti* 'drive' is excluded. Therefore, we can regard *-inė-* and *-dinė-* as phonetically distributed allomorphs in Standard Lithuanian and East Aukštaitian and as free variants of the same suffix in South Aukštaitian.

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[16] Similar borderline cases between event-internal and event-external pluractionality are discussed in Šluinskij (2006, 55–59).

2.2 Areal distribution of *-(d)inė-* in comparison with *-dav-*

The suffixes *-dav-* and *-(d)inė-* are both employed to mark pluractionality. However, their distribution within Lithuanian dialects is not even.

Forms with the suffix *-dav-* are attested only for some Lithuanian dialects, namely Aukštaitian and neighboring West Samogitian dialects. It has been noted that South Aukštaitian dialects rarely use these forms or do not use them at all (see §1.1). The data from the *TriMCo* corpus support this claim and clearly show that *dav*-forms appear in East Aukštaitian much more often than in South Aukštaitian. In the South Aukštaitian data from Belarus such forms turned out to be almost absent.

	East (Corpus size 65,593)			South (Corpus size 42,319)			Belarus (Corpus size 34,989)		
	raw numbers	%	Normalized frequency (ipm)	raw numbers	%	Normalized frequency (ipm)	raw numbers	%	Normalized frequency (ipm)
-dav-	1,095	16%	16,693.85	221	6%	5,222.24	3	0,1%	85.74
simple past	5,877	84%	89,597.98	3,467	94%	81,925.38	2,668	99,9%	76,252.54

Table 9. Distribution of past tense forms in the TriMCo corpus, Pearson's χ^2-test: χ^2 (2) = 613.77; $p < 0.0001$; Cramér's $V = 0.215$[17]

It has also been noted that the suffix *-(d)inė-* is, in turn, more frequent in the South Aukštaitian dialects, especially in the dialects located in Belarus (e.g., Vidugiris 1998: 184). The data from the *TriMCo* corpus support this claim as well.

	East (Corpus size 65,593)			South (Corpus size 42,319)			Belarus (Corpus size 34,989)		
	raw numbers	%	Normalized frequency (ipm)	raw numbers	%	Normalized frequency (ipm)	raw numbers	%	Normalized frequency (ipm)
-(d)inė- forms	58	0.45%	884.24	63	0.85%	1,488.69	58	1.02%	1,657.66
other verbal forms	12,835	99.55%	195,676.37	7,371	99.15%	174,177.08	5647	98.98%	161,393.58

Table 10. Distribution of all verbal forms in the TriMCo corpus, Pearson's χ^2-test: χ^2 (2) = 22.499; $p < 0.0001$; Cramér's $V = 0.029$

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[17] Relatively small effect size (Cramér's V) here and in the next table is the result of clear dominance of one outcome (simple past in this table or other verbal forms in Table 10) in all three dialectal areas.

Table 10 shows that -(*d*)*inė*- forms occur in the South Aukštaitian dialects of Belarus more than twice as often than in the East Aukštaitian dialects (the odds ratio is 2.27).

As has been noted for the standard language, -*dav*- and -*(d)inė*- can be combined; compare, for instance, *pardav-inė-dav-o* ≈ 'used to be occupied with selling', *atkalb-inė-dav-o* 'used to advise against', *perim-inė-dav-o* 'used to take over' (see §1.2). In our corpus, only seven such cases were observed, but all of them are from the East Aukštaitian part.

(19) *Ale*   *žmO:n-es*   *dougEusei*   *perdav-inĖ:-dav-oˑ* |
       but   people-NOM.PL   mostly   sell-REP-HAB-3

       atʲvEˑžiˑ   *iš*   *kuR*   *tai* | *visO:kʲ-uˑ*   *daž-U:*   *it-U:*
       PVB-bring-PA.PL from   where   IDEF   various-GEN.PL   paint-GEN.PL   this-GEN.PL

       'but people used to sell mostly, having brought various dyes from somewhere'
       (east, Rima)

