

An Overview of Khaling Verbal Morphology^{*}

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This article presents a comprehensive description of the Khaling intransitive and transitive verbal paradigms, focusing on the complex system of stem alternations, which is unmatched in the Sino-Tibetan family. Using internal reconstruction, we posit a reconstructed root and a set of rules from which all attested alternations can be derived. Paradigms generated by a computerized version of these rules have been validated by several speakers. This reconstruction serves as a tool to efficiently classify and describe morphophonological alternations, and as a basis for further research on diachronic morphology involving comparison with other closely related languages such as Dumi and Koyi.

Key words: morphophonology, internal reconstruction, portmanteau morpheme, templatic morphology, tonal alternations, Kiranti, Khaling, Dumi

1. Introduction¹

Despite the fact that Khaling is one the earliest Kiranti languages to have been described, its morphology is still poorly known in comparison with other neighbouring languages such as Dumi (van Driem 1993). Previous work on Khaling failed to mark

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¹ The abbreviations in this paper follow the Leipzig Glossing Rules. Additionally, the following symbols are used in the description of the data and the definitions of the rules:

L: lengthening of the vowel; F: falling tone; C: any consonant; Cf: final consonant.

Internally reconstructed verb roots (see §5.1) are represented between vertical bars | |.

tone alternations in verbs and vowel length, and gave an incomplete account of the verbal paradigms.

The present article, based on recent fieldwork, provides a comprehensive account of basic verb stem alternations in Khaling, covering the non-past, past and imperative paradigms for all categories of verbs. Reflexive, negative, and auxiliary paradigms will be treated in further publications.

This article is organized in three major parts. First, we provide a general account of the Khaling language, including sociolinguistic data, synchronic phonology, and a basic account of the verbal system. Second, we present a set of morphophonological rules, based in part on the insights in Michailovsky (1975), to derive the attested stems from reconstructed verb roots. Third, the paradigms of CVC intransitive, CVC transitive, CVCt transitive and CV roots are described in four separate sections. Two appendices provide a list of all possible stem alternations and a computer-generated list of all regular verbal paradigms, based on the rules set out in this article.

2. General overview

Khaling is a Sino-Tibetan language belonging to the Kiranti subbranch, spoken by around 15,000 people in Solukhumbu, Eastern Nepal. It is in contact with Sherpa, Thulung, Kulung and Nachiring. Nearly all speakers of Khaling are also bilingual in Nepali, but the language is still being acquired by children, even by some non-Khaling children (Sherpa, Tamang, or Kami) living in the Khaling-speaking area. The following map (Opgenort 2011:254, reproduced here with permission of the author), presents the distribution of Kiranti languages, including Khaling:



Map 1: The Kiranti languages (Opgenort 2011:254)

The data presented here were collected in July 2011, by a team of linguists during a month of intensive elicitation and discussion with Dhan Bahadur Rai in Paris, and in early 2012 by Guillaume Jacques during two months of fieldwork in Kathmandu and in the district of Solu Khumbu, mainly in the villages of Phuleli and Kanku.

The main existing source of data on Khaling is a dictionary by linguists of the Summer Institute of Linguistics (Toba & Toba 1975). This dictionary is a preliminary work with many errors, and thirty years after its publication its authors advised one of the authors of the present article not to rely on it. Still, it remains quite rich, with over 500 verbs, and it facilitated our search for verbs of different root categories.

On the basis of the infinitive and the 1SG>3SG form² cited for transitive verbs in the dictionary,³ Michailovsky (1975) was able to internally reconstruct verbal roots (e.g. |lop| ‘to catch’) of the form (C)V(Cf)(t), with a system of five reconstructed vowels, largely confirmed by the present research, and to show that the ‘high tone’ (in fact a falling tone) marked on verbs in the dictionary predictably correlated with root-final (Cf)

² In the Leipzig Glossing System, this notation indicates a transitive form with first singular agent and third singular patient.

³ The 1SG form cited for intransitive verbs provided no more information than the infinitive.

stop as indicated (usually) by the 1SG>3SG form. But the morphology remained incompletely described (I. Toba 1973, S. Toba 1984). The morphological paradigms presented here reveal a complex morphophonology involving stem rimes, including tones, and a previously undescribed opposition of quantity.

Khaling is a relatively homogeneous language. The data in this article is based on the dialect of Phuleli, but some marginal dialectal differences are briefly mentioned.

3. Phonology

This section presents a summary of the phonological inventory of Khaling, which is necessary to understand the verbal system.

Khaling has a rich vowel system of ten distinctive timbres. In our recent research, we found an opposition of length on eight of these.

Table 1: Vowel inventory

i i:	ɯ ɯ:	u u:
e e:	ə ə:	o o:
ɛ ɛ:	ʌ	oo
	a a:	

There is no opposition of quantity on /ʌ/ (which is always short) and /oo/ (always long) in the Phuleli dialect. In other varieties some speakers also have a long /ʌ:/ phoneme. There is no opposition of quantity in syllables with sonorant finals.

The inventory of syllable-initial consonants comprises the following 26 phonemes:

Table 2: Consonant inventory

p	t	ts	k	ʔ
p ^h	t ^h	ts ^h	k ^h	
b	d	dz	g	
b ^h	d ^h	dz ^h	g ^h	
m	n		ŋ	
	s			fi
	l	r		
w		j		

The phoneme status of the glottal stop /ʔ/ is debatable, as words with initial glottal stop could be alternatively analyzed as having zero-initial. However, its presence is conspicuous word-internally in forms such as *ʔiʔi* ‘you are angry’ and word-initially in quasi-minimal pairs such as:

- (1) *ʔoɔ̃jɲɛ* ‘to pronounce ritual words’
woɔ̃jɲɛ ‘to put in’

Few clusters are allowed in the syllable onset: only velar or labial stops followed by *r* or *l* are observed. No medial *-j-* or *-w-* are found. Apparent examples of medial *-w-* occur in realizations of the diphthong /oɔ̃/, e.g. /k^hoɔ̃nnɛ/ ‘to go’.

Only ten consonants are found syllable-finally: *p t k m n ŋ r l s j*, to which we must add the marginal phoneme /ç/. No complex codas are possible.

The segment [ç] is originally the allophone of /t/ before velars and labials. It also appears however before the 1P.PST suffixes *-tiki* and *-tɛkɛ*. Two hypotheses are proposed to explain the appearance of [ç] in this position. First, we could propose that *-tiki* and *-tɛkɛ* come from *-ktiki* and *-ktɛkɛ*, forms still attested in open-vowel root paradigms, and that the *-k-* of the cluster was simplified in consonant-final stems. Second, these forms could be the result of analogy. If we take the verb |set| ‘to kill’ (cf §7), the expected 1P>3 forms, assuming the rules *t > ç / [+velar|+labial] would be:

- | | | | | |
|-----|-----------|-----------|---|----------|
| (2) | 1P.L.NPST | *set+ki | > | seçki |
| | 1P.L.PST | *set+tiki | > | *settiki |

It is therefore possible that attested *seçtiki* is analogically renewed after the non-past form *seçki*.

Whatever its origin, /ç/ is in opposition with both /t/ and /s/ as the first element of an internal cluster before /t/ (VttV, VstV and VçtV are all possible), so it must be assigned phonemic status despite its limited distribution.

Tone is phonemic (1) on open syllables with long vowels and (2) on syllables with resonant finals. There are two tones: level and falling. We transcribe the former with a macron *ā* and the latter with a circumflex accent *â* following the Africanist tradition.

Open syllables may be short without contrastive tone, long with level tone, or long with falling tone, as exemplified by (3) and (4):

- | | | | |
|-----|---------------|---|----------------|
| (3) | <i>tsene</i> | ‘be spoiled (of flour)’ | (root tse) |
| | <i>tsē:ne</i> | ‘sieve’ | (root tseŋ) |
| | <i>tsê:ne</i> | ‘close’ | (root tsekt) |
| (4) | <i>mɛ</i> | ‘that’; ‘to do (3S>3.NPST)’ | |
| | <i>mē:</i> | ‘over there’ (the reduced form of <i>mɛjo</i>) | |
| | <i>mê:</i> | ‘completely (ideophone)’ (used with the verb root rumt ‘to coil’) | |

Syllables with a resonant final have either level or falling tone, with no opposition of length. We find scores of minimal pairs of infinitives like the following:

- (5) *loɔ̃mnɛ* ‘to look for (infinitive)’
loômnɛ ‘to catch (infinitive)’

Syllables ending in *p*, *t*, or *k* may be short or long. There is no opposition of tone, but we redundantly transcribe the phonetically falling tone heard on long syllables with stop finals, e.g. *rê:p* ‘he stands’.

One further tonal phenomenon occurs in a specific morphological context. In the purposive construction, level tone monosyllabic nouns (but not verbs) have low-tone allomorphs when they function as locative-marked complements of the verb *|kʰot|* ‘to go’. We find the following minimal set:

- (6) a. *bâi* *ʔu-gʰas* *kēm-bi* *kʰos-t-ɛ*
cow 3S.POSS-grass chew-LOC go-PST-2/3S
‘The cow went to chew the grass.’ (from the verb *kēmɛ* ‘to chew’)
- b. *kēm-bi* *kʰos-t-ɛ*
elk-LOC go-PST-2/3S
‘He went (to hunt) for the elk.’ (from the noun *kēm* ‘elk’)
- c. *kēm-bi* *kʰos-t-ɛ*
work-LOC go-PST-2/3S
‘He went for his work.’ (from the noun *kēm* ‘work’)

The tonal contrast between (a) and (c) is morphologically determined: verbs with level-toned infinitive stems have their usual high level tone before the locative suffix in the purposive construction, but lexically level-toned nouns appear with a low level tone. Such nouns may be considered to have low-toned allomorphs in this context. Minimal pairs are easily found, and have been rechecked with several speakers.⁴

Syllables in polysyllabic words may be stressed or unstressed. In verb forms, the verb stem is always stressed, as is the first syllable of a bi- or tri-syllabic suffix string. Given its predictable nature in verb forms, stress is not indicated in the present paper.

4. Verb morphology: the affix paradigm

Both the stem and the affixes of a Khaling verb vary throughout the tense and agreement paradigm. The stem-forms show alternations which can be related to the morphonological characteristics of an internally reconstructed root, whose derivation for each verb will be presented in §5. The affixes are drawn from a single morphological

⁴ For instance *sāŋ-bi khøste* ‘He went to ask’ from the verb root *|siŋ|* ‘to ask’ vs. *sāŋ-bi khøste* ‘He went for the firewood’ from the noun *sāŋ* ‘tree, firewood’.

paradigm which applies essentially to all verbs. The present section is a general introduction to the affix morphology.

The template in Table 3 presents a synthetic view of the affixes that may appear in a finite verb form with their relative order and position with respect to the verbal stem (Σ). The affixes are organized according to a templatic, rather than layered, principle (see Bickel & Nichols 2007).

Table 3: The Khaling verbal template

prefix	stem	person (I)	auxiliary	person (II)	TAM	person (III)	reflexive ⁵	number
-1	0	+1	+2	+3	+4	+5	+6	+7
?i- (2 or INVERSE) mu- (NEG) ma- (2.NEG)	Σ	-ŋ- (1SG) -i- (DU) -k- (1PL) -n- (2PL, 1>2, INF)	-de(t-) -t ^h er(d-) -k ^h Λ(t)- etc	-ŋΛ/-Λ (1SG.S/O) -u (1SG>3) -i (1DU) -k (1PL.PST) -nε (1>2, INF)	-t- past -w- irrealis	-ε (2/3) -ŋΛ/-Λ (1SG.S/O) -u (1SG>3) -i (1DI) -u (1DE) -(i)ki (1PI) -(Λ)kΛ (1PE)	-si -su (1SG.PST) -n (3PL.PST)	-su (2/3DU) -nu (2/3PL) -ni (2PL NPST, 1>2.PST)

There are one prefixal position and seven suffixal positions. Some inflectional suffixes (position +1) originate from ‘trapped’ morphemes in Harris & Faarlund’s (2006) sense, i.e. affixes sandwiched between the stem and a clitic (which afterwards became integrated in the verbal template).

Many pairs of affixes are in relations of mutual exclusion, so that the number of possible combinations is far less than the table would suggest. In the following examples, taken from texts, the position class of each affix is marked as a superscript in the transcription:

- (7) *tsətsəsu-ŋΛ mē:sΛ sŋ-t⁴-ε⁵-su⁷ ʔe*
 children-ERG thus ask-PST-2/3-DU HEARSAY
 ‘The two children asked her in this way.’ (Solme and Lamalit II, 3)

- (8) *kām-bΛ-jΛ tsēmhō:-t⁴-Λ⁵ mām-t⁴-ε⁵-si⁶*
 house-LOC-down forget-PST-1SG remember-PST-2/3-REFL
melo lô-n¹-pe²-nε³ g^hrē:s-t⁴-ε⁵
 at.that.time fetch-INF-REACH-INF be.reluctant-PST-2/3
 ‘He thought that he had forgotten (his plough) in the house, but he was reluctant/hesitated to go to fetch it at that time.’ (The plough, 7)

⁵ The reflexive suffix sometimes appears between the suffixal slots +2 and +3 as in *mām-si⁶-ŋΛ³-t⁴-Λ⁵* ‘I thought’.

- (9) *g^hoɔlpɛ g^hrô:t mɛ nôr-ʔɛ mu⁻¹-kɬ-k^hʌt²-w⁴-ɛ⁵ ɦola*
 big goat that tiger-ERG NEG-eat-COMpletely-IRR-2/3 maybe
 ‘That tiger probably did not eat the big goat.’ (Tiger and fern, 29)

The present article describes the non-negative indicative and imperative paradigms. Forms containing auxiliary verbs (suffixal position 2), which express either Aktionsarten or Associated Motion (go to, come to etc), will not be treated, nor will reflexive or negative forms.

Tables 4 and 5 present the non-past paradigms of the intransitive verb ‘to have enough’ and the transitive verb ‘to catch’, whose reconstructed roots (§5.1) are respectively |sop| and |lop|. In the transitive paradigm, the row-headers in the first column indicate the person and number of the agent and the column headers those of the patient. To simplify the presentation, the suffix string of tense and agreement markers is transcribed and glossed as a single unit: thus the suffix *-iti* is glossed as a portmanteau ‘1DI:PST’ rather than as a combination of three morphemes *-i³-t⁴-i⁵*.

Table 4: Intransitive non-past paradigm: |sop| ‘to have enough’

1S	soðm-ɲʌ	Σ-ɲʌ
1DI	səp-i	Σ-i
1DE	səp-u	Σ-u
1PI	soɔp-ki	Σ-ki
1PE	soɔp-kʌ	Σ-kʌ
2S	ʔi-soɔp	ʔi-Σ
2D	ʔi-səp-i	ʔi-Σ-i
2P	ʔi-soðm-ni	ʔi-Σ-ni
3S	soɔp	Σ
3D	səp-i	Σ-i
3P	soðm-nu	Σ-nu

Table 5: Transitive non-past paradigm: |lop| ‘to catch’

	1S	1DI	1DE	1PI	1PE	2S	2D	2P	3S	3D	3P
1S						loðm-ne	loðm-su	loðm-nu	lob-u	lob-usu	lob-unu
1DI										ləp-i	
1DE						ʔi-loɔp	ʔi-ləp-i	ʔi-loðm-ni		ləp-u	
1PI										loɔp-ki	
1PE						ʔi-loɔp	ʔi-ləp-i	ʔi-loðm-ni		loɔp-kʌ	
2S	ʔi-loðm-ɲʌ								ʔi-lə:b-ʌ	ʔi-lə:p-su	ʔi-lə:p-nu
2D	ʔi-loðm-ɲʌsu									ʔi-ləp-i	
2P	ʔi-loðm-ɲʌnu									ʔi-loðm-ni	
3S	ʔi-loðm-ɲʌ	ʔi-ləpi	ʔi-ləpu	ʔi-loɔp-ki	ʔi-loɔp-kʌ	ʔi-loɔp	ʔi-ləp-i	ʔi-loðm-ni	lə:b-ʌ		
3D	ʔi-loðm-ɲʌsu									lə:p-su	
3P	ʔi-loðm-ɲʌnu										lə:p-nu

Note that the correlation between syntactic transitivity and conjugation class is not 100% congruent. We find one *intransitive deponent* verb |ʔet| ‘to say’ (1SG ʔɛiŋa) with intransitive conjugation which is syntactically transitive, as agreement occurs with an argument marked with the ergative marker -ʔɛ. We also find several morphologically transitive verbs (including CVCT) which do not allow any argument in the ergative, and which we call *transitive deponent*. These verbs (for instance |ʔomt| ‘to ripen’, 3.NPST ʔoʔmdɬ) only allow non-animate arguments, and are restricted to 3SG forms. In the rare cases where 3DU and 3PL forms are found, these agree with the absolutive argument. Deponent verbs will not be discussed in any detail in this article, but some examples can be found in the annex, as for some root types (such as |Comt|) only transitive deponent verbs are known.

In the paradigms, the verb stem alternant is marked off from prefixes and suffixes by hyphens. The boundary between stem and suffix does not necessarily correspond to a syllable-boundary. In particular, the final consonant of a CVC stem functions phonologically as the syllable-initial before a vowel-initial suffix, and as a result, the vowel of a CVC stem may occur in a phonologically open syllable.

As noted above, essentially the same affixal paradigm applies to all verbs. The transitive paradigm, in which agreement with two arguments may be shown, is in general a superset of the intransitive one. Thus inverse⁶ transitive forms with 1st and 2nd person object (see the row with 3SG agent in Table 5) have the same suffixes as the 1st and 2nd person intransitive forms, except that they carry the inverse prefix ʔi-⁷ and may have an extra suffix to mark dual or plural number of the 3rd person agent. These shared or partially shared forms will be referred to as ‘inverse/intransitive’ below. Affixes unique to the transitive paradigm are found in 1SG>2 forms and in certain ‘direct’ forms with 3rd person object (e.g. 1S>3, 2S, 3S>3S) in Table 5.

In the more complete paradigms below it will be seen that all past tense forms have the marker *t* in the suffix string, often with a supporting vowel.

5. Verb roots and stems

After a short general introduction to stem alternations, we shall show how these

⁶ ‘Inverse’ refers to forms of the transitive paradigm in which the patient outranks the agent on the person hierarchy 1>2>3; the converse is ‘direct’. 3>3 forms in Khaling are direct forms. True direct/inverse systems are found in related languages, such as Rgyalrong (Sun & Shi 2002, Jacques 2010).

⁷ This prefix has two overlapping functions: it marks all forms with 2nd person arguments except 1>2 forms, and it marks all inverse forms. For a historical account of the origin of this prefix, see Jacques (2012) and DeLancey (2011).

can be used to reconstruct a root form for each lexical verb.

The basic stem alternations of all but open syllable roots are illustrated in Tables 4 and 5, which show the alternations in roots with the final $[-p]$. Stop finals in CVC roots generally show nasalization before a nasal-initial suffix (as in the infinitive), and are often voiced before a vowel initial suffix, alternations that do not affect the stems of roots with continuant finals. Among root-final stops and nasals, bilabials have the most straightforward stem derivations: dental root-finals undergo more complex changes, while velar root-finals are dropped in some forms, with compensatory lengthening.

We identify a basic alternation, affecting most rimes, between strong and weak vowels. In Tables 4 and 5 the alternation is between $o\omega$ (strong) and θ (weak). The strong alternants of back root vowels are backed (here to o) before the $1S>3$ suffix u . Table 6 shows the basic strong and weak vowel alternants of roots in final $[-p]$:

Table 6: Vowel alternations in stems from $[CVp]$ roots

root vowel	ip	ep	ap	op	up
strong	Λp	ϵp	ϵp	$o\omega p$	Λp
weak	ip	ep	ϵp	θp	θp

The falling tone of the infinitive and some other forms of $[-lop]$ and $[-sop]$ (e.g. *lo ω mn ϵ* ‘to catch’) is correlated with the stop root-final (cf. the infinitive *lo ω mn ϵ* ‘to look for’, root $[-lom]$), but stems with level tones or with toneless short vowels also appear in the paradigms of these verbs.

A verb may have up to ten different stem alternants. The following Table lists the stem alternants of the verb $[-\text{h}od]$ ‘to bring’.

Table 7: Forms showing the 10 stem alternants of $[-\text{h}od]$ ‘to bring’

STEM	TENSE	Person	‘to bring’ (transitive)
1	NPST	$1S>3$	h od-u
2	NPST	$1DI>3$	h ots-i
3	NPST	$1PI>3$	h o ω ç-ki
4	NPST	$2P>3$	$\text{ʔi-h}\theta\omega\text{ʔn-ni}$
5	NPST	$3S>3$	h o ω :d-u
6	NPST	$3P>3$	h o ω :t-nu
7	PST	$1S>3$	h o ω :t-t Λ
8	PST	$1DI>3$	h os-ti
9	PST	$3S>3$	h o ω :t-t ϵ
10	NPST	$3S>1S$	$\text{ʔi-h}\theta\omega\text{ʔj}$

This complexity is lessened by three factors: (1) Stems have a simple structure, $CV(C)(t)$ (with tone and length), in which only the rime, never the onset, alternates. (2) Although

the set of stem-alternants of a verb may be relatively large, it can be fully determined from a much smaller number of key forms: for many transitive verbs, the 1S>3S non-past alone is enough. In other cases, one or more of the dual, the third person past and the second plural non-past are required. This implies that (3) the number of possible alternation sets is much smaller than the number of alternants in each might suggest.

5.1 Internal reconstruction of verb roots

Following the basic insights in Michailovsky (1975, in press), it is possible to posit an internally reconstructed or morphophonological root form from which the occurring stem forms can be derived.

The reconstructed root form and the transitivity type (intransitive vs. transitive) are all that is needed to assign each verb to its conjugation class. This reconstructed root has a diachronic reality — it represents, with probably some minor changes due to analogy, the pre-Khaling form of the verbs, and it is the form which should be used in comparative work. It is unlikely that this root has a synchronic reality for speakers, but the diachronic perspective greatly simplifies the classification of observed alternations. Synchronically, the reconstructed root form is the most economical statement of the information needed to distinguish one Khaling verb from another (barring homonymy), and the inventory of possible root forms (defined by the inventories of reconstructed onsets, vowels and finals) defines the space of possible lexical verb roots. In the course of our research, this allowed us to *predict* the existence of some conjugation types (in particular the |-en| root type) and all their correct forms before finding actual verbs which exemplify them.

In the following sections, we shall first present the complete inventories of consonantal and vocalic alternation sets. Then, from these alternation sets (presented in §5.2 for consonants and §5.3 for vowels), we shall posit the reconstructed form of the root final consonant and vowel. Since initial consonants present no alternations, the root onset will at times be identified by a default C (representing a consonant or a C(l/r) cluster). Finally, the set of rules necessary to derive the surface stem forms from the reconstructed roots will be presented.

The stem derivation rules state the root segments or rimes affected, the result, and the morphophonological and morphological contexts that condition application of the rule. For computational simplicity, the rules are defined so as to avoid feeding or bleeding relationships. Each rule applies independently to the root if the stated conditions are met. The resulting stem reflects all of the alterations to the root contributed independently by the applicable rules.

The rules by which we propose to derive occurring stem forms from the roots do not in general belong to the synchronic phonology of the language; they are conditioned by specific morphophonological contexts. They no doubt to a large extent reflect earlier

phonological rules by which verbal stems were influenced by suffixes. But although we believe that our reconstructed roots give an idea of the pre-Khaling form of verbal stems, we have no reconstruction of the earlier forms of the suffixes, so the reconstruction of these phonological processes must remain a subject for future research.

5.2 Consonantal alternations

There are sixteen alternation sets of stem final consonants,⁸ fifteen with transitive verbs and eight with intransitives. In the following table, these are presented with a default onset *C* and the stem vowel *e*; *e* is chosen because it is the vowel with the fewest alternations, limited to tone changes and length.

Table 8: Stem final consonant alternation sets⁹

	1SG>3SG.NPST (TR)	3SG.NPST (IT)	INF	1DE.NPST	1PL.NPST	1DI.PST	3SG>3SG.PST (TR)
1	Ceg-u	Cê:	Cê:nɛ	Cek-u	Cek-ki	Cek-iti	Cê:k-tɛ
2	Ceb-u	Ce:p	Cêmnɛ	Cep-u	Cep-ki	Cep-iti	Cê:p-tɛ
3	Ced-u	Cêi	Cênnɛ	Cets-u	Ceç-ki	Ces-ti	Cê:-tɛ
4	Ceŋ-u	Cêŋ	Cê:nɛ	Ceŋ-u	Cêŋ-ki	Ceŋ-iti	Cêŋ-tɛ
5	Cem-u	Cēm	Cēmnnɛ	Cem-u	Cēm-ki	Cem-iti	Cēm-tɛ
6	--	Cēj	Cējnnɛ	Ce:ts-u	Cēj-ki	Ce:s-ti	--
7	Cer-u	Cēr	Cērnnɛ	Cer-u	Cēr-ki	Cer-iti	Cēr-tɛ
8	Cel-u	Cēl	Cēlnɛ	Cel-u	Cēl-ki	Cel-iti	Cēl-tɛ
9	Cekt-u		Cê:nɛ	Cek-u	Cek-ki	Cek-iti	Cek-tɛ
10	Cept-u		Cêmnɛ	Cep-u	Cep-ki	Cep-iti	Cep-tɛ
11	Cett-u		Cênnɛ	Cets-i	Ceç-ki	Ces-ti	Cet-tɛ
12	Cend-u		Cê:nɛ	Ceŋ-u	Cēj-ki	Ceŋ-iti	Cên-tɛ
13	Cemd-u		Cēmnnɛ	Cem-u	Cēm-ki	Cem-iti	Cēm-tɛ
14	Cend-u		Cēinnɛ	Cēts-u	Cēj-ki	Cê:s-ti	Cên-tɛ
15	Cerd-u		Cērnnɛ	Cer-u	Cēr-ki	Cer-iti	Cēr-tɛ
16	Celd-u		Cēlnɛ	Cel-u	Cēl-ki	Cel-iti	Cēl-tɛ

The lack of synchronic phonological motivation for the morphophonological alternations is seen in the table. The suffixes 1SG.NPST (tr) *-u* and 1DE.NPST *-u* and (seen in the first and fourth columns in Table 8) are homophonous, but they occur with different stem alternants. Thus, one cannot describe the stems only in terms of phonetic environment:

⁸ Open root verbs, with no final consonant, will be treated separately, in §7.

⁹ Verbs with CVCT roots (lines 9-16) are all transitive and thus do not have the intransitive form of column 2. Alternation set № 6 is not attested with transitive verbs, hence the grey cells in columns 1 and 7.

most of the alternations are determined by the morphological context, and only occur with a specific set of suffixes (The precise list of suffixes associated with each stem will be presented in the appendix).

Of all verb forms, the 1SG>3SG.NPST of transitive verbs is one of the most informative: all alternation sets (except those numbered 12 and 14 in Table 8, for which a dual form is also required) can be distinguished by this form alone.¹⁰ We reconstruct the root-final consonant (Cf) based on this form. For intransitive verbs, the 3SG.NPST is similarly useful.

Table 9: The reconstructed root final consonants for each alternation set

	1SG>3SG.NPST (TR)	3SG.NPST (IT)	INF	Reconstructed Cf
1	Ceg-u	Cê:	Cê:nɛ	k
2	Ceb-u	Ce:p	Cêmne	p
3	Ced-u	Cêj	Cênne	t
4	Ceŋ-u	Cêŋ	Cê:nɛ	ŋ
5	Cem-u	Cēm	Cēmne	m
6		Cēj	Cējne	n
7	Cer-u	Cēr	Cērne	r
8	Cel-u	Cēl	Cēlne	l
9	Cekt-u		Cê:nɛ	kt
10	Cept-u		Cêmne	pt
11	Cett-u		Cênne	tt
12	Cēnd-u		Cê:nɛ	ŋt
13	Cēmd-u		Cēmne	mt
14	Cēnd-u		Cējne	nt
15	Cērd-u		Cērne	rt
16	Cēld-u		Cēlne	lt

In Table 9, each alternation set is associated with a reconstructed Cf (sometimes with additional postfinal *t*) which identifies it. The stem in 1SG>3SG.NPST (tr) differs from the reconstructed form only by voicing of the Cf, and in the case of ŋt-final roots by assimilation of *ŋ* to the following dental.

The sixteen rules of Table 10 derive the surface forms from the reconstructed final consonant of the root:

¹⁰ 1SG>3SG.NPST is the form listed (with the infinitive) in Toba & Toba (1975).

