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Miina Norvik (Tartu)

The past participle constructions LEE(NE)- + PTCP and SAA- + PTCP as future time reference devices: the example of Livonian against a Southern Finnic background[1]

The present article studies the semantic functions and syntactic behaviour of past participle constructions in Livonian: *līdõ* 'will be' + active past participle (APP) / passive past participle (PPP) and *sǭdõ* 'get; become' + APP / PPP. Parallels are drawn with the corresponding constructions in the other Southern Finnic languages, as well as Northern Finnic and the Indo-European contact languages. The main focus is on Livonian *līdõ* 'will be' + APP. Considering the primary meaning element, time reference (future, past, or present), and the clause type (main or subordinate), a distinction is made between two main functions: (i) expressing anteriority, and (ii) epistemic modality. It is argued that Livonian *līdõ* + APP deserves to be regarded as the future perfect, as its primary function is to express anteriority in the future domain. Furthermore, *līdõ* + APP is shown to stand out with regard to the usage of temporal (future) meaning in subordinate clauses, as it is more common for a future-marking device to be redundant in subordinate clauses or associated with modal meanings. The expression of epistemic modality is regarded as its secondary function and possibly a later development; the epistemic usage is primarily associated with the construction occurring in main clauses.

1. Introduction

The present article discusses the expression of future time reference (FTR) in Livonian by means of past participle (PTCP) constructions. The focus is on Livonian *līdõ* 'will be' + PTCP and *sǭdõ* 'get; become' + PTCP; see examples (1) and (2). These constructions will be compared to the corresponding constructions in close cognate languages. Livonian is a Finnic language that used to be spoken in present-day Latvia; together with Estonian and Votic it belongs to the Southern Finnic group. Within Livonian, a distinction is made between two main varieties, Courland Livonian (associated with 12 coastal villages in northern Courland) and Salaca Livonian (which became extinct at the end of the 19th century). Here, the focus is on Courland Livonian, while Salaca Livonian examples are considered for comparison.

(1) Courland Livonian (AEDKL F0277-01)

ku	***lī-b***	*ni*	*se*	*vie'd*	***tilk-õn***	*sīe-stõ*	*mȭk-stõ*
when	LEE-3SG	now	this	water.GEN	drip-APP	this-ELA	sword-ELA

se	*glǭz-õ,*	*siz*	*sa*	*tu'l*
this	glass-ILL	then	you	come.IMP.2SG

'when now the water has dripped from the sword into the glass, then come'

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(2) Courland Livonian (Kettunen 1925: 53)

un kītõn: ä'b ūo kougõn ikš päpmȯizõd,

sāl	*jelā-b*	*päp,*	*sāl*	*mēg*	***sǭ-mõ***	***salōlat-õt***
there	live-3SG	vicar	there	we	get-1PL	wed-PPP

'and said, "there is a parish close by, there lives a vicar, there we'll be wedded"'

Livonian and its past participle constructions are of interest as they have already been associated with FTR in the first Livonian grammar (Sjögren & Wiedemann 1861), but there have been no thorough discussions concerning their semantic functions and syntactic behaviour. Furthermore, previous research has concentrated on *līdõ* and *sǭdõ* occurring as simple predicates and as part of infinitival and debitive constructions (Norvik 2013; Norvik 2014; Viitso 2014). The studies that deal with the expression of FTR in other Finnic languages also tend to concentrate on infinitival constructions and/or copular devices (Mägiste 1936; Majtinskaja 1973; Metslang 1996; Norvik 2013; Tauli 1966). Due to the fact that Finnic languages lack morphological future marking, grammars and language overviews comment only occasionally on the expression of FTR, most notably when morphological marking is seen to constitute a grammatical category.

Finnic languages display two types of past participles: active past participles (APP) and passive past participles (PPP). As the verbs *līdõ* as well as *sǭdõ* combine with both of these, all combinations are analysed in the present article. The main focus is on Livonian *līdõ* + APP, which has been called the future perfect (Pajusalu 2014: 132; Wälchli 2011: 337). It is considered remarkable that "Livonian has been inspired to develop a more marked form of the future, the future perfect, but not the simple future (except for the copula)" (Wälchli 2011: 336–337). Additionally, *līdõ* + APP has been attested in a modal meaning expressing epistemic modality; see example (3) (Norvik 2013: 145–148). Kettunen (1938: LXIII), for instance, subsumes both usages, the temporal (future perfect) as well as the modal usage of the construction, under the category of *potential* (hereinafter, potentiality is referred to as epistemic modality; see e.g. ISK 2004: 1510). The presence of an aspectual meaning element has been stressed as well (Norvik 2013: 145–148).

(3) Courland Livonian (Kettunen 1925: 26)

ni	*tä'mm-õn*	*nī'em-õd*	*attõ*	*jarā*	*ka'dd-õnõd,*
now	s/he-DAT	cow-PL	be.3PL	PP	lost-APP

kīen-di	*sudū-d*	***lī-bõd***	*mǭ'zõ*	***mūrda-nõd***
who-PL.PART	wolf-PL	LEE-3PL	PP	kill-APP

'now his/her cows have got lost, whom wolves may have killed.'

Proceeding from previous considerations, one aim of the present article is to analyse the semantic functions of *līdõ* + APP in order to determine whether it deserves to be called the future perfect or something else. Future perfect is here associated with expressing anteriority in the future domain, i.e. that a situation is located temporally prior to some reference point in the future (Comrie 1976: 53; Declerck 2006: 155); see example (1). With respect to syntactic behaviour, the usage of *līdõ* + APP in a subordinate clause is of interest. Namely, the use of FTR devices in subordinate clauses crosslinguistically tends to be redundant and/or is associated with modal meanings and non-assertiveness[2] (Bybee et al. 1994: 274; Comrie 1993: 48, 118; Huddleston & Pullum 2012); or, if future marking is used, inflectional FTR devices are said to be more likely to occur, as inflectional means are associated with later stages of grammaticalization (Bybee & Dahl 1989: 94; Dahl 2000a: 314).

Another aim of the article is to study the Livonian construction *līdõ* + APP against a broader background. Its usage will be first compared to the passive past participle construction *līdõ* + PPP but also to past participle constructions involving a different verb, *sǭdõ* 'get; become' + APP / PPP; see example (2) for *sǭdõ* + PPP. Given that *līdõ* + APP and *sǭdõ* + PPP frequently occur in texts, and that the former can be associated with the active voice and latter with the passive voice (Norvik 2013: 155), the question is to what extent they can be regarded as (active vs. passive) counterparts. As both verbs occurring in the constructions (*līdõ* as well as *sǭdõ*) go back to Proto-Finno-Ugric (UEW) and similar past participle constructions can be found in various Finnic languages (Norvik 2013: 132–135), the article will present some comparative data from the other Finnic languages, mainly from the other Southern Finnic languages (Estonian and Votic).

The article proceeds as follows: section 2 introduces the material and principles of analysis; section 3 focuses on Livonian *līdõ* + APP construction, analysing it against the background of *līdõ* + PPP and *sǭdõ* + APP / PPP constructions. Section 4 draws parallels with the corresponding devices in Salaca Livonian and in the other Finnic languages.

2. Material and principles of analysis

2.1. Compiling the data set

The data set consisted of the constructions *līdõ* 'will be' + PTCP and *sǭdõ* 'get; become' + PTCP in a broader context. Only the constructions that contained *līdõ* and *sǭdõ* in the present indicative form were included for the purposes of further study. The reason for this is that among all the instances of *līdõ* + PTCP, *līdõ* occurred in another form (quotative form) only once. In fact, *līdõ* has never been attested in a

2. Assertiveness can be associated with speaker's belief or confidence in the truth of the proposition. It is claimed to convey degrees of hypotheticality; the greatest degree of assertiveness and the smallest degree of assertiveness are two extremes (i.e. most factual vs. most hypothetical). (Silva-Corvalan 1995: 92). The term non-assertiveness used in the literature denotes here the smallest degree of assertiveness.

past simple form and there are only a few examples of *līdõ* in a past participle form occurring as a simple predicate (see also Norvik 2014: 140). The verb *sǭdõ*, in turn, commonly appeared in past forms and other moods (conditional, quotative, imperative), but considering only the present indicative forms made the constructions *sǭdõ* + PTCP and *līdõ* + PTCP better comparable.

Linguistic sources	Collection time of the linguistic data	Constructions in the sources			
		***līdõ* + APP**	***līdõ* + PPP**	***sǭdõ* + PPP**	***sǭdõ* + APP**
Edited and translated texts					
Sjögren & Wiedemann (1861)	1846, 1852	14	3	7	
(Transcribed) oral texts in text collections					
Setälä (1953)	1888, 1912	13		23	
Kettunen (1925)	1917–1922	2	1	8	
Loorits (1922)	1922–1924	2			1
Mägiste (1964)	1943			15	
Bible translations					
Gospel of Matthew (Mt 1880)	before 1880	11		80	
Gospel of Matthew and Gospel of Mark (ŪT 1942)	1931 to 1936	8 4	2	80 39	
Recordings of various speakers					
AEDKL	1960s–2010	4		7	
Total:		58	6	259	1

Table 1. Data set of Courland Livonian

The material originates from different time periods and contains both oral as well as written texts. The linguistic sources contain different kinds of texts: narratives about past events, fairy tales told by the speakers, interviews about everyday life, descriptions of certain activities (e.g. how beer is made), sentence examples, translated texts, etc. FTR devices appeared to be more common in fairy tales and Gospels, as both kinds of sources contain predictions about a future state of affairs. The usage of *sǭdõ* + PPP stands out in the case of Bible translations, in which the construction expresses passive future. However, it should be noted that the instances of *sǭdõ* used in the present indicative form + PPP also include cases with present reference, e.g. *sǭ-b tī'ed-õt* (get-3SG do-PPP) can be translated as 'is being done' as well as 'will be done', depending on the context.

