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. Introduction[1]

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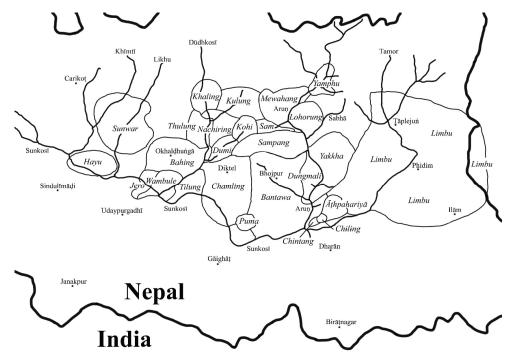
tone alternations in verbs and vowel length, and gave an incomplete account of the verbal paradigms.

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 form[2] 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)

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[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 iː	ʉ ʉː	u uː
e eː	ɵ ɵː	o oː
ɛ ɛː	ʌ	ɔɔ
	a aː	

There is no opposition of quantity on /ʌ/ (which is always short) and /ɔɔ/ (always long) in the Phuleli dialect. In other varieties some speakers also have a long /ʌː/ 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
pʰ	tʰ		tsʰ	kʰ	
b	d		dz	g	
bʰ	dʰ		dzʰ	gʰ	
m	n			ŋ	
	s				ɦ
	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)   *ʔoɔ̄jnɛ*   'to pronounce ritual words'
      woɔ̄jnɛ   '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 /oɔ/, e.g. /kʰoɔ̂nnɛ/ '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 *-tʌkʌ*. Two hypotheses are proposed to explain the appearance of [ç] in this position. First, we could propose that *-tiki* and *-tʌkʌ* come from *-ktiki* and *-ktʌkʌ*, 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 1PI>3 forms, assuming the rules *t > ç /_[+velar|+labial] would be:

(2)   1PI.NPST   *set+ki   >   seçki
      1PI.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)   *tsenɛ*   'be spoiled (of flour)'   (root |tse|)
      tsē:nɛ   'sieve'   (root |tseŋ|)
      tsê:nɛ   'close'   (root |tsekt|)

(4)   *mɛ*   'that'; 'to do (3S>3.NPST)'
      mɛ̄:   'over there' (the reduced form of *mɛjo*)
      mɛ̂:   '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) *lōmnɛ*   'to look for (infinitive)'
     loȃmnɛ   '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. *rêːp* '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. *bↄ̂i*   *ʔu-gʰas*   *kɛ̄m-bi*   *kʰɵs-t-ɛ*
         cow   3S.POSS-grass   chew-LOC   go-PST-2/3S
         'The cow went to chew the grass.' (from the verb *kɛ̄mnɛ* 'to chew')

     b. *kɛ̂m-bi*   *kʰɵs-t-ɛ*
         elk-LOC   go-PST-2/3S
         'He went (to hunt) for the elk.' (from the noun *kɛ̂m* 'elk')

     c. *kɛ̀m-bi*   *kʰɵs-t-ɛ*
         work-LOC   go-PST-2/3S
         'He went for his work.' (from the noun *kɛ̄m* '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 morphophonological characteristics of an internally reconstructed root, whose derivation for each verb will be presented in §5. The affixes are drawn from a single morphological

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[4] For instance *sↄ̄ŋ-bi khɵstɛ* 'He went to ask' from the verb root |siŋ| 'to ask' vs. *sↄ̀ŋ-bi khɵstɛ* 'He went for the firewood' from the noun *sↄ̄ŋ* '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
ʔi- (2 or INVERSE) mu- (NEG) mʌ- (2.NEG)	Σ	-ŋ- (1SG) -i- (DU) -k- (1PL) -n- (2PL, 1>2, INF)	-de(t-) -tʰer(d-) -kʰʌ(t)- etc	-ŋʌ/-ʌ (1SG.S/O) -u (1SG>3) -i (1DU) -k (1PL.PST) -nɛ (1>2, INF)	-t- past -w- irrealis	-ɛ (2/3) -ŋʌ/-ʌ (1SG.S/O) -u (1SG>3) -i (1DI) -u (1DE) -(i)ki (1PI) -(ʌ)kʌ (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) *tsɵtstsɵsu-ʔʌ   mē:sʌ   sîŋ-t⁴-ɛ⁵-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) *kɑ̄m-bʉ-jʉ   tsêmhô:-t⁴-ʌ⁵   mɑ̂m-t⁴-ɛ⁵-si⁶*
house-LOC-down   forget-PST-1SG   remember-PST-2/3-REFL
melo   lô-n¹-pɛ²-nɛ³   gʰrē:s-t⁴-ɛ⁵
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)

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[5] The reflexive suffix sometimes appears between the suffixal slots +2 and +3 as in *mɑ̂m-si⁶-ŋʌ³-t⁴-ʌ⁵* 'I thought'.

(9) *gʰoɔ̄lpɛ*   *gʰrô:t*   *mɛ*   *nôr-ʔɛ*   *mu⁻¹-kʉ-kʰʌt²-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	soôm-ŋʌ	Σ-ŋʌ
1DI	sɵp-i	Σ-i
1DE	sɵp-u	Σ-u
1PI	soɔp-ki	Σ-ki
1PE	soɔp-kʌ	Σ-kʌ
2S	ʔi-soɔp	ʔi-Σ
2D	ʔi-sɵp-i	ʔi-Σ-i
2P	ʔi-soôm-ni	ʔi-Σ-ni
3S	soɔp	Σ
3D	sɵp-i	Σ-i
3P	soôm-nu	Σ-nu

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

	1S	1DI	1DE	1PI	1PE	2S	2D	2P	3S	3D	3P
1S						loôm-nɛ	loôm-su	loôm-nu	lob-u	lob-usu	lob-unu
1DI										ləp-i	
1DE						ʔi-loɔp	ʔi-ləp-i	ʔi-loôm-ni		ləp-u	
1PI										loɔp-ki	
1PE						ʔi-loɔp	ʔi-ləp-i	ʔi-loôm-ni		loɔp-kʌ	
2S	ʔi-loôm-ŋʌ								ʔi-lə̄:b-ʉ	ʔi-lê:p-su	ʔi-lê:p-nu
2D	ʔi-loôm-ŋʌsu									ʔi-ləp-i	
2P	ʔi-loôm-ŋʌnu									ʔi-loôm-ni	
3S	ʔi-loôm-ŋʌ	ʔi-ləpi	ʔi-ləpu	ʔi-loɔp-ki	ʔi-loɔp-kʌ	ʔi-loɔp	ʔi-ləp-i	ʔi-loôm-ni	lə̄:b-ʉ		
3D	ʔi-loôm-ŋʌsu									lê:p-su	
3P	ʔi-loôm-ŋʌnu										lê:p-nu

Note that the correlation between syntactic transitivity and conjugation class is not 100% congruent. We find one *intransitive deponent* verb |ʔɛt| 'to say' (1SG ʔêiŋʌ) 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 ʔoɔ̄mdʉ) 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 inverse[6] 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

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[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 *oɔ* (strong) and *ɵ* (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	ʌp	ep	ɛp	oɔp	ʌp
weak	ip	ep	ɛp	ɵp	ʉp

The falling tone of the infinitive and some other forms of of |lop| and |sop| (e.g. *loɔmnɛ* 'to catch') is correlated with the stop root-final (cf. the infinitive *loɔmnɛ* '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 |ɦod| 'to bring'.

Table 7: Forms showing the 10 stem alternants of |ɦod| 'to bring'

STEM	TENSE	Person	'to bring' (transitive)
1	NPST	1s>3	**ɦod**-u
2	NPST	1DI>3	**ɦɵts**-i
3	NPST	1PI>3	**ɦoɔç**-ki
4	NPST	2P>3	ʔi-**ɦoɔ̂n**-ni
5	NPST	3s>3	**ɦō:d**-ʉ
6	NPST	3P>3	**ɦɵ̂:t**-nu
7	PST	1s>3	**ɦɵ̂:-t**ʌ
8	PST	1DI>3	**ɦɵs**-ti
9	PST	3s>3	**ɦɵ̂:-t**ɛ
10	NPST	3s>1s	ʔi-**ɦoɔ̂j**

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 |-eŋt| 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 morphophological 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 sets[9]

	1SG>3SG.NPST (TR)	3SG.NPST (IT)	INF	1DE.NPST	1PI.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	Cēŋ	Cê:nɛ	Ceŋ-u	Cēŋ-ki	Ceŋ-iti	Cêŋ-tɛ
5	Cem-u	Cēm	Cēmnɛ	Cem-u	Cēm-ki	Cem-iti	Cêm-tɛ
6	--	Cēj	Cējnɛ	Ce:ts-u	Cēj-ki	Ce:s-ti	--
7	Cer-u	Cēr	Cērnɛ	Cer-u	Cēr-ki	Cer-iti	Cêr-tɛ
8	Cel-u	Cēl	Cēlnɛ	Cel-u	Cēl-ki	Cel-iti	Cêl-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		Cēmnɛ	Cem-u	Cēm-ki	Cem-iti	Cêm-tɛ
14	Cend-u		Cēinɛ	Cēts-u	Cēj-ki	Cē:s-ti	Cên-tɛ
15	Cerd-u		Cērnɛ	Cer-u	Cēr-ki	Cer-iti	Cêr-tɛ
16	Celd-u		Cēlnɛ	Cel-u	Cēl-ki	Cel-iti	Cêl-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:

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[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	Cêmnɛ	p
3	Ced-u	Cêj	Cênnɛ	t
4	Ceŋ-u	Cēŋ	Cē:nɛ	ŋ
5	Cem-u	Cēm	Cēmnɛ	m
6		Cēj	Cējnɛ	n
7	Cer-u	Cēr	Cērnɛ	r
8	Cel-u	Cēl	Cēlnɛ	l
9	Cekt-u		Cê:nɛ	kt
10	Cept-u		Cêmnɛ	pt
11	Cett-u		Cênnɛ	tt
12	Cēnd-u		Cē:nɛ	ŋt
13	Cēmd-u		Cēmnɛ	mt
14	Cēnd-u		Cējnɛ	nt
15	Cērd-u		Cērnɛ	rt
16	Cēld-u		Cēlnɛ	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:

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

Table 10: Morphophonological rules for root final consonants[11]

	Rule	Reconstructed form	Outcome	Context
1.1	voicing	p t k	b d g	all vowel-initial suffixes except the dual -*i*/-*iti* and -*u*/-*utu*
1.2	affrication 1	n	L ts	dual non-past -*i* and -*u*
		t	ts	
1.3	affrication 2	n	L s	dual past -*iti* and -*utu*; all past suffixes in -*tV* for the intransitive and transitive inverse paradigms; imperative plural -*nuje*
		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 -*nuje*)
		k	F L	
		ŋ	L	with -*k* final roots, this rule either yields long vowel with falling tone or nasalization to -*ŋ* and falling tone
1.6	nasalization 2	t	F n	nasal-initial suffixes except 1S.S/O -*ŋʌ* and the imperative plural -*nuje*
1.7	lenition 1	t	F j	when not followed by any suffix or followed by 1S.S/O -*ŋʌ*
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 -*nuje*) ii) when not followed by any suffix iii) with 1P -*ki*/-*tiki* and -*kʌ*/-*tʌkʌ*
1.10	lenition 4	k	F L	i) nasal-initial suffixes (except the imperative plural -*nuje*) ii) when not followed by any suffix with |ik| roots, the rhyme changes to *û:*
1.11	lenition 5	ŋ	L	i) nasal-initial suffixes (except the imperative plural -*nuje*) ii) when not followed by any suffix
1.12	simplification 1	Ct	C	dual -*i*/-*iti* and -*u*/-*utu* and all inverse forms; 1P -*ki*/-*tiki* and -*kʌ*/-*tʌkʌ*
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	1PI.NPST	1DI.PST	1S.NPST (TR)	3S.NPST (IT)	3S.PST (TR)
1	ak, TR	Câ:-nɛ	Cʌk-u	Cak-ki	Cʌk-iti	Cʌg-u		Câ:k-tɛ
2	ak, IT	Câ:-nɛ	Cɛ-ju	Cak-ki	Cê-jti?		Câ:	
3	ek	Cê:-nɛ	Cek-u	Cek-ki	Cek-iti	Ceg-u	Cê:	Cê:k-tɛ
	ep	Cêm-nɛ	Cep-u	Cep-ki	Cep-iti	Ceb-u	Cê:p	Cê:p-tɛ
4	ik	Cû:-nɛ	Cik-u	Cʌk-ki	Cik-iti	Cig-u	Cû:	Cî:k-tɛ
5	ok	Cô:-nɛ	Cok-u	Cok-ki	Cok-iti	Cog-u	Cô:	Cô:k-tɛ
6	uk	Cû:-nɛ	Cuk-u	Cuk-ki	Cuk-iti	Cug-u	Cû:	Cû:k-tɛ
7	ɛp	Cêm-nɛ	Cɛp-u	Cɛp-ki	Cɛp-iti	Cɛb-u	Cɛp	Cɛ̂:p-tɛ
8	ip	Cʌ̂m-nɛ	Cip-u	Cʌp-ki	Cip-iti	Cib-u	Cʌp	Cî:p-tɛ
9	op	Coɔ̂m-nɛ	Cɵp-u	Coɔp-ki	Cɵp-iti	Cob-u	Coɔp	Cô:p-tɛ
10	up	Cʌ̂m-nɛ	Cup-u	Cʌp-ki	Cup-iti	Cub-u	Cʌp	Cû:p-tɛ

In alternation set 4, there is free variation between the realization *u* and *ʉ* 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	|-ŋ|, |-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: *jālnɛ* 'to strike' (1SG *jʌlu*) is a set 1 verb with a non-velar root-final, whose expected form would be *jēlnɛ (1SG *jɛlu). Compare *pēlnɛ* 'to coil' (1D *pɛlu*). |a| and |ɛ| certainly both originate from one proto-phoneme *a, given their quasi-complementary distribution and the numerous alternations between /a/ and /ɛ/ in the paradigms of intransitive |-ak| verbs and |-ɛ| verbs. The irregular vocalism of |jal| can be explained in two ways. First, it could be due to a special dissimilatory rule of |ɛ| after |j|. This hypothesis appears problematic however since we do find verbs with initial |j| and |ɛ| vocalism, such as |jɛt| 'to like'. Second, it could be a borrowing from Thulung *jal-* (Lahaussois 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 *jālnɛ*, 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	ө ʉ	i) CVC it. roots, inverse forms: dual -*i*/-*iti* and -*u*/-*utu* and all past and imperative except 1P ii) CVC tr. roots: all suffixes except 1S -*u*/-(*u*)*ta*, 1P -*ki*/-*tiki* and -*kʌ*/-*tʌkʌ*, 2P.NPST -*ni* and the infinitive -*nɛ* iii) CVCt roots: only dual -*i*/-*iti* and -*u*/-*utu* and 2P.PST -*tɛnu*

2.2	fronting 2	a	ɛ	This rule applies to all |-aC| roots where -C is not a velar, except for the verb *jālnɛ* 'to strike'.
2.3	opening	i o u	ʌ ɔɔ ʌ	i) CVC it. non-velar roots, inverse forms: 1/2/3S.NPST, 1P -*ki*/-*tiki* and -*kʌ*/-*tʌkʌ* ii) CVC tr. non-velar roots: 1P -*ki*/-*tiki* and -*kʌ*/-*tʌkʌ*, 2P.NPST -*ni* and the infinitive -*nɛ* iii) CVCt non-velar roots: all forms except dual -*i*/-*iti* and -*u*/-*utu* and 2P.PST -*tɛnu* and imperative dual and plural
2.4	backing1	o u i	o u ʌ	i) CVC it. velar roots, inverse forms: 1/2/3S.NPST, 1P -*ki*/-*tiki* and -*kʌ*/-*tʌkʌ* ii) CVC tr. velar roots: 1P -*ki*/-*tiki* and -*kʌ*/-*tʌkʌ*, 2P.NPST -*ni* and the infinitive -*nɛ* iii) CVCt velar roots: all forms except dual -*i*/-*iti* and -*u*/-*utu* and 2P.PST -*tɛnu* and imperative dual and plural
2.5	centralization	a	ʌ	i) velar roots and |jal|: 1/2D -*i*/-*iti* and -*u*/-*utu*, 1S -*u*/-*utʌ*; never occurs with consonant-initial suffixes such as 2PL>3.PST -*tɛnu* or 2PL>3.IMP -*nuje* 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 -*u*; 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).

