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# **Livonian verbal derivation**

*Inherited characteristics and  
contact-induced change*

Santra Jantunen

ACADEMIC DISSERTATION

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# Abstract

The study examines verbal derivation and its functional characteristics and diachronic change in Courland Livonian, one of the Finnic languages of the Uralic language family. The study describes how the role and the use of the Livonian verbal derivational affixes have changed in the light of typological changes in Livonian morphology, such as in the decrease of affixal morphology and the increasing importance of word-specific rules, resulting from phonetic attrition of word forms. Another significant factor behind the changes in Livonian lexicon and grammar is the intense and long-term influence of Latvian, which led to the bilingualism of the Livonian speakers. The study focuses on both suffixal frequentative and causative derivation as well as prefixal derivation.

The study is an empirical and data-driven qualitative analysis based on spoken Courland Livonian data. The data used in the study is drawn from unpublished recordings as well as published collections of narrative stories and dictionaries. The study is based on morphosyntactic analysis, in which morphological and functional characteristics of affixal derivational categories are determined. Furthermore, the extent to which lexical and verb-specific features govern morphosyntactic patterns is also evaluated. Individual verbs and verbal constructions are analyzed as a part of syntactic constructions with respect to, among other things, valency, transitivity, and object marking. The treatment of causatives ranges from affixal causatives to other Livonian causativization strategies. As a part of morphosyntactic analysis, Livonian verbs and verb phrases are compared with Latvian.

In Livonian, the erosion of affixal morphology is more noticeable in the inflectional than in the derivational morphology. The use of analytic constructions has increased, but suffixal derivation is still productive and the primary means of derivation. Compared to other Finnic languages, Livonian affixal verbal derivation has more constraints. The number of both derivational categories and derivational affixes is lower, and affixal derivatives tend to lexicalize more regularly. Latvian influence on Livonian verbal derivation is particularly evident in the adoption of prefixal verbal derivation.

In the Finnic languages in general, frequentative derivation is productive, and frequentative derivational affixes and derivatives are abundant. In Livonian, however, frequentative derivation is unproductive, and the number of derivatives is relatively small. Frequentative derivatives are often lexicalized in Finnic, and in Livonian, their lexicalization is even more regular.

Causal relations are displayed in Livonian in several ways. These include affixal causativization, analytic constructions, and suppletion. Latvian influence can be seen in numerous borrowed Latvian causative verbs that have brought with them the syntactic properties they have in Latvian. In Livonian, affixal causativization is the primary means of forming causative verbs. Intransitive verbs are preferred as the base of affixal causatives, but transitive stem verbs and nominal stems are also used. Affixal causative derivation has retained its productivity due to its syntactic

importance as a valency-changing operation as well as a process affecting the argument structure of a phrase and a sentence.

Prefixal derivation is relatively frequent in Livonian. Verbal prefixes of Latvian origin are widely attached to Livonian verbs. Functional properties of these prefixes have also been transferred to Livonian. Prefixes typically modify the lexical meaning of the underived verb, and the most frequent prefixes simultaneously mark perfectivity. In some instances, the prefix has an exclusively aspectual function. Prefixes are, however, an additional, secondary means to express perfectivity as their use is not obligatory. In contrast, the functional characteristics of suffixal derivation have not been transferred to prefixation. In many respects, prefixation in Livonian corresponds to Latvian prefixation. The most notable difference is the increasing use of the prefix *nuo-* and the frequent use of the prefix in expressing perfectivity in Livonian. Moreover, the prefixes frequently occur as a part of lexical borrowings.

Keywords: Livonian, verbal derivation, suffixal derivation, prefixation, frequentative verbs, causative verbs, productivity, language contact, contact-induced change

# Tiivistelmä

Tutkimus tarkastelee uralilaisen kielikunnan itämerensuomalaisiin kieliin kuuluvan Kuurinmaan liivin kielen verbiderivaatiota ja sen funktionaalisia ominaisuuksia sekä verbiderivaatiossa tapahtuneita muutoksia. Liivin sananmuotojen äänneellinen kuluminen on johtanut typologisiin muutoksiin kuten affiksaalisen morfologian heikkenemiseen ja sanakohtaisten sääntöjen merkityksen kasvamiseen, ja tutkimus kuvaa liivin verbinjohdinten roolin ja käytön muutosta tätä taustaa vasten. Toinen merkittävä tekijä liivin sanastossa ja kieliopissa tapahtuneiden muutosten taustalla on voimakas ja pitkäaikainen latvian vaikutus, joka johti liivin puhujien kaksikielisyyteen. Tutkimus keskittyy sekä suffiksaaliseen frekventatiivien ja kausatiivien johtamiseen että prefiksaaliseen johtamiseen.

Tutkimus on empiirinen ja aineistolähtöinen laadullinen analyysi, joka perustuu puhutun kielen aineistoihin. Tutkimuksessa käytetty aineisto on koottu julkaisemattomista nauhoituksista sekä julkaistuista kielennäytekokoelmista ja sanakirjoista. Tutkimus nojaa vahvasti morfosyntaktiseen analyysiin. Analyysissa on määritetty affiksaalisten johdostyyppien morfologiset ja funktionaaliset ominaispiirteet sekä arvioitu leksikaalisten ja verbikohtaisten piirteiden vaikutusta morfosyntaktisiin malleihin. Yksittäiset verbit ja verbirakenteet on analysoitu osana syntaktisia rakenteita muun muassa valenssin, transitiivisuuden ja objektin sijanmerkinnän osalta. Kausatiivien yhteydessä on affiksaalisten kausatiivijohdosten lisäksi käsitelty myös muita liivin kausatiivistamisstrategioita. Osansa morfosyntaktisten rakenteiden analyysistä muodostaa liivin vertailu latviaan.

Affiksaalisen morfologian heikkeneminen on huomattavampaa liivin taivutus- kuin derivaatiomorfologiassa. Analyyttisten rakenteiden käyttö on lisääntynyt, mutta suffiksijohtaminen on säilynyt produktiivisena ja on ensisijainen johtamiskeino. Muihin itämerensuomalaisiin kieliin verrattuna affiksaalinen verbinjohto on liivissä rajoitetumpaa. Sekä johdostyyppien että johtimien määrä on pienempi ja suuri osa johdoksista on leksikaalistuneita. Latvian vaikutus liivin verbiderivaatioon näkyy erityisesti prefiksaalisen johtamisen omaksumisena.

Frekventatiivien johtaminen on itämerensuomalaisissa kielissä yleisesti ottaen produktiivista ja sekä frekventatiivijohtimia että -johdoksia esiintyy runsaasti. Liivissä kuitenkin frekventatiivien johtaminen on epäproduktiivista ja niiden määrä on suhteellisen pieni. Frekventatiivijohdokset ovat itämerensuomessa usein leksikaalistuneita, ja liivissä niiden leksikaalistuminen on vieläkin säännönmukaisempaa.

Kausaalisia suhteita ilmaistaan liivissä useilla keinoilla. Näitä ovat affiksaaliset johdokset, analyttiset rakenteet sekä suppleetio. Latvian vaikutus on nähtävissä lukuisissa liiviin latviasta lainatuissa kausatiiviverbeissä, jotka ovat tuoneet mukanaan syntaktiset ominaisuutensa. Affiksaalinen johtaminen on liivissä ensisijainen keino muodostaa kausatiiveja. Affiksaalisia kausatiiveja muodostetaan tavallisimmin intransitiiviverbeistä, mutta myös transitiiviverbeistä ja

nomineista. Kausatiivien johtaminen on säilynyt produktiivisena, koska sillä on syntaktista merkitystä valenssia muuttavana sekä lauseen ja lausekkeen argumenttirakenteeseen vaikuttavana prosessina.

Prefiksaalinen johtaminen on liivissä suhteellisen yleistä. Latviasta lainatut verbiprefiksit liittyvät laajasti omaperäisiin verbeihin. Myös prefiksien funktionaalisia ominaisuuksia on siirtynyt liiviin. Prefiksit tyypillisesti modifioivat johtamattoman verbin leksikaalista merkitystä, ja yleisimmät niistä voivat samanaikaisesti myös ilmaista perfektiivisyyttä. Joissakin tapauksissa prefiksin aspektuaalinen funktio on yksinomainen. Prefiksit ovat kuitenkin vain täydentävä keino ilmaista perfektiivisyyttä, sillä niiden käyttö ei ole pakollista. Sitä vastoin suffiksijohtamisen funktioita prefiksaatiolle ei ole siirtynyt. Liivin prefiksaatio muistuttaa monilta osin latvian prefiksaatiota. Huomattavin ero on *nuo*-prefiksin yleistyminen ja sen käytön laajeneminen liivissä sekä prefiksin taaja käyttö perfektiivisyyden ilmaisemisessa. Prefiksit esiintyvät liivissä lisäksi usein osana leksikaalisia lainoja.

Avainsanat: Liivi, verbinjohto, suffiksaalinen johtaminen, prefiksaatio, frekventatiiviverbit, kausatiiviverbit, produktiivisuus, kielikontakti, kontaktilähtöinen kielenmuutos

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# List of original publications

This thesis is based on the following publications:

## I

Jantunen, Santra. 2014. The border between productivity and non-productivity – are Livonian frequentative verbs derivatives or lexicalised? *Eesti ja soome-ugri keeleteaduse ajakiri = Journal of Estonian and Finno-Ugric Linguistics* 5:1. 91–116. <https://doi.org/10.12697/jeful.2014.5.1.06>

## II

Jantunen, Santra. 2019. Syntactic and aspectual functions of Latvian verbal prefixes in Livonian. In Björklöf, Sofia & Jantunen, Santra (eds.), *Multilingual Finnic. Language contact and change* (Uralica Helsingiensia 14), 15–53. Helsinki: Finno-Ugrian Society. <https://doi.org/10.33341/uh.85032>

## III

Jantunen, Santra. Forthcoming. Causative strategies in Livonian: augmentation, lexical inheritance, and Latvian influence. *Finnisch-Ugrische Forschungen*. Submitted.

# 1 Introduction

The Courland Livonian language is an intriguing object of study as the southernmost Finnic language, which has undergone fundamental typological changes in its morphology and is very strongly influenced by Latvian. In Finnic and more broadly in the Uralic context, Livonian is an illustrative example of a language that has undergone contact-induced changes, which have affected Livonian more irreversibly than other Finnic languages. From a language sociological perspective, Livonian is critically endangered but, recently, revitalization efforts have also taken place. The linguistic documentation and descriptions of Livonian include different parts of grammar and vocabulary as well as language data, both audio recordings and text samples. During the past few decades, a written standard has been developed for Livonian. Scholarly interest in the Livonian language relates to research on the ethnic history of the Livonian people and their history. No comprehensive modern grammar of Livonian, however, has been written. Consequently, the analysis and detailed description of various linguistic features is still relevant and needed. This claim is valid for both typological features, syntactic constructions, and inflectional as well as derivational morphology.

## 1.1 Background and context

The current study focuses on the functional properties and changes that have taken place in verbal derivation in Courland Livonian, historically spoken on the northwestern coast of Latvia. The study is empirical, and the qualitative analysis seeks to describe the synchronic morphosyntactic characteristics of Livonian affixal verbal derivation. Verbal derivation is examined in three case studies, which focus on different derivational categories and types, such as suffixal derivatives, more precisely frequentatives (continuous) and causatives, and prefixal derivatives. Changes in Livonian, particularly grammatical changes analyzed in the present study, result from both language internal processes and contact-induced processes, and the intertwining of both. Changes in verbal derivation are discussed both in the light of language contact with Latvian and a more general shift in Livonian morphological typology. Furthermore, there are other topics of verbal grammar that intertwine with verbal derivation, namely, aspectual relations, Aktionsart, transitivity, and valency. The thesis consists of three research articles and an introductory part.

On the whole, Livonian constitutes a fruitful subject for examining language change with respect to both a wider perspective and individual phenomena. There are several

significant angles that shed light on both viewpoints that are involved in language change and its subsequent consequences. With the exception of Finnish and Estonian, Livonian shares the same status of minority language as other Finnic languages. Unlike the majority of other Finnic minority languages, the dominant language in the historical Livonian speech area is Latvian. Other Finnic languages, however, form a contrastive background against which changes that have taken place in Livonian can be projected. A more detailed analysis of Livonian also widens the general picture of how closely related languages may develop in diverging ways. Hence, morphological typology as well as the vocabulary and grammar of Livonian have developed rather differently in comparison with other Finnic languages. These developments are illustratively manifest in Livonian verbal derivation. The number of both derivational categories and affixes has decreased and analytic constructions have gained more ground. Furthermore, Latvian influence is transparent in the adoption of prefixal verbal derivation. Thus, my intention is to contribute an important part of research on Livonian morphology and morphosyntax and increase available information about the change and development that have occurred in Livonian grammar and describe their effects.