The principles described above were applied when collecting comparative material from the other Southern Finnic languages (parallels with the Northern Finnic languages will be drawn only occasionally). The corresponding constructions in the Finnic languages are here referred to as LEE(NE)- + PTCP and SAA- + PTCP. The use of capital letters denotes common origin and shared meanings (Dahl 2000a). LEE- stands for the Finnic verbs associated with the Proto-Finnic root *lē-; LEENE- designates the *lēne-* root, which is generally seen as the modal version of *lē- (see Saukkonen 1965: 174). Depending on the language, LEE(NE)- forms are associated with FTR (temporal meaning) and/or modal meanings (Norvik 2013: 141). Livonian is the only Finnic language where LEE- forms have been attested without the suffix *-ne* (Laakso 1990: 115).

As the linguistic data from other (Southern) Finnic languages was considered only for comparative purposes and the source material that could be included was smaller, no exact number of occurrences will be given.

The examples of *līdõ* + PTCP / *sǭdõ* + PTCP and their counterparts in the other Finnic languages were tagged for the following:

(1) language variety
(2) origin of linguistic example (oral or edited/translated text; example sentence in a grammar/dictionary[3])
(3) clause type (main or subordinate; in the case of the subordinate clause, also the type of clause was determined)
(4) time reference (past, present, or future)
(5) primary meaning element (temporal, modal, or aspectual)
(6) formal properties (e.g. voice, mood, tense, polarity, person)

The central task was to determine the primary meaning element of a participle construction in a particular context. The need for this came from the approach supported here. Namely, it has been argued that grammatical devices, especially FTR devices, combine temporal, modal, and aspectual meaning elements that can be associated with the domains of tense, modality, and aspect, respectively. Typically, the question is which meaning element is the strongest, not which one is the only one to be present (Dahl 2000b: 7; Dahl & Velupillai 2013; Givón 2001: 285). It will be shown that such an approach is well-suited for analysing the participle constructions containing LEE(NE)- and SAA-verbs, but also for providing an explanation, for instance, as to why temporal, modal as well as aspectual meaning elements have been associated with Livonian *līdõ* + APP (cf. section 1).

3. Grammars and dictionaries were additionally used for collecting examples whenever there seemed to be enough information about the time reference and possible meanings of the devices under study. In addition, the examples included in these grammars/dictionaries often originate from natural speech.

2.2. Principles of analysis

2.2.1. Representation of temporal relations

The representation of temporal relations in the article relies on Declerck's work (2006). Although he studies the English verb system, his figures proved suitable for illustrating the results of the present study as well.

Figure 1 illustrates the conceptualization of time line as understood by Declerck. He makes a distinction between two time-spheres – past and present – that have a break between them (marked by a dotted line). The present, pre-present, and post-present constitute the present time-sphere and the past constitutes the past time-sphere. The present moment is marked by t_0, which stands for the temporal zero-point. The post-present zone is also called the future zone. The choice between past and pre-present depends on the speaker's so-called temporal focus: whether it is on the present (= pre-present) or on the past (= past). The present perfect typically places situations in the pre-present. (Declerck 2006: 148–151.)

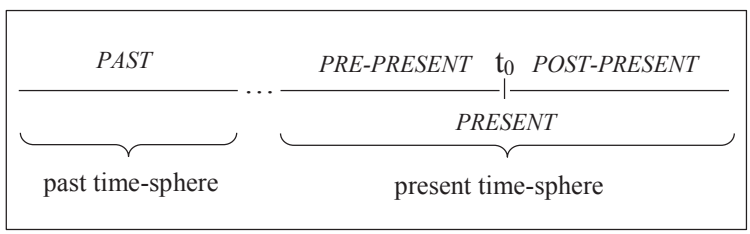

Figure 1. "Linguistic conceptualization of the time line" (reproduced from Declerck 2006: 149)

According to Declerck (2006: 147, 149), the two-way distinction of time-spheres in the case of English depends on the following:

> (a) only past and present are marked inflectionally (e.g. *walk : walk**ed***);
> (b) future tense use of *will* and *shall* goes back to present non-epistemic modality: < 'want' and 'owe' correspondingly (see Bybee et al. 1994: 254–256, 263);
> (c)"in order to temporally relate a situation time to a future situation time, English uses the same tense system as it uses to temporally relate a situation time to t_0, compare *I **am** ill* with [*Next time, he will pretend that*] *he **is** ill*".

The considerations listed in (a) and (c) also apply to the Finnic languages. With respect to (b), LEE(NE)- and SAA- do not go back to modal verbs, but originate from lexical sources expressing motion or at least some kind of change (Norvik 2013: 132–134; Norvik 2014: 141; Saukkonen 1965: 174; UEW). Thus, neither the English nor the Finnic FTR devices discussed here were originally periphrastic future markers.

2.2.2. Graphical representation of future simple and future perfect

There has been much debate over the issue of what counts as a true future tense and what not. Without going into details, this article shares the viewpoint of those researchers who claim that (i) when a grammatical device is used for making predictions and statements, asking factual questions about a future situation, and its usage in such cases is obligatory, the language has a well-grammaticalized future tense, (ii) in addition to morphological devices, also periphrastic devices can count as a future tense (Bybee et al. 1994: 244; Comrie 1993: 44; Lyons 1977: 677; Dahl 2000a: 310). In these cases, the temporal meaning element can be regarded as the strongest (cf. subsection 2.1). Example (4a) is presented as an example of future tense (future simple). As it expresses a situation that is posterior to t_0, it can be illustrated in terms of Figure 2.

(4) a. *Prudence **will retire** in a month.* (Declerck 2006: 25)

b. Estonian (personal knowledge)

Prudence	***lähe-b***	*kuu*	*aja*	*pärast*	*pensioni-le.*
Prudence	go-3SG	month.GEN	time.GEN	after	pension-ALL

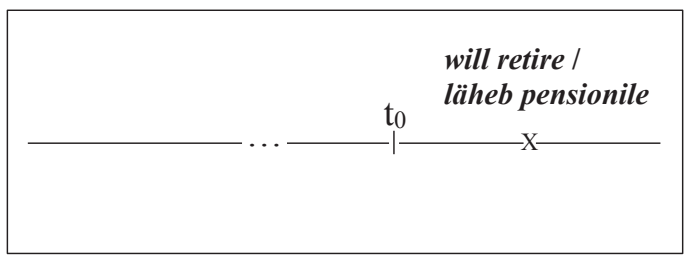

Figure 2. Graphic representation of examples (4a) and (4b)

The Estonian example (4b), which is a translation of (4a), can also be regarded in terms of Figure 2, only here we have an instance of a present tense form (*läheb* 'goes') fulfilling the function of expressing FTR. The placement of the situation in the future becomes clear from the adverbial *kuu aja pärast* 'in a month'. Thus, it is important to note that FTR does not necessarily imply the use of a future tense.

Figure 3 is a graphic representation of the English **future perfect**, as demonstrated by example (5). It encompasses what is regarded as the main characteristic of the future perfect: it expresses anteriority in the post-present (future) domain regardless of whether the situation had its beginning in the past, present or the future (Comrie 1993: 53). In Figure 3, x stands for orientation times like *by the end of next month* in examples (5), but also for situation times like *līb jera* 'will have passed' in example (6) (see also Declerck 2006: 155). Thus, Figure 3 is suitable for illustrating devices with different syntactic behaviour, cf. the use of *will have V*-ed (example 5) in the main clause and *līdõ* + APP in the subordinate clause (example 6).

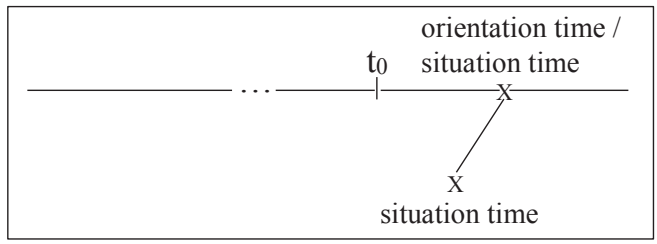

Figure 3. Graphic representation of examples (5) and (6) (based on Declerck 2006: 157)

(5) *I **will have finished** this manuscript by the end of next month.* (Comrie 1993: 69)

(6) Courland Livonian (Setälä 1953: 328–329)

un	*ku*	*tikkiž*	*mä'g* […]	***lī-b***	***jera***	***ku'll-õn***,
and	when	whole	mountain	LEE-3SG	PP	erode-APP
siz	*lī-b*	*ikš*	*sīlmapilk*	*igā-st*	*jera*	
then	LEE-3SG	one	moment	time-ELA	away	

'and when the whole mountain has been eroded […], one moment will have passed'

2.2.3. Past anteriority

The data set also contains instances that establish past time-sphere. Figure 4 illustrates these cases: the x on the timeline denotes some past orientation time due to which the past perfect has been used in the main clause. The other x denotes the orientation time established by *by the end of the day.*

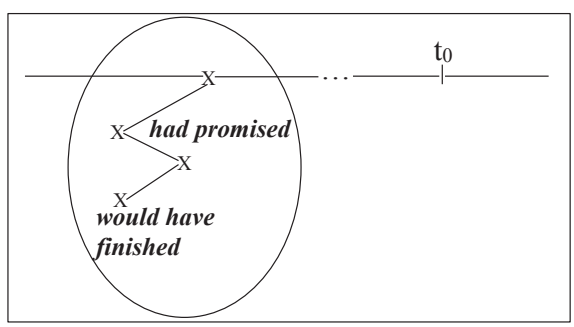

Figure 4. "The tense structure of *Bill had promised that he would have finished (by the end of the day)*" (reproduced from Declerck 2006: 457)

Even though *would have V*-ed is better known as *conditional perfect* and is thus associated with modal meanings (Harder 1996: 358, 454, 459), Thieroff (2010: 13) maintains that the so-called *Western Conditionals*[4] (applies also to English) can be rather subsumed into the tense category expressing temporal meanings. Declerck (2006: 457) also argues for the purely temporal sense of the example represented by Figure 4. Additionally, Figure 4 represents what is known as *consecutio temporum*, i.e. shifting back the tense of the verb (*will have V-ed* > *would have V-ed*) following the sequence of tense rule in the case of a subordinate clause (Comrie 1993: 111). For comparison, no shift of tenses occurs in Russian (Plungian 2011: 368). A different rule is in force there: "tenses in indirect speech in Russian are interpreted not from the viewpoint of the deictic centre of the here-and-now, but rather with the deictic centre of the original speaker" (Comrie 1993: 109); cf. English translation for example (7).

