

## Converb constructions in Mari and Udmurt: Russian loanwords as a metric of productivity

Uralic languages of the Volga-Kama Region, especially Mari and Udmurt, show strong Turkic influence in the range of usages of converbial (gerundial, i.e. adverbial non-finite) forms. Converbs can be found in combination with syntactically superordinate verbs communicating different values, mirroring Turkic structures: modal (“swimming know” = ‘know how to swim’), directional (“crawling leave” = ‘crawl away’), benefactive (“baking give” = ‘bake something for someone’), aspectual (“drinking send” = ‘drink up’). It is debatable however to what extent one can speak of grammaticalized structures and to what extent one should speak of a body of loan translations in individual languages or varieties. The paper explores the prospect of using verbs borrowed from Russian as a metric of productivity: as these were borrowed after the phase of intense Turkic language contacts ended, their usage in Turkic-type structures can be seen as evidence for their grammaticalization, while their absence in such structures can be seen as evidence against it.

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### 1. Introduction

The dividing line between a body of *loan translations* or *calques* – i.e. “word[s] or phrase[s] constructed by taking a foreign word or phrase as a model and translating it morpheme-by-morpheme” (Trask 1996: 21) – and grammatical structures resulting from contact-induced *grammaticalization* – i.e. “a shift from a more lexical meaning to more grammatical

content” (Campbell 2013: 297) – can be fuzzy and difficult to delimit in intense contact situations. At what point can the mirroring of grammatical structures from Language A in Language B no longer be considered just that, and must instead be considered a grammatical complex with a life of its own?

Diachronic changes in the contact situation can offer one metric in this regard: if the range of usage situations of said complex in Language B grows after language contacts with Language A have waned, this can be seen as evidence for the construction possessing a grammaticalized status. Particle verbs in Estonian serve as an excellent illustration of this principle: in these oftentimes highly idiomatic structures clearly calqued from German, a separable particle precedes a verb in the infinitive (e.g. German *vorwerfen* ‘accuse (lit. ahead throw)’ > Estonian *ette heitma* id.) but will jump to a later position in the sentence according to German (and due to language contacts, Estonian) word-order rules in inflection, as shown in (1).

Estonian<sup>1</sup>

- (1) *Ma heida-n su-lle ette, et [...]*  
 1SG throw-1SG 2SG-ALL ahead that  
 ‘I blame you (lit. throw ahead of you) for [...]  
 (German: ‘Ich werfe Dir vor, dass [...])’

In his 1990 survey of these structures, Cornelius Hasselblatt identified 1679 distinct calques of German particle verbs, but also 164 particle verbs of dubious origin, and 951 particle verbs that cannot be traced back to German roots (Hasselblatt 1990: 205). In the decades since this monograph was published, additional particle verbs have entered usage in Estonian in connection with the digital revolution. Even when these are Estonian neologisms or loan translations from English, their usage mirrors the German structure, as shown in (2).

Estonian

- (2) *Ma laadi-n fail-i alla.*  
 1SG load-1SG file-GEN down  
 ‘I’m downloading the file.’ (German: ‘Ich lade die Datei herunter.’)

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1. When not indicated otherwise, example sentences were provided by our native speaker informants; see Acknowledgements.

Irrespective of the low importance of German as a contact language in present-day Estonia, this grammatical structure triggered by German influence is alive and well in contemporary Estonian. It has been fully and thoroughly grammaticalized, as illustrated by usages that cannot possibly be German loan translations.

The paper at hand pertains to a similar conundrum that has not yet been answered as unambiguously: the status of Turkic-type converb constructions (see Section 4) in the Uralic languages of the Volga-Kama Region (see Section 3). A wide range of verb pairs consisting of a converb (gerund) and a superordinate verb can be found in Uralic languages of the region that clearly mirror their Turkic counterparts, e.g. (Southern) Udmurt *lobžisa koškiniž* ‘fly away (flying leave)’, Mari *čonešten lektaš* id., Erzya *livtaž tujems* id., cf. Tatar *oçıp çığu* id., Chuvash *věsse tuχ* id. (Isanbaev 1978: 66–67; Bereczki 1984: 312). Turkic-type verb pairs clearly have a stronger position in Mari (where they can be found in all varieties, cf. Bradley 2016a) than they do in Udmurt (where they are primarily documented in Southern varieties, cf. Horváth 2013: 121), and a stronger position in Udmurt than they do in Mordvin (where there are only sporadic accounts of such constructions, cf. Bereczki 1984: 312). In this survey, we aim to measure the vitality of different Turkic-type structures in two Uralic languages by using Russian loanwords as a metric (cf. also Sibatrova 2015): since Turkic contacts predate strong Russian contacts in the region, Russian loanwords used in Turkic-type verb pairs are an argument for the grammaticalization of the structure at hand, as they illustrate its usage with lexical material that was not present when the calquing of Turkic structures occurred. Section 5 will introduce the manner in which Russian verbs are borrowed into the languages under consideration; Section 6 will subsequently show how data on the usage of Russian verbs in Turkic-type converb constructions could be extracted from the nascent corpora of

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2. Cyrillic language data in this paper was transcribed using the COPIUS Transcription & orthography toolset found at <https://www.copius.eu/ortho.php>. The Uralic Phonetic Alphabet (UPA) was used for Uralic languages and also for Russian, as Russian language data is only presented within the context of its borrowing into Uralic languages. For Tatar and Bashkir, the standardized Latin orthographies were used. The orthographic rendering of example sentences was homogenized where sources use conventions that differ from the standard Cyrillic or UPA rendering of language data.

Uralic languages of Russia currently at our disposal. Section 7 contains the data extracted from the corpora and Section 8 then reviews the implications this data has on estimations of productivity of individual structures in the respective languages.

## 2. Data sources

In addition to existing literature and consultations with native speakers, our survey is based on currently available nascent corpus infrastructures with rudimentary morphological annotation (which is mainly not needed for our queries, see below) for Mari and Udmurt. These allow us to examine the usage of Russian verbal borrowings in contemporary written language, both in literary sources and on social media. Our main sources were the Corpora of Uralic Volga-Kama Languages developed by Timofey Arkhangelskiy and his colleagues (Arkhangelskiy 2019a) which include literary and social-media corpora for both Udmurt and (Meadow) Mari and are summarized in Table 1.

Table 1: Scope of the Corpora of Uralic Volga-Kama Languages at time of survey (July 2021)

	Main	Social media
Mari	Tokens: 5.53 million	Tokens: 3.59 million
Udmurt	Tokens: 9.57 million	Tokens: 2.66 million

Thanks to the comparable size and choice of sources of these resources, the Mari and Udmurt results garnered from this study can be considered comparable. The literary corpora contain texts collected on the Internet from newspaper pages, blogs, Wikipedia, etc., while the social-media corpora contain postings gathered from the social-media platform VK (VKontakte), a service comparable to Facebook that is highly popular in Russia, also among minority communities (cf. Pischlöger 2016).

For Mari, two additional resources will be utilized outside of the direct comparisons:

- The Corpus of Literary Mari compiled by the international Mari Corpus Project workgroup, hosted by the Giellatekno research group at the University of Tromsø. Upon its initial publication in December 2020,

it contained 57.38 million tokens of Meadow Mari texts from different genres representing a century of Mari literacy.

- The totality of verb pairs found in lexical sources on Mari, primarily compiled in the 20th century and/or on the basis of texts from the 20th century. These were gathered during the compilation of the Mari-English dictionary (Riese et al. 2014).

In total, the Mari corpora thus include 69.61 million tokens, while the Udmurt corpora include 6.22 million tokens.

### 3. Historical background

The Turkic and Uralic languages of the Volga-Kama Region, in the area surrounding the confluence of the Volga and Kama rivers in Tatarstan roughly 750 kilometers east of Moscow, are oftentimes subsumed in the so-called Volga-Kama Sprachbund (e.g. Wintschalek 1993; Helimski 2003: 159) due to ample linguistic convergence between them. As is typical of areas of linguistic convergence, one can differentiate between a core in which convergence is strong and a periphery showing increasingly weak convergence. Tatar (Turkic > Common Turkic > Kipchak), Bashkir (Turkic > Common Turkic > Kipchak), Chuvash (Turkic > Oghur), Mari (Uralic), and Udmurt (Uralic > Permic) are frequently classified as core members, while Komi (Uralic > Permic) and Mordvin (Uralic) are classified as peripheral members (cf. Bradley 2016a: 7–9).

It has long been debated, and remains a matter of contention, when the current linguistic landscape of the Volga-Kama Region took shape. Archaeological evidence shows that the Bolgars, the linguistic ancestors of the Chuvash, migrated into the region from the south in the late 8th/early 9th century (Róna-Tas 1988: 761; see Agyagási 2019 for a more detailed account), but it is less clear when actual language contacts between Bolgar and the indigenous Uralic languages commenced, with estimates ranging from the 9th century (Räsänen 1923: 94; Isanbaev 1989–1994: I: 28) to the 13th century (Wichmann 1924: 53; Bereczki 1992–1994: I: 16). Bolgar Turkic was supplanted by Kipchak Turkic as the dominant language of the region between the 13th century (Isanbaev 1989–1994: I: 28) and the early 15th century (Bereczki 1992–1994: I: 16).

As a function of these historical processes, linguistic convergence in the region differs not only between languages (with Mari showing more

Turkic features than Udmurt, and Udmurt showing more Turkic features than Mordvin and Komi), but also between different varieties of the languages spoken in the region:

- The Bolgar (Oghur) influence on Mari predated the split into the contemporary dialects. Bolgar influence is thus found in all varieties of Mari (Saarinen 1997a: 195; 1997b: 393); Hill Mari, spoken on the right bank of the Volga in immediate proximity to Chuvashia continued to be under Chuvash influence over the centuries and shows younger Chuvash loan elements (Ivanov 1981: 87). Meanwhile, a stronger influence of the Kipchak languages can be detected in the varieties of Mari spoken on the left bank of the Volga, especially in the varieties spoken by the Eastern Mari diaspora in Bashkortostan (Bereczki 1984: 311; 1992–1994: I: 26; Ilieva 2009: 3–8), which emerged as a result of the eastward migration of Maris in the 17th century (Pomozi 2004: 96).
- Likewise Proto-Permic, the ancestor of Komi and Udmurt, was spoken during the period of Bolgar dominance and was subject to Oghur Turkic influence (Róna-Tas 1988: 760). After the breakup of Proto-Permic, Komi was no longer subject to Turkic influence. In the case of Udmurt, the more recent Tatar influence is stronger in the Southern dialects (Kel'makov 1975: 95), especially the peripheral dialects (Csúcs 1998: 277). A notable exception to this trend is Beserman, a variety spoken in northern Udmurtia. One assumption is that Beserman speakers have a Turkic ethnic background (Róna-Tas 1988: 765).
- In addition to genealogical distance, a Mari substrate is assumed to be one of the reasons for the great structural difference between Chuvash and other Turkic languages (Agyagási 1998: 668). Mari influence is especially strong in Viryal Chuvash dialects (Berta 1998: 451; Johanson 2009a: 245) spoken in northern Chuvashia, in close proximity to Hill Mari.

Since the annexation of the Khanate of Kazan by Muscovy in 1552, the region has been under Russian control; Russian has increasingly become the dominant contact language for all languages under consideration. It is notable however that Russian only became truly dominant in the region in the twentieth century (Kangasmaa-Minn 1998: 220).

Language contacts in the region have long been observed and described on different levels of language: phonetics and phonology (e.g. Johanson 2000b), lexicon (e.g. Räsänen 1920; 1923; Isanbaev 1989–1994; Csúcs 1990;

Saarinen 1997a; 2010), loan translations (e.g. Saarinen 1997b, Hesselbäck 2005), and syntax (Wintschalek 1993). Turkic-type converb constructions (see Section 4 below) have long been noted as an example of structural borrowing in the region (cf. Čxaidze 1960; Kel'makov 1975; Isanbaev 1978; Bartens 1979: 143), though the time frame and origin of their borrowing remains unclear. In Udmurt, the Tatar origin of these structures seems clear. The picture is more complicated in the case of Mari. There these structures have historically been attributed primarily to Kipchak (e.g. Čxaidze 1967: 258), but this claim is problematic as Turkic-type converb constructions are ubiquitous in all varieties of Mari, while Kipchak language contacts in general only have a strong position in the eastern varieties of Mari. Given that Chuvash-type Turkic exerted influence on Proto-Mari before it broke up into its modern dialects and that Chuvash-type loans are evenly spread through all varieties of Mari, it is more likely that the system is of Chuvash origin in Mari. It is however highly likely that the usage of individual auxiliaries in eastern varieties of Mari has been colored by usage of auxiliaries in Kipchak languages at a later point in history.