Table 10: Morphophonological rules for root final consonants¹¹

	Rule	Reconstructed form	Outcome	Context
1.1	voicing	p t k	b d g	all vowel-initial suffixes except the dual <i>-i/-iti</i> and <i>-u/-utu</i>
1.2	affrication 1	n	L ts	dual non-past <i>-i</i> and <i>-u</i>
		t	ts	
1.3	affrication 2	n	L s	dual past <i>-iti</i> and <i>-utu</i> ; all past suffixes in -tV for the intransitive and transitive inverse paradigms; imperative plural <i>-nuje</i>
		t	s	
1.4	fricativization	t	ç	all suffixes of the form -kV and -pV
1.5	nasalization 1	p	F m	nasal-initial suffixes (except the imperative plural <i>-nuje</i>)
		k	F L	
		ŋ	L	with <i>-k</i> final roots, this rule either yields long vowel with falling tone or nasalization to <i>-ŋ</i> and falling tone
1.6	nasalization 2	t	F n	nasal-initial suffixes except 1S.S/O <i>-ŋʌ</i> and the imperative plural <i>-nuje</i>
1.7	lenition 1	t	F j	when not followed by any suffix or followed by 1S.S/O <i>-ŋʌ</i>
1.8	lenition 2	t	F L	past transitive direct -tV suffixes
1.9	lenition 3	n	j	i) nasal-initial suffixes (except the imperative plural <i>-nuje</i>) ii) when not followed by any suffix iii) with 1P <i>-ki/-tiki</i> and <i>-ka/-taka</i>
1.10	lenition 4	k	F L	i) nasal-initial suffixes (except the imperative plural <i>-nuje</i>) ii) when not followed by any suffix with <i> ik </i> roots, the rhyme changes to <i>û</i> :
1.11	lenition 5	ŋ	L	i) nasal-initial suffixes (except the imperative plural <i>-nuje</i>) ii) when not followed by any suffix
1.12	simplification 1	Ct	C	dual <i>-i/-iti</i> and <i>-u/-utu</i> and all inverse forms; 1P <i>-ki/-tiki</i> and <i>-ka/-taka</i>
1.13	simplification 2	Ct	C	3D/P.NPST all past -tV suffixes in direct forms except 1P
1.14	assimilation 1	ŋt	nt	all contexts except those affected by the rule simplification 1 (but not simplification 2)
1.15	assimilation 2	ŋ, k	F n	1S>2D/P.NPST; 1S>2.PST

¹¹ As mentioned in footnote 1, F and L refer to changes to the root vowel seen in the stem (F=falling tone, L=lengthening) in addition to changes to the final consonant. Note that changes in the quality of the vowels in the stems are discussed separately in the next section.

5.3 Vowel alternations

Despite the fact that eighteen vowel phonemes occur in Khaling, only ten categories of vowel alternations are attested for consonant-final roots, exemplified in Table 11 with roots in $[-k]$ and $[-p]$.

Table 11: Vowel alternation sets: roots in $[-k]$ and $[-p]$

	INF	1DE.NPST	1PL.NPST	1DL.PST	1S.NPST (TR)	3S.NPST (IT)	3S.PST (TR)
1	ak, TR	Câ:-nɛ	Cak-u	Cak-ki	Cak-iti	Cag-u	Câ:k-tɛ
2	ak, IT	Câ:-nɛ	Cɛ-ju	Cak-ki	Cɛ-jti?	Câ:	
3	ek	Cê:-nɛ	Cek-u	Cek-ki	Cek-iti	Ceg-u	Cê:k-tɛ
	ep	Cêm-nɛ	Cep-u	Cep-ki	Cep-iti	Ceb-u	Cê:p-tɛ
4	ik	Cû:-nɛ	Cik-u	Cak-ki	Cik-iti	Cig-u	Cû:k-tɛ
5	ok	Cô:-nɛ	Cok-u	Cok-ki	Cok-iti	Cog-u	Cô:k-tɛ
6	uk	Cû:-nɛ	Cuk-u	Cuk-ki	Cuk-iti	Cug-u	Cû:k-tɛ
7	ɛp	Cɛm-nɛ	Cɛp-u	Cɛp-ki	Cɛp-iti	Cɛb-u	Cɛ:p-tɛ
8	ip	Câm-nɛ	Cip-u	Cap-ki	Cip-iti	Cib-u	Ci:p-tɛ
9	op	Coðm-nɛ	Cop-u	Coɔp-ki	Cop-iti	Cob-u	Coðp-tɛ
10	up	Câm-nɛ	Cup-u	Cap-ki	Cup-iti	Cub-u	Cû:p-tɛ

In alternation set 4, there is free variation between the realization u and $\#$ in the infinitive and 3S.NPST (cf rule 1.10).

Each alternation set represents a single root vowel. We do not need to posit 10 different root vowels, however, because some pairs of sets (hence of potential root vowels) are in complementary distribution, as shown in Table 12.

Table 12: Complementary distribution between alternation sets

alternation set number	intransitive	transitive	$[-\eta]$, $[-k]$	non-velar Cf
1		+	+	+(one example)
2	+		+	
3	+	+	+	+
4	+	+	+	
5	+	+	+	
6	+	+	+	
7	+	+		+
8	+	+		+
9	+	+		+
10	+	+		+

Only alternation set 3 occurs in all contexts; the other sets fall into pairs related by complementary distribution.

Sets 1 and 2 are in complementary distribution with regard to the transitivity of the verb: set 1 is restricted to transitive and set 2 to intransitive verbs. We consider that these two sets taken together are almost in complementary distribution with set 7, conditioned by velar (sets 1/2) vs non-velar (set 7) root finals. There is one exception, however: *jālne* ‘to strike’ (1SG *jalu*) is a set 1 verb with a non-velar root-final, whose expected form would be **jēlne* (1SG **jelu*). Compare *pēlne* ‘to coil’ (1D *pelu*). |a| and |ε| certainly both originate from one proto-phoneme *a, given their quasi-complementary distribution and the numerous alternations between /a/ and /ε/ in the paradigms of intransitive |-ak| verbs and |-ε| verbs. The irregular vocalism of |jal| can be explained in two ways. First, it could be due to a special dissimilatory rule of |ε| after |j|. This hypothesis appears problematic however since we do find verbs with initial |j| and |ε| vocalism, such as |jet| ‘to like’. Second, it could be a borrowing from Thulung *jal-* (Lahaussais 2003:13).

Sets 4, 5, 6 are in complementary distribution with 8, 9, and 10 respectively, with regard to the final consonant: the first group (1-6) only occurs with velar final consonants |-ŋ| and |-k| (including the clusters |-kt| and |-ŋt|, cf §7), while the second group (7-10) appears with all other final consonants.

As a result, and ignoring the irregular stem rime of the verb *jālne*, only five vowels need to be reconstructed in non-open verb roots (Table 13).

Table 13: Reconstructed root vowels and their correspondence with alternation sets

	set
a	1/2, 7
e	3
i	4, 8
o	5, 9
u	6, 10

The following six rules of Table 14 are needed to derive the surface forms from the root:

Table 14: Morphophonological rules for root vowels

Rule	Reconstructed form	Outcome	Context
2.1 fronting 1	o u	ø ʉ	i) CVC it. roots, inverse forms: dual <i>-i/-iti</i> and <i>-u/-utu</i> and all past and imperative except 1P ii) CVC tr. roots: all suffixes except 1S <i>-u/-(u)ta</i> , 1P <i>-ki/-tiki</i> and <i>-ka/-taka</i> , 2P.NPST <i>-ni</i> and the infinitive <i>-ne</i> iii) CVCT roots: only dual <i>-i/-iti</i> and <i>-u/-utu</i> and 2P.PST <i>-tenu</i>

2.2	fronting 2	a	ε	This rule applies to all [-aC] roots where -C is not a velar, except for the verb <i>jālne</i> ‘to strike’.
2.3	opening	i o u	Λ ɔɔ Λ	i) CVC it. non-velar roots, inverse forms: 1/2/3S.NPST, 1P - <i>ki/-tiki</i> and - <i>kʌ/-tʌkʌ</i> ii) CVC tr. non-velar roots: 1P - <i>ki/-tiki</i> and - <i>kʌ/-tʌkʌ</i> , 2P.NPST - <i>ni</i> and the infinitive - <i>ne</i> iii) CVCt non-velar roots: all forms except dual - <i>i/-iti</i> and - <i>u/-utu</i> and 2P.PST - <i>tenu</i> and imperative dual and plural
2.4	backing1	o u i	o u Λ	i) CVC it. velar roots, inverse forms: 1/2/3S.NPST, 1P - <i>ki/-tiki</i> and - <i>kʌ/-tʌkʌ</i> ii) CVC tr. velar roots: 1P - <i>ki/-tiki</i> and - <i>kʌ/-tʌkʌ</i> , 2P.NPST - <i>ni</i> and the infinitive - <i>ne</i> iii) CVCt velar roots: all forms except dual - <i>i/-iti</i> and - <i>u/-utu</i> and 2P.PST - <i>tenu</i> and imperative dual and plural
2.5	centralization	a	Λ	i) velar roots and [jal]: 1/2D - <i>i/-iti</i> and - <i>u/-utu</i> , 1S - <i>u/-uta</i> ; never occurs with consonant-initial suffixes such as 2PL>3.PST - <i>tenu</i> or 2PL>3.IMP - <i>nuje</i> ii) 1S.PST [ak] intransitive roots
2.6	backing 2	o u	o u	1SG>3SG this represents a later backing due to the 1S suffix - <i>u</i> ; this change is distinct from 2.4

5.4 Synthesis

The internally reconstructed verb root fits the template CVC(t). The initial C can be any one of the regular Khaling consonant initials or stop+resonant clusters (§3). The final consonants of the verb roots differ in two ways from the inventory of word or syllable codas: (1) final -*s*, which is attested in nouns (for instance *hʌs* ‘man’), is not attested in verb roots.¹² (2) roots allow final Ct clusters.

The reconstructed vocalic inventory of the roots, with only five vowels, is considerably reduced compared to the 18 phonological vowels found in Khaling, but is consistent with what can be reconstructed in neighboring Kiranti languages with rich vowel systems; e.g. Bahing (Michailovsky 1975), Thulung (Allen 1975), Wambule (Opgenort 2004), and Dumi (Michailovsky in press).

¹² Ancient -*s* root verbs have become open-syllable roots. For instance, [k^he] ‘to steal’, has an irregular derived noun *k^hespə* ‘thief’, which preserves a trace of the final consonant.

The set of rules presented above suffices to generate most forms, but the three additional rules relating to vowel length and tone are also needed:

Table 15: Additional rules: quantity and tone

	Context
3.1	The vowel is lengthened in transitive CVC 2SG>3, 3>3 (past and non-past), transitive or intransitive IMP.SG.
3.2	Sonorant-final stems have a falling tone when directly followed by 2/3 dual <i>-su</i> , 2/3 plural <i>-nu</i> and 2/3 past singular <i>-te</i> , except in imperative and 1SG>2SG forms — that is, in 3D/P.NPST (TR), 2S.PST (TR. and IT.), 3S.PST (TR. and IT.), 3D/P.PST (TR.) forms.
3.3	The vowel is lengthened in intransitive/inverse Cep and Cep root verbs in 3>2SG and 2/3SG, that is, when the stem appears without a suffix. These two rimes are the only obstruent-final ones which do not undergo either 1.2-1.11 or 2.3/2.4.

In addition, the forms of intransitive *|-ak|* verbs present a series of idiosyncrasies and need to be treated separately.

By combining the 24 rules presented above, one can derive stems from the reconstructed root. There are no non-alternating verbs, although some categories (such as *|-er|*) alternate less than others.¹³ Transitive CVC verbs have at most 10 stems, CVCt verbs at most 6 stems, and CVC intransitive verbs at most 5 stems.

A Perl script implementing these rules produced the list of 123 regular paradigms in Appendix B. This computational application (and the validation of the results by speakers) confirms the validity of the rules presented in this section.

Providing a genuine historical analysis of the Khaling verbal system will require a systematic comparison with the closely related Dumi and Koyi: some of the rules (for instance 1.2, 1.3) are shared with Dumi and Koyi and should be reconstructed back to proto-Dumi-Khaling, while other rules (all the vowel change rules) are probably recent innovations, that took place long after the split with Dumi. The ordering of the sound changes will require a thorough comparison, and cannot be undertaken without taking nouns into account. The analysis provided here is in fact the *prerequisite* for historical comparison; a comparable analysis of Dumi (Michailovsky in press) and Koyi (Lahaussais 2009) is necessary before attempting any comparison between the three languages.

6. CVC intransitive verbs

Intransitive verbs have at most five different stems. These stems are derived using the rules defined in §5. In the tables below, the rules which must be applied to derive the form for each person/number/tense combination are given. Where the rules are separated

¹³ The only changes to the stems for *|-er|* are tone changes and lengthening.

by a slash, it is because different rules apply in mutually exclusive contexts depending on the phonology of the root. The application of the rules is exemplified with two distinct root types, $[-ot]$ and $[-ur]$.

To clarify the discussion of these forms, we shall give distinct labels to all the stems, which will also be used in the appendix. The labels are composed based on the rules that produced the stem.

Stems which have undergone the *opening* rule 2.3 (for non-velar roots) and the *backing* rule 2.4 (for velar roots) are called *strong* stems; stems that have not undergone these rules are called *weak* stems.

For intransitive verbs, two weak stems need to be distinguished, the basic one $\Sigma(w)$ and the lengthened (or geminated) weak stem $\Sigma(w,l)$ found in the imperative singular exclusively. Dental-final root verbs have an additional past weak stem $\Sigma(w,p)$ which undergoes rule 1.3.

Strong stems need to be divided into three sub-stems:

a) The plain strong stem $\Sigma(s)$, which undergoes rule 1.7 in the case of dental-final roots, and rule 3.1 in the case of $[-Vp]$ roots.

b) The assimilating strong stem $\Sigma(s,a)$, which undergoes rules 1.5 and 1.6. Note that rule 1.5 applies to the 1SG, while 1.6 does not. This implies that dental roots (which undergo 1.6) have the plain strong stem in the 1SG.NPST, while other root classes have the assimilating strong stem. Velar final stems are a special case: rule 1.5 only optionally applies to the 1SG.NPST, so that for $[CVk]$ roots both $C\hat{V}:\eta\lambda$ and $C\hat{V}\eta\eta\lambda$ are possible, while for $[CV\eta]$ roots both $C\hat{V}:\eta\lambda$ and $C\hat{V}\eta\eta\lambda$ are possible. In the appendices, only the first variant is presented.

c) The 1P strong stem $\Sigma(s,1p)$, which undergoes rule 1.4. This stem is distinct from $\Sigma(s)$ only in velar and $-p$ final roots.

Table 16: Deriving non-past stems from intransitive verb roots

Non-past	$[k^hot]$ 'to go'	$[b^hur]$ 'to become crazy'	Stem id., affixes	Rules
1S	$k^ho\delta j-\eta\lambda$	$b^h\lambda r-\eta\lambda$	$\Sigma(s,a)-\eta\lambda$	(1.5/1.7/1.9/1.10/1.11) (2.3/2.4)
1DI	$k^h\epsilon ts-i$	$b^h\epsilon r-i$	$\Sigma(w)-i$	(1.2) (2.1/2.5)
1DE	$k^h\epsilon ts-u$	$b^h\epsilon r-u$	$\Sigma(w)-u$	(1.2) (2.1/2.5)
1PI	$k^ho\delta\zeta-ki$	$b^h\lambda r-ki$	$\Sigma(s)-ki$	(1.4/1.9) (2.3/2.4)
1PE	$k^ho\delta\zeta-k\lambda$	$b^h\lambda r-k\lambda$	$\Sigma(s)-k\lambda$	(1.4/1.9) (2.3/2.4)
2S	$\eta i-k^ho\delta j$	$\eta i-b^h\lambda r$	$\eta i-\Sigma(s)$	(1.7/1.9/1.10) (2.3/2.4) (3.3)
2D	$\eta i-k^h\epsilon ts-i$	$\eta i-b^h\epsilon r-i$	$\eta i-\Sigma(w)-i$	(1.2) (2.1/2.5)
2P	$\eta i-k^ho\delta n-ni$	$\eta i-b^h\lambda r-ni$	$\eta i-\Sigma(s,a)-ni$	(1.5/1.6/1.7/1.10/1.11) (2.3/2.4)
3S	$k^ho\delta j$	$b^h\lambda r$	$\Sigma(s)$	(1.7/1.9/1.10) (2.3/2.4) (3.3)
3D	$k^h\epsilon ts-i$	$b^h\epsilon r-i$	$\Sigma(w)-i$	(1.2) (2.1/2.5)
3P	$k^ho\delta n-nu$	$b^h\lambda r-nu$	$\Sigma(s,a)-nu$	(1.5/1.6/1.7/1.10/1.11) (2.3/2.4)

The first singular and dual past tense suffixes appear with or without a leading vowel: *-ʌtʌ*, *-iti*, *-utu* or *-tʌ*, *-ti*, *-tu*. The latter set is restricted to $|CVt|$ and $|CVn|$ roots, while the former appears with all other root types.

Table 17: Deriving past stems from intransitive verb roots

Past	$ k^{hot} $	$ b^{hur} $	Stem id., affixes	Rules
1S	$k^{həs-tʌ}$	$b^{hʌr-ʌtʌ}$	$\Sigma(w,p)-(ʌ)tʌ$	(1.3) (2.1/2.5)
1DI	$k^{həs-ti}$	$b^{hʌr-iti}$	$\Sigma(w,p)-(i)ti$	(1.3) (2.1/2.5)
1DE	$k^{həs-tu}$	$b^{hʌr-utu}$	$\Sigma(w,p)-(u)tu$	(1.3) (2.1/2.5)
1PI	$k^{həɔç-tiki}$	$b^{hʌr-tiki}$	$\Sigma(s)-tiki$	(1.4/1.9) (2.3/2.4)
1PE	$k^{həɔç-tʌkʌ}$	$b^{hʌr-tʌkʌ}$	$\Sigma(s)-tʌkʌ$	(1.4/1.9) (2.3/2.4)
2S	$ʔi-k^{həs-tə}$	$ʔi-b^{hʌr-tə}$	$ʔi-\Sigma(w,p)-tə$	(1.3) (2.1/2.5) 3.2
2D	$ʔi-k^{həs-ti}$	$ʔi-b^{hʌr-iti}$	$ʔi-\Sigma(w,p)-(i)ti$	(1.3) (2.1/2.5)
2P	$ʔi-k^{həs-tənu}$	$ʔi-b^{hʌr-tənu}$	$ʔi-\Sigma(w,p)-tənu$	(1.3) (2.1/2.5) 3.2
3S	$k^{həs-tə}$	$b^{hʌr-tə}$	$\Sigma(w,p)-tə$	(1.3) (2.1/2.5) 3.2
3D	$k^{həs-ti}$	$b^{hʌr-iti}$	$\Sigma(w,p)-(i)ti$	(1.3) (2.1/2.5)
3P	$k^{həs-tənu}$	$b^{hʌr-tənu}$	$\Sigma(w,p)-tənu$	(1.3) (2.1/2.5) 3.2

Intransitive 2SG forms have two variants, either with a lengthened vowel or with the *-je* suffix. In $|t|$ roots, we find geminated $|tsts|$ in imperative singular forms instead of expected $*tsj$.

Table 18: Deriving imperative stems from intransitive verb roots

Imperative	$ k^{hot} $	$ b^{hur} $	Stem id., affixes	Rules
2S	$k^{hətsts-e}$, $k^{həts-e}$	$(mu)b^{hʌr-je}$, $(mu)b^{hʌr-r-e}$	$\Sigma(w)-je$ $\Sigma(w,l)-e$	(1.2) (2.1/2.5) 3.1
2D	$k^{həts-ije}$	$(mu)b^{hʌr-ije}$	$\Sigma(w)-ije$	(1.2) (2.1/2.5)
2P	$k^{həs-nuje}$	$(mu)b^{hʌr-nuje}$	$\Sigma(w,p)-nuje$	(1.3) (2.1/2.5)

Almost all intransitive CVC root verbs can be conjugated using the paradigms of Tables 16-18. The only exceptions are $|Cak|$ intransitive roots, which present two conjugations.

The first conjugation is quite irregular, in that it includes forms apparently influenced by $|Cɛ|$ intransitive verbs. It only applies to the verb $|b^{hak}|$ ‘go (honorific)’ and $|dak|$ ‘want’, a defective verb only occurring in third person forms. The paradigm is too irregular to be generated automatically (or it would involve too many ad hoc rules):

Table 19: Irregular paradigm of |b^hak| ‘to go (hon.)’

Person	NPST	PST	IMP
1S	b ^h âŋ-ŋʌ, b ^h â:-ŋʌ	b ^h ʌ-ŋʌtʌ	
1DI	b ^h ɛ-ji	b ^h ê-jti	
1DE	b ^h ɛ-ju	b ^h ê-jtu	
1PI	b ^h ak-ki	b ^h ak-tiki	
1PE	b ^h ak-kʌ	b ^h ak-tʌkʌ	
2S	ʔi-b ^h â:	ʔi-b ^h â:-tɛ	b ^h â:-je
2D	ʔi-b ^h ɛ-ji	ʔi-b ^h ê-jti	b ^h ê-ije
2P	ʔi-b ^h â:-ni	ʔi-b ^h a-tnu	b ^h â-nje
3S	b ^h â:	b ^h â:-tɛ	
3D	b ^h ɛ-ji	b ^h ê-jti	
3P	b ^h â:-nu	b ^h a-tnu	

The second conjugation is more regular, but seems restricted to the verb |dak| ‘to bicker’ (also |d^hak| in the southern dialect), a verb root only occurring in the collocation *tsinger dâ:nɛ* ‘to bicker’. This verb presents regular forms for the dual such as 1DI *daki*, but still has irregular forms for the 2/3SG.

7. CVC transitive verbs

In the transitive paradigm, stem alternations presented in the intransitive paradigms in the previous section also occur, but a few additional stems must be added.

The transitive paradigm can be broadly divided into three sections: direct forms (with a third person patient), inverse forms (3>1, 3>2 and 2>1), and somewhat marginal 1>2 forms. The inverse forms are generally (except for |ak| roots) identical with the corresponding intransitive forms, with the addition of the inverse prefix ʔi- (thus for instance the 3S>1S and 2S>1S are identical with 1S intransitive forms except for the inverse prefix).

Certain direct forms, on the other hand, are quite distinct from intransitive ones. In this part of the paradigm, the stems are always followed by a suffix. Apart from the weak stems, strong stems and strong assimilated stems, we must distinguish five additional stems for some verbs (especially for |ut| and |ot| roots). The two verbs |set| ‘to kill’ and |lop| ‘to catch’ illustrate all possible stem alternations.

The non-past direct paradigm includes three stems that have no equivalent in the intransitive paradigm: the weak voiced back stem $\Sigma(w,v,b)$ which undergoes rules 1.1 and 2.6 (for |o-| and |u-| verbs), the weak voiced lengthened stem $\Sigma(w,v,l)$, which undergoes rules 1.1, 2.1 and 3.1 (in the first singular) and the weak lengthened stem $\Sigma(w,l)$ which only undergoes rules 2.1 and 3.1 (in the second and third singular). In this

last stem the falling tone is phonetic; as mentioned in §2, there are no tonal constraints in obstruent-final syllables.

Table 20: Deriving non-past stems (direct forms) from transitive verb root

Non-past	set ‘to kill’	lop ‘to catch’	Stem id., affixes	Rules
1S>3S	sed-u	lob-u	$\Sigma(w,v,b)$ -u	(1.1) 2.6
1S>3D	sed-usu	lob-usu	$\Sigma(w,v,b)$ -usu	(1.1) 2.6
1S>3P	sed-unu	lob-unu	$\Sigma(w,v,b)$ -unu	(1.1) 2.6
1DI>3	sets-i	løp-i	$\Sigma(w)$ -i	(1.2) 2.1
1DE>3	sets-u	løp-u	$\Sigma(w)$ -u	(1.2) 2.1
1PI>3	seç-ki	loçp-ki	$\Sigma(s,lp)$ -ki	(1.4) (2.3/2.4)
1PE>3	seç-kλ	loçp-kλ	$\Sigma(s,lp)$ -kλ	(1.4) (2.3/2.4)
2S>3S	?i-sê:d- ʉ	?i-lô:b- ʉ	?i- $\Sigma(w,v,l)$ - ʉ	1.1 2.1 3.1
2S>3D	?i-sê:t-su	?i-lô:p-su	?i- $\Sigma(w,l)$ -su	2.1 (3.1/3.2)
2S>3P	?i-sê:t-nu	?i-lô:p-nu	?i- $\Sigma(w,l)$ -nu	2.1 (3.1/3.2)
2D>3	?i-sets-i	?i-løp-i	?i- $\Sigma(w)$ -i	(1.2) 2.1
2P>3	?i-sên-ni	?i-loôm-ni	?i- $\Sigma(s,a)$ -ni	(1.5/1.6/1.7/1.10/1.11) (2.3/2.4)
3S>3	sê:d- ʉ	lô:b- ʉ	$\Sigma(w,v,l)$ - ʉ	(1.1) 2.1 3.1
3D>3	sê:t-su	lô:p-su	$\Sigma(w,l)$ -su	2.1 (3.1/3.2)
3P>3	sê:t-nu	lô:p-nu	$\Sigma(w,l)$ -nu	2.1 (3.1/3.2)

In the past direct paradigm, |Cvt| roots have two additional stems: the weak past back assimilated stem $\Sigma(w,p,b,a)$, which undergoes 1.8 and 2.6 (in first singular), and the weak past assimilated stem $\Sigma(w,p,a)$, which undergoes either 1.8, 3.1, or 3.2 depending on the final consonant.

As with intransitive verbs, the 1S>3.PST, 1DI>3.PST and 1DE>3 suffixes have two distinct allomorphs *-utλ*, *-iti*, *-utu* and *-tλ*, *-ti*, *-tu*, the latter restricted to |Cvt| roots and the former appearing with all other root types.

Table 21: Deriving past stems (direct forms) from transitive verb roots

Past	set	lop	Stem id., affixes	Rules
1S>3S	sê:-tλ	lob-utλ	$\Sigma(w,p,b,a)$ -(u)tλ	(1.1/1.8) 2.6
1S>3D	sê:-tλsu	lob-utλsu	$\Sigma(w,p,b,a)$ -(u)tλsu	(1.1/1.8) 2.6
1S>3P	sê:-tλnu	lob-utλnu	$\Sigma(w,p,b,a)$ -(u)tλnu	(1.1/1.8) 2.6
1DI>3	ses-ti	løp-iti	$\Sigma(w)$ -(i)ti	(1.3) (2.1/2.5)
1DE>3	ses-tu	løp-utu	$\Sigma(w)$ -(u)tu	(1.3) (2.1/2.5)
1PI>3	seç-tiki	loçp-tiki	$\Sigma(s,lp)$ -tiki	(1.4) (2.3/2.4)
1PE>3	seç-tλkλ	loçp-tλkλ	$\Sigma(s,lp)$ -tλkλ	(1.4) (2.3/2.4)
2S>3S	?i-sê:-tê	?i-lô:p-tê	?i- $\Sigma(w,p,a)$ -tê	(1.8/3.1/3.2) 2.1
2S>3D	?i-sê:-tesu	?i-lô:p-tesu	?i- $\Sigma(w,p,a)$ -tesu	(1.8/3.1/3.2)
2S>3P	?i-sê:-tenu	?i-lô:p-tenu	?i- $\Sigma(w,p,a)$ -tenu	(1.8/3.1/3.2)

2D>3	ʔi-ses-ti	ʔi-ləp-iti	ʔi-Σ(w)-(i)ti	(1.3) (2.1/2.5)
2P>3	ʔi-ses-tənu	ʔi-ləp-tənu	ʔi-Σ(w)-tənu	(1.3) 2.1
3S>3	sê:-tə	lô:p-tə	Σ(w,p,a)-tə	(1.8/3.1/3.2) 2.1
3D>3	sê:-təsu	lô:p-təsu	Σ(w,p,a)-təsu	(1.8/3.1/3.2) 2.1
3P>3	sê:-tənu	lô:p-tənu	Σ(w,p,a)-tənu	(1.8/3.1/3.2) 2.1

Only [ot] and [ut] root verbs have distinct Σ(w,p,b,a) and Σ(w,p,a) stems. For example, [hot] ‘to bring’ has 1S>3.PST *hōt-ta* and 3S>3.PST *hōt-tə*. Note that [aC] transitives have one particularity: rule 2.5, unlike 2.1, does not apply in the 2P>3.PST form. Thus the root [sak] ‘to choose’ has 1S>3.PST *saguta*, but 2P>3.PST *ʔisaktənu* not *ʔisaktənu as would be expected if rule 2.5 operated in the same environments as 2.1.