(7) Russian (Plungian 2011: 368)

Oni byli železno uvereny,

čto	*ty*	***otkro-eš'***	*korobk-u*	*do*	*togo,*
that	you	open.PFV.PRS-2SG	box-ACC	until	that.GEN
kak	*tebe*	***po-zvonât***	*iz*	*policii.*	
when	you.DAT	PFV-call.PRS.3PL	from	police.GEN	

'They were as sure as hell you **would have opened** the box before the police **would call** you.'

3. Livonian *līdõ* + APP within the context of *līdõ* + PPP and *sǭdõ* + APP/PPP

Sections 3.1 and 3.2 focus on the functions of *līdõ* + APP, drawing some parallels with *sǭdõ* + APP. For comparative purposes, subsection 3.3 considers PPP constructions including *līdõ* and *sǭdõ.* Subsection 3.4 lists the main findings.

The following analysis considers 56 examples of *līdõ* + APP in the data set (translational equivalents in Bible translations have been counted only once, cf. Table 1, which contains 58 instances). Table 2 illustrates the paradigm of the present indicative forms of *līdõ* + markers of APP based on Viitso and Ernštreits (2012) and the forms in the data set. Although most examples (29 out of 56) contained *līdõ* in 3SG, all person forms in both affirmative as well as in negative were represented.

4. Thieroff makes a distinction between Western Conditionals and Eastern Conditionals, claiming that such a distinction corresponds to geographical spread only to some extent: Western Conditionals are found in Germanic, Romance, Celtic languages, but also in Albanian, Basque, Armenian, and Georgian. The Slavic languages, Latvian, Lithuanian, Finnish, Estonian, and Hungarian belong to the group of "Eastern Conditionals"; in these languages, the category is still called mood (Thieroff 2010: 13–14).

Person	Affirmative	Negative		APP
1SG	*līb*	*äb lī*		
2SG	*līd*	*äd lī*	+	*-nd, -n, -õn*
3SG	*līb*	*äb lī*		
1PL	*līm(õ)*	*äb līm(õ)*		*-nõd, -nd,*
2PL	*lītõ*	*ät līt(õ)*	+	
3PL	*lībõd*	*äb līt(õ)*		*-õnõd*

Table 2. Present indicative forms of Livonian *līdõ* + APP

On the basis of the interplay of clause type, time reference, and primary meaning element, it was possible to distinguish between two main functions of *līdõ* + APP: expressing future anteriority and epistemic modality. Every type is introduced by a small table that contains information about the clause type in which *līdõ* + APP occurred, the number of occurrences, time reference, and the main meaning element. TAM stands for the temporal, aspectual, and modal meaning elements that can be shown to intertwine in grammatical devices. The main meaning element is underlined. As the aspectual meaning element (A) seemed to be relevant in all the cases, it is either M (modal) or T (temporal) that gets underlined.

3.1. *līdõ* + APP expressing future anteriority

Clause type		No. of occ.-s	Time ref.	TAM
Subordinate clause	*temporal clause*	26	FUT	T**A**M
	object clause	2		
	relative clause	1		
	clause of place	1		
Main clause		9		
		Total: 39/56		

Table 3. Instances of future anteriority

The function of expressing future anteriority, i.e. the completion of a situation before another situation point or orientation point in the future, is the most typical way to use the *līdõ* + APP construction (39 instances out of 56). Thus, Livonian *līdõ* + APP was primarily found in the function that is generally referred to as the future perfect. Corresponding examples were attested in all the sources; only the text collections by Kettunen (1925), Loorits (1922) and Mägiste (1964) did not contain any examples. These sources contained all in all only a few instances of *līdõ* + APP (see Table 1).

Table 3 indicates that the construction most typically appears in subordinate temporal clauses, as in (8), and less commonly in subordinate object clauses, relative clauses and clauses of place. Additionally, *līdõ* + APP was found in the main clause, as in (9). The 39 instances that were subsumed under the present type primarily convey a temporal meaning (see the marking T**A**M in Table 3). The modal meaning element can be claimed to be present, but it is not the strongest.

(8) Courland Livonian (Setälä 1953: 108)

ku	*sinā*	***lī-d***	***no-ra'dļ-õn***	*siz*
when	you	LEE-2SG	off-cut-APP	then

sa	*kīt*	*sīe*	*neits-õn*
you	tell.IMP.2SG	this.GEN	girl-DAT

'when you have cut [it] off, then tell this girl'

(9) Courland Livonian (Setälä 1953: 144)

siz	*sīe*	*kēzar-õn*	***lī-b***
then	this.GEN	emperor-DAT	LEE-3SG

jo	*emīņ*	*vä'gg-õ*	***no-sa'dd-õn***
PREP	more	army-PART	off-fall-APP

'then more of the emperor's army will have fallen'

The temporal relation can be illustrated graphically with the help of Figure 5. The x on the timeline marks the situation point established by *kīt* in example (8) and an orientation point established by *siz* in example (9). As the situation times expressed by *līd nu'ora'dlõn* (8) and *līb nu'osa'ddən* (9) convey anteriority, they are placed diagonally to the left of x on the timeline.

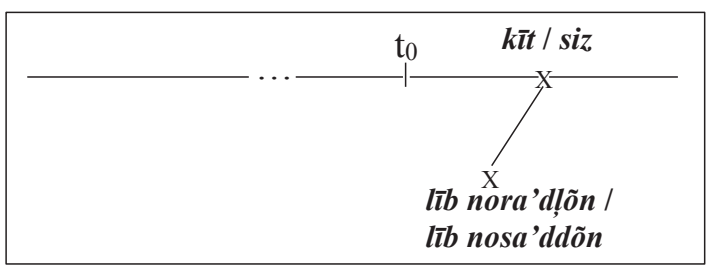

Figure 5. Graphic representation of examples (8) and (9)

3.1.1. Establishing FTR in a subordinate temporal clause

Claiming that a temporal meaning element is present (and strongest) in the case of a subordinate temporal clause (as done above) partly depends on the approach taken. For comparison, Givón (2001: 311) includes so-called *future time adverbial clauses* under *irrealis-scope adverbial clauses* (i.e. associates them with modal meaning), as the situation represented by the clause has not yet been realized. Namely, subordinate clauses may be regarded as non-assertive and lacking in specificity in time reference (for an explanation, see Dahl 2000a: 314; cf. also section 1). Still, there are researchers

who maintain that subordinate temporal clauses can establish time reference and that using an FTR device can serve the function of establishing FTR. In Greek, for example, FTR devices commonly occur in a subordinate temporal clause indicating a stronger certainty than the non-temporal subjunctive (Hedin 2000: 344, 346). The Hungarian periphrastic future construction *fog* 'will be' + infinitive in a subordinate temporal clause is claimed to primarily convey a temporal (future) meaning (Kenesei et al. 1998: 49). The Livonian examples in the data set present additional proof for the temporal interpretation of an FTR device in a subordinate temporal clause.

3.1.2. Continuum of resultativity and anteriority

Among the 39 examples, there were also some cases that primarily seemed to express a future state rather than an anterior action that had led to the corresponding state, as in example (10). Bybee et al. (1994: 63) have called the corresponding cases resultatives, which are explained as denoting "a state brought about by some action in the past"; the state is claimed to persist at a reference time. The possibility of using an adverb expressing unlimited duration (e.g. with the meaning 'still') aids in distinguishing resultativity from anteriority (Lindstedt 2000: 367).

(10) Courland Livonian (Sjögren & Wiedemann 1861: 455)

ma	***lī-b***	*selli*	***jera***	***väzz-õn***
I	LEE-1SG	such	PP	tired-APP

'I'll be tired.'

The corresponding cases showed similarities with predicate nominal clauses (NP_{Nom} V $AdjP_{Nom}$), which also primarily convey a future state (Norvik 2013: 136, 140–141), as in (11). The temporal relations of examples (10) and (11) can be viewed in terms of the same figure as well (Figure 6).

(11) Courland Livonian (Setälä 1953: 104)

ma	***lī-b***	*si'n*	*pā̆l*	*ne'i*	*kõ'zzi*
I	LEE-1SG	you.GEN	on	so	angry

'I'll be so angry with you.'

As it occasionally proved hard to decide whether an example expressed resulting state or an anterior action, resultativity and anteriority are here regarded as a continuum and viewed as belonging to the same type. There is also historical proof that anteriority and resultativity are related, namely resultativity is said to lead to anteriority when a participle loses its adjectival nature and becomes part of the verb (Bybee et al. 1994: 68; Nedjalkov 1988: 49).

