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Basic causative verb patterns in Uralic: Retention and renewal in grammar and lexicon

Abstract: This paper presents the formation of causative verbs and different causativization strategies in the Uralic languages as evidenced by six verb sets in 22 languages. The sample is a selection of basic verbs from a larger database including altogether 21 non-causal and causal verb pairs based on a slightly revised version of Nichols, Peterson and Barnes (2004). Our sample illustrates the big picture of causativization in Uralic in the light of three animate verb pairs ‘eat’ / ‘feed’, ‘see’ / ‘show’, ‘fear, be afraid’ / ‘frighten, scare’ and three inanimate non-causal / causal pairs, namely ‘burn (intr.); catch fire’ / ‘burn (tr.); set afire’, ‘dry (intr.); get dry’ / ‘dry (tr.), dry out’ and ‘be straight; straighten out’ / ‘straighten; make straight’. The sample shows some variation in the causativization strategies across the language family and different lexical types. However, the dominating characteristic of almost all investigated cases is that the Uralic languages prefer valency changing affixal morphology whereas other strategies are more random and result from verb-specific and language-specific historical development. A qualitative analysis of the diachronic development shows that, actually, most deviating patterns originate from former valency changing affixal morphology patterns as well.

Keywords: causative verbs, causativization, morphology, derivation, Uralic languages, language change

1 Introduction

This paper aims to shed light on the most typical features of causal verbs and their non-causal pairs in the Uralic languages from a diachronic perspective. We discuss verb pairs like the following, which we use here to present our terminology:

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Table 1: Morphological causativization strategies of six verb sets in the Uralic languages: Non-causal and causal verb pairs in Finnish.

	Non-causal	Causal
Finnish	nukk-u-a ‘sleep’	nuk-u-tta-a ‘put to sleep’
	sleep-REFL/PASS-INF	sleep-REFL/PASS-CAUS-INF
	syö-dä	syö-ttä-ä
	eat-INF	eat-CAUS-INF
	kätke-yty-ä ‘hide’	kätke-ä ‘hide (s.th.)’
	hide-DECAUS-INF	hide-INF

In all three of these pairs the verb semantics is the same: the non-causal describes a state or activity and the causal describes causation of the state or activity. But the morphology differs: in the first two pairs the causal member has a causative suffix *-tta*, while in the third pair the causal has no suffix and the non-causal has a decausative, or reflexive, suffix *-yty*. The essence of causativization is derivation of a causal verb from a non-causal one by some overt morphological means, and causative is the usual term for a verb affix that does this, or for the whole derived verb. Decausative is morphology that derives a non-causal from a causal; reflexive is a common term for such morphology in various grammatical traditions.¹

The pair ‘sleep’ : ‘put to sleep’ has a suffix *-u-*, glossed REFL/PASS above, which originated as a decausative or more generally intransitive marker, but by now has lost its function and is just a part of the verb stem. Henceforth we ignore such suffixes.

Fairly standard terms for the valency and argument structure are given in Table 2.

However, since there remain open theoretical questions in the syntactic and semantic description, and none of this is at issue in this paper, we maintain that argument structure, valency, and semantic roles just describe the syntactic roles as subject for intransitives, subject and object for transitives, and agent, causee, and object for causativized transitives.

Studies on causatives have shed light on their typological properties from a cross-linguistic viewpoint and shown differences in causativization and decausativization strategies across the world’s languages. The scale of causativizing strategies alternates between synthetic and analytic verb constructions. Lexically and morphologically totally independent suppletive pairs form the most transparent con-

¹ We note that the term anticausative also exists in the literature, but it mostly describes the syntax of a construction with a decausative verb. We use decausative only for morphology that derives a non-causal verb from a derived causal verb.

Table 2: Functional properties of non-causal/causal verb pairs.²

	<i>nukkua</i> ‘sleep’		<i>nukuttaa</i> ‘put to sleep’		
Arguments	S		A	O	
Valency	NOM		NOM	GEN/PART	
Semantics	Theme		Agent	Patient	
	<i>syödä</i>	‘eat’	<i>syöttää</i>	‘feed’	
Arguments	A	O	A	R/A	O
Valency	NOM	GEN/PART	NOM	ALL	GEN/PART
Semantics	Agent	Patient	Agent	Causee	Patient

trast between causal and non-causal verbs, while ambiguous (labile, ambitransitive) verbs have both functions: they do not distinguish formally between the non-causal and causal verb but make a distinction in the argument structure (such verbs are frequent cross-linguistically). In general, valency classes and changes in valency, such as causativization, have a direct influence on clausal argument structure, alignment and transitivity prominence (Haspelmath 1993; Shibatani and Pardeshi 2002; Nichols, Peterson and Barnes 2004; Malchukov and Comrie 2015a, 2015b).

Since a wordlist-based typology of basic valency orientation was proposed in 2004 (Nichols, Peterson and Barnes 2004) there has been work on individual languages, some historical comparison using the typological idea (Kulikov 2009; Luraghi 2012; Arkadiev and Pakerys 2015; Holvoet 2015; Nau 2015; Lavidas and Kulikov 2018), but no exhaustive survey of a language family, and virtually no work of this type on Uralic. This paper remedies these gaps with a survey of causativization strategies in this particular North Eurasian language family, using an expanded version of the wordlist of Nichols, Peterson and Barnes (2004), and proposing some major typological and historical trends in Uralic.

Most Uralic languages heavily rely on affixal valency-changing morphology, i.e. deriving a causal verb from a non-causal one, which is the most frequent way to form causative verbs. The basic pattern involves derivation from an underived verb stem as in North Saami *borrat* ‘eat’ → *borahit* ‘feed’ (1–2) (cf. Nickel and Sammallahti 2011: 580–591).

North Saami

- (1) *Dat mearkkaša ahte dat borrá eará elli-id*
 it mean.3SG that it eat.3SG other animal-PL.GEN(-ACC)
 ‘It means that it eats other animals.’

² Abbreviations of the arguments: A = agent, O = object, R = recipient, S = subject.