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[12] Ancient -*s* root verbs have become open-syllable roots. For instance, \|kʰe\| 'to steal', has an irregular derived noun *kʰespø* '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 -*su*, 2/3 plural -*nu* and 2/3 past singular -*tɛ*, 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 |Cɛp| 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 (Lahaussois 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

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[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 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 CV̂:ŋʌ and CV̂ŋŋʌ are possible, while for |CVŋ| roots both CV̄:ŋʌ and CV̄ŋŋʌ 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	|kʰot| 'to go'	|bʰur| 'to become crazy'	Stem id., affixes	Rules
1S	kʰoɔ̂j-ŋʌ	bʰʌ̄r-ŋʌ	Σ(s,a)-ŋʌ	(1.5/1.7/1.9/1.10/1.11) (2.3/2.4)
1DI	kʰɵts-i	bʰʉr-i	Σ(w)-i	(1.2) (2.1/2.5)
1DE	kʰɵts-u	bʰʉr-u	Σ(w)-u	(1.2) (2.1/2.5)
1PI	kʰoɔç-ki	bʰʌ̄r-ki	Σ(s)-ki	(1.4/1.9) (2.3/2.4)
1PE	kʰoɔç-kʌ	bʰʌ̄r-kʌ	Σ(s)-kʌ	(1.4/1.9) (2.3/2.4)
2S	ʔi-kʰoɔ̂j	ʔi-bʰʌ̄r	ʔi-Σ(s)	(1.7/1.9/1.10) (2.3/2.4) (3.3)
2D	ʔi-kʰɵts-i	ʔi-bʰʉr-i	ʔi-Σ(w)-i	(1.2) (2.1/2.5)
2P	ʔi-kʰoɔ̂n-ni	ʔi-bʰʌ̄r-ni	ʔi-Σ(s,a)-ni	(1.5/1.6/1.7/1.10/1.11) (2.3/2.4)
3S	kʰoɔ̂j	bʰʌ̄r	Σ(s)	(1.7/1.9/1.10) (2.3/2.4) (3.3)
3D	kʰɵts-i	bʰʉr-i	Σ(w)-i	(1.2) (2.1/2.5)
3P	kʰoɔ̂n-nu	bʰʌ̄r-nu	Σ(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	|kʰot|	|bʰur|	Stem id., affixes	Rules
1S	kʰɵs-tʌ	bʰʉr-ʌtʌ	Σ(w,p)-(ʌ)tʌ	(1.3) (2.1/2.5)
1DI	kʰɵs-ti	bʰʉr-iti	Σ(w,p)-(i)ti	(1.3) (2.1/2.5)
1DE	kʰɵs-tu	bʰʉr-utu	Σ(w,p)-(u)tu	(1.3) (2.1/2.5)
1PI	kʰɔɔç-tiki	bʰ̄ʌr-tiki	Σ(s)-tiki	(1.4/1.9) (2.3/2.4)
1PE	kʰɔɔç-tʌkʌ	bʰ̄ʌr-tʌkʌ	Σ(s)-tʌkʌ	(1.4/1.9) (2.3/2.4)
2S	ʔi-kʰɵs-tɛ	ʔi-bʰ̂ʉr-tɛ	ʔi-Σ(w,p)-tɛ	(1.3) (2.1/2.5) 3.2
2D	ʔi-kʰɵs-ti	ʔi-bʰʉr-iti	ʔi-Σ(w,p)-(i)ti	(1.3) (2.1/2.5)
2P	ʔi-kʰɵs-tɛnu	ʔi-bʰʉr-tɛnu	ʔi-Σ(w,p)-tɛnu	(1.3) (2.1/2.5) 3.2
3S	kʰɵs-tɛ	bʰ̂ʉr-tɛ	Σ(w,p)-tɛ	(1.3) (2.1/2.5) 3.2
3D	kʰɵs-ti	bʰʉr-iti	Σ(w,p)-(i)ti	(1.3) (2.1/2.5)
3P	kʰɵs-tɛnu	bʰʉr-tɛnu	Σ(w,p)-tɛnu	(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	|kʰot|	|bʰur|	Stem id., affixes	Rules
2S	kʰɵtsts-e,	(mu)bʰ̂ʉr-je,	Σ(w)-je	(1.2) (2.1/2.5) 3.1
	kʰɵ̄ːts-e	(mu)bʰ̄ʉːr-e	Σ(w,l)-e	
2D	kʰɵts-ije	(mu)bʰʉr-ije	Σ(w)-ije	(1.2) (2.1/2.5)
2P	kʰɵs-nuje	(mu)bʰʉr-nuje	Σ(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 |bʰak| 'go (honorific)' and |dak| 'want', a defective verb only occuring 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 |bʰak| 'to go (hon.)'

Person	NPST	PST	IMP
1s	bʰâŋ-ŋʌ, bʰâː-ŋʌ	bʰʌ-ŋʌtʌ	
1DI	bʰɛ-ji	bʰɛ̂-jti	
1DE	bʰɛ-ju	bʰɛ̂-jtu	
1PI	bʰak-ki	bʰak-tiki	
1PE	bʰak-kʌ	bʰak-tʌkʌ	
2s	ʔi-bʰâː	ʔi-bʰāː-tɛ	bʰāː-je
2D	ʔi-bʰɛ-ji	ʔi-bʰɛ̂-jti	bʰɛ̂-ije
2P	ʔi-bʰâː-ni	ʔi-bʰa-tnu	bʰâ-nje
3s	bʰâː	bʰāː-tɛ	
3D	bʰɛ-ji	bʰɛ̂-jti	
3P	bʰâː-nu	bʰa-tnu	

The second conjugation is more regular, but seems restricted to the verb |dak| 'to bicker' (also |dʰak| in the southern dialect), a verb root only occurring in the collocation *tsiŋger dâːnɛ* 'to bicker'. This verb presents regular forms for the dual such as 1DI *dʌki*, 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 Σ(w,v,b) which undergoes rules 1.1 and 2.6 (for |-o-| and |-u-| verbs), the weak voiced lengthened stem Σ(w,v,l), which undergoes rules 1.1, 2.1 and 3.1 (in the first singular) and the weak lengthened stem Σ(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 constrasts 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	Σ(w,v,b)-u	(1.1) 2.6
1s>3D	sed-usu	lob-usu	Σ(w,v,b)-usu	(1.1) 2.6
1s>3P	sed-unu	lob-unu	Σ(w,v,b)-unu	(1.1) 2.6
1DI>3	sets-i	løp-i	Σ(w)-i	(1.2) 2.1
1DE>3	sets-u	løp-u	Σ(w)-u	(1.2) 2.1
1PI>3	seç-ki	loɔp-ki	Σ(s,1p)-ki	(1.4) (2.3/2.4)
1PE>3	seç-kʌ	loɔp-kʌ	Σ(s,1p)-kʌ	(1.4) (2.3/2.4)
2s>3s	ʔi-sē:d-ʉ	ʔi-lē:b-ʉ	ʔi-Σ(w,v,l)-ʉ	1.1 2.1 3.1
2s>3D	ʔi-sê:t-su	ʔi-lê:p-su	ʔi-Σ(w,l)-su	2.1 (3.1/3.2)
2s>3P	ʔi-sê:t-nu	ʔi-lê:p-nu	ʔi-Σ(w,l)-nu	2.1 (3.1/3.2)
2D>3	ʔi-sets-i	ʔi-løp-i	ʔi-Σ(w)-i	(1.2) 2.1
2P>3	ʔi-sên-ni	ʔi-loɔ̂m-ni	ʔi-Σ(s,a)-ni	(1.5/1.6/1.7/1.10/1.11) (2.3/2.4)
3s>3	sē:d-ʉ	lē:b-ʉ	Σ(w,v,l)-ʉ	(1.1) 2.1 3.1
3D>3	sê:t-su	lê:p-su	Σ(w,l)-su	2.1 (3.1/3.2)
3P>3	sê:t-nu	lê:p-nu	Σ(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 Σ(w,p,b,a), which undergoes 1.8 and 2.6 (in first singular), and the weak past assimilated stem Σ(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 *-utʌ*, *-iti*, *-utu* and *-tʌ*, *-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:-tʌ	lob-utʌ	Σ(w,p,b,a)-(u)tʌ	(1.1/1.8) 2.6
1s>3D	sê:-tʌsu	lob-utʌsu	Σ(w,p,b,a)-(u)tʌsu	(1.1/1.8) 2.6
1s>3P	sê:-tʌnu	lob-utʌnu	Σ(w,p,b,a)-(u)tʌnu	(1.1/1.8) 2.6
1DI>3	ses-ti	løp-iti	Σ(w)-(i)ti	(1.3) (2.1/2.5)
1DE>3	ses-tu	løp-utu	Σ(w)-(u)tu	(1.3) (2.1/2.5)
1PI>3	seç-tiki	loɔp-tiki	Σ(s,1p)-tiki	(1.4) (2.3/2.4)
1PE>3	seç-tʌkʌ	loɔp-tʌkʌ	Σ(s,1p)-tʌkʌ	(1.4) (2.3/2.4)
2s>3s	ʔi-sê:-tɛ	ʔi-lê:p-tɛ	ʔi-Σ(w,p,a)-tɛ	(1.8/3.1/3.2) 2.1
2s>3D	ʔi-sê:-tɛsu	ʔi-lê:p-tɛsu	ʔi-Σ(w,p,a)-tɛsu	(1.8/3.1/3.2)
2s>3P	ʔi-sê:-tɛnu	ʔi-lê:p-tɛnu	ʔi-Σ(w,p,a)-tɛnu	(1.8/3.1/3.2)

2D>3	ʔi-ses-ti	ʔi-lɵp-iti	ʔi-Σ(w)-(i)ti	(1.3) (2.1/2.5)
2P>3	ʔi-ses-tɛnu	ʔi-lɵp-tɛnu	ʔi-Σ(w)-tɛnu	(1.3) 2.1
3S>3	sê:-tɛ	lê:p-tɛ	Σ(w,p,a)-tɛ	(1.8/3.1/3.2) 2.1
3D>3	sê:-tɛsu	lê:p-tɛsu	Σ(w,p,a)-tɛsu	(1.8/3.1/3.2) 2.1
3P>3	sê:-tɛnu	lê:p-tɛnu	Σ(w,p,a)-tɛnu	(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, |ɦot| 'to bring' has 1S>3.PST **ɦô:-tʌ** and 3S>3.PST **ɦô:-tɛ**. 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 **sʌgutʌ**, but 2P>3.PST **ʔisaktɛnu** not *ʔisʌktɛnu 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-ŋʌ	ʔi-loôm-ŋʌ	ʔi-Σ(s)-ŋʌ	(1.5/1.7/1.10/1.11) 2.3
3/2D>1S	ʔi-sêj-ŋʌsu	ʔi-loôm-ŋʌsu	ʔi-Σ(s)-ŋʌsu	i-loôm-ŋʌ
3/2P>1S	ʔi-sêj-ŋʌnu	ʔi-loôm-ŋʌnu	ʔi-Σ(s)-ŋʌnu	i-loôm-ŋʌ
3/2>1DI	ʔi-sets-i	ʔi-lɵp-i	ʔi-Σ(w)-i	(1.2) (2.1/2.5)
3/2>1DE	ʔi-sets-u	ʔi-lɵp-u	ʔi-Σ(w)-u	(1.2) (2.1/2.5)
3/2>1PI	ʔi-seç-ki	ʔi-loɔp-ki	ʔi-Σ(s)-ki	(1.4) 2.3
3/2>1PE	ʔi-seç-kʌ	ʔi-loɔp-kʌ	ʔi-Σ(s)-kʌ	(1.4) 2.3
3>2S	ʔi-sêj	ʔi-loôp	ʔi-Σ(s)	(1.7/1.9/1.10) (2.3/2.4) (3.3)
3>2D	ʔi-sets-i	ʔi-lɵp-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 **ʔisaktɛ** instead of †ʔisʌktɛ, 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-tʌ	ʔi-lɵp-ʌtʌ	ʔi-Σ(w,p)-(ʌ)tʌ	(1.3) (2.1/2.5)
3/2D>1S	ʔi-ses-tʌsu	ʔi-lɵp-ʌtʌsu	ʔi-Σ(w,p)-(ʌ)tʌsu	(1.3)
3/2P>1S	ʔi-ses-tʌnu	ʔi-lɵp-ʌtʌnu	ʔi-Σ(w,p)-(ʌ)tʌnu	(1.3)
3/2>1DI	ʔi-ses-ti	ʔi-lɵp-iti	ʔi-Σ(w,p)-(i)ti	(1.3) (2.1/2.5)
3/2>1DE	ʔi-ses-tu	ʔi-lɵp-utu	ʔi-Σ(w,p)-(u)tu	(1.3) (2.1/2.5)
3/2>1PI	ʔi-seç-tiki	ʔi-loɔp-tiki	ʔi-Σ(s)-tiki	(1.4) 2.3
3/2>1PE	ʔi-seç-tʌkʌ	ʔi-loɔp-tʌkʌ	ʔi-Σ(s)-tʌkʌ	(1.4) 2.3