#### 4. Converb constructions

The morphological category of *converb* is understood here as “a non-finite verb form whose main function is to mark adverbial subordination” (Haspelmath 1995: 4); the term can here be considered equivalent to *gerund* in some linguistic traditions (e.g. Uralic studies) and its translations. *Converb constructions* (i.e. constructions consisting of a converb and some sort of superordinate verbs) are not to be confused with *serial verb constructions*, “a sequence of verbs which act together as a single predicate, without any overt marker of coordination, subordination, or syntactic dependency of any other sort” (Aikhenvald 2006).

Converbs find ample usage throughout the Uralic language family (Ylikoski, forthcoming). Numerous converbial endings are conventionally distinguished in the Uralic and Turkic languages of the Volga-Kama Region (e.g. Mari: 5, Udmurt: 4, Erzya: 3, Tatar: 6, Bashkir: 6, Chuvash: 7; Riese et al. 2019: 8, Csúcs 1998: 293; Zaicz 1998: 205; Landmann 2014a: VI; 2014b: VI; 2015: VI). Some of these, such as the Mari converb of prior action in *-meke*, have well-defined and clearly delimited functions that are unremarkable in a Uralic context, for example as instruments of temporal structuring of statements, see (3).

Mari

(3) Урокым ыштымеке, Эчан телевизорым ончыш.

*Urok-âṁ âštâ-meke, Eĉan televizor-âṁ onĉâ-š.*  
 lesson-ACC do-CVB.PRI Echan television-ACC watch-PST1.3SG  
 ‘After doing his homework Echan watched television.’

Other converbs such as the Mari converb in *-n*, the Udmurt converb in *-sa*, and the Tatar converb in *-p* have a wider range of usage.<sup>3</sup> They can be found in a range of situations where their usage is atypical for Uralic outside of this region (see Ylikoski 2004: 380 about isolated occurrences) but are commonplace in Turkic languages, where they are oftentimes referred to as “paired verbs” in the literature (cf. Bradley 2016a: 35–47 for an overview of terminology used in respect to these constructions). They can also be found in a number of Samoyedic languages – Kamas (Klumpp 2002), Selkup (Valijärvi 2008; Harder 2018), Nenets (Tereščenko 1981), Mator (Helimski 1997: 188) – that have likewise been subject to Turkic language contacts. Such a structure is illustrated in (4).

Tatar (Landmann 2014a: 99)

(4) Агачны кисеп ташладылар.

*Ağaç-ni kis-ep taşla-dı-lar.*  
 tree-ACC cut-CVB throw-PST-3PL  
 ‘They cut down the tree.’

Here *taşla-* ‘throw’ loses its lexical meaning but is used to indicate the abrupt and sudden execution of an action, i.e. it primarily conveys an aspectual meaning. A wide range of verbs are used as auxiliaries in such constructions where they fully or partly lose their lexical meanings in the relevant languages. Similar constructions can be found in genealogically diverse languages over a wide geographical area: Dravidian and Indo-Aryan languages of the Indian subcontinent, Turkic and Mongolic languages of northern Eurasia, Japanese, and Korean (Masica 1976: 141ff.). In fact, the individual auxiliaries often represent typologically common grammaticalization patterns (cf. Kuteva et al. 2019: 437 regarding verbs meaning ‘throw’ grammaticalized as perfect or completive markers) which has

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3. The most versatile converb in a respective language is glossed simply as CVB in this paper, while converbs with a more specific range of usages will be additionally tagged according to their function.



been used as an argument against the Turkic origin of these structures in Uralic (e.g. in Honti 2013). However, the appearance of such systems in Uralic languages and varieties strongly overlap with Turkic contacts and the auxiliaries strongly overlap in both their function and their syntax throughout the region. This leaves little doubt in the Turkic origin of the system in the mainstream view. Consequently, the converb constructions under consideration will be referred to as “Turkic-type” in this paper.

Auxiliaries used in converb constructions can have a range of functional values, which are oftentimes poorly differentiated in the literature:

- Modal (see Section 4.1 and Bradley 2016a: 268)
- Directional (see Section 4.2 and Bradley 2016a: 56–68, 263–264)
- Benefactive (see Section 4.3 and Bradley 2016a: 68–69, 265)
- Aspectual (see Section 4.4 and Bradley 2016a: 47–56, 265–268)

The following subsection will briefly introduce these subtypes and discuss their spread within the Volga-Kama Region. In all constructions under consideration here, Mari utilizes the affirmative instructive converb in *-n* (Riese et al. 2019: 267–270), while Udmurt uses the converb in *-sa* (Winkler 2011: 117–119). For the remainder of this paper, references to “converbs” in Mari and Udmurt refer to these forms, irrespective of the numerous other converbs found in these languages.

#### 4.1. Modal constructions

It is typical for modal auxiliaries denoting permission, necessity, or ability to govern converbs rather than infinitives in Turkic languages (Johanson 2009b: 498) – i.e. these converbs also function as infinitives of sorts (cf. Ylikoski, forthcoming). This is indeed the case in Kipchak Turkic: Tatar and Bashkir *al-* ‘take; be able to’ and *bel-* ‘know; know how to’ co-occur with a converb (Landmann 2014a: 93; 2015: 95), as shown in (5).

Bashkir (Landmann 2015: 95)

(5) Hež йөзә беләһеҙме?

<i>Hež</i>	<i>yöz-ä</i>	<i>bel-ä-hegež=me?</i>
2PL	swim-CVB.MOD	know-PRS-2PL=INT
‘Do you know to swim?’		

Mari mirrors this, with *kertaš* ‘be able to’ and *moštaš* ‘know to’ both co-occurring with a converb (Riese et al. 2017: 173), illustrated in (6).

Mari

(6) Мый марла лудын ом мошто.

<i>Môj</i>	<i>mar-la</i>	<i>lud-ân</i>	<i>o-m</i>	<i>mosto.</i>
1SG	Mari-MOD	read-CVB	NEG-1SG	be_able.CNG

‘I can’t read Mari.’

The auxiliary *kertaš* can also be found in combination with the infinitive. This usage is marked as non-standard in lexical resources and is associated with a slightly different meaning: ‘be able to; carry out some kind of activity well; expert of’ (Galkin et al. 1990–2005 s.v. *керташ*). In the Corpus of Literary Mari, co-occurrences with the converb vastly outnumber co-occurrences with the infinitive: *kertaš*<sup>14</sup> is immediately preceded by a converb in 42,964 cases, but only 199 times by an infinitive.<sup>5</sup>

In other Uralic languages of the region, comparable modal auxiliaries govern the infinitive: Udmurt *bigatjñi* ‘be able to’ (Kirillova et al. 2008 s.v. *быгатъны*), Komi *vermjñi* (Beznosikova et al. 2000 s.v. *вермыны*), Erzya *maštoms* (Aasmäe 2012: 32). Interestingly, Chuvash *pultar* ‘be able to’ governs the infinitive (Landmann 2014b: 74). This is of especial note as the Turkic influence found in all varieties of Mari tends to be of the Oghur/Chuvash type, with Hill Mari showing little Kipchak Turkic influence. Yet, Hill Mari *kerdäš* ‘be able to’ couples with the converb (Krasnova et al. 2017: 163–164), rendering the classification of this pattern as borrowed from Turkic problematic and in need of further investigation.

## 4.2. Directional constructions

Following Leonard Talmy’s (1985; 2007) typological classification of motion events, the Turkic languages show a strong propensity towards so-called verb-framed structures in which the *manner* of a movement (e.g. going, running, swimming, crawling, flying) can be expressed by a converb

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4. The superscript Roman numeral indicates whether a verb belongs to the first or second conjugation in cases when the infinitive form is identical to that of a verb belonging to the other conjugation class.
  5. This search pattern only found affirmative clauses with no deviations from the pragmatically neutral word order as in other cases, the infinitive or converb would not immediately precede the auxiliary verb. It is however a sufficient search pattern to determine the relative frequency of the converb and infinitive in combination with the auxiliary.

while the syntactically superordinate verb expresses the *path* (e.g. in, out, away, up, down) (cf. Slobin 2000: 109), as shown in (7).

Chuvash (Skvorcov & Skvorcova 2002 s.v. *ВЫЛЕТЕТЬ*)

- (7) Цёкеç йăвинчен вёçсе тухрĕ.  
*Čěkeš jāv-in-čēn věš-se tuχ-r-ě.*  
 swallow nest-3SG-ABL fly-CVB exit-PST-3SG  
 ‘The swallow flew out of (lit. flying exited) its nest.’

These structures are uncommon in Uralic, but they are the default manner of verbalizing motion events in Mari and can be sporadically found in other Uralic languages or varieties that have been in contact with Turkic languages (Bradley 2016b). Individual examples can be found in (presumably Southern) Udmurt, Beserman, and Erzya, as shown in (8–10).

Udmurt (Bereczki 1984: 312)

- (8) лобъыса кошкыны  
*lobžj-sa koškj-nj<sup>6</sup>*  
 fly-CVB leave-INF  
 ‘fly away (flying leave)’

Beserman Udmurt (Serdobol’skaja et al. 2012)

- (9) Ву вылтй пичи пи уяса ваське.  
*[V]u vâl-ti pičĭ pi uja-sa [v]ašk-e.*  
 water surface-PROL small boy swim-CVB descend-3SG  
 ‘Down the river swims a little boy.’

Erzya (Bereczki 1984: 312)

- (10) Варака ливтязь тусь вирев.  
*Varaka livtā-ž tu-ś viř-ev.*  
 crow fly-CVB leave-PST1.3SG forest-LAT  
 ‘The bird flew away to the forest.’

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6. Our transcriptions are based on literary Udmurt and on occasion standardized accordingly.

### 4.3. Benefactive constructions

Turkic languages make use of a globally common strategy (Kuteva et al. 2019: 192–194) where a verb meaning ‘give’ is used as an auxiliary indicating the presence of a beneficiary, i.e. “a participant that is advantageously affected by an event without being its obligatory participant (either agent or primary target, i.e. patient)” (Kittilä & Zúñiga 2010: 2), as shown in (11).

Chuvash

- (11) Иван Веряна юрласа пачё.

*Ivan Verä-na jurla-sa pač-ě.*  
 Ivan Vera-DAT sing-CVB give-PST.3SG  
 ‘Ivan sang for Vera.’

This strategy is employed in Mari and in southern varieties of Udmurt (Bradley et al. 2019: 26), as shown in (12–13). Usage of *puaš* ‘give’ as a benefactive auxiliary has been described as uncommon in comparison to Turkic languages (Serebrennikov 1960: 198; Isanbaev 1978: 84).

Mari (Galkin et al. 1990–2005 s.v. *чыштыраи*)

- (12) Ачай, пычалым налын пу.

*Ača-j, pãčal-əm nal-ən pu.*  
 father-VOC rifle-ACC buy-CVB give.IMP.2SG  
 ‘Daddy, buy me (lit. buying give) a rifle.’

Southern Udmurt (Kel’makov 1975: 102)

- (13) кырзаса сётыны

*kirza-sa sotj-nj*  
 sing-CVB give-INF  
 ‘sing (for someone)’

In an autobenefactive construction, the agent in a clause also serves as the beneficiary (Creissels 2010: 2). Some, but by no means all, languages that use ‘give’ as a benefactive marker also use ‘take’ as an autobenefactive marker (Kittilä & Zúñiga 2010: 2). Autobenefactive ‘take’ is attested for Tatar, Chuvash (see 14), Mari, and Udmurt (Kel’makov 1975: 102; Isanbaev 1978: 83), though the interpretation of verb pairs of this type is difficult as ‘take’ verbs also serve as aspectual auxiliaries (see Section 4.4). In the case

of Mari, pairings with *nalaš* ‘take’ have been described as less common than their Turkic counterparts (Isanbaev 1978: 84).

Chuvash (Landmann 2014b: 90)

(14) Сирён адреса ырыса илтём.

*Sirën adres-a šyr-sa il-t-ëm.*  
2PL.GEN address-ACC write-CVB take-PST-1SG

‘I wrote down your address (for myself).’

Furthermore, in Tatar, Chuvash, and Mari, verbs meaning ‘show’ can be used to indicate that an action is carried out for illustrative purposes, similar to the verbal prefix *vor-* in German (e.g. *singen* ‘sing’ → *vorsingen* ‘sing (for someone/an audience)’): Tatar *uqıp kürsät-* ‘read (for someone/an audience) (lit. reading show)’, Chuvash *vulasa kätart id.*, Mari *ludân onćäktäš id.* (Bradley et al. 2019: 28)). There are not currently any indications of this structure being used in Mordvin or Permic.