- (2) *Ma-id* *sii* *galge-t* ***bora-hi-t***
 what-PL.GEN(-ACC) they must-3PL eat-CAUS-INF
mána-i-de?
 child-PL-ILL
 ‘What should they give the children to eat?’

The Saamic verb *borra-t* eat-INF ‘eat’ belongs to the inherited Uralic vocabulary, and both the root etymology and the grammatical pattern of causativization, with underived noncausal, come from the protolanguage. As a rule, causativization as illustrated in (1–2) involves valency change and increases the number of arguments. The syntactic arguments agent, object, and causee are obligatory in the causal sentence (2), whereas the non-causal verb in (1) has no causee because its subject corresponds to the causee of the causative example. For verbs like ‘eat’ the object is not always obligatory but always possible. Thus, verbs like Saami *borrat* ‘eat’ may function as both intransitive and transitive, whereas the causal counterpart is derived and always transitive.

Theoretically, both causativizing and decausativizing are possible. Decausative verbs can be derived from causative ones in many Uralic languages. North Mansi (cf. Dolovai 2001), for instance, mainly follows the pattern manifested in North Saami, above (1)–(2). A default causative verb such as North Mansi *kotare-nkwe* burn-INF ‘burn (something)’, from which the non-causal pair *kotartax-tuŋkwe* ‘get burned’ is derived, is very rare (3)–(4).

- North Mansi
- (3) *n’ělm-u-m* *tērpi-n* *ta* ***kotara-we***
 tongue-1SG.PX medicine-LAT it burn-3SG
 ‘My tongue burns because of the medicine.’
- (4) *manr-iy* *naskass-iy* ***kotər-ta-xt-uŋkwe?***
 what-TRA in.vain burn-CAUS-REFL-INF
 ‘Why would you burn yourself in vain?’

More generally speaking, causative derivations can be easily decausativized by applying the same strategy as in (4). A closer look at individual languages and selected verb sets shows exceptions to our hypothesis that in Uralic causal verbs are based on affixal causatives (alternatively augmentation, the cover term for causativization and other kinds of affixally marked derivation of causals). Ambitransitive (labile) verbs, for instance, are far less frequent in Uralic than in many other languages (Creissels 2015), and in fact they are almost non-existent in Uralic.

In Uralic causatives are formed from both intransitive and transitive verbs as well as nouns and adjectives. As a rule, the character of the non-causal member in terms of parts of speech does not influence the way causatives are used. Denominal and deadjectival causative verbs behave syntactically like those derived from intransitive verbs and have the same kind of argument structure. In Finnish *syö-dä* eat-INF ‘eat’ → *syö-ttä-ä* eat-CAUS-INF ‘make (one) eat’ and *kuiva* ‘dry’ (adjective) → *kuiva-tta-a* dry-CAUS-INF ‘make (one) dry’, for instance, the non-causal roots differ in part of speech but syntactically both agent and object are obligatorily dependents of the causative (5)–(6).

Finnish

- (5) *Itse-kin* ***syö-ttä-n*** *koira-lle-ni* *myös*
 oneself-FOC eat-CAUS-1SG dog-ALL-1SG.PX also
kana-n *luu-t*.
 chicken-GEN bone-PL
 ‘I myself feed my dog with chicken bones, too.’

- (6) *Tuuli* ***kuiva-ttaa*** *kasve-ja*.
 wind dry-CAUS.3SG plant-PL.PART
 ‘The wind dries the plants up.’

The relative proportion of denominal causatives is, however, small and they are considerably less frequent than deverbal causatives. Diachronically, distinguishing deverbal from denominal causatives is important for describing the origins of individual pairs but not for typologizing languages or the whole family.

We may assume that aside from language-specific varying causativization strategies there are verb-specific reasons that explain the use of deviating strategies from the assumed main pattern based on derivation (specifically, augmentation). Syntactically, the most salient characteristic of causativized transitive verbs is the optional ditransitive argument structure (see (5)) involving a similar valency change and increase of arguments as causativized intransitive verbs have. Furthermore, decausativization is also typical of Uralic causative verbs and may allow even secondary causativization of decausativized verbs (as in Finnish *kasta-a* dip-INF ‘dip’ → *kast-u-a* dip-REFL-INF ‘get wet’ → *kast-u-ttaa* dip-REFL-CAUS ‘make wet’). The strong tendency to causativize any non-causal verbs, either underived or derived, correlates with the universal proposing that if a language allows synthetic causatives of transitive verbs used in three-argument clauses, it also allows synthetic causatives of intransitive verbs (Nedjalkov 1966; Haspelmath 2016: 40–42). This, however, remains outside of the scope of this article.

We next introduce the data and verb sample used here (Section 2). This will be followed by a typological overview on the main morphological differences of causativized verbs in Uralic in the light of the selected six verbs (Section 3). Finally, diachronic tendencies that affect the verb/noun/adjective + CAUS relationship either by preserving the inherited pattern or deviating from it will be discussed in the light of the verbs ‘straighten’ and ‘dry’ in individual languages (Section 4).

2 Language sample and data

The data used in this paper mainly come from the database of the project *The causative alternation in Uralic* (UrCaus) (University of Helsinki). The database contains information from 22 Uralic languages ranging from the easternmost Samoyedic languages in Siberia to the westernmost Saamic languages in Northern Scandinavia and consists of 21 verb sets with morphological analysis, type of derivation, synonyms, valency, and glossed examples; additional examples from other sources are used here. The sampling of data is based on the verb list in Nichols, Peterson and Barnes (2004), which has been slightly revised. The identification of causal verbs takes place by determining causal pairs on functional and morphological grounds involving valency change. The database contains altogether roughly 2300 causal verb entries. Besides the basic pair consisting of a non-causal and causal verb, synonyms and near-synonyms displaying either the same or different verb root were included. Given that derivational morphology is widely used in Uralic, different aspectual features such as boundedness and continuity increase the number of adjacent verbs.