3>2S, 1D/PE>2S	ʔi-ses-tɛ	ʔi-lɵp-tɛ	ʔi-Σ(w,p)-tɛ	(1.3) 2.1 (3.2)
3>2D, 1D/PE>2D	ʔi-ses-ti	ʔi-lɵp-iti	ʔi-Σ(w,p)-(i)ti	(1.3) (2.1/2.5) (3.2)
3>2P, 1D/PE>2P	ʔi-ses-tɛnu	ʔi-lɵp-tɛnu	ʔi-Σ(w,p)-tɛnu	(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 |ɦuŋ| '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'	|pʰrok| 'to untie'	|ɦuŋ| 'to wait for'	Stem id., affixes	Rules
1S>2S	sên-nɛ	lôm-nɛ	pʰrô:-nɛ	ɦũ:-nɛ	Σ(s,a)-nɛ	(1.5/1.6/1.7/1.10/1.11) (2.3/2.4) 3.2
1S>2D	sên-su	lôm-su	pʰrôn-su	ɦûn-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	lôm-nu	pʰrôn-nu	ɦûn-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-tɛni	lôm-tɛni	pʰrôn-tɛni	ɦũn-tɛni	Σ(s,a)-tɛni	(1.5/1.6/1.7/1.10/1.11/1.16) (2.3/2.4)
1S>2D	sên-tɛnsu	lôm-tɛnsu	pʰrôn-tɛnsu	ɦũn-tɛnsu	Σ(s,a)-tɛnsu	(1.5/1.6/1.7/1.10/1.11/1.16) (2.3/2.4)
1S>2P	sên-tɛnnu	lôm-tɛnnu	pʰrôn-tɛnnu	ɦũn-tɛnnu	Σ(s,a)-tɛnnu	(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 *loɔ̂mnɛ* (from |lom| 'to look for') and *loɔ̂mnɛ* (from |lop| 'to catch') are distinct, their 1SG>2DU and 1SG>2PL non-past forms *loɔ̂m-su* and *loɔ̂m-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	sēːd-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	lɵ̄ːb-e		
2D	lɵp-ije		
2P	lɵp-nuje		
	1S	1DE	1PE
2S	lɵp-ʌje	lɵp-uje	loɔp-kʌje
2D	lɵp-ʌsuje		
2P	lɵp-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,1P)-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 *kʰɵsti* is both the 1DI/3D.PST of the intransitive |kʰot| 'to go' and the 1DI.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	mᾱmd-u	sēnd-u	Σ(s)-u	(2.3/2.4)
1s>3D	mᾱmd-usu	sēnd-usu	Σ(s)-usu	(2.3/2.4)
1s>3P	mᾱmd-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	mᾱm-ki	sēj-ki	Σ(s,r)-ki	(1.4/1.9) (2.3/2.4) 1.13
1PE>3	mᾱm-kʌ	sēj-kʌ	Σ(s,r)-kʌ	(1.4/1.9) (2.3/2.4) 1.13
2s>3s	ʔi-mᾱmd-ʉ	ʔi-sēnd-ʉ	ʔi-Σ(s)-ʉ	(2.3/2.4)
2s>3D	i-mᾱm-su	ʔi-sên-su	ʔi-Σ(s,f)-su	(2.3/2.4) 1.13 3.2
2s>3P	ʔi-mᾱm-nu	ʔi-sên-nu	ʔi-Σ(s,f)-nu	(2.3/2.4) 1.13 3.2
2D>3	ʔi-mim-i	ʔi-sē:ts-i	ʔi-Σ(w)-i	(1.2) (2.1/2.5) 1.12
2P>3	ʔi-mᾱm-ni	ʔi-sēj-ni	ʔi-Σ(s,a)-ni	(1.5/1.6/1.7/1.9/1.10/1.11) (2.3/2.4) 1.13
3s>3	mᾱmd-ʉ	sēnd-ʉ	Σ(s)-ʉ	(2.3/2.4)
3D>3	mʌ̂m-su	sên-su	Σ(s,f)-su	(2.3/2.4) 1.13 3.2
3P>3	mʌ̂m-nu	sên-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	mʌ̂m-tʌ	sên-tʌ	Σ(s)-tʌ	(2.3/2.4) 3.2 1.13
1s>3D	mʌ̂m-tʌsu	sên-tʌsu	Σ(s)-tʌsu	(2.3/2.4) 3.2 1.13
1s>3P	mʌ̂m-tʌnu	sên-tʌnu	Σ(s)-tʌnu	(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	mᾱm-tiki	sēj-tiki	Σ(s,r)-tiki	(1.4/1.9) (2.3/2.4) 1.13
1PE>3	mᾱm-tʌkʌ	sēj-tʌkʌ	Σ(s,r)-tʌkʌ	(1.4/1.9) (2.3/2.4) 1.13
2s>3s	ʔi-mʌ̂m-tɛ	ʔi-sên-tɛ	ʔi-Σ(s,f)-tɛ	(2.3/2.4) 3.2 1.13
2s>3D	ʔi-mʌ̂m-tɛsu	ʔi-sên-tɛsu	ʔi-Σ(s,f)-tɛsu	(2.3/2.4) 3.2 1.13
2s>3P	ʔi-mʌ̂m-tɛnu	ʔi-sên-tɛnu	ʔi-Σ(s,f)-tɛnu	(2.3/2.4) 3.2 1.13
2D>3	ʔi-mim-iti	ʔi-sē:s-ti	ʔi-Σ(w,p)-(i)ti	(1.2) (2.1/2.5) 1.12
2P>3	ʔi-mʌ̂m-tɛnu	ʔi-sē:s-tɛnu	ʔi-Σ(w,p)-tɛnu	(1.2) (2.1/2.5) 1.13
3s>3	mʌ̂m-tɛ	sên-tɛ	Σ(s,f)-tɛ	(2.3/2.4) 3.2 1.13
3D>3	mʌ̂m-tɛsu	sên-tɛsu	Σ(s,f)-tɛsu	(2.3/2.4) 3.2 1.13
3P>3	mʌ̂m-tɛnu	sên-tɛnu	Σ(s,f)-tɛnu	(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-mɑ̄m-ŋʌ	ʔi-sēj-ŋʌ	ʔi-Σ(s)-ŋʌ	(1.5/1.7/1.9/1.10/1.11) 2.3 1.12
3/2D>1s	ʔi-mɑ̄m-ŋʌsu	ʔi-sēj-ŋʌsu	ʔi-Σ(s)-ŋʌsu	(1.5/1.7/1.9/1.10/1.11) 2.3 1.12
3/2P>1s	ʔi-mɑ̄m-ŋʌnu	ʔi-sēj-ŋʌnu	ʔi-Σ(s)-ŋʌnu	(1.5/1.7/1.9/1.10/1.11) 2.3 1.12
3/2>1DI	ʔi-mim-i	ʔi-sē:ts-i	ʔi-Σ(w)-i	(1.2) (2.1/2.5) 1.12
3/2>1DE	ʔi-mim-u	ʔi-sē:ts-u	ʔi-Σ(w)-u	(1.2) (2.1/2.5) 1.12
3/2>1PI	ʔi-mɑ̄m-ki	ʔi-sēj-ki	ʔi-Σ(s)-ki	(1.4/1.9) 2.3 1.12
3/2>1PE	ʔi-mʌm-kʌ	ʔi-sēj-kʌ	ʔi-Σ(s)-kʌ	(1.4/1.9) 2.3 1.12
3>2s	ʔi-mɑ̄m	ʔi-sēj	ʔi-Σ(s)	(1.7/1.9/1.10) 2.3 (3.3) 1.12
3>2D	ʔi-mim-i	ʔi-sē:ts-i	ʔi-Σ(w)-i	(1.2) (2.1/2.5) 1.12
3>2P	ʔi-mɑ̄m-ni	ʔi-sēj-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-ʌtʌ	ʔi-sē:s-tʌ	ʔi-Σ(w)-(ʌ)tʌ	(1.2) (2.1/2.5) 1.12
3/2D>1s	ʔi-mim-ʌtʌsu	ʔi-sē:s-tʌsu	ʔi-Σ(w)-(ʌ)tʌsu	(1.2) (2.1/2.5) 1.12
3/2P>1s	ʔi-mim-ʌtʌnu	ʔi-sē:s-tʌnu	ʔi-Σ(w)-(ʌ)tʌnu	(1.2) (2.1/2.5) 1.12
3/2>1DI	ʔi-mim-iti	ʔi-sē:s-ti	ʔi-Σ(w)-(i)ti	(1.2) (2.1/2.5) 1.12
3/2>1DE	ʔi-mim-utu	ʔi-sē:s-tu	ʔi-Σ(w)-(u)tu	(1.2) (2.1/2.5) 1.12
3/2>1PI	ʔi-mɑ̄m-tiki	ʔi-sēj-tiki	ʔi-Σ(s)-tiki	(1.4/1.9) 2.3 1.12
3/2>1PE	ʔi-mɑ̄m-tʌkʌ	ʔi-sēj-tʌkʌ	ʔi-Σ(s)-tʌkʌ	(1.4/1.9) 2.3 1.12
3>2s	ʔi-mîm-tɛ	ʔi-sē:s-tɛ	ʔi-Σ(w)-tɛ	(1.2) (2.1/2.5) 3.2 1.12
3>2D	ʔi-mim-iti	ʔi-sē:s-ti	ʔi-Σ(w)-(i)ti	(1.2) (2.1/2.5) 1.12
3>2P	ʔi-mim-tɛnu	ʔi-sē:s-tɛnu	ʔi-Σ(w)-tɛnu	(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	sēj-nɛ	Σ(s,a)-nɛ	(1.5/1.6/1.7/1.10/1.11) (2.3/2.4) 3.2 1.13
1s>2D	sêj-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	sêj-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	sēj-tɛni	Σ(s,a)-tɛni	(1.5/1.6/1.7/1.9/1.10/1.11/1.16) (2.3/2.4) 1.13
1s>2D	sēj-tɛnsu	Σ(s,a,f)-tɛnsu	(1.5/1.6/1.7/1.9/1.10/1.11/1.16) (2.3/2.4) 1.13
1s>2P	sēj-tɛnnu	Σ(s,a,f)-tɛnnu	(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	seːts-ije		
2P	seːs-núje		
	1S	1DE	1PE
2S	sēːts-ʌje	sēːts-uje	sēj-kʌje
2D	sēːts-ʌsuje		
2P	sēːts-ʌnuje		

Table 33: Rules and stems for CVCt transitive roots

IMP	Stem id., affixes	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) 1.12
2>3.P	Σ(w,p)-nuje	(2.1/2.5) 1.12
2S>1S	Σ(w)-ʌje	(1.2) (2.1/2.5) 1.12
2D>1S	Σ(w)-ʌsuje	(1.2) (2.1/2.5) 1.12
2P>1S	Σ(w)-ʌnuje	(1.2) (2.1/2.5) 1.12
2>1D	Σ(w)-uje	(1.2) (2.1/2.5) 1.12
2>1P	Σ(s,1P)-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 *-ŋʌtʌ* (instead of *-ʌta*), past 1P with an additional *-k-* (*-ktiki* instead of *-tiki*) and past 2/3P *-tnu* (instead of *-tɛnu*).

Rules 2.1 and 2.2 apply to the basic stem (so that |a|, |o|, and |u| appear as ɛ, ɵ and ʉ 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	gʰrɛ-ŋʌ	dze-ŋʌ	pi-ŋʌ	ɦɵ-ŋʌ	tsʰʉ-ŋʌ	Σ-ŋʌ
1DI	gʰrɛ-ji	dze-ji	pi-ji	ɦɵ-ji	tsʰʉ-ji	Σ-ji
1DE	gʰrɛ-ju	dze-ju	pi-ju	ɦɵ-ju	tsʰʉ-ju	Σ-ju
1PI	gʰrɛ-ki	dze-ki	pi-ki	ɦɵ-ki	tsʰʉ-ki	Σ-ki
1PE	gʰrɛ-kʌ	dze-kʌ	pi-kʌ	ɦɵ-kʌ	tsʰʉ-kʌ	Σ-kʌ
2S	ʔi-gʰrɛ	ʔi-dze	ʔi-pi	ʔi-ɦɵ	ʔi-tsʰʉ	ʔi-Σ
2D	ʔi-gʰrɛ-ji	ʔi-dze-ji	ʔi-pi-ji	ʔi-ɦɵ-ji	ʔi-tsʰʉ-ji	ʔi-Σ-ji
2P	ʔi-gʰrɛ-ni	ʔi-dze-ni	ʔi-pi-ni	ʔi-ɦɵ-ni	ʔi-tsʰʉ-ni	ʔi-Σ-ni
3S	gʰrɛ	dze	pi	ɦɵ	tsʰʉ	Σ
3D	gʰrɛ-ji	dze-ji	pi-ji	ɦɵ-ji	tsʰʉ-ji	Σ-ji
3P	gʰrɛ-nu	dze-nu	pi-nu	ɦɵ-nu	tsʰʉ-nu	Σ-nu
Past						
1S	gʰrɛ-ŋʌtʌ	dze-ŋʌtʌ	pi-ŋʌtʌ	ɦɵ-ŋʌtʌ	tsʰʉ-ŋʌtʌ	Σ-ŋʌtʌ
1DI	gʰrê-jti	dzê-jti	pî-iti	ɦɵ̂-jti	tsʰʉ̂-jti	Σ-iti
1DE	gʰrê-jtu	dzê-jtu	pî-itu	ɦɵ-jtu	tsʰʉ̂-jtu	Σ-itu
1PI	gʰrɛ-ktiki	dze-ktiki	pi-ktiki	ɦɵ̂-ktiki	tsʰʉ-ktiki	Σ-ktiki
1PE	gʰrɛ-ktʌkʌ	dze-ktʌkʌ	pi-ktʌkʌ	ɦɵ-ktʌkʌ	tsʰʉ-ktʌkʌ	Σ-ktʌkʌ
2S	ʔi-gʰrāː-tɛ	ʔi-dzēː-tɛ	ʔi-pūː-tɛ	ʔi-ɦɵ̄ː-tɛ	ʔi-tsʰūː-tɛ	ʔi-Σ(l)-tɛ
2D	ʔi-gʰrê-jti	ʔi-dzê-jti	ʔi-pî-iti	ʔi-ɦɵ̂-jti	ʔi-tsʰʉ̂-jti	ʔi-Σ-iti
2P	ʔi-gʰra-tnu	ʔi-dze-tnu	ʔi-pu-tnu	ʔi-ɦɵ-tnu	ʔi-tsʰu-tnu	ʔi-Σ(l)-tnu
3S	gʰrāː-tɛ	dzēː-tɛ	pūː-tɛ	ɦɵ̄ː-tɛ	tsʰūː-tɛ	Σ(l)-tɛ
3D	gʰrê-jti	dzê-jti	pî-jti	ɦɵ̂-jti	tsʰʉ̂-jti	Σ-iti
3P	gʰra-tnu	dze-tnu	putnu	ɦɵ-tnu	tsʰu-tnu	Σ(l)-tnu

The examples of intransitive |a| roots encountered so far are all impersonal and thus have a defective conjugation (*mi ghrɛ* 'the fire burns'). In forms other than the third person singular, |gʰra| is conjugated only in the serial construction |mɵ gʰrɛ| 'to vomit terribly', for instance *mɵŋʌtʌ gʰrɛŋʌtʌ* '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	dzēː-je	pūː-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.