## 1.2 Research on Livonian typology and language contacts

Initially, starting in the late 19<sup>th</sup> century, research on Livonian aimed at collecting vocabulary, and other linguistic material, including oral tradition. Since the 1990s, language typology has made advances in linguistics and research on Finnic languages. As regards Livonian, the typological perspective has been increasingly taken into account during the 21<sup>st</sup> century. Consequently, research on the typology of Livonian, its morphology and syntax as well as functional characteristics has recently gained more attention. For example, Wälchli (2000) considers a few morphosyntactic features, such as the dative-genitive split and negation, in Livonian from a Circum-Baltic perspective and compares them to other Finno-Ugric languages. Metslang et al. (2015) analyze negation in Livonian, Norvik et al. (2022) discuss polar questions both in Courland and Salaca Livonian and compare them with a broader areal context, and Tomingas (2023) treats morphosyntax and semantic-pragmatic functions of pro-forms in Courland Livonian, to mention but a few. Salaca Livonian, the other, though less well-documented, Livonian variety has been described as well. Norvik et al. (2018) depict the functions and diachrony of the inessive construction of non-finite verbs marked with *ma-* (a.k.a. supine). Furthermore, Livonian language contacts have been a topic of interest and treated in several studies, such as Wälchli (2001) on verbal prefixes and verb particles in Livonian and Latvian and Grünthal (2003: 177–202) on the reanalysis and morphosyntactic properties of the Livonian translative-comitative, currently labeled instrumental case, and the impact of language contact in the process. Ernštreits & Kļava (2013; 2014) investigate various grammatical changes in Livonian triggered by the Latvian influence. Jantunen (2019), Dailidėnaitė (2021), and Dailidėnaitė & Ernštreits (2021) shed light on different aspects concerning prefixes of Latvian origin in Livonian.

Finally, Norvik & Saar (2023) describe patterns of Finnic comparative constructions in both Courland and Salaca Livonian.

This list of recent typological studies on Livonian is far from exhaustive, but it shows how research on Livonian has been enhanced by contemporary linguistics and prevailing methodologies. Other important steps have been taken as well. The Livonian-Estonian-Latvian dictionary (Viitso & Ernštreits 2012), for instance, has more fundamental importance for research on Livonian than just a list of lexical explanations because it presents a summary of the modern written standard for Livonian.

### **1.3 Objectives and scope**

The current study is thoroughly empirical and the key research questions arise from empirical linguistic material. The main focus is on the functional characteristics of Livonian derivational morphology and different derivational strategies that can be described. In order to trace these, multiple premises must be considered. These include inherited characteristics of Livonian, most notably both inflectional and derivational morphology, morphosyntax, and the influence of language contacts as well as typological characteristics.

This thesis seeks to elaborate the description of Livonian morphosyntax and especially derivational morphology by analyzing certain verbal derivational categories and changes that affect them. The focus is on synchronic categories. Given that the changes in verbal derivation play such a significant role, however, diachronic processes are considered as well. In this study, Livonian is examined in the Finnic context.

The study aims to explain how the relevance and the role of the Livonian verbal derivational affixes have changed in light of the decrease of affixal morphology and the increasing importance of word-specific rules. Affixal frequentative and causative derivatives are of particular interest. Along with describing these two derivational categories, the aim is to identify changes in Livonian verbal derivation that are based on endogenous processes and those that were caused by intense Latvian influence.

The research questions of the thesis are the following:

- 1) What is the role of affixal verbal derivation in the spoken Courland Livonian data?
- 2) In what way is verbal derivation affected by the erosion and typological change in Livonian morphology, meaning the decrease of affixal morphology and the increasing importance of word-specific rules?
- 3) How do verbal prefixes of Latvian origin influence Livonian morphosyntax, most notably the aspectual system?

The keywords of the present study include derivation, derivational categories, productivity, and language contact. In this study, derivation refers to a word formation process that produces new words by applying elements that already exist in the language. Livonian, and Uralic languages in general, employ affixal derivation, which means that a derivational affix attached to an individual word forms a new word, such as a verb, noun, adjective, or adverb. Generally speaking, in the Uralic languages, affixal derivation

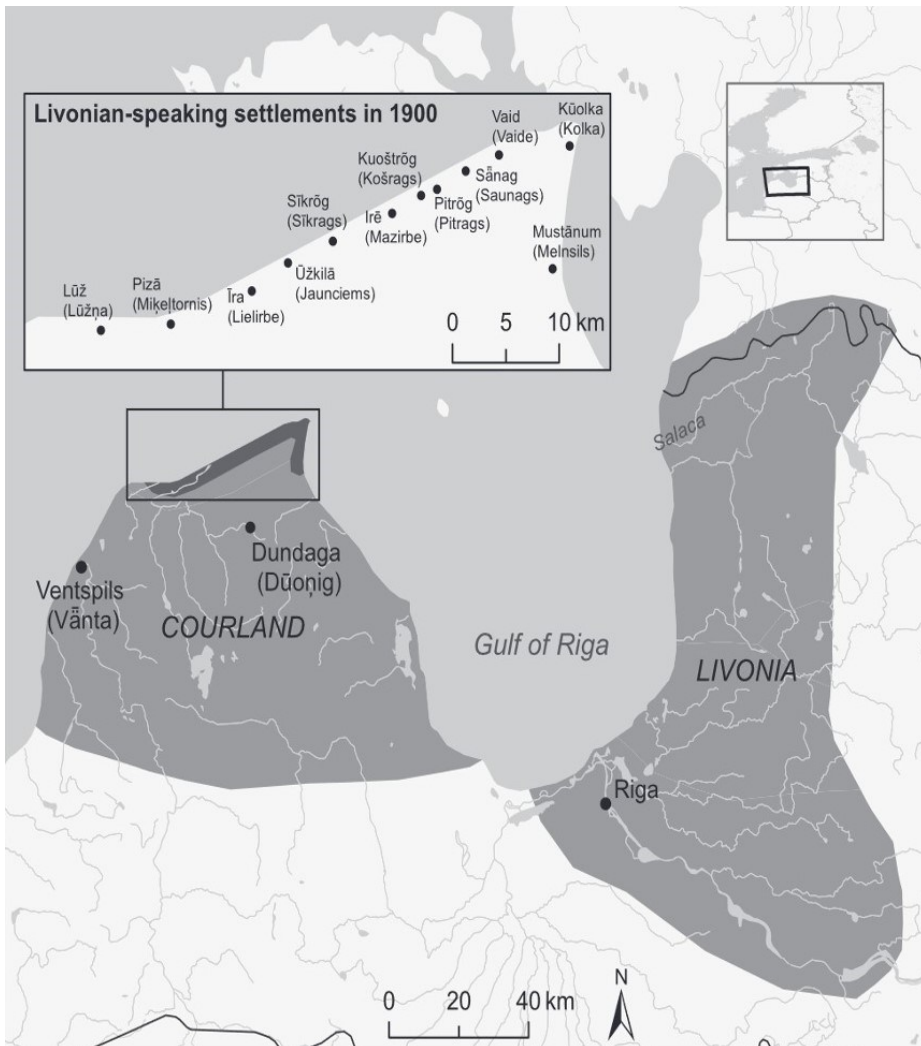
predominantly refers to suffixal derivation. Prefixal derivation, however, is limitedly employed only in a small number of languages, for example, in Livonian (see 3.4), negative prefixation in Finnish with the prefixes *ei-* and *epä-* (see 3.2.1) and in Erzya with the prefix *a-*, or unproductive prefixal derivation of adverbs in Mari (Kiefer & Laakso 2014: 475, 481, 483, 491; VISK § 172).

With a derivational category I mean a set of derivatives that belong to the same word class, carry the same semantic and syntactic properties, and are formed by using a specific derivational affix or a set of affixes. A derivational category is productive if it is open, and it is possible to add new derivatives to it. Likewise, a derivational affix is considered productive if it can derive new derivatives into the given derivational category. The productivity of individual derivational affixes varies from unproductive and rarely used ones to highly productive ones.

The concept of language contact is used to point to a situation in which contacts between the speakers of a particular language and the speakers of another, often their neighboring, language(s) lead inevitably to contact between languages. In that process, different elements are transferred from one language to the other. Certain elements, words in particular, tend to transfer more effortlessly, while others, such as morphological elements and especially syntactic features, require more intense and long-standing contacts (see Thomason & Kaufman 1988 and Thomason 2001).

## 1.4 Livonian language

Livonian belongs to the Finnic branch of the Uralic language family. Historically, together with Estonian, South Estonian, and Votic, it composes the southern subgroup of the Finnic languages, while the northern group consists of Finnish, Ingrian, Karelian, Livvi-Karelian, Lude, and Veps (see, for example, Itkonen 1983; Laanest 1982: 26–29). According to Kallio (2014: 159, 163–165), South Estonian and Livonian were the first varieties to split from Late Proto-Finnic. Today, the status of Finnic languages and varieties varies considerably. While Estonian and Finnish are standardized state languages used in every level of society, the rest of the Finnic languages are minority languages and most of them are severely endangered. The intergenerational transmission of Livonian decreased considerably between the two World Wars. Nowadays, Courland Livonian is extinct as a first language in the traditional speech area of twelve villages situated on the Livonian Coast along the northwestern coast of the Baltic Sea and the Gulf of Riga in Courland, Latvia. As a rule, Livonian is manifest in only a few language domains and is not a language of communication any longer in the traditional Livonian community and its descendants. It is irregularly used in everyday communication and symbolically, for instance, in greetings, expressions, and performances at different events. (Ernštreits & Kļava 2023; Laakso 2022c: 380.) However, research on Livonian is done constantly and literature is published as well. Map 1 presents the historical areas of Livonians.



**Map 1** The areas inhabited by Livonians at their largest (in the 13<sup>th</sup> century) and at the beginning of the 20<sup>th</sup> century (Laakso 2022c: 381).

Courland Livonian, the last vernacular variety of Livonian, has often been considered the main interest in research on Livonian (Ernštreits 2013: 15). It is divided into two main dialects, the Eastern and Western dialects. A third dialectal variety, namely the Īra or the central dialect, has been distinguished as well (see, e.g., Viitso 2008a; 2008b: 345). The written standard is based on the Eastern dialect. (Ernštreits 2013: 194; Pajusalu 2014: 149–150.)

Many basic areas of grammatical phenomena in Livonian have been covered in earlier research. The first Livonian grammar by Sjögren & Wiedemann (1861) appeared in the 19<sup>th</sup>

century. Grammatical overviews of Livonian have also been published by Kettunen (1938; 1947), Moseley (2002), and Viitso (2008b). Furthermore, Boiko (2000), de Sivers (2001), and Norvik & Tuisk (2023) have written textbooks that introduce the Livonian language from the viewpoint of language learning. However, a modern, comprehensive grammar has still to appear. Different aspects of Livonian language, as well as Livonian history and culture, are treated in the collection of articles by Blumberga et al. (eds., 2011). Furthermore, there are two Livonian dictionaries, by Kettunen (1938) and by Viitso & Ernštreits (LELS, 2012), the latter has been published online as well.

Linguistic material has been collected during the 19<sup>th</sup>, 20<sup>th</sup>, and 21<sup>st</sup> centuries. Published materials based on vernacular speech include Sjögren & Wiedemann (1861), Kettunen (1925), Loorits (1926–1928), Setälä (1953), Mägiste (1964; 2006), and Suhonen (1975). Recorded and transcribed narrative texts by Vääri are included in his dissertation (1974a) as an appendix. There are unpublished recordings in archives, such as the Tape Archive of the Finnish Language at the Institute for the Languages of Finland and the Archives of the Estonian Dialects and Kindred Languages (AEDKL) of the University of Tartu.

In addition to Courland Livonian, Vidzeme Livonian used to be spoken in historical Livonia, along the River Salaca, the River Daugava, and the River Gauja on the eastern coast of the Gulf of Riga in the territory of contemporary Vidzeme, Latvia. These varieties differ both phonologically, grammatically, and lexically (for more details, see Pajusalu 2014). As regards Vidzeme Livonian, only some Salaca Livonian materials have been preserved, as this particular variety became extinct in the 19<sup>th</sup> century. Naturally, all Salaca Livonian materials are limited. They comprise word lists, single phrases, and short translated fragments of the Bible (for a comprehensive description, see Winkler (ed.) 1994, for Salaca Livonian, see, for example, Norvik 2015; Pajusalu & Winkler 2023; Winkler & Pajusalu 2009; 2016; 2018). (Pajusalu 2014; Pajusalu & Winkler 2023: 11; Winkler (ed.) 1994: 11, 18.)

Livonian used to be a minority language for several centuries before it was first documented. Consequently, Livonian is characterized by the influence of long-term language contact with Latvian and, after World War I, a comprehensive Livonian-Latvian bilingualism of Livonian speakers that eventually led to a language shift (Ernštreits 2013: 14; Ernštreits & Kļava 2014: 78). The Latvian influence can be identified in borrowed vocabulary and grammatical effects of language contact. All aspects of the contact and the extent and character of contact-induced changes, however, are still only vaguely identified. Livonian-Latvian language contact will be discussed in more detail in Section 3.5 of the introduction.

Morphological erosion is an illustrative example of a typological change in Livonian. Alongside affixal morphology characteristic of Finnic languages, and more generally Uralic languages, the use of morphologically conditioned stem alternation has expanded. The use of analytic constructions has also increased. The change affects nominal morphology in particular, whereas in verbal morphology it is more limited. Consequently, Livonian morphology differs typologically from the general picture of Finnic morphology. Similar

changes, however, have also taken place in Estonian and South Estonian. This topic will be dealt with in Section 3.1 of the introduction.

## 2 Data and methods

Compared to many contemporary languages and European minority languages that have been supported by different revitalization measures, Livonian never had a widely used standard language. Attempts to more regular use of a literary language were made in the 1920s and 1930s but unfavorable language policies and World War II ended them (Ernštreits 2013: 18). From the 1990s on, the literary use of Livonian has become more active again when new publications in Livonian, such as dictionaries, textbooks, and poetry, have been made (Ernštreits 2013: 18, 180–185). Conceivably, published text collections and samples based on spoken language are invaluable for the research on Livonian. However, given that Livonian is not a totally undocumented language either, both transliterated narrative texts and recordings of spoken language constitute a reliable basis for linguistic research.