The current article investigates a more limited set of six verb sets and the causativizing pairs in more detail. The verb pairs under observation are (numbers refer to the numbering of Nichols, Peterson and Barnes (2004)) 4. ‘eat’ / ‘feed; give food’, 6. ‘see’ / ‘show’, 8. ‘fear, be afraid’ / ‘frighten, scare’, 11. ‘burn; catch fire’ / ‘burn, set afire’, 14. ‘dry; get dry’ / ‘dry (out)’ and 15. ‘be straight; straighten (out)’ / ‘straighten; make straight’. The first three pairs typically have animate S/O and the last three have inanimate S/O. The selected verbs include both inherited verbs (‘eat’, ‘see’, ‘fear’, ‘burn’) and predicates that are usually adjectives in Uralic languages (‘dry’, ‘straight’).

The formation of causal pairs of these six verb sets in 22 selected Uralic languages could maximally give 132 hits based on the selection of primary correspondence between a word and meaning. The total found is 129 as information was not available in some individual cases. Six parameters were chosen to distin-

guish between alternating causativization strategies on morphological grounds. Table 3 summarizes the distribution of the six strategies in the sample. Causativizing affixal morphology assigns segmental derivation (augmentation). Other changes in affixal morphology such as derivation of the non-causal pair from an unmarked causative verb are very rare in Uralic. Synchronically unproductive valency changing opaque morphology partly overlaps with changes in the verb root, which may contain a consonant originating from an affix that is non-transparent from the perspective of synchronic morphology. Radical indicates change in the verb root. Suppletion shows asymmetric pairs that display different verb roots, while analytic forms are light verb pairs or other phrases consisting of free words. Functionally ambiguous (labile) verbs that can be described as both causal and non-causal do not occur in the selected sample and are not mentioned in the table.

Table 3: Morphological causativization strategies of six verb sets in the Uralic languages.³

Language	eat / feed	see / show	fear / scare	burn	dry	straight
Kamas	S	S	S	R	C	C
Selkup	C	C	C	S	C	
Tundra Nenets	C	C	C	C	C	C
Nganasan	C	C		C	C	
East Khanty	C	S	C	C	C	A
North Khanty	C	S	C	A	A	A
(North) Mansi	C	C	C	S	C	A
Hungarian	C	S	S	C	C	C
Udmurt	S	C	C	C	C	C
Komi	S	S	C	R	R	C
Mari	S	S	C	C	R	C
Erzya	S	C	S	O	R	O
Livonian	C	C	S	S	O	A
South Estonian	C	C	S	C	R	C
Estonian	C	C	S	C	C	C
Votic	C	C	S	C	C	C
Veps	C	S	S	C	C	N
Finnish	C	C	C	C	C	C
Kildin Saami	C	S	C	C	R	O

³ Abbreviations: A = analytic, C = affixal causative, N = affixal non-causal, O = opaque, R = radical morphology, S = suppletion.

Table 3 (continued)

Language	eat / feed	see / show	fear / scare	burn	dry	straight		
Inari Saami	C	S	C	C	R	R		
North Saami	C	S	C	C	C	C		
South Saami	C	N	C	C	R	C		
Morphology							Total	
Analytic				1	1	4	= 6	(4.65%)
Affixal causative	17	11	13	15	13	12	= 81	(62.79%)
Affixal non-causal		1				1	= 2	(1.55%)
Opaque				1	1	2	= 4	(3.10%)
Radical morphology				2	7	1	= 10	(7.75%)
Suppletion	5	10	8	3			= 26	(20.16%)
Total							= 129	(100%)

The sample shows the dominating role of derivational morphology and causativizing affixes in contemporary Uralic languages in all selected verb sets. The number of diverging patterns varies, whereas deviations from the main type are, as a rule, relevant only for the analysis of individual verbs in the narrow sample. If individual languages deviate from this pattern, it is probably caused by secondary development in most cases. Yet, individual verbs such as 4. ‘see’ / ‘show’ demonstrate that suppletion can be a lexically relevant strategy as well. A large cross-linguistic sample may show relevant tendencies concerning the historical development of the language family. However, this topic will be discussed on another occasion.

3 Regularities and irregularities in causativization strategies

This section will include examples of the six verb sets to illustrate the typological and cross-linguistic divergence of causal verbs in Uralic. Conservative morphological and morphosyntactic patterns illustrate inherent long-term characteristics of this particular language family. Language and branch-specific deviations from the dominating pattern are hypothetically either areally or verb-specifically limited innovations highlighting the areas in which inherent features are prone to change or depend on lexical typology. Differences in the behavior of animate and inanimate verbs will also be pointed out.

3.1 Affixal morphology

Affixal causativization is most frequent in all six verbs selected for this paper, although in individual cases such as ‘see’ / ‘show’ other morphological strategies may be almost as frequent. As a rule, the derivational suffixes descend from the assumed Proto-Uralic *-pt- (*-kt-), which has preserved its productivity as a segmental affix in most investigated verbs in most languages. South Estonian verb ‘eat’ / ‘feed’ shows the maintenance of the inherited causative affix, although morphological erosion has, in general, strongly affected South Estonian (7)–(8). This is a more fundamental characteristic of the Uralic languages and their inherent typological characteristics, because they typically display a larger set of derivative affixes adding specific semantic and syntactic features to individual verbs. The main rule is that, although a given affix such as the causative suffix may be very frequent, there are always exceptions which distinguish derivational affixes from considerably more regular inflectional categories.

South Estonian

- (7) *mi süü-miq kolm kōrd päävä-n*
 we eat-1PL three time day-LOC
 ‘We eat three times a day.’