3.1.3. *sǭdõ* + APP showing overlapping functions with *līdõ* + APP

Although the large data set on Livonian contained only one instance of *sǭdõ* + APP (example 12), it reveals an interesting parallel with *līdõ* + APP: *sǭdõ* + APP in example (12) conveys future anteriority, as in example (8). Their similar usage finds proof from Sjögren & Wiedemann (1861: 145), who use the term *future exactum* (denotes the same as *future perfect*) for *līdõ* + APP as well as *sǭdõ* + APP.

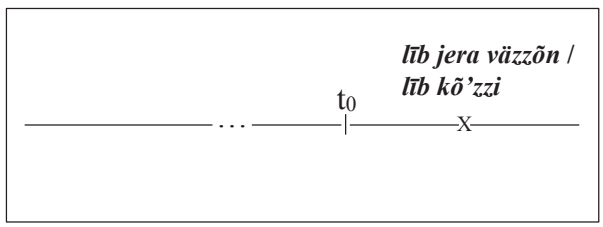

Figure 6. Graphic representation of examples (10) and (11)

(12) Courland Livonian (Loorits 1922)

Ta	***sǭ-b***	*sā̆l*	*seļļiz*	*strēk*	***spēļ-õn***,	
s/he	get-3SG	there	such.GEN	while.GEN	play-APP	
ne'i	*nūz-õb*	*lǭja*	*kilg-st*	*ikš*	*nai*	*i'lz*
so	rise-3SG	boat.GEN	side-ELA	one	woman	up

'[When] s/he has played a while, so a woman will rise from the side of the boat.'

The several examples of *sǭdõ* + APP included by Sjögren & Wiedemann (1861: 160) suggest that Livonian *sǭdõ* + APP once belonged to the vernacular language. However, unlike the Estonian cognate construction *saada* + APP, the Livonian construction is claimed to stress completeness more strongly (Sjögren & Wiedemann 1861: 145). For instance, Viitso (2008: 323) analyses example (13) as an expression of state. A comparison of examples (10), (12), and (13), shows that examples (12) and (13) are less state-like than (10), partly because the verb *sǭdõ* itself adds a dynamicity of reading (see also section 3.3.2).

(13) Courland Livonian (Viitso 2008: 323)

Ma	***sǭ-b***	*sīe-st*	*lēba-st*	***sīe-nd.***
I	get-1SG	this-ELA	bread-ELA	eat-APP

'I will get full from this bread.'

The overlapping functions might be the reason why almost only *līdõ* + APP occurs in the data set (see also subsection 4.2).

3.2. *līdõ* + APP and modal meanings

Subsections 3.2.1 through 3.2.3 introduce the cases in which *līdõ* + APP can be associated primarily with modal meanings. A distinction is made between the instances when *līdõ* + APP (i) locates the situation in the pre-present and expresses epistemic modality, (ii) appears in a conditional clause that can be associated with hypotheticality, and (iii) is used in the past zone expressing epistemic modality or anteriority. The majority of the examples analysed in the following subsections were attested elsewhere than in the translations of Gospels (see Table 1). This could be explained by the fact that all in all the Gospels tend to put forward confident beliefs rather than doubts.

3.2.1. Epistemic modality and pre-present zone

Clause type		No. of occ.-s	Time ref.	TAM
Main clause		9	PRS/PST	TA**M**
Subordinate clause	*object clause*	1		
		Total: 10/56		

Table 4. Instances of epistemic modality in the pre-present zone

When used in the main clause, *līdõ* + APP expresses either future anteriority (Table 3 in subsection 3.1) or epistemic modality placing the situation in the pre-present; see example (14) and Figure 7.

(14) Courland Livonian (Loorits 1922)

Perīmīez u'm kīt-õn						
"Mingi	***lī-b***	***järā***	***võtt-õn,***	*kis*	*tǭ'-ž*	*sīe-dõ"*
someone	LEE-3SG	PP	take-APP	who	want-PST.3SG	eat-tINF

– un lā̄'nd tijā ma'gkõks.

'But the master said, "Someone who wanted to eat may have taken it" – and went [on] with an empty stomach.'

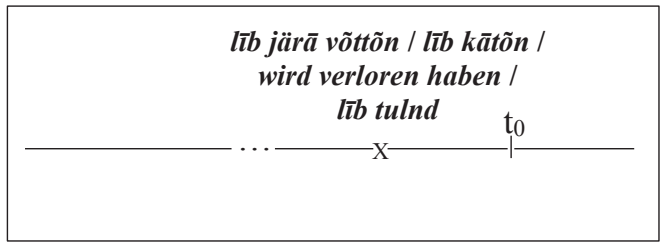

Figure 7. Graphic representation of examples (14)–(16)

Whenever there were several options for how to analyse *līdõ* + APP, context proved to be the decisive factor. For instance, in the case of example (14), context determines

that something has been taken away (it does not enable the reading that something will be taken away in the future). The modal sense added by *līdõ* + APP becomes clear when one tries to replace *līdõ* 'will be' + APP with *võlda*[5] 'be' + APP, e.g. *līb järā võttõn* > *um järā võttõn*, which results in a non-modal meaning 'has taken away'.

In example (15a), the presence of a modal meaning element finds support from the German translation in (15b) containing the future perfect construction *werden* + PTCP + *haben/sein* 'be' (also known as Futur II). The epistemic usage of the German future perfect is described as a common usage of the construction; the temporal relations are otherwise said to be similar to that of the present perfect (Duden-Grammatik 2005: 506, 515). Indeed, Figure 7 would also be applicable for the present perfect (cf. subsection 2.2.1).

(15) Courland Livonian (Sjögren & Wiedemann 1861: 345)

a.	*Ta*	***lī-b***	*āita*	*taga*	***kāt-õn***.
	s/he	LEE-3SG	granary.GEN	behind	lose-APP

b.	*Er*	***wird***	*es*	*hinter*	*der*	*Kleete*
	he	FUT.AUX.3SG	this	behind	DEF.ART	granary

verloren ***haben***.
lose.PTCP have.PTCP
'S/he may have lost it behind the granary.'

The only case of a subordinate clause (object clause) falling under this type contains *ma ārõb* 'I think' in the main clause, see (16); otherwise it shares the characteristics as illustrated above.

(16) Courland Livonian (Sjögren & Wiedemann 1861: 350)

Ma	*ār-õb,*	*ku*	*ta*	***lī-b***	***tul-nd***.
I	think-1SG	that	s/he	LEE-3SG	come-APP

'I think s/he might have arrived.'

Crosslinguistically, the epistemic usage is seen as a later development, e.g. English *will* and German *werden* show the further development FUTURE > EPISTEMIC MODALITY (see Heine & Kuteva 2002: 142). As the linguistic data on Livonian does not go far back and Sjögren & Wiedemann (1861) include the cases of anteriority/resultativity as well as epistemic modality, there is no clear proof for the order of the development. At the same time, there is no proof that this could not have been the case. As expressing epistemic modality in Livonian appeared to be the less commonly attested function of *līdõ* + APP (cf. Tables 4 and 5), it can be in any case regarded as a secondary function of *līdõ* + APP.

5. The verb *võlda* is a non-modal 'be' verb that has both a present and a past paradigm and is correspondingly used for present and past time reference (Viitso 2008: 319).

3.2.2. (Epistemic) modality and conditional clauses

The data set contained two examples of conditional clauses containing *līdõ* + APP, see (17) and (18). The subordinator in example (17) is *až* 'if', whereas in example (18) the conjunction *ku* is used. Typically *ku* expresses temporal relations and translates to 'when', but here the broader context supports the conditional interpretation.

(17) Courland Livonian (ŪT 1942, Mt. 12:29)

Kui	*või-b*	*ykš*	*mingiz*	*vegiz*	*mīe*
how	can-3SG	one	some.GEN	strong.GEN	man.GEN
kuoddõ	*lā̆-dõ*	*až*	*ta*	***äb***	***lī***
home.ILL	go-tINF	if	s/he	NEG.3SG	LEE.CNG
jedmõl	*vegiz*	***vizzõ***	***sidd-õn***		
before	strong.GEN	together	bind-APP		

'Or how can someone enter a strong man's house […],
unless he first binds the strong man?' (ESV)

(18) Courland Livonian (Setälä 1953: 370)

tam' kītõn,

ku	*perīnai*	***lī-b***	*lȭinagiž-iz*	*lemḍi*	*rīprokk-õ*	***kīet-õn,***
if	hostess	LEE-3SG	lunch-PL.ILL	warm.PART	drink-PART	boil-APP
ne'i	*ta*	*tēl̨-õb*	*ēŋtš-ta*	*pa*	*põzāg-õks*	
so	s/he	make-3SG	oneself-PART	PREP	mote-TRA	

's/he told, if the hostess has made warm drink for lunch,
then s/he'll make himself/herself into a mote?'

In comparison with temporal clauses, conditional clauses tend to (i) mark time reference less frequently (although some temporal element is always involved) and (ii) be more often non-assertive (Bybee et al. 1994: 274). For this reason, the use of FTR devices in conditional clauses is more readily associated with modal meanings than in the case of temporal clauses (cf. discussion in 3.1). Still, for the example of Greek it has been shown that the use of an FTR device in a conditional clause can denote a greater extent of assertion than using the subjunctive (Hedin 2000: 347).

With respect to example (17) it can be claimed that *līdõ* + APP expresses anteriority, but no specific time reference can be established as the situation is hypothetical, which is why no figure has been presented. In example (18), *līdõ* + APP can be associated with past time reference and adding an epistemic meaning, but again, the situation is hypothetical.