The approach applied in the present study is empirical and has a strong basis in the data. The study combines research on syntax, morphology, typology, and language contacts and draws from tools of morphosyntactic analysis for the description of Livonian verbal derivational categories and their functional characteristics.

### 2.1 Data

The linguistic material used in the current study originates from both unpublished recordings and published text samples representing spoken Courland Livonian. In order to examine different typological and diachronic aspects of Livonian verbal derivation, I have used unedited spoken language as the basis of linguistic analysis. Consequently, texts available that were translated into Livonian, such as Bible translations and other edited written texts, were not included in the data. As regards spoken Courland Livonian in general, high idiosyncratic variation is common in different sources. Dialectal variation used to exist as well as increased language sociological fragmentation of Livonian during the collection of these materials.

#### 2.1.1 Collection of data

The data have been drawn from various sources collected during approximately one hundred years between the end of the 19<sup>th</sup> century and the second half of the 20<sup>th</sup> century. Table 1 summarizes the data sources used in the study.

**Table 1** The Livonian data sources used in this study.

	Source	Time of collection
<b>Published written material</b>	<b>Collections of narrative stories</b>	
	Setälä (1953)	1888, 1912
	Suhonen (1975)	1971
	Mägiste (2006)	1947–1949, 1957
	<b>Dictionaries and word lists</b>	
	Kettunen (1938)	1917, 1920 to 1929
	de Sivers (1971b) (includes prefixed verbs from Kettunen 1938 as well)	1888, 1912, 1917 to 1929, 1943
	Viitso & Ernštreits (2012)	1910s to 1970s
<b>Unpublished recordings</b>	Recordings of two language consultants (recordings preserved in The Tape Archive of the Finnish Language)	1971

The collections of narrative stories applied here are based on the fieldwork materials collected by Setälä (1953), Suhonen (1975), and Mägiste (2006) (the time of collection is presented in Table 1). Furthermore, the data were drawn from unpublished recordings of spoken Livonian from the 1970s. The aim of applying data from different periods is to gather a sufficient number of examples that allow to draw conclusions on the grammatical features being studied. Individual examples and grammatical features are analyzed within their context involving syntactic and functional characteristics. The narrative stories in the collections by Setälä (1953), Suhonen (1975), and Mägiste (2006) consist of recollections (e.g., biographical material), descriptions of everyday life, customs, and traditions (e.g., fishing, weddings, funerals) as well as fairy tales and other folklore genres.

A noteworthy part of the data and current work consists of previously unused spoken material recorded by Seppo Suhonen, professor of Finnic languages at the University of Helsinki. Under strictly controlled postwar conditions, Suhonen had the opportunity to interview Livonian speakers in the beginning of the 1970s. In some of the interviews, the Estonian linguist Karl Kont also participated as a co-interviewer. So far, only a small portion of altogether 51 hours of recordings has been published (Suhonen 1975). I have transcribed and annotated approximately 6 hours of material from these unpublished audio recordings of two native speaking language consultants in order to get more data suitable for analyses. The annotation also forms a part of the morphosyntactic analysis carried out. In general, these audio recordings are linguistically and thematically compatible with published collections of narratives. To a large extent, the language of the recordings is identical to the language in the collections of narrative stories by Setälä (1953) that were collected 60–90 years earlier, and Mägiste (1964; 2006) who interviewed Livonian speakers in Courland in 1943 and Livonian refugees in Sweden at the end of the 1940s and 1950s. What is noteworthy in Suhonen’s recordings, however, is the high metalinguistic awareness of one of the language consultants. This particular language consultant, for instance, purportedly

avoids the adoption of many Latvian features, such as verbal prefixes, which are widely used in the speech of other Livonian speakers. Thus, material from this language consultant diverges from other recordings, and examples are applicable only in certain areas of this research. On the whole, these recordings increase the amount of available authentic material of Livonian that can be used in academic research.

The third, supplementary group of data sources consists of lexical items such as the Livonian dictionary by Kettunen (1938), the list of prefixed verbs by de Sivers (1971b), and the online version of the Livonian-Estonian-Latvian dictionary by Viitso & Ernštreits (2012). LELS, however, differs from the other sources of lexical data. It is an edited work representing modern standard Livonian. While the dictionary is partly based on spoken material adapted to written standard, published texts and manuscripts compose the rest of the material (Viitso & Ernštreits 2012: 10–11). Furthermore, LELS has had an important role in the development of the standard language. Finally, examples derived from these dictionaries and the verb list differ from other applied sources because they lack context, even if very short syntactic examples are given.

I have applied the ascribed data sources in slightly different ways in individual case studies. The collections of narratives, especially those by Suhonen (1975) and Mägiste (2006), form the basis of the data sample: data derived from them are used in all articles. In Articles 2 and 3, I have used several examples from unpublished recordings, while the dictionaries and the verb list have been used as sources in Article 3. The selection of data is described in the individual case studies.

In Articles 2 and 3, Latvian examples illustrate Latvian influence on Livonian with special emphasis on the features of the given study. Latvian examples are derived from contemporary texts available on the internet and presented in Standard Latvian.

Individual examples are glossed following the guidelines of The Leipzig Glossing Rules (Comrie et al. 2008) and provided with English translations. Regarding the Latvian examples, the guidelines and language-specific suggestions for the glossing of modern Latvian and Lithuanian by Arkadiev & Nau (2015) are followed as well.

Finally, there is published material of spoken Livonian that has not been used in this study, such as Kettunen (1925), Loorits (1926–1928), and Vääri (1974a). These materials include similar narratives and folklore material to those by Setälä (1953), Mägiste (1964; 2006), and Suhonen (1975) and undeniably would have increased the quantity of the data. From a qualitative viewpoint, however, the application of these sources would not have significant importance.

### **2.1.2 Transcription and orthography**

Different transcription techniques and ways of notation have been used for the description of Livonian, beginning from Sjögren & Wiedemann (1861). Later, the Finno-Ugric transcription (FUT), a phonetic transcription intended for scientific work, developed in the 1890s and first published by Setälä (1901), has been applied in the study of Livonian. More

recently, the Livonian dictionary by Viitso & Ernštreits (2012) has been an important stage for the contemporary use of Livonian. The notation used in this dictionary has become standard, and it is widely used in research as well. Ernštreits (2010; 2013) provides an extensive description of the development of the Livonian written language and orthography.

The transcription in the published written material used in the present study, except for LELS, is based on FUT. Needless to say, FUT is applied in a slightly different way in different collections of narratives. The transcription of the clause examples in the current study is based on the notation presented in LELS as well as the written standard with additional simplifications. Phonetic features are presented simplified as the written standard has been developing toward a simpler notation as well. For example, the differentiating of allophones in the notation is not crucial with respect to the topic of the current study. Thus, the letter  $\bar{o}$ , which is used in LELS as a symbol of the open labial back vowel, is replaced by  $\bar{o}$ . Furthermore, the broken tone, *stød*, or *Stosston* as a phonetic feature is not indicated in the examples because phonology or morphophonology are not the focus of the current study, but rather syntactic units. Moreover, the broken tone is not marked in the written standard. Areal features of the spoken language and idiolectal variation are still preserved in the presentation, including variation in vowel quality and length (e.g., *mā* ‘down, away’ vs. *mō* id., *pie-jue-t-iz* PRFX-drink-CAUS-PST.3SG/1SG ‘got drunk’ vs. *pie-jūo-t-iz* PRFX-drink-CAUS-PST.3SG/1SG id.) and certain frequently appearing abbreviated forms in the spoken language (e.g., *tam* s/he\_be.3SG ‘s/he is’ vs. *ta um* s/he be.3SG id.). Some other features, for instance, phonetic assimilation transcribed in narrative texts are omitted and presented as in the written standard (e.g., *sis te-i* > *siz te-i* then make-PST.3SG/1SG ‘then s/he / I made’).

The transcription, however, differs somewhat between the articles. For example, in Articles 1 and 2, half-long consonants (e.g.,  $\ddot{t}$ ,  $\ddot{k}$ ) are marked as geminates (e.g., *nurkkō* corner.ILL ‘to the corner’, *võl- $\ddot{t}$  $\ddot{t}$ õ* be.PST-2PL/3PL ‘you / they were’) instead of a single consonant in the written standard (e.g., *nurkõ* corner.ILL ‘to the corner’, *võl- $\dot{t}$ õ* be.PST-2PL/3PL ‘you / they were’) and in Article 3.

## 2.2 Methods

The methodological key issue is the interpretation of the data with respect to the typological characteristics of Livonian. Individual verbs, their lexical and semantic properties, are manifested in syntactic constructions, which are analyzed from a morphosyntactic viewpoint. The methodological core questions of the study are the following:

- 1) What kind of functional characteristics do verbal derivatives have? Are they implemented with affixes or stem alternation?
- 2) If derivational affixes have eroded, are there some means of compensation used? Are there other features that affect the verb phrase?
- 3) Do language contacts have a direct grammatical effect on transparent borrowings, or is functional transfer more characteristic of Latvian influence on Livonian verbal derivation?

The study is based on a morphosyntactic analysis of entire syntactic units and constructions consisting of phrases and sentences. Methodologically, the characteristics of Livonian inflectional morphology play an important role, because the inherited Finnic affixal morphology has considerably eroded and, similarly to Estonian (Metslang 2000; Viitso 1990), triggered the increase of analytic constructions and morphologically conditioned stem alternation in morphology. Livonian inflectional morphology is lexically based to a large extent and in contrast with category-based morphology, which is characteristic of northern Finnic languages. Unlike inflectional categories, Livonian verbal derivatives are mainly individual lexical forms. This kind of approach is utilized, for instance, for the description of Estonian morphology by Blevins (2005), who concludes that the Estonian declensional system is lexically based.

Given that the current study is data-driven, the evidence is based on the accurate identification of affixal and non-affixal features. Consequently, the analysis will, first, define the basic characteristics of individual derivational categories in terms of affixal derivation. Second, the analysis will evaluate the extent to which lexical and verb-specific features govern morphosyntactic patterns. Causative forms, for instance, are an illustrative example of a mixed morphological strategy employed in derivation (see Grünthal et al. 2021).

The classification of data is based on the occurrences of the selected derivational categories, namely frequentatives, causatives, and prefixed verbs. Livonian frequently employs other causativization strategies in addition to affixal derivation, and examples of this kind of structural and lexical variation have been included in the data as well. Each occurrence is then analyzed with respect to relevant syntactic and morphosyntactic properties, including valency, transitivity, object marking, and the presence of adverbials. Finally, Livonian verbs and verb phrases are also compared with Latvian, which sheds light on the transparent bilingual context of the data.

The fact that the data represents spoken language and originates from different periods has some methodological implications as well. The morphosyntactic analysis of individual

derivational categories and morphosyntactic patterns makes the language of individual language consultants and Livonian speakers mutually compatible. Thus, the crucial factor is that chronologically divergent data represent similar registers and grammatical rules, as the morphosyntactic analysis shows.

Both nominal and verbal inflection in Livonian manifest syncretic forms and the blurring of category boundaries to some extent (see 3.1). As a rule, syncretic forms are glossed by the assumed default category of the given syntactic construction (for the principles applied here, see Lehmann 2007). The most widespread syncretism pattern occurs between the nominative and genitive. The nominative and genitive overlap in many inflectional types in the singular and regularly in the plural. This kind of syncretism has syntactic relevance as well. Both the nominative and genitive are cases of the object and comparable with the accusative in many languages, including Latvian. In many sentences, it is not possible to determine exactly whether the given inflectional form and case actually is the nominative or genitive. In this case, in Article 3 and the introductory part, both the singular nominative and genitive are indicated in the glosses. In Articles 1 and 2, however, the singular nominative and genitive are glossed by the assumed category. In the plural, the nominative-genitive is the default form and only the number is indicated. Furthermore, the partitive and illative regularly overlap in the singular. In verbal inflection, the singular first and third person forms both in present and past tense are syncretic as well as the past tense forms of the plural second and third person. Like nominal categories, syncretic forms in verbal inflection are glossed according to the assumed default category.

Syncretism is an illustrative example of a language-specific methodological question that arises from Livonian morphological characteristics and has an essential role in a data-driven study. A typological morphosyntactic analysis forms the methodological backbone of the study as regards several characteristics in Livonian that demand consideration of different viewpoints. The erosion of affixal morphology typical of Livonian affects Livonian verbal derivation as well through changes in lexical semantics and functional properties.

## 3 Theoretical background

In Livonian, the erosion of affixal elements is particularly transparent in inflectional systems. This makes Livonian a versatile object of morphological study. Given this viewpoint, the primary question is whether erosion can be observed in derivational morphology. In other words, are derivational paradigms reintroduced, or are new syntactic means of compensation preferred. In general, derivational morphology is relatively commonly attested in Livonian and derivatives are often morphologically transparent, whereas in certain cases they are more clearly lexicalized forms.