- (8) *ta süü-t tsiko*
 (s)he eat-CAUS.3SG pig.PL.PART
 ‘(s)he is feeding pigs’

As Table 3 shows, there is a good deal of divergence between verb sets in individual languages, although rather similar patterning between the Finnic languages on the one hand, and Saamic languages, on the other hand, suggests that the degree of genealogical affinity has some importance as well. Affixal causativization in North Khanty, for instance, is not dominant as shown by other verb pairs as well, whereas the low frequency of affixal morphology in Erzya is caused by more random options in Table 3. North Khanty diverges from all other languages in the sample, and alternative strategies are frequently used. Individual verb pairs may use segmentable affixes, and have a parallel possibility for more productive analytic patterns. The verb *leti* ‘eat’ is etymologically different from semantically corresponding words in other Uralic languages and illustrates alternating causativization strategies in North Khanty as both an affixal causative and an analytic construction are possible: *le-ti* eat-INF ‘eat’ ~ *jõxi le-ti* ASP eat-INF ‘eat (momentaneous)’ / *la-pət-ti* eat-CAUS-INF ‘feed’ ~ *nõx la-pət-ti* ASP eat-CAUS-INF ‘feed (continuous)’. The basic pattern

based on affixal valency change (9–10) and the use of the affix *-pt- can be considered as the inherited one, which has mostly been replaced by secondary means in the causativization of other verbs.

North Khanty

- (9) *Maša jöχi löŋ-m-atən ma lat le-s-əm*
 Masha home enter-PTCP.PST-3SG I soup eat-PST-1SG
 ‘When Masha entered home, I was eating soup.’

- (10) *ant-em ŋawrem-əl la-pət-əl*
 mother-1SG child-3SG eat-CAUS-3SG
 ‘My mother is feeding her child.’

Considering Table 3, above, it is striking that all Uralic languages spoken in Central Russia, namely Udmurt, Komi, Mari and Erzya covering three distinct branches, display a suppletive pattern for ‘eat’ + CAUS. Mostly ‘eat’ in these languages descends from old inherited vocabulary, although semantic changes have taken place between them and etymologically corresponding lexemes. The causal pairs, in turn, either manifest semantic changes in comparison with their etymological cognates, cf. Erzya *andoms*, Moksha (Mordvinic) *andəms* ‘feed’ ~ Finnish *antaa* ‘give’ and Hungarian *ad-* ‘give’, or they do not have cognates in other Uralic languages as Udmurt *śudyny* ‘feed’, Mari *pukšaš* ‘feed’.

3.2 Other affixal changes

Given the dominating role of affixal morphology, any other affixal changes are very rare in the data (cf. Table 3). In Veps the causal *oigeta* ‘straighten’ is an exception to the rule as the non-causal pair *oigetas* ‘straighten (oneself); make one’s way’ displays valency-decreasing morphology (11a-b) and not the causativizing type (12a-b). Unlike the derivational morphology that is characteristic of causativization, the non-causal verb is morphologically more complex in comparison with the causal. Historically, both verbs are based on the adjective *oiged* ‘straight; even; right’. The non-causal member is a reflexive verb, which inflects for a specific conjugation type. Both verbs display secondary meanings and, actually, the most typical meaning of *oigeta* is ‘send; direct’, *oigetas* ‘take one’s way (further)’ in contemporary Veps.

Veps

- (11) a. *rungu-n kibišta-b, oige-tas emboi*
 back-GEN(-ACC) hurt-3SG straight-REFL-INF NEG.1SG.can
 ‘My back is hurting, I cannot straighten myself.’ (SVJa 377)
- (11) b. *Me-ide-n kanz most oige-ti-he ede-mba.*
 we-PL-GEN family again straight-PST-REFL.3PL further-CMP
 ‘Our family made one’s way further, again.’
- (12) a. *oige-ta naglo-i-d pal’laize-l*
 straight-INF nail-PL-PART hammer-ADE
 ‘straighten nails with a hammer’
- (12) b. *Muga hăn tahto-i oige-ta naiž-ide-n*
 so (s)he want-PST.3SG straight-INF woman-PL-GEN
energia-d da väge-d voina-ha.
 energy-PART and power-PART war-ILL
 ‘So she wanted to direct women’s energy and power to the war.’

A distinct reflexive conjugation is not very widespread in the Uralic languages, although non-causal derivative verbs that display an affix labeled reflexive(-passive) occur very widely. In Finnic, a reflexive conjugation is attested in the contact zone of Russian involving South Estonian, Votic, Ingrian, Karelian and Veps (Koivisto 1995). In Veps, this is a fairly productive feature which, in the given case, enables a parallel use of another parameter, the contrast between reflexive and non-reflexive verbs (Grünthal 2015: 120–149). In the context of this article, this feature is secondary and both language- and verb-specific.

3.3 Causativizing change in verb root

Introductions to the Uralic languages often emphasize the role of suffixal morphology, whereas flexion, stem alternations and analytic constructions, for instance, exist as well but are less characteristic (Majtinskaja 1979, 1993: 24–29; Comrie 1988: 455, 459–469; Hajdú 1993: 12–19; Abondolo 1998: 30–31). This, however, admits many exceptions as some kind of stem alternation occurs across the language family. In our sample, the verb ‘dry’, for instance, illustrates the minority pattern, in which causativization is based on changes limited to the verb root. In Inari Saami, a language that displays both affixal morphology and vowel metaphony, the verb set *kuškâ-đ* dry.up-INF ‘dry (up)’ (intr.), *kuški-đ* dry.up-INF ‘dry (up)’ (tr.) and a secondary affixal causal *kuškâ-di-đ* dry.up-CAUS-INF ‘dry (up) (something)’ are all related to the adjective *koškes* ‘dry’.

Inari Saami

- (13) *Juuva-h koške-h pakkâ já arvettis*
 river-PL dry-3PL hot and rainless
keesi ääigi.
 summer(NOM-GEN-ACC) time.GEN-ACC
 ‘Rivers dry up during a hot and rainless summer.’
- (14) *Piäiváš já pieggâ kuški-v jotelávt*
 sun and wind dry-3DU fast
Myerji pihtâs-ijd.
 Myerji.GEN cloth-PL.ACC
 ‘The sun and wind dried Mary’s clothes fast.’