3.2.3. Past zone: epistemic modality and anteriority

Clause type		No. of occ.-s	Time ref.	TAM
Subordinate clause	*temporal clause*	2	PST	TAM
	object clause	1		TAM
	relative clause	1		
	predicative clause	1		
		Total: 5/56		

Table 5. Instances of epistemic modality in the past zone

There were five instances of *līdõ* + APP used in the past zone. All the examples occurred in a subordinate clause. The absence of *līdõ* + APP in the main clause can be explained by the fact that *līdõ* does not have simple past tense forms (see subsection 2.1), and thus it cannot establish a past time-sphere by itself.

The past zone is established by a past tense form in the main clause (see subsection 2.2.3). In example (19a), *um' vȯnd* serves to place a situation into the past and *äb lī vȯnd* is anterior to that (see Figure 8). In example (20), the past simple form *kūondiz* 'charge' takes the perspective into the past (see Figure 9).

(19) Courland Livonian (Setälä 1953: 354)

a.	*tä'mm-õn*	*u'm*	*vȯnd*	*irm,*	
	s/he-DAT	be.3SG	be.APP	fear	
	ku	***ä'b***	***lī***	*jȯvā*	***vȯnd***
	that	NEG.3SG	LEE.CNG	good	be.APP
b.	*Häne-llä*	*on*	*ol-lut*	*pelko*	***ettei***
	s/he-ADE	be.3SG	be-APP	fear	that_ NEG.3SG
	ole	***ol-lut***	*hyvä*		
	be.CNG	be-APP	good		

'but s/he feared (lit. has had fear) that [the soup] may not have been good'

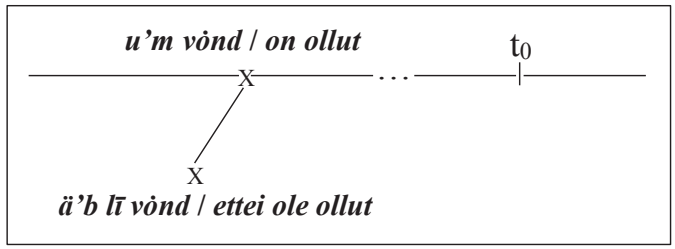

Figure 8. Graphic representation of examples (19a) and (19b)

(20) Courland Livonian (ŪT 1942, Mark 09:09)

kūondiz ta näntõn pālõ,						
algõ	*ne*	*mityd-õn*		*kītõ-gõd,*	*mis*	*ne*
NEG.JUSS	they	anyone-PL.DAT		tell-JUSS.3PL	what	they
voļt	*nālnd,*	*kuņtš*	*Rišting*	*Pūoga*	***äb***	***lī***
be.PST.3PL	see.APP	until	human	son	NEG.3SG	LEE.CNG

kūolini-st ***ylz-nūz-õn.***
dead-ELA up-rise-APP

'he charged them to tell no one what they had seen, until the Son of Man had risen from the dead' (ESV)

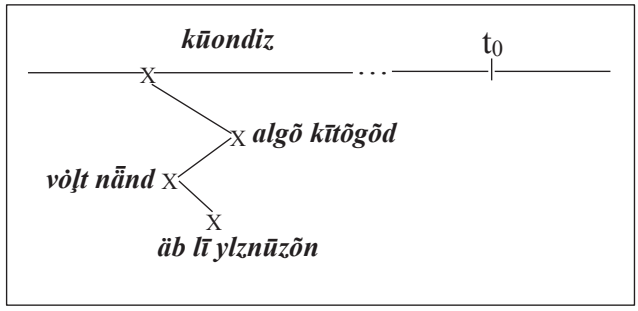

Figure 9. Graphic representation of example (20)

Both past simple forms (such as *kūondiz*) as well as present perfect forms (such as *um' vȯnd*) are regarded here as establishing the past time-sphere (not pre-present as one could expect, cf. subsection 2.2.1). The reason is that the perfect forms in narrative texts, especially in folk tales, are used for stylistic means. This technique is also common to Estonian (Alvre 1993: 102), Latvian (Kalnača 2014: 124), and Lithuanian (Klaas 1997: 89), where its usage instead of the simple past tense is claimed to add a sense of a mediated message[6] (Klaas 1997: 89–90). Considering both forms as a means

6. In Latvian, the modal sense that is added to the message is additionally supported by the use of the perfect tense of the oblique mood (Kalnača 2014: 122).

to establish the past time-sphere makes it possible to avoid the unnecessary distinction between cases like (19a) and (20) but also between narratives told in the present perfect vs. simple past (e.g. in the Votic examples, past simple commonly established the past zone). Moreover, it explains why the verb in the subordinate clause can occur in the same tense as the verb in the main clause but still express anteriority.

When *līdõ* + APP occurs in a subordinate clause, which takes the perspective even further back in time (see example 19a), the use of *līdõ* + APP can be primarily associated with modal meanings. Although the Finnish translation (19b) given by Setälä does not contain any hints of a modal meaning element, using *līdõ* + APP in this example seems to trigger at least some modal meaning. Again, trying to replace *līdõ* 'will be' in example (19a) with *võlda* 'be' results in a non-modal meaning (cf. subsection 3.2.1). For comparison, in example (21), the whole sentence context seems to support the modal reading: *līdõ* appears twice as a copula conveying epistemic meaning about a situation that is represented as simultaneous with that of *at mõtlõnd* '(lit.) have thought' (see also Norvik 2013: 143–144). Figure 10 makes the temporal relations holding for example (21) explicit.

(21) Courland Livonian (Loorits 1922)

Ne	*at*	*mõtl-õnd,*	*ku*	*se*	*lī-b*	
they	be.3PL	think-APP	that	this	LEE-3SG	
mingi	*kuo'ig*	***lī-b***	***ukkõ***	***lā̄'-nd***	*un*	*sā̄l*
some	ship	LEE-3SG	down	go-APP	and	there
bǭts	*lī-b*	*ro'vž-ti.*				
perish	LEE-3SG	people-PL.PART				

'they thought that this may have been a ship, which had probably sunk and people had perished there'

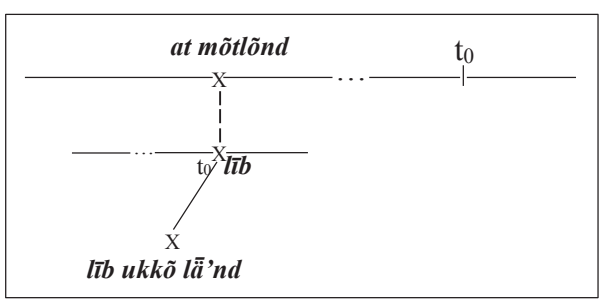

Figure 10. Graphic representation of example (21)

In the case of example (20), in turn, *līdõ* + APP primarily expresses a temporal meaning although the whole sentence is placed into the past zone. The reason is that unlike

in examples (19a) and (21), *līdõ* + APP in (20) expresses anteriority with respect to a posterior orientation point (i.e. telling that something does not happen before the Son of Man has risen).

The cases discussed above suggest that the examples of *līdõ* + APP remaining within the past zone can express both modal as well as temporal meaning. It seems to be the case that the complex temporal relations with respect to central orientation time determine the accompanying meaning element, cf. Figures 8 and 10, in which *līdõ* + APP is placed diagonally to the left vs. Figure 9, where *līdõ* + APP is placed diagonally to the right of the orientation point. The former were associated with modal meanings, the latter with temporal meanings.

3.3. Comparisons with Livonian *līdõ* + PPP and *sǭdõ* + PPP

The constructions *līdõ* 'will be' + PPP (passive past participle) and *sǭdõ* 'get; become' + PPP can be associated with expressing passive meaning. Whereas Sjögren & Wiedemann (1861: 158–159, 162–163) list *līdõ*, *sǭdõ*, and *võlda* 'be' + PPP of a lexical verb as means of conveying passive relations, Viitso (2008: 324) mentions only *võlda* and *sǭdõ* + PPP, as *līdõ* + PPP is rare (Tiit-Rein Viitso, personal communication).

An additional way of conveying passive meaning in Livonian is by using a verb in the 3rd person form (singular or plural) and omitting the subject, e.g. *vietā* (water. PART) *kānd-iz* (carry-PST.3SG) 'water was carried' (Viitso 2008: 321). This possibility, however, has some constraints, for instance, when an agent is explicitly expressed the construction *sǭdõ* + PPP must be used, e.g. *ta* ***sai taptõd*** *eŋtš* [...] *veļst* 's/he was killed by his/her brother' (Sjögren & Wiedemann 1861: 159–160). Here, only the analytical constructions will be discussed.

Table 6 includes the forms of *līdõ* + PPP and *sǭdõ* + PPP that were represented in the data set. Whereas *līdõ* + PPP occurred only 6 times and only in the 3rd person affirmative form, there were all in all 259 instances of *sǭdõ* + PPP. Mostly *sǭdõ* appeared in 3rd person forms but also other options were represented.

Person	Finite verb			V2
	Affirmative		Negative	PPP
1SG	*sǭb*		*äb sǭ*	
2SG	*sǭd*		*äd sǭ*	
3SG	*sǭb*	*līb*	*äb sǭ*	*-dõd, -tõd*
1PL	*sǭmõ*		*äb sǭmõ*	*-õd*
2PL	*sǭt(õ)*		*ät sǭt(õ)*	
3PL	*sǭbõd*	*lībõd*	*äb sǭt(õ)*	

Table 6. Present indicative forms of *sǭdõ* and *līdõ* in a PPP construction

3.3.1. *līdõ* + PPP in Livonian

The 6 instances of *līdõ* + PPP in the data set all get passive readings but represent somewhat different cases. In example (22), *līdõ* + PPP occurs in a subordinate temporal clause and expresses future anteriority. Example (23) seems to stress the resulting state as explained in the case of *līdõ* + APP (cf. subsection 3.1.2). In example (24), *līdõ* + PPP is used in the main clause, where it conveys epistemic modality. Thus, (22) through (24) show similarities with *līdõ* + APP described in 3.1, 3.1.2, and 3.2.1 and illustrated by Figures 5–7, respectively.