#### 4.4. Aspectual constructions

The probably most-studied converb constructions of the Volga-Kama Region are constructions in which a converb is coupled with a syntactically superordinate verb that fully or partially loses its lexical meaning and primarily communicates an aspectual (or rather, *Aktionsart*) value. These pairings have been extensively studied in Tatar (Schönig 1984), Bashkir (Graščenkov 2012), Chuvash (Lebedev 2016), Mari (Čxaidze 1960; Isanbaev 1978; Bradley 2016a) and especially Hill Mari (Kashkin 2017; 2018a; 2018b; 2018c; 2019; 2020; Kashkin & Dyachkov 2018), and (Southern) Udmurt (Kel’makov 1975; Horváth 2011; 2012; 2013). In the following example, the Mari verb *šāndaš* ‘put, place’ loses its lexical meaning completely and rather turns the atelic, static, imperfective act of ‘loving’ into a telic, transformative, perfective act of ‘falling in love’, as shown in (15).

Mari

(15) Эчан Эвикам икымше ончалтыш гыч йөрәтен шынден.

*Ečan Eβika-m ik-ämše onćaltäš gäč jörat-en šānd-en.*  
Ečan Evika-ACC one-ORD look from love-CVB put-PST.3SG

‘Ečan fell in love (lit. loving placed) with Evika at first sight.’

A closed set of a few dozen verbs can be found in the second position of such pairings serving as aspectual *auxiliaries* (in some nomenclatures *light verbs*, cf. Butt 2010; cf. Bradley 2016a: 45–47 for a discussion on the terminology). These verbs partially or completely lose their lexical meaning in these constructions and primarily or exclusively communicate an aspectual value; the converb communicates the lexical value in these pairings. The exact number of prospective auxiliaries is subject to debate. For Mari, we estimate that 45 different verbs can occur as aspectual auxiliaries (Bradley 2016a: 276–278). Verbs with the same lexical meanings generally communicate comparable aspectual values in the different languages of the region, though some variance between languages and varieties can be observed. Auxiliaries expressing the following aspectual values are grammaticalized from verbs with the following lexical meanings (Bradley 2016a: 265–268):

- **Ingressive (inchoative, inceptive) / initial-transformative auxiliaries** that “indicate the beginning of a situation” (Comrie 1998: 19): ‘descend’, ‘go (away)’, ‘let go; send’, ‘become’, ‘look’.
- **Resultative auxiliaries** that indicate “the successful completion of a situation” (Comrie 1998: 20): ‘lie down; fall’, ‘stay’, ‘sit down’, ‘stand up’, ‘leave something’, ‘put, place, stand’, ‘give’, ‘throw’, ‘stop’.
- **Exhaustive auxiliaries** where “the specified action is realized to the fullest possible extent and thus also extends to all possible subjects and objects, whether or not they are indicated” (Schönig 1984: 55–56): ‘(come to an) end’, ‘arrive; reach’, ‘become superfluous’, ‘take out’, ‘finish something’, ‘win’, ‘fill something up’, ‘strike’, ‘provide’, ‘be filled’, ‘manage’.
- **Delimitative auxiliaries** indicating a perfective situation occurs over a defined period of time (Comrie 1998: 22): ‘take’, ‘carry out’, ‘leave’.
- **Durative auxiliaries** referring “to the fact that the given situation lasts for a certain period of time (or at least, is conceived of as lasting for a certain period of time)” (Comrie 1998: 41): ‘live’, ‘lie’, ‘go/wander’, ‘sit’, ‘stand’.
- **Continuative auxiliaries** indicating “an event continuing to happen” (Binnick 1991: 146): ‘endure’.
- **Iterative (frequentative) auxiliaries** denoting “the repetition of a situation, the successive occurrence of several instances of the given situation” (Comrie 1998: 27): ‘set’, ‘turn’, ‘sit around’, ‘stand around’.
- **Gradual (incremental) auxiliaries** indicating “duration or repetition together with transformation” (Vinay & Darbelnet 1995: 78): ‘come’.

There are clear differences within a language or variety as regards the frequency of individual auxiliaries in the individual languages. For example, while Mari *koltaš* ‘send’ is ubiquitous as an ingressive marker and can be found coupled with hundreds of different verbs in converb constructions (Bradley 2016a: 164–170), we have currently, in spite of the large size of our corpus (see Section 2), only found Mari *č̣ətaš* ‘endure’ as a continuative marker in combination with three different verbs, making it highly unlikely that it can be reasonably called a grammaticalized marker. It remains unclear where one should draw the line between clearly grammaticalized markers and markers that only occur in individual idiomatic expressions.

#### 4.5. Ambiguity of interpretation

The interpretation of individual verb pairs can be difficult as auxiliaries can have a broad functional range and as there are no clear syntactic differences between different converb constructions (beyond the fact that pragmatically motivated deviations from the standard word order are only permissible in some types of converb constructions, cf. Bradley 2016a: 73–77 – a fact that could be utilized in empirical research with native speakers, but of limited use in a corpus-based study). For example, Mari *puaš* ‘give’ (Bradley 2016a: 210) can occur as both a benefactive marker and as an aspectual marker with a resultative value; in fact these two readings are not incompatible with one another and pairings with *puaš* can allow for both a benefactive and an aspectual interpretation, as in (16).

Mari (Galkin et al. 1990–2005 s.v. *nyaui* II)

(16) Технологлан пӧртым чонген пуэна.

*Teχnolog-lan pört-əm čong-en pu-ena.*  
 technologist-DAT house-ACC build-CVB give-1PL

‘We will build a house for the technologist.’

In other situations, though, the context would not permit a benefactive reading. Likewise, Mari *kajaš* ‘go (away)’ (Bradley 2016a: 149) is used both in directional constructions (indicating the path ‘away’) and as an aspectual marker with an ingressive value, and here again the two values are not incompatible with one another. In individual sentences, however, one of these values can be incompatible with the context.

Furthermore, the degree of semantic bleaching that auxiliaries experience can be quite variable. In some cases, it is clearly complete (e.g. Mari

*jöراتen šāndaš* ‘fall in love (lit. loving place)’), but in others it is debatable. For example, Mari *šīńćās*<sup>11</sup> ‘sit’, *šogaš* ‘stand’, and *kijaš* ‘lie’ are all three used as durative markers coupled primarily with intransitive verbs, but outside of highly idiomatic expressions their functional distribution seems to be determined by the verb’s lexical meaning: *ludān šīńćās*<sup>11</sup> ‘lit. reading sit’, *ludān šogaš* ‘lit. reading stand’, and *ludān kijaš* ‘lit. reading lie’ are all durative forms of *ludaš* ‘read’; the difference between the pairings is the implied position in which the reading is carried out (Bradley 2016a: 260–263). Claus Schönig poetically refers to this phenomenon as *das Durchschlagen der Vollverbbedeutung* – the verb’s lexical meaning breaking through (Schönig 1984: 73).

Consequently, a certain amount of ambiguity should be assumed in respect to verb pairs provided in the overview below.

## 5. Verbal borrowing strategies

Compared to the relatively straightforward process of nominal borrowings, verbal borrowings have long been known to be generally less common, typical of more intense language contacts, and when the recipient language is morphologically rich, requiring special mechanisms to accommodate them (Arkhangelskiy 2019b; 2020). Søren Wichmann and Jan Wohlgemuth distinguish four basic types of verbal borrowing strategies (Wichmann & Wohlgemuth 2008; Wohlgemuth 2009):

1. The **light verb strategy**, in which the borrowed element is coupled with a semantically light verb (usually ‘do’) which is inflected while the loan element remains inert (Wichmann & Wohlgemuth 2008: 93–96; Arkhangelskiy 2019b: 527), shown in (17).

Mari (Corpus of Literary Mari)

(17) Туныктышо-влакым мобилизовать ыште.

*Tunāktāšo-βlak-ām mobilizova-t’ āšte.*  
 teacher-PL-ACC      **mobilize-INF**<sup>7</sup>      do.IMP.2SG

‘Mobilize the teachers.’ (< Russian *mobilizovat’*)

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7. In these glosses, bold indicates Russian verbal morphology.



2. **Indirect insertion**, in which an affix is added to the borrowed element and the resulting verb is then inflected (Wichmann & Wohlgemuth 2008: 97–99; Arkhangelskiy 2019b: 523–527), illustrated in (18).

Mari (Corpus of Literary Mari)

- (18) мобилизоватлыме пӧрӱен-влак  
*mobilizovat-lâ-me*            *pörjeŋ-βlak*  
 mobilize-VRB-PTCP.PASS    man-PL  
 ‘mobilized men’ (< Russian *mobilizovat’*)

3. **Direct insertion** is when the loanword is inserted into the grammar of the recipient language without any morphological or syntactic accommodation (Wichmann & Wohlgemuth 2008: 99–102; Arkhangelskiy 2019b: 523–527), shown in (19).

Mari (Corpus of Literary Mari)

- (19) Ынде жарымын үпшыжымак шижын ом керт.  
*Ënde*    *žarâ-mâ-n*            *üps̄-âž-âm=ak*  
 now    fry-PTCP.PASS-GEN    smell-3SG-ACC=EMP  
*šič-ân*            *o-m*            *kert.*  
 sense-CVB    NEG-1SG    be\_able.CNG  
 ‘Now I can’t sense the smell of frying.’ (< Russian *žarit’*)

4. **Paradigm transfer** is when a borrowed verb is inflected in accordance with the donor language’s morphology rather than that of the recipient language (Wichmann & Wohlgemuth 2008: 102–104; Arkhangelskiy 2019b: 527–529), illustrated in (20).

Mari (Gavrilova 2014: 77)

- (20) Тый мо ден преподаёшь вара?  
*Tâj*    *mo*    *den*    *prepodaj-oš*    *βara?*  
 2SG    what    with    **teach-2SG**    then  
 ‘So what do you teach?’ (< Russian *prepodavat’*, instead of *tunâkt-et* teach-2SG)

All four types can be encountered in both Mari (see above) and Udmurt (Arkhangelskiy 2019b), but different strategies receive different weight. As paradigm transfer can be considered a type of code mixing, it is not relevant within the context of the study at hand: one would not expect the

morphosyntax of the recipient language to co-occur in this situation. It will thus be disregarded in the following overview.

### 5.1. Mari

In literary Meadow Mari, the standard manner in which Russian verbs are integrated into Mari is indirect insertion via the derivational suffix *-l-*, which is in its primary function widely used denominally in Mari, e.g. *negôz* ‘foundation’ → *negôzlaš* ‘found’ (Riese et al. 2019: 387). The suffix is attached to the Russian infinitive ending *-tʹ*<sup>8</sup>, which loses its palatalization, to form a Mari verb, e.g. Russian *filʹtroatʹ* ‘filter’ > Mari *filʹtroatlaš* id. (See Section 5.3. for analogous usage in Chuvash.) When reflexive, reciprocal, and intransitive Russian verbs with the ending *-ša* ~ *-ś* are borrowed into Mari, this suffix is replaced with the Mari valency-reducing derivational suffix *-alt-* (Riese et al. 2019: 391–392) which follows the derivational suffix *-l-*: Russian *filʹtroatʹša* ‘be filtered’ > Mari *filʹtroatlaltaš* ‘be filtered’.

In Hill Mari, the dominant method is direct insertion: the non-past stem of a Russian verb (which oftentimes differs from the infinitive/past stem) serves as the stem of the Hill Mari verb (Krasnova et al. 2017: 48–49): Russian *filʹtroatʹ* ‘filter’ → *filʹtruj-* (Russian non-past stem) > Hill Mari *filʹtrujaš*. As in Meadow Mari, the derivational suffix *-alt-* (~ *-ält-*) is used when Russian verbs with the ending *-ša* ~ *-ś* are borrowed: *filʹtrujaltaš* ‘be filtered’.

In Eastern varieties of Mari (speakers of which use the Meadow Mari literary norm in writing) subject to greater Turkic influence, *âštaš* ‘do’ is used in borrowings utilizing the light verb strategy: Russian *agitirovatʹ* ‘agitate, campaign’ > Eastern Mari *agitirovatʹ âštaš* (Sibatrova 2016). Cases can also be found of *âštaš* being used in combination with Russian verbs in *-ša* ~ *-ś*, e.g. (21).

Eastern Mari (Arkhangelskiy Social-Media Corpus, user lastochkao610<sup>9</sup>)

(21) ала-ко" [sic] весе хуйня ден заниматься ышта, а мый огыл))

*ala-kö*      *βese*    *χujña*    *den*      ***zanima-tʹ-ša***  
 INDF-who    other    bullshit with    **handle-INF-REFL**

*âšt-a,*      *a*      *mâj*      *ogâl*))  
 do-3SG    but    1SG      NEG

‘Somebody else can deal with this bullshit, but not me :))’

8. The rare Russian infinitives not ending in *-tʹ* (e.g. *idti* ‘go’) can be disregarded here.

9. A native of Kaltasy, Bashkortostan.

In summation, all three relevant strategies can be found in Mari, though the prevalence of strategies depends on speakers' dialectal background. There seems to be a spectrum ranging from direct insertion in the west (Hill Mari) over indirect insertion (Meadow Mari) to the light verb strategy in the east (Eastern Mari). Since the corpus resources currently at our disposal pertain to the Meadow Mari literary standard (used by speakers of Meadow Mari and Eastern Mari), when turning our attention to converb constructions using borrowed Russian lexemes, we will restrict ourselves to examining indirect insertion with *-l-* (including reflexive forms) and the light verb strategy, as direct insertion is not a productive process for speakers of these varieties.