At first sight, the number of distinct lexemes with which this suffix combines (= productivity) does not vary much over the regions (we would expect a higher number in the South Aukštaitian dialects):

Belarus	20 (or 16)
South	22 (or 20)
East	21 (or 20)

Table 11. Number of verb stems which combine with the suffix -*(d)inė*-

Comment (also for Table 11a): Figures in brackets indicate the amount minus those stems with more than one derivative; for instance:

(20) *dav-inė-ti ~ duo-dinė-ti*   (⇐ *duo-ti* 'give', past tense stem *dav*-)
       pirk-inė-ti ~ pirk-dinė-ti   (⇐ *pirk-ti* 'buy')
       muš-inė-ti ~ muš-dinė-ti   (⇐ *muš-ti* 'beat')

However, if we put the South Aukštaitian dialects in Lithuanian and Belarus together (which yields subcorpora of a more comparable size), the results are different: in South Aukštaitian this suffix combines with 35 distinct lexemes (or 29 if we account for identical stems).

South + Belarus	35 (or 29)
East	21 (or 20)

Table 11a. Number of distinct lexemes with which the suffix -*(d)inė*- combines: binary opposition (East vs. South+Belarus)

It has also been claimed that *dav*-forms in South Aukštaitian were driven out by *inė*-forms (Zinkevičius 1966, 356, Vidugiris 1998, 184, Roszko & Roszko 2006, 165). If this is true, we expect to have a larger number of simple past forms in the south than in the east. Thus, if we look at the percentage of simple past forms of verbs with the (*d*)*inė*-suffix in the *TriMCo* corpus, we see that, on the one hand, the South Aukštaitian subcorpora both show a higher percentage of simple past tokens for -*(d)inė*- than does the East Aukštaitian subcorpus; on the other hand, we also observe a somewhat higher percentage of simple past forms with the suffix -*(d)inė*- in South Aukštaitian in Lithuania, but not in Belarus, which is not what we would expect.

	sum of tokens	simple past tokens
Belarus	58	34 (59%)
South	63	42 (67%)
East	58	27 (47%) [18]
total	179	103 (56%)

Table 12. Percentage of simple past forms of -*(d)inė*- forms across dialectal zones

Moreover, Table 13 shows that, even though the percentage of simple past (as opposed to other verb forms) is slightly higher in South Aukštaitian, the difference is not statistically significant. Thus, corpus data do not really confirm the assumption that -*(d)inė*- has been expanding at the expense of -*dav*-.[19]

	simple past	%	other forms	%	Total	Total %
East	27	53%	24 [20]	47%	51	100%
South	42	67%	21	33%	63	100%
Belarus	34	59%	24	41%	58	100%

Table 13. Distribution of verb forms with -*(d)inė*- (simple past vs other forms) in dialect areas, Pearson's χ^2-test: χ^2 (2) = 2.2683; p = 0.3217; Cramér's V = 0.115

The aforementioned hypothesis also entails that in the past tense verbs with the suffix -(*d*) *nė*- in South Aukštaitian express habitual meanings more often than in East Aukštaitian. Again, the difference between dialect areas turns out to be illusory; see Table 14. On the one hand, if we look only at the simple past forms, we see that the dependency between the two factors (event type and region) is statistically significant (which supports the hypothesis).

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[18] In East Aukštaitian, there are also seven examples when -(*d*)*inė*- is used together with -*dav*-. These examples were excluded from our count.

[19] Apart from that, -*(d)inė*- might not have ousted -*dav*-: given the origin of -*dav*- from West Aukštaitian (see §1.1), this suffix probably had never been that widespread in South Aukštaitian, in the first place.

[20] The examples in which -(*d*)*inė*- was combined with -*dav*- were excluded for the counts.

	Frequen-tative	%	Repeti-tive	%	Proces-sual	%	Total
East	16	64%	4	16%	5	20%	25
South	36	88%	3	7%	2	5%	41
Belarus	28	82%	6	18%	0	0%	34

Table 14. Semantics of the simple past forms with the suffix -(*d*)*inė*- in dialect areas, Fisher's exact test: $p = 0.024$; Cramér's $V = 0.241$

On the other hand, if we compare present tense forms with the suffix -(*d*)*inė*- in different dialect areas, the data also shows a dependency between the meaning of the verb form and the dialect region; see Table 15.