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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-ŋʌ	lʉ-ŋʌ	mu-ŋʌ	Σ(b)-ŋʌ
1DI	je-ji	lʉ-ji	mʉ-ji	Σ-ji
1DE	je-ju	lʉ-ju	mʉ-ju	Σ-ju
1PI	je-ki	lʉ-ki	mu-ki	Σ(b)-ki
1PE	je-kʌ	lʉ-kʌ	mu-kʌ	Σ(b)-kʌ
2s	ʔi-je	ʔi-lʉ	ʔi-mu	ʔi-Σ(b)
2D	ʔi-je-ji	ʔi-lʉ-ji	ʔi-mʉ-ji	ʔi-Σ-ji
2P	ʔi-je-ni	ʔi-lʉ-ni	ʔi-mʉ-ni	ʔi-Σ-ni
3s	je	lʉ	mu	Σ(b)
3D	je-ji	lʉ-ji	mʉ-ji	Σ-ji
3P	je-nu	lʉ-nu	mu-nu	Σ(b)-nu
Past				
1s	je-ŋʌtʌ	lʉ-ŋʌtʌ	mu-ŋʌtʌ	Σ(b)-ŋʌtʌ
1DI	jê-jti	lʉ̂-jti	mʉ̂-jti	Σ-iti
1DE	jê-jtu	lʉ̂-jtu	mʉ̂-jtu	Σ-itu
1PI	je-ktiki	lʉ-ktiki	mu-ktiki	Σ(b)-ktiki
1PE	je-ktʌkʌ	lʉ-ktʌkʌ	mu-ktʌkʌ	Σ(b)-ktʌkʌ
2s	ʔi-jāː-tɛ	ʔi-lōː-tɛ	ʔi-mōː-tɛ	ʔi-Σ(l)-tɛ
2D	ʔi-jê-jti	ʔi-lʉ̂-jti	ʔi-mʉ̂-jti	ʔi-Σ-iti
2P	ʔi-ja-tnu	ʔi-lo-tnu	ʔi-mo-tnu	ʔi-Σ(l)-tnu
3s	jāː-tɛ	lōː-tɛ	mōː-tɛ	Σ(l)-tɛ
3D	jê-jti	lʉ̂-jti	mʉ̂-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	jēː-je	(mu)lōː-je	Σ(l)-je
2D	jê-jje	(mu)lʉ̂-jje	Σ-jje
2P	jê-nje	(mu)lô-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 (-*ŋtʌ* instead of -*ŋʌtʌ*) 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|	|kʰe|	|ŋi|	|tʰo|	
Meaning	to eat	to steal	to hear	to see	
1S>3	dzʌ-ŋʌ	kʰe-ŋʌ	ŋi-ŋʌ	tʰɵ-ŋʌ	Σ(1SG.NPST)-ŋʌ
1DI>3	dzɵ-ji	kʰe-ji	ŋi-ji	tʰɵ-ji	Σ-ji
1DE>3	dzɵ-ju	kʰe-ju	ŋi-ju	tʰɵ-ju	Σ-ju
1PI>3	dzɵ-ki	kʰe-ki	ŋi-ki	tʰɵ-ki	Σ-ki
1PE>3	dzɵ-kʌ	kʰe-kʌ	ŋi-kʌ	tʰɵ-kʌ	Σ-kʌ
2S>3	ʔi-dzɛ	ʔi-kʰe	ʔi-ŋi	ʔi-tʰɵ	ʔi-Σ(2/3.NPST)
2D>3	ʔi-dzɵ-ji	ʔi-kʰe-ji	ʔi-ŋi-ji	ʔi-tʰɵ-ji	ʔi-Σ-ji
2P>3	ʔi-dzɵ-ni	ʔi-kʰe-ni	ʔi-ŋi-ni	ʔi-tʰɵ-ni	ʔi-Σ-ni
3S>3	dzɛ	kʰe	ŋi	tʰɵ	Σ(2/3.NPST)
3D>3	dzɛ-su	kʰe-su	ŋi-su	tʰɵ-su	Σ(2/3.NPST)-su
3P>3	dzɛ-nu	kʰe-nu	ŋi-nu	tʰɵ-nu	Σ(2/3.NPST)-nu
Past					
1S>3	dzû-ŋtʌ	kʰê-ŋtʌ	ŋî-ŋtʌ	tʰɵ̂-ŋtʌ	Σ(1SG.PST)-ŋtʌ
1DI>3	dzê-jti	kʰê-jti	ŋî-iti	tʰɵ̂-jti	Σ-iti
1DE>3	dzê-jtu	kʰê-jtu	ŋî-itu	tʰɵ̂-jtu	Σ-itu
1PI>3	dzɵ-ktiki	kʰe-ktiki	ŋi-ktiki	tʰɵ-ktiki	Σ-ktiki
1PE>3	dzɵ-ktʌkʌ	kʰe-ktʌkʌ	ŋi-ktʌkʌ	tʰɵ-ktʌkʌ	Σ-ktʌkʌ
2S>3	ʔi-dzʉ-tɛ	ʔi-kʰe-tɛ	ʔi-ŋi-tɛ	ʔi-tʰɵ-tɛ	ʔi-Σ(2/3.PST)-tɛ
2D>3	ʔi-dzê-jti	ʔi-kʰê-jti	ʔi-ŋî-jti	ʔi-tʰɵ̂-jti	ʔi-Σ-iti
2P>3	ʔi-dzo-tnu	ʔi-kʰe-tnu	ʔi-ŋu-tnu	ʔi-tʰo-tnu	ʔi-Σ(shortened)-tnu
3S>3	dzʉ-tɛ	kʰe-tɛ	ŋi-tɛ	tʰɵ-tɛ	Σ(2/3.PST)-tɛ
3D>3	dzʉ-ssu	kʰe-ssu	ŋi-ssu	tʰɵ-ssu	Σ(2/3.PST)-ssu
3P>3	dzʉ-tnu	kʰe-tnu	ŋi-tnu	tʰɵ-tnu	Σ(2/3.PST)-tnu
3S>2S	ʔi-dzɵ̄ː-tɛ	X	ʔi-ŋūː-tɛ	ʔi-tʰɵ̄ː-tɛ	ʔi-Σ(1)-tɛ

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 -*ŋʌ* 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	Cɵ	1D/2D, 1P, 2P NPST
1SG.NPST	Cʌ	1SG>3 NPST
2/3.NPST	Cɛ	2SG>3 NPST, 3SG>3 NPST
1SG.PST	Cu	1SG>3 PST
2/3.PST	Cʉ	2SG>3 PST, 3>3 PST
lengthened	Cō:	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	dzʉ-je	Σ(2/3.PST)-je
2D	dzɵ̂-jje	Σ-jje
2P	dzô-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-syllabe transitive roots is *-ŋʌje* instead of *-ʌje* with the weak stem: *bi-ŋʌje* 'give it to me'. Open-syllable roots and *-ŋ* 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	ŋi-ŋʌje	ŋî-ije	ŋi-kʌje
2D	ŋi-ŋʌsuje		
2P	ŋi-ŋʌnuje		

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

Non-past	|sent| 'to look at'	Stems
1S>2S	kɵ-nɛ	Σ(A)-nɛ
1S>2D	kɵ̂-nsu	Σ(A)-nsu
1S>2P	kɵ̂-nnu	Σ(A)-nnu
Past		
1S>2S	kɵ̂-ntɛni	Σ(A)-ntɛni
1S>2D	kɵ̂-ntɛnsu	Σ(A)-ntɛnsu
1S>2P	kɵ̂-ntɛnnu	Σ(A)-ntɛnnu

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	mʌ-ŋʌ	Σ(1SG.NPST)-ŋʌ
1DI	mʉ-ji	Σ-ji
1DE	mʉ-ju	Σ-ju
1PI	mʉ-ki	Σ-ki
1PE	mʉ-kʌ	Σ-kʌ
2S	ʔi-mɛ	ʔi-Σ(2/3.NPST)
2D	ʔi-mʉ-ji	ʔi-Σ-ji
2P	ʔi-mʉ-ni	ʔi-Σ-ni
3S	mɛ	Σ(2/3.NPST)
3D	mɛ-su	Σ(2/3.NPST)-su
3P	mɛ-nu	Σ(2/3.NPST)-nu
Past		
1S	mû-ŋtʌ	Σ(1SG.PST)-ŋtʌ
1DI	mû̥-jti	Σ-iti
1DE	mû̥-jtu	Σ-itu
1PI	mʉ-ktiki	Σ-ktiki
1PE	mʉ-ktʌkʌ	Σ-ktʌkʌ
2S	ʔi-mʉ-tɛ	ʔi-Σ(2/3.PST)-tɛ
2D	ʔi-mû̥-jti	ʔi-Σ-iti
2P	ʔi-mo-tnu	ʔi-Σ(shortened)-tnu
3S	mʉ-tɛ	Σ(2/3.PST)-tɛ
3D	mʉ-ssu	Σ(2/3.PST)-ssu
3P	mʉ-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, *məŋʌtʌ* 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 *kʰoↄ̂j-ŋʌ*, 1DI.NPST *kʰɵts-i*, 1DI.PST *kʰɵs-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 **ghrɛ** 'burn'

	non-past	past	imperative
1S	ghrɛŋʌ	ghrɛŋʌtʌ	
1DI	ghrɛji	ghrêiti	
1DE	ghrɛju	ghrêitu	
1PI	ghrɛki	ghrɛktiki	
1PE	ghrɛkʌ	ghrɛktʌkʌ	
2S	ʔighrɛ	ʔighrā:tɛ	ghrā:je
2D	ʔighrɛji	ʔighrêiti	ghrêije
2N	ʔighrɛni	ʔighratnu	ghrânje
3S	ghrɛ	ghrā:tɛ	
3D	ghrɛji	ghrêiti	
3N	ghrɛnu	ghratnu	

Table 2: Intransitive verb **dzhɛp** 'be possible'

	non-past	past
3S	dzhɛ̂:p	dzhɛptɛ

Table 3: Transitive verb **ʔɛt** 'say'

	non-past	past	imperative
1S	ʔêjŋʌ	ʔɛstʌ	
1DI	ʔɛtsi	ʔɛsti	
1DE	ʔɛtsu	ʔɛstu	
1PI	ʔɛçki	ʔɛçtiki	
1PE	ʔɛçkʌ	ʔɛçtʌkʌ	
2S	ʔiʔêj	ʔiʔɛstɛ	ʔɛtstse
2D	ʔiʔɛtsi	ʔiʔɛsti	ʔɛtsije
2N	ʔiʔênni	ʔiʔɛstɛnu	ʔɛsnuje
3S	ʔêj	ʔɛstɛ	
3D	ʔɛtsi	ʔɛsti	
3N	ʔênnu	ʔɛstɛnu	

Table 4: Intransitive verb **dzhɛm** 'disappear'

	non-past	past	imperative
1S	dzhɛmŋʌ	dzhɛmʌtʌ	
1DI	dzhɛmi	dzhɛmiti	
1DE	dzhɛmu	dzhɛmutu	
1PI	dzhɛmki	dzhɛmtiki	
1PE	dzhɛmkʌ	dzhɛmtʌkʌ	
2S	ʔidzhɛm	ʔidzhêmtɛ	dzhêmje
2D	ʔidzhɛmi	ʔidzhɛmiti	dzhɛmije
2N	ʔidzhɛmni	ʔidzhɛmtɛnu	dzhɛmnuje
3S	dzhɛm	dzhêmtɛ	
3D	dzhɛmi	dzhɛmiti	
3N	dzhɛmnu	dzhɛmtɛnu	

Table 5: Intransitive verb **ŋɛn** 'sit'

	non-past	past	imperative
1S	ŋɛ̄:jŋʌ	ŋɛ̄:stʌ	
1DI	ŋɛ̄:tsi	ŋɛ̄:sti	
1DE	ŋɛ̄:tsu	ŋɛ̄:stu	
1PI	ŋɛjki	ŋɛjtiki	
1PE	ŋɛjkʌ	ŋɛjtʌkʌ	
2S	ʔiŋɛj	ʔiŋɛ̄:stɛ	ŋɛ̄:tse
2D	ʔiŋɛ̄:tsi	ʔiŋɛ̄:sti	ŋɛ̄:tsije
2N	ʔiŋɛjni	ʔiŋɛ̄:stɛnu	ŋɛ̄:snuje
3S	ŋɛj	ŋɛ̄:stɛ	
3D	ŋɛ̄:tsi	ŋɛ̄:sti	
3N	ŋɛjnu	ŋɛ̄:stɛnu	

Table 6: Intransitive verb **ghaŋ** 'agree'

	non-past	past	imperative
1S	ghā:ŋʌ	ghʌŋʌtʌ	
1DI	ghʌŋi	ghʌŋiti	
1DE	ghʌŋu	ghʌŋutu	
1PI	ghaŋki	ghaŋtiki	
1PE	ghaŋkʌ	ghaŋtʌkʌ	
2S	ʔighaŋ	ʔighâŋtɛ	ghâŋje
2D	ʔighʌŋi	ʔighʌŋiti	ghʌŋije
2N	ʔighā:ni	ʔighaŋtɛnu	ghaŋnuje
3S	ghaŋ	ghâŋtɛ	
3D	ghʌŋi	ghʌŋiti	
3N	ghā:nu	ghaŋtɛnu	