## 5.2. Udmurt

While all strategies detailed above can be found in Udmurt (Arkhangelskiy 2019b), today two strategies dominate, with their productivity and acceptance among speakers subject to regional variance.

The standard strategy found in all dialects and the literary language is the light verb strategy, using *karinj* 'do', an Iranian loanword (Holopainen 2019: 380–381). This verb is used as a light verb in combination with a wide range of words belonging to different parts of speech (cf. Tarakanov 2013), such as ideophones, adjectives, or nouns (including loanwords), e.g. *žur karinj* 'murmur (lit. *žur do*)' *jegit karinj* 'rejuvenate (lit. young do)', *murt karinj* 'shun (lit. strange do)', *kjrs karinj* 'pollute (lit. dirt do)' *keneš karinj* 'consult (lit. advice do)' (Kirillova et al. 2008 s.v. *карыны*). It is also used in combination with Russian infinitive forms, e.g. Russian *vlijat* 'influence' > Udmurt *vlijat' karinj* id. (Arkhangelskiy 2019b: 527). The extensive usage of light verbs is typical of Turkic languages and also Tatar (Ganiev 1982; Arkhangelskiy 2019b: 546), making it unsurprising that this strategy has an especially strong position in southern varieties of Udmurt (Edygarova 2014: 395; Salánki 2015: 159) that show a stronger Turkic influence and are also those in which Turkic-type converb constructions have been primarily observed. Light verb constructions are however also typical of Iranian languages (Korn 2013), from where the primarily used Udmurt light verb was borrowed, raising the possibility that light verb constructions in Udmurt might predate Turkic contacts – though the seeming absence of these structures from Komi, Udmurt's sister language, complicates the picture. Some variance appears when Russian reflexive

verbs are borrowed. Sometimes the Udmurt passive suffix *-(i)šk-* is attached to the stem of the light verb, while on others it is not (mirroring Tatar, where the light verb *itü* ‘do’ is used regardless of voice (cf. Arkhangelskiy 2019b: 546)), and in yet others, *lujnı* ‘be’ is used as a light verb, as shown in (22a–c).

Udmurt (Arkhangelskiy 2019b: 543–544, 547; Cyrillic variants from corpus)

(22) a. Мон но тиледын [sic] фотографироваться карысал.

*Mon no tiled-ın fotografirova-t-ša kari-sal.*  
 1SG and 2PL-INS **photograph-*INF-REFL*** do-COND  
 ‘I’d also like to have a picture taken of me and you.’

b. МИ НО ВНУЧКАЕНЫМ [...] ФОТОГРАФИРОВАТЬСЯ КАРИСЬ-КИМ.

*Mi no vnučka-jen-ım [...] fotografirova-t-ša kar-ışk-ım.*  
 1PL and granddaughter-INS-1SG **photograph-*INF-REFL*** do-REFL-PST.1PL

‘I also had a picture taken of me together with my granddaughter.’

c. [...] мировой экономикаен специализироваться луэ.

[...] *mirovoj ekonomika-jen special’izirova-t-ša lu-e.*  
 world economy-INS **specialize-*INF-REFL*** become-PRS.3SG  
 ‘[...] [s/he] specializes in world economy.’

The main competing strategy in modern Udmurt is indirect insertion using the verbal derivational suffix *-t-* (Salánki 2015: 259; Horváth 2018; Arkhangelskiy 2019b: 520) which is added to the Russian infinitive: Russian *žarít* ‘fry’ > Udmurt *žarít’ijnı* id. This strategy is said to hold an especially strong position in northern varieties of Udmurt (Edygarova 2014: 395; Salánki 2015: 159), though empirical research has shown the opposite in some cases (Arkhangelskiy 2019b: 531).

### 5.3. Turkic

The three strategies under consideration are employed in verbal borrowings throughout the Turkic language family (Kincses Nagy 2006).

Direct insertion:

Mongolian *čida-* ‘be able, capable’ > Tatar *çida-* id. (ibid. 5)

Indirect insertion:

Russian *žarit’* ‘cook, fry’ > Chuvash *šaritle-* id. (ibid. 2)

Light verb strategy:

French *déchiffrer* ‘decipher’ > Turkish *deşifre et-* id. (*etmek* ‘do’) (ibid.)

Notable differences can be observed, however, in the frequency and universal applicability of the strategies. Direct insertion seems to mostly have a strong position in borrowings “between typologically very close, agglutinating languages in contact” (ibid. 6). It is for example employed in the borrowing of Mari verbs into Chuvash (ibid., e.g. Mari *vəlǵəžaš* ‘flutter’ > Chuvash *vělkěš-* id., Fedotov 1990: 300) but does not seem to be documented in the borrowing of verbs from typologically distant Russian.

Meanwhile, the light verb strategy enjoys an especially strong position as a highly versatile strategy. It has for example been observed in Turkish as spoken in migrant communities in Europe, e.g. Dutch *opruimen* ‘clean up’ > Netherlands Turkish *opruimen yapmak* id. (*yapmak* ‘make’) (ibid. 2). This strategy also seems to be the dominant strategy in the borrowing of Russian loanwords into Turkic languages.

## 6. Russian borrowings in converb constructions: corpus data

### 6.1. Search queries: Mari

The first point of investigation will be Russian borrowings derived by means of the productive indirect insertion pattern – the default strategy in Meadow Mari – in which the derivational suffix *-l-* is attached to the Russian infinitive, which ends in *-t’* in Russian; Russian *-t’* is substituted with *-t-* in Mari (e.g. Russian *gladit’* ‘iron’ > Mari *gladitlaš* id.).

The aim in choosing an adequate search query to find a pattern – in this case, Russian borrowings realized as the converb in *-n* in combination with specific superordinate verb – is to establish a pattern that does not miss relevant sentences (i.e. it avoids false negatives) while on the other hand reducing the number of irrelevant sentences (i.e. false positives) in the search output. As the search output can be perused by eye and irrelevant search results removed manually, the first point is of greater importance.

The low amount of allomorphy in Mari morphosyntax alleviates the task at hand. The converb in *-n* (Riese et al. 2019: 267–270) without exception

has the form *-en* after the derivational suffix *-l-*. Consequently, every non-reflexive Russian loanword following the productive indirect insertion pattern in Mari will have the ending *-tlen*. After the reflexive *-alt-*, the converb either has the ending *-ân* or a zero ending (the alternation between these two endings is determined by non-trivial factors and cannot be addressed here, cf. Riese et al. 2019: 267), meaning that reflexive borrowings from Russian can either have the ending *-tlaltân* or *-tlalt*. A search for all words in a corpus with one of these three endings – *-tlen*, *-tlaltân*, *-tlalt* – will yield all converbs of Russian loans following the productive pattern under consideration. Needless to say, numerous false positives must be weeded out from the results, e.g. *süretlen* < *süretlaš* ‘draw’, derived from the Tatar loanword *süret* ‘picture’ (Moisio & Saarinen 2008: 648).

Next one must search for the syntactically superordinate verb that should occur in combination with the converb. The process is facilitated by the relatively rigid word order: in affirmative clauses, the superordinate verb almost always immediately follows the converb (Bradley 2016a: 73–75); deviations from this pattern are sufficiently rare that they can be disregarded in the study at hand. Only in negated sentences is the converb typically separated from its superordinate verb, by the negation verb, as shown above in (6). The negation verb is however immediately followed by the connegative form, meaning that the two elements of a verb pair are at most one word apart from one another. If a light verb pattern with *âštaš* ‘do’ (e.g. Russian *zanimatša* ‘deal with’ > (Eastern) Mari *zanimatša âštaš* id., cf. (21)) were to be used in a converb construction, the light verb would occur in its converb form *âšten* and would be followed by the superordinate verb (in negation preceded by a form of the negation verb).

## 6.2. Search queries: Udmurt

As the light verb strategy (e.g. Russian *vlijat’* ‘influence’ > *vlijat’ kariņi* id.) seems to be dominant in those southern varieties of Udmurt where Turkic-type converb constructions are best documented, this will be the first point of investigation here. The three prospective light verbs – *kariņi* ‘do’, *kariškijni* ‘be done’, and *lujni* ‘be’ – have the respective converbs *kariša*, *kariškisa*, and *lujisa*. It would be possible to further restrict the search to only find pairings with individual auxiliaries, but as the body of results is already comparatively small at this point (see Section 7.2), the output of this search pattern can already be manually processed.

For Russian loanwords using indirect insertion (e.g. *žarit* ‘fry’ > Udmurt *žarittijnj* id.), the converbs always end in *-ttisa*. Simply searching for all word forms ending in this combination of sounds finds all relevant converb constructions.

## 7. Data and implications on the productivity of auxiliaries

In this section we will present the totality of relevant converb constructions we could find in our corpora and our resulting judgments as regards the productivity of individual auxiliaries. For Mari, as the primary metric of productivity we are using type frequency, i.e. the number of distinct verbs with which an auxiliary co-occurs in our sources. An overview of all pairings is available in the appendix.

### 7.1. Mari

In our survey we are restricting ourselves to examining those verbs identified as auxiliaries in Bradley (2016a: 276–278).

#### Indirect insertion

An overview of Mari data can be found in Table 2. For each examined auxiliary, the following additional data points are taken from the source:

- the verb’s lexical meaning,
- the page number in Bradley (2016a) of the section dedicated to the auxiliary,
- the functional meaning assigned to the verb as an auxiliary,
- the total number of distinct converbs, regardless of the etymology of the stem, found coupled with the auxiliary in Bradley (2016a) – i.e. the type frequency in the source – to give a baseline measurement of the auxiliary’s productivity.

As regards new data, the number of distinct Russian loanwords found in the sources (i.e. the type frequency) detailed in Section 6 as well as the total number of occurrences within the 57.38 million tokens of the Corpus of Literary Mari (i.e. the token frequency) is provided; a listing of all pairings can be found in the appendix. When collecting these data, we have corrected obvious OCR mistakes and typos, but we have otherwise provided verbs as found in the corpus.

The auxiliaries are sorted by their type frequency, which can be seen as the best indicator of productivity yielded by this survey. Token frequency on its own, on the other hand, is a problematic measure of productivity as the exceeding frequency of certain pairings (e.g. *pečatlen luktaš* ‘publish’ < *pečatlaš* ‘print’ + *luktaš* ‘take out’ occurs 475 times in the corpus) distorts the picture.

For a number of Mari verbs treated as prospective auxiliaries in Bradley (2016a), we could not find any plausible pairings with Russian words. A list of these verbs is found in Table 2 on pp. 29–30.

From among the verbs described as prospective auxiliaries in Bradley (2016a), no pairings with Russian stems were found for *βoltaš* ‘lower’ (path ‘down’), *βońčas̄* ‘go over’ (path ‘across, over’), *βozaš<sup>I</sup>* ‘lie down’ (resultative; path ‘down’), *ččataš* ‘endure’ (continuative), *čumāraš* ‘gather’ (path ‘together’), *kāñelaš* ‘get up’ (path ‘up’), *kudaltaš* ‘throw’ (resultative), *küzəktaš* ‘raise’ (path ‘up(wards)’), *oĵāraš* ‘separate’ (path ‘apart’), *oĵārlaš* ‘go apart’ (path ‘apart’), *puraš<sup>II</sup>* ‘come in’ (path ‘in, into’), *šūtaš* ‘pierce’ (path ‘through’), *šūtlaš* ‘wear through’ (path ‘through’), *temaš<sup>I</sup>* ‘be filled’ (exhaustive), *temaš<sup>II</sup>* ‘fill sth. up’ (exhaustive), *utaš* ‘become superfluous’ (exhaustive). The correlation between the overall type frequency of an auxiliary as given in Bradley (2016a) and the type frequency in combination with Russian borrowings is plainly visible if one plots these two values against each other, see Figure 1.