	Frequen-tative	%	Repeti-tive	%	Proces-sual	%	Total
East	6	38%	5	31%	5	31%	16
South	14	87.5%	2	12.5%	0	0%	16
Belarus	11	100%	0	0%	0	0%	11

Table 15. Semantics of the present forms with the suffix -(*d*)*inė*- in dialect areas, Fisher's exact test: $p = 0.0009$; Cramér's $V = 0.444$

Thus, even though the habitual meanings of (*d*)*inė*-forms are more common in South Aukštaitian, it is not the result of their spread (only) into the past tense. If anything, higher frequency of -(*d*)*inė*- at the expense of -*dav*- is a by-product of a global spread of -(*d*)*inė*- irrespective of tense (or other inflectional characteristics). This might hint at a higher similarity between South Aukštaitian *(d)inė*-forms and Slavic secondary imperfectives. In Standard Lithuanian, telic verbs can be used in the present tense to describe habitual events (Dumašiūtė 1961, Sawicki 2000, Arkadiev 2012, 56). We may assume that in South Aukštaitian in such contexts the -(*d*)*inė*-forms are used. However, at this stage this is just a tentative suggestion that should be tested on larger corpora.

3 Conclusions

Before drawing more general conclusions, let us summarize our findings on -(*d*)*inė*- and -*dav*- arrived at on the basis of the *TriMCo* corpus.

1) As for the studied dialect areas, the variants -*dinė*- and -*inė*- can be considered allomorphs only in East Aukštaitian, contrary to South Aukštaitian, where they do not occur in complementary distribution regarding structural properties of the stems they attach to. That is, the two variants do not really show complementary areal distribution, but only a slight tendency.

2) The variant -*dinė*- is more frequent in South Aukštaitian than in East Aukštaitian. This regards not only token frequency, but also lexical productivity, i.e. the degree to which the given morpheme is attested with different stems. However, since the absolute numbers of tokens found in the corpus are not very high, we have to be particularly careful with conclusions concerning productivity.

3) Verb forms with -(*d*)*inė*- are more frequent in South Aukštaitian than in East Aukštaitian, however the lexical productivity of the iterative suffix is roughly the same across the dialect zones.

4) The percentage of the past habitual (-*dav*-) among the past tense forms is different across the dialects. Past habitual is almost absent in the South Aukštaitian dialects of Belarus.

5) Even though verb forms with the suffix -(*d*)*inė*- are more frequent in South Aukštaitian than in East Aukštaitian, this does not necessarily imply that these forms encroached on the domain of the past habitual forms. It seems that habitual meanings are primarily expressed by the simple past in South Aukštaitian. A slightly higher token frequency of -(*d*)*inė*- in South Aukštaitian seems to apply irrespective of any particular tense.

Our more general conclusions are as follows. As we stressed in our overview (§§1.1-1.2), dialectological literature has at best been restricted to type-based analyses; there have been no token-based analyses at all. We argue that a quantitative, token-based approach, for which annotated corpora are indispensible, yields much more revealing insights into the variation and spread of morphosyntactic phenomena, such as those investigated in this article.

1) Only token-based analyses can substantiate claims concerning the spread of a construction. They allow us to disclose biases within some larger area (or between two areas), which remain unaccounted for if only type-based data are considered. The latter ones lie at the basis of atlases and traditional isoglosses, both single ones and bundles.

2) By using inferential statistics, we can make claims about the significance of biases (i.e. skewed distributions). This is important to emphasize, since it allows us to separate impressionistic observations from more systematic differences claimed to exist between varieties and/or between forms and their functions.