### 3.1 Morphological typology of Livonian

In this study, Livonian morphological typology is discussed in the context of morphological change that has an influence on syntax. Compared to other Finnic languages, Livonian morphology is characterized by a strong erosion of affixal morphology, particularly inflectional morphology. More generally, erosion can also have a role in changes in language structure in the case of endangered languages and language death, see, for example, Palosaari & Campbell (2011: 113–116); Polinsky (1995: 95–110); Wolfram (2004: 772–776). In Livonian, erosion has resulted in the loss of entire categories and increased syncretism both in nominal and verbal morphology (Grünthal 2023a: 442–443). Moreover, the importance of morphologically conditioned stem alternation and word-specific rules has increased (Grünthal 2010: 101–102; 2023a: 442). An illustrative example of word-specific rules can be seen in the Livonian dictionary by Viitso & Ernštreits (2012), which presents 242 inflectional types for nominals and 64 inflectional types for verbs. In fact, several of them consist of only one or two lexemes. The erosion of inflectional affixes is especially transparent in those nominal categories that commonly display affixes in other Finnic languages. The rise of syncretism, for instance, involves three grammatical cases, namely the nominative, genitive, and partitive as well as illative. Consequently, syncretic forms are highly frequent in the singular between the nominative and the genitive (e.g., *kalā* fish.NG ‘fish’) and not rare between the partitive and the illative (e.g., *kallō* fish.PRT ‘(some) fish’ = *kallō* fish.ILL ‘into the fish’) either. In the plural, the nominative and the genitive overlap almost fully with the exception of the plural third person pronoun (e.g., *kalā-d* fish-NG.PL ‘fish’). (Grünthal 2010: 101–102, 104–107; 2023a: 442–443; Laakso 2022c: 384; Viitso 2008b: 329–330.)

An example of Livonian noun inflection compared to some other Finnic languages is presented in Table 2. Considering the whole paradigm, Livonian employs fewer case affixes than other Finnic languages. The exterior local cases characteristic of Finnic languages, for instance, are unproductive in Livonian and mostly occur in fossilized singular expressions and lexicalized forms relating to place names, adverbs, and postpositions (see Blokland & Inaba 2018; Viitso 2008b: 325–326).

**Table 2** Noun inflection of the grammatical cases nominative, genitive, and partitive as well as the illative of the Proto-Finnic \**kala* ‘fish’ in Livonian, Standard Estonian, Standard Finnish, and Veps. Syncretic forms in Livonian, Estonian, and Veps are highlighted.

	Livonian		Estonian		Finnish		Veps	
	sg	pl	sg	pl	sg	pl	sg	pl
<b>NOM</b>	<i>kalā</i>	<i>kalā-d</i>	<i>kala</i>	<i>kala-d</i>	<i>kala</i>	<i>kala-t</i>	<i>kala</i>	<i>kala-d</i>
<b>GEN</b>	<i>kalā</i>	<i>kalā-d</i>	<i>kala</i>	<i>kala-de</i>	<i>kala-n</i>	<i>kalo-je-n</i>	<i>kala-n</i>	<i>kalo-ide-n</i>
<b>PRT</b>	<i>ka'llō</i>	<i>ka'ʹ-ḡi</i>	<i>kala</i>	<i>kalu / kala-sid</i>	<i>kala-a</i>	<i>kalo-ja</i>	<i>kala-d</i>	<i>kalo-i-d</i>
<b>ILL</b>	<i>ka'llō</i>	<i>ka'ʹ-ži</i>	<i>kala-sse</i>	<i>kala-de-sse</i>	<i>kala-an</i>	<i>kalo-i-hin</i>	<i>kala-ha</i>	<i>kalo-i-he</i>

Contrary to nouns, Livonian verbal inflection has preserved inherent Finnic features more consistently and displays affixes extensively. Verbal inflection, for instance, manifests an affixal person and tense marking system. Syncretism is limited to the overlapping of the singular first and third person present tense forms, e.g., *kītō-b* say-3SG ‘s/he says’ = *kītō-b* say-1SG ‘I say’. The same inflectional form can encode both 3SG and 1SG, and the pronominal subject determines the person in question. Furthermore, in past tense forms, the singular first and third person overlap as well, e.g., *kīt-iz* say-PST.3SG ‘s/he said’ = *kīt-iz* say-PST.1SG ‘I said’. In the plural, there is another overlapping of forms because the plural second and third person are identical in the past tense, e.g., *kīt-iz-t(ō)* say-PST-2PL ‘you said’ = *kīt-iz-t(ō)* say-PST-3PL ‘they said’. (Grünthal 2023a: 443; Laakso 2022c: 385; Viitso 2008b: 317.)

Table 3 shows the difference between Livonian, Estonian, and Finnish present and past tense conjugation. Generally speaking, the effect of phonetic erosion is not as significant in verbal morphology as in nominal paradigms because affixal derivation often decreases its impact.

**Table 3** Affirmative present tense and past tense of the verb 'see' and the derived causative 'show' in Livonian, Standard Estonian, and Standard Finnish. Syncretic forms are highlighted.

	Livonian		Estonian		Finnish	
	<i>nā'dō</i>	<i>nā'gļō</i>	<i>nāha</i>	<i>nāidata</i>	<i>nāhdä</i>	<i>näyttää</i>
<b>present tense</b>						
<b>1SG</b>	<i>nā-b</i>	<i>nā'gļō-b</i>	<i>nāe-n</i>	<i>nāita-n</i>	<i>nāe-n</i>	<i>näytä-n</i>
<b>2SG</b>	<i>nā-d</i>	<i>nā'gļō-d</i>	<i>nāe-d</i>	<i>nāita-d</i>	<i>nāe-t</i>	<i>näytä-t</i>
<b>3SG</b>	<i>nā-b</i>	<i>nā'gļō-b</i>	<i>nāe-b</i>	<i>nāita-b</i>	<i>nāke-e</i>	<i>näyttä-ä</i>
<b>1PL</b>	<i>nā-mō</i>	<i>nā'gļō-m</i>	<i>nāe-me</i>	<i>nāita-me</i>	<i>nāe-mme</i>	<i>näytä-mme</i>
<b>2PL</b>	<i>nā-tō</i>	<i>nā'gļō-t</i>	<i>nāe-te</i>	<i>nāita-te</i>	<i>nāe-tte</i>	<i>näytä-tte</i>
<b>3PL</b>	<i>nā-bōd</i>	<i>nā'gļō-bōd</i>	<i>nāe-vad</i>	<i>nāita-vad</i>	<i>nāke-vät</i>	<i>näyttä-vät</i>
<b>past tense</b>						
<b>1SG</b>	<i>ne-iz</i>	<i>nā'gļ-iz</i>	<i>nāg-i-n</i>	<i>nāita-si-n</i>	<i>nā-i-n</i>	<i>näyt-i-n</i>
<b>2SG</b>	<i>ne-iz-t</i>	<i>nā'gļ-iz-t</i>	<i>nāg-i-d</i>	<i>nāita-si-d</i>	<i>nā-i-t</i>	<i>näyt-i-t</i>
<b>3SG</b>	<i>ne-iz</i>	<i>nā'gļ-iz</i>	<i>nāg-i</i>	<i>nāita-s</i>	<i>nāk-i</i>	<i>näytt-i</i>
<b>1PL</b>	<i>ne-iz-m(ō)</i>	<i>nā'gļ-iz-mō</i>	<i>nāg-i-me</i>	<i>nāita-si-me</i>	<i>nā-i-mme</i>	<i>näyt-i-mme</i>
<b>2PL</b>	<i>ne-iz-t(ō)</i>	<i>nā'gļ-iz-t(ō)</i>	<i>nāg-i-te</i>	<i>nāita-si-te</i>	<i>nā-i-tte</i>	<i>näyt-i-tte</i>
<b>3PL</b>	<i>ne-iz-t(ō)</i>	<i>nā'gļ-iz-t(ō)</i>	<i>nāg-i-d</i>	<i>nāita-si-d</i>	<i>nāk-i-vät</i>	<i>näytt-i-vät</i>

Verbal derivation, which is typically affixal in Finnic languages, has maintained its inherent characteristics in Livonian to a large extent, which is illustratively seen in certain inherited affixal derivational categories, such as causatives and frequentatives, which, for example, are morphologically transparent. However, it has also lost much of its productivity, and lexicalized derivatives are frequent. Affixal derivation is more limited in terms of both the number of derivational categories as well as derivational affixes than in Finnic languages in general (see 3.3) (Laakso 1989: 59, 66). Furthermore, the long-term influence of Latvian has triggered the adoption of prefixal derivation (see 3.4).

Conclusively, the erosion of Livonian morphology has caused notable constraints in both inflectional and derivational categories in comparison with other Finnic languages. Nevertheless, affixal inflectional morphology maintains verbal derivation by providing a functional model for using affixal morphology. The number of segmentable affixal units, however, is lower in comparison to other Finnic languages, and lexical information as well as word-specific rules have gained more importance in Livonian.

## 3.2 Derivation as a word formation process

Derivation is a morphological word formation process that induces new words and meanings. Typologically, word formation processes can be divided into various groups according to the type of derivational units. Štekauer et al. (2012), for instance, present four types of word formation processes: 1) those that combine free morphemes by means of compounding, reduplication, and blending, 2) those that operate with bound morphemes, that is, affixation, 3) those that are used without adding derivational material, for instance, conversion, stress shift, and stem modification, and 4) subtractive word formation processes, such as back-formation (for word formation patterns and formal means of derivation see also, e.g., Olsen 2014: 43–48; Schmid 2015: 6–8).

In the Uralic languages, compounding and affixal derivation are typical methods of word formation (see Kiefer & Laakso (2014) and Laakso (2015) for Uralic languages in general, Ruong (1943) for a comprehensive description of verbal derivation in Pite Saami, and Kuokkala (2023) for Saami languages). This is a transparent characteristic of the Finnic branch as well (for compound formation in Livonian, see Ernštreits 2016; 2018a; 2018b). Compounding and the derivation of new words are based on previously existing elements. Thus, compounds are formed by combining free morphemes, that is, individual words, while affixal derivatives are based on individual words and derivational affixes (Olsen 2014: 26). The relationship between both derivation and compounding as well as derivation and inflection is ambiguous. In compounding, ambiguity results from the fact that a particular morpheme can occur either as an independent word or an affix grammaticalized from an independent word (Olsen 2014: 28, for more details, see Olsen 2014). Furthermore, the border between derivation and inflection can be blurred and the same morphological category can occur either derivational or inflectional in different languages (Štekauer et al. 2012: 19, 20). In fact, there is a continuum from clear inflection to clear derivation. Between them fall vague cases, which either do not correspond to the most prototypical cases of inflection or derivation, or in which the distinguishing between inflection and derivation is a language-specific characteristic. (Haspelmath 1996: 47–48.) Štekauer et al. (2012: 20–23) have various examples that illustrate the latter, and the distinction between derivation and inflection is discussed in more detail by ten Hacken (2014) and Štekauer (2015). Haspelmath (2024), however, argues that the distinction between inflection and derivation is based on traditional terminology rather than real phenomena of the world's languages. Yet, the Finnic languages make, as a rule, a clear distinction between inflection and derivation, which is clearly seen in Livonian verbal morphology as well.

The preference for affixation as a means of word formation is common. Štekauer et al. (2012: 138, 140) conclude that nearly all languages in their sample of 55 genetically and areally diverse languages display affixal derivation in some way. The sole exception is Vietnamese, which has no affixation at all (Štekauer et al. 2012: 141). The most typically displayed pattern of affixal derivation in the languages of the world is suffixal derivation, while prefixal derivation has a more limited frequency (Lieber & Štekauer 2014: 782–783).

This applies to Uralic languages, too, as they mainly exploit suffixal derivation (Laakso 2015: 2065).

### 3.2.1 Verbal derivation in Finnic

In the Finnic languages, derivation is an inherent feature that has several old Uralic derivational affixes and applies them in diverging ways. In the context of Uralic languages, derivation is mostly manifested as affixal derivation. Inflectional morphology is predominantly based on affixing and suffixal units. In Finnic, the order of affixes corresponds to the cross-linguistic tendency as derivational affixes tend to occur closer to the stem than inflectional affixes (Saarinen & Hay 2014: 371). Thus, derivational affixes are attached to the stem, and inflectional affixes follow the derivational ones. The productivity of affixal verbal derivation as well as individual derivational affixes varies in individual languages and dialect areas and is, to a large extent, a language-specific feature. In many cases, the use of various derivational affixes depends on the given verb as well. As regards individual verbs, their tendency to lexicalize depends on an individual derivational category. Reduplication, infixation, and circumfixation do not occur in the Finnic context.