Examples (13)–(14) illustrate the overlapping of lexically ruled morphology with category-based morphology, which has regular affixal inflection. In the given case, the inflectional categories are segmentable, whereas valency change is merely radical. Synchronically, this is a language-specific deviation from more frequent causativization strategies in Inari Saami. This unexpected feature has parallels in several other Uralic languages (see Table 3, above), which suggests that the reasons can be found in the historical development of these particular forms. We return to this issue in Section 4.4, below.

3.4 Suppletion

After affixal causativization suppletion is the second most frequent way of forming non-causal / causal contrasts in Uralic, which emphasizes the importance of lexical properties for valency change. There are some other individual cases in which the basic verb and its causal counterpart both lack a productive causal or non-causal marker, which is functionally unnecessary, if the semantic difference between the verb pair is lexically encoded. In this respect suppletion shares some of the characteristics of changes in the verb root, which were discussed in Section 3.3. In example (15)–(16) the causativizing strategy of a basic animate verb ‘eat’ / ‘feed’ in Udmurt, a language with regular affixal morphology, is based on suppletion and diverges from the more frequent derivational pattern X + CAUS (see (1), (2), (5)–(9) above).

Udmurt

- (15) *čapak si-s'ky-sa puki-s'ko-my val*
 just eat-REFL-CVB sit-PRES-1PL be.PST
 'We were just sitting and eating.'

- (16) *so pinal-z-e s'uđe*
 (s)he child-3SG-ACC feed.PRES.3SG
 '(S)he is feeding her/his child.'

Cross-linguistically, a wide-spread exception is the verb pair 'die' and 'kill', which typically form a suppletive pair in global typological data (Botne 2003; WATP). This is valid in the Uralic languages as well. In our sample of six verb sets, the verb pair that has most suppletive pairs is 'see' / 'show'. This kind of pattern is attested in three different macro-areas, namely Siberia (Khanty (17)–(18), Kamas), languages of Central Russia (Komi and Mari), as well as Saamic (19)–(20) in Scandinavia, and Hungarian as the geographical outsider. Hence, the tendency to use suppletion for this particular verb is probably more due to lexical typology than language-specific or areal factors. Khanty, unlike other Uralic languages, displays a different alignment pattern and manifests an ergative structure with a non-nominative agent. In Inari Saami (20), the causal verb *čäitti-d* show-INF additionally has a causative suffix -t-, which, given the lack of an underived counterpart from the same root, cannot be distinguished from the verb stem. The evidence for the assumed underived word stem is found in the South Saami cognate *tjaajie-h* show-INF, cf. *vuojne-dh* see-INF 'see' → *vuesie-hti-dh* show-CAUS-INF 'show' (for reconstruction of the Inari Saami word descending from '(to) head', see Sammallahhti 1998: 234).

North Khanty

- (17) *Mašaj-a jām-a ni-t-a*
 Maša-LAT good-LAT see-PASS-3SG
 'Masha sees well.'

- (18) *ant-em nāwrem-a χör-ət at-ət*
 mother-1SG child-LAT picture-PL show-3SG
 'The mother shows pictures to the child.'

Inari Saami

- (19) *Tarja ooin-ij Raansu aauto.*
 Tarja see-PST.3SG Ransu.GEN auto.NOM-GEN-ACC
 'Tarja saw Ransu's car.'

- (20) *Ransu čaait-ij aaauto-s Taarja-n.*
 Ransu show-PST.3SG car-3SG.PX Tarja-ILL
 ‘Ransu showed Tarja his car.’

The number of lexically dissimilar expressions of ‘see’ / ‘show’ is almost as high as that of pairs with affixal morphology, which reflects the fact that almost all Finnic languages display it, and they are more numerously represented in the sample than other Uralic branches (cf. Table 3, above). In Finnic, suppletion is typically used for verbs expressing ‘fear’ / ‘frighten’, as in South Estonian (21)–(22), which like Inari Saami in (20) displays a causative suffix in the causal member. In this case the causal member is a derivative of another non-causal verb (*(h)irmu-daq* get.scared-INF ‘get scared’ but the basic meaning ‘fear’ is expressed by another inherited verb, which etymologically belongs to the older Proto-Uralic layer.

South Estonian

- (21) *latś pelä-ś ütsindä kodo min-näq.*
 child be.afraid-PST.3SG alone home.ILL go-INF
 ‘The child was afraid of going home alone.’

- (22) *susi pišt akna-st saba si-sse,*
 wolf put.PST.3SG window-ELA tail.GEN-ACC in.ILL
irmu-t lamb-i-t.
 frighten-CAUS.PST.3SG sheep-PL-PART
 ‘A wolf put its tail in from the window and frightened the sheep.’

Compared to affixal morphology, suppletion lacks predictability and is less systematic in the way it assigns valency change and causativization both in individual languages and verb sets. Hence the way valency change is assigned depends primarily on verbal semantics in individual languages and verb sets. The result is that affixal causatives partly resemble inflectional units and tend to be category-based, while suppletion is lexically based. The shaded areas in Table 4 show those slots which display absolute or optional suppletion for the pairs ‘eat’ / ‘feed’ and ‘fear’ / ‘frighten, scare’ in our sample. Absolute suppletion indicates that there is no synonymic alternation that would allow the selection of the same root for both the causal and non-causal verb. Optional suppletion makes a distinction between the primary non-causal verb and its causal counterpart but the verb set involves a synonym which is a lexical cognate of one or the other verb.

Udmurt and Erzya display absolute suppletion in the causal member of ‘eat’ / ‘feed’, whereas Hungarian is the only language that displays absolute suppletion of ‘fear’ / ‘frighten’. The number of possible suppletion pairs is higher, if one con-

Table 4: The causal pair of ‘eat’ / ‘feed’ and ‘fear’ / ‘frighten, scare’ based on suppletion (shaded areas).