3) Corpus data are also indispensible, although not by themselves sufficient, for an assessment of productivity (i.e. flexibility of lexical input); cf. Baayen (2009) for an overview. Good gauges and methods of productivity are hard to come by;

a central problem is the non-comparability of corpora of different sizes and of the variances of types (H. Baayen, p.c.). In any case, however, the road toward suitable indicators of productivity leads via type/token ratios for slots in specific constructions (or morphemes of word forms), and to establish these, corpora are indispensable.

4) Token-based analyses allow for regression methods (sometimes even if data is sparse), i.e. methods that weight factors against each other and allow us to filter out the most relevant ones (which, again, cannot be discerned by the naked eye).

Acknowledgments

Abbreviations

1 — 1st person; 2 — 2nd person; 3 — 3d person; ACC — accusative; DIM — diminutive; F — feminine; FUT — future; GEN — genitive; HAB — habitual; IDEF — indefinite marker; ILL — illative; INF — infinitive; INS — instrumental; IPFV – imperfective; LOC — locative; M — masculine; NEG — negation; NOM — nominative; PA — active participle; PL — plural; PRS — present; PST — past; PVB — preverb; REP — repetitive; RFL — reflexive; SG — singular; SUBJ — subjunctive

Lithuanian dialectal transcription

All Lithuanian examples cited from the TriMCo corpus use additional IPA diacritics: : for long vowels, · for half-long vowels, ʲ for palatalization. Stressed vowels are marked by capital letters.

References

Arkadiev, Peter. [Arkad'ev, Petr M.] 2009. Teorija akcional'nosti i litovskij glagol [A theory of actionality and the Lithuanian verb]. *Balto-slavjanskie issledovanija* 18 [Baltic-Slavic investigations 18], 72–94.

Arkadiev, Peter. 2011. Aspect and actionality in Lithuanian on a typological background. In *Langues baltiques, langues slaves*. Daniel Petit, Claire Le Feuvre & Henri Menantaud, éd. Paris: CNRS Editions. 61–92.

Arkadiev, Peter. [Arkad'ev, Petr M.] 2012. Aspektual'naja sistema litovskogo jazyka (s privlečeniem areal'nyx dannyx) [The aspectual system of Lithuanian (with an account of areal data)]. In *Issledovanija po teorii grammatiki*. Vyp. 6: *Tipologija aspektual'nyx sistem i kategorij* [Investigations in the theory of grammar. Issue 6: The typology of aspect systems and categories]. (= *Acta Linguistica Petropolitana*, t. VIII, č. 2). Vladimir A. Plungjan, ed. Sankt-Peterburg: Nauka. 45–121.

Arkadiev, Peter, Axel Holvoet & Björn Wiemer. 2015. Introduction: Baltic linguistics – State of the art. In *Contemporary Approaches to Baltic Linguistics*. Peter Arkadiev, Axel Holvoet & Björn Wiemer, eds. Berlin, Boston: De Gruyter Mouton. 1–109.

Baayen, Harald. 2009. Corpus linguistics in morphology: Morphological productivity. In *Corpus Linguistics. An International Handbook*, vol. 2. Anke Lüdeling & Merja Kytö, eds. Berlin, New York: Mouton de Gruyter. 899–919. https://doi.org/10.1515/9783110213881.2.899.

Bertinetto, Pier Marco & Alessandro Lenci. 2012. Habituality, Pluractionality, and Imperfectivity. In *The Oxford Handbook of Tense and Aspect*. Robert Binnick, ed. New York: Oxford University Press. 852–880. https://doi.org/10.1093/oxfordhb/9780195381979.013.0030.

Cabredo Hofherr, Patricia & Brenda Laca. 2012. Introduction – event plurality, verbal plurality and distributivity. In *Verbal Plurality and Distributivity*. Patricia Cabredo Hofherr & Brenda Laca, eds. Berlin, Boston: De Gruyter Mouton. 1–24. https://doi.org/10.1515/9783110293500.

Corbett, Greville G. 2000. *Number*. Cambridge etc.: Cambridge U.P.

Cusic, David Dowell. 1981. *Verbal Plurality and Aspect*. Stanford, CA (unpubl. PhD thesis).