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

	non-past	past	imperative
1S	ghɛrŋʌ	ghɛrʌtʌ	
1DI	ghɛri	ghɛriti	
1DE	ghɛru	ghɛrutu	
1PI	ghɛrki	ghɛrtiki	
1PE	ghɛrkʌ	ghɛrtʌkʌ	
2S	ʔighɛr	ʔighêrtɛ	ghêrje
2D	ʔighɛri	ʔighɛriti	ghɛrije
2N	ʔighɛrni	ʔighɛrtɛnu	ghɛrnuje
3S	ghɛr	ghêrtɛ	
3D	ghɛri	ghɛriti	
3N	ghɛrnu	ghɛrtɛnu	

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

	non-past	past	imperative
1S	ŋɛlŋʌ	ŋɛlʌtʌ	
1DI	ŋɛli	ŋɛliti	
1DE	ŋɛlu	ŋɛlutu	
1PI	ŋɛlki	ŋɛltiki	
1PE	ŋɛlkʌ	ŋɛltʌkʌ	
2S	ʔiŋɛl	ʔiŋêltɛ	ŋêlje
2D	ʔiŋɛli	ʔiŋɛliti	ŋɛlije
2N	ʔiŋɛlni	ʔiŋɛltɛnu	ŋɛlnuje
3S	ŋɛl	ŋêltɛ	
3D	ŋɛli	ŋɛliti	
3N	ŋɛlnu	ŋɛltɛnu	

Table 9: Transitive verb **ka** 'eat'

	non-past	past	imperative
1S	kʌŋʌ	kûŋtʌ	
1DI	kɵji	kêiti	
1DE	kɵju	kêitu	
1PI	kɵki	kɵktiki	
1PE	kɵkʌ	kɵktʌkʌ	
2S	ʔikɛ	ʔikʉte	kʉje
2D	ʔikɵji	ʔikêiti	kêije
2N	ʔikɵni	ʔikotnu	kônje
3S	kɛ	kʉtɛ	
3D	kɛsu	kʉtsu	
3N	kɛnu	kʉtnu	
2/3S>1S	ʔikɵŋʌ	ʔikɵŋʌtʌ	kɵŋʌje
2/3D>1S	ʔikɵŋʌsu	ʔikɵŋʌtʌsu	kɵŋʌsuje
2/3P>1S	ʔikɵŋʌnu	ʔikɵŋʌtʌnu	kɵŋʌnuje
2/3>1DI	ʔikɵji	ʔikêiti	
2/3>1DE	ʔikɵju	ʔikêitu	kɵije
2/3>1PI	ʔikɵki	ʔikɵktiki	
2/3>1PE	ʔikɵkʌ	ʔikɵktʌkʌ	kɵkʌje
3,1D/PE>2S	ʔikɵ	ʔikōːtɛ	
3,1D/PE>2D	ʔikɵji	ʔikêiti	
3,1D/PE>2P	ʔikɵni	ʔikotnu	
1S>2S	kɵnɛ	kêntɛni	
1S>2D	kênsu	kêntɛnsu	
1S>2P	kênnu	kêntɛnnu	

Table 10: Transitive verb **khɛp** 'be about to'

	non-past	past	imperative
1s>3s	khɛbu	khɛbutʌ	
1s>3D	khɛbusu	khɛbutʌsu	
1s>3P	khɛbunu	khɛbutʌnu	
1DI>3	khɛpi	khɛpiti	
1DE>3	khɛpu	khɛputu	
1PI>3	khɛpki	khɛptiki	
1PE>3	khɛpkʌ	khɛptʌkʌ	
2s>3s	ʔikhɛ̃ːbʉ	ʔikhɛ̂ːptɛ	khɛ̃ːbe
2s>3D	ʔikhɛ̂ːpsu	ʔikhɛ̂ːptɛsu	
2s>3P	ʔikhɛ̂ːpnu	ʔikhɛ̂ːptɛnu	
2D>3	ʔikhɛpi	ʔikhɛpiti	khɛpije
2N>3	ʔikhɛ̃ːni	ʔikhɛptɛnu	khɛpnuje
3s>3s	khɛ̃ːbʉ	khɛ̂ːptɛ	
3>3(D)	khɛ̂ːpsu	khɛ̂ːptɛsu	
3>3(P)	khɛ̂ːpnu	khɛ̂ːptɛnu	
2/3s>1s	ʔikhɛ̂mŋʌ	ʔikhɛpʌtʌ	khɛpʌje
2/3D>1s	ʔikhɛ̂mŋʌsu	ʔikhɛpʌtʌsu	khɛpʌsuje
2/3P>1s	ʔikhɛ̂mŋʌnu	ʔikhɛpʌtʌnu	khɛpʌnuje
2/3>1DI	ʔikhɛpi	ʔikhɛpiti	
2/3>1DE	ʔikhɛpu	ʔikhɛputu	khɛpuje
2/3>1PI	ʔikhɛpki	ʔikhɛptiki	
2/3>1PE	ʔikhɛpkʌ	ʔikhɛptʌkʌ	khɛpkʌje
3,1D/PE>2s	ʔikhɛ̂ːp	ʔikhɛptɛ	
3,1D/PE>2D	ʔikhɛpi	ʔikhɛpiti	
3,1D/PE>2P	ʔikhɛ̂mni	ʔikhɛptɛnu	
1s>2s	khɛ̂mnɛ	khɛ̂mtɛni	
1s>2D	khɛ̂msu	khɛ̂mtɛnsu	
1s>2P	khɛ̂mnu	khɛ̂mtɛnnu	

Table 11: Transitive verb **kɛt** 'bite'

	non-past	past	imperative
1s>3s	kɛdu	kɛ̂tʌ	
1s>3D	kɛdusu	kɛ̂tʌsu	
1s>3P	kɛdunu	kɛ̂tʌnu	
1DI>3	kɛtsi	kɛsti	
1DE>3	kɛtsu	kɛstu	
1PI>3	kɛçki	kɛçtiki	
1PE>3	kɛçkʌ	kɛçtʌkʌ	
2s>3s	ʔikɛ̃ːdʉ	ʔikɛ̂ːtɛ	kɛ̃ːde
2s>3D	ʔikɛ̂ːtsu	ʔikɛ̂ːtɛsu	
2s>3P	ʔikɛ̂ːtnu	ʔikɛ̂ːtɛnu	
2D>3	ʔikɛtsi	ʔikɛsti	kɛtsije
2N>3	ʔikɛ̂nni	ʔikɛstɛnu	kɛsnuje
3s>3s	kɛ̃ːdʉ	kɛ̂ːtɛ	
3>3(D)	kɛ̂ːtsu	kɛ̂ːtɛsu	
3>3(P)	kɛ̂ːtnu	kɛ̂ːtɛnu	
2/3s>1s	ʔikɛ̂jŋʌ	ʔikɛstʌ	kɛtsʌje
2/3D>1s	ʔikɛ̂jŋʌsu	ʔikɛstʌsu	kɛtsʌsuje
2/3P>1s	ʔikɛ̂jŋʌnu	ʔikɛstʌnu	kɛtsʌnuje
2/3>1DI	ʔikɛtsi	ʔikɛsti	
2/3>1DE	ʔikɛtsu	ʔikɛstu	kɛtsuje
2/3>1PI	ʔikɛçki	ʔikɛçtiki	
2/3>1PE	ʔikɛçkʌ	ʔikɛçtʌkʌ	kɛçkʌje
3,1D/PE>2s	ʔikɛ̂j	ʔikɛstɛ	
3,1D/PE>2D	ʔikɛtsi	ʔikɛsti	
3,1D/PE>2P	ʔikɛ̂nni	ʔikɛstɛnu	
1s>2s	kɛ̂nnɛ	kɛ̂ntɛni	
1s>2D	kɛ̂nsu	kɛ̂ntɛnsu	
1s>2P	kɛ̂nnu	kɛ̂ntɛnnu	

Table 12: Transitive verb *sak* 'choose'

	non-past	past	imperative
1s>3s	sʌgu	sʌgutʌ	
1s>3D	sʌgusu	sʌgutʌsu	
1s>3P	sʌgunu	sʌgutʌnu	
1DI>3	sʌki	sʌkiti	
1DE>3	sʌku	sʌkutu	
1PI>3	sakki	saktiki	
1PE>3	sakkʌ	saktʌkʌ	
2s>3s	ʔisāːgʉ	ʔisâːktɛ	sāːge
2s>3D	ʔisâːksu	ʔisâːktɛsu	
2s>3P	ʔisâːknu	ʔisâːktɛnu	
2D>3	ʔisʌki	ʔisʌkiti	sʌkije
2N>3	ʔisâːni	ʔisaktɛnu	saknuje
3s>3s	sāːgʉ	sâːktɛ	
3>3(D)	sâːksu	sâːktɛsu	
3>3(P)	sâːknu	sâːktɛnu	
2/3s>1s	ʔisâːŋʌ	ʔisʌkʌtʌ	sʌkʌje
2/3D>1s	ʔisâːŋʌsu	ʔisʌkʌtʌsu	sʌkʌsuje
2/3P>1s	ʔisâːŋʌnu	ʔisʌkʌtʌnu	sʌkʌnuje
2/3>1DI	ʔisʌki	ʔisʌkiti	
2/3>1DE	ʔisʌku	ʔisʌkutu	sʌkuje
2/3>1PI	ʔisakki	ʔisaktiki	
2/3>1PE	ʔisakkʌ	ʔisaktʌkʌ	sakkʌje
3,1D/PE>2s	ʔisâː	ʔisaktɛ	
3,1D/PE>2D	ʔisʌki	ʔisʌkiti	
3,1D/PE>2P	ʔisâːni	ʔisaktɛnu	
1s>2s	sâːnɛ	sânteni	
1s>2D	sânsu	sântensu	
1s>2P	sânnu	sântennu	

Table 13: Transitive verb ***khlɛm*** 'bewitch'

	non-past	past	imperative
1s>3s	khlɛmu	khlɛmutʌ	
1s>3D	khlɛmusu	khlɛmutʌsu	
1s>3P	khlɛmunu	khlɛmutʌnu	
1DI>3	khlɛmi	khlɛmiti	
1DE>3	khlɛmu	khlɛmutu	
1PI>3	khlɛmki	khlɛmtiki	
1PE>3	khlɛmkʌ	khlɛmtʌkʌ	
2s>3s	ʔikhlɛ̄ːmʉ	ʔikhlêmtɛ	khlɛ̄ːme
2s>3D	ʔikhlêmsu	ʔikhlêmtɛsu	
2s>3P	ʔikhlêmnu	ʔikhlêmtɛnu	
2D>3	ʔikhlɛmi	ʔikhlɛmiti	khlɛmije
2N>3	ʔikhlɛmni	ʔikhlɛmtɛnu	khlɛmnuje
3s>3s	khlɛ̄ːmʉ	khlêmtɛ	
3>3(D)	khlɛmsu	khlêmtɛsu	
3>3(P)	khlɛmnu	khlêmtɛnu	
2/3s>1s	ʔikhlɛmŋʌ	ʔikhlɛmʌtʌ	khlɛmʌje
2/3D>1s	ʔikhlɛmŋʌsu	ʔikhlɛmʌtʌsu	khlɛmʌsuje
2/3P>1s	ʔikhlɛmŋʌnu	ʔikhlɛmʌtʌnu	khlɛmʌnuje
2/3>1DI	ʔikhlɛmi	ʔikhlɛmiti	
2/3>1DE	ʔikhlɛmu	ʔikhlɛmutu	khlɛmuje
2/3>1PI	ʔikhlɛmki	ʔikhlɛmtiki	
2/3>1PE	ʔikhlɛmkʌ	ʔikhlɛmtʌkʌ	khlɛmkʌje
3,1D/PE>2s	ʔikhlɛm	ʔikhlêmtɛ	
3,1D/PE>2D	ʔikhlɛmi	ʔikhlɛmiti	
3,1D/PE>2P	ʔikhlɛmni	ʔikhlɛmtɛnu	
1s>2s	khlɛmnɛ	khlɛmtɛni	
1s>2D	khlêmsu	khlɛmtɛnsu	
1s>2P	khlêmnu	khlɛmtɛnnu	

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

	non-past	past	imperative
1s>3s	jʌŋu	jʌŋutʌ	
1s>3D	jʌŋusu	jʌŋutʌsu	
1s>3P	jʌŋunu	jʌŋutʌnu	
1DI>3	jʌŋi	jʌŋiti	
1DE>3	jʌŋu	jʌŋutu	
1PI>3	jaŋki	jaŋtiki	
1PE>3	jaŋkʌ	jaŋtʌkʌ	
2s>3s	ʔijāːŋʉ	ʔijâŋtɛ	jāːŋe
2s>3D	ʔijâŋsu	ʔijâŋtɛsu	
2s>3P	ʔijâŋnu	ʔijâŋtɛnu	
2D>3	ʔijʌŋi	ʔijʌŋiti	jʌŋije
2N>3	ʔijāːni	ʔijaŋtɛnu	jaŋnuje
3s>3s	jāːŋʉ	jâŋtɛ	
3>3(D)	jâŋsu	jâŋtɛsu	
3>3(P)	jâŋnu	jâŋtɛnu	

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

	non-past	past	imperative
1s>3s	wɛru	wɛrutʌ	
1s>3D	wɛrusu	wɛrutʌsu	
1s>3P	wɛrunu	wɛrutʌnu	
1DI>3	wɛri	wɛriti	
1DE>3	wɛru	wɛrutu	
1PI>3	wɛrki	wɛrtiki	
1PE>3	wɛrkʌ	wɛrtʌkʌ	
2s>3s	ʔiwɛ̄rʉ	ʔiwêrtɛ	wɛ̄re
2s>3D	ʔiwêrsu	ʔiwêrtɛsu	
2s>3P	ʔiwêrnu	ʔiwêrtɛnu	
2D>3	ʔiwɛri	ʔiwɛriti	wɛrije
2N>3	ʔiwɛrni	ʔiwɛrtɛnu	wɛrnuje
3s>3s	wɛ̄ːrʉ	wêrtɛ	
3>3(D)	wêrsu	wêrtɛsu	
3>3(P)	wêrnu	wêrtɛnu	