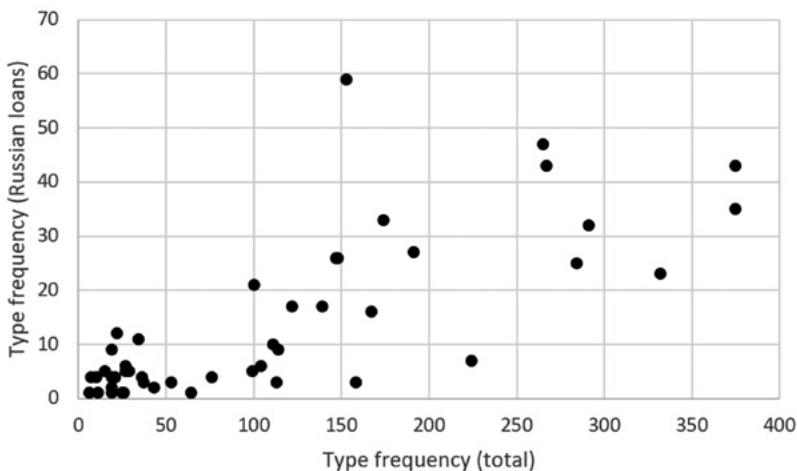


Figure 1: Scatter plot of type frequencies of different auxiliaries



Table 2: Overview of Mari data

Auxiliary	Lexical meaning	Page in Bradley (2016a)	Function as auxiliary	Type frequency in Bradley (2016a)	Type frequency (Russian borrowing)	Token frequency (Russian borrowings) in corpora
<i>kertaš</i>	be able to	154	modal (ability)	– <sup>a</sup>	–	100+
<i>moštaš</i>	be able to, know to	188	modal (ability)	–	–	100+
<i>šuktaš</i>	manage; lead to	241	exhaustive	153	59	158
<i>pātaraš</i>	finish	204	exhaustive	265	47	102
<i>koštaš</i>	go, wander	172	durative; ‘at many locations’	267	43	104
<i>šogaš</i>	stand	232	durative	375	43	63
<i>koltaš</i>	let go; send	164	ingressive	375	35	104
<i>puaš</i>	give	210	benefactive; resultative	174	33	48
<i>šāndaš</i>	put	219	resultative	291	32	75
<i>tolaš</i> <sup>I</sup>	come	248	gradual; path (‘coming’)	191	27	215
<i>oñčasš</i>	look	196	ingressive; (‘doing to try, test’)	148	26	38
<i>kodaš</i> <sup>II</sup>	leave something	162	resultative	147	26	32
<i>nalaš</i>	take	189	auto-benefactive; delimitative	284	25	35
<i>kajaš</i>	go (away)	149	ingressive; path ‘away’	332	23	49
<i>kijaš</i>	lie	158	durative	100	21	28
<i>luktaš</i>	take out	184	exhaustive; path ‘out’	139	17	504
<i>ilaš</i>	live	147	durative	122	17	47
<i>lektaš</i>	go (out), leave	179	delimitative; path ‘out’	167	16	315
<i>tolašaš</i>	try, strive	248	improper execution	22	12	18
<i>seŋaš</i>	win	216	exhaustive; ‘manage to’	34	11	17
<i>šīnčasš</i> <sup>II</sup>	sit	225	durative	111	10	24

- a. As the modal auxiliaries *kertaš* ‘be able to’ and *moštaš* ‘be able to, know to’ are unambiguously productive, we did not collect type frequency data on these.

Auxiliary	Lexical meaning	Page in Bradley (2016a)	Function as auxiliary	Type frequency in Bradley (2016a)	Type frequency (Russian borrowing)	Token frequency (Russian borrowings) in corpora
<i>šuaš<sup>I</sup></i>	arrive, reach	237	exhaustive	114	9	18
<i>oňčãktaš</i>	show	199	benefactive ('in order to show')	19	9	13
<i>pãtaš</i>	end	207	exhaustive	224	7	6
<i>ertaraš</i>	carry out, conduct	144	delimitative	27	6	10
<i>pãštaš</i>	put, place	202	resultative	104	6	9
<i>nanğajaš</i>	take	193	path 'away'	27	5	42
<i>kodaš<sup>I</sup></i>	stay	160	resultative	99	5	23
<i>šínčãltaš</i>	sit around	227	iterative	15	5	6
<i>sitaraš</i>	gather, provide	218	exhaustive	29	5	4
<i>kondaš</i>	bring	170	path ('coming')	19	4	13
<i>optaš</i>	put, set	200	iterative	76	4	9
<i>čarnaš</i>	stop, cease	138	resultative	10	4	7
<i>saßãrnaš</i>	turn	215	iterative; path 'round'	21	4	5
<i>lijaš</i>	be; become	183	ingressive	7	4	3
<i>šogãltaš</i>	stand around	236	iterative	36	4	2
<i>šogaltaš</i>	put, place, stand	230	resultative	37	3	52
<i>šogalaš</i>	stand up	228	resultative	113	3	27
<i>šínčãš<sup>I</sup></i>	sit down	222	resultative	158	3	8
<i>kãškaš</i>	throw; scatter	156	resultative	53	3	4
<i>purtaš</i>	bring in	214	path 'in(to)'	19	2	6
<i>mijaš</i>	come, go	186	gradual; path 'up to'	43	2	2
<i>tõčas</i>	try, attempt	253	improper execution	11	1	3
<i>bolaš</i>	descend	131	path 'down'	19	1	3
<i>namijaš</i>	bring	192	path 'up to'	6	1	1
<i>küzaš</i>	climb, rise	177	path 'up'	25	1	1
<i>ertaš</i>	go by	145	path 'past'	26	1	1
<i>šuaš<sup>II</sup></i>	throw	239	resultative	64	1	0

### Light verb strategy

In contrast to the over 2000 pairings of Russian borrowings using indirect insertion with auxiliary verbs found within the 5738 million tokens of the Corpus of Literary Mari, only three hapax forms of Russian borrowings using the light verb strategy can be found in combination with auxiliaries, two of which are given in (23–24).

Mari (Corpus of Literary Mari)

- (23) Доказать ыштен пу, Иван Иваныч!

*Dokaza-t' âst-en pu, Ivan Ivanâĉ!*  
**prove-INF do-CVB give.IMP.2SG, Ivan Ivanâĉ**  
 'Prove it (to me/us), Ivan Ivanâĉ!'

- (24) [Т]ендам раскулачить ыштен колтена!

*Tendam raskulaĉi-t' âst-en kolt-ena!*  
 2PL.ACC **dispossess\_a\_kulak-INF do-CVB send-1PL**  
 'We'll dispossess you as kulaks!'

## 7.2. Udmurt

The data in this section was collected from two sources: the Corpora of Uralic Volga-Kama Languages' main and social-media corpora. Our survey uncovered only very few Turkic-type converb constructions with Russian borrowings, thus allowing only a qualitative but exhaustive (i.e. all examples we could find are given in this section) examination of our findings. Pairings of Russian borrowings as converbs with superordinate verbs do not generally show the same level of abstraction found in Mari, i.e. a lexical interpretation of the superordinate verb is more salient than a functional interpretation, leaving only few examples that can be considered auxiliary constructions. This sharp contrast with Mari is not commensurate with the sizes of the data sets under investigation: while we have roughly 10 times the tokens at our disposal for Mari (see 5.1), we could find over 2000 auxiliary constructions in our Mari sources, but only 12 distinct verbs in our Udmurt corpora.

Among the examples we could find, *ulĭnj* 'live' stood out as the most widely used in a clearly non-lexical manner. This verb is described as a

marker for “the incompleteness, duration, processual nature of an action or its periodicity” (Kel'makov 1975: 96) in Southern Udmurt and has also been observed in a comparable function in Beserman (Tepljašina 1970: 252–254). The interpretation of individual examples can be difficult as the lexical meaning of ‘living’ is generally compatible with actions by animate agents. Oftentimes however a functional reading compatible with those described in the sources is more transparent than a lexical reading and accepted as such by our native-speaker consultant, as in (25–26).

Udmurt (Corpora of Uralic Volga-Kama Languages, main)

- (25) [...] и тани ми ку афишаос ошылймы гуртгъёсы, мыным туннё нуналын лумбыт звонить карыса улйзы ни, лыкто-а, уг-а?

[...] *i tańi mi ku afiša-os ošil-i-mj*  
and so 1PL when poster-PL hang\_up-PST1-1PL

*gurt-jos-i, mññm tunne nunal-in lumbyt*  
village-PL-ILL 1SG.DAT today day-INE all\_day

*zvońi-t' kari-sa ul-i-zj ni,*  
**call-INF** do-CVB live-PST1-3PL already

*likt-o-a, ug-a?*  
come-FUT-1SG-INT, NEG-INT

‘[...] and when we were hanging up posters in the villages, they already were calling me all day, will I come or won’t I?’

- (26) Вдобавок берам пуке вал нылкышно, кудйз ваньзэ комментировать карыса улйз.

*Vdobavok ber-am puk-e val niłkjšno,*  
furthermore behind-1SG sit-3SG be.PST1.3SG woman

*kudiz vańze kommentirova-t' kari-sa ul-i-z.*  
which everything.ACC **comment-INF** do-CVB live-PST1-3SG  
‘Additionally there was a woman sitting behind me who was (constantly) commenting on everything.’

Likewise from the main corpus: *služit' kariša ulińj* ‘serve’ *dokazivat' kariša ulińj* ‘demonstrate’, *oħrańat' kariša ulińj* ‘safeguard’, *skanirovat'kiša ulińj* ‘scan’. The last example is especially notable as it exemplifies indirect insertion, a strategy that is more typical of northern varieties of Udmurt in which Turkic-type auxiliary constructions are less widely used. Furthermore, the grammaticalization of a verb meaning ‘live’ as a habitual

or progressive marker is typologically common (cf. Kuteva et al. 2019: 261–262); a semantic shift of Russian *žit* ‘live’ > ‘exist’ has been observed in Russian dialects of Udmurtia (Mart’janova 2004: 34; Ždanova 2021), showing semantic lability of verbs meaning ‘live’ as a regionally common phenomenon. It thus seems plausible that the functional meaning of *uljñj* ‘live’ was fortified independently from the initial contact situation in which the usage of Turkic-type auxiliaries arose in southern varieties of Udmurt.

*śotjñj* ‘give’ and *baštjñj* ‘take’ are described as benefactive and auto-benefactive markers, respectively, in the literature (e.g. Kel’makov 1975: 102). One example for each can be found in the main corpus, namely *romantizirovat’ karjśa śotjñj* ‘romanticize (something for someone)’ and *rešit’ karjśa baštjñj* ‘resolve (something for oneself)’, as shown in (27).

(27) Нош писатель улоньсь басьтэм [...] частной конфликтэз романтизировать карыса сётэ.

*Noš pisatel’ ulon-jš bašt-em* [...]
   
but author life-ELA take-PTCP.PRF

*častnoj konflikt-ez romantižirova-t’ karj-sa śot-e.*
  
private conflict-ACC romanticize-INF do-CVB give-3SG

‘But the author romanticized (for the readers) a private conflict taken from life.’

When examining those verbs described as auxiliaries in Kel’makov (1975), we could find one example each where the verb in question was prospectively serving as an auxiliary:

- *bjdtjñj* ‘end’ as a marker of “completeness, finality” (Kel’makov 1975: 99): *otravit’ karjśa bjdtjñj* (Rus. *otravit’* ‘poison’) (social-media corpus)
- *vetljñj* ‘go’ as a marker of “the duration of an action, the non-directionality of a movement” (Kel’makov 1975: 100): *služit’ karjśa vetljñj* (Rus. *služit’* ‘serve’) (social-media corpus)
- *vožjñj* ‘keep’ as a maker of a “lengthy continuous state (process) consisting of separate, periodically repeated actions” (Kel’makov 1975: 103): *zaššiššat’ karjśa vožjñj* (Rus. *zaššiššat’* ‘defend’) (social-media corpus)
- *kuštjñj* ‘throw’ as a marker of “the meaning of exhaustiveness of an action” (Kel’makov 1975: 101): *redaktirovat’ karjśa kuštjñj* (Rus. *redaktirovat’* ‘edit’) (main corpus).

## 8. Conclusions and outlook

Our survey supports the assumption that Turkic-type converb constructions have a stronger position in Mari than they do in Udmurt.

In Mari, Russian borrowings adapted into Mari using indirect insertion (where the derivational suffix *-l-* is attached to a Russian infinitive to form a Mari verb) are widely used in combination with auxiliaries in Turkic-type converb constructions. This serves as an argument for the vitality of the mechanism at hand, especially given how recent Russian borrowings such as *privatizirovatlaš* ‘privatize’ or *skanirovatlaš* ‘scan’ must be. Turkic-type converb constructions can be encountered both in literary texts and in social-media postings. A wide range of auxiliaries can be found to co-occur with Russian loanwords, and the type frequencies given in (Bradley 2016a) – i.e. the totality of distinct converbs previously found in combination with an auxiliary – were a good indicator of the type frequencies of Russian loanwords used with auxiliaries as determined in this survey. Nevertheless, the token frequencies are not exceedingly large.