Dumašiūtė, Zelma. 1961. *Dabartinės literatūrinės lietuvių kalbos veiksmažodžio vientisinio esamojo laiko reikšmė ir vartojimas* [The meaning and use of the simple present tense in contemporary Standard Lithuanian]. Vilnius (unpubl. doctoral dissertation).

Fraenkel, Ernst. 1936. Der Stand der Erforschung des im Wilnagebiete gesprochenen Litauischen. *Balticoslavica* 2, 14–107.

Geniušienė, Emma Š. 1989. Mul'tiplikativ i iterativ v litovskom jazyke [The multiplicative and the iterative in Lithuanian]. In *Tipologija iterativnyx konstrukcij* [Typology of iterative contructions]. Viktor S. Xrakovskij, ed. Leningrad: Nauka. 122–132.

Holvoet, Axel & Jūratė Pajėdienė. 2004. Laiko kategorija ir laiko formos [The category of tense and tense forms]. In *Gramatinių kategorijų tyrimai* [Investigations on grammatical categories]. Axel Holvoet & Loreta Semėnienė, eds. Vilnius: LKI. 121–140.

Kardelis, Vytautas. 2009. *Šiaurės rytų aukštaičiai vilniškiai: ribos ir diferenciacija* [Northeast Aukštaitian dialects: borders and differentiation]. Vilnius: Vilniaus universiteto leidykla.

Kardelis, Vytautas & Björn Wiemer. 2002. Ausbildung von Aspektpaarigkeit in litauischen Grenz- und Inseldialekten (am Beispiel von Sprechverben). *Linguistica Baltica* 10, 51–80.

Kardelis, Vytautas & Björn Wiemer. 2003. Kritische Bemerkungen zur Praxis der Erstellung litauischer Wörterbücher, insbesondere von Mundarten – am Beispiel des slavischen Lehnguts und des 'veikslas'. In *Prace bałtystyczne. Język, literatura, kultura*. Norbert Ostrowski & Ona Vaičiulytė-Romančuk, eds. Warszawa: Wydział Polonistyki UW. 45–72.

Mattiola, Simone. 2019. *Typology of Pluractional Constructions in the Languages of the World*. Amsterdam, Philadelphia: Benjamins.

Pakerys, Jurgis. 2017. On the development of past habitual from iterative in Lithuanian. *Baltistica* LII-2, 295–323. https://doi.org/10.15388/baltistica.52.2.2324.

Pakerys, Jurgis & Björn Wiemer. 2007. Building a partial aspect system in East Aukštaitian Vilnius dialects of Lithuanian (Correlations between telic and activity verbs). *Acta Linguistica Lithuanica* 57, 45–97.

Roszko & Roszko 2006. Lithuanian frequentativum. *Études cognitives* 7, 163–172.

Rozwadowski, Jan. 1995. *Litewska gwara okolic Zdzięcioła na Nowogrodczyźnie (Dzieło pośmiertne)*. Opracowanie: Adam Gregorski. Konsultacja: Jan Safarewicz) [The Lithuanian dialect of Zdzięcioł (Lith. *Zietela*) in the Nowogródek region (A posthumous work). Preparation: Adam Gregorski. Consultation: Jan Safarewicz]. Cracow: PAN.

Sakurai, Eiko. 2015. Past habitual tense in Lithuanian. In *Contemporary Approaches to Baltic Linguistics*. Peter Arkadiev, Axel Holvoet & Björn Wiemer, eds. Berlin, Boston: De Gruyter Mouton. 383–436.

Sawicki, Lea. 2000. Remarks on the category of aspect in Lithuanian. *Linguistica Baltica* 8, 133–142.

Stang, Christian S. 1942. *Das slavische und baltische Verbum*. Oslo.

Šluinskij, Andrej B. 2006. K tipologii predikatnoj množestvennosti: organizacija semantičeskoj zony [On the typology of verbal plurality: the organisation of a semantic domain]. *Voprosy jazykoznanija* 2006-1, 46–75.

Tatevosov, Sergej G. 2002. The parameter of actionality. *Linguistic typology*, 6(3), 317–401.