In addition to suffixal derivation, Livonian displays prefixal derivation with Latvian-origin verbal prefixes (see 3.4). While there is no inherited verbal prefixation in Finnic, borrowed prefixes and prefixed verbs can be found in some Finnic languages and varieties. In Veps and Karelian, some borrowed Russian prefixed verbs occur. Some of them, such as *iz-nesida* ‘carry’ and *iz-vot’t’a* ‘get rid of’, can be considered as fully adopted lexical units in Veps as they are included in the dictionary by Zajceva & Mullonen (1972). Borrowed Russian prefixes *do-* ‘up to; until; addition’ and *pere-* ‘across; re-’ are occasionally employed in Veps and Karelian. Both display an aspectual function in Russian. (Grünthal 2024; Honti 2007: 49; Kiefer & Honti 2003: 137–138, 146–147; Laakso 2015: 2065; Mägiste 1937: 20–22.) As regards Veps, verbal prefixes may appear in colloquial Veps and published text samples, but not in Standard Veps (Grünthal 2024). Furthermore, borrowed Latvian prefixes were used in Leivu, an extinct South Estonian dialect that used to be spoken in northeastern Latvia (for a detailed description of the diachronic development of Leivu and its linguistic position within South Estonian, see Kallio 2021) (Mägiste 1937: 16–19; Vaba 1997: 43; Wälchli 2001: 418). In modern standard Finnish and Estonian, from a synchronic viewpoint, some elements can be considered prefixes. In studies of Finnish, *ei-* ‘no, non-, un-’, for instance, *ei-kiireellinen* NEG-urgent ‘nonurgent’ and *epä-* ‘non-, un-’, for example, *epä-ystävällinen* NEG-friendly ‘unfriendly’ are seen as negative prefixes that are based on inherited elements and are employed in nominal constructions (Laakso 2022b: 263; VISK § 172, § 1630–1631). Regarding standard Estonian, *eba-* ‘non-, un-’, for example, *eba-sõbralik* NEG-friendly ‘unfriendly’, is considered more similar to a stem than an affix, as it may function as a derivational base (e.g., *eba-le-ma* non-FREQ-INF ‘hesitate’) (EG: 108, 290–291). The same interpretation applies to Finnish *epä-* as well. In some former studies, however, Estonian *eba-* ‘non-, un-’ has been presented as a prefix (see, for example,

EKG I: § 254, § 399, § 448). Borrowed prefixes also appear in young loanwords and display the pattern of Indo-European donor languages, for instance, *ir-* (< *\*in-*) in Finnish *irrationaalinen* ‘irrational’ and Estonian *ir-ratsionaalne* id. (EG: 108, 290–291; VISK § 172, § 1630–1631).

Derivation, it should be noted, is not the only method used to form verbs or verbal constructions to express certain functions, such as valency change. Causative verbs in Livonian are either affixal derivatives or display functional compensation by applying analytic causative constructions (see also Norvik & Pakerys 2022). Suppletive causative pairs and borrowed causative verbs are attested as well (Jantunen forthcoming). In Estonian, analytic causatives are frequent (Erelt 2017: 231–233, 234–236; Kasik 2001; 2015: 113).

The rich derivational morphology of Finnic languages is characterized by the amplitude of verbal derivational affixes. Typical inherited derivational categories that occur in all or most Finnic languages include causative, frequentative (continuous), momentative (a.k.a. momentaneous) (punctual), reflexive, and translative verbs. (See Erelt et al. 2020: 331–339; Grünthal 2022: 302; Kasik 2015: 108–182; Laakso 1989: 55–59; 2022a: 249; 2022b: 264; 2022c: 388; Markus & Rozhanskiy 2022a: 324; Markus & Rozhanskiy 2022b: 344; Metslang 2022: 360; Novak et al. 2019: 319; Pajusalu 2022: 376.) Two of them, i.e. causatives and reflexives, are valency changing categories. In Livonian, however, only causative, frequentative, and translative derivations are attested, and reflexive derivatives are marginal, whereas Livonian has no momentative category. The morphology of translative derivatives differs from other Finnic languages, as in Livonian, the Finnic translative affix *-ne-* does not occur as a sole affix but only as a part of a complex affix (Laakso 1990: 115–116). The question of why these particular derivational categories are still widely used while some other shared Finnic derivational categories are not requires further study.

There is a significant difference between the northern and southern Finnic languages, which is caused by diverging typological development. Generally speaking, derivational morphology is more versatile in northern Finnic, most notably in Karelian, Livvi-Karelian, Veps, and Eastern Finnish dialects, which have several derivational categories and affixes. However, in eastern varieties of South Estonian, such as in Seto, derivation is productive as well, and a diverse range of derivational categories and affixes is employed (Hagu & Pajusalu 2021: 33–42; Pajusalu 2022: 376). Furthermore, the concatenation of affixes is more typical in northern Finnic (Laakso 2022a: 249). Several language-specific descriptions on northern Finnic verbal derivation have been published: for Karelian, see Markianova (1985), Zajkov (1999: 107–110), Zaikov (2013: 211–214), and on reflexive verbal derivation and inflection Novak et al. (2019: 319–326), for Veps, see M. Zajceva (1978), N. Zajceva (2003: 119–120), Grünthal (2015b: 162–171; 2022: 302), and on frequentative and momentative verbal derivation Puura (2007; 2010), for Ingrian, see Markus & Rozhanskiy (2022a: 323–324).

As regards southern Finnic languages, verbal derivation has been treated in few studies. For example, Hagu & Pajusalu (2021: 40–42) describe verbal derivational affixes and

categories in Seto dialect of South Estonian, while Juhkason (2011) concentrates on momentative and frequentative derivation in Võro dialect of South Estonian. Markus & Rozhanskiy (2022b: 343, 344) present briefly derivational affixes in Votic.

There are only a few comparative and contrastive descriptions of Finnic verbal derivation. Many inherent derivational categories, such as causatives, frequentatives, and momentatives, lack a comprehensive description. In his book on the historical development of the Finnic languages, Laanest (1982: 271–283) presents verbal derivational affixes among other morphological features. He defines the functions of the affixes in the light of derivatives attested in different Finnic languages. Laakso (1989) analyzes Finnic verbal derivational affixes with a focus on the relationship between their form and function and examines their distribution and phonological structure. She concludes that reflexive affixes are the smallest and phonologically simplest group, which is more closely related to inflectional morphology than other derivational affixes. More recently, Laakso (2022a) gives a very concise introduction to derivation in Finnic.

Furthermore, some verbal derivational categories in Finnic are discussed in more detail. Lehtinen (1979) describes Finnish verbal derivatives of type *avajaa*, *karkajaa*, and their Finnic equivalents. Laakso (1990) discusses the diachronic development and synchronic distribution of the verbal derivational affix *-ne-* in Finnic languages. In his study of frequentative derivation in Finnish dialects, Suihkonen (1994) provides an overview of the morphology of frequentatives and some remarks on their functions in Finnic. Koivisto (1995) offers an extensive description of the formation and semantics of Finnic reflexive verbs. Finally, Grünthal et al. (2021) describe causative verbs and causativization strategies of a few verb pairs in Uralic languages, including Finnic.

Compared to other Finnic languages, Finnish and Estonian derivational morphology have been treated more extensively and from multiple perspectives. Kasik (1997) compares Finnish and Estonian verbal derivational systems and concludes that verbal morphology in Finnish and Estonian shares the same basic structure. Nonetheless, Estonian displays shared patterns less frequently and, actually, makes use of other syntactic or lexical ways to express the same meaning. Further, Kasik (1989) and Ojutkangas (1997) have published comparative studies on Finnish and Estonian derivation. Kasik (1989) describes similarities in Estonian and Finnish verbal derivation and focuses on the most frequent derivational types, while Ojutkangas (1997) compares the use of Finnish and Estonian *U-* and *ne-* derivatives. Finnish derivation has been extensively described in the descriptive grammar by A. Hakulinen et al. (VISK, 2004) and in the handbooks by L. Hakulinen (1941; 1961; 1968; 1979) and Brown et al. (2008). Kangasmaa-Minn (1982; 1983) analyzes Finnish verbal derivatives as well as deverbal nominal derivatives. Kytömäki (1990) discusses different types and semantic variation of denominal verbal derivatives. Kiefer & Laakso (2014) present a more recent concise overview of Finnish derivational processes. In Estonian grammars (EG; EKG I), derivation is dealt with as a part of word formation. The largest recent study focuses on Estonian. Kasik (2015) provides a comprehensive description of derivational morphology in her extensive work on Estonian word formation.

### 3.2.2 Verbal derivation in Livonian

Derivation in Livonian has been discussed in terms of derivation in the Finnic languages but only occasionally in a more detailed way. Affixal derivation in Livonian relates to the analysis of lexicon and individual words as, for example, Kiefer & Laakso (2014) and Laakso (1989; 1990; 2015; 2022a) show. Most frequently, Livonian affixal verbal derivation has been mainly treated as a morphological phenomenon. Sjögren & Wiedemann (1861: 23–40) give an overview of suffixal verbal derivation in their Livonian grammar. Derivational strategies are distinguished on the basis of word classes, which constitute nominal, verbal, and adverbial derivation. In the grammar, Sjögren & Wiedemann describe the semantics of individual affixes and give examples of derived words. The description of Livonian derivation also includes a comparison of the derivational suffixes with equivalents in Finnish and Estonian. In addition to suffixal derivation, Sjögren & Wiedemann (1861: 43–45) briefly mention verbal prefixation in Livonian and apply the concepts of preposition and particle instead of a prefix. Some decades later, Kettunen (1938) deals with derivatives in individual lexical entries of his Livonian dictionary.

The most comprehensive description of Livonian affixal derivation is Väari's (1974a) overview of Livonian derivational suffixes based on a vast lexical material. Väari lists suffixal derivatives one by one and provides examples and etymological details when they are available and specifies which diachronic changes have taken place. He also assesses whether individual derivatives were still in use when the study was carried out. The overview is based on narrative stories recorded and transcribed by Väari. He also investigates verbal derivation in more detail in a high number of articles (Väari 1974b; 1975; 1976; 1980a; 1980b; 1981; 1982; 1983; 1984; 1985; 1986; 1987). The analysis is, however, limited to the morphological description of derivation and listing of individual affixal forms.

De Sivers (1971a) provides the most comprehensive discussion of the verbal prefixes of Latvian origin in Livonian. In her study, she presents an overview of the borrowed verbal prefixes and their use in Livonian. Later, verbal prefixes of Latvian origin in Livonian have been discussed by Wälchli (2001) and Ernštreits & Kļava (2013; 2014). They briefly describe the use of the prefixes in Livonian. Furthermore, Arkadiev (2014; 2015; 2017) examines verbal prefixes in Livonian from a typological point of view in terms of prefixal perfectivization and contact-induced borrowing of verbal prefixes. Taking a different point of view, Ernštreits (2016: 210–214; 2018a: 254–257) presents affixal derivation as one of the methods to expand the Livonian vocabulary. Jantunen (2019) analyzes syntactic and aspectual functions of verbal prefixes and shows that some of them can form perfective verbs. Dailidēnaitē & Ernštreits (2021) study the frequency of the prefixed verbs and show their increase during the dispersal of the Livonian speech community (The Livonian uprising and World War I). Dailidēnaitē (2021) investigates the derivational productivity of the prefixes with a focus on data collected before World War II. She concludes that the use of the prefixes resembles the Latvian model as both the derivational productivity of the prefixes and the absolute occurrence of a certain prefix have become more even in the more

recent texts of the data. Finally, Arkadiev & Kozhanov (2023) analyze Livonian prefixation in the light of morphological borrowing and evaluate the borrowability of the Slavic and Baltic verbal aspect in language contact. They argue that even if the morphological prefixal means of aspect marking is borrowed, borrowed prefixes never have the same aspectual values as the prefixes in the source languages.

The functional characteristics of Livonian affixal morphology play an important role in the analysis of Livonian verbal derivation. In spite of the general erosion of affixal morphology, certain inherited verbal affixes, such as personal endings, have been preserved relatively well and better than nominal suffixes. In some categories, affixal derivational morphology is preserved even unexpectedly well. Diachronically, there is no clear evidence of compensating lost derivational categories in general, even though certain categories, such as momentative derivatives, have been lost. However, it is possible that some means of compensation occur. The loss of overt morphological marking in the Finnic intransitive reflexive-automative-translative *\*U*-derivatives due to the merging of *\*e*, *\*a*, *\*ä* and labial vowels in unstressed syllables (resulting in verb pairs like *kūl-ō* hear-INF ‘be heard’ and *kūl-ō* hear-INF ‘hear’), is partly compensated by the more frequent use of the affix *-b-* (e.g., *rikā-b-ō* break-TRSL-INF ‘get broken, go bad’). The translative verbalizer affix *-g-*, based on the short Finnic translative *\*-kA-*, may be used in the same way. (Kuokkala 2019: 169; 2020: 192–194; see also Väiri 1975). Thus, derivational morphology is more firmly confined to word stem than inflectional morphology.

As evidenced by verbal derivation in the Finnic languages as a whole, Livonian verbal derivation has most likely been more versatile and the number of derivational affixes has been higher. Thus, as noted above, the erosion of Livonian morphology suggests that entire affixal categories have been lost. Conceivably, derivational categories are typically language specific as morphology generally is. In general, the conditions under which affixal categories are preserved are closely connected to both the morpheme order and word class of a given lexical unit. In other words, affixes that are attached directly to a word stem are better preserved than other verbal and nominal affixes.

In Livonian, inherited affixal verbal derivational categories include the causative, frequentative, and translative. Derivatives in these categories differ functionally. While causatives are typically bounded and transitive and translatives are unbounded and intransitive, frequentatives can be either bounded or unbounded depending on their derivational base. If the derivational base is a verb, the derivative shares its characteristic as a bounded or unbounded verb. However, nouns and adjectives can occur as derivational bases for frequentatives as well. Translatives are typically derived from adjectives and causatives from verbs, and in the Finnic languages, from nouns and adjectives, too. Causative derivation is typically a valency changing operation. (Laakso 1990; 2022a: 249; VISK § 351.)

In addition to the word formation process perceived in derivation, verbal derivation plays an important role at the sentence level as well. This is illustratively seen in those derivational categories that are the subject of the present study, namely, frequentatives,

causatives, and prefixed verbs. Table 4 summarizes the diachronic and typological characteristics of affixal derivation in Livonian. Types of Livonian affixal derivation originate from different sources and they are manifest differently at the sentence level. Types of affixal derivation in Livonian are discussed in more detail in 3.3 and 3.4.

