COMPOUND FORMATION PRINCIPLES IN LIVONIAN

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Abstract. Compounding is one of the most productive types of Livonian word formation. Compounds typically are synthetic and contain one or more modifiers, which follow the head of the compound. Most compound nouns have a singular genitive modifier. Livonian also has an important sub-group of compound nouns and adjectives, which has preserved the historical singular genitive ending *-n in modifiers. On rare occasions, the modifier can also be nominative. In such compounds, the modifier partially agrees in case with the head. An important group of Livonian compound nouns, created on the Latvian model, has declinable active present participles as modifiers. The Livonian system of compounds, just like Livonian itself, generally follows traditional Finnic compound word formation principles, but also has characteristics of compound formation typical of Latvian. Understanding the Livonian system of compounds was greatly helped by use of the Livonian written language corpus.

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1. Introduction

Certain aspects of Livonian are rather well researched; however, there are some areas, which have not yet been the focus of comprehensive studies. There also exist studies, which must be redone or expanded using a larger amount of materials and newer data.

One such area is compound formation. This part of grammar, which is connected more to word formation, syntax and also orthography, hides noteworthy features. These features are important in the historical development of the Livonian language but also from the standpoint of current morphological structure.

Livonian compound formation principles are most thoroughly described for the first time in A. J. Sjögren’s and F. J. Wiedemann’s Livonian grammar in 1861 (SjWa: 40–45). The Livonian literary language tradition has continued to develop since that time and Livonian
itself has gone through new developments. I have partially described present-day compound formation in Livonian within the context of it being one possibility for word formation as a means for expanding the Livonian lexicon in my previous articles (Ernštreits 2016, 2018). The aim of the current article is to provide an overview of the types of Livonian compounds, their morphological features, and the problems which exist in presenting their morphology.

The need for a more complete understanding and better description of compound words was a major contributor to the Livonian lexical database (LLDB) completed in 2016 on the basis of the Livonian-Estonian-Latvian Dictionary (LELD). In addition, a morphological database (LMDB) was created for easier language learning and collection of morphological data. The materials in these data showed that a majority of noun compounds clearly require a special interpretation in connection with the declension in the modifiers and also with respect to the corresponding declension principles, which are unclear.

In Estonian (Kasik 2015: 93–100) and Latvian (Vulāne 2013: 249–252) linguistic tradition, compounds, their classification and other related theoretical aspects are generally dealt with similarly. However, the tradition of defining the compound is somewhat different. In Latvian, compounds are considered semantically as well as syntactically linked words (Vulāne 2013: 249). In Estonian, in addition to synthetic compounds corresponding to those in Latvian, there are also stem compounds, in which there is a semantic correlation only between the parts involved in word formation (Kasik 2015: 93) and which often have a nominative modifier. One goal of the current study is to determine how Livonian compound formation relates to its two contact languages.

The present paper focuses primarily on describing the compound formation principles originating from the morphological properties of the compounds. The compounds are grouped according to their head and modifier as well as the inflected forms used in their formation, while also, for the first time, detailing which are the statistically most popular methods for compound formation.

The current paper is an empirical descriptive study of Livonian, for which the corpus of written Livonian (CWL) is the main source. The CWL consists of data from the LLDB as well as various other written language sources (ČDG, ČT, Stalte 2011, etc.). Compounds were also studied in two closely connected languages: in Latvian, as the primary source of contacts for Livonian, and in Estonian, which provides an understanding of traditional Finnic word formation principles and also is a source for newer language and culture contacts.
Boundaries within compounds are marked as they are in LELD and LLDB. Boundaries between components are marked with | and the declinable portion of the compound is marked with ||.

2. Compound formation

Compound formation is one of the most productive types of word formation in Livonian. Approximately one-quarter of the entries in LELD are compounds. Compounds also have an important role in the creation of new words, especially translated loanwords, which Latvian for bilingual Livonian language speakers is the most comfortable to use as a model or Estonian, as a second important source, for terms relating to culture.

Compared to Latvian, one can observe a noticeably wider use of compounds in Livonian. Depending on the source or materials, Livonian also uses compounds where a simple word combination is sufficient in Latvian (rōda|na ‘iron nail’; raudnæl ‘felt boots’; filts|söpkōd ‘felt boots’). This could also just be recent influence on the Livonian orthography by the Estonian orthographic practice for writing stem compounds, especially in the context of the merging of the nominative and genitive cases in Livonian. Modifiers are semantically in the genitive, which can be seen in compounds where a component distinguishes nominative and genitive forms (mie’d|kastūg ‘honeydew [honey.GEN + sauce]’; me’ž|kastūg ‘quern, (hand-)mill [hand. GEN + stone]’).

Generally, compounds are formed from two components, but compounds consisting of three or more components are also possible (võ’l|uumn’aiɡa ‘magic potion [lit. wizard’s drink]’; pivā|kuodā|kēla ‘church bell’; kō’d|tuoistōn|suorm|sūol ‘duodenum’; si’zzōl|tu’lmīz|ovāt ‘income source’; sied|aig|sōŋō ‘until this time’; tagā|mūn|āigast ‘the year before last’).

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The majority of compounds in Livonian are subordinate compounds. Coordinate compounds are less represented and their features in this article are discussed along with their respective compound type.

Subordinate compounds are composed of one or more modifiers, which are followed by the head. The only exception is the modifier -īž ‘self, own sama-, -pat’, which likely arose as a result of Latvian and Estonian influence. This modifier occurs at the end of the compound primarily in compound adverbs (sā’līž ‘right there sealsamas turpat’), but also in pronouns (seīž ‘the same one seesama tas pats’) and adjectives (selīž ‘of the same type samasugune tāds pats’) in some written sources.

2.1. Compound nouns

The majority of compounds in Livonian are compound nouns. As compound nouns are primarily formed from declinable components and are declinable themselves, morphology plays an important role in selecting the inflected form of the modifier for constructing the compound as well as in preserving certain archaic forms in modifiers. Likewise, the unique features of the declension of compound nouns themselves is important from the perspective of morphology.

This latter aspect has posed a significant problem for presenting compound nouns in lexicographic sources. There are many compounds in Livonian in which not only the head, but also the modifier, is declined. In earlier lexicographic sources this problem is mostly ignored in discussions of morphology. Such words are presented as word combinations (SJWb) or illustrated with only some isolated, exceptional basic forms (LW).