	‘eat’	‘feed; give food’	‘fear’	‘frighten, scare’
Selkup	am-	apsəta-	lɛri- / lɛrimpi-	lɛrəpčə-
North Khanty	łeti	łapətti	pätti	pältaptəti
Mansi	teenkwe	titunkwe	pilunkwe	piluptankwe
Hungarian	eszik	etet	fél	ijeszt
Udmurt	s’iyny	s’udyny	kurdany	kurda-ty-ny
Mari	kočkaš	pukšaš	lüdaš	lüdyktaš
Erzya	jarsams	andoms	pel’ems ~ tandadoms	tandavtoms
Estonian	sööma	söötma	kartma ~ hirmuma	hirmutama ~ hirmu tegema
Finnish	syödä	syöttää	pelätä ~ pelottaa	pelästyttää
North Saami	borrat	borahit	ballat ~ suorganit	suorgahit

siders the difference between the primary verb denoting ‘fear’ and its causal pair. In this case, Erzya, Estonian and North Saami causal pairs could be considered as suppletive. However, in Erzya *tanda-vto-ms* get.scared-CAUS-INF ‘frighten’ has a non-causal counterpart *tanda-do-ms* get.scared-MOM-INF ‘get scared’, whereas the old inherited Uralic verb *pel’e-ms* fear-INF is the primary verb denoting ‘fear’. Likewise, North Saami *balla-t* fear-INF ‘fear’ belongs to the inherited Uralic lexicon, while causal *suorga-hi-t* get.scared-CAUS-INF ‘frighten’ is a counterpart of *suorga-ni-t* get.scared-TRA-INF ‘get scared’.

3.5 Analytic verb pairs

Assuming that language contacts may affect the distribution of various causativization patterns, one would expect that analytic constructions are gaining more space in western Uralic languages such as Livonian and Estonian that have been heavily influenced by the neighboring Baltic and Germanic languages. And in fact, the spread of analytic constructions has taken place in some other verb phrase types and several Estonian verbs (23–24) display alternative causativization strategies (Erelt 2017: 231–235).

Estonian

- (23) a. *Mees* ***käivi-ta-s*** *auto*.
 man walk-CAUS-PST.3SG car.GEN-ACC
 ‘The man started the car.’
- (23) b. *Mees* ***pan-i*** *auto* ***käi-ma***.
 man put-PST.3SG car.GEN-ACC walk-INF
 ‘The man started the car.’ (Erelt 2017: 231)
- (24) a. *Kee-gi* ***rõõmus-ta-b*** *mind*.
 who-FOC happy-CAUS-3SG I.ACC
 ‘Someone is making me happy.’
- (24) b. *Kee-gi* ***tee-b*** *mind* ***rõõmsa-ks***.
 who-FOC do-3SG I.ACC happy-TRA
 ‘Someone is making me happy.’ (Erelt 2017: 235)

For (23b) our claim is not that the verb *panema* ‘put’ calques any particular Germanic or Baltic causal construction, but that the whole structure of auxiliary or light verb plus lexical verb is presumably influenced by Germanic and/or Baltic patterns.

In the sample of basic verbs analyzed in this paper, a general tendency of shifting towards more analytic constructions is not seen. The language that diverges most in this limited sample is North Khanty, spoken in Northwestern Siberia. There the expression ‘burn’ is a phrasal predicate based on the construction ‘fire’ + ‘eat’ (25), and a similar construction occurs in some other Uralic languages in Siberia, such as Mansi and Eastern Khanty. The causativization of ‘burn’ is the same as for the independent verb to ‘eat’ / ‘feed’ (26).

North Khanty

- (25) *tūt* *le-l*
 fire eat-3SG
 ‘burn’
- (26) *imi* *tut* *la-pt-əs*
 woman fire eat-CAUS-3SG
 ‘A woman makes a fire.’

The Khanty verb phrase displays more analytic constructions than most other Uralic languages. While analytic constructions are secondary in southern Finnic languages, such as Livonian, South Estonian and Estonian, the age of analytic constructions in the Ugric languages is a more ambiguous question (Honti 1999,

2013: 303–317; Honti and Kiefer 2003). It must also be noted that certain North Khanty verbs, such as *leti* ‘eat’ / *lapətti* ‘feed’, which is included in the column of affixal morphology in Table 3, above, actually have phrasal verb synonyms *jōχi leti* ‘eat (momentaneous)’ / *nōχ lapətti* ‘feed (continuous)’ showing the increase of analytic constructions.

These few examples show the structural and lexical diversity which characterizes the Uralic causatives. We will next proceed with an overview of main diachronic trends in their development.

4 Diachronic tendencies

Given that the default causal verb in Uralic is based on augmentation and a derivative verb, the diachronic analysis of most verb sets has to account for the maintenance and renewal of morphological units. The diachronic development of individual verbs in individual languages is hypothetically open for three alternatives either maintaining or compensating the earlier pattern. The alternatives for preserving the inherited pattern are gradual erosion and lexicalization of one member of a verb pair or replacement of a synthetic causal verb by analytic constructions. Gradual reduction of a formerly segmentable causative structure eventually creates a non-segmentable lexeme with causative semantics. Thus, considering affixally marked causatives, we may assume three basic mechanisms affecting their diachronic development:

- (i) The inherited augmentation pattern X + CAUS is preserved, although the affix may undergo some phonological changes.
- (ii) The inherited pattern X + CAUS has eroded and gradually led to the fusion of the two morphemes.
- (iii) The inherited pattern X + CAUS is no longer productive, and secondary analytic light verb constructions have emerged instead.

All three alternatives suggest that the causativized verb undergoes the diachronic development of alternating causal patterns, whereas changes in the argument structure are sensitive to the semantic properties of the verb regardless of the morphological structure.

The wide-spread similarity between causative affixes in contemporary Uralic languages displaying affixal *-t-* presumably originates from a shared proto-language stage. The high degree of stability of the proto-language affix **-kt-* or **-pt-* and its maintenance in every branch shows the importance of inherited derivative affixes for causative verbs and, more generally speaking, the word

formation typology of the Uralic languages. Nevertheless, in certain cases, the inherited causativization strategy is blurred by the parallel influence of language contacts. For instance, the heavy Turkic influence on Mari is manifested in causal verbs, too, with the result that the number of different causative suffixes has increased under language contact.