**Table 4** Diachronic and typological characteristics of Livonian affixal derivation.

Affixal derivation in Livonian		
prefixation		suffixal derivation
<ul style="list-style-type: none"> <li>• language contact</li> <li>• Latvian</li> <li>• lexically ruled</li> </ul>	+      word      +	<ul style="list-style-type: none"> <li>• inherited Finnic / Uralic</li> <li>• lexicalizing forms (frequentatives)</li> <li>• syntactic-semantic motivation: transitivity (causatives)</li> </ul>

The functions of frequentatives, causatives, and prefixed verbs extend from lexical to syntactic features. Frequentative derivation modifies the lexical meaning of the underived verb but does not usually affect the argument structure or valency of the underived verb. It has an effect on Aktionsart of the underived verb, for example, *sõuv-õ* scratch-INF ‘scratch’ → *sõuv-l-õ* itch-FREQ-INF ‘itch’. In a prototypical case, a frequentative derivative expresses frequency, recurrence, and continuity of an action or an event. (Suihkonen 1994: 38–39; VISK § 351, 1499.)

Latvian-origin prefixed verbs in Livonian have both adverbial and aspectual functions. Like some suffixal derivations, prefixes typically modify the lexical meaning of the underived verb. They can also mark perfectivity, and in some relatively limited number of cases, their functional properties are exclusively limited to perfectivity. The aspectual function is contextual and is manifested at the phrase and sentence levels. Example (1) shows how the prefix *nuo-* is used as a perfectivity marker in an exclusively aspectual function.

(1) Livonian (SKNA 9941:1)

*un ne voddõr-d sa-i-tõ no-kiet-õd*  
 and those barley-PL get-PST-3PL PRFX-boil-PPP

‘And those barleys got boiled.’

Causatives have a transparent syntactic function as causativization modifies the argument structure of the underived verb and the verb phrase by means of valency change and augmenting an intransitive verb into a transitive one, for instance, *jũokš-õ* run-INF ‘run’ → *jũokš-t-õ* run-CAUS-INF ‘make run; let run’. Likewise, valency changes if a transitive verb

is converted to a ditransitive one, which has an additional argument, for instance, *nā-dō* see-INF ‘see’ → *nāg-ŧ-ō* see-CAUS-INF ‘show’. Passive and reflexive verbs, which are not discussed in this study, have the opposite effect on the argument structure because the number of obligatory arguments decreases. Examples (2a) and (2b) show how the number of arguments increases in a non-causal and causal pair based on affixal derivation. In (2b), the causative has a direct object, *līvō-d kīel-dō* Livonian-PL language-PRT ‘Livonian language’.

(2) Livonian (SKNA 9909:1)

- a. *nu pāgiņi-d attō opp-ōn-d*  
 well many-PL be.3PL learn-APP-PL  
*Līepō mier-skūol-sō*  
 Liepāja.NG sea-school-INE  
 ‘Well, many have studied in a maritime school in Liepāja.’

(2) Livonian (SKNA 9909:1)

- b. *laz ta opā-t-ōg līvō-d kīel-dō*  
 HORT s/he teach-CAUS-JUS.SG Livonian-PL language-PRT  
 ‘Let her/him teach Livonian.’

Functionally, Livonian derivational categories form a continuum that bridges lexical modifiers with markers of different syntactic features. As a rule, verbal derivation in Livonian is primarily a lexical property that creates new verbs. However, as indicated above, verbal derivation is functionally important at the phrase and sentence level as well.

### 3.3 Suffixal derivation in Livonian

Historically, Livonian verbal derivation has generally maintained many characteristics of inherent Finnic suffixal morphology as noted above. Morpheme order corresponds to other Finnic languages as derivational affixes precede inflectional affixes, both regularly used in suffixal position, for example, *vōd-l-iz-tō* wait-FREQ-PST-2PL/3PL ‘you / they waited’, *nāg-ŧ-iz* see-CAUS-PST.3SG/1SG ‘s/he showed; I showed’. Both examples also show that individual morphemes are segmentable affixes.

As mentioned above, suffixal morphology has strongly eroded in Livonian as final syllables have been phonologically prone to attrition (see 3.1). Compared to Finnic languages in general, the frequency of derivational morphology in Livonian has decreased. This is reflected in a lower frequency of derivatives in certain categories. The use of frequentative derivatives, for example, is limited in comparison with other Finnic languages. Furthermore, there are fewer derivational affixes as a whole (Laakso 1989: 59) and less variation and allomorphy in individual categories, such as frequentatives where the

Livonian frequentative affixes *-l-* and *-skl-* (the latter only derives a few verbs), correspond to multiple frequentative affixes, particularly in northern Finnic languages. The degree of productivity varies between individual derivational categories. On the whole, frequentative derivation has lost much of its productivity in Livonian. Syntactically, frequentatives express an Aktionsart-category by modifying the semantics and lexical meaning of the underived word. In Livonian, affixal causative derivation has retained its productivity due to its syntactic importance as a valency-changing and transitivizing operation. Example (3) shows the affixal causative derivative *nus-t-õ* rise-CAUS-INF ‘lift, raise’ ← *nūz-õ* rise-INF ‘rise’, and (4) exhibits the lexicalized frequentative *l-*derivative *tap-l-õ* kill-FREQ-INF ‘fight’ ← *tapp-õ* kill-INF ‘kill’.

(3) Livonian (SKNA 9941:1)

<i>se</i>	<i>nai</i>	<b><i>nus-t-õn</i></b>	<i>pā</i>	<i>illõ</i>
it	woman.NG	raise-CAUS-APP	head.NG	up
‘The woman (has) raised her head’				

(4) Livonian (SKNA 9912:1)

<i>tuļ-tõ</i>	<i>kõpmīe-d</i>	<i>sīņõz</i>	<i>aigõ</i>
come.PST-3PL	merchant-PL	there	shore.ILL
<i>agā</i>	<i>īrg-iz-t</i>	<i>kuigõst</i>	<b><i>tap-l-õ</i></b>
but	start-PST-3PL	somehow	fight-FREQ-INF
‘Merchants came there to the shore but for some reason (they) started to fight.’			

Frequentative derivation and its productivity in Livonian are examined in more detail in Article 1. Causative derivation is the topic of Article 3, which includes a broader analysis of Livonian causativization strategies.

### 3.4 Prefixation in Livonian

In this study, verbal prefixes are treated as a part of affixal derivation in Livonian. Thus, Livonian displays two types of affixal derivation, namely suffixal and prefixal. While suffixal derivation is the inherited default pattern, prefixal derivation with verbal prefixes of Latvian origin is relatively frequent as well. Due to their limited distribution, verbal prefixes are primarily a lexical feature that frequently co-occurs with lexical borrowings. However, prefixation can be partly characterized as a functionally distinctive feature that expresses perfectivity and is grammatically significant.

Livonian manifests eleven Latvian verbal prefixes: *aiz-*, *ap-*, *at-*, *ie-*, *iz-*, *nuo-*, *pa-*, *pie-*, *põr-*, *sa-*, and *uz-*. In Latvian, most of them can be used both as bound verbal prefixes and prepositions as well as marking adverbial functions. In Livonian, two types of prefixed verbs can be distinguished. First, there are borrowed Latvian prefixed verbs, that is,

monomorphemic lexical borrowings that function as lexical units and are adapted to the Livonian grammar (e.g., *izduođ-õ* succeed-INF ‘succeed, manage’ (cf. Latvian *iz-do-t-ies* PRFX-give-INF-REFL id.) (see also Grünthal 2015a: 104; Suhonen 1985: 113). Second, derived prefixed verbs are morphologically segmentable combinations consisting of a Livonian verb stem and a Latvian prefix, e.g., *uz-kērat-õ* PRFX-write-INF ‘write’ (cf. Latvian *uz-rakstī-t* PRFX-write-INF id.) (see also Suhonen 1985: 113–116). Verbs in the latter group can be called partial calques (Suhonen 1972: 218) or loan blends (Winford 2005: 384). The frequency of the verbal prefixes in the speech is rather idiosyncratic and varies between speakers (Laakso 2022c: 388; Wälchli 2001: 418). While certain speakers use them fluently and in a great amount, others deliberately avoid using prefixes in their speech. In the written standard, prefixes are not favored (Viitso 2008b: 317), and in LELS, they do not appear at all.

In general, borrowing morphology, and derivational morphology in particular, is not unusual. Structural transparency of morphology is, however, a prerequisite for borrowing (Matras 2020: 228). Seifart (2015, see also 2020) claims that for borrowing affixes, either inflectional or derivational, structural similarity between the donor and recipient language is not the key factor. Matras (2020: 226) distinguishes the acceptance of morphology in connection to lexical borrowings and the application of morphology more broadly than solely in lexical borrowings. To recognize borrowed morphology, at least the replication of borrowed elements connected to the inherited lexicon is a prerequisite. In their seminal book, Thomason & Kaufman (1988: 74–76) introduce a probability scale of borrowing and borrowability and argue that the borrowability of derivational morphology is higher compared to inflectional morphology. Matras (2020: 229) explains the difference by showing that derivational morphology usually accompanies lexical borrowings, that is, individual words, which are borrowed as derivational compositions. Later, if another word with the same composition is borrowed, the morphological procedure can be generalized, and the same morphological procedure may be replicated in the inherited lexicon. Inflectional morphology, on the other hand, does not accompany single words since it is applied at the sentence level and is not an inseparable part of the meaning. Borrowing derivational morphology does not necessarily require very intense contacts or strong cultural pressure, as derivational morphology can also be transmitted under more casual contacts (Thomason & Kaufman 1988: 74–75, see also Donohue 2013). In the Finnic context, a widespread example of a borrowed derivational affix is *niekka* ~ *nikka* ~ *nik*, which originates from Russian *-nik*. It is used to derive animate agent nouns, e.g., Karelian *tiedo-ńikka* ‘wise man’, Veps *mets-nik* ‘hunter’, Estonian *koda-nik* ‘citizen’. In Finnish, *niekka* is considered a second part of a compound, e.g., *runo-niekka* ‘poet’ (SES s.v. *niekka*). In Karelian, Old Literary Finnish, and Finnish dialects, it is also attested as a separate word with the meaning ‘master, expert’ (Alvre 2002: 163; SES s.v. *niekka*). (Kalima 1952: 129; Mikkola 1894: 57.) In fact, the borrowing of derivational morphology in the nominal domain, for instance, markers of agentivity, is common compared to borrowing in the verbal domain (Matras 2020: 226, 227).

Livonian differs from other Finnic languages because, in addition to affixes that follow after the stem, prefixation is a productive means of derivation. Verbal prefixes have several functions in lexical word formation in Livonian. First, they add information or modify the lexical meaning of an underived verb, and second, in certain instances, they can simultaneously carry a perfective aspectual function. Particularly the prefixes *nuo-* ‘of; from’ and *iz-* ‘out’ tend to express perfectivity, and in certain instances also the prefixes *sa-* ‘together; multitude’, *uz-* ‘on; onto, to’, *ie-* ‘in, into’, and *ap-* ‘around, about’ that typically simultaneously alter the lexical meaning of the verb. Verbs derived with the help of prefixes have relatively rarely only the perfective meaning (see (1) and (9)). Example (5) exhibits the unprefixed verb *tīedō* ‘do, make’ in imperfective function and (6) the prefixed verb *sa-tīedō* ‘make plenty of (sth)’, in which the prefix marks perfectivity and modifies the lexical meaning of the underived verb. In (6), the adverb *pāgiņ* ‘much’ is added to the verb phrase in order to emphasize a large quantity. However, a prefixed verb is not obligatory. Example (7) shows the unprefixed verb *tīedō* ‘do, make’ and the adverb *pāgiņ* ‘much’ in the same kind of context.

(5) Livonian (SKNA 9940:2)

<i>izā</i>	<i>kīt-iz</i>	<i>no</i>	<i>mis</i>	
father.NG	say-PST.3SG	well	what	
<i>siz</i>	<i>ni</i>	<i>ka</i>	<i>te-i</i>	<i>mīl</i>
then	now	also	do-PST.3SG	PRPN

‘Father said: “Well, what did Mīl do then.”’

(6) Livonian (SKNA 9940:2)

<i>se</i>	<i>ju</i>	<i>vōļ</i>	<i>pāgiņ</i>	<i>sa-tīe-nd</i>
it	PTCL	be.PST.3SG	much	PRFX-do-APP
<i>vāņk-idi</i>		<i>un</i>	<i>amā-d</i>	
garland-PRT.PL		and	all-PL	
<i>nīemō-d-ōn</i>		<i>vōļ-tō</i>	<i>vāņka-d</i>	<i>pā-sō</i>
cow-PL-DAT		be.PST-3PL	garland-PL	head-INE

‘S/he had made a lot of garlands, and all the cows were wearing a garland.’

(7) Livonian (SKNA 9941:1)

<i>no</i>	<i>se</i>	<i>ka</i>	<i>pāgiņ</i>
well	this	also	much
<i>nei</i>	<i>selļi-ži</i>	<i>až-đi</i>	<i>te-i</i>
so	such-PRT.PL	thing-PRT.PL	do-PST.3SG

‘Well, this (person) also did a lot of these kinds of things.’

In (8), the prefix *aiz-* ‘behind’ affects the lexical meaning of the verb *lādō* ‘1. go, walk, 2. take place, 3. lead (a road), 4. progress, 5. go in(to), 6. make sounds’ because the derived

prefixed verb *aiz-lādō* ‘1. go (away), 2. die’ has a different meaning compared to the unprefixed verb. In this particular case, the Livonian prefixed verb is a loan blend (Winford 2005: 384) from Latvian and corresponds semantically with the parallel Latvian prefixed verb *aiz-iet* ‘1. go (away), 2. die’ (cf. *iet* ‘1. walk, go, 2. move forward, on (a vehicle), 3. run (a vehicle, a mechanism), 4. go by, pass’ etc.).