LELD is the first lexicographic publication, which attempts to present the declension principles of such compounds. A special compound boundary symbol (||) is used in these instances. Also, the number of the declension type is given only for the head of the compound (alli|serk *94 ‘undershirt alussārk apakškreklī’). In the place-name index in the same source, the declension type is also given for the modifier (Pišķī|Salāts *194*140); however, this reference makes the user assume that the head and modifier are both declined throughout the entire paradigm. Examining the materials, it becomes clear that in this type of compound, the modifier is declined only partially and to varying extents depending on the compound group. Therefore, the system
used by LELD does not offer an adequate solution for the problem of showing compound nouns with declinable modifiers.

A further difficulty is presented by the absence of detailed studies of the morphology of these words, which would clarify the extent to which modifiers are declined. Researching this topic is complicated not only by the specifics of this topic, but also by the small amount of Livonian morphological data and the rarity of compound nouns in which the modifiers are declined. This would also be the case even if the amount of data for describing the morphology of these compounds were sufficient. In the following sections, the morphology of compound nouns is presented with their analogous forms, which are taken from the Livonian language corpus. These are used to present a summary of the morphological principles of Livonian compound nouns and also the unique features of modifier declension within compounds.

**2.1.1. Declension of compound nouns**

In compound noun declension, the modifier maintains its form and only the head component is declined. However, occasionally a modifier in the nominative can be declined for part of the paradigm. In compounds consisting of three or more components, only the modifier immediately preceding the head component is declined.

Declinable modifiers in the nominative generally agree with the head component in the singular nominative, genitive, partitive, illative, inessive, elative, and, when encountered, the abessive. However, these modifiers remain in the genitive for head components in the dative and instrumental (i.e., corresponding to the general principles of noun case agreement). For plural forms, modifiers remain in the plural genitive, which does not differ in its form from the plural nominative. The same principles apply to all compound nouns formed with the modifier -īž ‘self, own’ + sama- -pat’. i-final modifiers (sindi ‘birth’ + sünni- dzimtā’; e’ddi- ‘front, fore’ + esi- priekš-) remain in the genitive singular also for all singular locative cases.

Nominal modifiers in the nominative and nominative modifiers in compound numerals agree with the head in the singular nominative, genitive, and partitive, but remain in the genitive singular for all other singular and all plural noun cases.
2.1.2. Compound nouns and adjectives with genitive modifiers

Modifiers in compound nouns and adjectives are generally in the genitive singular (jelāmiz|ki ‘bēdi ‘the bitterness of life’ elukibedus, eluraskus ‘dzīves rūgtums’; kā d|rō ‘retainer, deposit’ kāsiraha ‘rokasnauđa’; ma’g’diz|vīti ‘sweetish’ magusavžītu ‘pasal’ds; mā’d|su ‘glimi ‘like us’ meiesugune ‘līdzīgs mums’). The genitive is generally used in a way, which is semantically similar to Latvian compounds, and the development of this system in Livonian has likely been aided by the merging of nominative and genitive forms, which are the same for most Livonian nouns.

In compounds containing two nouns, in which the modifier refers semantically to the purpose of the noun, the compounds are likely formed on the model of Latvian compounds. The modifier in these compounds is usually in the plural genitive (ainad|ang ‘pitchfork’ heinahang ‘siena dakšas’; na’ggōrd|kuot ‘potato sack’ kartuli-kott ‘kartupe|uss maiss’; kanād|tal ‘hen house’ kanakuut ‘vistu kūts’; kindōd|pōr ‘pair of mittens [lit. mittens’ pair’ kindapaar ‘cimdu pāris’; dattōld|palm ‘date palm [lit. dates’ palm] datlipalm ‘datelpalma’ pīnūd|bo ‘ugō ‘dog house [lit. dogs’ shack] koerakuut ‘sunjūbūda’; sūold|te’b ‘intestinal disease’ soolehaigus ‘zarnu slimība’; lī’ed|pūd|pisk ‘deciduous tree resin’ lehtpuuvaik ‘lapu koku sveķi; lūomōd|tal ‘livestock barn’ loomalaut ‘lopu kūts’; mōtkōd|va’itōks ‘discussion’ mōttevahetus ‘domu apmaina’; arōnījd|līem ‘chokeberry juice’ arooniamahl ‘aroniju sula’; ma’g’diz|kīršōd|pū ‘sweet cherry tree’ maguskirsipuu ‘saldo kīršu koks’). Modifiers in the genitive singular are also possible and can exist alongside compound nouns with the same meaning using the plural genitive (kanā|kuj ‘kanād|kuj ‘chicken hawk’ kanakull ‘vistu vanags’; jelāj|vōzā ‘sūr|jelāj|vōzā ‘beef [lit. (large) animal meat’ loomalīha ‘liellopu gāla’ jelāj|vāgōn ‘cattle car’ loomavagun ‘lopu vagons’ jelājd|bīetōz ‘beet used for animal feed’ loomapeet ‘loparības biete’).

There is an important group of compound nouns and adjectives in Livonian, which have preserved the historical genitive ending *-n in the modifier. Two subgroups can be differentiated. The first of these consists of old fossilised compound nouns (sīemn|āiga ‘food, provisions’ toit ‘ēdiens, pārtika’; jūomn|āiga ‘drink, beverage’ jook ‘dzēriens, dzeramais’, sitān|ouk ‘anus’ pārak ‘tūplis’, mōn|vizāntimi ‘serfdom’ pārismaisus ‘dzimtbūšana’). The second group consists of compounds containing nouns specifying location: -aigā ‘edge’ jōran|aigā ‘lakeshore’ jārveār ‘ezermala’; jo ugn|aigā ‘riv-
erside o jõeäär o upes mala’, koun|aigā ‘edge of a well’ o kaevuäär o akas mala’; kōnka|aigā ‘edge of dunes’ o luite äär o kāpas mala’, mā’gn|aigā ‘slope, hillside o māc nölv o nogāze, piekalne’, mie’rn|aigā ‘seashore o mere äär o jūrmala’, mōtsān|aigā ‘edge of a forest’ o met-sääär o mežmala’, rāndan|aigā ‘beach o rannaäär o piekraste, pludmale’, tu’ln|aigā ‘edge of a fire’ o tule äär o uguns mala, ugunskura mala’);