The realization of the forms of all ten stems can be predicted by applying the rules, but the full list of all stems for each root type is indicated in the appendix for reference.

The inverse forms, as mentioned above, are quite similar to the intransitive ones:

Table 22: Deriving non-past stems (inverse forms) from transitive verb roots

Non-past	[set]	[lop]	Stem id., affixes	Rules
3/2S>1S	ʔi-sêj-ηa	ʔi-loôm-ηa	ʔi-Σ(s)-ηa	(1.5/1.7/1.10/1.11) 2.3
3/2D>1S	ʔi-sêj-ηasu	ʔi-loôm-ηasu	ʔi-Σ(s)-ηasu	i-loôm-ηa
3/2P>1S	ʔi-sêj-ηanu	ʔi-loôm-ηanu	ʔi-Σ(s)-ηanu	i-loôm-ηa
3/2>1DI	ʔi-sets-i	ʔi-ləp-i	ʔi-Σ(w)-i	(1.2) (2.1/2.5)
3/2>1DE	ʔi-sets-u	ʔi-ləp-u	ʔi-Σ(w)-u	(1.2) (2.1/2.5)
3/2>1PI	ʔi-seç-ki	ʔi-loəp-ki	ʔi-Σ(s)-ki	(1.4) 2.3
3/2>1PE	ʔi-seç-ka	ʔi-loəp-ka	ʔi-Σ(s)-ka	(1.4) 2.3
3>2S	ʔi-sêj	ʔi-loəp	ʔi-Σ(s)	(1.7/1.9/1.10) (2.3/2.4) (3.3)
3>2D	ʔi-sets-i	ʔi-ləp-i	ʔi-Σ(w)-i	(1.2) (2.1/2.5)
3>2P	ʔi-sên-ni	ʔi-loôm-ni	ʔi-Σ(s,a)-ni	(1.5/1.6/1.7/1.10/1.11) (2.3/2.4)

In the past paradigm, rule 2.5 does not apply in the 3>2S and 3>2P forms of [aC] stem verbs, so that for the root [sak] ‘to choose’ one finds 3>2S.PST *ʔisakte* instead of *ʔisakte, which would be expected if the context of rule 2.5 had been the same as for rule 2.1.

Table 23: Deriving past stems (inverse forms) from transitive verb roots

Past	[set]	[lop]	Stem id., affixes	Rules
3/2S>1S	ʔi-ses-ta	ʔi-ləp-ta	ʔi-Σ(w,p)-(a)ta	(1.3) (2.1/2.5)
3/2D>1S	ʔi-ses-tasu	ʔi-ləp-tasu	ʔi-Σ(w,p)-(a)tasu	(1.3)
3/2P>1S	ʔi-ses-tanu	ʔi-ləp-tanu	ʔi-Σ(w,p)-(a)tanu	(1.3)
3/2>1DI	ʔi-ses-ti	ʔi-ləp-iti	ʔi-Σ(w,p)-(i)ti	(1.3) (2.1/2.5)
3/2>1DE	ʔi-ses-tu	ʔi-ləp-utu	ʔi-Σ(w,p)-(u)tu	(1.3) (2.1/2.5)
3/2>1PI	ʔi-seç-tiki	ʔi-loəp-tiki	ʔi-Σ(s)-tiki	(1.4) 2.3
3/2>1PE	ʔi-seç-taka	ʔi-loəp-taka	ʔi-Σ(s)-taka	(1.4) 2.3

3>2S, 1D/PE>2S	ʔi-ses-te	ʔi-ləp-te	ʔi-Σ(w,p)-te	(1.3) 2.1 (3.2)
3>2D, 1D/PE>2D	ʔi-ses-ti	ʔi-ləp-iti	ʔi-Σ(w,p)-(i)ti	(1.3) (2.1/2.5) (3.2)
3>2P, 1D/PE>2P	ʔi-ses-tenu	ʔi-ləp-tenu	ʔi-Σ(w,p)-tenu	(1.3) 2.1 (3.2)

Notice that 3/2>1DI, 3>2D and 2D>3 are always identical. The same is true of 2P>3 and 3>2P.

The 1S>2 forms present a special Σ(s,a) for |-k| and |-ŋ| final roots (here |hũŋ| ‘to wait’ and |phrok| ‘to untie’) due to rule 1.16.

Table 24: Deriving stems of 1>2 forms from transitive verb roots

NP	set ‘to kill’	lop ‘to catch’	p ^h rok ‘to untie’	hũŋ ‘to wait for’	Stem id., affixes	Rules
1S>2S	sên-ne	loôm-ne	p ^h rô:-ne	hũ:-ne	Σ(s,a)-ne	(1.5/1.6/1.7/1.10/1.11) (2.3/2.4) 3.2
1S>2D	sên-su	loôm-su	p ^h rôn-su	hũn-su	Σ(s,a)-su	(1.5/1.6/1.7/1.10/1.11/1.16) (2.3/2.4) 3.2
1S>2P	sên-nu	loôm-nu	p ^h rôn-nu	hũn-nu	Σ(s,a)-nu	(1.5/1.6/1.7/1.10/1.11/1.16) (2.3/2.4) 3.2
Past					Stem	Rules
1S>2S	sên-teni	loôm-teni	p ^h rôn-teni	hũn-teni	Σ(s,a)-teni	(1.5/1.6/1.7/1.10/1.11/1.16) (2.3/2.4)
1S>2D	sên-tensu	loôm-tensu	p ^h rôn-tensu	hũn-tensu	Σ(s,a)-tensu	(1.5/1.6/1.7/1.10/1.11/1.16) (2.3/2.4)
1S>2P	sên-tennu	loôm-tennu	p ^h rôn-tennu	hũn-tennu	Σ(s,a)-tennu	(1.5/1.6/1.7/1.10/1.11/1.16) (2.3/2.4)

In the 1S>2D/P non-past forms, |-p| final and |-m| final roots have the same forms due to the addition of the falling tone to all sonorant-final forms (rule 3.2). Thus, while the 1SG>2SG forms *loômne* (from |lom| ‘to look for’) and *loômne* (from |lop| ‘to catch’) are distinct, their 1SG>2DU and 1SG>2PL non-past forms *loôm-su* and *loôm-nu* are identical. This is the only case of homonymy in the entire paradigm between these two classes.

The imperative forms are the following:

Table 25: Imperative forms for |set| ‘to kill’, and |lop| ‘to catch’

	3S	3D	3P
2S	sē:d-e		
2D	sets-ije		
2P	ses-nuje		
	1S	1DE	1PE
2S	sets-ʌje	sets-uje	seç-kʌje
2D	sets-ʌsúje		
2P	sets-ʌnúje		

	3S	3D	3P
2S	l̥ɔ:b-e		
2D	l̥ɔp-ije		
2P	l̥ɔp-nuje		
	1S	1DE	1PE
2S	l̥ɔp-ʌje	l̥ɔp-uje	loɔp-kʌje
2D	l̥ɔp-ʌsuje		
2P	l̥ɔp-ʌnuje		

Table 26: Rules and stems for transitive imperatives

Imperative	Stem	Rules
2S>3	Σ(w,v,l)-e	1.1 2.1 3.1
2>3(D)	Σ(w)-ije	(1.2) (2.1/2.5)
2>3(P)	Σ(w,p)-nuje	(2.1/2.5)
2S>1S	Σ(w)-ʌje	(1.2) (2.1/2.5)
2D>1S	Σ(w)-ʌsuje	(1.2) (2.1/2.5)
2P>1S	Σ(w)-ʌnuje	(1.2) (2.1/2.5)
2>1D	Σ(w)-uje	(1.2) (2.1/2.5)
2>1P	Σ(s,lP)-kʌje	(1.4) 2.3

8. CVCt transitive verbs

|CVCt| verbs have a conjugation that differs from both regular transitive and intransitives. The context of application of the rules presented above is slightly different in |CVCt| root verbs.

The weak stem only occurs in 1D/2D forms, and it is characterized by loss of the postfinal |-t| (rule 1.12), so that in these forms |CVCt| verbs are identical to the equivalent |CVC| transitive and intransitive forms. Thus *kʰɔsti* is both the 1D/3D.PST of the intransitive |kʰot| ‘to go’ and the 1D.PST of |kʰott| ‘to bring’.

Due to a different context of application of the rules 2.3 and 2.4, the strong stem appears in all forms except the dual and 2P>3.PST. However, four strong stems must be distinguished: the reduced strong stem Σ(s,r) in 1P, which undergoes the loss of the postfinal |-t| (1.13) but not most assimilatory changes; the plain strong stem Σ(s), which is the only one preserving the reconstructed postfinal |-t|; the assimilated strong stem Σ(s,a). Only in the infinitive and 2P>3.NPST; and the falling tone strong stem Σ(s,f), which only differs from Σ(s,r) by the failure to apply 1.4 and 1.9 and by the falling tone (rule 3.2).

We exemplify the |CVCt| paradigms with the two verbs |mimt| ‘to remember’ and |sent| ‘to look at’.

Table 27: Deriving non-past stems (direct forms) from CVCt transitive roots

Non-past	mimt ‘to remember’	sent ‘to look at’	Stem id., affixes	Rules
1S>3S	māmd-u	sēnd-u	Σ(s)-u	(2.3/2.4)
1S>3D	māmd-usu	sēnd-usu	Σ(s)-usu	(2.3/2.4)
1S>3P	māmd-unu	sēnd-unu	Σ(s)-unu	(2.3/2.4)
1DI>3	mim-i	sē:ts-i	Σ(w)-i	(1.2) (2.1/2.5) 1.12
1DE>3	mim-u	sē:ts-u	Σ(w)-u	(1.2) (2.1/2.5) 1.12
1PI>3	mām-ki	sēj-ki	Σ(s,r)-ki	(1.4/1.9) (2.3/2.4) 1.13
1PE>3	mām-kA	sēj-kA	Σ(s,r)-kA	(1.4/1.9) (2.3/2.4) 1.13
2S>3S	?i-māmd- u	?i-sēnd- u	?i-Σ(s)- u	(2.3/2.4)
2S>3D	i-mām-su	?i-sēn-su	?i-Σ(s,f)-su	(2.3/2.4) 1.13 3.2
2S>3P	?i-mām-nu	?i-sēn-nu	?i-Σ(s,f)-nu	(2.3/2.4) 1.13 3.2
2D>3	?i-mim-i	?i-sē:ts-i	?i-Σ(w)-i	(1.2) (2.1/2.5) 1.12
2P>3	?i-mām-ni	?i-sēj-ni	?i-Σ(s,a)-ni	(1.5/1.6/1.7/1.9/1.10/1.11) (2.3/2.4) 1.13
3S>3	māmd- u	sēnd- u	Σ(s)- u	(2.3/2.4)
3D>3	mām-su	sēn-su	Σ(s,f)-su	(2.3/2.4) 1.13 3.2
3P>3	mām-nu	sēn-nu	Σ(s,f)-nu	(2.3/2.4) 1.13 3.2

Table 28: Deriving past stems (direct forms) from CVCt transitive roots

Past	mimt	sent	Stem id., affixes	Rules
1S>3S	mām-tA	sēn-tA	Σ(s)-tA	(2.3/2.4) 3.2 1.13
1S>3D	mām-tAsu	sēn-tAsu	Σ(s)-tAsu	(2.3/2.4) 3.2 1.13
1S>3P	mām-tAnu	sēn-tAnu	Σ(s)-tAnu	(2.3/2.4) 3.2 1.13
1DI>3	mim-iti	sē:s-ti	Σ(w,p)-iti	(1.3) (2.1/2.5) 1.12
1DE>3	mim-utu	sē:s-tu	Σ(w,p)-utu	(1.3) (2.1/2.5) 1.12
1PI>3	mām-tiki	sēj-tiki	Σ(s,r)-tiki	(1.4/1.9) (2.3/2.4) 1.13
1PE>3	mām-tAkA	sēj-tAkA	Σ(s,r)-tAkA	(1.4/1.9) (2.3/2.4) 1.13
2S>3S	?i-mām-te	?i-sēn-te	?i-Σ(s,f)-te	(2.3/2.4) 3.2 1.13
2S>3D	?i-mām-tesu	?i-sēn-tesu	?i-Σ(s,f)-tesu	(2.3/2.4) 3.2 1.13
2S>3P	?i-mām-tenu	?i-sēn-tenu	?i-Σ(s,f)-tenu	(2.3/2.4) 3.2 1.13
2D>3	?i-mim-iti	?i-sē:s-ti	?i-Σ(w,p)-(i)ti	(1.2) (2.1/2.5) 1.12
2P>3	?i-mīm-tenu	?i-sē:s-tenu	?i-Σ(w,p)-tenu	(1.2) (2.1/2.5) 1.13
3S>3	mām-te	sēn-te	Σ(s,f)-te	(2.3/2.4) 3.2 1.13
3D>3	mām-tesu	sēn-tesu	Σ(s,f)-tesu	(2.3/2.4) 3.2 1.13
3P>3	mām-tenu	sēn-tenu	Σ(s,f)-tenu	(2.3/2.4) 3.2 1.13

The inverse, 1>2 and imperative forms are identical to those of corresponding CVC verbs; |CVnt| roots, however, have special forms due to the absence of transitive |Cvn| roots, in particular concerning the application of rule 1.9:

Table 29: Deriving non-past stems (inverse forms) for CVCt transitive roots

Non-past	mimt	sent	Stem id., affixes	Rules
3/2S>1S	ʔi-mām-ŋa	ʔi-sěj-ŋa	ʔi-Σ(s)-ŋa	(1.5/1.7/1.9/1.10/1.11) 2.3 1.12
3/2D>1S	ʔi-mām-ŋasu	ʔi-sěj-ŋasu	ʔi-Σ(s)-ŋasu	(1.5/1.7/1.9/1.10/1.11) 2.3 1.12
3/2P>1S	ʔi-mām-ŋanu	ʔi-sěj-ŋanu	ʔi-Σ(s)-ŋanu	(1.5/1.7/1.9/1.10/1.11) 2.3 1.12
3/2>1DI	ʔi-mim-i	ʔi-sěj:ts-i	ʔi-Σ(w)-i	(1.2) (2.1/2.5) 1.12
3/2>1DE	ʔi-mim-u	ʔi-sěj:ts-u	ʔi-Σ(w)-u	(1.2) (2.1/2.5) 1.12
3/2>1PI	ʔi-mām-ki	ʔi-sěj-ki	ʔi-Σ(s)-ki	(1.4/1.9) 2.3 1.12
3/2>1PE	ʔi-mām-kā	ʔi-sěj-kā	ʔi-Σ(s)-kā	(1.4/1.9) 2.3 1.12
3>2S	ʔi-mām	ʔi-sěj	ʔi-Σ(s)	(1.7/1.9/1.10) 2.3 (3.3) 1.12
3>2D	ʔi-mim-i	ʔi-sěj:ts-i	ʔi-Σ(w)-i	(1.2) (2.1/2.5) 1.12
3>2P	ʔi-mām-ni	ʔi-sěj-ni	ʔi-Σ(s)-ni	(1.5/1.6/1.7/1.9/1.10/1.11) (2.3/2.4) 1.12

Table 30: Deriving past stems (inverse forms) for CVCt transitive roots

Past	mimt	sent	Stem id., affixes	Rules
3/2S>1S	ʔi-mim-Ata	ʔi-sěj:s-ta	ʔi-Σ(w)-(A)ta	(1.2) (2.1/2.5) 1.12
3/2D>1S	ʔi-mim-Atasu	ʔi-sěj:s-tasu	ʔi-Σ(w)-(A)tasu	(1.2) (2.1/2.5) 1.12
3/2P>1S	ʔi-mim-Atanu	ʔi-sěj:s-tanu	ʔi-Σ(w)-(A)tanu	(1.2) (2.1/2.5) 1.12
3/2>1DI	ʔi-mim-iti	ʔi-sěj:s-ti	ʔi-Σ(w)-(i)ti	(1.2) (2.1/2.5) 1.12
3/2>1DE	ʔi-mim-utu	ʔi-sěj:s-tu	ʔi-Σ(w)-(u)tu	(1.2) (2.1/2.5) 1.12
3/2>1PI	ʔi-mām-tiki	ʔi-sěj-tiki	ʔi-Σ(s)-tiki	(1.4/1.9) 2.3 1.12
3/2>1PE	ʔi-mām-takā	ʔi-sěj-takā	ʔi-Σ(s)-takā	(1.4/1.9) 2.3 1.12
3>2S	ʔi-mīm-te	ʔi-sěj:s-te	ʔi-Σ(w)-te	(1.2) (2.1/2.5) 3.2 1.12
3>2D	ʔi-mim-iti	ʔi-sěj:s-ti	ʔi-Σ(w)-(i)ti	(1.2) (2.1/2.5) 1.12
3>2P	ʔi-mim-tenu	ʔi-sěj:s-tenu	ʔi-Σ(w)-tenu	(1.2) (2.1/2.5) 1.12

The 1>2 forms of |nd| verbs are the following, with a special strong assimilated falling tone stem Σ(s,a,f):

Table 31: Stems for 1>2 forms for CVCt transitive roots

Non-past	sent	Stem id., affixes	Rules
1s>2S	sěj-ne	Σ(s,a)-ne	(1.5/1.6/1.7/1.10/1.11) (2.3/2.4) 3.2 1.13
1s>2D	sěj-su	Σ(s,a,f)-su	(1.5/1.6/1.7/1.9/1.10/1.11/1.16) (2.3/2.4) 3.2 1.13
1s>2P	sěj-nu	Σ(s,a,f)-nu	(1.5/1.6/1.7/1.9/1.10/1.11/1.16) (2.3/2.4) 3.2 1.13
Past			
1s>2S	sěj-teni	Σ(s,a)-teni	(1.5/1.6/1.7/1.9/1.10/1.11/1.16) (2.3/2.4) 1.13
1s>2D	sěj-tensu	Σ(s,a,f)-tensu	(1.5/1.6/1.7/1.9/1.10/1.11/1.16) (2.3/2.4) 1.13
1s>2P	sěj-tennu	Σ(s,a,f)-tennu	(1.5/1.6/1.7/1.9/1.10/1.11/1.16) (2.3/2.4) 1.13

Imperatives of |nd| roots are as follows:

Table 32: Imperative forms for imperatives of CVCt transitive roots

	3S	3D	3P
2S	sēnd-e		
2D	se:ts-ije		
2P	se:s-núje		
	1S	1DE	1PE
2S	sē:ts-ʌje	sē:ts-uje	sēj-kʌje
2D	sē:ts-ʌsuje		
2P	sē:ts-ʌnuje		

Table 33: Rules and stems for CVCt transitive roots

IMP	Stem id., affixes	Rules
2S>3	$\Sigma(w,v,l)$ -e	1.1 2.1 3.1
2>3.D	$\Sigma(w)$ -ije	(1.2) (2.1/2.5) 1.12
2>3.P	$\Sigma(w,p)$ -nuje	(2.1/2.5) 1.12
2S>1S	$\Sigma(w)$ -ʌje	(1.2) (2.1/2.5) 1.12
2D>1S	$\Sigma(w)$ -ʌsuje	(1.2) (2.1/2.5) 1.12
2P>1S	$\Sigma(w)$ -ʌnuje	(1.2) (2.1/2.5) 1.12
2>1D	$\Sigma(w)$ -uje	(1.2) (2.1/2.5) 1.12
2>1P	$\Sigma(s,lp)$ -kʌje	(1.4/1.9) 2.3 1.12

9. Open root verbs

Stem alternations in open roots are quite different from those in consonant-final roots. There are no *weak* vs. *strong* stems, and most of the rules stated above (except 2.1 and 2.2, both *fronting* rules) do not apply. Instead, a past lengthened stem is found in past 2S and 3S of intransitive verbs. All other intransitive and transitive forms present the basic stem, except for transitive |a| roots, whose paradigm is more complex.

The suffixes used with open-syllable roots are also slightly different: dual suffixes *-ji* and *-ju*, past dual exclusive *-itu* (instead of *-utu*), past 1S *-ηʌtʌ* (instead of *-ʌtʌ*), past 1P with an additional *-k-* (*-ktiki* instead of *-tiki*) and past 2/3P *-tnu* (instead of *-tenu*).

Rules 2.1 and 2.2 apply to the basic stem (so that |a|, |o|, and |u| appear as ϵ , \emptyset and \mathfrak{u} respectively), but not to the lengthened stem:

Table 34: Stems for intransitive open root verbs, by root vowel

Non-past	[Ca]	[Ce]	[Ci]	[Co]	[Cu]	
Meaning	to burn	to say	to come	to come to ripen	to be late	Stem id., affixes
1S	g ^{hr} ε-ηΛ	dze-ηΛ	pi-ηΛ	fiε-ηΛ	ts ^h ε-ηΛ	Σ-ηΛ
1DI	g ^{hr} ε-jī	dze-jī	pi-jī	fiε-jī	ts ^h ε-jī	Σ-jī
1DE	g ^{hr} ε-ju	dze-ju	pi-ju	fiε-ju	ts ^h ε-ju	Σ-ju
1PI	g ^{hr} ε-ki	dze-ki	pi-ki	fiε-ki	ts ^h ε-ki	Σ-ki
1PE	g ^{hr} ε-kΛ	dze-kΛ	pi-kΛ	fiε-kΛ	ts ^h ε-kΛ	Σ-kΛ
2S	?i-g ^{hr} ε	?i-dze	?i-pi	?i-fiε	?i-ts ^h ε	?i-Σ
2D	?i-g ^{hr} ε-jī	?i-dze-jī	?i-pi-jī	?i-fiε-jī	?i-ts ^h ε-jī	?i-Σ-jī
2P	?i-g ^{hr} ε-ni	?i-dze-ni	?i-pi-ni	?i-fiε-ni	?i-ts ^h ε-ni	?i-Σ-ni
3S	g ^{hr} ε	dze	pi	fiε	ts ^h ε	Σ
3D	g ^{hr} ε-jī	dze-jī	pi-jī	fiε-jī	ts ^h ε-jī	Σ-jī
3P	g ^{hr} ε-nu	dze-nu	pi-nu	fiε-nu	ts ^h ε-nu	Σ-nu
Past						
1S	g ^{hr} ε-ηΛΛ	dze-ηΛΛ	pi-ηΛΛ	fiε-ηΛΛ	ts ^h ε-ηΛΛ	Σ-ηΛΛ
1DI	g ^{hr} ε-jti	dzê-jti	pî-iti	fiê-jti	ts ^h ε-jti	Σ-iti
1DE	g ^{hr} ε-jtu	dzê-jtu	pî-itu	fiê-jtu	ts ^h ε-jtu	Σ-itu
1PI	g ^{hr} ε-ktiki	dze-ktiki	pi-ktiki	fiê-ktiki	ts ^h ε-ktiki	Σ-ktiki
1PE	g ^{hr} ε-ktΛkΛ	dze-ktΛkΛ	pi-ktΛkΛ	fiê-ktΛkΛ	ts ^h ε-ktΛkΛ	Σ-ktΛkΛ
2S	?i-g ^{hr} āi-te	?i-dzêi-te	?i-pûi-te	?i-fiôi-te	?i-ts ^h ûi-te	?i-Σ(l)-te
2D	?i-g ^{hr} ε-jti	?i-dzê-jti	?i-pî-iti	?i-fiê-jti	?i-ts ^h ε-jti	?i-Σ-iti
2P	?i-g ^{hr} ra-tnu	?i-dze-tnu	?i-pu-tnu	?i-fiô-tnu	?i-ts ^h u-tnu	?i-Σ(l)-tnu
3S	g ^{hr} āi-te	dzêi-te	pûi-te	fiôi-te	ts ^h ûi-te	Σ(l)-te
3D	g ^{hr} ε-jti	dzê-jti	pî-jti	fiê-jti	ts ^h ε-jti	Σ-iti
3P	g ^{hr} ra-tnu	dze-tnu	putnu	fiô-tnu	ts ^h u-tnu	Σ(l)-tnu

The examples of intransitive [a] roots encountered so far are all impersonal and thus have a defective conjugation (*mi ghrε* ‘the fire burns’). In forms other than the third person singular, [g^{hr}ra] is conjugated only in the serial construction [*mə g^{hr}ε*] ‘to vomit terribly’, for instance *məηΛΛ g^{hr}εηΛΛ* ‘I vomited terribly’.

The imperative singular and plural have the same vowel as the 2S/3S forms:

Table 35: Imperative stems for open root verbs

2S	dzêi-je	pûi-je	Σ(l)-je
2D	dzê-jje	pî-jje	Σ-jje
2P	dzê-nje	pû-nje	Σ(l)-nje

A number of open syllable root verbs have irregularities, with idiosyncratic vowel alternations.

Table 36: Idiosyncracies in stems of some open root verbs

Non-past	Ce	Cu	Cu	
Meaning	to come down	to feel	to be	
1S	je-ŋΛ	l̥Λ-ŋΛ	mu-ŋΛ	Σ(b)-ŋΛ
1DI	je-ji	l̥Λ-ji	m̥Λ-ji	Σ-ji
1DE	je-ju	l̥Λ-ju	m̥Λ-ju	Σ-ju
1PI	je-ki	l̥Λ-ki	mu-ki	Σ(b)-ki
1PE	je-kΛ	l̥Λ-kΛ	mu-kΛ	Σ(b)-kΛ
2S	?i-je	?i-l̥Λ	?i-mu	?i-Σ(b)
2D	?i-je-ji	?i-l̥Λ-ji	?i-m̥Λ-ji	?i-Σ-ji
2P	?i-je-ni	?i-l̥Λ-ni	?i-m̥Λ-ni	?i-Σ-ni
3S	je	l̥Λ	mu	Σ(b)
3D	je-ji	l̥Λ-ji	m̥Λ-ji	Σ-ji
3P	je-nu	l̥Λ-nu	mu-nu	Σ(b)-nu
Past				
1S	je-ŋΛΛ	l̥Λ-ŋΛΛ	mu-ŋΛΛ	Σ(b)-ŋΛΛ
1DI	jê-jti	l̥Λ-jti	m̥Λ-jti	Σ-iti
1DE	jê-jtu	l̥Λ-jtu	m̥Λ-jtu	Σ-itu
1PI	je-ktiki	l̥Λ-ktiki	mu-ktiki	Σ(b)-ktiki
1PE	je-ktΛkΛ	l̥Λ-ktΛkΛ	mu-ktΛkΛ	Σ(b)-ktΛkΛ
2S	?i-jā:-te	?i-lō:-te	?i-mō:-te	?i-Σ(l)-te
2D	?i-jê-jti	?i-l̥Λ-jti	?i-m̥Λ-jti	?i-Σ-iti
2P	?i-ja-tnu	?i-lo-tnu	?i-mo-tnu	?i-Σ(l)-tnu
3S	jā:-te	lō:-te	mō:-te	Σ(l)-te
3D	jê-jti	l̥Λ-jti	m̥Λ-jti	Σ-iti
3P	ja-tnu	lo-tnu	mo-tnu	Σ(l)-tnu

The irregular /e/~/a/ alternation in the paradigm of |je| ‘to come down’ might be due historically to the presence of initial /j/ (as in the case of the verb |jal| ‘to strike’). The root |mu| ‘to be’ is unique in having a back vowel stem *mu* that appears in non-dual forms (except where the past lengthened stem appears).

Note that the imperative of ‘come down’ has the regular lengthened stem of |e| roots, different from the lengthened past stem.

Table 37: Imperative forms of verbs with roots |je| and |lu|

2S	jē:-je	(mu)lō:-je	Σ(l)-je
2D	jê-jje	(mu)l̥Λ-jje	Σ-jje
2P	jê-nje	(mu)lō-nje	Σ(l)-nje

This appears to be the only verb in the language whose imperative stem is distinct from the second person past form.