This section will be limited on two diachronic aspects, which are (a) the evolution of the inherited Uralic causative affix, (b) the gradual erosion of segmentable affixes and the lexicalization of affixal causatives. Other diachronically relevant processes such as the decausativization and secondary causativization of individual verbs, the emergence of analytic causatives, and affixal borrowing in a language contact situation will not be discussed here. The following sections are organized so that they correspond to the horizontal parameters in Table 3 and Section 3, above.

4.1 Evolution of the inherited causative affix

As examples in Table 4 show, the transparent feature in the causative affixes of Uralic languages is the derivational segment *-t-*, which typically follows a two-syllable word stem, although in individual cases, such as Hungarian *e-tet-ni* eat-CAUS-INF ‘feed’ the stem may be shorter. The historical development of the Proto-Uralic involves two alternatives. The Samoyedic and Ob-Ugric languages suggest that the Proto-Uralic affix used to be **-pt-* as evidenced in Selkup *l̥eri-* ‘fear’ / *l̥erə-pčə-* fear-CAUS ‘frighten, scare’, North Khanty *pāl-ti* fear-INF ‘fear’ / *pālta-ptə-ti* fear-CAUS-INF and (North) Mansi *pilu-nkwe* fear-INF ‘fear’ / *pilu-ptan-kwe* fear-CAUS-INF ‘frighten’. The more western languages, Mari and Erzya, in which *-vt-* descends from **-kt-*, provide evidence for the variant **-kt* as in Mari *lūda-š* fear-INF ‘fear’ / *lūdy-kt-aš* fear-CAUS-INF ‘frighten’. In standard North Saami the causative affix is reflected as *-h-* as in *suorga-hi-t* fear-CAUS-INF ‘frighten’ but, historically, it originates from a plosive as well, as the Inari Saami variant *polâ-tti-đ* fear-CAUS-INF ‘frighten’ indicates.

The main point here is that the affixal status of the inherited causative derivational affix **-pt-* ~ **-kt-* has been preserved consistently in all Uralic branches and the vast majority of individual languages. The degree to which descendants of the inherited affix are the dominating means of causativization varies.

4.2 Erosion and fusion of the causative affix in the lexical stem

In Table 3 Erzya and Kildin Saami show greater diversity of causativization strategies than other Uralic languages. This is somewhat surprising, because both Mordvinic languages, Erzya and Moksha, have a rich derivative morphology, which is especially characteristic of verbs, and there is a productive causative affix.

The ultimate result of the erosion of morphological affixes is fusion to the stem. The erosion of affixes characteristically leads to the increase of dissimilarity between related languages either through morphological restructuring or complete loss. However, in our sample there are very few cases in which the verb presumably displays a historical affix, which synchronically is a part of the stem, manifesting a complete loss of the affix. The verb pair ‘be straight; straighten (out)’ / ‘straighten; make straight’ in Erzya is an example of this process (27)–(28).

Erzya

- (27) *nuvara* *ser’e-m* *mon* ***vit’-an***
 depressed length-1SG.PX I straighten-1SG
 ‘I will straighten my downcast posture.’ (MdWb 2657)

- (28) *ves’i* ***vit’e-v-s’*** *mon’* *mel’-n’e-m*
 all straighten-REFL-PST.3SG I.GEN mind-DEM-1SG.PX
 ‘My mind has been fully brightened up.’ (MdWb 2658)

Morphologically, the non-causal pair *vit’e-ve-ms* straighten[CAUS]-REFL-INF is derived from the causative basic stem *vit’e-ms* straighten[CAUS]-INF as reflexive(-passive) derivations are often used as non-causativizing affixes in Mordvinic. Nevertheless, the stem *vit’e-* historically originates from the adjective *vijed’e* ~ *vid’e* ‘straight’ and there are numerous nominal and verbal derivations from this particular word (MdWb 2652–2658). Most of them are based on *vid’e*, which is secondary and shortened from *vijed’e* (cf. UEW 824–825). The intervocalic voiceless plosive *-t’-* of the verb *vit’e-ms* straighten.CAUS-INF ‘straighten’ diverges from the voiced *-d’-* of the adjective *vid’e* because the historical causative affix **-kt-*, Proto-Mordvinic *-vt-*, has merged in the stem. This explains the phonological contrast between *-d’-* in *vid’e* ‘straight’ and *-t’-* in *vit’e-ms* straighten.CAUS-INF. The merger is partly caused by the fact that second-syllable mid vowels *e* and *o* drop in front of an affix.

This example is language- and verb-specific to a very large extent. The next section deals with another example that reflects the diachronic properties of the word in Uralic in a more general way.

4.3 Verb root alternation

Change in the verb root is, as a rule, secondary if it occurs in strongly suffixal languages such as Uralic. In our sample, ‘dry’ shows considerably more frequent change in the verb root than the rest of the six verb sets (cf. Table 3, above). Change in the verb root is not attested in Samoyedic and Ugric, whereas at least one language in every Uralic branch on the European side manifests it. In this case, the point of the diachronic development is the historical development of non-verbal predication and verbal nouns, which inflect both as nouns and verbs.

The vast majority of Uralic verbs denoting ‘dry’ in the non-causal (intransitive) and causative (transitive) meaning are derived from the adjective ‘dry’. Synchronically, the stem alternation is seen either in vowel alternation as in Inari Saami *kuškâ-đ* dry-INF ‘dry (non-causal)’ / *kuškiđ* dry.CAUS-INF ‘dry (causal)’, or consonant alternation as Mari *košk-aš* dry-INF ‘dry (non-causal)’ / *košt-aš* dry.CAUS-INF ‘dry (causal)’ (29)–(30). A similar relationship occurs between Erzya *kos’ke-ms* dry-INF ‘dry (non-causal)’ and *kos’t’a-ms* dry.CAUS-INF ‘dry (causal)’ (31)–(32). The relating adjectives are Mari *kukšo* ‘dry (adj.)’, which does not correspond phonologically to the verbs, whereas Erzya *kos’ke* ‘dry (adj.)’ is simply the same stem without verbal markers.