-aigi ‘of an edge’ o ärne, ääre- o malas-’ (mie’rn|a’igi ‘of a seashore o mereäärne o piejūras-, jūrmalas-’); -alā ‘underside o -alune o apakša’ (mōn|alā ‘underworld o manala o pazeme, veļu valstība’); -a’lli ‘under, a place underneath o -alune o apakša, apakš-’ (pān|a’lli ‘pillow, head of the bed o pealune o pagalvis’, pūolan|a’lli ‘hollow of one’s knee o pēlvealune o pacele’, ulān|a’lli ‘shed, awning, lean-to o varikatus o nojume’, mōn|a’lli ‘underground o maalune o apakšzemes-; āitan|a’lli ‘space under a granary o aidaalune o kļēsapakša, paklēs-’, kūondan|a’lli ‘something to be scorned o tuhvilalune o pamesls’, labān|a’lli ‘sole [of a foot] o labaalune o pēdas apakša’, lōdan|a’lli ‘space under a table o lauualune o pagalde’, lovān|a’lli ‘space under a bed o voodialune o pagulte’); -e’dži ‘front [side] o -esine o priekša’ (āitan|e’dži ‘porch of a granary o aidaesine o kļēs lievenis’; tubān|e’dži ‘entrance hall, anteroom, lobby o esik o priekšnams’); -pēļi ‘top [side] o -pealne o virsa, augša’ (tubān|pēļi ‘attic o toapealne o istabaugša, bēniņi’).

The historical genitive was maintained in the compound nouns and adjectives of this subgroup apparently as a result of the final vowel of the modifier occurring next to the initial vowel of the head, but otherwise the historical genitive ending *-n has generally been lost (kōnka + aigā, āita + e’dži). The same process has occurred in modern consonant-final stems (mie’r + aigā < *mierrõ ~ *mierrõn + aigā; mā’g + aigā < *māggo ~ *māggõn + aigā). The modifier -pēļi has apparently developed analogically based on the model of -e’dži and -a’lli.

2.1.3. Compound nouns and adjectives with nominative modifiers

On rare occasions, the modifier can be in the nominative. The most common compound nouns of this type are those, which have a concrete adjective as their modifier. The components of such compounds come together to form a new term with an independent meaning (pivā||kuodā ‘church o kirik o baznīca’, mustā|pūlgōz ‘chokeberry o aronia o aronija’ sindī|kōrand ‘birth home o sūnītalu o dzimtā sēta’; pivā|pāva ‘Sunday o pūhapāev o svētdiena’).
The nominative case is generally used for compound nouns when the modifier is an *i*-final adjective referring to location: *a’lli*- (‘the one underneath *alu*- *alu*- *apakšējais*); *a’lli|serk* ‘under-shirt *alu*- *apakškreklс*), *e’dđi*- (‘the one in front *ees*- *ees*- *priekšējais*’; *e’dđi|tubā* ‘entrance hall, anteroom, lobby *esik* *priekšistabā’), *i’lli*- (‘the high one *üle*- *üle*- *augšējais, augstākais*’; *i’lli|skūol* ‘university *ilikool augstskola, universitāte*’), *kilgi*- (‘the one on the side *külg*- *sānu-; kilgi||riek* ‘detour [lit. side road] *apkārtcelš*’), *pēli*- (‘the top one *pealme*- *peal- virsējais*; *pēli|ke’z* ‘upper hand, advantage *paaliskāsi* *virsroka*’), *u’lli*- (‘the one behind, the back one *tagune, taga- aizmugure-; ta’ggi|tukām* ‘backside, rear end, posterior *pāra, tagaots, tagumik, taguots dibens, pakalgals, sēžamvieta*’), *u’lli|- (‘the outer one *väline, välis- ärējais*; *u’lli|sāina* ‘exterior wall *vālissein, ārsiena*’), *va’lli*- (‘the one in between *vaheline, vahe- starpā esošais*’; *va’lli|sāina* ‘partition [lit. between wall] *vahesein starpsiena*’).

As described above, compound nouns with adjective modifiers have significant semantic parallels with the use of adjectives with definite endings in Latvian, which are a motivation for corresponding Livonian compound nouns (*mustā||pīlgōz* ‘chokeberry [lit. black rowan-tree] *must* *pīl- melnais pīļādzis*’; *sindi||kōrand* ‘birth home *sūnītalu dzimtā sēta*’). Likewise, when Latvian compound nouns are replaced with their motivating word groups, the adjectives in the corresponding groups have definite endings (*a’lli|serk* – cf. *lt apakškreklс* > *apakšējais kreklс* ‘under shirt *alu*- *alu*- *apakšējais*); *u’lli|sāina* – *lt ārsiena* > *ārējā siena* ‘outer wall *väline*’; *pīvā|kuodā svētnams* > *svētais nams* ‘holy building *pūha*’). Therefore, while these compound nouns correspond to Estonian stem compounds in terms of form, their use of the nominative results from their formation as compounds based on phrases whose semantics were borrowed from Latvian. Thus, these are synthetic compounds, which are formed according to the Estonian tradition (Kasik 2015: 93). This also explains why the the modifier often agrees in case with the head. Both parts of the compound can be declined in compound nouns with the modifiers *a’lli-, e’dđi-, i’lli-, kilgi-, pēli-, ta’ggi-, u’lli- and va’lli-. This is supported by the modifiers *a’lli-, e’dđi-, i’lli-, ta’ggi- and u’lli-, which undergo gradation and therefore have unique genitive forms. The same system of modifier declension extends to the functionally similar, though non-gradational, modifiers *kilgi-, pēli-*, and *va’lli*. However,
within these compound noun groups there is also considerable movement towards use of the genitive, as, in addition to these compounds, there are compound nouns with genitive modifiers, which either have the same structure or have been similarly simplified (alīz|ki‘v ‘cornerstone’ aluskivi pamatakmens’, alīz|kēra ‘signature’ alīz|kēra paraksts’).