(8) Livonian (SKNA 9941:1)

<i>un</i>	<i>kīt-iz</i>	<i>neiku</i>	<i>tāmā</i>
and	say-PST.3SG	like	s/he

<i>tāmīe-z</i>	<i>ni</i>	<b><i>aiz-lī-b</i></b>
this_night-ILL	now	PRFX-go-3SG

‘And (s/he) said that this night s/he will pass away.’

Verbal prefixes constitute an additional means of expressing perfectivity in Livonian that stands out in the Finnic context, in which inherited patterns lack prefixes. Prefixation, however, remains a more marginal way of manifesting aspect in comparison with object case alternation, verbal particles, such as *jarā* ‘off, away’, and alternation between different types of adverbials. In fact, prefixal perfectivization does not form a grammatical category in Livonian. (Jantunen 2019.) In many ways, verbal prefixation in Livonian corresponds to Latvian prefixation. Nevertheless, in Livonian, some features make it different from Latvian. According to de Sivers (1971a: 76–79, 82), the frequency of the prefixes in Livonian does not directly correspond to that in Latvian. She concludes that for all Latvian combinations of a prefix and an underived verb, there is no equivalent in Livonian (op. cit. 25–43). Livonian prefixed verbs also regularly correspond semantically to Latvian ones, but there is evidence of a tendency of endogenous semantic change. This is based on an analysis of six Livonian and Latvian verbs (op. cit. 25–43). The most frequent prefix *nuo-* ‘of; from’ differs from the use of the equivalent prefix *no-* in Latvian. In Livonian, *nuo-* has become more prevalent and it also derives prefixed verbs that do not have a direct equivalent in Latvian, but, for example, a different prefix or a construction of an unprefixed verb and an adverb is used instead. Conceivably, *nuo-* may be regarded as a default perfectivizing prefix in Livonian. It is most frequently used to mark perfectivity, while in Latvian, no default perfectivizing prefix can be specified because all the prefixes derive perfective verbs. (Jantunen 2019; Suhonen 1972: 220; 1985: 115; de Sivers 1971a.) Contrary to the use of the prefix *nuo-*, the prefixes *aiz-* ‘behind’, *at-* ‘away; back’, *pa-* ‘along, on, in; by; under; slightly’, *pie-* ‘by, at’, and *pōr-* ‘over, across’ that are less frequent in Livonian, only rarely have a perfective function, and they merely modify the lexical meaning of the verb (Jantunen 2019: 45). In Latvian, the corresponding prefixes are frequently perfectivizing. For a more detailed description of the Latvian verbal aspect, see, for example, Kalnača (2014: 89–114) and Kalnača & Lokmane (2021: 281–289).

In Salaca Livonian, verbal prefixation and prefixal derivation are more marginal compared to Courland Livonian. Winkler (2017), based on the data derived from the

manuscripts by Sjögren (Winkler & Pajusalu 2016), argues that prefixed verbs are not frequent in Salaca Livonian. He contrasts this observation with the situation of Salaca Livonian being on the verge of extinction, which would lead one to assume abundant use of prefixes. Prefixed verbs mostly appear in literary texts translated from Latvian and, in fact, the situation of Salaca Livonian seems not to be relevant when the use of prefixed verbs is concerned, but the text type, such as the Bible, and the way the materials were collected. The basic meaning of a stem verb, however, seems to influence the frequency of prefix use: verbs of motion occur with several different prefixes (Winkler 2017: 352–353). Moreover, while both Courland and Salaca Livonian have adopted the same eleven verbal prefixes (*aiz-*, *ap-*, *at-*, *ie-*, *iz-*, *nuo-*, *pa-*, *pie-*, *põr-*, *sa-*, *uz-*), there are some striking differences in the use of prefixes between the varieties. Winkler (2017: 351–352) compares the frequency of the prefixes in Salaca and Courland Livonian (frequencies in Courland Livonian derived from de Sivers (1971a: 78)) and concludes that the frequencies of individual prefixes are very different. In Salaca Livonian, the most frequent prefix is *at-*, whereas of the prefix *nuo-*, the most frequent prefix in Courland Livonian (see also Jantunen 2019: 29), there are only two occurrences in the Salaca Livonian data. In Salaca Livonian, prefixal derivation seems to be very marginal, however, some examples can be found.

Prefixal derivation in Livonian is discussed in more detail in Article 2. In the given article, prefixation is analyzed from a different perspective, focusing on its functions and comparing the functions and the use of individual prefixes with their Latvian equivalents. In the present synthesis, I have mainly examined prefixation and prefixal derivation as a word derivation process.

### 3.5 Language contact

Language contacts have influenced Livonian in multiple ways. The documented history of the Livonian language begins in the 18<sup>th</sup> and 19<sup>th</sup> centuries when multilingual phenomena and foreign interferences were already strong. The influence of Latvian on Livonian used to be the strongest in comparison with any other language influencing Livonian. The contact was intense and long-standing and involved widespread bilingualism. Consequently, contact with Latvian induced striking changes both in lexicon and grammar, including numerous functional changes (Ernštreits & Kļava 2013; 2014; Grünthal 2015a; Halling 2006; Laakso 2022c: 380; Matthews 1956; Rudzīte 1994: 301–314; Rudzīte & Karma 1981; Suhonen 1973; 1974: 62–101; 1985; Wälchli 2000). Compared to other language contact situations, it is a typical example of very intensive foreign influence on the widely quoted scale of Thomason & Kaufman (1988: 74–76; see also Donohue 2013: 219–220; Thomason 2001: 70–71; Winford 2005).

Latvian influence on Livonian has a significant role in this study and is discussed in more detail in Jantunen (2019 and forthcoming). Winford (2005), following van Coetsem's (2016 (1988)) distinction, classifies the adoption of crosslinguistic influence in two major transfer types, borrowing and imposition. Typically, borrowing includes the transfer of

vocabulary, while imposition is related to second language acquisition. The two mechanisms of imitation and adaptation are associated with these transfer types. Winford (2005: 384) presents different types of lexical borrowings and categorizes direct loanwords and loan blends as loan words and semantic extensions and loan translations as loan shifts (loan meanings). A direct loanword refers to borrowing a word stem, while as regards Livonian, many prefixed verbs are loan blends that combine both borrowed and native elements, for example, *iz-lugg-ō* PRFX-read-INF ‘read’, cf. Latvian *iz-lasīt* PRFX-read-INF id., see also (8).

Given that morphological units, derivation, syntactic constructions, and even inflectional patterns are involved in Latvian influence on Livonian, I discuss it briefly in terms of the model of matter and pattern transfer of Yaron Matras and Jeanette Sakel (Matras & Sakel 2007; Sakel 2007) later in this chapter. The distinction between MAT and PAT borrowing in the research on Livonian is also applied by Norvik & Pakerys (2022) in their study of Livonian analytic causatives, Norvik et al. (2022) on Livonian polar questions, and Norvik & Saar (2023) on comparative constructions in Finnic languages.

In language contact situations, communication takes place between speakers of different (typically neighboring) languages. In general, language contact triggers some kind of change in at least one of the languages in contact. Most often, the influence is manifested in the lexicon because lexical borrowing is the most common and transparent type of influence. (Thomason 2001: 10.) In favorable conditions, however, structural features may be borrowed as well. The intensity of contact, as a rule, correlates with the degree of transfer. In an intensive contact situation, more grammatical and phrasal features are transferred from the donor language to the recipient language than in more random contacts. Furthermore, the probability of transferring different elements varies. While lexical borrowings are the basic result of language contact, the transfer of structural features may occur in a more intense contact. On the other end of the scale predicting the borrowability of different linguistic elements (Thomason 2001: 70–71; Donohue 2013: 219–220), inflectional morphology is the most unlikely to be borrowed. Moreover, Winford’s (2005: 388) analysis of structural borrowing emphasizes the role of bilingualism in the direct borrowing of structural features. (Donohue 2013: 220; Thomason 2001: 1, 10–11, 66, 68–69, 131.) The very broad synthesis of language contact studies, so far, is that any kind of transfer from one language to another can occur, and the scale of borrowing varies considerably. In an individual language contact situation, however, there are more constraints that ultimately determine what is more and what is less likely to be borrowed (see Grünthal 2003: 162–202; 2019).

For several centuries Latvian used to be the majority language in the areas inhabited by Livonian speakers though not having full-scale implementation in society, either. The vocabulary of Livonian involves numerous Latvian borrowings both in the light of published dictionaries (see, e.g., Suhonen 1973) as well as recorded and published samples of spoken language. Grammatically, the Livonian case system, for instance, has been functionally and paradigmatically affected by Latvian, which is illustratively seen in the

emergence of the dative and the reanalysis of the instrumental case (Ernštreits & Kļava 2013: 20, 21–22; 2014: 79, 81–83; Grünthal 2003: 177–202, 205; for dative, see also Inaba 2015: 98–171). Another fundamental morphological change is the adoption of verbal prefixes of Latvian origin, which are applied in certain grammatical functions, especially as markers of perfectivity, as well as the development of prefixes from native elements (de Sivers 1971a; Ernštreits & Kļava 2013: 23; 2014: 83–84; Jantunen 2019; Wälchli 2001). In Livonian, standard negation is formed with the negative auxiliaries *āb* in the indicative and conditional present tense and *iz* in the indicative past tense. Influenced by Latvian, the negative prefix *āb-*, which is used to derive antonyms, has developed from the auxiliary *āb*, for example, *āb-kūolimi* NEG-mortality ‘immortality’, cf. Latvian *ne-mirstība* NEG-mortality id., *āb-kāndatiji* NEG-sufferer ‘impatient’, cf. Latvian *ne-pacietīgs* NEG-patient id. (Ernštreits & Kļava 2013: 23–24; 2014: 85; Metslang et al. 2015.) Occasionally, it can also be used with verbs, for instance, *āb-võņšt-ð* NEG-succeed-INF ‘fail, fall through’ (Ernštreits 2016: 213). In Uralic languages in general, negation is based on negative auxiliary verbs (for negation in Uralic, see Miestamo et al. (eds.) 2015). Livonian impersonal constructions show Latvian influence as well. Unlike many Finnic languages, such as Estonian and Finnish, that typically display a separate affixal category, Livonian uses the syncretic singular/plural third person verb forms without the subject, a characteristic that also exists in the eastern-most Finnic languages influenced by Russian (Kettunen 1943: 54–57, 427–428; Novak et al. 2019: 272; Savijärvi 1990: 226), for the encoding of impersonal constructions. (Ernštreits & Kļava 2013: 24; 2014: 85–86; Holvoet 2001: 385–386; Rudzīte & Karma 1981: 234.) This development, however, is rather common because cross-linguistically the third person plural is the person form most often documented to be used as impersonal (Siewierska 2004: 211).

Matras & Sakel (2007) and Sakel (2007) distinguish between matter (MAT) and pattern (PAT) borrowing as two basic distinctions of contact influence. In MAT borrowing the phonological form of morphological elements is transferred from the donor language to the recipient language. Pure MAT borrowing, however, occurs very rarely and is most characteristic of vocabulary. Typically, at least some of its original PAT is included in MAT borrowing. PAT borrowing, in turn, refers to a case in which patterns, functional properties, or structural mappings, such as changes in word order, are replicated from the donor language to the recipient language, but forms are not. MAT is usually borrowed simultaneously with PAT, that is, both the form and the function are borrowed.

As regards Livonian verbal derivation, the characteristics of MAT/PAT borrowing are illustratively manifested in the borrowing of the verbal prefixes of Latvian origin. Generally speaking, they correspond to Sakel’s (2007: 16–17) observations that often, the entire function or form of MAT or PAT borrowings is not integrated into the recipient language. Latvian verbal prefixes are borrowed as MAT, but their functions are only partially transferred into Livonian. Thus, the aspectual, perfective function, typical of all Latvian verbal prefixes, is frequently manifested in Livonian only by one prefix, *nuo-*, sometimes also by the prefix *iz-*. All other verbal prefixes primarily indicate the adverbial function, and

the perfective function is more case-specific. Example (9) presents an illustrative example of parallel borrowing of MAT and PAT in Livonian, displaying the prefixed verb *nuo-loul-õ* PRFX-sing-INF ‘sing; finish singing’ compared to the equivalent Latvian prefixed verb *no-dziedā-t* PRFX-sing-INF id. in (10).

(9) Livonian (SKNA 9941:1)

<i>amā</i>	<i>īe</i>	<b><i>no-lõl-iz</i></b>	<i>un</i>
all	night.NG	PRFX-sing-PST.3SG	and
<i>īe-z</i>	<i>ānd-iz</i>	<i>vel</i>	<i>sīe-dõ</i>
night-ILL	give-PST.3SG	still	eat-INF

‘The night was spent singing and something to eat was given at night.’

(10) Latvian (Zīle 2009)

<i>Manuprāt,</i>	<i>ansambl-is</i>	<b><i>no-dziedāj-a</i></b>	<i>lieliski.</i>
in_my_opinion	band-NOM.SG	PRFX-sing.PST-3	excellently

‘I think that the band sang excellently.’