Table 16: Transitive verb *jal* 'beat'

	non-past	past	imperative
1s>3s	jʌlu	jʌlutʌ	
1s>3D	jʌlusu	jʌlutʌsu	
1s>3P	jʌlunu	jʌlutʌnu	
1DI>3	jʌli	jʌliti	
1DE>3	jʌlu	jʌlutu	
1PI>3	jalki	jaltiki	
1PE>3	jalkʌ	jaltʌkʌ	
2s>3s	ʔijāːlʉ	ʔijâltɛ	jāːle
2s>3D	ʔijâlsu	ʔijâltɛsu	
2s>3P	ʔijâlnu	ʔijâltɛnu	
2D>3	ʔijʌli	ʔijʌliti	jʌlije
2N>3	ʔijalni	ʔijaltɛnu	jalnuje
3s>3s	jāːlʉ	jâltɛ	
3>3(D)	jâlsu	jâltɛsu	
3>3(P)	jâlnu	jâltɛnu	
2/3s>1s	ʔijalŋʌ	ʔijʌlʌtʌ	jʌlʌje
2/3D>1s	ʔijalŋʌsu	ʔijʌlʌtʌsu	jʌlʌsuje
2/3P>1s	ʔijalŋʌnu	ʔijʌlʌtʌnu	jʌlʌnuje
2/3>1DI	ʔijʌli	ʔijʌliti	
2/3>1DE	ʔijʌlu	ʔijʌlutu	jʌluje
2/3>1PI	ʔijalki	ʔijaltiki	
2/3>1PE	ʔijalkʌ	ʔijaltʌkʌ	jalkʌje
3,1D/PE>2s	ʔijal	ʔijâltɛ	
3,1D/PE>2D	ʔijʌli	ʔijʌliti	
3,1D/PE>2P	ʔijalni	ʔijaltɛnu	
1s>2s	jalnɛ	jaltɛni	
1s>2D	jâlsu	jaltɛnsu	
1s>2P	jâlnu	jaltɛnnu	

Table 17: Transitive verb *phɛl* 'damage'

	non-past	past	imperative
1s>3s	phɛlu	phɛlutʌ	
1s>3D	phɛlusu	phɛlutʌsu	
1s>3P	phɛlunu	phɛlutʌnu	
1DI>3	phɛli	phɛliti	
1DE>3	phɛlu	phɛlutu	
1PI>3	phɛlki	phɛltiki	
1PE>3	phɛlkʌ	phɛltʌkʌ	
2s>3s	ʔiphɛ̃lʉ	ʔiphɛ̂ltɛ	phɛ̃le
2s>3D	ʔiphɛ̂lsu	ʔiphɛ̂ltɛsu	
2s>3P	ʔiphɛ̂lnu	ʔiphɛ̂ltɛnu	
2D>3	ʔiphɛli	ʔiphɛliti	phɛlije
2N>3	ʔiphɛlni	ʔiphɛltɛnu	phɛlnuje
3s>3s	phɛ̃lʉ	phɛ̂ltɛ	
3>3(D)	phɛ̂lsu	phɛ̂ltɛsu	
3>3(P)	phɛ̂lnu	phɛ̂ltɛnu	
2/3s>1s	ʔiphɛlŋʌ	ʔiphɛlʌtʌ	phɛlʌje
2/3D>1s	ʔiphɛlŋʌsu	ʔiphɛlʌtʌsu	phɛlʌsuje
2/3P>1s	ʔiphɛlŋʌnu	ʔiphɛlʌtʌnu	phɛlʌnuje
2/3>1DI	ʔiphɛli	ʔiphɛliti	
2/3>1DE	ʔiphɛlu	ʔiphɛlutu	phɛluje
2/3>1PI	ʔiphɛlki	ʔiphɛltiki	
2/3>1PE	ʔiphɛlkʌ	ʔiphɛltʌkʌ	phɛlkʌje
3,1D/PE>2s	ʔiphɛl	ʔiphɛ̂ltɛ	
3,1D/PE>2D	ʔiphɛli	ʔiphɛliti	
3,1D/PE>2P	ʔiphɛlni	ʔiphɛltɛnu	
1s>2s	phɛlnɛ	phɛltɛni	
1s>2D	phɛ̂lsu	phɛltɛnsu	
1s>2P	phɛ̂lnu	phɛltɛnnu	

Table 18: Transitive verb *phrɛpt* 'scratch'

	non-past	past	imperative
1s>3s	phrɛptu	phrɛptʌ	
1s>3D	phrɛptusu	phrɛptʌsu	
1s>3P	phrɛptunu	phrɛptʌnu	
1DI>3	phrɛpi	phrɛpiti	
1DE>3	phrɛpu	phrɛputu	
1PI>3	phrɛpki	phrɛptiki	
1PE>3	phrɛpkʌ	phrɛptʌkʌ	
2s>3s	ʔiphrɛptʉ	ʔiphrɛptɛ	phrɛpte
2s>3D	ʔiphrɛpsu	ʔiphrɛptɛsu	
2s>3P	ʔiphrɛpnu	ʔiphrɛptɛnu	
2D>3	ʔiphrɛpi	ʔiphrɛpiti	phrɛpije
2N>3	ʔiphrɛ̂mni	ʔiphrɛptɛnu	phrɛpnuje
3s>3s	phrɛptʉ	phrɛptɛ	
3>3(D)	phrɛpsu	phrɛptɛsu	
3>3(P)	phrɛpnu	phrɛptɛnu	
2/3s>1s	ʔiphrɛ̂mŋʌ	ʔiphrɛpʌtʌ	phrɛpʌje
2/3D>1s	ʔiphrɛ̂mŋʌsu	ʔiphrɛpʌtʌsu	phrɛpʌsuje
2/3P>1s	ʔiphrɛ̂mŋʌnu	ʔiphrɛpʌtʌnu	phrɛpʌnuje
2/3>1DI	ʔiphrɛpi	ʔiphrɛpiti	
2/3>1DE	ʔiphrɛpu	ʔiphrɛputu	phrɛpuje
2/3>1PI	ʔiphrɛpki	ʔiphrɛptiki	
2/3>1PE	ʔiphrɛpkʌ	ʔiphrɛptʌkʌ	phrɛpkʌje
3,1D/PE>2s	ʔiphrɛ̃ːp	ʔiphrɛptɛ	
3,1D/PE>2D	ʔiphrɛpi	ʔiphrɛpiti	
3,1D/PE>2P	ʔiphrɛ̂mni	ʔiphrɛptɛnu	
1s>2s	phrɛ̂mnɛ	phrɛ̂mtɛni	
1s>2D	phrɛ̂msu	phrɛ̂mtɛnsu	
1s>2P	phrɛ̂mnu	phrɛ̂mtɛnnu	

Table 19: Transitive verb *rɛtt* 'settle'

	non-past	past	imperative
1s>3s	rɛttu	rɛttʌ	
1s>3D	rɛttusu	rɛttʌsu	
1s>3P	rɛttunu	rɛttʌnu	
1DI>3	rɛtsi	rɛsti	
1DE>3	rɛtsu	rɛstu	
1PI>3	rɛçki	rɛçtiki	
1PE>3	rɛçkʌ	rɛçtʌkʌ	
2s>3s	ʔirɛttʉ	ʔirɛttɛ	rɛtte
2s>3D	ʔirɛtsu	ʔirɛttɛsu	
2s>3P	ʔirɛtnu	ʔirɛttɛnu	
2D>3	ʔirɛtsi	ʔirɛsti	rɛtsije
2N>3	ʔirênni	ʔirɛstɛnu	rɛsnuje
3s>3s	rɛttʉ	rɛttɛ	
3>3(D)	rɛtsu	rɛttɛsu	
3>3(P)	rɛtnu	rɛttɛnu	
2/3s>1s	ʔirêjŋʌ	ʔirɛstʌ	rɛtsʌje
2/3D>1s	ʔirêjŋʌsu	ʔirɛstʌsu	rɛtsʌsuje
2/3P>1s	ʔirêjŋʌnu	ʔirɛstʌnu	rɛtsʌnuje
2/3>1DI	ʔirɛtsi	ʔirɛsti	
2/3>1DE	ʔirɛtsu	ʔirɛstu	rɛtsuje
2/3>1PI	ʔirɛçki	ʔirɛçtiki	
2/3>1PE	ʔirɛçkʌ	ʔirɛçtʌkʌ	rɛçkʌje
3,1D/PE>2s	ʔirêj	ʔirɛstɛ	
3,1D/PE>2D	ʔirɛtsi	ʔirɛsti	
3,1D/PE>2P	ʔirênni	ʔirɛstɛnu	
1s>2s	rênnɛ	rêntɛni	
1s>2D	rênsu	rêntɛnsu	
1s>2P	rênnu	rêntɛnnu	

Table 20: Transitive verb *krakt* 'force'

	non-past	past	imperative
1s>3s	kraktu	kraktʌ	
1s>3D	kraktusu	kraktʌsu	
1s>3P	kraktunu	kraktʌnu	
1DI>3	krʌki	krʌkiti	
1DE>3	krʌku	krʌkutu	
1PI>3	krakki	kraktiki	
1PE>3	krakkʌ	kraktʌkʌ	
2s>3s	ʔikraktʉ	ʔikraktɛ	krakte
2s>3D	ʔikraksu	ʔikraktɛsu	
2s>3P	ʔikraknu	ʔikraktɛnu	
2D>3	ʔikrʌki	ʔikrʌkiti	krʌkije
2N>3	ʔikrâːni	ʔikraktɛnu	kraknuje
3s>3s	kraktʉ	kraktɛ	
3>3(D)	kraksu	kraktɛsu	
3>3(P)	kraknu	kraktɛnu	
2/3s>1s	ʔikrâːŋʌ	ʔikrʌkʌtʌ	krʌkʌje
2/3D>1s	ʔikrâːŋʌsu	ʔikrʌkʌtʌsu	krʌkʌsuje
2/3P>1s	ʔikrâːŋʌnu	ʔikrʌkʌtʌnu	krʌkʌnuje
2/3>1DI	ʔikrʌki	ʔikrʌkiti	
2/3>1DE	ʔikrʌku	ʔikrʌkutu	krʌkuje
2/3>1PI	ʔikrakki	ʔikraktiki	
2/3>1PE	ʔikrakkʌ	ʔikraktʌkʌ	krakkʌje
3,1D/PE>2s	ʔikrâː	ʔikraktɛ	
3,1D/PE>2D	ʔikrʌki	ʔikrʌkiti	
3,1D/PE>2P	ʔikrâːni	ʔikraktɛnu	
1s>2s	krâːnɛ	krântɛni	
1s>2D	krânsu	krântɛnsu	
1s>2P	krânnu	krântɛnnu	

Table 21: Transitive verb *ghrɛmt* 'be disguted by'

	non-past	past	imperative
1s>3s	ghrɛmdu	ghrȇmtʌ	
1s>3D	ghrɛmdusu	ghrȇmtʌsu	
1s>3P	ghrɛmdunu	ghrȇmtʌnu	
1DI>3	ghrɛmi	ghrɛmiti	
1DE>3	ghrɛmu	ghrɛmutu	
1PI>3	ghrɛmki	ghrɛmtiki	
1PE>3	ghrɛmkʌ	ghrɛmtʌkʌ	
2s>3s	ʔighrɛmdʉ	ʔighrȇmtɛ	ghrɛmde
2s>3D	ʔighrȇmsu	ʔighrȇmtɛsu	
2s>3P	ʔighrȇmnu	ʔighrȇmtɛnu	
2D>3	ʔighrɛmi	ʔighrɛmiti	ghrɛmije
2N>3	ʔighrɛmni	ʔighrɛmtɛnu	ghrɛmnuje
3s>3s	ghrɛmdʉ	ghrȇmtɛ	
3>3(D)	ghrȇmsu	ghrȇmtɛsu	
3>3(P)	ghrȇmnu	ghrȇmtɛnu	
2/3s>1s	ʔighrɛmŋʌ	ʔighrɛmʌtʌ	ghrɛmʌje
2/3D>1s	ʔighrɛmŋʌsu	ʔighrɛmʌtʌsu	ghrɛmʌsuje
2/3P>1s	ʔighrɛmŋʌnu	ʔighrɛmʌtʌnu	ghrɛmʌnuje
2/3>1DI	ʔighrɛmi	ʔighrɛmiti	
2/3>1DE	ʔighrɛmu	ʔighrɛmutu	ghrɛmuje
2/3>1PI	ʔighrɛmki	ʔighrɛmtiki	
2/3>1PE	ʔighrɛmkʌ	ʔighrɛmtʌkʌ	ghrɛmkʌje
3,1D/PE>2s	ʔighrɛm	ʔighrȇmtɛ	
3,1D/PE>2D	ʔighrɛmi	ʔighrɛmiti	
3,1D/PE>2P	ʔighrɛmni	ʔighrɛmtɛnu	
1s>2s	ghrɛmnɛ	ghrɛmtɛni	
1s>2D	ghrȇmsu	ghrɛmtɛnsu	
1s>2P	ghrȇmnu	ghrɛmtɛnnu	

Table 22: Transitive verb *pɛnt* 'attack'

	non-past	past	imperative
1s>3s	pɛndu	pȇntʌ	
1s>3D	pɛndusu	pȇntʌsu	
1s>3P	pɛndunu	pȇntʌnu	
1DI>3	pɛ̄tsi	pɛ̄sti	
1DE>3	pɛ̄tsu	pɛ̄stu	
1PI>3	pɛjki	pɛjtiki	
1PE>3	pɛjkʌ	pɛjtʌkʌ	
2s>3s	ʔipɛndʉ	ʔipȇntɛ	pɛnde
2s>3D	ʔipȇnsu	ʔipȇntɛsu	
2s>3P	ʔipȇnnu	ʔipȇntɛnu	
2D>3	ʔipɛ̄tsi	ʔipɛ̄sti	pɛ̄tsije
2N>3	ʔipɛjni	ʔipɛ̄stɛnu	pɛ̄snuje
3s>3s	pɛndʉ	pȇntɛ	
3>3(D)	pȇnsu	pȇntɛsu	
3>3(P)	pȇnnu	pȇntɛnu	
2/3s>1s	ʔipɛjŋʌ	ʔipɛ̄stʌ	pɛ̄tsʌje
2/3D>1s	ʔipɛjŋʌsu	ʔipɛ̄stʌsu	pɛ̄tsʌsuje
2/3P>1s	ʔipɛjŋʌnu	ʔipɛ̄stʌnu	pɛ̄tsʌnuje
2/3>1DI	ʔipɛ̄tsi	ʔipɛ̄sti	
2/3>1DE	ʔipɛ̄tsu	ʔipɛ̄stu	pɛ̄tsuje
2/3>1PI	ʔipɛjki	ʔipɛjtiki	
2/3>1PE	ʔipɛjkʌ	ʔipɛjtʌkʌ	pɛjkʌje
3,1D/PE>2s	ʔipɛj	ʔipɛ̄stɛ	
3,1D/PE>2D	ʔipɛ̄tsi	ʔipɛ̄sti	
3,1D/PE>2P	ʔipɛjni	ʔipɛ̄stɛnu	
1s>2s	pɛjnɛ	pɛjtɛni	
1s>2D	pȇjsu	pɛjtɛnsu	
1s>2P	pȇjnu	pɛjtɛnnu	