Transitive open roots have the same set of affixes except for the 1SG>3 past (-*ηtΛ* instead of -*ηΛtΛ*) and 3>3(D). The pattern of stem alternations is slightly different, especially for |a| roots, which have complex alternations:

Table 38: Stems for transitive open root verbs, by root vowel

Non-past	dza	k ^h e	ŋi	t ^h o	
Meaning	to eat	to steal	to hear	to see	
1S>3	dzΛ-ηΛ	k ^h e-ηΛ	ŋi-ηΛ	t ^h o-ηΛ	Σ(1SG.NPST)-ηΛ
1DI>3	dzø-ji	k ^h e-ji	ŋi-ji	t ^h o-ji	Σ-ji
1DE>3	dzø-ju	k ^h e-ju	ŋi-ju	t ^h o-ju	Σ-ju
1PI>3	dzø-ki	k ^h e-ki	ŋi-ki	t ^h o-ki	Σ-ki
1PE>3	dzø-kΛ	k ^h e-kΛ	ŋi-kΛ	t ^h o-kΛ	Σ-kΛ
2S>3	ʔi-dzε	ʔi-k ^h e	ʔi-ŋi	ʔi-t ^h o	ʔi-Σ(2/3.NPST)
2D>3	ʔi-dzø-ji	ʔi-k ^h e-ji	ʔi-ŋi-ji	ʔi-t ^h o-ji	ʔi-Σ-ji
2P>3	ʔi-dzø-ni	ʔi-k ^h e-ni	ʔi-ŋi-ni	ʔi-t ^h o-ni	ʔi-Σ-ni
3S>3	dzε	k ^h e	ŋi	t ^h o	Σ(2/3.NPST)
3D>3	dzε-su	k ^h e-su	ŋi-su	t ^h o-su	Σ(2/3.NPST)-su
3P>3	dzε-nu	k ^h e-nu	ŋi-nu	t ^h o-nu	Σ(2/3.NPST)-nu
Past					
1S>3	dzû-ηtΛ	k ^h ê-ηtΛ	ŋî-ηtΛ	t ^h ô-ηtΛ	Σ(1SG.PST)-ηtΛ
1DI>3	dzô-jti	k ^h ê-jti	ŋî-iti	t ^h ô-jti	Σ-iti
1DE>3	dzô-jtu	k ^h ê-jtu	ŋî-itu	t ^h ô-jtu	Σ-itu
1PI>3	dzø-ktiki	k ^h e-ktiki	ŋi-ktiki	t ^h o-ktiki	Σ-ktiki
1PE>3	dzø-ktΛkΛ	k ^h e-ktΛkΛ	ŋi-ktΛkΛ	t ^h o-ktΛkΛ	Σ-ktΛkΛ
2S>3	ʔi-dzû-te	ʔi-k ^h e-te	ʔi-ŋi-te	ʔi-t ^h o-te	ʔi-Σ(2/3.PST)-te
2D>3	ʔi-dzô-jti	ʔi-k ^h ê-jti	ʔi-ŋî-jti	ʔi-t ^h ô-jti	ʔi-Σ-iti
2P>3	ʔi-dzo-tnu	ʔi-k ^h e-tnu	ʔi-ŋu-tnu	ʔi-t ^h o-tnu	ʔi-Σ(shortened)-tnu
3S>3	dzû-te	k ^h e-te	ŋi-te	t ^h o-te	Σ(2/3.PST)-te
3D>3	dzû-ssu	k ^h e-ssu	ŋi-ssu	t ^h o-ssu	Σ(2/3.PST)-ssu
3P>3	dzû-tnu	k ^h e-tnu	ŋi-tnu	t ^h o-tnu	Σ(2/3.PST)-tnu
3S>2S	ʔi-dzô:-te	X	ʔi-ŋû:-te	ʔi-t ^h ô:-te	ʔi-Σ(1)-te

The lengthened stem only appears in 2PL>3 past and 3SG>2 past forms. The 3SG>3.PST in particular has a short vowel, a difference with intransitive verbs that allows us to distinguish between these two verb categories (since the 1S.NPST has -*ηΛ* for both transitive and intransitive).

For |a| roots, no less than seven different vowels appear in the paradigm:

Table 39: Distribution of stems for transitive roots

name	form	distribution
basic	C \emptyset	1D/2D, 1P, 2P NPST
1SG.NPST	C Λ	1SG>3 NPST
2/3.NPST	C ϵ	2SG>3 NPST, 3SG>3 NPST
1SG.PST	Cu	1SG>3 PST
2/3.PST	C \mathfrak{h}	2SG>3 PST, 3>3 PST
lengthened	C \ddot{o} :	3SG>2SG PST
shortened	Co	2PL>3 PST

The imperative of transitive verbs has the lengthened stem only in the plural. The 2/3.PST stem is found in the singular form:

Table 40: Shortened stem in plural imperative

2S	dz \mathfrak{h} -je	Σ (2/3.PST)-je
2D	dz $\hat{\theta}$ -jje	Σ -jje
2P	dz \hat{o} -nje	Σ (shortened)-nje

These are the same stem forms as those found in second person past, with a different suffix. Note that the 2>1 imperative suffix of open-syllable transitive roots is *- $\eta\Lambda je$* instead of *- Λje* with the weak stem: *bi- $\eta\Lambda je$* ‘give it to me’. Open-syllable roots and *- η* final roots have the same imperative 2>1 (as well as 2/3>1S).

Table 41: Inverse imperative forms for open root verbs

	1S	1DE	1PE
2S	ηi - $\eta\Lambda je$	$\eta\hat{i}$ -ije	ηi -k Λje
2D	ηi - $\eta\Lambda su je$		
2P	ηi - $\eta\Lambda nu je$		

The inverse forms can be predicted from the above paradigms, but the 1S>2 forms present idiosyncrasies:

Table 42: 1>2 forms for open root verbs

	sent ‘to look at’	Stems
Non-past		
1S>2S	k \emptyset -n ϵ	Σ (A)-n ϵ
1S>2D	k $\hat{\theta}$ -nsu	Σ (A)-nsu
1S>2P	k $\hat{\theta}$ -nnu	Σ (A)-nnu
Past		
1S>2S	k $\hat{\theta}$ -nteni	Σ (A)-nteni
1S>2D	k $\hat{\theta}$ -ntensu	Σ (A)-ntensu
1S>2P	k $\hat{\theta}$ -ntennu	Σ (A)-ntennu

An additional *-n-* appears in all forms but the 1S>2S.

|mu| ‘to do’, which merges |Cu| root forms with |Ca| root forms), is the only irregular transitive verb:

Table 43: Irregular transitive open root verb

Non-past	mu ‘to do’	
1S	mΛ-ηΛ	Σ(1SG.NPST)-ηΛ
1DI	mΛ-jī	Σ-jī
1DE	mΛ-ju	Σ-ju
1PI	mΛ-ki	Σ-ki
1PE	mΛ-kΛ	Σ-kΛ
2S	ʔi-mε	ʔi-Σ(2/3.NPST)
2D	ʔi-mΛ-jī	ʔi-Σ-jī
2P	ʔi-mΛ-ni	ʔi-Σ-ni
3S	mε	Σ(2/3.NPST)
3D	mε-su	Σ(2/3.NPST)-su
3P	mε-nu	Σ(2/3.NPST)-nu
Past		
1S	mû-ηΛ	Σ(1SG.PST)-ηΛ
1DI	mû-jti	Σ-iti
1DE	mû-jtu	Σ-itu
1PI	mΛ-ktiki	Σ-ktiki
1PE	mΛ-ktΛkΛ	Σ-ktΛkΛ
2S	ʔi-mΛ-tε	ʔi-Σ(2/3.PST)-tε
2D	ʔi-mû-jti	ʔi-Σ-iti
2P	ʔi-mo-tnu	ʔi-Σ(shortened)-tnu
3S	mΛ-tε	Σ(2/3.PST)-tε
3D	mΛ-ssu	Σ(2/3.PST)-ssu
3P	mΛ-tnu	Σ(2/3.PST)-tnu

For open verb roots, it is always necessary to have the 1S.NPST and the 3S.PST forms. The 1S.PST makes it possible to determine the root class and the transitivity, but in the case of intransitive verbs, this form is homophonous with the equivalent form for |CVŋ| roots. Thus, *məŋΛtΛ* is the 1S.PST form of both |mo| ‘to vomit’ and |moŋ| ‘to dream’.

10. Conclusion

The present paper provides a comprehensive description of Khaling verbal stem alternations and of the structure of the transitive and intransitive paradigms.

Explaining these paradigms however will require a systematic comparison with Dumi and Koyi. Many non-trivial alternations, such as that between *-j/-ts/-s* (in verbs

such as ‘to go’ 1S.NP *kʰoŋj-ŋa*, 1DI.NPST *kʰəts-i*, 1DI.PST *kʰəs-ti*) are shared between Khaling, Dumi, Koyi, and perhaps other Kiranti languages, and should be reconstructed back to their common ancestor.

Although most alternations in Khaling seem to be relatively recent, due to the loss of final consonants or to the application of accentual rules (especially for the lengthening rule 3.1), it is conceivable some of the vowel alternations observed in the Khaling paradigms are not recent, but constitute archaisms.¹⁴

This paper describes only part of the Khaling verbal system. The negative and reflexive paradigms have not been treated, and the system of auxiliaries, whose conjugations are highly irregular, will be described in future publications.

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¹⁴ In particular, the puzzling *i/u*: alternation of the open-stem paradigms reminds one of the unexplained *o/i* alternation found in Situ Rgyalrong in the verb ‘to come’ *pi*, *po* (Lin 2003: 254). It is significant that this alternation occurs in the Khaling verb /pi/ ‘to come (horizontal plane)’, the probable cognate of Situ *pi*.

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卡玲語動詞形態概要

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本文提供卡玲語及物和不及物動詞系統的完整描寫，並重點討論形態變化中的詞幹交替。我們用內部構擬法分析詞幹交替，在這個構擬模式中，動詞形態的任何一個形式可以用一系列的形態規則從動詞的原形派生出來。我們在這個構擬模式的基礎上編了電腦程式，這個程式自動生成所有的動詞形態。電腦生成的動詞變位表得到卡玲語母語者的驗證。

我們的構擬模式不但是分析詞幹交替的有效方法，也是進行基蘭提語言語音和動詞形態歷史比較的基礎研究，特別是密切相關的督米語和高衣語。

關鍵詞：形態音位學，混成詞，模板性形態，聲調交替，基蘭提，卡玲語，督米語

Appendix

Table 1: Intransitive verb *ghre* ‘burn’

	non-past	past	imperative
1S	ghreŋa	ghreŋata	
1DI	ghreji	ghrêiti	
1DE	ghreju	ghrêitu	
1PI	ghreki	ghrektiki	
1PE	ghreka	ghrektaka	
2S	ʔighre	ʔighrā:te	
2D	ʔighreji	ʔighrêiti	
2N	ʔighreni	ʔighratnu	
3S	ghre	ghrā:te	
3D	ghreji	ghrêiti	
3N	ghrenu	ghratnu	

Table 4: Intransitive verb *dzhem* ‘disappear’

	non-past	past	imperative
1S	dzhemŋa	dzhemata	
1DI	dzhemi	dzhemiti	
1DE	dzhemu	dzhemutu	
1PI	dzhemki	dzhemtiki	
1PE	dzhemka	dzhemtaka	
2S	ʔidzhem	ʔidzhêmtē	
2D	ʔidzhemi	ʔidzhemiti	
2N	ʔidzhemni	ʔidzhemtenu	
3S	dzhem	dzhêmtē	
3D	dzhemi	dzhemiti	
3N	dzhemnu	dzhemtenu	

Table 2: Intransitive verb *dzhep* ‘be possible’

	non-past	past
3S	dzhē:p	dzhepte

Table 5: Intransitive verb *ŋen* ‘sit’

	non-past	past	imperative
1S	ŋejŋa	ŋē:sta	
1DI	ŋē:tsi	ŋē:sti	
1DE	ŋē:tsu	ŋē:stu	
1PI	ŋejki	ŋejtiki	
1PE	ŋejka	ŋejtaka	
2S	ʔiŋej	ʔiŋē:ste	
2D	ʔiŋē:tsi	ʔiŋē:sti	
2N	ʔiŋejni	ʔiŋē:stenu	
3S	ŋej	ŋē:ste	
3D	ŋē:tsi	ŋē:sti	
3N	ŋejnu	ŋē:stenu	

Table 3: Transitive verb *ʔet* ‘say’

	non-past	past	imperative
1S	ʔējŋa	ʔēsta	
1DI	ʔetsi	ʔēsti	
1DE	ʔetsu	ʔēstu	
1PI	ʔeçki	ʔeçtiki	
1PE	ʔeçka	ʔeçtaka	
2S	ʔiʔēj	ʔiʔēste	
2D	ʔiʔetsi	ʔiʔēsti	
2N	ʔiʔēnni	ʔiʔēstenu	
3S	ʔēj	ʔēste	
3D	ʔetsi	ʔēsti	
3N	ʔēnnu	ʔēstenu	

Table 6: Intransitive verb *ghaŋ* ‘agree’

	non-past	past	imperative
1S	ghā:ŋa	ghaŋata	
1DI	ghaŋi	ghaŋiti	
1DE	ghaŋu	ghaŋutu	
1PI	ghaŋki	ghaŋtiki	
1PE	ghaŋka	ghaŋtaka	
2S	ʔighaŋ	ʔighāŋte	
2D	ʔighaŋi	ʔighaŋiti	
2N	ʔighā:ni	ʔighaŋtenu	
3S	ghaŋ	ghāŋte	
3D	ghaŋi	ghaŋiti	
3N	ghā:nu	ghaŋtenu	

Table 7: Intransitive verb *gher*
'have an insomnia'

	non-past	past	imperative
1S	gherŋa	gherata	
1DI	gheri	gheriti	
1DE	gheru	gherutu	
1PI	gherki	ghertiki	
1PE	gherka	ghertaka	
2S	ŋigher	ŋighêrte	
2D	ŋigheri	ŋigheriti	
2N	ŋigherni	ŋighertenu	
3S	gher	ghêrte	
3D	gheri	gheriti	
3N	ghernu	ghertenu	

Table 8: Intransitive verb *ŋel* 'play a trick on'

	non-past	past	imperative
1S	ŋelŋa	ŋelata	
1DI	ŋeli	ŋeliti	
1DE	ŋelu	ŋelutu	
1PI	ŋelki	ŋeltiki	
1PE	ŋelka	ŋeltaka	
2S	ŋigel	ŋigêlte	
2D	ŋigeli	ŋigeliti	
2N	ŋigelni	ŋigeltenu	
3S	ŋel	ŋêlte	
3D	ŋeli	ŋeliti	
3N	ŋelnu	ŋeltenu	

Table 9: Transitive verb *ka* 'eat'

	non-past	past	imperative
1S	kaŋa	kûŋta	
1DI	køji	kôiti	
1DE	køju	kôitu	
1PI	køki	køktiki	
1PE	køka	køktaka	
2S	ŋike	ŋikæte	
2D	ŋikøji	ŋikôiti	
2N	ŋikøni	ŋikotnu	
3S	ke	kæte	
3D	kesu	kætsu	
3N	kenu	kætnu	
2/3S>1S	ŋikøŋa	ŋikøŋata	køŋaje
2/3D>1S	ŋikøŋasu	ŋikøŋatasu	køŋasuje
2/3P>1S	ŋikøŋanu	ŋikøŋatanu	køŋanuje
2/3>1DI	ŋikøji	ŋikôiti	køije
2/3>1DE	ŋikøju	ŋikôitu	
2/3>1PI	ŋikøki	ŋikøktiki	
2/3>1PE	ŋikøka	ŋikøktaka	køkaje
3,1D/PE>2S	ŋikø	ŋikō:te	
3,1D/PE>2D	ŋikøji	ŋikôiti	
3,1D/PE>2P	ŋikøni	ŋikotnu	
1S>2S	køne	kønteni	
1S>2D	kønsu	køntensu	
1S>2P	kønnu	køntennu	

Table 10: Transitive verb *khep* ‘be about to’

	non-past	past	imperative
1S>3S	khebu	khebuta	khẽ:be
1S>3D	khebusu	khebutasu	
1S>3P	khebunu	khebutanu	
1DI>3	khepi	khepiti	
1DE>3	khepu	kheputu	
1PI>3	khepki	kheptiki	
1PE>3	khepka	kheptaka	
2S>3S	ʔikhē:b̥a	ʔikhē:pte	
2S>3D	ʔikhē:psu	ʔikhē:ptesu	
2S>3P	ʔikhē:pnu	ʔikhē:ptenu	
2D>3	ʔikhēpi	ʔikhēpiti	khepije
2N>3	ʔikhēmni	ʔikheptenu	khepnuje
3S>3S	khē:b̥a	khē:pte	khepkaje
3>3(D)	khē:psu	khē:ptesu	
3>3(P)	khē:pnu	khē:ptenu	
2/3S>1S	ʔikhēmɣa	ʔikhepta	
2/3D>1S	ʔikhēmɣasu	ʔikheptasu	
2/3P>1S	ʔikhēmɣanu	ʔikheptanu	
2/3>1DI	ʔikhēpi	ʔikhēpiti	
2/3>1DE	ʔikhēpu	ʔikhēputu	
2/3>1PI	ʔikhēpki	ʔikheptiki	
2/3>1PE	ʔikhēpka	ʔikheptaka	
3,1D/PE>2S	ʔikhē:p	ʔikhepte	
3,1D/PE>2D	ʔikhēpi	ʔikhēpiti	
3,1D/PE>2P	ʔikhēmni	ʔikheptenu	
1S>2S	khēmne	khēmteni	
1S>2D	khēmsu	khēmten-su	
1S>2P	khēmnu	khēmtennu	

Table 11: Transitive verb *ket* ‘bite’

	non-past	past	imperative
1S>3S	kədu	kē:ta	kē:de
1S>3D	kədusu	kē:tasu	
1S>3P	kədunu	kē:tanu	
1DI>3	ketsi	kesti	
1DE>3	ketsu	kestu	
1PI>3	keçki	keçtiki	
1PE>3	keçka	keçtaka	
2S>3S	ʔikē:d̥a	ʔikē:te	
2S>3D	ʔikē:tsu	ʔikē:tesu	
2S>3P	ʔikē:tnu	ʔikē:tenu	
2D>3	ʔiketsi	ʔikesti	ketsije
2N>3	ʔikēnni	ʔikestenu	kesnuje
3S>3S	kē:d̥a	kē:te	ketsaje
3>3(D)	kē:tsu	kē:tesu	
3>3(P)	kē:tnu	kē:tenu	
2/3S>1S	ʔikējɣa	ʔikesta	
2/3D>1S	ʔikējɣasu	ʔikestasu	
2/3P>1S	ʔikējɣanu	ʔikestanu	
2/3>1DI	ʔiketsi	ʔikesti	
2/3>1DE	ʔiketsu	ʔikestu	
2/3>1PI	ʔikeçki	ʔikeçtiki	
2/3>1PE	ʔikeçka	ʔikeçtaka	
3,1D/PE>2S	ʔikēj	ʔikeste	
3,1D/PE>2D	ʔiketsi	ʔikesti	
3,1D/PE>2P	ʔikēnni	ʔikestenu	
1S>2S	kēnne	kēnteni	
1S>2D	kēnsu	kēntensu	
1S>2P	kēnnu	kēntennu	

Table 12: Transitive verb *sak* ‘choose’

	non-past	past	imperative
1S>3S	sagu	saguta	
1S>3D	sagusu	sagutasu	
1S>3P	sagunu	sagutanu	
1DI>3	saki	sakiti	
1DE>3	saku	sakutu	
1PI>3	sakki	saktiki	
1PE>3	sakka	saktaka	
2S>3S	ʔisā:ɡu	ʔisā:kte	sā:ge
2S>3D	ʔisā:ksu	ʔisā:ktesu	
2S>3P	ʔisā:knu	ʔisā:ktenu	
2D>3	ʔisaki	ʔisakiti	sakije
2N>3	ʔisā:ni	ʔisaktenu	saknuje
3S>3S	sā:ɡu	sā:kte	
3>3(D)	sā:ksu	sā:ktesu	
3>3(P)	sā:knu	sā:ktenu	
2/3S>1S	ʔisā:ŋa	ʔisakata	sakaje
2/3D>1S	ʔisā:ŋasu	ʔisakatasu	sakasuje
2/3P>1S	ʔisā:ŋanu	ʔisakatanu	sakanuje
2/3>1DI	ʔisaki	ʔisakiti	
2/3>1DE	ʔisaku	ʔisakutu	sakuje
2/3>1PI	ʔisakki	ʔisaktiki	
2/3>1PE	ʔisakka	ʔisaktaka	sakakaje
3,1D/PE>2S	ʔisā:	ʔisakte	
3,1D/PE>2D	ʔisaki	ʔisakiti	
3,1D/PE>2P	ʔisā:ni	ʔisaktenu	
1s>2S	sā:ne	sânteni	
1s>2D	sânsu	sântensu	
1s>2P	sânnu	sântennu	

Table 13: Transitive verb *khlēm* ‘bewitch’

	non-past	past	imperative
1S>3S	khlemu	khlemuta	khlẽme
1S>3D	khlemusu	khlemutasu	
1S>3P	khlemunu	khlemutanu	
1DI>3	khlemi	khlemiti	
1DE>3	khlemu	khlemutu	
1PI>3	khlemki	khlemtiki	
1PE>3	khlemka	khlemtaka	
2S>3S	ʔikhlē:m̥	ʔikhlēmte	
2S>3D	ʔikhlēmsu	ʔikhlēmtesu	
2S>3P	ʔikhlēmn̥u	ʔikhlēmtenu	
2D>3	ʔikhlemi	ʔikhlemiti	khlēmije
2N>3	ʔikhlemni	ʔikhlemtenu	khlēmnuje
3S>3S	khlẽ:m̥	khlẽmte	
3>3(D)	khlẽmsu	khlẽmtesu	
3>3(P)	khlẽmn̥u	khlẽmtenu	
2/3S>1S	ʔikhlemɟa	ʔikhlemaɬa	khlɛmaɟe
2/3D>1S	ʔikhlemɟasu	ʔikhlemaɬasu	khlɛmasuje
2/3P>1S	ʔikhlemɟanu	ʔikhlemaɬanu	khlɛmanuje
2/3>1DI	ʔikhlemi	ʔikhlemiti	khlɛmuje
2/3>1DE	ʔikhlemu	ʔikhlemutu	
2/3>1PI	ʔikhlemki	ʔikhlemtiki	
2/3>1PE	ʔikhlemka	ʔikhlemtaka	khlɛmkaje
3,1D/PE>2S	ʔikhlem	ʔikhlēmte	
3,1D/PE>2D	ʔikhlemi	ʔikhlemiti	
3,1D/PE>2P	ʔikhlemni	ʔikhlemtenu	
1s>2S	khlemne	khlemteni	
1s>2D	khlēmsu	khlemtensu	
1s>2P	khlēmn̥u	khlemtennu	

Table 14: Transitive verb *jaŋ*
'sift, steal little by little'

	non-past	past	imperative
1S>3S	jaŋu	jaŋuta	jā:ŋe
1S>3D	jaŋusu	jaŋutasu	
1S>3P	jaŋunu	jaŋutanu	
1DI>3	jaŋi	jaŋiti	
1DE>3	jaŋu	jaŋutu	
1PI>3	jaŋki	jaŋtiki	
1PE>3	jaŋka	jaŋtaka	
2S>3S	ʔijā:ŋɛ	ʔijāŋte	
2S>3D	ʔijāŋsu	ʔijāŋtesu	
2S>3P	ʔijāŋnu	ʔijāŋtenu	
2D>3	ʔijāŋi	ʔijāŋiti	
2N>3	ʔijā:ni	ʔijāŋtenu	
3S>3S	jā:ŋɛ	jāŋte	
3>3(D)	jāŋsu	jāŋtesu	
3>3(P)	jāŋnu	jāŋtenu	

Table 15: Transitive verb *wɛr*
'mind (an objection)'

	non-past	past	imperative
1S>3S	wɛru	wɛruta	wɛ're
1S>3D	wɛrusu	wɛrutasu	
1S>3P	wɛrunu	wɛrutanu	
1DI>3	wɛri	wɛriti	
1DE>3	wɛru	wɛrutu	
1PI>3	wɛrki	wɛrtiki	
1PE>3	wɛrka	wɛrtaka	
2S>3S	ʔiwɛ:rɛ	ʔiwɛrte	
2S>3D	ʔiwɛrsu	ʔiwɛrtesu	
2S>3P	ʔiwɛrnu	ʔiwɛrtenu	
2D>3	ʔiwɛri	ʔiwɛriti	
2N>3	ʔiwɛrni	ʔiwɛrtenu	
3S>3S	wɛ:rɛ	wɛrte	
3>3(D)	wɛrsu	wɛrtesu	
3>3(P)	wɛrnu	wɛrtenu	

Table 16: Transitive verb *jal* 'beat'

	non-past	past	imperative
1S>3S	jalu	jaluta	jā:le
1S>3D	jalusu	jalutasu	
1S>3P	jalunu	jalutanu	
1DI>3	jali	jaliti	
1DE>3	jalu	jalutu	
1PI>3	jalki	jaltiki	
1PE>3	jalka	jaltaka	
2S>3S	ʔijālɛ	ʔijālte	
2S>3D	ʔijālsu	ʔijāltesu	
2S>3P	ʔijālnu	ʔijāltenu	
2D>3	ʔijali	ʔijaliti	
2N>3	ʔijalni	ʔijaltenu	
3S>3S	jā:lɛ	jālte	
3>3(D)	jālsu	jāltesu	
3>3(P)	jālnu	jāltenu	
2/3S>1S	ʔijalɣa	ʔijalata	jalaɣe
2/3D>1S	ʔijalɣasu	ʔijalatasu	jalasuje
2/3P>1S	ʔijalɣanu	ʔijalatanu	jalanuje
2/3>1DI	ʔijali	ʔijaliti	jaluje
2/3>1DE	ʔijalu	ʔijalutu	
2/3>1PI	ʔijalki	ʔijaltiki	
2/3>1PE	ʔijalka	ʔijaltaka	
3,1D/PE>2S	ʔijal	ʔijālte	
3,1D/PE>2D	ʔijali	ʔijaliti	jalkaɣe
3,1D/PE>2P	ʔijalni	ʔijaltenu	
1S>2S	jalne	jalteni	
1S>2D	jālsu	jaltensu	
1S>2P	jālnu	jaltenu	

Table 17: Transitive verb *phel* ‘damage’

	non-past	past	imperative
1S>3S	phelu	pheluta	phēle
1S>3D	phelusu	phelutasu	
1S>3P	phelunu	phelutānu	
1DI>3	pheli	pheliti	
1DE>3	phelu	phelutu	
1PI>3	phelki	pheltiki	
1PE>3	phelka	pheltaka	
2S>3S	ʔiphēlɛ	ʔiphēlte	
2S>3D	ʔiphēlsu	ʔiphēltesu	
2S>3P	ʔiphēlnu	ʔiphēltenu	
2D>3	ʔipheli	ʔipheliti	phelije
2N>3	ʔiphelni	ʔipheltenu	phelnuje
3S>3S	phēlɛ	phēlte	phelaje
3>3(D)	phēlsu	phēltesu	
3>3(P)	phēlnu	phēltenu	
2/3S>1S	ʔiphelŋa	ʔiphelata	
2/3D>1S	ʔiphelŋasu	ʔiphelatasu	
2/3P>1S	ʔiphelŋanu	ʔiphelatānu	
2/3>1DI	ʔipheli	ʔipheliti	
2/3>1DE	ʔiphelu	ʔiphelutu	pheluje
2/3>1PI	ʔiphelki	ʔipheltiki	phelkaje
2/3>1PE	ʔiphelka	ʔipheltaka	
3,1D/PE>2S	ʔiphel	ʔiphēlte	
3,1D/PE>2D	ʔipheli	ʔipheliti	
3,1D/PE>2P	ʔiphelni	ʔipheltenu	
1S>2S	phelne	phelteni	
1S>2D	phēlsu	pheltensu	
1S>2P	phēlnu	pheltennu	

Table 18: Transitive verb *phrept* ‘scratch’

	non-past	past	imperative
1S>3S	phreptu	phrepta	phrepte
1S>3D	phreptusu	phreptasu	
1S>3P	phreptunu	phreptānu	
1DI>3	phrepi	phrepiti	
1DE>3	phrepu	phreputu	
1PI>3	phrepki	phreptiki	
1PE>3	phrepka	phreptaka	
2S>3S	ʔiphreptɛ	ʔiphrepte	
2S>3D	ʔiphrepsu	ʔiphreptesu	
2S>3P	ʔiphrepnu	ʔiphreptenu	
2D>3	ʔiphrepi	ʔiphrepiti	phrepije
2N>3	ʔiphrēmni	ʔiphreptenu	phrepnuje
3S>3S	phreptɛ	phrepte	phrepaje
3>3(D)	phrepsu	phreptesu	
3>3(P)	phrepnu	phreptenu	
2/3S>1S	ʔiphrēmŋa	ʔiphrepata	
2/3D>1S	ʔiphrēmŋasu	ʔiphrepatasu	
2/3P>1S	ʔiphrēmŋanu	ʔiphrepatānu	
2/3>1DI	ʔiphrepi	ʔiphrepiti	
2/3>1DE	ʔiphrepu	ʔiphreputu	phrepuje
2/3>1PI	ʔiphrepki	ʔiphreptiki	phrepkaje
2/3>1PE	ʔiphrepka	ʔiphreptaka	
3,1D/PE>2S	ʔiphre:p	ʔiphrepte	
3,1D/PE>2D	ʔiphrepi	ʔiphrepiti	
3,1D/PE>2P	ʔiphrēmni	ʔiphreptenu	
1S>2S	phrēmne	phrēmteni	
1S>2D	phrēmsu	phrēmtenusu	
1S>2P	phrēmnu	phrēmtennu	