Finally, a specific characteristic of the contacts between Livonian and Latvian is that, historically, the influence has been bidirectional, and the Finnic languages, most notably Livonian, have considerably affected Latvian as well. The Livonian influence is most distinctly seen in the Livonian dialects of Latvian. For a description of the Livonian dialects, see, for instance, Rudzīte (1964: 149–255; 2005: 27–31, 62–79). In addition to lexical borrowing, Latvian manifests phonological, morphological, and syntactic contact-induced changes (for a concise depiction, see, for example, Rudzīte 1994: 290–301). For instance, Latvian has a fixed, first-syllable stress which contrasts with the inherited accentual system (Rudzīte 1994: 298; Thomason 2001: 11). Moreover, it is assumed that some other phonological changes in Latvian dialects were caused by Livonian, for instance, in certain cases, the loss of both word-internal and word-final consonants as well as the apocope of word-final vowels and shortening of diphthongs and long vowels (Grünthal 2003: 192–193). In the Latvian case system, the locative case has undergone a semantic extension and, in addition to the static locative function ‘in; at’, it displays the dynamic lative function ‘to’ as well (Ernštreits & Kļava 2014: 79–80). Prefixed motion verbs that indicate a completed action can occasionally be replaced by adverbial constructions, for instance, *ie-ie-t* PRFX-go-INF ~ *ie-t iekšā* go-INF inside ‘go in’ (for interpretations of the Latvian unprefixed verb and adverbial constructions and their functions, see discussion in Kalnača 2014: 96–97). Interestingly, there are constructions of a prefixed verb and an adverb as well, in which the adverb specifies the (local) meaning of the prefix, for example, *ap-ie-t apkārt* PRFX-go-INF around ‘go around’. (Ernštreits & Kļava 2014: 84–85; Kalnača 2014: 98–99; Rudzīte 1994: 295–296.) Livonian influence is also probable in certain compounds indicating location names that display the Livonian pattern of postpositional phrases, for instance,

*gald-apakša* ‘under the table’, while the more usual Latvian pattern includes a prefixal noun, for instance, *pa-galde* ‘under the table’ (Ernštreits & Kļava 2014: 86–87; Rudzīte 1994: 294–295). Finally, Livonian and Estonian influence on Latvian phraseology and some syntactic features are discussed by Arumaa (1935) as well as Livonian and Finnic loanwords in Latvian by Aben (1957) and Zeps (1962: 84–228).

It must be noted that, in addition to Latvian, Livonian has been in contact with other languages as well. Lexical influence from different German varieties, probably received through Latvian, has been shown in Livonian vocabulary. Swedish influence used to be marginal but is evidenced in a limited number of lexical borrowings. Contacts with Estonian, a genetically related and typologically similar language, are more transparent in the lexicon but involve phraseological borrowings as well. This suggests that, actually, morphosyntactic and functional transfer from Estonian to Livonian is also possible. This assumption is supported by the fact that, historically, there have been relations between Salaca Livonian and the geographically adjacent Mulgi dialect of South Estonian (Pajusalu 1996: 56–64). Furthermore, shared phonological, morphological, and lexical features of these two language varieties are treated by Tanning (1958). O’Rourke & Pajusalu (2016) present shared phonological, morphological, and morphosyntactic innovations in Estonian dialects and both Courland and Salaca Livonian. Contacts between Courland Livonian and Estonian, particularly the variety spoken in Saaremaa, are discussed by Grünthal (2023b). Moreover, lexical borrowings from written Standard Estonian as well as neologisms based on the Estonian model can be found in published written Livonian in the 1920s and 1930s (Ernštreits 2013: 199). For a more detailed discussion of the influence of language contacts in Livonian, other than Latvian, see Grünthal (2015a).

## 4 Results of individual articles

This section presents the summaries of individual case studies and discusses the main results of the thesis. All three case studies focus on affixal verbal derivation. However, each of them elaborates on a different aspect of more detailed characteristics of affixal derivation in Livonian.

### Article 1

Article 1 focuses on the structure and productivity of Livonian frequentative derivatives. In this article, I claim that from a synchronic point of view, Livonian frequentative derivation is unproductive, and frequentative derivatives are mostly lexicalized forms.

In the Finnic languages, frequentative derivatives and derivational affixes are widespread, and frequentative derivation is highly productive. In Livonian, this category is significantly restricted as there is one single primary frequentative affix *-l-*, which can rarely form a complex affix with the *-sk-*, a co-affix that co-occurs with another affix, while the Finnic languages generally manifest a varying number of frequentative affixes. Consequently, the derivation of frequentative verbs is less productive in Livonian than in the Finnic languages in general, and the frequency of frequentative derivatives, manifested as *l*-derivatives, is lower. The frequentative derivatives also show a strong tendency to lexicalize this particular group of verbs and, as regards Livonian, this tendency is even more regular.

In Livonian, as in the Finnic languages in general, frequentative verbs can be both deverbal and denominal. It is also relatively common that an *l*-derivative has no underived stem but a Finnic verb correlate or that neither an underived stem nor a correlate can be defined. An underived stem can be defined for seven out of fifteen *l*-derivatives discussed in the article. Furthermore, three *l*-derivatives have an underived cognate stem in other Finnic languages. Four verbs have no underived stem, whereas the etymological origin of one verb remains unknown.

## Article 2

Article 2 focuses on syntactic and aspectual functions of verbal prefixes of Latvian origin in Livonian. I argue that in Livonian, verbal prefixation has both a lexical and grammatical function since some of the borrowed prefixes derive aspectually perfective verbs.

Livonian displays eleven productive verbal prefixes of modern Latvian (*aiz-*, *ap-*, *at-*, *ie-*, *iz-*, *no-*, *pa-*, *pie-*, *pār-*, *sa-*, and *uz-*). These prefixes have been adapted to Livonian phonology and they mostly correspond to their Latvian source: *aiz-*, *ap-*, *at-*, *ie-*, *iz-*, *nuo-*, *pa-*, *pie-*, *pār-*, *sa-*, and *uz-*. The frequency of individual prefixes varies. In Livonian, both the lexical and functional borrowing of verbal prefixes is connected with morphosyntactic transfer. The most frequent prefixes mark perfectivity in Livonian. Thus, prefixes manifest an additional, secondary means of perfectivization in addition to inherent Finnic alternating case marking of direct objects, verbal particles, and adverbial constructions.

Functionally, prefixes of Latvian origin are used in two ways, because they may mark perfectivity or modify the lexical meaning of the verb. In certain instances, both functions apply parallel. The two most frequent ones, *nuo-* ‘of; from’ and *iz-* ‘out’, manifest the perfectivizing function, which, nevertheless, is more limited in comparison with Latvian. The prefix *nuo-* can be considered as the default perfectivizing prefix in Livonian. In general, the use of the prefixes closely resembles that of Latvian. If a given prefix simultaneously derives a perfective verb and modifies the lexical meaning of the underived verb, the resulting adverbial meaning is identical to Latvian. Particularly, this applies to the prefixes *sa-* ‘together; multitude’, *uz-* ‘on; onto, to’, *ie-* ‘in, into’, and *ap-* ‘around, about’. In contrast to these, in Livonian, the prefixes *aiz-* ‘behind’, *at-* ‘away; back’, *pa-* ‘along, on, in; by; under; slightly’, *pie-* ‘by, at’, and *pār-* ‘over, across’ are infrequent and usually only modify the lexical meaning of the underived verb. In some instances, they may also have a perfective function.

In summary, verbal prefixation has not been fully adapted to a perfectivizing function in Livonian, and verbal prefixes are not obligatory markers of perfectivity. Unprefixed verbs may occur in a perfective context as well. Moreover, the inherent Finnic means of making an aspectual distinction often appear parallel with prefixation.

### Article 3

Article 3 focuses on the description of causative strategies in light of their morphological characteristics as well as valency change in Livonian. I maintain that in Livonian, lexically determined causative verbs provide an illustrative example of a functional category in which inherited and borrowed features intertwine.

Alternating causativization strategies show significant differences in the formation of causative verbs. Causal relations are mainly displayed by both morphological, bound derivative forms and analytic (adverbial) constructions. The primary means of causativization in Livonian is based on augmentation and the use of an inherited causative affix *-t-* as well as complex affixes consisting of *-t-*, including *-nt-*, *-st-/št-*, and *-rt-*. Intransitive verbs are preferred as the base of affixal causatives. However, transitive stem verbs and nouns and adjectives are possible as well. Despite the decrease of affixal morphology in Livonian, affixal causative derivation retains its inherited characteristics more often than other verbal derivational categories. The maintenance of affixal causativization is syntactically motivated because it makes valency change morphologically transparent.

In addition to affixal derivation, analytic constructions and suppletion are relatively frequent causativization strategies. Analytic causatives are formed by free words. In Livonian, the most typical constructions consist of a verb and an adverb, e.g., *vāldiņ* or *vāldiž tīedō* ‘open; free’. Although the importance of analytic constructions has increased in Livonian, analytic causatives appear to be secondary compared to affixal causatives. Yet, it is striking that the curative function, which expresses mediated causality, is based solely on analytic constructions. In suppletive causativization, different intransitive and transitive lexical stems are used for the pair of a non-causal and causal verb, and causativity is displayed in the lexical meaning of the verb, for example, *kūolō* ‘die’ and *tappō* ‘kill’.

Causative verbs borrowed from Latvian constitute a specific group. Latvian influence in Livonian causativization is very transparent in those numerous borrowed Latvian causative verbs, but which have been adapted to Livonian morphological rules, for instance, *slēpō* ‘hide, conceal, put into hiding’ (cf. Standard Lv. *slēpt* ‘hide, conceal; cover; harbor’). Syntactically, borrowed causative verbs typically transmit the properties they have in Latvian.

## 5 Conclusion

The main objective of the current study is to describe Livonian verbal derivation and evaluate diachronic changes in inherited derivational patterns in the evidence of affixal derivational categories, such as frequentatives and causatives as well as prefixal verbal derivation. The case studies investigate the functions and functional properties of the derivational categories mentioned, particularly with respect to the implementation of grammatical and phrasal semantic functions. Moreover, the productivity of derivational categories and lexicalization of individual derivatives is assessed on the basis of the frequency of affixal derivations.

The current study seeks to answer the following research questions:

- 1) What is the role of affixal verbal derivation in the spoken Courland Livonian data?
- 2) In what way is verbal derivation affected by the erosion and typological change in Livonian morphology, meaning the decrease of affixal morphology and the increasing importance of word-specific rules?
- 3) How do verbal prefixes of Latvian origin influence Livonian morphosyntax, most notably the aspectual system?

Affixal derivation is a relatively widely used means of word formation in Livonian. As a rule, inherent affixal verbal derivation in Livonian shares the most fundamental characteristics with other Finnic languages, whereas prefixation is a contact-induced change and a result of intensive Latvian influence. In the Uralic research tradition, derivation has been analyzed as a solely or at least mainly suffixal phenomenon. In preceding research on Latvian-origin verbal prefixes in Livonian, the prefixes have mostly been treated as a part of lexical units, not as a part of verbal derivation. In fact, prefixation is a productive means of derivation in Livonian that contrasts with suffixal derivation. While there is no grammatical category of prefixal perfectivization, verbal prefixes relatively frequently mark perfectivity and, based on their aspectual function, they have special relevance for phrasal semantics as well. In contrast to verbal prefixes, other Latvian verbal derivational affixes have not been transferred to Livonian as such but occur as a part of numerous lexical borrowings.

Compared to other Finnic languages, Livonian verbal derivation has more constraints. The number of both derivational categories and derivational affixes, particularly suffixes, is lower, and Livonian rarely displays the concatenation of (derivational) affixes, whereas recursion of (derivational) affixes is not possible. The functions of derivational affixes are

more limited in Livonian as well and, actually, affixal derivatives tend to lexicalize more regularly. This tendency is particularly strong in the case of frequentatives.

The strong erosion of Livonian morphology is particularly typical for inflectional morphology, whereas it is not as illustratively manifest in derivational morphology. Thus, suffixal derivation is still productive and morphologically transparent and the primary means of derivation. Although analytic constructions are generally gaining more ground, with respect to verbal derivation, their relevance is low. As regards borrowed Latvian affixal causative verbs, they may be applied as compensation in the causativization system counterbalancing the decrease of affixal morphology. Yet, the functional characteristics of inherited suffixal derivation have not been transferred to borrowed verbal prefixes and prefixation.

Finally, there is still a lot to investigate in the field of Livonian verbal derivation and, as usual, several questions have arisen during the research. First, in addition to frequentatives, causatives, and prefixed verbs that are discussed in this study, there are other suffixal derivational categories, for instance, *-b-* and *-g-* derivatives with reflexive, translative, and passive semantics as well as derivatives in *-ikš-*, the functional properties of which require further examination. Second, further research into Livonian verbal derivational categories is needed to better understand why some of them, namely frequentatives, causatives, and translatives, are preserved while other inherited Finnic derivational categories, such as momentatives, have been lost. And ultimately, further work is required to establish what actually triggers the loss of derivational categories.

# List of abbreviations

1, 2, 3	1 <sup>st</sup> person, 2 <sup>nd</sup> person, 3 <sup>rd</sup> person
APP	active past participle
CAUS	causative
FREQ	frequentative
HORT	hortative
ILL	illative
INF	infinitive
JUS	jussive
NEG	negation
NG	nominative-genitive
NOM	nominative
PL	plural
PPP	passive past participle
PRFX	prefix
PRPN	proper name
PRT	partitive
PST	past
PTCL	particle
SG	singular
TRSL	translative

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