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

	non-past	past	imperative
1s>3s	kandu	kântʌ	
1s>3D	kandusu	kântʌsu	
1s>3P	kandunu	kântʌnu	
1DI>3	kʌŋi	kʌŋiti	
1DE>3	kʌŋu	kʌŋutu	
1PI>3	kaŋki	kaŋtiki	
1PE>3	kaŋkʌ	kaŋtʌkʌ	
2s>3s	ʔikandʉ	ʔikântɛ	kande
2s>3D	ʔikânsu	ʔikântɛsu	
2s>3P	ʔikânnu	ʔikântɛnu	
2D>3	ʔikʌŋi	ʔikʌŋiti	kʌŋije
2N>3	ʔikā:ni	ʔikaŋtɛnu	kaŋnuje
3s>3s	kandʉ	kântɛ	
3>3(D)	kânsu	kântɛsu	
3>3(P)	kânnu	kântɛnu	

Table 24: Intransitive verb *dze* 'say'

	non-past	past	imperative
1s	dzeŋʌ	dzeŋʌtʌ	
1DI	dzeji	dzêiti	
1DE	dzeju	dzêitu	
1PI	dzeki	dzektiki	
1PE	dzekʌ	dzektʌkʌ	
2s	ʔidze	ʔidzē:tɛ	dzē:je
2D	ʔidzeji	ʔidzêiti	dzêije
2N	ʔidzeni	ʔidzetnu	dzênje
3s	dze	dzē:tɛ	
3D	dzeji	dzêiti	
3N	dzenu	dzetnu	

Table 25: Intransitive verb *rep* 'stand'

	non-past	past	imperative
1s	rêmŋʌ	repʌtʌ	
1DI	repi	repiti	
1DE	repu	reputu	
1PI	repki	reptiki	
1PE	repkʌ	reptʌkʌ	
2s	ʔirê:p	ʔireptɛ	repje
2D	ʔirepi	ʔirepiti	repije
2N	ʔirêmni	ʔireptɛnu	repnuje
3s	rê:p	reptɛ	
3D	repi	repiti	
3N	rêmnu	reptɛnu	

Table 26: Intransitive verb *ŋet* 'hurt'

	non-past	past	imperative
1s	ŋêjŋʌ	ŋestʌ	
1DI	ŋetsi	ŋesti	
1DE	ŋetsu	ŋestu	
1PI	ŋeçki	ŋeçtiki	
1PE	ŋeçkʌ	ŋeçtʌkʌ	
2s	ʔiŋêj	ʔiŋestɛ	ŋetstse
2D	ʔiŋetsi	ʔiŋesti	ŋetsije
2N	ʔiŋênni	ʔiŋestɛnu	ŋesnuje
3s	ŋêj	ŋestɛ	
3D	ŋetsi	ŋesti	
3N	ŋênnu	ŋestɛnu	

Table 27: Intransitive verb *tsek* 'be hard, be stingy'

	non-past	past	imperative
1s	tsê:ŋʌ	tsekʌtʌ	
1DI	tseki	tsekiti	
1DE	tseku	tsekutu	
1PI	tsekki	tsektiki	
1PE	tsekkʌ	tsektʌkʌ	
2s	ʔitsê:	ʔitsektɛ	tsekje
2D	ʔitseki	ʔitsekiti	tsekije
2N	ʔitsê:ni	ʔitsektɛnu	tseknuje
3s	tsê:	tsektɛ	
3D	tseki	tsekiti	
3N	tsê:nu	tsektɛnu	

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

	non-past	past
3s	jem	jêmtɛ

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

	non-past	past	imperative
1s	lejŋʌ	lē:stʌ	
1DI	lē:tsi	lē:sti	
1DE	lē:tsu	lē:stu	
1PI	lejki	lejtiki	
1PE	lejkʌ	lejtʌkʌ	
2s	ʔilej	ʔilē:stɛ	lē:tse
2D	ʔilē:tsi	ʔilē:sti	lē:tsije
2N	ʔilejni	ʔilē:stɛnu	lē:snuje
3s	lej	lē:stɛ	
3D	lē:tsi	lē:sti	
3N	lejnu	lē:stɛnu	

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

	non-past	past	imperative
1s	bhrē:ŋʌ	bhreŋʌtʌ	
1DI	bhreŋi	bhreŋiti	
1DE	bhreŋu	bhreŋutu	
1PI	bhreŋki	bhreŋtiki	
1PE	bhreŋkʌ	bhreŋtʌkʌ	
2s	ʔibhreŋ	ʔibhrêŋtɛ	bhrêŋje
2D	ʔibhreŋi	ʔibhreŋiti	bhreŋije
2N	ʔibhrē:ni	ʔibhreŋtɛnu	bhreŋnuje
3s	bhreŋ	bhrêŋtɛ	
3D	bhreŋi	bhreŋiti	
3N	bhrē:nu	bhreŋtɛnu	

Table 31: Intransitive verb *bher* 'fly'

	non-past	past	imperative
1s	bherŋʌ	bherʌtʌ	
1DI	bheri	bheriti	
1DE	bheru	bherutu	
1PI	bherki	bhertiki	
1PE	bherkʌ	bhertʌkʌ	
2s	ʔibher	ʔibhêrtɛ	bhêrje
2D	ʔibheri	ʔibheriti	bherije
2N	ʔibherni	ʔibhertɛnu	bhernuje
3s	bher	bhêrtɛ	
3D	bheri	bheriti	
3N	bhernu	bhertɛnu	

Table 32: Intransitive verb *ʔel* 'overflow'

	non-past	past
3s	ʔel	ʔêltɛ

Table 33: Transitive verb *khlep* 'peel'

	non-past	past	imperative
1s>3s	khlebu	khlebutʌ	
1s>3D	khlebusu	khlebutʌsu	
1s>3P	khlebunu	khlebutʌnu	
1DI>3	khlepi	khlepiti	
1DE>3	khlepu	khleputu	
1PI>3	khlepki	khleptiki	
1PE>3	khlepkʌ	khleptʌkʌ	
2s>3s	ʔikhlē:bʉ	ʔikhlê:ptɛ	khlē:be
2s>3D	ʔikhlê:psu	ʔikhlê:ptɛsu	
2s>3P	ʔikhlê:pnu	ʔikhlê:ptɛnu	
2D>3	ʔikhlepi	ʔikhlepiti	khlepije
2N>3	ʔikhlêmni	ʔikhleptɛnu	khlepnuje
3s>3s	khlē:bʉ	khlê:ptɛ	
3>3(D)	khlê:psu	khlê:ptɛsu	
3>3(P)	khlê:pnu	khlê:ptɛnu	

Table 34: Transitive verb *set* 'kill'

	non-past	past	imperative
1S>3S	sedu	sê:tʌ	
1S>3D	sedusu	sê:tʌsu	
1S>3P	sedunu	sê:tʌnu	
1DI>3	setsi	sesti	
1DE>3	setsu	sestu	
1PI>3	seçki	seçtiki	
1PE>3	seçkʌ	seçtʌkʌ	
2S>3S	ʔisē:dʉ	ʔisê:tɛ	sē:de
2S>3D	ʔisê:tsu	ʔisê:tɛsu	
2S>3P	ʔisê:tnu	ʔisê:tɛnu	
2D>3	ʔisetsi	ʔisesti	setsije
2N>3	ʔisênni	ʔisestɛnu	sesnuje
3S>3S	sē:dʉ	sê:tɛ	
3>3(D)	sê:tsu	sê:tɛsu	
3>3(P)	sê:tnu	sê:tɛnu	
2/3S>1S	ʔisêjŋʌ	ʔisestʌ	setsʌje
2/3D>1S	ʔisêjŋʌsu	ʔisestʌsu	setsʌsuje
2/3P>1S	ʔisêjŋʌnu	ʔisestʌnu	setsʌnuje
2/3>1DI	ʔisetsi	ʔisesti	
2/3>1DE	ʔisetsu	ʔisestu	setsuje
2/3>1PI	ʔiseçki	ʔiseçtiki	
2/3>1PE	ʔiseçkʌ	ʔiseçtʌkʌ	seçkʌje
3,1D/PE>2S	ʔisêj	ʔisestɛ	
3,1D/PE>2D	ʔisetsi	ʔisesti	
3,1D/PE>2P	ʔisênni	ʔisestɛnu	
1S>2S	sênnɛ	sêntɛni	
1S>2D	sênsu	sêntɛnsu	
1S>2P	sênnu	sêntɛnnu	

Table 35: Transitive verb *dhek* 'wipe'

	non-past	past	imperative
1S>3S	dhegu	dhegutʌ	
1S>3D	dhegusu	dhegutʌsu	
1S>3P	dhegunu	dhegutʌnu	
1DI>3	dheki	dhekiti	
1DE>3	dheku	dhekutu	
1PI>3	dhekki	dhektiki	
1PE>3	dhekkʌ	dhektʌkʌ	
2S>3S	ʔidhē:gu	ʔidhê:ktɛ	dhē:ge
2S>3D	ʔidhê:ksu	ʔidhê:ktɛsu	
2S>3P	ʔidhê:knu	ʔidhê:ktɛnu	
2D>3	ʔidheki	ʔidhekiti	dhekije
2N>3	ʔidhê:ni	ʔidhektɛnu	dheknuje
3S>3S	dhē:gu	dhê:ktɛ	
3>3(D)	dhê:ksu	dhê:ktɛsu	
3>3(P)	dhê:knu	dhê:ktɛnu	

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Table 36: Transitive verb *phlem* 'tread'

	non-past	past	imperative
1s>3s	phlemu	phlemutʌ	
1s>3D	phlemusu	phlemutʌsu	
1s>3P	phlemunu	phlemutʌnu	
1DI>3	phlemi	phlemiti	
1DE>3	phlemu	phlemutu	
1PI>3	phlemki	phlemtiki	
1PE>3	phlemkʌ	phlemtʌkʌ	
2s>3s	ʔiphlē:mɥ	ʔiphlêmtɛ	phlē:me
2s>3D	ʔiphlêmsu	ʔiphlêmtɛsu	
2s>3P	ʔiphlêmnu	ʔiphlêmtɛnu	
2D>3	ʔiphlemi	ʔiphlemiti	phlemije
2N>3	ʔiphlemni	ʔiphlemtɛnu	phlemnuje
3s>3s	phlē:mɥ	phlêmtɛ	
3>3(D)	phlêmsu	phlêmtɛsu	
3>3(P)	phlêmnu	phlêmtɛnu	
2/3s>1s	ʔiphlemŋʌ	ʔiphlemʌtʌ	phlemʌje
2/3D>1s	ʔiphlemŋʌsu	ʔiphlemʌtʌsu	phlemʌsuje
2/3P>1s	ʔiphlemŋʌnu	ʔiphlemʌtʌnu	phlemʌnuje
2/3>1DI	ʔiphlemi	ʔiphlemiti	
2/3>1DE	ʔiphlemu	ʔiphlemutu	phlemuje
2/3>1PI	ʔiphlemki	ʔiphlemtiki	
2/3>1PE	ʔiphlemkʌ	ʔiphlemtʌkʌ	phlemkʌje
3,1D/PE>2s	ʔiphlem	ʔiphlêmtɛ	
3,1D/PE>2D	ʔiphlemi	ʔiphlemiti	
3,1D/PE>2P	ʔiphlemni	ʔiphlemtɛnu	
1s>2s	phlemnɛ	phlemtɛni	
1s>2D	phlêmsu	phlemtɛnsu	
1s>2P	phlêmnu	phlemtɛnnu	

Table 37: Transitive verb *ghle* 'worship'

	non-past	past	imperative
1s	ghleŋʌ	ghlêŋtʌ	
1DI	ghleji	ghlêiti	
1DE	ghleju	ghlêitu	
1PI	ghleki	ghlektiki	
1PE	ghlekʌ	ghlektʌkʌ	
2s	ʔighle	ʔighletɛ	ghleje
2D	ʔighleji	ʔighlêiti	ghlêije
2N	ʔighleni	ʔighletnu	ghlênje
3s	ghle	ghletɛ	
3D	ghlesu	ghletsu	
3N	ghlenu	ghletnu	

Table 38: Transitive verb *tsheŋ* 'hate'

	non-past	past	imperative
1s>3s	tsheŋu	tsheŋutʌ	
1s>3D	tsheŋusu	tsheŋutʌsu	
1s>3P	tsheŋunu	tsheŋutʌnu	
1DI>3	tsheŋi	tsheŋiti	
1DE>3	tsheŋu	tsheŋutu	
1PI>3	tsheŋki	tsheŋtiki	
1PE>3	tsheŋkʌ	tsheŋtʌkʌ	
2s>3s	ʔitshē:ŋɥ	ʔitshêŋtɛ	tshē:ŋe
2s>3D	ʔitshêŋsu	ʔitshêŋtɛsu	
2s>3P	ʔitshêŋnu	ʔitshêŋtɛnu	
2D>3	ʔitsheŋi	ʔitsheŋiti	tsheŋije
2N>3	ʔitshē:ni	ʔitsheŋtɛnu	tsheŋnuje
3s>3s	tshē:ŋɥ	tshêŋtɛ	
3>3(D)	tshêŋsu	tshêŋtɛsu	
3>3(P)	tshêŋnu	tshêŋtɛnu	
2/3s>1s	ʔitshē:ŋʌ	ʔitsheŋʌtʌ	tsheŋʌje
2/3D>1s	ʔitshē:ŋʌsu	ʔitsheŋʌtʌsu	tsheŋʌsuje
2/3P>1s	ʔitshē:ŋʌnu	ʔitsheŋʌtʌnu	tsheŋʌnuje
2/3>1DI	ʔitsheŋi	ʔitsheŋiti	
2/3>1DE	ʔitsheŋu	ʔitsheŋutu	tsheŋuje
2/3>1PI	ʔitsheŋki	ʔitsheŋtiki	
2/3>1PE	ʔitsheŋkʌ	ʔitsheŋtʌkʌ	tsheŋkʌje
3,1D/PE>2s	ʔitsheŋ	ʔitshêŋtɛ	
3,1D/PE>2D	ʔitsheŋi	ʔitsheŋiti	
3,1D/PE>2P	ʔitshē:ni	ʔitsheŋtɛnu	
1s>2s	tshē:nɛ	tshentɛni	
1s>2D	tshênsu	tshentɛnsu	
1s>2P	tshênnu	tshentɛnnu	