Table 19: Transitive verb *rett* ‘settle’

	non-past	past	imperative
1S>3S	rettu	retta	rette
1S>3D	rettusu	rettasu	
1S>3P	rettunu	rettanu	
1DI>3	retsi	resti	
1DE>3	retsu	restu	
1PI>3	reçki	reçtiki	
1PE>3	reçka	reçtaka	
2S>3S	ʔirettu	ʔirette	
2S>3D	ʔiretsu	ʔirettesu	
2S>3P	ʔiretnu	ʔirettenu	
2D>3	ʔiretsi	ʔiresti	retsije
2N>3	ʔirënni	ʔirestenu	resnuje
3S>3S	rettu	rette	retsaje
3>3(D)	retsu	rettesu	
3>3(P)	retnu	rettenu	
2/3S>1S	ʔirëjɲa	ʔiresta	
2/3D>1S	ʔirëjɲasu	ʔirestasu	
2/3P>1S	ʔirëjɲanu	ʔirestanu	
2/3>1DI	ʔiretsi	ʔiresti	
2/3>1DE	ʔiretsu	ʔirestu	
2/3>1PI	ʔireçki	ʔireçtiki	
2/3>1PE	ʔireçka	ʔireçtaka	
3,1D/PE>2S	ʔirëj	ʔireste	
3,1D/PE>2D	ʔiretsi	ʔiresti	
3,1D/PE>2P	ʔirënni	ʔirestenu	
1S>2S	rënnu	rënteni	
1S>2D	rënsu	rëntensu	
1S>2P	rënnu	rëntennu	

Table 20: Transitive verb *krakt* ‘force’

	non-past	past	imperative
1S>3S	kraktu	krakta	krakte
1S>3D	kraktusu	kraktasu	
1S>3P	kraktunu	kraktanu	
1DI>3	kraki	krakiti	
1DE>3	kraku	krakutu	
1PI>3	krakki	kraktiki	
1PE>3	krakka	kraktaka	
2S>3S	ʔikraktu	ʔikrakte	
2S>3D	ʔikraksu	ʔikrakesu	
2S>3P	ʔikraknu	ʔikraktenu	
2D>3	ʔikraki	ʔikrakiti	
2N>3	ʔikrâ:ni	ʔikraktenu	
3S>3S	kraktu	krakte	krakije
3>3(D)	kraksu	krakesu	
3>3(P)	kraknu	kraktenu	
2/3S>1S	ʔikrâ:ɲa	ʔikrakata	
2/3D>1S	ʔikrâ:ɲasu	ʔikrakatasu	
2/3P>1S	ʔikrâ:ɲanu	ʔikrakatanu	
2/3>1DI	ʔikraki	ʔikrakiti	
2/3>1DE	ʔikraku	ʔikrakutu	
2/3>1PI	ʔikrakki	ʔikraktiki	
2/3>1PE	ʔikrakka	ʔikraktaka	
3,1D/PE>2S	ʔikrâ:	ʔikrakte	
3,1D/PE>2D	ʔikraki	ʔikrakiti	
3,1D/PE>2P	ʔikrâ:ni	ʔikraktenu	
1S>2S	krâ:ne	krânteni	
1S>2D	krânsu	krântensu	
1S>2P	krânnu	krântennu	

Table 21: Transitive verb *ghremt* ‘be disgusted by’

	non-past	past	imperative
1S>3S	ghremdu	ghrêmta	ghremde
1S>3D	ghremdusu	ghrêmtasu	
1S>3P	ghremdunu	ghrêmtanu	
1DI>3	ghremi	ghremiti	
1DE>3	ghremu	ghremutu	
1PI>3	ghremki	ghremtiki	
1PE>3	ghremka	ghremtaka	
2S>3S	?ighremda	?ighrêmta	
2S>3D	?ighrêmsu	?ighrêmtasu	
2S>3P	?ighrêmnunu	?ighrêmtanu	
2D>3	?ighremi	?ighremiti	
2N>3	?ighremni	?ighremtenu	
3S>3S	ghremda	ghrêmta	ghremije
3>3(D)	ghrêmsu	ghrêmtasu	
3>3(P)	ghrêmnunu	ghrêmtanu	
2/3S>1S	?ighremna	?ighremata	
2/3D>1S	?ighremnasu	?ighrematasu	ghremasuje
2/3P>1S	?ighremnanunu	?ighrematanu	
2/3>1DI	?ighremi	?ighremiti	
2/3>1DE	?ighremu	?ighremutu	
2/3>1PI	?ighremki	?ighremtiki	ghremuje
2/3>1PE	?ighremka	?ighremtaka	
3,1D/PE>2S	?ighrem	?ighrêmta	
3,1D/PE>2D	?ighremi	?ighremiti	
3,1D/PE>2P	?ighremni	?ighremtenu	ghremkaje
1S>2S	ghremne	ghremteni	
1S>2D	ghrêmsu	ghremtensu	
1S>2P	ghrêmnunu	ghremtennu	

Table 22: Transitive verb *pent* ‘attack’

	non-past	past	imperative
1S>3S	pendu	pênta	pende
1S>3D	pendusu	pêntasu	
1S>3P	pendunu	pêntanu	
1DI>3	pê:tsi	pê:sti	
1DE>3	pê:tsu	pê:stu	
1PI>3	pejki	pejtiki	
1PE>3	pejka	pejtaka	
2S>3S	?ipenda	?ipênta	
2S>3D	?ipênsu	?ipêntasu	
2S>3P	?ipênnunu	?ipêntanu	
2D>3	?ipê:tsi	?ipê:sti	
2N>3	?ipejni	?ipêstenu	
3S>3S	penda	pênta	pê:tsije
3>3(D)	pênsu	pêntasu	
3>3(P)	pênnunu	pêntanu	
2/3S>1S	?ipejna	?ipênta	
2/3D>1S	?ipejnasu	?ipêntasu	pê:tsasuje
2/3P>1S	?ipejnanunu	?ipêntanu	
2/3>1DI	?ipê:tsi	?ipê:sti	
2/3>1DE	?ipê:tsu	?ipê:stu	
2/3>1PI	?ipejki	?ipejtiki	pê:tsuje
2/3>1PE	?ipejka	?ipejtaka	
3,1D/PE>2S	?ipej	?ipê:ste	
3,1D/PE>2D	?ipê:tsi	?ipê:sti	
3,1D/PE>2P	?ipejni	?ipêstenu	pejkaje
1S>2S	pejne	pejteni	
1S>2D	pêjsu	pejtensu	
1S>2P	pêjnu	pejtennu	

Table 23: Transitive verb *kaŋt* ‘put on (the oven)’

	non-past	past	imperative
1S>3S	kandu	kānta	
1S>3D	kandusu	kāntasu	
1S>3P	kandunu	kāntanu	
1DI>3	kaŋji	kaŋjiti	
1DE>3	kaŋju	kaŋjutu	
1PI>3	kaŋki	kaŋtiki	
1PE>3	kaŋka	kaŋtaka	
2S>3S	ʔikandə	ʔikānte	
2S>3D	ʔikānsu	ʔikāntesu	
2S>3P	ʔikānnu	ʔikāntenu	
2D>3	ʔikaŋji	ʔikaŋjiti	kaŋjije
2N>3	ʔikā:ni	ʔikaŋtenu	kaŋnuje
3S>3S	kandə	kānte	
3>3(D)	kānsu	kāntesu	
3>3(P)	kānnu	kāntenu	

Table 24: Intransitive verb *dze* ‘say’

	non-past	past	imperative
1S	dzeŋa	dzeŋata	
1DI	dzeji	dzēiti	
1DE	dzeju	dzēitu	
1PI	dzeki	dzektiki	
1PE	dzeka	dzektaka	
2S	ʔidze	ʔidzē:te	
2D	ʔidzeji	ʔidzēiti	
2N	ʔidzeni	ʔidzetnu	
3S	dze	dzē:te	
3D	dzeji	dzēiti	
3N	dzenu	dzetnu	

Table 25: Intransitive verb *rep* ‘stand’

	non-past	past	imperative
1S	rēmŋa	repata	
1DI	repi	repiti	
1DE	repu	reputu	
1PI	repki	reptiki	
1PE	repka	reptaka	
2S	ʔirē:p	ʔirepte	
2D	ʔirepi	ʔirepiti	
2N	ʔirēmni	ʔireptenu	
3S	rē:p	repte	
3D	repi	repiti	
3N	rēmnu	reptenu	

Table 26: Intransitive verb *ŋet* ‘hurt’

	non-past	past	imperative
1S	ŋējŋa	ŋesta	
1DI	ŋetsi	ŋesti	
1DE	ŋetsu	ŋestu	
1PI	ŋeçki	ŋeçtiki	
1PE	ŋeçka	ŋeçtaka	
2S	ʔiŋēj	ʔiŋeste	
2D	ʔiŋetsi	ʔiŋesti	
2N	ʔiŋēnni	ʔiŋestenu	
3S	ŋēj	ŋeste	
3D	ŋetsi	ŋesti	
3N	ŋēnnu	ŋestenu	

Table 27: Intransitive verb *tsek*
‘be hard, be stingy’

	non-past	past	imperative
1S	tsē:ŋa	tsekata	
1DI	tseki	tsekiti	
1DE	tseku	tsekutu	
1PI	tsekki	tsektiki	
1PE	tsekka	tsektaka	
2S	ʔitsē:	ʔitsekte	
2D	ʔitseki	ʔitsekiti	
2N	ʔitsē:ni	ʔitsektenu	
3S	tsē:	tsekte	
3D	tseki	tsekiti	
3N	tsē:nu	tsektenu	

Table 28: Intransitive verb *jem*
'be too late to harvest'

	non-past	past
3S	jem	jêmtë

Table 29: Intransitive verb *len* 'visit shortly'

	non-past	past	imperative
1S	lejŋA	lê:stA	
1DI	lê:tsi	lê:sti	
1DE	lê:tsu	lê:stu	
1PI	lejki	lejtiki	
1PE	lejka	lejtaka	
2S	?ilej	?ilê:ste	lê:tse
2D	?ilê:tsi	?ilê:sti	lê:tsije
2N	?ilejni	?ilê:stenu	lê:snuje
3S	lej	lê:ste	
3D	lê:tsi	lê:sti	
3N	lejnu	lê:stenu	

Table 30: Intransitive verb *bhrej* 'be lazy'

	non-past	past	imperative
1S	bhrê:ŋA	bhreŋA	
1DI	bhreŋi	bhreŋiti	
1DE	bhreŋu	bhreŋutu	
1PI	bhreŋki	bhreŋtiki	
1PE	bhreŋka	bhreŋtaka	
2S	?ibhreŋ	?ibhrê:ŋte	bhrê:ŋje
2D	?ibhreŋi	?ibhreŋiti	bhreŋije
2N	?ibhrê:ni	?ibhreŋtenu	bhreŋnuje
3S	bhreŋ	bhrê:ŋte	
3D	bhreŋi	bhreŋiti	
3N	bhrê:nu	bhreŋtenu	

Table 31: Intransitive verb *bher* 'fly'

	non-past	past	imperative
1S	bherŋA	bherA	
1DI	bheri	bheriti	
1DE	bheru	bherutu	
1PI	bherki	bhertiki	
1PE	bherka	bhertaka	
2S	?ibher	?ibhê:te	bhê:je
2D	?ibheri	?ibheriti	bherije
2N	?ibherni	?ibhertenu	bhernuje
3S	bher	bhê:te	
3D	bheri	bheriti	
3N	bhernu	bhertenu	

Table 32: Intransitive verb *?el* 'overflow'

	non-past	past
3S	?el	?êlte

Table 33: Transitive verb *khlep* 'peel'

	non-past	past	imperative
1S>3S	khlebu	khlebutA	
1S>3D	khlebusu	khlebutasu	
1S>3P	khlebunu	khlebutanu	
1DI>3	khlepi	khlepiti	
1DE>3	khlepu	khleputu	
1PI>3	khlepki	khleptiki	
1PE>3	khlepka	khleptaka	
2S>3S	?ikhlê:bə	?ikhlê:pte	khle:be
2S>3D	?ikhlê:psu	?ikhlê:ptesu	
2S>3P	?ikhlê:pnu	?ikhlê:ptenu	
2D>3	?ikhlepi	?ikhlepiti	khlepije
2N>3	?ikhlêmni	?ikhleptenu	khlepnuje
3S>3S	khle:bə	khle:pte	
3>3(D)	khle:psu	khle:ptesu	
3>3(P)	khle:pnu	khle:ptenu	

Table 34: Transitive verb *set* ‘kill’

	non-past	past	imperative
1S>3S	sedu	sê:ta	sê:de
1S>3D	sedusu	sê:tasu	
1S>3P	sedunu	sê:tanu	
1DI>3	setsi	sesti	
1DE>3	setsu	sestu	
1PI>3	seçki	seçtiki	
1PE>3	seçka	seçtaka	
2S>3S	ʔisê:d̥a	ʔisê:te	
2S>3D	ʔisê:tsu	ʔisê:tesu	
2S>3P	ʔisê:t̥nu	ʔisê:tenu	
2D>3	ʔisetsi	ʔisesti	setsije
2N>3	ʔisênni	ʔisestenu	sesnuje
3S>3S	sê:d̥a	sê:te	setsaje
3>3(D)	sê:tsu	sê:tesu	
3>3(P)	sê:t̥nu	sê:tenu	
2/3S>1S	ʔisêj̥a	ʔisesta	
2/3D>1S	ʔisêj̥asu	ʔisestasu	
2/3P>1S	ʔisêj̥anu	ʔisestanu	
2/3>1DI	ʔisetsi	ʔisesti	
2/3>1DE	ʔisetsu	ʔisestu	
2/3>1PI	ʔiseçki	ʔiseçtiki	
2/3>1PE	ʔiseçka	ʔiseçtaka	
3,1D/PE>2S	ʔisêj̥	ʔiseste	
3,1D/PE>2D	ʔisetsi	ʔisesti	
3,1D/PE>2P	ʔisênni	ʔisestenu	
1S>2S	sê:ne	sê:teni	
1S>2D	sê:nsu	sê:ten̥su	
1S>2P	sê:nnu	sê:ten̥nu	

Table 35: Transitive verb *dhek* ‘wipe’

	non-past	past	imperative
1S>3S	dhegu	dhegut̥a	dhê:ge
1S>3D	dhegusu	dhegut̥asu	
1S>3P	dhegunu	dhegut̥anu	
1DI>3	dheki	dhekiti	
1DE>3	dheku	dhekutu	
1PI>3	dhekki	dhektiki	
1PE>3	dhekk̥a	dhekt̥aka	
2S>3S	ʔidhê:g̥a	ʔidhê:kte	
2S>3D	ʔidhê:ksu	ʔidhê:ktesu	
2S>3P	ʔidhê:knu	ʔidhê:ktenu	
2D>3	ʔidheki	ʔidhekiti	
2N>3	ʔidhê:ni	ʔidhektenu	
3S>3S	dhê:g̥a	dhê:kte	dhekije dheknuje
3>3(D)	dhê:ksu	dhê:ktesu	
3>3(P)	dhê:knu	dhê:ktenu	

Table 36: Transitive verb *phlem* ‘tread’

	non-past	past	imperative
1S>3S	phlemu	phlemuta	phlēm:me
1S>3D	phlemusu	phlemutasu	
1S>3P	phlemunu	phlemutānu	
1DI>3	phlemi	phlemiti	
1DE>3	phlemu	phlemutu	
1PI>3	phlemki	phlemtiki	
1PE>3	phlemka	phlemtaka	
2S>3S	ʔiphlē:mə	ʔiphlēmtē	
2S>3D	ʔiphlēmsu	ʔiphlēmtesu	
2S>3P	ʔiphlēmnū	ʔiphlēmtēnu	
2D>3	ʔiphlemi	ʔiphlemiti	phlemije
2N>3	ʔiphlemni	ʔiphlemtēnu	phlemnūje
3S>3S	phlē:mə	phlēmtē	phlemkaje
3>3(D)	phlēmsu	phlēmtesu	
3>3(P)	phlēmnū	phlēmtēnu	
2/3S>1S	ʔiphlemḡa	ʔiphlemata	
2/3D>1S	ʔiphlemḡasu	ʔiphlematasu	
2/3P>1S	ʔiphlemḡanu	ʔiphlematānu	
2/3>1DI	ʔiphlemi	ʔiphlemiti	
2/3>1DE	ʔiphlemu	ʔiphlemutu	
2/3>1PI	ʔiphlemki	ʔiphlemtiki	
2/3>1PE	ʔiphlemka	ʔiphlemtaka	
3,1D/PE>2S	ʔiphlem	ʔiphlēmtē	
3,1D/PE>2D	ʔiphlemi	ʔiphlemiti	
3,1D/PE>2P	ʔiphlemni	ʔiphlemtēnu	
1S>2S	phlemne	phlemteni	
1S>2D	phlēmsu	phlemtensu	
1S>2P	phlēmnū	phlemtēnnu	

Table 37: Transitive verb *ghle* ‘worship’

	non-past	past	imperative
1S	ghleḡa	ghlēḡta	ghleje ghlēije ghlēnje
1DI	ghleji	ghlēiti	
1DE	ghleju	ghlēitu	
1PI	ghleki	ghlektiki	
1PE	ghleka	ghlektaka	
2S	ʔighle	ʔighlete	
2D	ʔighleji	ʔighlēiti	
2N	ʔighleni	ʔighletnu	
3S	ghle	ghlete	
3D	ghlesu	ghletsu	
3N	ghlenu	ghletnu	

Table 38: Transitive verb *tsheḡ* ‘hate’

	non-past	past	imperative
1S>3S	tsheḡu	tsheḡuta	tsheḡije tsheḡnuje
1S>3D	tsheḡusu	tsheḡutasu	
1S>3P	tsheḡunu	tsheḡutānu	
1DI>3	tsheḡi	tsheḡiti	
1DE>3	tsheḡu	tsheḡutu	
1PI>3	tsheḡki	tsheḡtiki	
1PE>3	tsheḡka	tsheḡtaka	
2S>3S	ʔitshē:ḡə	ʔitshēḡte	
2S>3D	ʔitshēḡsu	ʔitshēḡtesu	
2S>3P	ʔitshēḡnu	ʔitshēḡtēnu	
2D>3	ʔitshēḡi	ʔitshēḡiti	tsheḡaje tsheḡasuje tsheḡanu tsheḡuje tsheḡkaje
2N>3	ʔitshē:ni	ʔitshēḡtēnu	
3S>3S	tshē:ḡə	tshēḡte	
3>3(D)	tshēḡsu	tshēḡtesu	
3>3(P)	tshēḡnu	tshēḡtēnu	
2/3S>1S	ʔitshē:ḡa	ʔitshēḡata	
2/3D>1S	ʔitshē:ḡasu	ʔitshēḡatasu	
2/3P>1S	ʔitshē:ḡanu	ʔitshēḡatānu	
2/3>1DI	ʔitshēḡi	ʔitshēḡiti	
2/3>1DE	ʔitshēḡu	ʔitshēḡutu	
2/3>1PI	ʔitshēḡki	ʔitshēḡtiki	
2/3>1PE	ʔitshēḡka	ʔitshēḡtaka	
3,1D/PE>2S	ʔitshēḡ	ʔitshēḡte	
3,1D/PE>2D	ʔitshēḡi	ʔitshēḡiti	
3,1D/PE>2P	ʔitshē:ni	ʔitshēḡtēnu	
1S>2S	tshē:ne	tshenteni	
1S>2D	tshēḡsu	tshentensu	
1S>2P	tshēḡnu	tshentēnnu	

Table 39: Transitive verb *ner* ‘finish’

	non-past	past	imperative
1S>3S	neru	neruta	
1S>3D	nerusu	nerutasu	
1S>3P	nerunu	nerutanu	
1DI>3	neri	neriti	
1DE>3	neru	nerutu	
1PI>3	nerki	neritiki	
1PE>3	nerka	nerataka	
2S>3S	ʔinē:ɾɿ	ʔinēɾte	
2S>3D	ʔinēɾsu	ʔinēɾtesu	
2S>3P	ʔinēɾnu	ʔinēɾtenu	
2D>3	ʔineri	ʔineriti	nerije
2N>3	ʔinerni	ʔinertenu	nernuje
3S>3S	nē:ɾɿ	nēɾte	
3>3(D)	nēɾsu	nēɾtesu	
3>3(P)	nēɾnu	nēɾtenu	
2/3S>1S	ʔinerɿa	ʔinerata	neraje
2/3D>1S	ʔinerɿasu	ʔineratasu	nerasuje
2/3P>1S	ʔinerɿanu	ʔineratanu	neranuje
2/3>1DI	ʔineri	ʔineriti	neruje
2/3>1DE	ʔineru	ʔinerutu	
2/3>1PI	ʔinerki	ʔinertiki	nerkaje
2/3>1PE	ʔinerka	ʔinertaka	
3,1D/PE>2S	ʔiner	ʔinēɾte	
3,1D/PE>2D	ʔineri	ʔineriti	
3,1D/PE>2P	ʔinerni	ʔinertenu	
1S>2S	nerne	nerteni	
1S>2D	nēɾsu	nertensu	
1S>2P	nēɾnu	nertennu	

Table 40: Transitive verb *thel* ‘take off’

	non-past	past	imperative
1S>3S	thelu	theluta	
1S>3D	thelusu	thelutasu	
1S>3P	thelunu	thelutanu	
1DI>3	theli	theliti	
1DE>3	thelu	thelutu	
1PI>3	thelki	theltiki	
1PE>3	thelka	theltaka	
2S>3S	ʔithē:lɿ	ʔithēlte	
2S>3D	ʔithēlsu	ʔithēltesu	
2S>3P	ʔithēlnu	ʔithēltenu	
2D>3	ʔitheli	ʔitheliti	thelije
2N>3	ʔithelni	ʔitheltenu	thelnuje
3S>3S	thē:lɿ	thēlte	
3>3(D)	thēlsu	thēltesu	
3>3(P)	thēlnu	thēltenu	

Table 41: Transitive verb *kept* ‘climb; sting’

	non-past	past	imperative
1S>3S	keptu	kepta	kepte
1S>3D	keptusu	keptasu	
1S>3P	keptunu	keptanu	
1DI>3	kepi	kepiti	
1DE>3	kepu	keputu	
1PI>3	kepki	keptiki	
1PE>3	kepka	keptaka	
2S>3S	ʔikeptə	ʔikepte	
2S>3D	ʔikepsu	ʔikeptesu	
2S>3P	ʔikepnu	ʔikeptenu	
2D>3	ʔikepi	ʔikepiti	kepije
2N>3	ʔikəmni	ʔikeptenu	kepnuje
3S>3S	keptə	kepte	kepkaje
3>3(D)	kepsu	keptesu	
3>3(P)	kepnu	keptenu	
2/3S>1S	ʔikəmɲa	ʔikepata	
2/3D>1S	ʔikəmɲasu	ʔikepatasu	
2/3P>1S	ʔikəmɲanu	ʔikepatanu	
2/3>1DI	ʔikepi	ʔikepiti	
2/3>1DE	ʔikepu	ʔikeputu	
2/3>1PI	ʔikepki	ʔikeptiki	
2/3>1PE	ʔikepka	ʔikeptaka	
3,1D/PE>2S	ʔiké:p	ʔikepte	
3,1D/PE>2D	ʔikepi	ʔikepiti	
3,1D/PE>2P	ʔikəmni	ʔikeptenu	
1S>2S	kəmne	kəmteni	
1S>2D	kəmsu	kəmtensu	
1S>2P	kəmnu	kəmtennu	

Table 42: Transitive verb *rett* ‘laugh at’

	non-past	past	imperative
1S>3S	rettu	retta	rette
1S>3D	rettusu	rettasu	
1S>3P	rettunu	rettanu	
1DI>3	retsi	resti	
1DE>3	retsu	restu	
1PI>3	reçki	reçtiki	
1PE>3	reçka	reçtaka	
2S>3S	ʔirettə	ʔirette	
2S>3D	ʔiretsu	ʔirettesu	
2S>3P	ʔiretnu	ʔirettenu	
2D>3	ʔiretsi	ʔiresti	retsije
2N>3	ʔirənni	ʔirestenu	resnuje
3S>3S	rettə	rette	retsaje
3>3(D)	retsu	rettesu	
3>3(P)	retnu	rettenu	
2/3S>1S	ʔirəɲa	ʔiresta	
2/3D>1S	ʔirəɲasu	ʔirestasu	
2/3P>1S	ʔirəɲanu	ʔirestanu	
2/3>1DI	ʔiretsi	ʔiresti	
2/3>1DE	ʔiretsu	ʔirestu	
2/3>1PI	ʔireçki	ʔireçtiki	
2/3>1PE	ʔireçka	ʔireçtaka	
3,1D/PE>2S	ʔirəj	ʔireste	
3,1D/PE>2D	ʔiretsi	ʔiresti	
3,1D/PE>2P	ʔirənni	ʔirestenu	
1S>2S	rənne	rənteni	
1S>2D	rənsu	rəntensu	
1S>2P	rənnu	rəntennu	

Table 43: Transitive verb *rekt* ‘write’

	non-past	past	imperative
1S>3S	rektu	rektA	
1S>3D	rektusu	rektAsu	
1S>3P	rektunu	rektAnu	
1DI>3	reki	rekiti	
1DE>3	reku	rekutu	
1PI>3	rekki	rektiki	
1PE>3	rekka	rektaka	
2S>3S	ʔirektʰ	ʔirekte	
2S>3D	ʔireksu	ʔirektesu	
2S>3P	ʔireknu	ʔirektenu	
2D>3	ʔireki	ʔirekiti	
2N>3	ʔirê:ni	ʔirektenu	
3S>3S	rektʰ	rekte	
3>3(D)	reksu	rektesu	
3>3(P)	reknu	rektenu	
2/3S>1S	ʔirê:ŋA	ʔirekata	rekAje
2/3D>1S	ʔirê:ŋAsu	ʔirekatAsu	rekAsuje
2/3P>1S	ʔirê:ŋAnu	ʔirekatAnu	rekAnuje
2/3>1DI	ʔireki	ʔirekiti	rekuje
2/3>1DE	ʔireku	ʔirekutu	
2/3>1PI	ʔirekki	ʔirektiki	rekka je
2/3>1PE	ʔirekka	ʔirektaka	
3,1D/PE>2S	ʔirê:	ʔirekte	
3,1D/PE>2D	ʔireki	ʔirekiti	
3,1D/PE>2P	ʔirê:ni	ʔirektenu	
1S>2S	rê:ne	rênteni	
1S>2D	rênsu	rêntensu	
1S>2P	rênnu	rêntennu	

Table 44: Transitive verb *lemt* ‘coax’

	non-past	past	imperative
1S>3S	lemdu	lêmtA	
1S>3D	lemdusu	lêmtAsu	
1S>3P	lemdunu	lêmtAnu	
1DI>3	lemi	lemiti	
1DE>3	lemu	lemutu	
1PI>3	lemki	lemtiki	
1PE>3	lemka	lemtaka	
2S>3S	ʔilemdʰ	ʔilêmtē	
2S>3D	ʔilêmsu	ʔilêmtesu	
2S>3P	ʔilêmnu	ʔilêmtenu	
2D>3	ʔilemi	ʔilemiti	
2N>3	ʔilemni	ʔilemtenu	
3S>3S	lemdʰ	lêmtē	
3>3(D)	lêmsu	lêmtesu	
3>3(P)	lêmnu	lêmtenu	
2/3S>1S	ʔilemŋA	ʔilemata	lemAje
2/3D>1S	ʔilemŋAsu	ʔilematAsu	lemAsuje
2/3P>1S	ʔilemŋAnu	ʔilematAnu	lemAnuje
2/3>1DI	ʔilemi	ʔilemiti	lemuje
2/3>1DE	ʔilemu	ʔilemutu	
2/3>1PI	ʔilemki	ʔilemtiki	lemka je
2/3>1PE	ʔilemka	ʔilemtaka	
3,1D/PE>2S	ʔilem	ʔilêmtē	
3,1D/PE>2D	ʔilemi	ʔilemiti	
3,1D/PE>2P	ʔilemni	ʔilemtenu	
1S>2S	lemne	lemteni	
1S>2D	lêmsu	lemtensu	
1S>2P	lêmnu	lemtennu	