On very rare occasions, there are also nominative noun (rāngaz|vaţţ ‘bridle’ lōõg, ohelik pavada’), numeral (pūol|īē ‘midnight’ keskōõ, südaōō pusnaksts’), and pronoun se|āiga ‘of that time’ selle aja tālaika-) modifiers.

As previously stated, modifiers in the nominative generally agree in case with the head, but noun and numeral modifiers remain in the singular genitive for plural cases. Also, adjective modifiers in the nominative do not agree with the head at all in many fossilised compounds (pivā|pāva ‘Sunday’ pūhapāev svētdiena’ pivā|pāvan ‘on Sunday’ pūhapāeval svētdiena’). In addition, as is described below, modifiers in the nominative formed from declinable active present participles also do not agree with the head.

The absence of declension in some compound noun groups can be considered the influence of Estonian stem compounds in rather old words (rāngaz|vaţţ NSg ‘bridle’ lōõg, ohelik pavada’ ~ LW also rangū|vaţţ GSg) as well as in new translated borrowings (keţ|kēra ‘handwriting, manuscript’ kēsikirī rokraksts, manuskripts’ ~ kēd|kēra ‘handwriting’ kēkirī rokraksts’).

2.1.4. Other compound nouns and adjectives

The compound noun and adjective modifiers in expressions, which have arisen as a result of compounding can also be in other noun cases (vīerda|joutōm [PSg] ‘anaemia’ aneemia, verevae-sus anēmija, mazasinība’; pie’rrō|suodē|āigali ‘post-war’ (adj.) pārastsōjaaeigne pēckara laika’; sōnāst sō’mi [ELsg] ‘literal’ sōna-sōnaline burtisks; sūrdō|viīi [PSg] ‘excellent’ suurepārane lielisks; skūols|oppīji [Insg] ‘pupil’ kooliōpilane skolēns’).

Among these compounds one encounters a small group of compound nouns, which was likely constructed according to an older model and may have preserved the inessive ending *-s (dō’dōgs|pūoi ‘late afternoon’ öhtutoolik vakarpuse’; vōidags|lēba ‘open sandwich’ vōileib sviestmaize’; vōidags|pākā ‘slippery jack (Suillus luteus)’ vōitakīā sviesta beka’). The same inessive or illative ending can be encountered
in various more archaic compound nouns (umārz|pū ‘apple tree’ öunapuu ‘apple’, i’|džemda ‘cream’ (piima)koor ‘cream’ and compound adverbs (tagārs|pē’dōn ~ tagārs|pēn ~ dagārž|pē’dōn ‘the wrong way around’ tagurpidi ‘the wrong way around’)

There also exists a small group of compound nouns and adjectives constructed from indeclinable expressions (alā|u’n|jära ‘forget-me-not’ meelespea, lõosilm ‘neaimirstule’; pie’rrō|suodā ‘post-war’ sōjajärgne ‘pēckara’; kāldakarrō ‘gold-coloured kullakarva ‘zelta krāsā’; vōrō|mō ‘of foreign origin’ vōõramaa ‘svežemju’).

2.1.5. Compound place names

Just as in compound nouns and compound adjectives, the modifier in compound place names is typically also in the genitive (Pōdrō|mā’g ‘Pōdrōmāg Hill [lit. deer hill] Pōdrōmāg’māgi ‘Briežkalns’).


2.1.6. Compound numerals

There are few compound numerals in Livonian, though they are well-represented in the basic vocabulary. Their formation and declension principles are even more unique than that of compound nouns and adjectives.

Compound cardinal numerals are constructed in Livonian using the head components -kimdō ‘-ty (multiples of ten) kümmend ‘desmits’ (kakš|kimdō ‘twenty kakskümmend divdesmit’) and -tuoistōn ‘-teen -teist -padsmit’ (viē|tuoistōn ‘fifteen viisteist piecpadsmit’), and also -sadā ‘-saddō ‘hundred sadā simts’ (seven hundred seis|sadā ‘seitsesada septīnsimt’). The modifiers of these compound numerals are cardinal numerals.

Sometimes compound cardinal numerals are also constructed using the head -tūontō ‘thousand tuhat tūkstotis’, though compounds of this sort are occasionally used just for emphasis (Mōštād, mōštād – kimtū’ontō rubīl! ‘Understand, understand – ten thousand roubles! Saa aru, saa ar – käumetuhat rubla! Saproti, saproti –
Fractional numerals are constructed using a unique compound numeral suffix -jag and -jagū'-part (fractional suffix) o -jagu, -ndik o - daļa’ (nellõz|ja’g ~ nel|õzjagu ‘one-fourth o neljandik o ceturdala’) and an ordinal numeral as the modifier.

Modifiers in compound cardinal numerals are in the nominative. They agree in case with the head component in the singular nominative, genitive, and partitive, but remain in the singular genitive for all other singular and also plural cases (vē’dkimdõ e’žmi ‘fifty-first o viiekümme esimene o piecedsmes pirmais’; i’dutoistõn sōnô ‘until eleven o üheistkümneni o lidz vienpadsmitiem’; pie’rrõ vētkimdõ ~ kōdōkstsa’ddio āigastõ ‘after fifty ~ eighty years o viiekümme ~ kaheksakümme aasta pārast o pēc piecedsmes ~ asto desmit gadiem; ta lekš ku’bs ne kō’dutoistōndōks ‘he went with those twenty o ta läks koos nende kaheistkümnega o viņš gāja kopā ar tiem divapadsmit’).

The few fossilised compound pronouns are constructed similarly (pōr|kimdõ ‘a few ten o paarkümmend o pārdesmit’, mits|kimdõ ‘several tens o mitukümmend o vairāki desmiti’; set|kimdõ ‘several tens o mitukümmend o vairāki desmiti’), but the modifier is not declined.

The head -saddõ has developed in Livonian as a replacement for -sadā, which is clearly the partitive form of -sadõ. There are also forms using the head -kimdõ (<NSg kim > PŠg kimdõ ‘ten o kümme o desmit’), which are constructed similarly by analogy; however, compound numerals formed using these head components are not declined. There are also other occasional numerical compounds, which are also not declined (pōoll|tōōitza ‘one and a half o poolest o pusotrs’).