(22) Courland Livonian (Sjögren & Wiedemann 1861: 332)

Ku	***lī-b***	***jera***	***jūo-dõd***,	*sis*	*tul*
when	LEE-3SG	PP	drink-PPP	then	come.IMP.2SG

mīn-da	*nutā-m*
I-PART	call-mINF

'when you have drunk it up, then come to call me'

(23) Courland Livonian (ŪT 1942, Mt. 16:19)

Ma	*ānd-ab*	*sinnõn*	*touvõd*	*vald*	*võţm-õd;*
I	give-1SG	you.DAT	sky.PL.GEN	kingdom.GEN	key-PL

ja	*mis*	*sa*	*mā*	*pā̆l*	*sidā-d,*
and	what	you	earth.GEN	on	bind-2SG

lī-b	*touvis*	***sid-tõt***
LEE-3SG	heaven.INE	bind-PPP

'I will give you the keys to the kingdom of heaven, and whatever you bind on earth shall be bound in heaven' (ESV)

(24) Courland Livonian (Kettunen 1925: 54)

kui	*ma*	*ni*	*lā̆'-b*	*kuodāj*	*või*	*minā*
when	I	now	go-3SG	home	or	I

eŋtš	*kuolm-õ*	*pȯig-õ*	*vel*	*sǭ-b*	*nā̆'-dõ*	*või*
own.GEN	three-PART	boy-PART	still	get-1SG	see-tINF	or

ne	***lī-bõd***	*ka*	*kuo'nnõ*	***järā***	***võtt-õt***
they	LEE-3PL	also	at_home	PP	take-PPP

'when I go home now, will I be able to see my three boys or maybe they have been taken away from home'

These few examples already show that *līdõ* + PPP can be regarded as a passive counterpart of *līdõ* + APP. Furthermore, Sjögren & Wiedemann (1861: 158, 160) have introduced *līdõ* + PPP as *passive future perfect* as opposed to *līdõ* + APP and *sǭdõ* + APP, which are both placed under *active future perfect* (cf. subsection 3.1.3).

3.3.2. *sǭdõ* + PPP in Livonian

With 259 examples, *sǭdõ* + PPP was the commonest construction in the data set; see example (25) and corresponding Figure (11). The following overview is, however, based on 195 examples as translational equivalents occurring in the data set were counted only once (Gospels of Matthew contained 64 overlapping instances out of 80). The high number of instances in the data set is partly due to the fact that the PPP construction containing *sǭdõ* in the present tense was used also for expressing present time reference (cf. subsection 2.1). The high number of instances in the Gospel translations, in turn, can be explained by the type of the text: Gospels contain many predictions about future states of affairs.

(25) Courland Livonian (Kettunen 1925: 53)

un	*li*	*jālgab-õz* […]	*un*	
and	go.IMP.2SG	town-ILL	and	
sinā	***sǭ-d***	***võtt-õd***	*pa*	*pūoš-õks*
you	get-2SG	take-PPP	PREP	servant-INS

'and go to town […] you'll be taken as a servant'

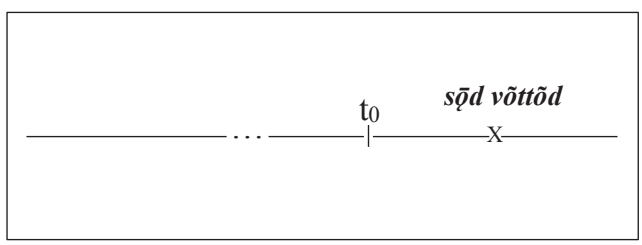

Figure 11. Graphic representation of example (25)

The construction *sǭdõ* + PPP is claimed to describe an action (Viitso 2008: 324). Indeed, most instances of Livonian *sǭdõ* + PPP in the data set occurred in the main clause conveying an action. The action is carried out at a certain orientation point, as in (25), not by a certain orientation point as is typically the case with *līdõ* + APP (cf. subsection 3.2). The construction *sǭdõ* + PPP showed such behaviour in various subordinate clauses as well. For instance, in example (26), *sǭdõ* + PPP occurs in a subordinate object clause expressing an action that is viewed as simultaneous with another action in the past zone (for past time zone, see subsections 2.2.3 and 3.2.3).

Unlike *līdõ* + APP, *sǭdõ* + PPP appeared only infrequently in temporal clauses (cf. subsection 3.2.1).

(26) Courland Livonian (Kettunen 1925: 99)

un	*tam*	*nā̄'nd*	*ku*	***sǭ-b***	***kand-tõd***	*zārka*
and	s/he_be.3SG	see.APP	that	get-3SG	carry-PPP	coffin

'S/he saw that a coffin was being carried'

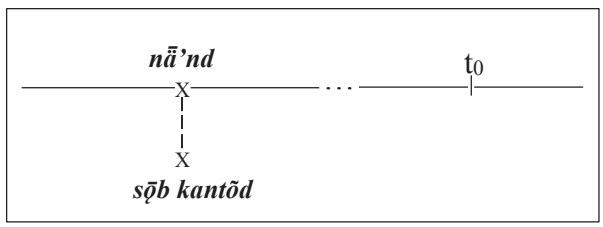

Figure 12. Graphical representation of example (26)

In addition to syntactic differences, there are also semantic differences between *sǭdõ* + PPP and *līdõ* + PPP. The verbs themselves play a role here: *sǭdõ* expresses a more dynamic action and gives a hint of change, while *līdõ*, in turn, expresses static relations. Whereas *līdõ* can be found in the epistemic function, *sǭdõ* rather carries the co-meaning of SUCCEED. For comparison, this meaning is shown to be present in different constructions containing Estonian *saada* (Tragel & Habicht 2012: 1397) and it seems to apply at least to Livonian *sǭdõ* + PTCP constructions as well (cf. also subsection 3.1.3).

Relying on the evidence presented above, *līdõ* + APP and *sǭdõ* + PPP cannot be regarded as active and passive counterparts. Sjögren & Wiedemann (1861: 162) have also treated *sǭdõ* + PPP differently from *līdõ* + APP (and also from *sǭdõ* + APP and *līdõ* + PPP) placing *sǭdõ* + PPP under *passive future* (cf. subsection 3.3.1).

The majority of the investigated cases contained a semantic patient as a grammatical subject (occurs in the nominative case, coordinates with the verb), see *sinā* in (25) and *zārka* in (26). This proves the claim about Livonian that expressing passive relations is subject-centred (Tiit-Rein Viitso, personal communication). Occasionally, the agent was expressed as well, usually by means of an elative agent adverbial (e.g. *eŋtš veĺst* 'by his/her brother') or by means of NP_{Gen} *kä'dst* (e.g. *kēnig kä'dst* 'by the king', lit. 'by king's hand'). The semantic patient did not appear as a grammatical subject or it was not possible to insert one only in a few cases. For instance, example (27) contains semantic patient as a grammatical object (it occurs in the partitive case, which is an object case); an agent is not expressed.

(27) Courland Livonian (Mägiste 1964: 58)

sīe	*reit*	*si'nn-õn*	***sǭ-b***	***ie-ra'dĺ-tõd***	*jalg-õ*
this	time	you-DAT	get-3SG	off-cut-PPP	leg-PART

'This time your leg will be cut off.'

When studying the cognate *saada* + PPP constructions in Estonian dialects, the cases that reduce the valence of the verb (examples 25 and 26) are associated with passive meanings, whereas the instances that do not affect the valence of the verb (example 27) have been associated with impersonal meanings (see Uiboaed 2013: 179). (For more information on the differences between impersonalization and passivization, see Torn-Leesik 2009 and Erelt 2013). As it appears, unlike Livonian, the Estonian counterpart *saada* + PPP was typically attested in the impersonal function; the passive function turned out to be less common. Additionally, Estonian *saada* + PPP was found in the possessive perfect construction (contains an adessive agent) and resultative construction[7] (Uiboaed 2013: 179–180). The Livonian material collected for the present study did not reveal any corresponding instances. This, however, does not mean that these uses are impossible: in Estonian dialects, the possessive perfect and resultative uses were also shown to be infrequent.

3.4. Conclusive remarks on Livonian *līdõ* + PTCP and *sǭdõ* + PTCP

Analysis of Livonian *līdõ* + PTCP and *sǭdõ* + PTCP has demonstrated the following

(1) *līdõ* + APP occurs commonly in the function of expressing future anteriority (and resultativity). Thus, it deserves to be called the future perfect. The epistemic meaning, which occurred to a lesser extent, could be regarded as a secondary function of *līdõ* + APP.

(2) *līdõ* + PPP was infrequent (all in all 6 occurrences), but the few usages showed that it can be considered the passive counterpart for *līdõ* + APP (it conveyed future anteriority and epistemic modality, and had a state-like usage).

(3) *sǭdõ* + APP occurred in only one instance in the data set and in a few examples in earlier grammars / language overviews. The construction showed overlapping uses with *līdõ* + APP, first of all in the function of conveying anteriority. Comparison of *sǭdõ* + APP and *līdõ* + APP in a state-like cases revealed a more dynamic usage of the former.

(4) The construction *sǭdõ* + PPP was shown to differ semantically and syntactically from the rest of the constructions: it is more likely to express an action carried out at a certain reference point (rather than by a certain reference point); the construction is typically used in the main clause; the differences are conditioned partly by the verb *sǭdõ* itself.