Table 45: Transitive verb *tshent* ‘recognize’

	non-past	past	imperative
1S>3S	tshendu	tshênta	
1S>3D	tshendus	tshêntasu	
1S>3P	tshendunu	tshêntanu	
1DI>3	tshê:tsi	tshê:sti	
1DE>3	tshê:tsu	tshê:stu	
1PI>3	tshejki	tshejtiki	
1PE>3	tshejka	tshejtaka	
2S>3S	ʔitshendæ	ʔitshênte	
2S>3D	ʔitshênsu	ʔitshêntesu	
2S>3P	ʔitshênnu	ʔitshêntenu	
2D>3	ʔitshê:tsi	ʔitshê:sti	tshê:tsije
2N>3	ʔitshejni	ʔitshê:stenu	tshê:snuje
3S>3S	tshendæ	tshênte	
3>3(D)	tshênsu	tshêntesu	
3>3(P)	tshênnu	tshêntenu	
2/3S>1S	ʔitshejŋa	ʔitshê:sta	tshê:tsaje
2/3D>1S	ʔitshejŋasu	ʔitshê:stasu	tshê:tsasuje
2/3P>1S	ʔitshejŋanu	ʔitshê:stanu	tshê:tsanuje
2/3>1DI	ʔitshê:tsi	ʔitshê:sti	tshê:tsuje
2/3>1DE	ʔitshê:tsu	ʔitshê:stu	
2/3>1PI	ʔitshejki	ʔitshejtiki	
2/3>1PE	ʔitshejka	ʔitshejtaka	
3,1D/PE>2S	ʔitshej	ʔitshê:ste	tshejkaje
3,1D/PE>2D	ʔitshê:tsi	ʔitshê:sti	
3,1D/PE>2P	ʔitshejni	ʔitshê:stenu	
1S>2S	tshejne	tshejteni	
1S>2D	tshêjsu	tshejtensu	
1S>2P	tshêjnu	tshejtennu	

Table 46: Transitive verb *rejt* ‘cause trouble’

	non-past	past	imperative
1S>3S	rendu	rênta	
1S>3D	rendusu	rêntasu	
1S>3P	rendunu	rêntanu	
1DI>3	reŋi	reŋiti	
1DE>3	reŋu	reŋutu	
1PI>3	reŋki	reŋtiki	
1PE>3	reŋka	reŋtaka	
2S>3S	ʔirendæ	ʔirênte	
2S>3D	ʔirênsu	ʔirêntesu	
2S>3P	ʔirênnu	ʔirêntenu	
2D>3	ʔireŋi	ʔireŋiti	reŋije
2N>3	ʔirê:ni	ʔireŋtenu	reŋnuje
3S>3S	rendæ	rênte	
3>3(D)	rênsu	rêntesu	
3>3(P)	rênnu	rêntenu	
2/3S>1S	ʔirê:ŋa	ʔireŋata	reŋaje
2/3D>1S	ʔirê:ŋasu	ʔireŋatasu	reŋasuje
2/3P>1S	ʔirê:ŋanu	ʔireŋatanu	reŋanuje
2/3>1DI	ʔireŋi	ʔireŋiti	reŋuje
2/3>1DE	ʔireŋu	ʔireŋutu	
2/3>1PI	ʔireŋki	ʔireŋtiki	
2/3>1PE	ʔireŋka	ʔireŋtaka	
3,1D/PE>2S	ʔireŋ	ʔirênte	reŋkaje
3,1D/PE>2D	ʔireŋi	ʔireŋiti	
3,1D/PE>2P	ʔirê:ni	ʔireŋtenu	
1S>2S	rê:ne	renteni	
1S>2D	rênsu	rentensu	
1S>2P	rênnu	rentennu	

Table 47: Transitive verb *dhert* ‘suit’

	non-past	past	imperative
1S>3S	dherdu	dhêrtA	dherde
1S>3D	dherdusu	dhêrtAsu	
1S>3P	dherdunu	dhêrtAnu	
1DI>3	dheri	dheriti	
1DE>3	dheru	dherutu	
1PI>3	dherki	dhertiki	
1PE>3	dherka	dhertakA	
2S>3S	ʔidherdɛ	ʔidhêrte	
2S>3D	ʔidhêrsu	ʔidhêrtesu	
2S>3P	ʔidhêrnu	ʔidhêrtenu	
2D>3	ʔidheri	ʔidheriti	dherije
2N>3	ʔidherni	ʔidhertenu	dhernuje
3S>3S	dherdɛ	dhêrte	dherkaje
3>3(D)	dhêrsu	dhêrtesu	
3>3(P)	dhêrnu	dhêrtenu	
2/3S>1S	ʔidherŋA	ʔidheratA	
2/3D>1S	ʔidherŋAsu	ʔidheratAsu	
2/3P>1S	ʔidherŋAnu	ʔidheratAnu	
2/3>1DI	ʔidheri	ʔidheriti	
2/3>1DE	ʔidheru	ʔidherutu	
2/3>1PI	ʔidherki	ʔidhertiki	
2/3>1PE	ʔidherka	ʔidhertakA	
3,1D/PE>2S	ʔidher	ʔidhêrte	
3,1D/PE>2D	ʔidheri	ʔidheriti	
3,1D/PE>2P	ʔidherni	ʔidhertenu	
1S>2S	dherne	dherteni	
1S>2D	dhêrsu	dhertensu	
1S>2P	dhêrnu	dhertennu	

Table 48: Detransitive verb *tshelt* ‘be clear’

	non-past	past
3S	tsheldɛ	tshêlte

Table 49: Intransitive verb *pi* ‘come (level)’

	non-past	past	imperative
1S	piŋA	piŋatA	pūje pīje pūnje
1DI	piji	pīiti	
1DE	piju	pītu	
1PI	piki	piktiki	
1PE	pika	piktakA	
2S	ʔipi	ʔipū:te	
2D	ʔipiji	ʔipīiti	
2N	ʔipini	ʔiputnu	
3S	pi	pū:te	
3D	piji	pīiti	
3N	pinu	putnu	

Table 50: Intransitive verb *dzhip*

‘get spoiled (pumpkin)’

	non-past	past
3S	dzhap	dzhipe

Table 51: Intransitive verb *dzhit* ‘get wet’

	non-past	past	imperative
1S	dzhâjŋA	dzhista	dzhitstse dzhitsije dzhisnuje
1DI	dzhitsi	dzhisti	
1DE	dzhitsu	dzhistu	
1PI	dzhac̣ki	dzhac̣tiki	
1PE	dzhac̣ka	dzhac̣takA	
2S	ʔidzhâj	ʔidzhiste	
2D	ʔidzhitsi	ʔidzhisti	
2N	ʔidzhânni	ʔidzhistenu	
3S	dzhâj	dzhiste	
3D	dzhitsi	dzhisti	
3N	dzhânnu	dzhistenu	

Table 52: Intransitive verb *ghik* ‘be entangled’

	non-past	past
3S	ghû:	ghikte

Table 53: Intransitive verb *lim* ‘sprout’

	non-past	past
3S	lam	lîmte

Table 54: Intransitive verb *ḡin* ‘be afraid’

	non-past	past	imperative
1S	ḡajḡa	ḡiṣta	
1DI	ḡiṣsi	ḡiṣti	
1DE	ḡiṣsu	ḡiṣtu	
1PI	ḡajki	ḡajtiki	
1PE	ḡajka	ḡajtaḡa	
2S	ḡiḡaj	ḡiḡiṣte	ḡiṣte
2D	ḡiḡiṣsi	ḡiḡiṣti	ḡiṣsiḡe
2N	ḡiḡajni	ḡiḡiṣtenu	ḡiṣnuḡe
3S	ḡaj	ḡiṣte	
3D	ḡiṣsi	ḡiṣti	
3N	ḡajnu	ḡiṣtenu	

Table 55: Intransitive verb *biḡ* ‘look nice’

	non-past	past	imperative
1S	būḡa	biḡata	
1DI	biḡi	biḡiti	
1DE	biḡu	biḡutu	
1PI	baḡki	baḡtiki	
1PE	baḡka	baḡtaḡa	
2S	ḡibaḡ	ḡibiḡte	biḡje
2D	ḡibini	ḡibiḡiti	biḡije
2N	ḡibū:ni	ḡibiḡtenu	biḡnuḡe
3S	baḡ	biḡte	
3D	biḡi	biḡiti	
3N	bū:nu	biḡtenu	

Table 56: Transitive verb *bi* ‘give’

	non-past	past	imperative
1S	biḡa	biḡta	
1DI	biji	bīiti	
1DE	biju	bīitu	
1PI	biki	biktiki	
1PE	bika	biktaka	
2S	ḡibi	ḡibite	bije
2D	ḡibiji	ḡibīiti	bīije
2N	ḡibini	ḡibutnu	būnje
3S	bi	bite	
3D	bisu	bitsu	
3N	binu	bitnu	
2/3S>1S	ḡibiḡa	ḡibiḡata	biḡaje
2/3D>1S	ḡibiḡasu	ḡibiḡatasu	biḡasuje
2/3P>1S	ḡibiḡanu	ḡibiḡatanu	biḡanuḡe
2/3>1DI	ḡibiji	ḡibīiti	
2/3>1DE	ḡibiju	ḡibīitu	biije
2/3>1PI	ḡibiki	ḡibiktiki	
2/3>1PE	ḡibika	ḡibiktaka	bikaje
3,1D/PE>2S	ḡibi	ḡibū:te	
3,1D/PE>2D	ḡibiji	ḡibīiti	
3,1D/PE>2P	ḡibini	ḡibutnu	
1S>2S	bine	bīnteni	
1S>2D	bīnsu	bīntensu	
1S>2P	bīnnu	bīntennu	

Table 57: Transitive verb *khīp* ‘cook’

	non-past	past	imperative
1S>3S	khibu	khibuta	
1S>3D	khibusu	khibutasu	
1S>3P	khibunu	khibutanu	
1DI>3	khipi	khipiti	
1DE>3	khipu	khiputu	
1PI>3	khapki	khaptiki	
1PE>3	khapka	khaptaka	
2S>3S	ḡikhī:bḡ	ḡikhī:pte	khī:be
2S>3D	ḡikhī:psu	ḡikhī:ptesu	
2S>3P	ḡikhī:pnu	ḡikhī:ptenu	
2D>3	ḡikhipi	ḡikhipiti	khipije
2N>3	ḡikhāmnī	ḡikhiptenu	khipnuḡe
3S>3S	khī:bḡ	khī:pte	
3>3(D)	khī:psu	khī:ptesu	
3>3(P)	khī:pnu	khī:ptenu	

Table 58: Transitive verb *sit* ‘give up; leave’

	non-past	past	imperative
1s>3s	sidu	sĩ:ta	sĩ:de
1s>3D	sidusu	sĩ:tasu	
1s>3P	sidunu	sĩ:tanu	
1DI>3	sitsi	sisti	
1DE>3	sitsu	sistu	
1PI>3	saçki	saçtiki	
1PE>3	saçka	saçtaka	
2s>3s	ʔisĩ:du	ʔisĩ:te	sitsije sisnuje
2s>3D	ʔisĩ:tsu	ʔisĩ:tesu	
2s>3P	ʔisĩ:tnu	ʔisĩ:tenu	
2D>3	ʔisitsi	ʔisisti	
2N>3	ʔisãnni	ʔisistenu	
3s>3s	sĩ:du	sĩ:te	
3>3(D)	sĩ:tsu	sĩ:tesu	
3>3(P)	sĩ:tnu	sĩ:tenu	
2/3s>1s	ʔisãjɲa	ʔisista	sitsaje
2/3D>1s	ʔisãjɲasu	ʔisistasu	sitsasuje
2/3P>1s	ʔisãjɲanu	ʔisistanu	sitsanuje
2/3>1DI	ʔisitsi	ʔisisti	sitsuje
2/3>1DE	ʔisitsu	ʔisistu	
2/3>1PI	ʔisaçki	ʔisaçtiki	
2/3>1PE	ʔisaçka	ʔisaçtaka	saçkaje
3,1D/PE>2s	ʔisãj	ʔisiste	
3,1D/PE>2D	ʔisitsi	ʔisisti	
3,1D/PE>2P	ʔisãnni	ʔisistenu	
1s>2s	sãnne	sãnteni	
1s>2D	sãnsu	sãntensu	
1s>2P	sãnnu	sãntennu	

Table 59: Transitive verb *kik* ‘tie’

	non-past	past	imperative
1S>3S	kigu	kigutɔ	kŋge
1S>3D	kigusu	kigutɔsu	
1S>3P	kigunu	kigutɔnu	
1DI>3	kiki	kikiti	
1DE>3	kiku	kikutu	
1PI>3	kakki	kaktiki	
1PE>3	kakka	kaktaka	
2S>3S	ʔikŋgɛ	ʔikŋkte	
2S>3D	ʔikŋksu	ʔikŋktesu	
2S>3P	ʔikŋknu	ʔikŋktenu	
2D>3	ʔikiki	ʔikikiti	kikije
2N>3	ʔikŋmi	ʔikiktenu	kiknuje
3S>3S	kŋgɛ	kŋkte	
3>3(D)	kŋksu	kŋktesu	
3>3(P)	kŋknu	kŋktenu	

Table 60: Transitive verb *tshim*

‘push to the other side’

	non-past	past	imperative
1S>3S	tshimu	tshimuta	tshīme
1S>3D	tshimusu	tshimutasu	
1S>3P	tshimunu	tshimutanu	
1DI>3	tshimi	tshimiti	
1DE>3	tshimu	tshimutu	
1PI>3	tshamki	tshamtiki	
1PE>3	tshamka	tshamtaka	
2S>3S	ʔitshīmæ	ʔitshimte	
2S>3D	ʔitshīmsu	ʔitshimtesu	
2S>3P	ʔitshīmnu	ʔitshimtenu	
2D>3	ʔitshimi	ʔitshimiti	
2N>3	ʔitshamni	ʔitshimtenu	
3S>3S	tshīmæ	tshimte	
3>3(D)	tshīmsu	tshimtesu	
3>3(P)	tshīmnu	tshimtenu	
2/3S>1S	ʔitshamɣa	ʔitshimata	tshimaje
2/3D>1S	ʔitshamɣasu	ʔitshimatasu	tshimasuje
2/3P>1S	ʔitshamɣanu	ʔitshimatanu	tshimanuje
2/3>1DI	ʔitshimi	ʔitshimiti	tshimuje
2/3>1DE	ʔitshimu	ʔitshimutu	
2/3>1PI	ʔitshamki	ʔitshamtiki	
2/3>1PE	ʔitshamka	ʔitshamtaka	
3,1D/PE>2S	ʔitsham	ʔitshimte	tshamkaje
3,1D/PE>2D	ʔitshimi	ʔitshimiti	
3,1D/PE>2P	ʔitshamni	ʔitshimtenu	
1S>2S	tshamne	tshamteni	
1S>2D	tshāmsu	tshamtensu	
1S>2P	tshāmnu	tshamtenu	

Table 61: Transitive verb *siŋ* ‘ask’

	non-past	past	imperative
1S>3S	siŋu	siŋuta	sīŋe
1S>3D	siŋusu	siŋutasu	
1S>3P	siŋunu	siŋutanu	
1DI>3	siŋi	siŋiti	
1DE>3	siŋu	siŋutu	
1PI>3	saŋki	saŋtiki	
1PE>3	saŋka	saŋtaka	
2S>3S	ʔisīŋæ	ʔisīŋte	
2S>3D	ʔisīŋsu	ʔisīŋtesu	
2S>3P	ʔisīŋnu	ʔisīŋtenu	
2D>3	ʔisīŋi	ʔisīŋiti	
2N>3	ʔisū:ni	ʔisīŋtenu	
3S>3S	sīŋæ	sīŋte	
3>3(D)	sīŋsu	sīŋtesu	
3>3(P)	sīŋnu	sīŋtenu	
2/3S>1S	ʔisū:ŋa	ʔisīŋata	siŋaje
2/3D>1S	ʔisū:ŋasu	ʔisīŋatasu	siŋasuje
2/3P>1S	ʔisū:ŋanu	ʔisīŋatanu	siŋanuje
2/3>1DI	ʔisīŋi	ʔisīŋiti	siŋuje
2/3>1DE	ʔisīŋu	ʔisīŋutu	
2/3>1PI	ʔisaŋki	ʔisaŋtiki	
2/3>1PE	ʔisaŋka	ʔisaŋtaka	
3,1D/PE>2S	ʔisaŋ	ʔisīŋte	saŋkaje
3,1D/PE>2D	ʔisīŋi	ʔisīŋiti	
3,1D/PE>2P	ʔisū:ni	ʔisīŋtenu	
1S>2S	sū:ne	santeni	
1S>2D	sānsu	santensu	
1S>2P	sānnu	santenu	

Table 62: Transitive verb *tsir* ‘pile up bricks’

	non-past	past	imperative
1S>3S	tsiru	tsirutA	tsĩre
1S>3D	tsirusu	tsirutAsu	
1S>3P	tsirunu	tsirutAnu	
1DI>3	tsiri	tsiriti	
1DE>3	tsiru	tsirutu	
1PI>3	tsarki	tsartiki	
1PE>3	tsarka	tsartaka	
2S>3S	ʔitsĩrɛ	ʔitsĩrte	
2S>3D	ʔitsĩrsu	ʔitsĩrtesu	
2S>3P	ʔitsĩrnu	ʔitsĩrtenu	
2D>3	ʔitsiri	ʔitsiriti	tsirije
2N>3	ʔitsarni	ʔitsirtenu	tsirnuje
3S>3S	tsĩrɛ	tsĩrte	
3>3(D)	tsĩrsu	tsĩrtesu	
3>3(P)	tsĩrnu	tsĩrtenu	

Table 63: Transitive verb *fiil* ‘knead’

	non-past	past	imperative
1S>3S	fiilu	fiilutA	fiĩle
1S>3D	fiilusu	fiilutAsu	
1S>3P	fiilunu	fiilutAnu	
1DI>3	fiili	fiiliti	
1DE>3	fiilu	fiilutu	
1PI>3	fiAlki	fiAltiki	
1PE>3	fiAlka	fiAltaka	
2S>3S	ʔifiĩlɛ	ʔifiĩlte	
2S>3D	ʔifiĩlsu	ʔifiĩltesu	
2S>3P	ʔifiĩlnu	ʔifiĩltenu	
2D>3	ʔifiili	ʔifiiliti	fiilije
2N>3	ʔifiAlni	ʔifiiltenu	fiilnuje
3S>3S	fiĩlɛ	fiĩlte	
3>3(D)	fiĩlsu	fiĩltesu	
3>3(P)	fiĩlnu	fiĩltenu	

Table 64: Transitive verb *ʔipt* ‘put to sleep’

	non-past	past	imperative
1S>3S	ʔAptu	ʔAptA	ʔApte
1S>3D	ʔAptusu	ʔAptAsu	
1S>3P	ʔAptunu	ʔAptAnu	
1DI>3	ʔipi	ʔipiti	
1DE>3	ʔipu	ʔiputu	
1PI>3	ʔApki	ʔAptiki	
1PE>3	ʔApka	ʔAptaka	
2S>3S	ʔiʔAptɛ	ʔiʔApte	
2S>3D	ʔiʔApsu	ʔiʔAptesu	
2S>3P	ʔiʔApnu	ʔiʔAptenu	
2D>3	ʔiʔipi	ʔiʔipiti	ʔipije
2N>3	ʔiʔAmni	ʔiʔiptenu	ʔipnuje
3S>3S	ʔAptɛ	ʔApte	
3>3(D)	ʔApsu	ʔAptesu	
3>3(P)	ʔApnu	ʔAptenu	
2/3S>1S	ʔiʔAmɲA	ʔiʔipata	ʔipaje
2/3D>1S	ʔiʔAmɲAsu	ʔiʔipatasu	ʔipasuje
2/3P>1S	ʔiʔAmɲAnu	ʔiʔipatanu	ʔipanuje
2/3>1DI	ʔiʔipi	ʔiʔipiti	ʔipuje
2/3>1DE	ʔiʔipu	ʔiʔiputu	
2/3>1PI	ʔiʔApki	ʔiʔAptiki	
2/3>1PE	ʔiʔApka	ʔiʔAptaka	
3,1D/PE>2S	ʔiʔAp	ʔiʔipte	ʔApkaje
3,1D/PE>2D	ʔiʔipi	ʔiʔipiti	
3,1D/PE>2P	ʔiʔAmni	ʔiʔiptenu	
1S>2S	ʔAmne	ʔAmteni	
1S>2D	ʔAmnu	ʔAmtenu	
1S>2P	ʔAmnu	ʔAmtennu	

Table 65: Transitive verb *sitt* ‘heal (shaman)’

	non-past	past	imperative
1S>3S	sattu	satta	satte
1S>3D	sattusu	sattasu	
1S>3P	sattunu	sattanu	
1DI>3	sitsi	sisti	
1DE>3	sitsu	sistu	
1PI>3	saçki	saçtiki	
1PE>3	saçka	saçtaka	
2S>3S	ʔisattə	ʔisatte	
2S>3D	ʔisatsu	ʔisattesu	
2S>3P	ʔisatnu	ʔisattenu	
2D>3	ʔisitsi	ʔisisti	sitsije
2N>3	ʔisānni	ʔisistenu	sisnuje
3S>3S	sattə	satte	satsaje
3>3(D)	satsu	sattesu	
3>3(P)	satnu	sattenu	
2/3S>1S	ʔisājɣa	ʔisista	
2/3D>1S	ʔisājɣasu	ʔisistasu	
2/3P>1S	ʔisājɣanu	ʔisistanu	
2/3>1DI	ʔisitsi	ʔisisti	
2/3>1DE	ʔisitsu	ʔisistu	
2/3>1PI	ʔisaçki	ʔisaçtiki	
2/3>1PE	ʔisaçka	ʔisaçtaka	
3,1D/PE>2S	ʔisāj	ʔisiste	
3,1D/PE>2D	ʔisitsi	ʔisisti	
3,1D/PE>2P	ʔisānni	ʔisistenu	
1S>2S	sānne	sānteni	
1S>2D	sānsu	sāntensu	
1S>2P	sānnu	sāntennu	

Table 66: Transitive verb *ghrikt* ‘hold’

	non-past	past	imperative
1S>3S	ghraktu	ghrakta	ghrakte
1S>3D	ghraktusu	ghraktasu	
1S>3P	ghraktunu	ghraktanu	
1DI>3	ghriki	ghrikiti	
1DE>3	ghriku	ghrikutu	
1PI>3	ghrakki	ghraktiki	
1PE>3	ghrakka	ghraktaka	
2S>3S	ʔighraktə	ʔighrakte	
2S>3D	ʔighraksu	ʔighraktesu	
2S>3P	ʔighraknu	ʔighraktenu	
2D>3	ʔighriki	ʔighrikiti	ghrikije
2N>3	ʔighrūmi	ʔighriktenu	ghriknuje
3S>3S	ghraktə	ghrakte	ghrikaje
3>3(D)	ghraksu	ghraktesu	
3>3(P)	ghraknu	ghraktenu	
2/3S>1S	ʔighrūɣa	ʔighrikata	
2/3D>1S	ʔighrūɣasu	ʔighrikatasu	
2/3P>1S	ʔighrūɣanu	ʔighrikatanu	
2/3>1DI	ʔighriki	ʔighrikiti	
2/3>1DE	ʔighriku	ʔighrikutu	
2/3>1PI	ʔighrakki	ʔighraktiki	
2/3>1PE	ʔighrakka	ʔighraktaka	
3,1D/PE>2S	ʔighrū:	ʔighrikte	
3,1D/PE>2D	ʔighriki	ʔighrikiti	
3,1D/PE>2P	ʔighrūmi	ʔighriktenu	
1S>2S	ghrūme	ghrānteni	
1S>2D	ghrānsu	ghrāntensu	
1S>2P	ghrānnu	ghrāntennu	

Table 67: Transitive verb *mimt* ‘think’

	non-past	past	imperative
1S>3S	mamdu	mâmta	mamde
1S>3D	mamdusu	mâmtasu	
1S>3P	mamdunu	mâmtanu	
1DI>3	mimi	mimiti	
1DE>3	mimu	mimutu	
1PI>3	mamki	maamtiki	
1PE>3	mamka	maamtaka	
2S>3S	ʔimamdə	ʔimâmtə	
2S>3D	ʔimâmsu	ʔimâmtesu	
2S>3P	ʔimâmnun	ʔimâmtenu	
2D>3	ʔimimi	ʔimimiti	mimije
2N>3	ʔimamni	ʔimimtenu	mimnuje
3S>3S	mamdə	mâmtə	mimaje
3>3(D)	mâmsu	mâmtesu	
3>3(P)	mâmnun	mâmtenu	
2/3S>1S	ʔimamja	ʔimimata	
2/3D>1S	ʔimamjasu	ʔimimatasu	
2/3P>1S	ʔimamjanun	ʔimimatanun	
2/3>1DI	ʔimimi	ʔimimiti	
2/3>1DE	ʔimimu	ʔimimutu	
2/3>1PI	ʔimamki	ʔimamtki	
2/3>1PE	ʔimamka	ʔimamtaka	
3,1D/PE>2S	ʔimam	ʔimîmtə	
3,1D/PE>2D	ʔimimi	ʔimimiti	
3,1D/PE>2P	ʔimamni	ʔimimtenu	
1S>2S	mamne	maamtəni	
1S>2D	mâmsu	maamtənsu	
1S>2P	mâmnun	maamtənnun	

Table 68: Transitive verb *gint* ‘be afraid of’

	non-past	past	imperative
1S>3S	gandu	gânta	gande
1S>3D	gandusu	gântasu	
1S>3P	gandunu	gântanu	
1DI>3	gîtsi	gîsti	
1DE>3	gîtsu	gîstu	
1PI>3	gajki	gajtiki	
1PE>3	gajka	gajtaka	
2S>3S	ʔigandə	ʔigântə	
2S>3D	ʔigânsu	ʔigântesu	
2S>3P	ʔigânnun	ʔigântenu	
2D>3	ʔigîtsi	ʔigîsti	gîtsije
2N>3	ʔigajni	ʔigîstenu	gîtsnuje
3S>3S	gandə	gântə	gîtsaje
3>3(D)	gânsu	gântesu	
3>3(P)	gânnun	gântenu	
2/3S>1S	ʔigajja	ʔigîsta	
2/3D>1S	ʔigajjasu	ʔigîstasu	
2/3P>1S	ʔigajjanun	ʔigîstanun	
2/3>1DI	ʔigîtsi	ʔigîsti	
2/3>1DE	ʔigîtsu	ʔigîstu	
2/3>1PI	ʔigajki	ʔigajtki	
2/3>1PE	ʔigajka	ʔigajtaka	
3,1D/PE>2S	ʔigaj	ʔigîste	
3,1D/PE>2D	ʔigîtsi	ʔigîsti	
3,1D/PE>2P	ʔigajni	ʔigîstenu	
1S>2S	gajne	gajtəni	
1S>2D	gâjsu	gajtənsu	
1S>2P	gâjnu	gajtənnun	

Table 69: Transitive verb *tshilt*
'be dissatisfied with'

	non-past	past	imperative
1S>3S	tshald <u>u</u>	tshâlta	tshalde
1S>3D	tshaldusu	tshâltasu	
1S>3P	tshaldunu	tshâltanu	
1DI>3	tshili	tshiliti	
1DE>3	tshilu	tshilutu	
1PI>3	tshal <u>ki</u>	tshaltiki	
1PE>3	tshal <u>ka</u>	tshaltaka	
2S>3S	ʔitshald <u>u</u>	ʔitshâlte	
2S>3D	ʔitshâlsu	ʔitshâltasu	
2S>3P	ʔitshâl <u>nu</u>	ʔitshâltenu	
2D>3	ʔitshili	ʔitshiliti	
2N>3	ʔitshalni	ʔitshiltenu	
3S>3S	tshald <u>u</u>	tshâlte	
3>3(D)	tshâlsu	tshâltasu	tshilaje
3>3(P)	tshâl <u>nu</u>	tshâltenu	
2/3S>1S	ʔitshal <u>ŋa</u>	ʔitshilata	
2/3D>1S	ʔitshalŋ <u>asu</u>	ʔitshilatasu	
2/3P>1S	ʔitshalŋ <u>anu</u>	ʔitshilatanu	
2/3>1DI	ʔitshili	ʔitshiliti	
2/3>1DE	ʔitshilu	ʔitshilutu	
2/3>1PI	ʔitshal <u>ki</u>	ʔitshaltiki	
2/3>1PE	ʔitshal <u>ka</u>	ʔitshaltaka	
3,1D/PE>2S	ʔitshal	ʔitshîlte	
3,1D/PE>2D	ʔitshili	ʔitshiliti	
3,1D/PE>2P	ʔitshalni	ʔitshiltenu	
1S>2S	tshal <u>ne</u>	tshalteni	
1S>2D	tshâlsu	tshaltensu	
1S>2P	tshâl <u>nu</u>	tshaltenu	