It is noteworthy that not only were previously unknown pairings found in our sources, but also that previously known pairings from lexical sources were not found in the extensive corpora at our disposal. This seems to indicate a somewhat stochastic nature of verb pairs included in lexical sources: it seems that oftentimes, pairings found in lexical sources constitute random-usage examples of individual auxiliaries that lexicographers happened to be aware of rather than specific well-established collocations. Our personal experience from compiling the Mari-English dictionary (Riese et al. 2014) corroborates this suspicion. This again can be seen as a further argument for the productivity of these markers.

At first sight it seems curious how many Mari path markers that seemed fairly productive before this study (e.g. *puraš*<sup>11</sup> ‘come in’ > path ‘in, into’, 36 pairings in Bradley 2016a) cannot be found in combination with Russian loanwords at all in any of our sources. However, this can be seen as a function of an auxiliary’s semantic constraints: even assuming full productivity of an auxiliary within semantic constraints, how many Russian verbs could form semantically sound pairings with it? A number of Russian verbs which can, in a highly figurative sense, be considered as markers of a means of movement or transportation can be found in combination with path markers, e.g. *mobilizovatlen nanğajaš* ‘mobilize (someone) away (lit. mobilizing take\_away)’, *evakuirovatlalt tolaš*<sup>1</sup> ‘be evacuated to (lit. being\_evacuated come)’. It

thus seems meaningful to consider the body of path-marking verbs as productive markers within semantic constraints, in analogy with the treatment of the Finnish prolativ marker *-tse* which can be found in combination with recent loanwords, e.g. *mailitse* ‘by e-mail’ (Ylikoski 2018: 10).

Russian borrowings using the light verb strategy (i.e. the Russian infinitive is followed by the verb *âštaš* ‘do’), found in Eastern Mari, could only on three occasions be found in Turkic-type converb constructions. However, the general rarity of these structures within the data set at our disposal precludes strong conclusions from being made here.

In sharp contrast to the Mari data, the Udmurt data under examination yielded only 12 distinct Russian verbs in Turkic-type converb constructions. Only for *uljni* ‘live’ could we find a significant number of examples in which it is used in accordance with its previously defined function as a durative marker, indicating that this auxiliary is uniquely productive in modern Udmurt. It should be noted that we could find this auxiliary in connection with a Russian verbal borrowing using indirect insertion, a strategy more conventional in northern Udmurt dialects in which Turkic-type converb constructions have a weak position: *skanirovat̆isa uljni* ‘scan’. This coupled with how typologically common it is for verbs meaning ‘live’ to become habitual or progressive markers and the observation that in local varieties of Russian in Udmurtia a semantic shift *žit* ‘live’ > ‘exist’ has occurred (cf. Ždanova 2021) raises the prospect of areal processes affecting the functional meaning of verbs meaning ‘live’ independent from the original contact situation in which Turkic-type auxiliary constructions were borrowed from Tatar into Udmurt.

As regards other verbs that have been described as auxiliaries, some caution is advised before making overly bold conclusions based on negative data. Firstly, it was already established that Turkic-type converb constructions are typical of southern varieties of Udmurt (though some examples of Turkic-type verbalization of motion events having been described in Beserman), in contrast to Mari where Turkic-type converb constructions are ubiquitous in all varieties. The lower incidence of these structures could partly also be a function of the dialectal backgrounds of the writers, journalists, and users who produced the texts at our disposal. Furthermore, we are not fully certain that all strategies of verbal borrowing lend themselves equally to morphosyntactic modification, especially given the very few examples found of Russian borrowings using the light verb strategy used in Turkic-type converb constructions in (Eastern) Mari.

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## **Non-standard abbreviations used in glosses**

CNG	connegative	MOD	modal
EMP	emphatic	ORD	ordinal
ILL	illative	PRF	perfect
INDF	indefinite	PROL	prolative
INE	inessive	PST1	first past tense
INS	instructive	PST2	second past tense
INT	interrogative	VRB	verbalizer
LAT	lative		

## **Primary data sources**

Corpora of Uralic Volga-Kama Languages:

[http://volgakama.web-corpora.net/index\\_en.html](http://volgakama.web-corpora.net/index_en.html).

Corpus of Literary Mari:

<http://corpus.mari-language.com>, [https://gtweb.uit.no/u\\_korp/?mode=mhr](https://gtweb.uit.no/u_korp/?mode=mhr).

Mari-English Dictionary:

<http://dict.mari-language.com>, XML at <http://source.mari-language.com>.



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## Appendix

### Abbreviations

Aux.	auxiliary	Tf.	type frequency in source
Lm.	lexical meaning	Tokens	# tokens in corpora
P.	page number in source	Rv.	Russian verbs paired with auxiliary in corpora
Am.	meaning as auxiliary		

Aux. *kertaš*, Lm. ‘be able to’, P. 154, Am. modal (ability), Tf. N/A, Tokens 100+  
Rv. (not documented due to unambiguous full productivity of auxiliary)

Aux. *moštaš*, Lm. ‘be able to, know to’, P. 188, Am. modal (ability), Tf. N/A, Tokens 100+

Rv. (not documented due to unambiguous full productivity of auxiliary)

Aux. *šuktaš*, Lm. ‘manage; lead to’, P. 241, Am. exhaustive, Tf. 153, Tokens 158

Rv. 59: *agitirovatlaš* ‘agitate, campaign’, *analizirovatlaš* ‘analyse’, *arestovatlaš* ‘arrest’, *atakovatlaš* ‘attack’, *blokirovatlaš* ‘block’, *celitlaš* ‘aim’, *dressirovatlaš* ‘train (animal)’, *elektrificirovatlaš* ‘electrify’, *evakuirovatlaš* ‘be evacuated’, *evakuirovatlaš* ‘evacuate’, *formirovatlaš* ‘form’, *fotkatlaš* ‘photograph’, *fotografirovatlaš* ‘be photographed’, *gladitlaš* ‘iron’, *gruzitlaš* ‘load’, *izvinitlaš* ‘apologize’, *javitlaš* ‘inform’, *kačatlaš* ‘pump’, *kleitlaš* ‘glue’, *komplektovatlaš* ‘complete’, *maskirovatlaš* ‘mask’, *mexanizirovatlaš* ‘mechanize’, *montirovatlaš* ‘mount’, *motivirovatlaš* ‘justify’, *oformitlaš* ‘put into shape’, *okopatlaš* ‘dig in’, *organizovatlaš* ‘organize’, *pasterizovatlaš* ‘pasteurize’, *pečatlaš* ‘be published’, *pečatlaš* ‘print’, *peredavatlaš* ‘broadcast’, *pererabotatlaš* ‘process’, *prinimatlaš* ‘take up (a post)’, *privatizirovatlaš* ‘privatize’, *projektirovatlaš* ‘design’, *raskulačivatlaš* ‘dispossess (a kulak)’, *registrirovatlaš* ‘be registered’, *registrirovatlaš* ‘register’, *rešatlaš* ‘solve’, *rešitlaš* ‘solve’, *restavrirovatlaš* ‘restore’, *sdatlaš* ‘hand over’, *sdavatlaš* ‘hand over’, *skanirovatlaš* ‘scan’, *služitlaš* ‘serve’, *snimatlaš* ‘photograph, film’, *suditlaš* ‘sentence’, *trenirovatlaš* ‘train’, *u’užitlaš* ‘iron’, *vakcinirovatlaš* ‘vaccinate’, *vooružatlaš* ‘arm’, *vospitatlaš* ‘bring up’, *zagotovitlaš* ‘lay in stock’, *zakazatlaš* ‘order’, *zařaditlaš* ‘load (tr.)’, *žaritlaš* ‘fry’, *zavoditlaš* ‘start, wind up’, *zoritlaš* ‘ravage’, *zvonitlaš* ‘ring’

Aux. *pātaraš*, Lm. ‘finish’, P. 204, Am. exhaustive, Tf. 265, Tokens 102

Rv. 47: *betonirovatlaš* ‘concrete’, *bintovatlaš* ‘bandage’, *bombitlaš* ‘bomb’, *britlaš* ‘shave’, *čertitlaš* ‘draw, trace’, *deklamirovatlaš* ‘recite’, *dežuritlaš* ‘be on duty’, *diktovatlaš* ‘dictate’, *diskovatlaš* ‘harrow’, *gladitlaš* ‘iron’, *grimirovatlaš* ‘apply theatre makeup’, *gruzitlaš* ‘load’, *kleitlaš* ‘glue’, *komplektovatlaš* ‘complete’, *kritikovatlaš* ‘criticize’, *lišitlaš* ‘deprive of rights’, *lunkovatlaš* ‘?’, *mexanizirovatlaš* ‘mechanize’, *minirovatlaš* ‘mine’, *orkestruvatlaš* ‘orchestrate’, *pečatlaš* ‘print’, *perepisatlaš* ‘rewrite’, *perevoditlaš* ‘translate’, *povtoritlaš* ‘repeat’, *pressovatlaš* ‘compress’, *putatlaš* ‘tangle’, *rastaskivatlaš*



‘drag apart’, *redaktirovatlaš* ‘edit’, *remontirovatlaš* ‘repair’, *repressirovatlaš* ‘repress’, *rešatlaš* ‘solve’, *restavrirovatlaš* ‘restore’, *rozmitlaš* ‘?’, *sdatlaš* ‘hand over’, *sdavatlaš* ‘hand over’, *skanirovatlaš* ‘scan’, *skirdovatláš* ‘stack’, *služitlaš* ‘serve’, *snimatlaš* ‘photograph, film’, *sortirovatlaš* ‘sort’, *stroitlaš* ‘construct’, *štukaturitlaš* ‘plaster’, *vjstupatlaš* ‘perform’, *zapravitlaš* ‘fill up (tr.)’, *zařaditlaš* ‘load (tr.)’, *zoritlaš* ‘ravage’, *zvonitlaš* ‘ring’

Aux. *koštaš*, Lm. ‘go, wander’, P. 172, Am. durative; ‘at many locations’, Tf. 267, Tokens 104

Rv. 43: *agitirovatlaš* ‘agitate, campaign’, *batračitlaš* ‘work as a farm labourer’, *bespokoitlaš* ‘bother’, *bomževatlaš* ‘be like a homeless person’, *broditlaš* ‘roam’, *buntovatláš* ‘rebel’, *figuřatlaš* ‘show off’, *gastrolirovatlaš* ‘tour’, *gipsovatláš* ‘put in a cast’, *grabitlaš* ‘rob’, *gul’atlaš* ‘go for a walk’, *instruktirovatlaš* ‘instruct’, *kaljmitlaš* ‘moonlight’, *kaznitlaš* ‘execute’, *komandovatláš* ‘command’, *konfiskovatláš* ‘confiscate’, *konvoirovatlaš* ‘escort’, *maittlaš* ‘suffer’, *maskirovatlaš* ‘be masked’, *maskirovatlaš* ‘mask’, *oformitlaš* ‘put into shape’, *patruľirovatlaš* ‘patrol’, *putešestvovatláš* ‘travel’, *revizirovatlaš* ‘requisition’, *šabašatlaš* ‘moonlight’, *šabašitlaš* ‘moonlight’, *šalitlaš* ‘play tricks’, *šatatlaš* ‘rock’, *slavitlaš* ‘extol’, *služitlaš* ‘serve’, *snimatlaš* ‘photograph, film’, *sormitlaš* ‘?’, *šutitlaš* ‘joke’, *tancevatlaš* ‘dance’, *veselitlaš* ‘have a good time’, *vjstupatlaš* ‘perform’, *vojevatláš* ‘wage war’, *zagoťlaš* ‘?’, *zakazatlaš* ‘reserve’, *žalovatláš* ‘complain’, *zvonitlaš* ‘ring’, *χlopotatlaš* ‘make an effort’, *χuliganitlaš* ‘behave like a hooligan’

Aux. *šogaš*, Lm. ‘stand’, P. 232, Am. durative, Tf. 375, Tokens 63

Rv. 43: *dejstvovatláš* ‘function’, *diktovatláš* ‘dictate’, *distillirovatlaš* ‘distil’, *dokladjvatlaš* ‘report’, *doložitlaš* ‘report’, *eksportirovatlaš* ‘export’, *formirovatlaš* ‘be formed’, *fotografirovatlaš* ‘photograph’, *gladitlaš* ‘iron’, *golosovatláš* ‘vote’, *kalitlaš* ‘be heated’, *kaznitlaš* ‘execute’, *koordinirovatlaš* ‘coordinate’, *kurirovatláš* ‘curate’, *maskirovatlaš* ‘be masked’, *nabl’udatlaš* ‘observe’, *obespečitlaš* ‘guarantee’, *obrabatjvatlaš* ‘process’, *organizovatláš* ‘organize’, *pečatláš* ‘be published’, *pečatláš* ‘print’, *podderžatlaš* ‘support’, *podderživatlaš* ‘support’, *podpisatlaš* ‘sign’, *propagandirovatlaš* ‘propagandize’, *razoblačitlaš* ‘reveal’, *recenzirovatláš* ‘review’, *rešatlaš* ‘solve’, *revizovatláš* ‘inspect’, *rjfmovatláš* ‘rhyme’, *služitlaš* ‘serve’, *šutitlaš* ‘joke’, *travitlaš* ‘poison’, *trenirovatlaš* ‘train’, *uvažatlaš* ‘respect’, *veselitlaš* ‘have a good time’, *vjpisatlaš* ‘subscribe’, *vjstupatlaš* ‘perform’, *vospitatlaš* ‘bring up’, *zakazatlaš* ‘order’, *žaritlaš* ‘fry’, *zavisitlaš* ‘depend on’, *zvonitlaš* ‘call’