In forming compound ordinal numerals, the following suffixes function as head components -kimdõz ‘-tieth (ordinal suffix for multiples of ten) o -kümnies o -desmitais’, -sadāz ‘-hundredth o -sajas o -simtais’, -tuoistõnz ‘-teenth o -teistkümnies o -padsmaitais’. Modifiers are in the genitive singular (kō’d|kimdõz ‘twentieth o kahekümme o dividmesmitais’; kūd|sadāz ‘six hundredth o kuuesajas o sešsimtais’; ūd|dutoistõnz ‘eleventh o üheistkümnies o vienpadsmitais’). The same practice is followed for forming compound numerals with -tuoontõz (kō’d|tuontõz ‘two thousandth o kaheisthandes o divtōōkstošais’).

There is also an alternate method for forming ordinals using the head -tuoistõnz, where two ordinals are combined (nellõz||tuoistõnz ‘fourteenth o neljasteistkümnies o četrimpadsmitais’; viõdõz||tuoistõnz ‘fifteenth o viieteistkümnies o piecpadsmitais’; seismõz||tuoistõnz ‘seventeenth o
seitsmieteiskümnes «septiņpadsmitais»), but their use is rare. When modifiers are in the nominative singular for such compounds, they also agree with the head.

In the case of the head -tuostõnz, compound ordinal numerals are constructed with modifiers in the genitive singular. However, occasional compound ordinals have been observed with a nominative component. These forms may have been constructed analogically based on cardinal numerals ikš|tuostõnz ‘eleventh = üheteistkümnens = vienpadsmitais’ and kakš|tuostõnz ‘twelfth = kaheteistkümnens = divpadsmitais’; however, one does not find other such forms with a nominative component (for example, the following forms have not been encountered: viž|tuostõnz ‘fifteenth = vieteistkümnens = piecpadsmitais’ and kūž|tuostõnz ‘sixteenth = kuuteistkümnens = sešpadsmitais’).

2.1.7. Compound pronouns

Livonian also has a small number of compound pronouns (äts|mingi ‘someone, anyone = keegi, mingi = kāds’; īd|tuoz ‘one or the other person/thing, some but not all individuals within a group = üksteise, teine-teinse = viens otrs, cits cits’; jegā|ikš ‘everyone = igaūks, iga = ikviens, katrs’; mit|ikš ‘nobody = ei keegi, mitte keegi, mitte ükski = neviens’; ī|dt|a ‘all of it = seda kõike = to visu’). As this last form is constructed based on a partitive form, it is not declinable.

2.1.8. Verb forms as part of compound nouns

When the head of a compound noun describes a particular purpose connected with a concrete action, the modifier used in the compound is generally the declinable active present participle corresponding to that action (ē’kortõb|nõ ’crochet needle = heegelusnõel = tambora-data’, glõibdõb|lõja ‘lifeboat [lit. rescue boat] = pääsetepaat = glābšanas laiva’, optõb|āiga ‘school year [lit. study year] = āpgaasta = mācību gads’; ri’ggõ|nīb|hāiga ‘rye harvest = rukkolōikus = rudzu plāuja’; metāl|sulābõ|j ‘metal foundry = metallisulatusahi = metālkausētava’; na’ggõrd|võttõb|hāiga ‘potato harvest time = kartulivõtuaeg = kartupeļu novāksanas laiks’).

This group of compounds probably developed under the influence of Latvian declinable passive present participles (endings -ams ~ -ama, -āms ~ -āma), which are common in Latvian compound nouns and word groups (siedõb|lõda ‘dining table = söögilaud = ēdamgals’).
Compound formation principles in Livonian

je’ltõb|tubā ‘living room’ elutuba ‘residential building [lit. living house]’ elumaja ‘dwelling house’ ēka’; pū’gdõb|lil ‘wind instrument [lit. blowing tube]’ puhkpill ‘pūšamais instruments’). Though semantically the declinable active present participle is in the nominative in these words, in declension these modifiers do not agree with the head. This is also probably due to the example of Latvian, in which a participle modifier will lose its definite ending within the compound.

The active present participle can also occur as a head, where it denotes semantically an action carried out with a particular tool (kaffe|jo’vtõb ‘coffee grinder’ kohviveski ‘kaffee|mēs ‘coffee making’ kafijas dzirnaviņas’), also verbal nouns (ma’ggimiz|azūm ‘sleeping place’ magamise ‘sleeping place’ guļvieta’; urgrimiz|māng ‘hide and go seek’ peitusemāng ‘paslēpes’), and other derived verbal noun forms (kazātõks|ve’l ‘step-brother’ kasvend ‘audūbrālis’; kūoks|kēra ‘letter of recommendation’ soovituskir ‘soovituskir’ ieteikuma vēstule’; ma’ggõrd|võttõks|āiga ‘potato harvest time’ kartuliivõtuaeg ‘cartuľu kartuliivõtuaeg’ novākšanas laiks’), which generally indicate a purpose related to an action, but less often refer to an overall purpose (siemiz|vigā ‘hunger [lit. eating purpose]’ nālg ‘izsalkums’).

Active past participles can also be used as modifiers. These describe the resulting property of the activity (druppõn|leba ‘bread crumbs’ maizes drupatas’; appõn|nūtōz ‘saucerkruste [lit. pickle dabbage]’ hapukapsas ‘skabēti kāposti, skabie kāposti’; kuppõn|sēmda ‘curds, cottage cheese’ kohupiim ‘kohupiim’ biezpiens’; oudõn|kostā ‘sleepy head’ pōõnaja ‘guļava’; pō’dõn|āiga ‘oppressive heat’ leitsak ‘tveicē’; vie’nnõn|lū ‘lazy person’ laiskvorsā ‘slinkis’).

On rare occasions, the modifier can be an agent noun in the nominative (a’liš|pusk ‘twining plant, bindweed’ kassitiapp, seatapp ‘kassitiapp’ kasitiapp ‘kassitiapp’; kāndaji|kanā ‘laying hen’ munakana ‘dējēvista’; lōlaji|lind ‘songbird’ laululind ‘dziedātājputns’; virgti|iëla ‘alarm clock’ äratuskell ‘modinātāpulkstenis’). There is a possibility that the form in which these agent nouns appear has also been influenced by Latvian (dējē|a|vista, dziedātāj|spūtens, modinātāj|spulkstenis ~ modinātājs).