Table 70: Intransitive verb *ho* 'come'

	non-past	past	imperative
1S	həŋa	həŋata	hō:je hōije hōnje
1DI	həji	hōiti	
1DE	həju	hōitu	
1PI	həki	həktiki	
1PE	həka	həktaka	
2S	ʔihə	ʔihō:te	
2D	ʔihəji	ʔihōiti	
2N	ʔihəni	ʔihotnu	
3S	hə	hō:te	
3D	həji	hōiti	
3N	hənu	hotnu	

Table 71: Intransitive verb *sop* 'be full'

	non-past	past	imperative
1S	sođmŋa	səpata	səpje səpije səpnuje
1DI	səpi	səpiti	
1DE	səpu	səputu	
1PI	soəpki	soəptiki	
1PE	soəpka	soəptaka	
2S	ʔisoəp	ʔisəpte	
2D	ʔisəpi	ʔisəpiti	
2N	ʔisoəpmni	ʔisəptenu	
3S	soəp	səpte	
3D	səpi	səpiti	
3N	soəpmnu	səptenu	

Table 72: Intransitive verb *jot* 'look like'

	non-past	past	imperative
1S	jođjŋa	jəsta	jəstse jətsije jəsnuje
1DI	jətsi	jəsti	
1DE	jətsu	jəstu	
1PI	joəçki	joəçtiki	
1PE	joəçka	joəçtaka	
2S	ʔijođj	ʔijəste	
2D	ʔijətsi	ʔijəsti	
2N	ʔijoənni	ʔijəstenu	
3S	jođj	jəste	
3D	jətsi	jəsti	
3N	joənnu	jəstenu	

Table 73: Intransitive verb *ʔok* 'crow'

	non-past	past
3S	ʔō:	ʔəkte

Table 74: Intransitive verb *tshom* ‘dance’

	non-past	past	imperative
1S	tshoomɣa	tshemata	
1DI	tshemi	tshemiti	
1DE	tshemu	tshemutu	
1PI	tshoomki	tshoomtiki	
1PE	tshoomka	tshoomtaka	
2S	?itshoom	?itshemte	tshemje
2D	?itshemi	?itshemiti	tshemije
2N	?itshoomni	?itshemtenu	tshemnuje
3S	tshoom	tshemte	
3D	tshemi	tshemiti	
3N	tshoomnu	tshemtenu	

Table 77: Intransitive verb *bhor* ‘grow’

	non-past	past	imperative
1S	bhoorɣa	bherata	
1DI	bheri	bheriti	
1DE	bheru	bherutu	
1PI	bhoorki	bhoortiki	
1PE	bhoorka	bhoortaka	
2S	?ibhoor	?ibherite	bherje
2D	?ibheri	?ibheriti	bherije
2N	?ibhoorni	?ibhertenu	bhernuje
3S	bhoor	bherite	
3D	bheri	bheriti	
3N	bhoornu	bhertenu	

Table 75: Intransitive verb *tson* ‘jump’

	non-past	past	imperative
1S	tsoojɣa	tsō:sta	
1DI	tsō:tsi	tsō:sti	
1DE	tsō:tsu	tsō:stu	
1PI	tsoojki	tsoojtiki	
1PE	tsoojka	tsoojtaka	
2S	?itsooj	?itsō:ste	tsō:tse
2D	?itsō:tsi	?itsō:sti	tsō:tsije
2N	?itsoojni	?itsō:stenu	tsō:snuje
3S	tsooj	tsō:ste	
3D	tsō:tsi	tsō:sti	
3N	tsoojnu	tsō:stenu	

Table 78: Intransitive verb *ghol* ‘grow in width’

	non-past	past
3S	ghool	ghôlte

Table 79: Transitive verb *phlo* ‘help’

	non-past	past	imperative
1S	phlɔɣa	phlɔnta	
1DI	phlɔji	phlɔiti	
1DE	phlɔju	phlɔitu	
1PI	phlɔki	phlɔtiki	
1PE	phlɔka	phlɔtaka	
2S	?iphlɔ	?iphlɔte	phlɔje
2D	?iphlɔji	?iphlɔiti	phlɔije
2N	?iphlɔni	?iphlɔtnu	phlɔnje
3S	phlɔ	phlɔte	
3D	phlɔsu	phlɔtsu	
3N	phlɔnu	phlɔtnu	
2/3S>1S	?iphlɔɣa	?iphlɔnta	phlɔɣaje
2/3D>1S	?iphlɔɣasu	?iphlɔntasu	phlɔɣasuje
2/3P>1S	?iphlɔɣanu	?iphlɔntanu	phlɔɣanuje
2/3>1DI	?iphlɔji	?iphlɔiti	
2/3>1DE	?iphlɔju	?iphlɔitu	phlɔije
2/3>1PI	?iphlɔki	?iphlɔtiki	
2/3>1PE	?iphlɔka	?iphlɔtaka	phlɔkaje
3,1D/PE>2S	?iphlɔ	?iphlɔ:te	
3,1D/PE>2D	?iphlɔji	?iphlɔiti	
3,1D/PE>2P	?iphlɔni	?iphlɔtnu	
1S>2S	phlɔne	phlɔnteni	
1S>2D	phlɔnsu	phlɔntensu	
1S>2P	phlɔnnu	phlɔntennu	

Table 76: Intransitive verb *khoy* ‘come’

	non-past	past	imperative
1S	khō:ɣa	khoyata	
1DI	khoyi	khoyiti	
1DE	khoyu	khoyutu	
1PI	khoyki	khoytiki	
1PE	khoyka	khoytaka	
2S	?ikhoy	?ikhoyte	khoyje
2D	?ikhoyi	?ikhoyiti	khoyije
2N	?ikhō:ni	?ikhoytenu	khoynuje
3S	khoy	khoyte	
3D	khoyi	khoyiti	
3N	khō:nu	khoytenu	

Table 80: Transitive verb *ʔop* ‘shoot’

	non-past	past	imperative
1S>3S	ʔobu	ʔobuta	
1S>3D	ʔobusu	ʔobutasu	
1S>3P	ʔobunu	ʔobutānu	
1DI>3	ʔəpi	ʔəpiti	
1DE>3	ʔəpu	ʔəputu	
1PI>3	ʔoɔpki	ʔoɔptiki	
1PE>3	ʔoɔpkʌ	ʔoɔptakʌ	
2S>3S	ʔiʔə:bʌ	ʔiʔə:pte	
2S>3D	ʔiʔə:psu	ʔiʔə:ptesu	
2S>3P	ʔiʔə:pnu	ʔiʔə:ptenu	
2D>3	ʔiʔəpi	ʔiʔəpiti	
2N>3	ʔiʔoɔmni	ʔiʔəptenu	
3S>3S	ʔə:bʌ	ʔə:pte	
3>3(D)	ʔə:psu	ʔə:ptesu	
3>3(P)	ʔə:pnu	ʔə:ptenu	
2/3S>1S	ʔiʔoɔmɲʌ	ʔiʔəpatʌ	ʔəpʌje
2/3D>1S	ʔiʔoɔmɲʌsu	ʔiʔəpatʌsu	ʔəpʌsujə
2/3P>1S	ʔiʔoɔmɲʌnu	ʔiʔəpatʌnu	ʔəpʌnujə
2/3>1DI	ʔiʔəpi	ʔiʔəpiti	ʔəpujə
2/3>1DE	ʔiʔəpu	ʔiʔəputu	
2/3>1PI	ʔiʔoɔpki	ʔiʔoɔptiki	ʔoɔpkʌje
2/3>1PE	ʔiʔoɔpkʌ	ʔiʔoɔptakʌ	
3,1D/PE>2S	ʔiʔoɔp	ʔiʔəpte	
3,1D/PE>2D	ʔiʔəpi	ʔiʔəpiti	
3,1D/PE>2P	ʔiʔoɔmni	ʔiʔəptenu	
1S>2S	ʔoɔmne	ʔoɔmteni	
1S>2D	ʔoɔmsu	ʔoɔmtensu	
1S>2P	ʔoɔmnu	ʔoɔmtennu	

Table 81: Transitive verb *rot* ‘hit a target’

	non-past	past	imperative
1S>3S	rodu	rô:ta	
1S>3D	rodusu	rô:tasu	
1S>3P	rodunu	rô:tānu	
1DI>3	rətsi	rəsti	
1DE>3	rətsu	rəstu	
1PI>3	roɔçki	roɔçtiki	
1PE>3	roɔçkʌ	roɔçtakʌ	
2S>3S	ʔirə:dʌ	ʔirə:te	
2S>3D	ʔirə:tsu	ʔirə:tesu	
2S>3P	ʔirə:tnu	ʔirə:tenu	
2D>3	ʔirətsi	ʔirəsti	
2N>3	ʔiroɔnni	ʔirəstenu	
3S>3S	rə:dʌ	rə:te	
3>3(D)	rə:tsu	rə:tesu	
3>3(P)	rə:tnu	rə:tenu	
2/3S>1S	ʔiroɔɲɲʌ	ʔirəstʌ	rətsʌje
2/3D>1S	ʔiroɔɲɲʌsu	ʔirəstʌsu	rətsʌsujə
2/3P>1S	ʔiroɔɲɲʌnu	ʔirəstʌnu	rətsʌnujə
2/3>1DI	ʔirətsi	ʔirəsti	rətsujə
2/3>1DE	ʔirətsu	ʔirəstu	
2/3>1PI	ʔiroɔçki	ʔiroɔçtiki	roɔçkʌje
2/3>1PE	ʔiroɔçkʌ	ʔiroɔçtakʌ	
3,1D/PE>2S	ʔiroɔɲ	ʔirəste	
3,1D/PE>2D	ʔirətsi	ʔirəsti	
3,1D/PE>2P	ʔiroɔnni	ʔirəstenu	
1S>2S	roɔnnə	roɔnteni	
1S>2D	roɔnsu	roɔntensu	
1S>2P	roɔnnu	roɔntennu	

Table 82: Transitive verb *phrok* ‘untie’

	non-past	past	imperative
1S>3S	phrogu	phroguta	phrō:ge
1S>3D	phrogusu	phrogutasu	
1S>3P	phrogunu	phrogutanu	
1DI>3	phrēki	phrēkiti	
1DE>3	phrēku	phrēkutu	
1PI>3	phrokki	phroktiki	
1PE>3	phrokka	phroktaka	
2S>3S	ʔiphrō:ɡɸ	ʔiphrō:kte	
2S>3D	ʔiphrō:ksu	ʔiphrō:ktesu	
2S>3P	ʔiphrō:knu	ʔiphrō:ktenu	
2D>3	ʔiphrēki	ʔiphrēkiti	
2N>3	ʔiphrō:ni	ʔiphrō:ktenu	
3S>3S	phrō:ɡɸ	phrō:kte	
3>3(D)	phrō:ksu	phrō:ktesu	
3>3(P)	phrō:knu	phrō:ktenu	
2/3S>1S	ʔiphrō:ɣa	ʔiphrōkata	phrōkaje
2/3D>1S	ʔiphrō:ɣasu	ʔiphrōkatasu	phrōkasuje
2/3P>1S	ʔiphrō:ɣanu	ʔiphrōkatanu	phrōkanuje
2/3>1DI	ʔiphrēki	ʔiphrēkiti	phrōkuje
2/3>1DE	ʔiphrēku	ʔiphrēkutu	
2/3>1PI	ʔiphrokki	ʔiphroktiki	
2/3>1PE	ʔiphrokka	ʔiphroktaka	phrokkaje
3,1D/PE>2S	ʔiphrō:	ʔiphrōkte	
3,1D/PE>2D	ʔiphrēki	ʔiphrēkiti	
3,1D/PE>2P	ʔiphrō:ni	ʔiphrōktenu	
1S>2S	phrō:ne	phrōnteni	
1S>2D	phrōnsu	phrōntensu	
1S>2P	phrōnnu	phrōntennu	

Table 83: Transitive verb *lom* ‘look for’

	non-past	past	imperative
1S>3S	lomu	lomuta	lō:me
1S>3D	lomusu	lomutasu	
1S>3P	lomunu	lomutanu	
1DI>3	lōmi	lōmiti	
1DE>3	lōmu	lōmutu	
1PI>3	loɔmki	loɔmtiki	
1PE>3	loɔmka	loɔmtaka	
2S>3S	ʔilō:mɸ	ʔilō:nte	
2S>3D	ʔilō:msu	ʔilō:ntesu	
2S>3P	ʔilō:mnu	ʔilō:ntenu	
2D>3	ʔilōmi	ʔilōmiti	
2N>3	ʔilōɔmni	ʔilōmtenu	
3S>3S	lō:mɸ	lō:nte	
3>3(D)	lōmsu	lō:ntesu	
3>3(P)	lōmnu	lō:ntenu	
2/3S>1S	ʔilōɔmɣa	ʔilōmata	lōmaje
2/3D>1S	ʔilōɔmɣasu	ʔilōmatasu	lōmasuje
2/3P>1S	ʔilōɔmɣanu	ʔilōmatanu	lōmanuje
2/3>1DI	ʔilōmi	ʔilōmiti	lōmuje
2/3>1DE	ʔilōmu	ʔilōmutu	
2/3>1PI	ʔilōɔmki	ʔilōɔmtiki	
2/3>1PE	ʔilōɔmka	ʔilōɔmtaka	loɔmkaje
3,1D/PE>2S	ʔilōɔm	ʔilō:nte	
3,1D/PE>2D	ʔilōmi	ʔilōmiti	
3,1D/PE>2P	ʔilōɔmni	ʔilōmtenu	
1S>2S	loɔmne	loɔmteni	
1S>2D	loɔmsu	loɔmtensu	
1S>2P	loɔmnu	loɔmtennu	

Table 84: Transitive verb *tsoŋ* ‘add’

	non-past	past	imperative
1S>3S	tsoŋu	tsoŋuta	
1S>3D	tsoŋusu	tsoŋutasu	
1S>3P	tsoŋunu	tsoŋutānu	
1DI>3	tsoŋi	tsoŋiti	
1DE>3	tsoŋu	tsoŋutu	
1PI>3	tsoŋki	tsoŋtiki	
1PE>3	tsoŋka	tsoŋtaka	
2S>3S	ʔitsō:ŋə	ʔitsōŋte	
2S>3D	ʔitsōŋsu	ʔitsōŋtesu	
2S>3P	ʔitsōŋnu	ʔitsōŋtenu	
2D>3	ʔitsōŋi	ʔitsōŋiti	tsoŋije
2N>3	ʔitsō:mi	ʔitsōŋtenu	tsoŋnuje
3S>3S	tsō:ŋə	tsōŋte	
3>3(D)	tsōŋsu	tsōŋtesu	
3>3(P)	tsōŋnu	tsōŋtenu	

Table 85: Transitive verb *khōr* ‘fry’

	non-past	past	imperative
1S>3S	khōru	khōruta	
1S>3D	khōrusu	khōrutasu	
1S>3P	khōrunu	khōrutānu	
1DI>3	khōri	khōriti	
1DE>3	khōru	khōrutu	
1PI>3	khōorki	khōortiki	
1PE>3	khōorka	khōortaka	
2S>3S	ʔikhō:rə	ʔikhōrte	
2S>3D	ʔikhōrsu	ʔikhōrtesu	
2S>3P	ʔikhōrnu	ʔikhōrtenu	
2D>3	ʔikhōri	ʔikhōriti	khōrije
2N>3	ʔikhōorni	ʔikhōrtenu	khōrnuje
3S>3S	khō:rə	khōrte	
3>3(D)	khōrsu	khōrtesu	
3>3(P)	khōrnu	khōrtenu	

Table 86: Transitive verb *tol* ‘push’

	non-past	past	imperative
1S>3S	tolu	toluta	
1S>3D	tolusu	tolutasu	
1S>3P	tolunu	tolutānu	
1DI>3	tōli	tōliti	
1DE>3	tōlu	tōlutu	
1PI>3	toolkī	tooltiki	
1PE>3	toolkā	tooltaka	
2S>3S	ʔitō:lə	ʔitōlte	
2S>3D	ʔitōlsu	ʔitōltesu	
2S>3P	ʔitōlnu	ʔitōltenu	
2D>3	ʔitōli	ʔitōliti	tōlije
2N>3	ʔitōlni	ʔitōltenu	tōlnuje
3S>3S	tō:lə	tōlte	
3>3(D)	tōlsu	tōltesu	
3>3(P)	tōlnu	tōltenu	
2/3S>1S	ʔitōlnə	ʔitōlata	tōlaje
2/3D>1S	ʔitōlnəsu	ʔitōlatasu	tōlasuje
2/3P>1S	ʔitōlnənu	ʔitōlatānu	tōlanuje
2/3>1DI	ʔitōli	ʔitōliti	tōluje
2/3>1DE	ʔitōlu	ʔitōlutu	
2/3>1PI	ʔitoolkī	ʔitooltiki	
2/3>1PE	ʔitoolkā	ʔitooltaka	
3,1D/PE>2S	ʔitōl	ʔitōlte	toolkaje
3,1D/PE>2D	ʔitōli	ʔitōliti	
3,1D/PE>2P	ʔitōlni	ʔitōltenu	
1S>2S	toolne	tooltēni	
1S>2D	toōlsu	tooltensu	
1S>2P	toōlnu	tooltēnnu	

Table 87: Transitive verb *sopt* ‘beat’

	non-past	past	imperative
1S>3S	soɔptu	soɔpta	soɔpte
1S>3D	soɔptusu	soɔptasu	
1S>3P	soɔptunu	soɔptanu	
1DI>3	səpi	səpiti	
1DE>3	səpu	səputu	
1PI>3	soɔpki	soɔptiki	
1PE>3	soɔpka	soɔptaka	
2S>3S	ʔisoɔptə	ʔisoɔpte	
2S>3D	ʔisoɔpsu	ʔisoɔptesu	
2S>3P	ʔisoɔpnu	ʔisoɔptenu	
2D>3	ʔisəpi	ʔisəpiti	səpije
2N>3	ʔisoɔmni	ʔisəptenu	səpnuje
3S>3S	soɔptə	soɔpte	soɔpkaje
3>3(D)	soɔpsu	soɔptesu	
3>3(P)	soɔpnu	soɔptenu	
2/3S>1S	ʔisoɔmɣa	ʔisəpata	səpaje
2/3D>1S	ʔisoɔmɣasu	ʔisəpatasu	səpasuje
2/3P>1S	ʔisoɔmɣanu	ʔisəpatanu	səpanuje
2/3>1DI	ʔisəpi	ʔisəpiti	səpuje
2/3>1DE	ʔisəpu	ʔisəputu	
2/3>1PI	ʔisoɔpki	ʔisoɔptiki	
2/3>1PE	ʔisoɔpka	ʔisoɔptaka	soɔpkaje
3,1D/PE>2S	ʔisoɔp	ʔisəpte	
3,1D/PE>2D	ʔisəpi	ʔisəpiti	
3,1D/PE>2P	ʔisoɔmni	ʔisəptenu	
1S>2S	soɔmne	soɔmteni	
1S>2D	soɔmsu	soɔmtensu	
1S>2P	soɔmnu	soɔmtennu	

Table 88: Transitive verb *bhrott* ‘call’

	non-past	past	imperative
1S>3S	bhroottu	bhrootta	bhrootte
1S>3D	bhroottusu	bhroottasu	
1S>3P	bhroottunu	bhroottanu	
1DI>3	bhroetsi	bhroesti	
1DE>3	bhroetsu	bhroestu	
1PI>3	bhrooçki	bhrooçtiki	
1PE>3	bhrooçka	bhrooçtaka	
2S>3S	ʔibhroottə	ʔibhrootte	
2S>3D	ʔibhrootsu	ʔibhroottesu	
2S>3P	ʔibhroottnu	ʔibhroottenu	
2D>3	ʔibhroetsi	ʔibhroesti	bhroetsije
2N>3	ʔibhrooñni	ʔibhroestenu	bhroesnuje
3S>3S	bhroottə	bhrootte	bhroetsaje
3>3(D)	bhrootsu	bhroottesu	
3>3(P)	bhroottnu	bhroottenu	
2/3S>1S	ʔibhrooɣja	ʔibhroesta	
2/3D>1S	ʔibhrooɣjasu	ʔibhroestas	
2/3P>1S	ʔibhrooɣjanu	ʔibhroestanu	
2/3>1DI	ʔibhroetsi	ʔibhroesti	bhroetsuje
2/3>1DE	ʔibhroetsu	ʔibhroestu	
2/3>1PI	ʔibhrooçki	ʔibhrooçtiki	
2/3>1PE	ʔibhrooçka	ʔibhrooçtaka	bhrooçkaje
3,1D/PE>2S	ʔibhrooɣj	ʔibhroeste	
3,1D/PE>2D	ʔibhroetsi	ʔibhroesti	
3,1D/PE>2P	ʔibhrooñni	ʔibhroestenu	
1S>2S	bhrooñne	bhrooñteni	
1S>2D	bhrooñsu	bhrooñtensu	
1S>2P	bhrooñnu	bhrooñtenu	

Table 89: Transitive verb *fiokt* ‘shout at’

	non-past	past	imperative
1S>3S	fioktu	fiokta	fiokte
1S>3D	fioktusu	fioktasu	
1S>3P	fioktunu	fioktanu	
1DI>3	fiəki	fiəkiti	
1DE>3	fiəku	fiəkutu	
1PI>3	fiokki	fioktiki	
1PE>3	fiokka	fioktaka	
2S>3S	ʔifioktə	ʔifiokte	
2S>3D	ʔifioksu	ʔifioktesu	
2S>3P	ʔifioknu	ʔifioktenu	
2D>3	ʔifiəki	ʔifiəkiti	fiəkiye
2N>3	ʔifið:ni	ʔifiəktenu	fiəknuje
3S>3S	fioktə	fiokte	fiəkaʔje
3>3(D)	fioksu	fioktesu	
3>3(P)	fioknu	fioktenu	
2/3S>1S	ʔifið:ŋa	ʔifiəkata	
2/3D>1S	ʔifið:ŋasu	ʔifiəkatasu	
2/3P>1S	ʔifið:ŋanu	ʔifiəkatanu	
2/3>1DI	ʔifiəki	ʔifiəkiti	
2/3>1DE	ʔifiəku	ʔifiəkutu	
2/3>1PI	ʔifiokki	ʔifioktiki	
2/3>1PE	ʔifiokka	ʔifioktaka	
3,1D/PE>2S	ʔifið:	ʔifiəkte	
3,1D/PE>2D	ʔifiəki	ʔifiəkiti	
3,1D/PE>2P	ʔifið:ni	ʔifiəktenu	
1S>2S	fið:ne	fiðnteni	
1S>2D	fiðnsu	fiðntensu	
1S>2P	fiðnnu	fiðntennu	

Table 91: Transitive verb *bont* ‘touch’

	non-past	past	imperative
1S>3S	boəndu	boənta	boənde
1S>3D	boəndusu	boəntasu	
1S>3P	boəndunu	boəntanu	
1DI>3	bə:tsi	bə:sti	
1DE>3	bə:tsu	bə:stu	
1PI>3	boəjki	boəjtiki	
1PE>3	boəjka	boəjtaka	
2S>3S	ʔiboəndə	ʔiboənte	
2S>3D	ʔiboənsu	ʔiboəntesu	
2S>3P	ʔiboənnu	ʔiboəntenu	
2D>3	ʔibə:tsi	ʔibə:sti	bə:tsije
2N>3	ʔiboəjni	ʔibə:stenu	bə:snuje
3S>3S	boəndə	boənte	bə:tsaʔje
3>3(D)	boənsu	boəntesu	
3>3(P)	boənnu	boəntenu	
2/3S>1S	ʔiboəjŋa	ʔibə:sta	
2/3D>1S	ʔiboəjŋasu	ʔibə:stasu	
2/3P>1S	ʔiboəjŋanu	ʔibə:stanu	
2/3>1DI	ʔibə:tsi	ʔibə:sti	
2/3>1DE	ʔibə:tsu	ʔibə:stu	
2/3>1PI	ʔiboəjki	ʔiboəjtiki	
2/3>1PE	ʔiboəjka	ʔiboəjtaka	
3,1D/PE>2S	ʔiboəj	ʔibə:ste	
3,1D/PE>2D	ʔibə:tsi	ʔibə:sti	
3,1D/PE>2P	ʔiboəjni	ʔibə:stenu	
1S>2S	boəjne	boəjteni	
1S>2D	boəjsu	boəjtensu	
1S>2P	boəjnu	boəjtennu	

Table 90: Detransitive verb *ʔomt* ‘ripen’

	non-past	past
3S	ʔoəmdə	ʔoənte

Table 92: Transitive verb *noŋt* ‘accuse’

	non-past	past	imperative
1s>3s	nondu	nônta	
1s>3D	nondusu	nôntasu	
1s>3P	nondunu	nôntanu	
1DI>3	nøŋi	nøŋiti	
1DE>3	nøŋu	nøŋutu	
1PI>3	nøŋki	nøŋtiki	
1PE>3	nøŋka	nøŋtaka	
2s>3s	ʔinondɤ	ʔinônte	nonde
2s>3D	ʔinônsu	ʔinôntesu	
2s>3P	ʔinônnu	ʔinôntenu	
2D>3	ʔinøŋi	ʔinøŋiti	nøŋije
2N>3	ʔinô:ni	ʔinøŋtenu	nøŋnuje
3s>3s	nondɤ	nônte	
3>3(D)	nônsu	nôntesu	
3>3(P)	nônnu	nôntenu	
2/3s>1s	ʔinô:ŋa	ʔinøŋata	nøŋaje
2/3D>1s	ʔinô:ŋasu	ʔinøŋatasu	nøŋasuje
2/3P>1s	ʔinô:ŋanu	ʔinøŋatanu	nøŋanuje
2/3>1DI	ʔinøŋi	ʔinøŋiti	
2/3>1DE	ʔinøŋu	ʔinøŋutu	nøŋuje
2/3>1PI	ʔinøŋki	ʔinøŋtiki	
2/3>1PE	ʔinøŋka	ʔinøŋtaka	nøŋkaje
3, 1D/PE>2s	ʔinøŋ	ʔinôŋte	
3, 1D/PE>2D	ʔinøŋi	ʔinøŋiti	
3, 1D/PE>2P	ʔinô:ni	ʔinøŋtenu	
1s>2s	nô:ne	nonteni	
1s>2D	nônsu	nontensu	
1s>2P	nônnu	nontennu	

Table 93: Transitive verb *dhort* ‘be useful for’

	non-past	past	imperative	
1S>3S	dhoɔɾdu	dhoɔɾta	dhoɔɾde	
1S>3D	dhoɔɾdusu	dhoɔɾtasu		
1S>3P	dhoɔɾdunu	dhoɔɾtanu		
1DI>3	dɕeri	dɕeriti		
1DE>3	dɕeru	dɕerutu		
1PI>3	dhoɔɾki	dhoɔɾtiki		
1PE>3	dhoɔɾka	dhoɔɾtaka		
2S>3S	ʔidhoɔɾɖe	ʔidhoɔɾte		
2S>3D	ʔidhoɔɾsu	ʔidhoɔɾtesu		
2S>3P	ʔidhoɔɾnu	ʔidhoɔɾtenu		
2D>3	ʔidɕeri	ʔidɕeriti	dɕerije	
2N>3	ʔidhoɔɾni	ʔidɕertenu	dɕernuje	
3S>3S	dhoɔɾɖe	dhoɔɾte		
3>3(D)	dhoɔɾsu	dhoɔɾtesu		
3>3(P)	dhoɔɾnu	dhoɔɾtenu		
2/3S>1S	ʔidhoɔɾɟa	ʔidɕerata		dɕeraje
2/3D>1S	ʔidhoɔɾɟasu	ʔidɕeratasu		dɕerajuse
2/3P>1S	ʔidhoɔɾɟanu	ʔidɕeratanu	dɕerajunu	
2/3>1DI	ʔidɕeri	ʔidɕeriti	dɕeruje	
2/3>1DE	ʔidɕeru	ʔidɕerutu		
2/3>1PI	ʔidhoɔɾki	ʔidhoɔɾtiki		
2/3>1PE	ʔidhoɔɾka	ʔidhoɔɾtaka	dhoɔɾkaje	
3, 1D/PE>2S	ʔidhoɔɾ	ʔidɕêɾte		
3, 1D/PE>2D	ʔidɕeri	ʔidɕeriti		
3, 1D/PE>2P	ʔidhoɔɾni	ʔidɕertenu		
1S>2S	dhoɔɾne	dhoɔɾteni		
1S>2D	dhoɔɾsu	dhoɔɾtensu		
1S>2P	dhoɔɾnu	dhoɔɾtenu		