Tatevosov, Sergej G. 2005. Akcional'nost': tipologija i teorija [Actionality: typology and theory]. *Voprosy jazykoznanija* 1, 108–141.

Tatevosov, Sergej G. 2016. Glagol'nye klassy i tipologija akcional'nosti [Verb classes and the typology of actionality]. Moscow: JaSK.

Toporov, Vladimir N. 1961. K voprosu ob évoljucii slavjanskogo i baltijskogo glagola [On the issue of the evolution of the Slavic and the Baltic verb]. In *Voprosy slavjanskogo jazykoznanija* 5. Vladimir N. Toporov, ed. Moskva: Izd-vo AN SSSR. 35–70.

Vidugiris, Aloyzas. 1961. Veiksmažodžiai su priesagomis *-inėti* ir *-dinėti* Zietelos tarmėje [Verbs with the suffixes *-inėti* and *-dinėti* in the Zietela dialect]. *Lietuvos TSR Mokslų Akademijos darbai, serija A*, 2(11), 219–231.

Vidugiris, Aloyzas. 1998. Dėl daugkartinio veiksmo raiškos pietrytinėse lietuvių kalbos tarmėse [On the iterative meaning in the Southeastern Lithuanian dialects]. *Lietuvių kalbotyros klausimai* 39, 183–191.

Vidugiris, Aloyzas. 2004. *Zietelos lietuvių šnekta* [The Lithuanian dialect of Zietela]. Vilnius: Presvika.

Vidugiris, Aloyzas. 2014. *Lazūnų šnekta* [The dialect of Lazūnai]. Vilnius: LKI.

Wiemer, Björn. 2001. Aspektual'nye paradigmy i leksičeskoe značenie russkix i litovskix glagolov (Opyt sopostavlenija s točki zrenija leksikalizacii i grammatikalizacii) [Aspectual paradigms and the lexical meaning of Russian and Lithuanian verbs (A comparative attempt from the point of view of lexicalization and grammaticalization)]. *Voprosy jazykoznanija* 2001-2, 26–58.

Wiemer, Björn. 2009. Zu entlehnten Präfixen und anderen morphosyntaktischen Slavismen in litauischen Insel- und Grenzmundarten. In *Von Zuständen, Dynamik und Veränderung bei Pygmäen und Giganten (Festschrift für Walter Breu zu seinem 60. Geburtstag)*. Lenka Scholze & Björn Wiemer, eds. Bochum: Brockmeyer. 347–390.

Wiemer, Björn, Aksana Ėrker & Kirill Kožanov. 2019. Korpus slavjanskix i baltijskix govorov *TriMCo*: struktura, celi i primery primenenija [The *TriMCo* corpus of Slavic and Baltic dialects: structure, goals, and examples of application]. *Balto-slavjanskie issledovanija* 20 [Baltic-Slavic investigations 20], 122–143. DOI: 10.31168/2658-5766.2019.20.6.

Wood, Esther Jane. 2007. *The Semantic Typology of Pluractionality*. Berkeley: University of California (unpubl. PhD thesis).

Xrakovskij, Viktor S. 1987. Kratnost' [Event plurality]. In *Teorija funkcional'noj grammatiki*, t. 1: *Vvedenie. Aspektual'nost'. Vremennaja lokalizovannost'. Taksis* [A theory of functional grammar, vol. 1: Introduction. Aspectuality. Temporal localization. Taxis]. Aleksandr V. Bondarko, ed. Leningrad: Nauka. 124–152.

Xrakovskij, Viktor S. 1997. Semantic types of the plurality of situations and their natural classification. In *Typology of Iterative Constructions*. Viktor S. Xrakovskij, ed. Munich, Newcastle: Lincom Europa. 3–64.

Zinkevičius, Zigmas. 1966. *Lietuvių dialektologija (Lyginamoji tarmių fonetika ir morfologija)* [Lithuanian dialectology (A comparative phonetics and morphology of dialects)]. Vilnius: Mintis.