Aux. *koltaš*, Lm. ‘let go; send’, P. 164, Am. ingressive, Tf. 375, Tokens 104

Rv. 35: *blagoslovitlaš* ‘bless’, *dreseirovatlaš* [sic] ‘train (animals)’, *evakuirovatlaš* ‘evacuate’, *formirovatlaš* ‘form’, *fotografirovatlaš* ‘photograph’, *grabitlaš* ‘rob’, *gruzitlaš* ‘load’, *kaljmitlaš* ‘moonlight’, *komissovatláš* ‘give a fitness test for military service’, *lišitlaš* ‘deprive of rights’, *loslovitlaš* ‘?’, *mečtatlaš* ‘dream’, *obsluživatlaš* ‘serve’, *oformitlaš* ‘put into shape’, *organizovatláš* ‘organize’, *perepizatlaš* ‘rewrite’, *podpisatlaš*

‘sign’, *puđritlaš* ‘powder’, *putatlaš* ‘tangle’, *raskulaćitlaš* ‘dispossess (a kulak)’, *registrirovatlaš* ‘register’, *rešatlaš* ‘solve’, *šabašitlaš* ‘moonlight’, *sdatlaš* ‘hand over’, *snimatlaš* ‘be photographed’, *suditlaš* ‘sentence’, *šuritlaš* ‘?’, *tancevatlaš* ‘dance’, *veselitlaš* ‘have a good time’, *vjipisatlaš* ‘subscribe’, *zakazatlaš* ‘order’, *žalovatlaš* ‘complain’, *žaritlaš* ‘fry’, *zavoditlaš* ‘start, wind up’, *χuliganitlaš* ‘behave like a hooligan’

Aux. *puaš*, Lm. ‘give’, P. 210, Am. benefactive; resultative, Tf. 174, Tokens 48  
 Rv. 33: *britlaš* ‘shave’, *čertitlaš* ‘draw, trace’, *citirovatlaš* ‘cite’, *deklamirovatlaš* ‘recite’, *deval’virovatlaš* ‘devalue’, *diržižirovatlaš* ‘conduct’, *dokazatlaš* ‘demonstrate’, *gladitlaš* ‘iron’, *kalitlaš* ‘heat’, *kaznitlaš* ‘execute’, *koćegaritlaš* ‘work as a stoker’, *oformitlaš* ‘put into shape’, *paitlaš* ‘solder’, *paritlaš* ‘steam’, *pećatlaš* ‘print’, *perepisatlaš* ‘rewrite’, *podpisatlaš* ‘sign’, *pressovatlaš* ‘compress’, *rešitlaš* ‘solve’, *skanirovatlaš* ‘scan’, *služitlaš* ‘serve’, *snimatlaš* ‘photograph, film’, *sortirovatlaš* ‘sort’, *toćitlaš* ‘sharpen’, *ut’užitlaš* ‘iron’, *vjipisatlaš* ‘subscribe’, *zapravitlaš* ‘fill up (tr.)’, *zařaditlaš* ‘load (tr.)’, *žaritlaš* ‘fry’, *zaveritlaš* ‘attest’, *zavoditlaš* ‘start, wind up’, *zvonitlaš* ‘ring’, *χlopotatlaš* ‘make an effort’

Aux. *šndaš*, Lm. ‘put’, P. 219, Am. resultative, Tf. 291, Tokens 75

Rv. 32: *arestovatlaš* ‘arrest’, *betonirovatlaš* ‘concrete’, *bintovatlaš* ‘bandage’, *čertitlaš* ‘draw, trace’, *dressirovatlaš* ‘train (animal)’, *fantazirovatlaš* ‘dream about’, *gipnozirovatlaš* [sic] ‘hypnotize’, *gipsovataš* ‘put in a cast’, *gladitlaš* ‘iron’, *grafitlaš* ‘plot on a graph’, *gruzitlaš* ‘load’, *kleitlaš* ‘glue’, *kommentirovatlaš* ‘comment on’, *konservirovatlaš* ‘conserve’, *koptitlaš* ‘smoke’, *lepitlaš* ‘sculpt’, *maskirovatlaš* ‘mask’, *obšivatlaš* ‘clad’, *paitlaš* ‘solder’, *pećatlaš* ‘print’, *plombirovatlaš* ‘seal’, *registrirovatlaš* ‘register’, *rifmovatlaš* ‘rhyme’, *sařaritlaš* ‘sugar’, *šnurovatlaš* ‘lace up’, *štukaturitlaš* ‘plaster’, *trambovatlaš* ‘trample’, *valkovatlaš* ‘put into windrows’, *varitlaš* ‘weld’, *zařaditlaš* ‘load (tr.)’, *žaritlaš* ‘fry’, *zubritlaš* ‘learn by rote’

Aux. *tolaš*<sup>1</sup>, Lm. ‘come’, P. 248, Am. gradual; path ‘(coming)’, Tf. 191, Tokens 215

Rv. 27: *demobilizovatlaš* ‘be demobilized’, *doložitlaš* ‘report’, *evakuirovatlaš* ‘be evacuated’, *ironizirovatlaš* ‘speak ironically’, *komissovatlaš* ‘retire from armed service’, *kontuzitlaš* ‘be contused’, *marširovatlaš* ‘march’, *maskirovatlaš* ‘be masked’, *nastupatlaš* ‘advance’, *opravdatlaš* ‘be discharged’, *pasovatlaš* ‘pass’, *pećatlaš* ‘be published’, *pećatlaš* ‘print’, *perevospatlaš* ‘be reeducated’, *propagandirovatlaš* ‘propagandize’, *ranitlaš* ‘be injured’, *razoblaćitlaš* ‘reveal’, *razoritlaš* ‘be ruined’, *razvivatlaš* ‘delevop (intr.)’, *razvoditlaš* ‘separate’, *reformirovatlaš* ‘reform’, *rešatlaš* ‘solve’, *sdatlaš* ‘hand over’, *služitlaš* ‘serve’, *suditlaš* ‘be sentenced’, *zanimatlaš* ‘study’, *zvonitlaš* ‘ring’

Aux. *ońćaš*, Lm. ‘look’, P. 196, Am. ingressive; (doing to try, test), Tf. 148, Tokens 38

Rv. 26: *dežuritlaš* ‘be on duty’, *diskovatlaš* ‘harrow’, *golosoivatlaš* ‘vote’, *gruzitlaš* ‘load’, *kaćatlaš* ‘pump’, *obrabotatlaš* ‘process’, *pećatlaš* ‘print’,

*perevoditlaš* ‘translate’, *primatlaš* ‘take up (a post)’, *probjĭtlaš* ‘stay somewhere’, *sdatlaš* ‘hand over’, *sdavatlaš* ‘hand over’, *snimatlaš* ‘photograph, film’, *suditlaš* ‘sentence’, *tancevatlaš* ‘dance’, *trenirovatlaš* ‘train’, *viĭpisatlaš* ‘subscribe’, *vĭstupatlaš* ‘perform’, *vkĭuĭtĭtlaš* ‘switch on’, *vospitatlaš* ‘bring up’, *zakazatlaš* ‘order’, *zapravitlaš* ‘fill up (tr.)’, *zařaditlaš* ‘load (tr.)’, *řaritlaš* ‘fry’, *zavoditlaš* ‘start, wind up’, *zvonitlaš* ‘ring’

Aux. *kodaš*<sup>II</sup>, Lm. ‘leave something’, P. 162, Am. resultative, Tf. 147, Tokens 32  
 Rv. 26: *blagoslovitlaš* ‘bless’, *bombitlaš* ‘bomb’, *britlaš* ‘shave’, *elektrizovatlaš* ‘electrify’, *fotografirovatlaš* ‘photograph’, *kristallizirovatlaš* ‘crystallize’, *kritikovatlaš* ‘criticize’, *mobilizovatlaš* ‘mobilize’, *oborudovatlaš* ‘equip’, *oformitlaš* ‘put into shape’, *oskorbitlaš* ‘insult’, *peĭtatlaš* ‘print’, *prostĭtlaš* ‘pardon’, *rozmitlaš* ‘?’, *sdatlaš* ‘hand over’, *skanirovatlaš* ‘scan’, *snimatlaš* ‘photograph, film’, *stramitlaš* ‘disgrace’, *veselitlaš* ‘have a good time’, *vĭkĭluĭtatlaš* ‘turn off’, *zapravitlaš* ‘fill up (tr.)’, *zařaditlaš* ‘load (tr.)’, *zaveřřatlaš* ‘bequeath’, *zavoditlaš* ‘start, wind up’, *řelatlaš* ‘wish’, *zorĭtlaš* ‘ravage’

Aux. *nalaš*, Lm. ‘take’, P. 189, Am. auto-benefactive; delimitative, Tf. 284, Tokens 35

Rv. 25: *britlaš* ‘shave’, *fotografirovatlaš* ‘photograph’, *golosovatlaš* ‘vote’, *kalitlaš* ‘heat’, *keseritlaš* ‘?’, *kritikovatlaš* ‘criticize’, *leĭĭtĭtlaš* ‘treat’, *paritlaš* ‘steam’, *peĭtatlaš* ‘print’, *podpisatlaš* ‘sign’, *privatizirovatlaš* ‘privatize’, *skandalitĭtlaš* ‘brawl’, *skanirovatlaš* ‘scan’, *sluřitĭtlaš* ‘serve’, *snimatlaš* ‘photograph, film’, *sortirovatlaš* ‘sort’, *tancevatlaš* ‘dance’, *truditlaš* ‘burden with work’, *uĭĭstvovatlaš* ‘participate’, *veselitlaš* ‘have a good time’, *vospitatlaš* ‘bring up’, *zakazatlaš* ‘order’, *zanimatlaš* ‘study’, *řaritlaš* ‘fry’, *zvonitlaš* ‘ring’

Aux. *kajaš*, Lm. ‘go (away)’, P. 149, Am. ingressive; path ‘away’, Tf. 332, Tokens 49

Rv. 23: *bombitlaš* ‘bomb’, *brakovatlaš* ‘reject as defective’, *buksovatlaš* ‘skid, slip’, *dokladĭvatlaš* ‘report’, *evakuirovatlaš* ‘be evacuated’, *fotografirovatlaš* ‘photograph’, *klejmitlaš* ‘brand’, *markirovatlaš* ‘mark’, *nomerovatlaš* ‘number’, *prořřatlaš* ‘forgive’, *redaktirovatlaš* ‘edit’, *rĭfĭmovatlaš* ‘rhyme’, *snimatlaš* ‘be photographed’, *snimatlaš* ‘photograph, film’, *řtampovatlaš* ‘stamp, press’, *řtrobĭtlaš* ‘cut a wall plate’, *suditlaš* ‘be sentenced’, *tancevatlaš* ‘dance’, *uĭuĭtĭtlaš* ‘iron’, *verbovatlaš* ‘enlist’, *veselitlaš* ‘have a good time’, *viĭpisatlaš* ‘be subscribed’, *zarĭtlaš* ‘excite’

Aux. *kijaš*, Lm. ‘lie’, P. 158, Am. durative, Tf. 100, Tokens 28

Rv. 21: *dokladĭvatlaš* ‘report’, *dolořitlaš* ‘report’, *grabitlaš* ‘rob’, *gruzitlaš* ‘load’, *kalitlaš* ‘be heated’, *konspektirovatlaš* ‘summarize’, *koptĭtlaš* ‘give off soot’, *maitlaš* ‘suffer’, *maitlaš* ‘suffer’, *marinovatlaš* ‘marinate’, *peĭtatlaš* ‘print’, *perevaritlaš* ‘overdo’, *projavitlaš* ‘display’, *rozoritlaš* ‘?’, *verbovatlaš* ‘enlist’, *vreditlaš* ‘injure’, *zanimatlaš* ‘study’, *zapravitlaš* ‘fill up (tr.)’, *zařaditlaš* ‘load (tr.)’, *zavoditlaš* ‘start, wind up’, *zvonitlaš* ‘ring’