7. In the case of a resultative construction, the semantic agent and grammatical subject are claimed to express the same entity. Thus, the resultative is defined differently from what is regarded as a resultative construction here, see subsections 3.1.2 and 3.1.3.

4. Participle constructions in Livonian in a Southern Finnic context

Table 7 views the functions of PTCP constructions in Livonian (explained in subsections 3.1 through 3.3) within a broader Southern Finnic context. The discussion will follow in subsections 4.1 through 4.3.

Construction Language variety	**LEE(NE)- + APP**		**SAA- + APP**	**LEE(NE)- + PPP**	
	temp. (ant./res.)	epist. mod.	temp. (ant./res.)	temp. (ant./res.)	epist. mod.
Courland Livonian	+	+	+	+	+
Salaca Livonian	+	+	+	+	
Insular dialect of Estonian	+	+	+	-	-
Old Written North Estonian	N/A	+	+	-	-
Standard Estonian	-	-	+	-	-
Votic	+	+	+	+	

Table 7. LEE(NE)-/SAA- + APP and LEE(NE)- + PPP constructions in Southern Finnic

In addition to Courland Livonian, Salaca Livonian and Votic have also been included. With respect to Estonian, Old Written North Estonian (OWNE) and the Insular dialect are considered separately as *leeda* could be attested only in these language varieties[8]. Standard Estonian is included for comparison.

In the case of LEE(NE)- + APP/PPP, a distinction is made between the two main functions outlined in section 3: temporal (anteriority/resultativity) and modal function (epistemic modality). As SAA- + APP does not have the epistemic modality reading, only the temporal function is included. Although parallels were also drawn with SAA- + PPP, this construction is not included in Table 7 as the construction was shown to differ semantically and syntactically (cf. subsection 3.3.2).

The marking "-" is used if the corresponding construction was not attested in a particular language variety. "+" means that the construction was attested in a particular function, whereas "N/A" means that it was not. The darker grey in the case of Votic indicates a different function (see subsection 4.3). It is, however, important to note that Table 7 illustrates only the data set collected for the purposes of the present study.

8. Tunkelo (1946: 556) has reconstructed the form *lîв for South Estonian; the literary sources, however, do not seem to contain any instances.

4.1. Temporal and modal usage of LEE(NE)- + APP in Southern Finnic

Analysis of the Southern Finnic language varieties revealed both the temporal as well as the modal usage of LEE(NE)- + APP (see Tables 7 and 8). Still, OWNE is represented only by examples of the modal usage. There are no examples from Standard Estonian, as the verb *leeda* is not used in present-day Estonian.

(28)	Votic (Ariste 1948: 79) *kui* *minä* ***lee-n*** ***tšüsü-nnü***, *sis* when I LEE-1SG ask-APP then *siä* *anna* you give.IMP.2SG 'when I have asked then you give [it to me]'	temporality (anteriority / resultativity)
(29)	Votic (Ariste 1977: 52) *se* *moni* *satoi-ta* *vuosii-ta* this some hundred.PL-PART year.PL-PART *vie-z* ***lie-b*** ***õl-lu*** water-INE LEE-3SG be-APP 'this might have been in the water for hundreds of years'	epistemic modality
(30)	Insular dialect of Estonian (Ariste 1954: 288) *sis* *ma* *tee* *ku* *ma* ***lee (lii)*** *seel* ***käi-nd*** then I know when I LEE there go-APP 'then I'll know, when I've been there'	temporality (anteriority / resultativity)
(31)	Insular dialect of Estonian (EMS) *ta* ***lee-b*** *se-da* ***saa-nd*** s/he LEE-3SG this-PART get-APP 'S/he may have received this.'	epistemic modality
(32)	OWNE (Hornung 1693) *ehk* *ma* ***lene-n*** ***ol-nud*** maybe I LEENE-1SG be-APP 'Maybe I have been.'	epistemic modality

(33)	Salaca Livonian (Sjögren & Wiedemann 1861: 297) *Ma* *ēldim* *ab* *iä* *mierk* *ku* I before NEG.1SG stay.CNG satisfied when *ma* *ama* ***lī-b*** ***jära*** ***kirit-en*** I everything LEE-1SG PP write-APP 'I won't be satisfied before I have written everything down.'	temporality (anteriority / resultativity)
(34)	Salaca Livonian (Sjögren & Wiedemann 1861: 332) *nüüd* *te* ***lī-ti*** ***magg-en*** now you.2PL LEE-3SG sleep-APP *-ab* *uo* *magg-en* NEG.1PL be.CNG sleep-APP 'Now you must have slept – no we have not.'	epistemic modality

Table 8. Temporal and modal uses of LEE(NE)- + APP

In the Insular dialect of Estonian, only one example gets an anteriority reading (30); the rest convey epistemic modality. It is interesting that example (30) has been noted down from the Sõrve peninsula – the area that is geographically closest to Courland. Furthermore, the *lî-* form in brackets shows similarities with Livonian *līdõ*. Ariste (1954: 288) regarded Livonian influence as possible, although at the same time he maintained that there was not enough evidence to prove that.

Whereas the examples from Votic and Salaca Livonian contained only the LEE- form, the examples in OWNE also made use of the LEENE- form; see (32). Even though examples (31) and (32) are represented without context, their translations in dictionaries support the modal reading. Example (31) is "translated" into Standard Estonian as *vist on saanud* 'probably has received' (EMS). Hornung (1693) translates example (32) into German as *vielleicht bin ich gewesen* 'maybe I have been'. An additional indicator of modality in example (32) is the modal particle *ehk* 'maybe'.

A small comparison with Northern Finnic languages shows that Finnish, Karelian (Olonets and Viena Karelian), and Ludic also use LEE(NE)- + APP constructions. In these language varieties, the epistemic modality reading seems to be the commonest, as in example (35). Thus, in a broader Finnic context, the anteriority reading of Livonian *līdõ* + APP stands out even more.

(35) Ludic (Zaikov 2000: 261)

kahteh	*kierah*	*vai*	*kolmeh*	***l'ienne-n***	***ol-nu***	*Terunkülä-s*
two	time	or	three	LEENE-1SG	be-APP	Terunkülä-INE

'Two or three times I've been to Terunkülä'

4.2. Anteriority – the overlapping use of LEE(NE)- + APP and SAA- + APP

Livonian *līdõ* + APP and *sǭdõ* + APP were shown to overlap in the functions of expressing future anteriority. This was also proposed as the reason why only one of the devices (*līdõ* + APP) is typical in this function (cf. subsection 3.1.3). Further proof comes from OWNE and the Insular dialect of Estonian, which contained instances of *saada* + APP as well as *leeda* + APP. Both constructions were found in the anteriority function; see examples (36) and (30). But again, only one of the constructions proved to be common. Unlike in Livonian, *saada* + APP gave numerous examples. As mentioned already, example (30) was the only instance of *leeda* + APP expressing anteriority in the case of Estonian varieties discussed here. In addition to *leeda* + APP, also *saada* + APP is uncommon in present-day Estonian (see also Tragel & Habicht 2012: 1398, 1403).

(36) OWNE (COWE [<<1781-Lithander_g_669.1047>>])

Saa-d	*sa*	*pärmi*	***sissepan-nud,***
get-2SG	you	yeast.GEN	in_put-APP
siis [...]	*liguta*	*se-dda*	*öllu-t*
then	stir.IMP.2SG	this-PART	beer-PART

'When you have put the yeast in, then […] stir this beer'

The construction *saada* + APP is regarded as characteristic of the first Estonian full Bible from 1739 (Mägiste 1936: 73), where it is found in the function of relative future expressing perfectivity (Helle 2006: C40–C41). (This description corresponds to the function of expressing future anteriority as explained in this article.) A small comparison of passages containing Livonian *līdõ* + APP in the Gospels of Matthew (Mt 1880; ŪT 1942) with the corresponding passages in different translations of the Gospel of Matthew into Estonian[9] showed that the Gospel of Matthew of the Livonian *Ūž Testament* (1942) and the Gospel of Matthew of the first full Estonian Bible 1739 provide the most correspondences: Livonian *līdõ* + APP and Estonian *saada* + APP correspond in 6 cases. In 5 out of 6 instances, they are used in temporal clauses, in which they express future anteriority and primarily convey temporal meaning; see examples (37a) and (37b). The remaining example was the instance of a conditional clause already discussed in subsection 3.2.2. In Standard Estonian, the 6 instances either contain a verb in the present tense or use the present perfect construction *olla* 'be' + APP (*olla* is a cognate of Livonian *võlda* 'be').

9. Search engine available online: <http://www.eki.ee/piibel/>

(37) a. Courland Livonian (ŪT 1942, Mt. 26:32)

Aga	*pierrõ,*	*ku*	*ma*	***lī-b***
but	after	when	I	LEE-1SG
ylz-nūz-õn	*ma*	*lā̄-b*	*täd*	
up-raise-APP	I	go-1SG	you.PL.GEN	
jeds	*Galileamā-lõ.*			
before	Galilee-ALL			

b. OWNE (COWE [Bible 1739], Mt. 26:32)

Agga	*pärrast,*	*kui*	*ma*	***saa-n***
but	after	when	I	get-1SG
ülles-tous-nud,	*tahha-n*	*ma*	*teie*	*ele*
up-raise-APP	want-1SG	I	you.PL.GEN	before
miñ-na	*Kalileama-le.*			
go-tINF	Galilee-ALL			

'But after I am risen, I will go before you to Galilee.' (ESV)

As Estonian *saada* + APP construction may have entered the stage with Bible translations and by now it has fallen out of use, but also for other reasons, the question of the origin of *saada* + APP has been addressed. Researchers tend to argue for a native origin, claiming that once it belonged to the vernacular language (Mägiste 1936: 87–88; Tragel & Habicht 2012: 1398). Due to the reason that linguistic data from Votic and Livonian does not go far back, it is hard to say anything decisive about SAA- + APP constructions in these languages. It is only possible to note that the corresponding constructions are rare in the sources that were used for the present study. For instance, Ariste (1948: 91–92) presents full paradigm of *saata* + APP in the Votic Grammar, but the text collections I consulted with, did not reveal any instances. Of course, it is possible that the data set was too small, but in the Finnic languages in general, SAA- + APP constructions seem to be uncommon (see also subsection 3.1.3). Considering this, SAA- + APP constructions need further study, besides, there still remains the question why this construction is uncommon in Standard Estonian.