Mari

- (29) *pušenje košk-en*
 tree dry-PST2.3SG
 ‘the tree withered’

- (30) *šinčal-an kočkyš logary-m košt-a*
 salt-ADJR food throat-ACC dry-3SG
 ‘Salty food makes you thirsty.’

Erzya

- (31) *kos’ke čevn’e-ks mon kos’k-i-n’*
 dry kindling-TRA I dry-PST-1SG
 ‘I dried out like a dry kindling.’ (MdWb 873)

- (32) *lis’-n’e-s’ či-ze, n’ej kos’t’-i-nz’e*
 exit-CONT-PST.3SG sun-3SG.px now dry.CAUS-PST-3SG>3SG
 ‘The sun rose, now it has dried it/her/him.’ (MdWb 874)

Synchronically, the distinction between Mari non-causal and causal verb is based merely on the alternation of the plosive ($k \sim t$). The causal stem suggests that, historically, the use of $-t$ in the causal pair could originate from a causative affix. The Erzya parallel sheds more light on the diachronic development. Since the stem *kos'ke* inflects both for nominal and verbal categories, the non-causal variant *kos'ke-ms* must be considered as primary, whereas the causal pair *kos't'a-ms* historically reflects the loss of the word stem mid vowel $-e-$ and, probably, the simplification of a consonant cluster $*kos'k(e)-(k)ta-ms$.

Similarly, the Inari Saami verb pair *kuškâ-đ* dry-INF 'dry (non-causal)' / *kuškiđ* dry.CAUS-INF 'dry (causal)' reflects the ambiguous character of Proto-Uralic $*koška$ 'dry' in terms of parts of speech in that it displays two distinct verb stems, an intransitive and transitive one, both of them verbs, while in most of the languages the intransitive is an adjective. Inari Saami also displays a secondary causative derivation *kuškâ-di-đ* dry-CAUS-INF 'dry (caus.)', which is based on the prevailing affix-changing morphology and compensates for the higher morphological burden caused by lexically encoded and stem-based valency change. In North Saami this is the only alternate (33)–(34) that causes a slight difference between valency changing patterns in comparison with Inari Saami, a neighboring language.

North Saami

- (33) *Muđui* *muorra* ***guoiká***, *go* *mátta*
 otherwise tree dry.3SG when butt
gáhčči-luvvá *hui* *jodanit*.
 resin-CONT.PASS.3SG very fast
 'Otherwise the timber will dry out, when the butt rapidly becomes resinous.'
- (34) *Ma-s* *don* *dál* *galgga-t* ***goika-di-t*** *biktas-iid?*
 where-LOC you now must-2SG dry-CAUS-INF cloth-PL.GEN(-ACC)
 'Where will you dry your clothes now?'

The tendency to prefer affixal valency changing is more stable across the Uralic family than the other ways of forming causative pairs. Both verb root alternation and non-segmental affixal changes are secondary and characteristically random, whereas affixal derivation is diachronically stable in most verb sets. There is not much evidence that secondary analytic light verb constructions would have emerged instead and led to a large-scale typological compensation of eroded constructions. In our sample, exceptions to the rule show some traces of earlier affix changing morphology.

5 Conclusion

The empirical sample of this paper represents a larger database showing variation in causativizing strategies of selected Uralic verb pairs. The limited pilot consisting of six verb pairs shows that synchronically, there is considerable divergence. While affixal morphology is the most frequent and regular way of forming causal verbs across the language family, other strategies such as suppletion and changes in verb root are less regular. The fact that more than sixty percent of the verb sets display causativizing affixes suggests that this is an inherited typological characteristic of the Uralic languages, which, more generally speaking, typically display rich affixal morphology of both nominal and verbal categories.

The number of deviations from the main pattern is not irrelevant, either. Those verb sets that show more than random exceptions to the rule have significance for the analysis of verb-specific and areal development. Verbs like ‘see’ / ‘show’ for instance are clearly prone to replace valency changing pattern with suppletion.

A brief diachronic analysis shows that, historically, the picture of causativizing individual verbs is probably more uniform than the synchronic divergence shows. The erosion of affixal morphology explains the emergence of irregular direction in valency change between the non-causal and causal verbs. Likewise, the emergence of root alternation, a secondary feature in the morphology of several Uralic languages, originates from the loss of morpheme boundaries and merger of morphemes, usually including a causative morpheme.

Abbreviations

ACC	accusative
ADE	adessive
ADJR	adjectivizer
ALL	allative
ASP	aspectual
CAUS	causative
CMP	comparative
CONT	continuous
CVB	converb
DECAUS	decausative
DEM	deminutive
DU	dual
ELA	elative
FOC	focus
FRE	frequentative(continuous)

GEN	genitive
ILL	illative
INF	infinitive
LAT	lative
LOC	locative
MOM	momentaneous
NEG	negative
NOM	nominative
PART	partitive
PASS	passive
PL	plural
PRES	present
PST	past tense
PTCP	participle
PX	possessive suffix
REFL	reflexive
SG	singular
TRA	translative

Appendix – Uralic languages of the sample

(Languages and subgroups are primarily organized from East to West with respect to the whole language family and the division of subbranches, and secondarily from South to North, if the assumed spread of the subbranch had this direction.)

Samoyedic

KAM = Kamas

SEL = Selkup

NENT = Tundra Nenets

NGA = Nganasan

Ugric

KHAE = East Khanty

KHAN = North Khanty

MAN = (North) Mansi

HUN = Hungarian

Permian

UDM = Udmurt

KOM = Komi

Mari

MAR = (Meadow) Mari

Mordvinic

ERZ = Erzya

Finnic

LIV = Livonian

ESTS = South Estonian

EST = (Standard) Estonian

VOT = Votic

FIN = Finnish

VEP = Veps

Saamic

SAAKld = Kildin Saami

SAAIn = Inari Saami

SAAN = North Saami

SAAS = South Saami

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