Aux. *luktaš*, Lm. ‘take out’, P. 184, Am. exhaustive; path ‘out’, Tf. 139, Tokens 504  
Rv. 17: *čertitlaš* ‘design’, *dublirivatlaš* ‘duplicate’, *izvinitlaš* ‘apologize’,  
*kačatlaš* ‘pump’, *oformitlaš* ‘put into shape’, *paritlaš* ‘steam’, *pečatlaš*  
‘print’, *peľatlaš* ‘?’, *pererabaťivatlaš* ‘process’, *predpolagatlaš* ‘presume’,  
*pressovatlaš* ‘compress’, *redaktirovatlaš* ‘edit’, *štamповatlaš* ‘stamp, press’,  
*suditlaš* ‘sentence’, *turitlaš* ‘urge’, *žaritlaš* ‘fry’, *χlopotatlaš* ‘make an effort’

Aux. *ilaš*, Lm. ‘live’, P. 147, Am. durative, Tf. 122, Tokens 47

Rv. 17: *ekspluatirovatlaš* ‘exploit’, *grabitlaš* ‘rob’, *klevetatlaš* ‘slander’,  
*kompleksovotlaš* ‘have a complex’, *maitlaš* ‘suffer’, *maitlaš* ‘suffer’, *mečtatlaš*  
‘dream’, *obižajaltlaltlaš* [sic] ‘be insulted’, *otravitlaš* ‘poison’, *pečatlaš* ‘be  
printed’, *pereživatlaš* ‘endure’, *pitatlaš* ‘feed’, *snimatlaš* ‘photograph, film’,  
*veselitlaš* ‘have a good time’, *vooružatlaš* ‘arm’, *vreditlaš* ‘harm’, *zoritlaš*  
‘ravage’

Aux. *lektaš*, Lm. ‘go (out), leave’, P. 179, Am. delimitative; path ‘out’, Tf. 167,  
Tokens 315

Rv. 16: *analizirovatlaš* ‘analyse’, *dežuritlaš* ‘be on duty’, *kanduzitlaš* ‘?’,  
*paritlaš* ‘take a steam bath’, *prostitlaltlaš* ‘take one’s leave’, *pečatlaš* ‘be  
published’, *pečatlaš* ‘print’, *proveřatlaš* ‘check’, *redaktirovatlaš* ‘edit’,  
*repetirovatlaš* ‘rehearse’, *revizirovatlaš* ‘audit’, *rozmitlaš* ‘?’, *sdatlaš* ‘hand  
over’, *služitlaš* ‘serve’, *tancevatlaš* ‘dance’, *vjstupatlaš* ‘perform’

Aux. *tolašaš*, Lm. ‘try, strive’, P. 248, Am. improper execution, Tf. 22, Tokens 18  
Rv. 12: *buksovotlaš* ‘skid, slip’, *dokazatlaš* ‘demonstrate’, *duritlaš* ‘play  
pranks’, *golosovatlaš* ‘vote’, *pečatlaš* ‘print’, *rifmovatlaš* ‘rhyme’, *sdatlaš*  
‘hand over’, *suditlaš* ‘have legal proceedings’, *tipizirovatlaš* ‘typify’,  
*zavoditlaš* ‘start, wind up’, *zvonitlaš* ‘ring’, *χodatajstvovatlaš* ‘solicit’

Aux. *seřaš*, Lm. ‘win’, P. 216, Am. exhaustive; ‘manage to’, Tf. 34, Tokens 17

Rv. 11: *agitirovatlaš* ‘agitate, campaign’, *dežuritlaš* ‘dežuritle’, *dokazatlaš*  
‘demonstrate’, *maskirovatlaš* ‘be masked’, *obižatlaš* ‘offend’, *prostitlaš*  
‘pardon’, *rešatlaš* ‘solve’, *rešitlaš* ‘solve’, *sdatlaš* ‘hand over’, *sofinansirovatlaš*  
‘co-finance’, *zavoditlaš* ‘start, wind up’

Aux. *šičaš*<sup>II</sup>, Lm. ‘sit’, P. 225, Am. durative, Tf. 111, Tokens 24

Rv. 10: *lepitlaš* ‘sculpt’, *nabiratlaš* ‘engage’, *pečatlaš* ‘print’, *podpisatlaš* ‘sign’,  
*pudritlaš* ‘powder’, *suditlaš* ‘sentence’, *sufleritlaš* ‘prompt (in theatre)’,  
*veselitlaš* ‘have a good time’, *zanimatlaš* ‘study’, *zubritlaš* ‘learn by rote’

Aux. *šuaš*<sup>I</sup>, Lm. ‘arrive, reach’, P. 237, Am. exhaustive, Tf. 114, Tokens 18

Rv. 9: *adaptirovatlaš* ‘adapt (intr.)’, *evakuirovatlaš* ‘be evacuated’,  
*formirovatlaš* ‘be formed’, *oformitlaš* ‘take shape’, *pečatlaš* ‘be published’,  
*rešitlaš* ‘be solved’, *rusificirovatlaš* ‘be Russified’, *služitlaš* ‘serve’, *žaritlaš*  
‘fry (intr.)’

Aux. *ońčãktaš*, Lm. ‘show’, P. 199, Am. benefactive (in order to show), Tf. 19, Tokens 13

Rv. 9: *dokazatlaš* ‘demonstrate’, *idealizirovatlaš* ‘idealize’, *ill’ustrirovatlaš* ‘illustrate’, *kopirovatlaš* ‘copy’, *kritikovatlaš* ‘criticize’, *pečatlaš* ‘print’, *poetizirovatlaš* ‘poeticize’, *rulitlaš* ‘taxi’, *tipizirovatlaš* ‘typify’

Aux. *pãtaš*, Lm. ‘end’, P. 207, Am. exhaustive, Tf. 224, Tokens 6

Rv. 7: *assimilirovatlaš* ‘be assimilated’, *koptitlaš* ‘be smoked’, *paritlaš* ‘take a steam bath’, *pečatlaš* ‘be published’, *ranitlaš* ‘be injured’, *žaritlaš* ‘fry (intr.)’, *zoritlaš* ‘dawn’

Aux. *ertaraš*, Lm. ‘carry out, conduct’, P. 144, Am. delimitative, Tf. 27, Tokens 10

Rv. 6: *maitlaš* ‘suffer’, *pečatlaš* ‘print’, *služitlaš* ‘serve’, *snimatlaš* ‘photograph, film’, *veselitlaš* ‘have a good time’, *zoritlaš* ‘ravage’

Aux. *pãštaš*, Lm. ‘put, place’, P. 202, Am. resultative, Tf. 104, Tokens 9

Rv. 6: *bintovatlaš* ‘bandage’, *koptitlaš* ‘give off soot’, *oformitlaš* ‘put into shape’, *pečatlaš* ‘print’, *podpisatlaš* ‘sign’, *žaritlaš* ‘fry’

Aux. *naŋgajaš*, Lm. ‘take’, P. 193, Am. path ‘away’, Tf. 27, Tokens 42

Rv. 5: *arestovatlaš* ‘arrest’, *buksirovatlaš* ‘tow’, *konvoirovatlaš* ‘escort’, *mobilizovatlaš* ‘mobilize’, *verbovatlaš* ‘recruit’

Aux. *kodaš*, Lm. ‘stay’, P. 160, Am. resultative, Tf. 99, Tokens 23

Rv. 5: *britlaš* ‘shave oneself’, *pečatlaš* ‘be published’, *snimatlaš* ‘be photographed’, *veselitlaš* ‘have a good time’, *želatlaš* ‘wish’

Aux. *šinčãltaš*, Lm. ‘sit around’, P. 227, Am. iterative, Tf. 15, Tokens 6

Rv. 5: *kleitlaš* ‘glue’, *nastroitlaš* ‘tune’, *pečatlaš* ‘print’, *varitlaš* ‘weld’, *veselitlaš* ‘have a good time’

Aux. *sitaraš*, Lm. ‘gather, provide’, P. 218, Am. exhaustive, Tf. 29, Tokens 4

Rv. 5: *bombitlaš* ‘bomb’, *fotografirovatlaš* ‘photograph’, *veselitlaš* ‘have a good time’, *vojevatlaš* ‘wage war’, *zapravitlaš* ‘fill up (tr.)’

Aux. *kondaš*, Lm. ‘bring’, P. 170, Am. path ‘(coming)’, Tf. 19, Tokens 13

Rv. 4: *arestovatlaš* ‘arrest’, *evakuirovatlaš* ‘evacuate’, *gruzitlaš* ‘load’, *mobilizovatlaš* ‘mobilize’

Aux. *optaš*, Lm. ‘put, set’, P. 200, Am. iterative, Tf. 76, Tokens 9

Rv. 4: *gruzitlaš* ‘load’, *sortirovatlaš* ‘sort’, *varitlaš* ‘weld’, *vipisatlaš* ‘subscribe’

Aux. *čarnaš*, Lm. ‘stop, cease’, P. 138, Am. resultative, Tf. 10, Tokens 7

Rv. 4: *bombitlaš* ‘bomb’, *veselitlaš* ‘have a good time’, *tancevatlaš* ‘dance’, *vįstupatlaš* ‘perform’

Aux. *saβârnaš*, Lm. ‘turn’, P. 215, Am. iterative; path ‘round’, Tf. 21, Tokens 5  
Rv. 4: *blagoslovitlaš* ‘bless’, *služitlaš* ‘serve’, *tancevatlaš* ‘dance’, *varitlaš* ‘weld’

Aux. *lijaš*, Lm. ‘be; become’, P. 183, Am. ingressive, Tf. 7, Tokens 3  
Rv. 4: *golosovatlaš* ‘vote’, *obespečítlaš* ‘provide oneself’, *proveřatlaš* ‘be checked’, *rešítlaš* ‘be solved’

Aux. *šogâltaš*, Lm. ‘stand around’, P. 236, Am. iterative, Tf. 36, Tokens 2  
Rv. 4: *skanirovatlaš* ‘scan’, *suditlaš* ‘sentence’, *točítlaš* ‘sharpen’, *zavoditlaš* ‘start, wind up’

Aux. *šogaltaš*, Lm. ‘put, place, stand’, P. 230, Am. resultative, Tf. 37, Tokens 52  
Rv. 3: *arestovatlaš* ‘arrest’, *betonirovatlaš* ‘concrete’, *stroitlaš* ‘construct’

Aux. *šogalaš*, Lm. ‘stand up’, P. 228, Am. resultative, Tf. 113, Tokens 27  
Rv. 3: *maskirovatlaš* ‘be masked’, *stroitlaš* ‘draw up in a line’, *tormozitlaš* ‘brake’

Aux. *šínčáš<sup>I</sup>*, Lm. ‘sit down’, P. 222, Am. resultative, Tf. 158, Tokens 8  
Rv. 3: *kleitlaš* ‘be glued’, *lepítlaš* ‘be sculpted’, *maskirovatlaš* ‘be masked’

Aux. *kāškaš*, Lm. ‘throw; scatter’, P. 156, Am. resultative, Tf. 53, Tokens 4  
Rv. 3: *bombitlaš* ‘bomb’, *gořačítlaš* ‘excite’, *χuliganitlaš* ‘behave like a hooligan’

Aux. *purtaš*, Lm. ‘bring in’, P. 214, Am. path ‘in(to)’, Tf. 19, Tokens 6  
Rv. 2: *kačatlaš* ‘pump’, *pečatlaš* ‘print’

Aux. *mijaš*, Lm. ‘come, go’, P. 186, Am. gradual; path ‘up to’, Tf. 43, Tokens 2  
Rv. 2: *evakuirovatlaš* ‘be evacuated’, *sdatlaš* ‘hand over’

Aux. *töčáš*, Lm. ‘try, attempt’, P. 253, Am. improper execution, Tf. 11, Tokens 3  
Rv. 1: *suditlaš* ‘have legal proceedings’

Aux. *βolaš*, Lm. ‘descend’, P. 131, Am. path ‘down’, Tf. 19, Tokens 3  
Rv. 1: *pikirovatlaš* ‘dive (when flying)’

Aux. *namijaš*, Lm. ‘bring’, P. 192, Am. path ‘up to’, Tf. 6, Tokens 1  
Rv. 1: *koptitlaš* ‘give off soot’

Aux. *küzaš*, Lm. ‘climb, rise’, P. 177, Am. path ‘up’, Tf. 25, Tokens 1  
Rv. 1: *pikirovatlaš* ‘dive (when flying)’

Aux. *ertaš*, Lm. ‘go by’, P. 145, Am. path ‘past’, Tf. 26, Tokens 1  
Rv. 1: *stročítlaš* ‘stitch’

Aux. *šuaš<sup>II</sup>*, Lm. ‘throw’, P. 239, Am. resultative, Tf. 64, Tokens 0  
Rv. 1: *gladitlaš* ‘iron’