Table 94: Transitive verb *kolt* ‘chase’

	non-past	past	imperative
1S>3S	kooldu	koõlta	koalde
1S>3D	kooldusu	koõltasu	
1S>3P	kooldunu	koõltanu	
1DI>3	keli	keliti	
1DE>3	kəlu	kəlutu	
1PI>3	koalki	koaltiki	
1PE>3	koalka	koaltaka	
2S>3S	ʔikooldu	ʔikoõlte	
2S>3D	ʔikoõlsu	ʔikoõltasu	
2S>3P	ʔikoõlnu	ʔikoõltenu	
2D>3	ʔikeli	ʔikeliti	kəlije
2N>3	ʔikoalni	ʔikəltenu	kəlnuje
3S>3S	kooldu	koõlte	kəlkaje
3>3(D)	koõlsu	koõltasu	
3>3(P)	koõlnu	koõltenu	
2/3S>1S	ʔikoalɲa	ʔikəlatə	
2/3D>1S	ʔikoalɲasu	ʔikəlatasu	
2/3P>1S	ʔikoalɲanu	ʔikəlatanu	
2/3>1DI	ʔikeli	ʔikeliti	
2/3>1DE	ʔikəlu	ʔikəlutu	
2/3>1PI	ʔikoalki	ʔikoaltiki	
2/3>1PE	ʔikoalka	ʔikoaltaka	
3,1D/PE>2S	ʔikoal	ʔikəlte	
3,1D/PE>2D	ʔikeli	ʔikeliti	
3,1D/PE>2P	ʔikoalni	ʔikəltenu	
1S>2S	koalne	koalteni	
1S>2D	koõlsu	koaltensu	
1S>2P	koõlnu	koaltenu	

Table 95: Intransitive verb *su* ‘itch’

	non-past	past	imperative
1S	səŋa	səŋata	sūje səije sūnje
1DI	səji	səiti	
1DE	səju	səitu	
1PI	səki	səktiki	
1PE	səka	səktaka	
2S	ʔisə	ʔisūte	
2D	ʔisəji	ʔisəiti	
2N	ʔisəni	ʔisutnu	
3S	sə	sūte	
3D	səji	səiti	
3N	sənu	sutnu	

Table 96: Intransitive verb *fiut* ‘burn’

	non-past	past
3S	fɪlj	fɪuste

Table 97: Intransitive verb *dzhuk* ‘escape’

	non-past	past	imperative
1S	dzhû:ŋa	dzhəkata	dzhəkje dzhəkije dzhəknuje
1DI	dzhəki	dzhəkiti	
1DE	dzhəku	dzhəkutu	
1PI	dzhukki	dzhuktiki	
1PE	dzhukka	dzhuktaka	
2S	ʔidzhû:	ʔidzhəkte	
2D	ʔidzhəki	ʔidzhəkiti	
2N	ʔidzhû:ni	ʔidzhəktenu	
3S	dzhû:	dzhəkte	
3D	dzhəki	dzhəkiti	
3N	dzhû:nu	dzhəktenu	

Table 98: Intransitive verb *ghrum* ‘be tired’

	non-past	past	imperative
1S	ghramɲa	ghramata	ghrāmje ghrāmije ghrāmnuje
1DI	ghrami	ghramiti	
1DE	ghramu	ghramutu	
1PI	ghramki	ghramtiki	
1PE	ghramka	ghramtaka	
2S	ʔighram	ʔighrānte	
2D	ʔighrami	ʔighramiti	
2N	ʔighramni	ʔighramtenu	
3S	ghram	ghrānte	
3D	ghrami	ghramiti	
3N	ghramnu	ghramtenu	

Table 99: Intransitive verb *khun* ‘fall down’

	non-past	past	imperative
1S	khajŋa	khū:sta	
1DI	khū:tsi	khū:sti	
1DE	khū:tsu	khū:stu	
1PI	khajki	khajtiki	
1PE	khajka	khajtaka	
2S	ʔikhaj	ʔikhū:ste	
2D	ʔikhū:tsi	ʔikhū:sti	
2N	ʔikhajni	ʔikhū:stenu	
3S	khaj	khū:ste	
3D	khū:tsi	khū:sti	khū:tse khū:tsije khū:snuje
3N	khajnu	khū:stenu	

Table 100: Intransitive verb *ghur* ‘run’

	non-past	past	imperative
1S	gharŋa	gharata	ghârje gharije gharnuje
1DI	ghari	ghariti	
1DE	gharu	gharutu	
1PI	gharki	ghartiki	
1PE	gharka	ghartaka	
2S	ʔighar	ʔighârte	
2D	ʔighari	ʔighariti	
2N	ʔigharni	ʔighartenu	
3S	ghar	ghârte	
3D	ghari	ghariti	
3N	gharnu	ghartenu	

Table 101: Transitive verb *ʔu* ‘take care’

	non-past	past	imperative
1S	ʔaŋa	ʔaŋta	ʔaje ʔâije ʔûnje ʔaŋaje ʔaŋasuje ʔaŋanuje ʔâije ʔakaje
1DI	ʔaji	ʔâiti	
1DE	ʔaju	ʔâitu	
1PI	ʔaki	ʔaktiki	
1PE	ʔaka	ʔaktaka	
2S	ʔiʔa	ʔiʔate	
2D	ʔiʔaji	ʔiʔâiti	
2N	ʔiʔani	ʔiʔutnu	
3S	ʔa	ʔate	
3D	ʔasu	ʔatsu	
3N	ʔanu	ʔatnu	
2/3S>1S	ʔiʔaŋa	ʔiʔaŋata	ʔaŋaje ʔaŋasuje ʔaŋanuje
2/3D>1S	ʔiʔaŋasu	ʔiʔaŋatasu	
2/3P>1S	ʔiʔaŋanu	ʔiʔaŋatanu	ʔâije ʔakaje
2/3>1DI	ʔiʔaji	ʔiʔâiti	
2/3>1DE	ʔiʔaju	ʔiʔâitu	
2/3>1PI	ʔiʔaki	ʔiʔaktiki	
2/3>1PE	ʔiʔaka	ʔiʔaktaka	
3,1D/PE>2S	ʔiʔa	ʔiʔû:te	
3,1D/PE>2D	ʔiʔaji	ʔiʔâiti	
3,1D/PE>2P	ʔiʔani	ʔiʔutnu	
1S>2S	ʔane	ʔânteni	
1S>2D	ʔânsu	ʔântensu	
1S>2P	ʔânnu	ʔântennu	

Table 102: Transitive verb *gup* ‘hide’

	non-past	past	imperative
1S>3S	gubu	gubuta	gā:be gəpije gəpnuje
1S>3D	gubusu	gubutasu	
1S>3P	gubunu	gubutānu	
1DI>3	gəpi	gəpiti	
1DE>3	gəpu	gəputu	
1PI>3	gəpki	gəptiki	
1PE>3	gəpkā	gəptākā	
2S>3S	ʔigā:bə	ʔigā:pte	
2S>3D	ʔigā:psu	ʔigā:ptesu	
2S>3P	ʔigā:pnu	ʔigā:ptenu	
2D>3	ʔigəpi	ʔigəpiti	
2N>3	ʔigāmn̩i	ʔigəptenu	
3S>3S	gā:bə	gā:pte	
3>3(D)	gā:psu	gā:ptesu	
3>3(P)	gā:pnu	gā:ptenu	
2/3S>1S	ʔigāmn̩ʔa	ʔigəpata	gəpəje
2/3D>1S	ʔigāmn̩ʔasu	ʔigəpatasu	gəpasuje
2/3P>1S	ʔigāmn̩ʔanu	ʔigəpatānu	gəpānuje
2/3>1DI	ʔigəpi	ʔigəpiti	gəpuje
2/3>1DE	ʔigəpu	ʔigəputu	
2/3>1PI	ʔigəpki	ʔigəptiki	gəpkəje
2/3>1PE	ʔigəpkā	ʔigəptākā	
3,1D/PE>2S	ʔigəp	ʔigəpte	
3,1D/PE>2D	ʔigəpi	ʔigəpiti	
3,1D/PE>2P	ʔigāmn̩i	ʔigəptenu	
1S>2S	gāmn̩e	gāmt̩eni	
1S>2D	gāmsu	gāmt̩ensu	
1S>2P	gāmn̩u	gāmt̩ennu	

Table 103: Transitive verb *lut* ‘tell’

	non-past	past	imperative
1S>3S	ludu	lū:ta	lā:de lətsije ləsnuje
1S>3D	ludusu	lū:tasu	
1S>3P	ludunu	lū:tanu	
1DI>3	lətsi	ləsti	
1DE>3	lətsu	ləstu	
1PI>3	ləçki	ləçtiki	
1PE>3	ləçkā	ləçtakā	
2S>3S	ʔilā:də	ʔilā:te	
2S>3D	ʔilā:tsu	ʔilā:tesu	
2S>3P	ʔilā:tnu	ʔilā:tenu	
2D>3	ʔilətsi	ʔiləsti	
2N>3	ʔilānn̩i	ʔiləstenu	
3S>3S	lā:də	lā:te	
3>3(D)	lā:tsu	lā:tesu	
3>3(P)	lā:tnu	lā:tenu	
2/3S>1S	ʔilājn̩ʔa	ʔiləsta	lətsəje
2/3D>1S	ʔilājn̩ʔasu	ʔiləstasu	lətsəsuje
2/3P>1S	ʔilājn̩ʔanu	ʔiləstānu	lətsānuje
2/3>1DI	ʔilətsi	ʔiləsti	lətsuje
2/3>1DE	ʔilətsu	ʔiləstu	
2/3>1PI	ʔiləçki	ʔiləçtiki	ləçkəje
2/3>1PE	ʔiləçkā	ʔiləçtakā	
3,1D/PE>2S	ʔilāj	ʔiləste	
3,1D/PE>2D	ʔilətsi	ʔiləsti	
3,1D/PE>2P	ʔilānn̩i	ʔiləstenu	
1S>2S	lānn̩e	lānt̩eni	
1S>2D	lānsu	lānt̩ensu	
1S>2P	lānn̩u	lānt̩ennu	

Table 104: Transitive verb *phuk* ‘wake up’

	non-past	past	imperative
1S>3S	phugu	phuguta	phā:ge phākije phāknuje phukkaje
1S>3D	phugusu	phugutasu	
1S>3P	phugunu	phugutānu	
1DI>3	phūki	phūkiti	
1DE>3	phūku	phūkutu	
1PI>3	phukki	phuktiki	
1PE>3	phukka	phuktaka	
2S>3S	ʔiphū:gu	ʔiphū:kte	
2S>3D	ʔiphū:ksu	ʔiphū:ktesu	
2S>3P	ʔiphū:knu	ʔiphū:ktenu	
2D>3	ʔiphūki	ʔiphūkiti	
2N>3	ʔiphū:ni	ʔiphūktenu	
3S>3S	phū:gu	phū:kte	
3>3(D)	phū:ksu	phū:ktesu	
3>3(P)	phū:knu	phū:ktenu	
2/3S>1S	ʔiphū:ŋa	ʔiphūkata	phūkaje
2/3D>1S	ʔiphū:ŋasu	ʔiphūkatasu	phūkasuje
2/3P>1S	ʔiphū:ŋānu	ʔiphūkatānu	phūkānuje
2/3>1DI	ʔiphūki	ʔiphūkiti	phūkuje
2/3>1DE	ʔiphūku	ʔiphūkutu	
2/3>1PI	ʔiphukki	ʔiphuktiki	phukkaje
2/3>1PE	ʔiphukka	ʔiphuktaka	
3,1D/PE>2S	ʔiphū:	ʔiphūkte	
3,1D/PE>2D	ʔiphūki	ʔiphūkiti	
3,1D/PE>2P	ʔiphū:ni	ʔiphūktenu	
1S>2S	phū:ne	phūnteni	
1S>2D	phūnsu	phūntensu	
1S>2P	phūnnu	phūntennu	

Table 105: Transitive verb *dum* ‘meet’

	non-past	past	imperative
1S>3S	dumu	dumuta	dā:me dūmije dūmnuje dūmajje
1S>3D	dumusu	dumutasu	
1S>3P	dumunu	dumutānu	
1DI>3	dūmi	dūmiti	
1DE>3	dūmu	dūmutu	
1PI>3	dāmki	dāmtiki	
1PE>3	dāmka	dāmtaka	
2S>3S	ʔidū:mə	ʔidū:nte	
2S>3D	ʔidū:msu	ʔidū:ntesu	
2S>3P	ʔidū:mnu	ʔidū:ntenu	
2D>3	ʔidūmi	ʔidūmiti	
2N>3	ʔidāmni	ʔidūmtenu	
3S>3S	dū:mə	dū:nte	
3>3(D)	dū:msu	dū:ntesu	
3>3(P)	dū:mnu	dū:ntenu	
2/3S>1S	ʔidāmŋa	ʔidūmata	dūmajje
2/3D>1S	ʔidāmŋasu	ʔidūmatasu	dūmasuje
2/3P>1S	ʔidāmŋānu	ʔidūmatānu	dūmānuje
2/3>1DI	ʔidūmi	ʔidūmiti	dūmuje
2/3>1DE	ʔidūmu	ʔidūmutu	
2/3>1PI	ʔidāmki	ʔidāmtiki	dāmkaaje
2/3>1PE	ʔidāmka	ʔidāmtaka	
3,1D/PE>2S	ʔidām	ʔidūnte	
3,1D/PE>2D	ʔidūmi	ʔidūmiti	
3,1D/PE>2P	ʔidāmni	ʔidūmtenu	
1S>2S	dāmne	dāmteni	
1S>2D	dāmsu	dāmtensu	
1S>2P	dāmnu	dāmtennu	

Table 106: Transitive verb *huy* ‘wait’

	non-past	past	imperative
1S>3S	huyu	huyutA	h̥e:ŋe h̥ŋije h̥ŋnuje
1S>3D	huyusu	huyutAsu	
1S>3P	huyunu	huyutAnu	
1DI>3	h̥ŋi	h̥ŋiti	
1DE>3	h̥ŋu	h̥ŋutu	
1PI>3	h̥ŋki	h̥ŋtiki	
1PE>3	h̥ŋka	h̥ŋtaka	
2S>3S	ʔih̥e:ŋe	ʔih̥ŋte	
2S>3D	ʔih̥ŋsu	ʔih̥ŋtesu	
2S>3P	ʔih̥ŋnu	ʔih̥ŋtenu	
2D>3	ʔih̥ŋi	ʔih̥ŋiti	
2N>3	ʔih̥ū:ni	ʔih̥ŋtenu	
3S>3S	h̥e:ŋe	h̥ŋte	
3>3(D)	h̥ŋsu	h̥ŋtesu	
3>3(P)	h̥ŋnu	h̥ŋtenu	
2/3S>1S	ʔih̥ū:ŋA	ʔih̥ŋatA	h̥ŋAje
2/3D>1S	ʔih̥ū:ŋAsu	ʔih̥ŋatAsu	h̥ŋAsuje
2/3P>1S	ʔih̥ū:ŋAnu	ʔih̥ŋatAnu	h̥ŋAnuje
2/3>1DI	ʔih̥ŋi	ʔih̥ŋiti	h̥ŋuje
2/3>1DE	ʔih̥ŋu	ʔih̥ŋutu	
2/3>1PI	ʔih̥ŋki	ʔih̥ŋtiki	h̥ŋkaje
2/3>1PE	ʔih̥ŋka	ʔih̥ŋtaka	
3,1D/PE>2S	ʔih̥ŋ	ʔih̥ŋte	
3,1D/PE>2D	ʔih̥ŋi	ʔih̥ŋiti	
3,1D/PE>2P	ʔih̥ū:ni	ʔih̥ŋtenu	
1S>2S	h̥ū:ne	h̥unteni	
1S>2D	h̥ūnsu	h̥untensu	
1S>2P	h̥ūnnu	h̥untennu	

Table 107: Transitive verb *sur* ‘wash’

	non-past	past	imperative
1S>3S	suru	surutA	s̥e:re s̥rije s̥arnuje
1S>3D	surusu	surutAsu	
1S>3P	surunu	surutAnu	
1DI>3	s̥ri	s̥riti	
1DE>3	s̥ru	s̥rutu	
1PI>3	s̥arki	s̥artiki	
1PE>3	s̥arka	s̥artaka	
2S>3S	ʔis̥e:re	ʔis̥ŋte	
2S>3D	ʔis̥ŋsu	ʔis̥ŋtesu	
2S>3P	ʔis̥ŋnu	ʔis̥ŋtenu	
2D>3	ʔis̥ri	ʔis̥riti	
2N>3	ʔis̥arni	ʔis̥ŋtenu	
3S>3S	s̥e:re	s̥ŋte	
3>3(D)	s̥ŋsu	s̥ŋtesu	
3>3(P)	s̥ŋnu	s̥ŋtenu	
2/3S>1S	ʔis̥arŋA	ʔis̥arata	s̥arAje
2/3D>1S	ʔis̥arŋAsu	ʔis̥aratAsu	s̥arasuje
2/3P>1S	ʔis̥arŋAnu	ʔis̥aratAnu	s̥aranuje
2/3>1DI	ʔis̥ri	ʔis̥riti	s̥ruje
2/3>1DE	ʔis̥ru	ʔis̥rutu	
2/3>1PI	ʔis̥arki	ʔis̥artiki	s̥arkaje
2/3>1PE	ʔis̥arka	ʔis̥artaka	
3,1D/PE>2S	ʔis̥ar	ʔis̥ŋte	
3,1D/PE>2D	ʔis̥ri	ʔis̥riti	
3,1D/PE>2P	ʔis̥arni	ʔis̥ŋtenu	
1S>2S	s̥arne	s̥arteni	
1S>2D	s̥ŋrsu	s̥artensu	
1S>2P	s̥ŋrnu	s̥artennu	

Table 108: Transitive verb *gul* ‘cover’

	non-past	past	imperative
1S>3S	gulu	guluta	gũ:le gũlije gũnuje
1S>3D	gulusu	gulutasu	
1S>3P	gulunu	gulutanu	
1DI>3	gũli	gũliti	
1DE>3	gũlu	gũlutu	
1PI>3	galki	galtiki	
1PE>3	galka	galtaka	
2S>3S	ʔigũ:lu	ʔigũlte	
2S>3D	ʔigũlsu	ʔigũltesu	
2S>3P	ʔigũlnu	ʔigũltenu	
2D>3	ʔigũli	ʔigũliti	
2N>3	ʔigalɲi	ʔigũltenu	
3S>3S	gũ:lu	gũlte	
3>3(D)	gũlsu	gũltesu	
3>3(P)	gũlnu	gũltenu	
2/3S>1S	ʔigalɲa	ʔigũlata	gũlaje
2/3D>1S	ʔigalɲasu	ʔigũlatasu	gũlasuje
2/3P>1S	ʔigalɲanu	ʔigũlatanu	gũlanuje
2/3>1DI	ʔigũli	ʔigũliti	gũluje
2/3>1DE	ʔigũlu	ʔigũlutu	
2/3>1PI	ʔigalki	ʔigaltiki	galkaje
2/3>1PE	ʔigalka	ʔigaltaka	
3,1D/PE>2S	ʔigal	ʔigũlte	
3,1D/PE>2D	ʔigũli	ʔigũliti	
3,1D/PE>2P	ʔigalɲi	ʔigũltenu	
1S>2S	galne	galteni	
1S>2D	galɲsu	galtensu	
1S>2P	galɲnu	galtennu	

Table 109: Transitive verb *fiutt* ‘burn, reveal the culprit’

	non-past	past	imperative
1S>3S	fiattu	fiatta	fiatte fiətsije fiəsnuje
1S>3D	fiattusu	fiattasu	
1S>3P	fiattunu	fiattanu	
1DI>3	fiətsi	fiəsti	
1DE>3	fiətsu	fiəstu	
1PI>3	fiəçki	fiəçtiki	
1PE>3	fiəçka	fiəçtaka	
2S>3S	ʔifiəttə	ʔifiətte	
2S>3D	ʔifiətsu	ʔifiəttesu	
2S>3P	ʔifiətnu	ʔifiəttenu	
2D>3	ʔifiətsi	ʔifiəsti	
2N>3	ʔifiənni	ʔifiəstenu	
3S>3S	fiəttə	fiətte	
3>3(D)	fiətsu	fiəttesu	
3>3(P)	fiətnu	fiəttenu	
2/3S>1S	ʔifiəɲa	ʔifiəsta	fiətsaje
2/3D>1S	ʔifiəɲasu	ʔifiəstasu	fiətsasuje
2/3P>1S	ʔifiəɲanu	ʔifiəstanu	fiətsanuje
2/3>1DI	ʔifiətsi	ʔifiəsti	fiətsuje
2/3>1DE	ʔifiətsu	ʔifiəstu	
2/3>1PI	ʔifiəçki	ʔifiəçtiki	fiəçkaje
2/3>1PE	ʔifiəçka	ʔifiəçtaka	
3,1D/PE>2S	ʔifiəɲ	ʔifiəste	
3,1D/PE>2D	ʔifiətsi	ʔifiəsti	
3,1D/PE>2P	ʔifiənni	ʔifiəstenu	
1S>2S	fiənnə	fiənteni	
1S>2D	fiənsu	fiəntensu	
1S>2P	fiənnu	fiəntennu	

Table 110: Transitive verb *kukt*
'bend; take revenge'

	non-past	past	imperative
1S>3S	kuktu	kukta	kukte kəkije kəknuje
1S>3D	kuktusu	kuktasu	
1S>3P	kuktunu	kuktanu	
1DI>3	kəki	kəkiti	
1DE>3	kəku	kəkutu	
1PI>3	kukki	kuktiki	
1PE>3	kukka	kuktaka	
2S>3S	ʔikukta	ʔikukte	
2S>3D	ʔikuksu	ʔikuktesu	
2S>3P	ʔikuknu	ʔikuktenu	
2D>3	ʔikəki	ʔikəkiti	
2N>3	ʔikū:ni	ʔikəktenu	
3S>3S	kukta	kukte	
3>3(D)	kuksu	kuktesu	kəkaje kəkasuje kəkanuje kəkuje kukkaje
3>3(P)	kuknu	kuktenu	
2/3S>1S	ʔikū:ŋa	ʔikəkata	
2/3D>1S	ʔikū:ŋasu	ʔikəkatasu	
2/3P>1S	ʔikū:ŋanu	ʔikəkatanu	
2/3>1DI	ʔikəki	ʔikəkiti	
2/3>1DE	ʔikəku	ʔikəkutu	
2/3>1PI	ʔikukki	ʔikuktiki	
2/3>1PE	ʔikukka	ʔikuktaka	
3,1D/PE>2S	ʔikū:	ʔikəkute	
3,1D/PE>2D	ʔikəki	ʔikəkiti	
3,1D/PE>2P	ʔikū:ni	ʔikəktenu	
1S>2S	kū:ne	kūnteni	
1S>2D	kūnsu	kūntensu	
1S>2P	kūnnu	kūntennu	

Table 111: Transitive verb *tumt* 'follow tracks'

	non-past	past	imperative
1S>3S	tamdu	tāmta	tamde təmije təmnuje
1S>3D	tamdusu	tāmtasu	
1S>3P	tamdunu	tāmtanu	
1DI>3	təmi	təmiti	
1DE>3	təmu	təmutu	
1PI>3	tamki	tāmtiki	
1PE>3	tamka	tāmtaka	
2S>3S	ʔitamda	ʔitāmte	
2S>3D	ʔitāmsu	ʔitāmtesu	
2S>3P	ʔitāmnu	ʔitāmtenu	
2D>3	ʔitəmi	ʔitəmiti	
2N>3	ʔitamni	ʔitāmtenu	
3S>3S	tamda	tāmte	
3>3(D)	tāmsu	tāmtesu	təmaje təmasuje təmanuje təmuje tamkaje
3>3(P)	tāmnu	tāmtenu	
2/3S>1S	ʔitamŋa	ʔitāmata	
2/3D>1S	ʔitamŋasu	ʔitāmatasu	
2/3P>1S	ʔitamŋanu	ʔitāmatanu	
2/3>1DI	ʔitəmi	ʔitəmiti	
2/3>1DE	ʔitəmu	ʔitəmutu	
2/3>1PI	ʔitamki	ʔitāmtiki	
2/3>1PE	ʔitamka	ʔitāmtaka	
3,1D/PE>2S	ʔitam	ʔitāmte	
3,1D/PE>2D	ʔitəmi	ʔitəmiti	
3,1D/PE>2P	ʔitamni	ʔitāmtenu	
1S>2S	tamne	tāmteni	
1S>2D	tāmsu	tāmtensu	
1S>2P	tāmnu	tāmtennu	

Table 112: Transitive verb *phlunt*
'take off (clothes)'

	non-past	past	imperative
1S>3S	phlandu	phlânta	phlande
1S>3D	phlandusu	phlântasu	
1S>3P	phlandunu	phlântanu	
1DI>3	phlã:tsi	phlã:sti	
1DE>3	phlã:tsu	phlã:stu	
1PI>3	phlajki	phlajtiki	
1PE>3	phlajka	phlajtaka	
2S>3S	?iphlandæ	?iphlânte	
2S>3D	?iphlânsu	?iphlântesu	
2S>3P	?iphlânnu	?iphlântenu	
2D>3	?iphlã:tsi	?iphlã:sti	phlã:tsije
2N>3	?iphlajni	?iphlã:stenu	phlã:snuje
3S>3S	phlandæ	phlânte	
3>3(D)	phlânsu	phlântesu	
3>3(P)	phlânnu	phlântenu	

Table 113: Transitive verb *thugt* 'stab'

	non-past	past	imperative
1S>3S	thundu	thûnta	thunde
1S>3D	thundusu	thûntasu	
1S>3P	thundunu	thûntanu	
1DI>3	thæŋi	thæŋiti	
1DE>3	thæŋu	thæŋutu	
1PI>3	thunŋki	thunŋtiki	
1PE>3	thunŋka	thunŋtaka	
2S>3S	?ithundæ	?ithûnte	
2S>3D	?ithûnsu	?ithûntesu	
2S>3P	?ithûnnu	?ithûntenu	
2D>3	?ithæŋi	?ithæŋiti	thæŋije
2N>3	?ithû:ni	?ithæŋtenu	thæŋnuje
3S>3S	thundæ	thûnte	
3>3(D)	thûnsu	thûntesu	
3>3(P)	thûnnu	thûntenu	
2/3S>1S	?ithû:ŋa	?ithæŋata	thæŋaje
2/3D>1S	?ithû:ŋasu	?ithæŋatasu	thæŋasuje
2/3P>1S	?ithû:ŋanu	?ithæŋatanu	thæŋanuje
2/3>1DI	?ithæŋi	?ithæŋiti	thæŋuje
2/3>1DE	?ithæŋu	?ithæŋutu	
2/3>1PI	?ithunŋki	?ithunŋtiki	thunŋaje
2/3>1PE	?ithunŋka	?ithunŋtaka	
3,1D/PE>2S	?ithunŋ	?ithæŋte	
3,1D/PE>2D	?ithæŋi	?ithæŋiti	
3,1D/PE>2P	?ithû:ni	?ithæŋtenu	
1S>2S	thû:ne	thunteni	
1S>2D	thûnsu	thuntensu	
1S>2P	thûnnu	thuntennu	

Table 114: Transitive verb *kurt* ‘bring for’

	non-past	past	imperative
1S>3S	kardu	kârta	
1S>3D	kardusu	kârtasu	
1S>3P	kardunu	kârtanu	
1DI>3	kəri	kəriti	
1DE>3	kəru	kərutu	
1PI>3	karki	kartiki	
1PE>3	karka	kartaka	
2S>3S	ʔikardə	ʔikârte	karde
2S>3D	ʔikârsu	ʔikârtesu	kərije kənuje
2S>3P	ʔikârnu	ʔikârtenu	
2D>3	ʔikəri	ʔikəriti	
2N>3	ʔikarni	ʔikərtenu	
3S>3S	kardə	kârte	
3>3(D)	kârsu	kârtesu	kəraje kərasuje kəranuje kəruje karkaje
3>3(P)	kârnu	kârtenu	
2/3S>1S	ʔikarŋa	ʔikərata	
2/3D>1S	ʔikarŋasu	ʔikərata <u>su</u>	
2/3P>1S	ʔikarŋanu	ʔikərata <u>nu</u>	
2/3>1DI	ʔikəri	ʔikəriti	
2/3>1DE	ʔikəru	ʔikərutu	
2/3>1PI	ʔikarki	ʔikartiki	
2/3>1PE	ʔikarka	ʔikartaka	
3,1D/PE>2S	ʔikar	ʔikârte	
3,1D/PE>2D	ʔikəri	ʔikəriti	
3,1D/PE>2P	ʔikarni	ʔikərtenu	
1S>2S	karne	karteni	
1S>2D	kârsu	kartensu	
1S>2P	kârnu	kartennu	