In compound nouns formed from verbal and agent nouns derived from phrasal verbs, the modifier is formed from the adverb occurring
with the phrasal verb. This modifier is connected to the head derived from the verbal or agent noun (jarā|liēptimi ‘reconciliation’ ā lepitus ā samierināšana’; ku ’bbō|pūtīmi ‘contact’ ā kokkupuutumine, kokku-puude ā saskarsme’; kā ’ddō|maksāmi ‘revenge’ ā kättemaks ā atriebība’; si ’zzō|lū’mi ‘income’ ā sissetulek ā ienākums’; vāldīg|tē’emi ‘opening, unveiling’ ā avamine, lahtitegemine’ ā avēršana, atklāšana’). Compounds nouns can also be formed from phraseological verbs according to the same principles (tā ’dō|lpa’nmi ‘attention, recognition’ ā tāhelepanu ā uzmanība, ievērība’; sōnā|kūlimi ‘obedience’ ā sōnakulmine ā paklausība’; mī ’elō|lē’mi ‘marriage’ ā meheleminel ā apprecēšanās, iziešana pie vīra’) and other verbal derivations where the source is a phrasal or phraseological verb (jarā|likkōm ‘deviation’ ā hālve ā novirze’; jū ’rō|lā’oks ‘note, remark’ ā mārkus ā piezieme’; je ’ddō|vōtām ‘enterprise, undertaking’ ā etevēote ā uzņēmums’; je ’ddō|kēratōks ‘written instructions’ ā eeskiri, ettekirjutus ā prikešrakste’; je ’dst|pōlandōks ‘a prayer for someone’ ā eestpalve ā aizlūgums’; le ’bī|edētkōs ‘cross-section, split’ ā lābilīgē ā šēkārsgriezums, šēklums’; si ’zzōl|kēratōks ‘entry, dedication’ ā eeskiri, ettekirjutus ā prikešrakste’; si ’zzōl|jū ’ondōm ‘introduction’ ā sissejuhatuss ā ievads’; kā ’ddō|makst ‘revenge’ ā kättemaks ā atriebība’) as well as other verbs containing expressions (ēntsā|ārmažtīmi ‘selfishness’ ā enesearmastus ā patmīlība’; nō ’vā|āndami ‘lecturing’ ā manitse-mine ā pamācīšana’; rō |sōtimi ‘money transfer’ ā rahasaadetis ā naudas sūēlums, naudas pārvedums’; māgu|grēbīji ‘mountain climber’ ā māgironija ā alpīnists’; tāddōks|pū’gimi ‘bloating, swelling’ ā puhitus ā uzpūšanās’).

It is also possible to use other verb forms (īkš|kōrd|ikš ‘multiplication’ ā īkskordūks ā reizrēķins’; sēdē|tō’mi ‘appetite’ ā sūgīgīsu ā īstgribā’) or translated loans (je ’lsō|ō ’bdō ā jelāb ā ’bdō ‘mercury’ ā elavhōbe ā dzīvsudrabs’; rištōd|ni’m ā ‘name, given name’ ā ristin-īmi ā vārs, krisūtais vārs’) as modifiers.

2.1.9. Particles as part of the compound noun

In compound nouns, particles can occur as modifiers (pūol|pi’mdō ā ‘half blind’ ā poolpime ā pusakls’; immōr|kouf ā ‘neighbourhood’ ā ūmruskond, kant ā apkaiame, apkārtnie’; ulž|vič ‘contour, configuration’ ā piirjoon, váliskuju ā apveids’; ku ’bs|rōk ‘conversation’ ā vest-lus ā sarana’; ku ’bsō|tie ā ‘collaboration’ ā koostōo ā kopdarbs’; sizāl|ažād ā ‘internal affairs’ ā siseasjad ā iekšlietas’; si ’zzōl|maks ā ‘deposit’ ā
sissemaks ◆ iemaksa’; i’l|rõkûd ‘debate, discussions ◆ vaidlus, vaitlus ◆ diskusijas, pärrunas’; i’l|tarâli ‘neighbour ◆ naaber, üleaedne ◆ kaiminš’; pênõst|tundiji ‘sensitive, tactful ◆ peenetundeline ◆ smalkjûtûgs’; vastõ|va’it ‘counterweight ◆ vastukaal ◆ pretsvars’; pû’dõst|ve’rit ‘pure blood ◆ puhtaverelisus ◆ tîrasinîba’.

Adverbs referring to movement occur as modifiers only with -pê’dî ‘having the characteristic of ◆ -pidine ◆ -êjs, -îgs’ as the head (je’ddõ|pê’dî ‘future, further, later ◆ edaspidine ◆ turpmâkais’; ullõ|pê’dî ‘exterior, outward ◆ vâlispidine ◆ ârêjs, ârîgs’; sizâld|pê’dî ‘interior, inner, coming from within ◆ seestpoolne ◆ iekšejs, no iekspuses nâkošs’; sizâld|pê’dî ‘interior, inside ◆ sisemus ◆ iekšiene’).

2.1.10. Coordinate compound nouns

There are few coordinate compound nouns in Livonian. Generally, they are written with a hyphen (seļļi-tüolo ‘like this, like that ◆ nii-sugune-naasugune; mitmesugune ◆ šâds tâds’; mingi-‘b|mungi ‘being all different ways, of indistinct character ◆ igasugune ◆ visâds, kâds nekâds, šâds tâds’).

Both parts of coordinate compound nouns are usually in the nominative and also agree in case across the entire paradigm, including in the plural (PPI mingiži-‘ab|mingiži ‘all sorts ◆ igasuguseid ◆ visâdus’; PPI seļži-tuolži a’ždi ‘all sorts of things ◆ igasuguseid asju ◆ visâdas lietas’). Some coordinate compound nouns are also indeclinable and descriptive (kõlā-kõlā ‘zig-zag ◆ loogeline ◆ lîcu loku’) or borrowed (sômõ-u’grò ‘Finno-Ugric ◆ soome-ugri ◆ somugru-’).