4.3. LEE(NE)- + PPP: resultative vs. actional?

Whereas Salaca Livonian and Votic also contained examples of LEE- + PPP (the LEENE- form did not occur), the Estonian language varieties discussed here did not reveal any corresponding examples (see Table 7). The Salaca Livonian examples were attested in the function of expressing future anteriority/resultativity, see examples (38) and (39), cf. corresponding examples in Courland Livonian (examples 21 and 22 respectively).

(38) Salaca Livonian (Sjögren & Wiedemann 1861: 332)

ku	***lī-ms***	*jära*	***juod-eds***
when	LEE-mINF.INE	PP	drink-PPP
sis	*tul*	*min-d*	*kuts-ma*
then	come.IMP.2SG	I-PART	call-INF

'when it will be drunk up, then come to call me'

(39) Salaca Livonian (Sjögren & Wiedemann 1861: 328)

Mis	*omm-el*	*tie-d,*	*se*	***lī-b***	***tied-eds***.
what	yourself-ADE/ALL	do-2SG	this	LEE-3SG	do-PPP

'what you do for yourself will be done'

The examples from Votic also contained instances that primarily express action. In the case of example (40), the context provides the reading of an action, i.e. that an action of torturing will take place in the future, not that someone will be in the state of being tortured. It seems that the farther east we move, the more we get usages like (40), cf. Veps example (41). A comparison of examples (38), (40), and (41), which all contain LEE(NE)- + PPP in the main clause, reveals the more resultativity-like interpretation of Salaca Livonian example (39).

(40) Votic (Ariste 1977: 52)

kasse	*puu-hõõ*	*jumalaa*	*poikaa*	***lie-b***	***piina-ttu***
this	tree-ILL	God.GEN	son	LEE-3SG	torture-PPP

'On this tree they will torture God's son'

(41) Veps (Tunkelo 1946: 310)

homen	***lino-b***	*pät's-he*	***lykai-tud***
tomorrow	LEENE-3SG	oven-ILL	push-PPP

'Tomorrow will be put into the oven.'

The action-like uses seem to show parallels with Russian. Namely of all the tense-aspect forms, the future copula *bud-* + perfective form is claimed to be the least

resultative (Nedjalkov 1988: 47). Such cases are referred to as passive functions (actional passive) as opposed to resultative functions (statal passive) (Nedjalkov 1988: 45). This adds one further distinction as in subsection 3.1.2 it was stated that there is a continuum between expressing anteriority and resultativity, but in the case of PPP constructions that do not express anteriority, the question is between the actional passive and statal passive.

Be it more resultative or action-like use, the examples (39) to (41) can be represented in terms of Figure 13. Example (38), however, is an example of expressing anteriority in the future zone and can be viewed in terms of Figure 5.

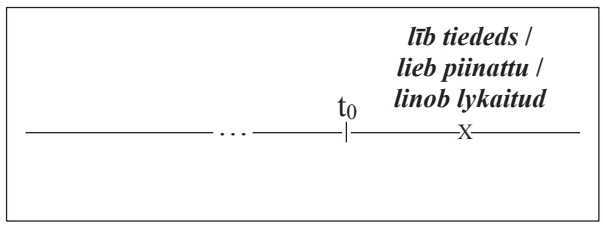

Figure 13. Graphic representation of examples (39) to (41)

With respect to Votic, Veps, and other Northern Finnic languages that can omit copula in the present, there are also cases where a different formation comes into the question, i.e. that LEE(NE)- is a copula inserted into a predicative construction; see example (42).

(42) Votic (Ariste 1962: 34)

ned	*bulka-d*	***lie-väd***	*sene-lie*	*lavva-lõõ*	***pan-tu***,
these	bread-PL	LEE-3PL	this-ALL	table-ALL	put-PPP
kuza	*kõik*	*võõra-d*	*nõõ-vad*	*issu-maa*	
where	all	stranger-PL	begin-3PL	sit-MINF	

'This bread will be put on the table, where all guests will eat.'

In any case, LEE(NE)- + PPP in the Northern Finnic languages needs further attention, especially taking into account the contact with Russian.

5. Conclusions

The present article has analysed semantic functions and syntactic behaviour of past participle constructions. The focus was on Livonian *līdõ* 'will be' + active past participle (APP) / passive past participle (PPP) and *sǭdõ* 'get; become' + APP / PPP. As regards Livonian, the article set out to determine to what extent these constructions can be associated with expressing future time reference (FTR): (i) whether *līdõ* +

APP, which has been called the future perfect but is also associated with modal and aspectual meanings, deserves to be called the future perfect; (ii) and what its precise relation is to the *sǭdõ* + PPP constructions that also frequently occur with reference to the future. The constructions in Livonian were viewed against a broader background, discussing the cognate constructions in the other Southern Finnic languages (referred to as LEE(NE)- + APP/PPP and SAA- + APP/PPP); some parallels were drawn with the corresponding constructions in the Northern Finnic languages and the Indo-European contact languages.

Considering the primary meaning element (temporal or modal as the aspectual meaning element was always shown to be strong), time reference (future, past, or present), and the clause type (main or subordinate), a distinction was made between two main functions: expressing (i) anteriority, and (ii) epistemic modality. It was argued that *līdõ* + APP deserves to be called the future perfect as its main function is to express anteriority in the future domain (39 out of 56 instances in the data set occurred in this function). Additionally, it was pointed out that Livonian stands out with regard to the usage of the future perfect construction, as future marking in subordinate clauses is often redundant or associated with modal meanings. Livonian *līdõ* + APP, however, was typically attested in the temporal (future) meaning. The second-most common function of *līdõ* + APP in Livonian was the function of expressing epistemic modality (the epistemic sense was typically added to a situation viewed as completed in the pre-present zone). Drawing on crosslinguistic evidence, it was suggested that this usage might be a later development of the construction, and can be thus regarded as a secondary function of *līdõ* + APP. The finer development of the semantic functions and syntactic behaviour, however, needs further study.

The construction *sǭdõ* + PPP commonly encountered in Livonian in the function of expressing passive relations was considered a passive counterpart of *līdõ* + APP only in a very general sense. It was found in a more action-like usage: expressing an action carried out at a certain reference point, not by a certain reference point as is typical in the case of *līdõ* + APP. Additionally, *sǭdõ* + PPP was associated with different accompanying meanings, e.g. the sense of SUCCEED (the epistemic sense typical of *līdõ* was shown to be impossible). Comparison with the Estonian data presented further proof for the claim that Livonian is more subject-centred in expressing passive relations: the majority of instances contained a semantic patient as the grammatical subject; the semantic agent could also be expressed.

There were only 6 instances of *līdõ* + PPP, but it turned out to be a better passive counterpart for *līdõ* + APP than *sǭdõ* + PPP: *līdõ* + PPP was also found in the function of expressing anteriority and epistemic modality. Thus, this justifies calling it the passive future perfect in the literature. In Livonian, the construction *sǭdõ* + APP also proved to be infrequent. This was explained by the fact that as SAA- + APP and LEE(NE)- + APP constructions share similar functions (even though the verbs convey somewhat different meanings), the language chooses either one or the other construction. Unlike Livonian, Old Written North Estonian was shown to have used the construction *saada* + APP.

Under the function of anteriority, the article also discussed the instances of resultativity. They were regarded as establishing a continuum, with anteriority stressing

the action and resultativity the resulting state. These functions were shown to intertwine; however, in some cases it was possible to tell which one was in the foreground. Whereas the difference between anteriority and resultativity was made in the case of APP constructions, in the case of PPP constructions that did not express anteriority, the term *actional passive* was introduced. For instance, when used in the main clause, Livonian *līdõ* + PPP seemed to stress the resulting state, whereas the corresponding LEE(NE)- + PPP construction in Northern Finnic languages rather expressed an action.

Placing the results against a broader (Southern) Finnic background revealed that the presence/absence of LEE(NE)- + APP/PPP and SAA- + APP/PPP and their main/secondary functions is largely language-specific. A further task would be to analyse the results in the light of language contacts in order to determine to what extent neighbouring Indo-European languages have played a role in the development of the participle constructions discussed in this article.

Abbreviations

1,2,3 – numbers
ACC – accusative
ADE – adessive
ADJP – adjective phrase
ALL – allative
APP – active past participle
ART – article
AUX – auxiliary
CNG – connegative
DAT – dative
DEF – definite
ELA – elative
FTR – future time reference
FUT – future
GEN – genitive
IMP – imperative
ILL – illative
INE – inessive
INS – instrumental
JUSS – jussive
MINF – M-infinitive
NEG – negative
NOM – nominative
NP – noun phrase
PART – partitive
PASS – passive
PFV – perfective
PL – plural
PP – perfective particle
PPP – passive past participle
PREP – preposition
PRS – present
PST – past
PTCP – past participle
SG – singular
TINF – T-infinitive
TRA – translative
V – verb

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