2.2. Compound verbs

There are very few compound verbs in Livonian. The majority of these are the joined forms of phrasal verbs (immõr|kèratò ‘to rewrite ◆ ümber kirjutada ◆ pârrakstît’; mõ‘zò|pâstò ‘to unharness, unyoke ◆ rakkest lahti võtta, rakkest päästa ◆ izjûgt’; jarâ|tuqslò ‘to confirm, certify ◆ tuvastada ◆ apliecinât’), some compounds are derived other verbal sources (kuolm|kôrdastò ‘to triple ◆ kolmekordis-tada ◆ trîskâršot’) or are translated loans (arm|kadiksò ‘to be jealous ◆ armukadetseda ◆ bût grezsirdîgam’; tâud|vîjistò ‘to improve, perfect ◆ tâiustada ◆ pilnveidot’).
Compound verbs are formed with an adverbial modifier affixed to the verb (*i’l*)\textit{mustō} ‘to transfer, to translate’ ∅ \textit{tõlkīda, ümber panna} ∅ \textit{pārcelt, pārtulkot’}; \textit{immōr|kēratō} ‘to rewrite ∅ \textit{ümber kirjutada} ∅ \textit{pārrakstīt’}; \textit{jarā|lieptō} ‘to appease ∅ \textit{lepitada} ∅ \textit{samierināt’}; \textit{pālō|ourō} ‘to yell at ∅ \textit{kāratada} ∅ \textit{uzblaut’) or a nominal modifier in the genitive affixed to the verb \textit{(arm|kadīkšō} ‘to be jealous ∅ \textit{armukadetseda} ∅ \textit{būt greizsirdīgām’}; \textit{kō’d|kordatō} ‘to double ∅ \textit{kahekordistada} ∅ \textit{divkāršot’}; \textit{kār|tapārtō} ‘to convince ∅ \textit{veenda} ∅ \textit{pārliecināt’ = \textit{üle} ∅ \textit{pārt’}; \textit{pālō|ourō} ‘to yell at ∅ \textit{kāratada} ∅ \textit{uzblaut’ = \textit{pālō} ‘on top of (directional) ∅ \textit{peale} ∅ \textit{uz, virsū’ + \textit{ourō} ‘to yell ∅ \textit{karjuda} ∅ \textit{blaut’)} or forms the entire phrasal verb in Livonian by analogy, often using Estonian as a semantic model (\textit{immōr|kēratō} ‘to rewrite ∅ \textit{ümber kirjutada} ∅ \textit{pārrakstīt’ = \textit{immōr} ‘around ∅ \textit{ümber} ∅ \textit{apkārt’ instead of \textit{i’l} ‘over ∅ \textit{üle} ∅ \textit{pār’}). In many instances where a compound verb is formed using an adverb, the existence of a Latvian prefix as well as other similar compound verbs has resulted in these semantically similar adverbs also to begin to develop into prefixes.

### 2.3. Compound adverbs

Most Livonian compound adverbs are formed from adverbial phrases. Other such phrases continue to be adverbialised and are often written as such in texts.

Compound adverbs practically form an entire part of speech in Livonian (\textit{mūs|pūols} ‘elsewhere ∅ \textit{mujal} ∅ \textit{citur, citā pusē’}; \textit{perīn|tāldō} ‘with the wind ∅ \textit{pārītult} ∅ \textit{pa vējam’}; \textit{mit|kūlōmōks} ‘not worth listening to ∅ \textit{mittekuulmaks} ∅ \textit{par neuzklausāmu’}; \textit{amā|le’b} ‘generally ∅ \textit{üldse} ∅ \textit{vispār’}; \textit{vōib|vōlda} ‘maybe, perhaps ∅ \textit{vōib-olla} ∅ \textit{varbūt’}; \textit{sā’ld|pūold} ‘from there ∅ \textit{sealtpoolt} ∅ \textit{no turienes, no tās puses’}; \textit{tiētōb|a’ždi} ‘of course ∅ \textit{mittele} ∅ \textit{muidagi, muidugi} ∅ \textit{protams, zināms’}; \textit{i’l|ka’ggõl} ‘somersaulting ∅ \textit{uperkuuti} ∅ \textit{kūleņojojot’}; \textit{āndiz|pāvan} ‘the day before yesterday ∅ \textit{üleile} ∅ \textit{aizvakar’}; \textit{pūolst|ēdō} ‘at midnight ∅ \textit{keskōl} ∅ \textit{pusnaktī’}; \textit{sūr|lēbas} ‘while arguing ∅ \textit{tūlis} ∅ \textit{strīdā’}; \textit{ul|vītō} ‘horribly ∅ \textit{hullupōōra} ∅ \textit{traki, briesmīgi’}, etc.).
The heads of some compound adverbs are forms such as \textit{-pēdōn} ‘-
ward (indicating direction) \textit{-pidi} \textit{pa-}, \textit{-up} (\textit{i}’\textit{lz} \textit{pē} \textit{dōn} ‘upward \textit{ô} üle-
spoole \textit{augšup}’; \textit{va}’\textit{nst} \textit{pē}’\textit{dōn} ‘in old age \textit{ô} vanast peast \textit{ô} vecumdiēnas, vecumā’), \textit{-pēdōnd} ‘from \textit{-poolt}, \textit{-vāljadi} \textit{no-}’ (\textit{sizāld} \textit{pē}’\textit{dōnd} ‘from inside \textit{-seestpoolt \textit{-no iekšpuses}’), \textit{-pēn} ‘indicating direction, manner, location \textit{-pidi} \textit{pa-}, \textit{-up} \textit{(tagārs} \textit{pēn} ‘the wrong way around \textit{-tagurpidi \textit{-otrādi, acgārni}’; \textit{i}’\textit{llō} \textit{pēn} ‘higher, before \textit{-ulal-
pool \textit{augstāk, iepriekš}’), and \textit{-mēdō} ‘along, after \textit{mōōda \textit{pa, pēc} \textit{(rindō} \textit{mēdō} ‘in line \textit{ridamisi \textit{-rindā}; kātā} \textit{mēdō} ‘tactile, palpable \textit{-kāegakatsutav \textit{-taustāms}’). Likewise, the modifier \textit{āts} ‘some (particle) \textit{-ūkskōik, kōik-, īga-, mingi- \textit{-kaut} \textit{(āts} \textit{kuigid} ‘somehow \textit{-ūkskōik kudas, mingitviisi \textit{-kaut kā’; āts} \textit{kunāgid} ‘at some time \textit{-millalgi \textit{-kaut kad}’) is used for forming compound adverbs and in some instances also compound adjectives.

Compound adverbs containing the modifier \textit{-īž} ‘self, own \textit{-sama- \textit{-pat}’ are somewhat different in their construction, because unlike other modifiers, it follows rather than precedes the head \textit{(ne}’\textit{i}’\textit{īž} ‘in the same way \textit{niisama, niisamuti, samuti \textit{-tāpat, tāpat vien}’; \textit{sā}’\textit{l}’\textit{īž ‘right there \textit{sealsamas \textit{-turpat}; sīn}’\textit{īž ‘right here \textit{siinsamas \textit{-tepat \textit{-right there \textit{siinasamasse, sīnassamma \textit{-turpat}; sī}’\textit{dšt}’\textit{īž \textit{-tāst}’\textit{īž ‘from right here \textit{siitsamasast \textit{-no šejienes pat}’). The construction of these compound adverbs is influenced by semantically and structurally similar Latvian compound adverbs.

As in compound nouns and also compound adverbs, there exists a small group of old compound adverbs where the nominal modifiers have preserved the historical genitive ending \textit{*-n. (amn}’\textit{i}’\textit{ggōks ‘already long ago \textit{-ammugi \textit{jau sen}’; kāinan}’\textit{allō ‘under one’s arm \textit{-kaenla alla, kaenlasse \textit{-padusē; mōn}’\textit{alā ‘underground (directional) \textit{-maha, maasse \textit{-zem zemes (virziens)’). A portion of these words have may have also maintained the old lative ending \textit{*-na, for example, mūn}’\textit{āigast ‘in a different year \textit{-tulevaastal \textit{-citugad; tā’mūn}’\textit{āigast ‘this year \textit{-tānuv \textit{-šogad}’.

There is also a subgroup of coordinate compound adverbs (ā’\textit{kōl-
bū}’\textit{kōl ‘in a hurried frantic way, head over heels \textit{-ūlepeakaela \textit{-pa gaļvu, pa kaklu’; e’\textit{ggōl-pū’gōl ‘out of breath, huffing and puffing \textit{-āhkides-
pukhides \textit{-elšot pūšot; immōr-immōrd ‘indirectly \textit{-mōistamisi \textit{-aplunkus; lougō-lougō ‘slowly \textit{-tasapisi \textit{-palēnām; sēnō-tānnō ‘back and forth \textit{sinna-tānna, siia-sinna \textit{-šurpu turpu’; sō’\textit{-sōvīn ‘during the summers \textit{-suvi suvelt, suviti \textit{-vasarās, pa vasarām’; i’’\textit{silmad-il}’\textit{pād ‘in a hurried frantic way, head over heels \textit{-ūlepeakaela \textit{-pa gaļvu, pa kaklu’).
2.4. Compounds from other word classes

Just as with adverbs, there are other types of compounds, which have been formed from phrases. In Livonian there are compound prepositions (pi’ddõz|miedõ ‘alongside, along with’, rööbiti ‘līdztekus’; tūola|pūol ‘on the other side’, viņpus; tūola|pūoldõ ‘from over there’, sealtpool ‘no turienes, no tās puses’; tūola|pūolõ ‘(to) over there, in that direction’, sinnapoole ‘turp, uz to pusi’; tuoiz|pūolõ ‘to the other side’, teisele poole ‘uz otru pusi, otprus’; tuoiz|pūolsõ ‘on the other side’, teisel pool ‘otrā pusē, otprus’; tuoiz|pūolstõ ‘from the other side’, teiselt poolt ‘no otras puses, otprus’), compound postpositions (kā’d|kou ‘through’, kaut ‘although’, kūgi ‘kaut ari’; mis|jūs ‘in addition’, misjuures ‘turklāt’; mis|pierāst ‘why’, mispārast ‘kāpēc’; ne’i|ku ‘as’, nagu ‘kā’).

Conclusions

The Livonian system of compounds tells the story of the history of the Livonian language. It hides within itself archaic features such as the historical genitive ending *-n as well as signs of later developments in noun cases found in the declension paradigms of declinable compound noun modifiers. The same can be seen in Livonian compounds with respect to language contact. Bilingualism and living side by side resulted in compound formation principles similar to those found in Latvian as well as certain unique types of compounds such as compound nouns formed with active present participles. More recently, compounds have been formed on the model of Estonian and other languages or translated and borrowed into Livonian.

It can be said that the Livonian system of compounds, like the Livonian language as a whole, exists between two worlds. On one side, one finds the traditional compound formation principles of the Finnic languages, on the other, the characteristics of compound formation typical for Latvian. This situation also causes some shifts in compound formation principles some as well as in their use. As a result, while in most cases we can create a mostly precise general description of compound formation, it is often not possible to define a single set of rules for compound formation.
A comparison between the two language systems shows that compound use is a little broader in Livonian than in Latvian. Most Livonian compounds, where Latvian uses a word group to for the corresponding construction, are formed analogically to Estonian stem compounds (rõda|na ‘iron nail’ • raudnael • dzelzs nagla; filts|šōpkõd ‘felt boots • viltsaapad • filca zābaki’), though the modifier in Livonian is generally in the genitive.

Understanding the Livonian compound system is considerably aided and made more effective through the use of Livonian written language corpus for the present study. It has helped and will help also in the future to find unique compounds, clarify their groups and the morphological features of compounds. So, for example, on the basis of the present data, one can already safely say that there may be far more compound nouns with declinable modifiers in Livonian than present in LELD.

The ongoing work described in this study is only a preliminary introduction to a description of the formation principles and morphology of Livonian compounds. The corpus, its labelled portion and also the existing morphological data in the database, makes it possible to return to this topic again in the future and with the help of new data to not only expand our understanding of it, but to perhaps even see it from a new perspective.

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Abbreviations and additional markings

El – elative, In – inessive, Sg – singular, Pl – plural, P – partitive, |
| – component boundary within compounds, || – component bound-
| ary within compounds where both components are declined, ◐ divider

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kool and Latviešu valodas āģentūra.

Märksõnad: liitsõnad, keeleajalugu, keelekontaktid, liivi keel