Table 39: Transitive verb *ner* 'finish'

	non-past	past	imperative
1s>3s	neru	nerutʌ	
1s>3D	nerusu	nerutʌsu	
1s>3P	nerunu	nerutʌnu	
1DI>3	neri	neriti	
1DE>3	neru	nerutu	
1PI>3	nerki	nertiki	
1PE>3	nerkʌ	nertʌkʌ	
2s>3s	ʔinē:rʉ	ʔinêrtɛ	nē:re
2s>3D	ʔinêrsu	ʔinêrtɛsu	
2s>3P	ʔinêrnu	ʔinêrtɛnu	
2D>3	ʔineri	ʔineriti	nerije
2N>3	ʔinerni	ʔinertɛnu	nernuje
3s>3s	nē:rʉ	nêrtɛ	
3>3(D)	nêrsu	nêrtɛsu	
3>3(P)	nêrnu	nêrtɛnu	
2/3s>1s	ʔinerŋʌ	ʔinerʌtʌ	nerʌje
2/3D>1s	ʔinerŋʌsu	ʔinerʌtʌsu	nerʌsuje
2/3P>1s	ʔinerŋʌnu	ʔinerʌtʌnu	nerʌnuje
2/3>1DI	ʔineri	ʔineriti	
2/3>1DE	ʔineru	ʔinerutu	neruje
2/3>1PI	ʔinerki	ʔinertiki	
2/3>1PE	ʔinerkʌ	ʔinertʌkʌ	nerkʌje
3,1D/PE>2s	ʔiner	ʔinêrtɛ	
3,1D/PE>2D	ʔineri	ʔineriti	
3,1D/PE>2P	ʔinerni	ʔinertɛnu	
1s>2s	nernɛ	nertɛni	
1s>2D	nêrsu	nertɛnsu	
1s>2P	nêrnu	nertɛnnu	

Table 40: Transitive verb *thel* 'take off'

	non-past	past	imperative
1s>3s	thelu	thelutʌ	
1s>3D	thelusu	thelutʌsu	
1s>3P	thelunu	thelutʌnu	
1DI>3	theli	theliti	
1DE>3	thelu	thelutu	
1PI>3	thelki	theltiki	
1PE>3	thelkʌ	theltʌkʌ	
2s>3s	ʔithē:lʉ	ʔithêltɛ	thē:le
2s>3D	ʔithêlsu	ʔithêltɛsu	
2s>3P	ʔithêlnu	ʔithêltɛnu	
2D>3	ʔitheli	ʔitheliti	thelije
2N>3	ʔithelni	ʔitheltɛnu	thelnuje
3s>3s	thē:lʉ	thêltɛ	
3>3(D)	thêlsu	thêltɛsu	
3>3(P)	thêlnu	thêltɛnu	

Table 41: Transitive verb *kept* 'climb; sting'

	non-past	past	imperative
1s>3s	keptu	keptʌ	
1s>3D	keptusu	keptʌsu	
1s>3P	keptunu	keptʌnu	
1DI>3	kepi	kepiti	
1DE>3	kepu	keputu	
1PI>3	kepki	keptiki	
1PE>3	kepkʌ	keptʌkʌ	
2s>3s	ʔikeptʉ	ʔikeptɛ	kepte
2s>3D	ʔikepsu	ʔikeptɛsu	
2s>3P	ʔikepnu	ʔikeptɛnu	
2D>3	ʔikepi	ʔikepiti	kepije
2N>3	ʔikêmni	ʔikeptɛnu	kepnuje
3s>3s	keptʉ	keptɛ	
3>3(D)	kepsu	keptɛsu	
3>3(P)	kepnu	keptɛnu	
2/3s>1s	ʔikêmŋʌ	ʔikepʌtʌ	kepʌje
2/3D>1s	ʔikêmŋʌsu	ʔikepʌtʌsu	kepʌsuje
2/3P>1s	ʔikêmŋʌnu	ʔikepʌtʌnu	kepʌnuje
2/3>1DI	ʔikepi	ʔikepiti	
2/3>1DE	ʔikepu	ʔikeputu	kepuje
2/3>1PI	ʔikepki	ʔikeptiki	
2/3>1PE	ʔikepkʌ	ʔikeptʌkʌ	kepkʌje
3,1D/PE>2s	ʔikê:p	ʔikeptɛ	
3,1D/PE>2D	ʔikepi	ʔikepiti	
3,1D/PE>2P	ʔikêmni	ʔikeptɛnu	
1s>2s	kêmnɛ	kêmtɛni	
1s>2D	kêmsu	kêmtɛnsu	
1s>2P	kêmnu	kêmtɛnnu	

Table 42: Transitive verb *rett* 'laugh at'

	non-past	past	imperative
1s>3s	rettu	rettʌ	
1s>3D	rettusu	rettʌsu	
1s>3P	rettunu	rettʌnu	
1DI>3	retsi	resti	
1DE>3	retsu	restu	
1PI>3	reçki	reçtiki	
1PE>3	reçkʌ	reçtʌkʌ	
2s>3s	ʔirettʉ	ʔirettɛ	rette
2s>3D	ʔiretsu	ʔirettɛsu	
2s>3P	ʔiretnu	ʔirettɛnu	
2D>3	ʔiretsi	ʔiresti	retsije
2N>3	ʔirênni	ʔirestɛnu	resnuje
3s>3s	rettʉ	rettɛ	
3>3(D)	retsu	rettɛsu	
3>3(P)	retnu	rettɛnu	
2/3s>1s	ʔirêjŋʌ	ʔirestʌ	retsʌje
2/3D>1s	ʔirêjŋʌsu	ʔirestʌsu	retsʌsuje
2/3P>1s	ʔirêjŋʌnu	ʔirestʌnu	retsʌnuje
2/3>1DI	ʔiretsi	ʔiresti	
2/3>1DE	ʔiretsu	ʔirestu	retsuje
2/3>1PI	ʔireçki	ʔireçtiki	
2/3>1PE	ʔireçkʌ	ʔireçtʌkʌ	reçkʌje
3,1D/PE>2s	ʔirêj	ʔirestɛ	
3,1D/PE>2D	ʔiretsi	ʔiresti	
3,1D/PE>2P	ʔirênni	ʔirestɛnu	
1s>2s	rênnɛ	rêntɛni	
1s>2D	rênsu	rêntɛnsu	
1s>2P	rênnu	rêntɛnnu	

Table 43: Transitive verb *rekt* 'write'

	non-past	past	imperative
1s>3s	rektu	rektʌ	
1s>3D	rektusu	rektʌsu	
1s>3P	rektunu	rektʌnu	
1DI>3	reki	rekiti	
1DE>3	reku	rekutu	
1PI>3	rekki	rektiki	
1PE>3	rekkʌ	rektʌkʌ	
2s>3s	ʔirektʉ	ʔirektɛ	rekte
2s>3D	ʔireksu	ʔirektɛsu	
2s>3P	ʔireknu	ʔirektɛnu	
2D>3	ʔireki	ʔirekiti	rekije
2N>3	ʔirê:ni	ʔirektɛnu	reknuje
3s>3s	rektʉ	rektɛ	
3>3(D)	reksu	rektɛsu	
3>3(P)	reknu	rektɛnu	
2/3s>1s	ʔirê:ŋʌ	ʔirekʌtʌ	rekʌje
2/3D>1s	ʔirê:ŋʌsu	ʔirekʌtʌsu	rekʌsuje
2/3P>1s	ʔirê:ŋʌnu	ʔirekʌtʌnu	rekʌnuje
2/3>1DI	ʔireki	ʔirekiti	
2/3>1DE	ʔireku	ʔirekutu	rekuje
2/3>1PI	ʔirekki	ʔirektiki	
2/3>1PE	ʔirekkʌ	ʔirektʌkʌ	rekkʌje
3,1D/PE>2s	ʔirê:	ʔirektɛ	
3,1D/PE>2D	ʔireki	ʔirekiti	
3,1D/PE>2P	ʔirê:ni	ʔirektɛnu	
1s>2s	rê:nɛ	rêntɛni	
1s>2D	rênsu	rêntɛnsu	
1s>2P	rênnu	rêntɛnnu	

Table 44: Transitive verb *lemt* 'coax'

	non-past	past	imperative
1s>3s	lemdu	lêmtʌ	
1s>3D	lemdusu	lêmtʌsu	
1s>3P	lemdunu	lêmtʌnu	
1DI>3	lemi	lemiti	
1DE>3	lemu	lemutu	
1PI>3	lemki	lemtiki	
1PE>3	lemkʌ	lemtʌkʌ	
2s>3s	ʔilemdʉ	ʔilêmtɛ	lemde
2s>3D	ʔilêmsu	ʔilêmtɛsu	
2s>3P	ʔilêmnu	ʔilêmtɛnu	
2D>3	ʔilemi	ʔilemiti	lemije
2N>3	ʔilemni	ʔilemtɛnu	lemnuje
3s>3s	lemdʉ	lêmtɛ	
3>3(D)	lêmsu	lêmtɛsu	
3>3(P)	lêmnu	lêmtɛnu	
2/3s>1s	ʔilemŋʌ	ʔilemʌtʌ	lemʌje
2/3D>1s	ʔilemŋʌsu	ʔilemʌtʌsu	lemʌsuje
2/3P>1s	ʔilemŋʌnu	ʔilemʌtʌnu	lemʌnuje
2/3>1DI	ʔilemi	ʔilemiti	
2/3>1DE	ʔilemu	ʔilemutu	lemuje
2/3>1PI	ʔilemki	ʔilemtiki	
2/3>1PE	ʔilemkʌ	ʔilemtʌkʌ	lemkʌje
3,1D/PE>2s	ʔilem	ʔilêmtɛ	
3,1D/PE>2D	ʔilemi	ʔilemiti	
3,1D/PE>2P	ʔilemni	ʔilemtɛnu	
1s>2s	lemnɛ	lemtɛni	
1s>2D	lêmsu	lemtɛnsu	
1s>2P	lêmnu	lemtɛnnu	

Table 45: Transitive verb *tshent* 'recognize'

	non-past	past	imperative
1s>3s	tshendu	tshêntʌ	
1s>3D	tshendusu	tshêntʌsu	
1s>3P	tshendunu	tshêntʌnu	
1DI>3	tshē:tsi	tshē:sti	
1DE>3	tshē:tsu	tshē:stu	
1PI>3	tshejki	tshejtiki	
1PE>3	tshejkʌ	tshejtʌkʌ	
2s>3s	ʔitshendʉ	ʔitshêntɛ	tshende
2s>3D	ʔitshênsu	ʔitshêntɛsu	
2s>3P	ʔitshênnu	ʔitshêntɛnu	
2D>3	ʔitshē:tsi	ʔitshē:sti	tshē:tsije
2N>3	ʔitshejni	ʔitshē:stɛnu	tshē:snuje
3s>3s	tshendʉ	tshêntɛ	
3>3(D)	tshênsu	tshêntɛsu	
3>3(P)	tshênnu	tshêntɛnu	
2/3s>1s	ʔitshejŋʌ	ʔitshē:stʌ	tshē:tsʌje
2/3D>1s	ʔitshejŋʌsu	ʔitshē:stʌsu	tshē:tsʌsuje
2/3P>1s	ʔitshejŋʌnu	ʔitshē:stʌnu	tshē:tsʌnuje
2/3>1DI	ʔitshē:tsi	ʔitshē:sti	
2/3>1DE	ʔitshē:tsu	ʔitshē:stu	tshē:tsuje
2/3>1PI	ʔitshejki	ʔitshejtiki	
2/3>1PE	ʔitshejkʌ	ʔitshejtʌkʌ	tshejkʌje
3,1D/PE>2s	ʔitshej	ʔitshē:stɛ	
3,1D/PE>2D	ʔitshē:tsi	ʔitshē:sti	
3,1D/PE>2P	ʔitshejni	ʔitshē:stɛnu	
1s>2s	tshejnɛ	tshejtɛni	
1s>2D	tshêjsu	tshejtɛnsu	
1s>2P	tshêjnu	tshejtɛnnu	

Table 46: Transitive verb *reŋt* 'cause trouble'

	non-past	past	imperative
1s>3s	rendu	rêntʌ	
1s>3D	rendusu	rêntʌsu	
1s>3P	rendunu	rêntʌnu	
1DI>3	reŋi	reŋiti	
1DE>3	reŋu	reŋutu	
1PI>3	reŋki	reŋtiki	
1PE>3	reŋkʌ	reŋtʌkʌ	
2s>3s	ʔirendʉ	ʔirêntɛ	rende
2s>3D	ʔirênsu	ʔirêntɛsu	
2s>3P	ʔirênnu	ʔirêntɛnu	
2D>3	ʔireŋi	ʔireŋiti	reŋije
2N>3	ʔirē:ni	ʔireŋtɛnu	reŋnuje
3s>3s	rendʉ	rêntɛ	
3>3(D)	rênsu	rêntɛsu	
3>3(P)	rênnu	rêntɛnu	
2/3s>1s	ʔirē:ŋʌ	ʔireŋʌtʌ	reŋʌje
2/3D>1s	ʔirē:ŋʌsu	ʔireŋʌtʌsu	reŋʌsuje
2/3P>1s	ʔirē:ŋʌnu	ʔireŋʌtʌnu	reŋʌnuje
2/3>1DI	ʔireŋi	ʔireŋiti	
2/3>1DE	ʔireŋu	ʔireŋutu	reŋuje
2/3>1PI	ʔireŋki	ʔireŋtiki	
2/3>1PE	ʔireŋkʌ	ʔireŋtʌkʌ	reŋkʌje
3,1D/PE>2s	ʔireŋ	ʔirêntɛ	
3,1D/PE>2D	ʔireŋi	ʔireŋiti	
3,1D/PE>2P	ʔirē:ni	ʔireŋtɛnu	
1s>2s	rē:nɛ	rentɛni	
1s>2D	rênsu	rentɛnsu	
1s>2P	rênnu	rentɛnnu	

Table 47: Transitive verb *dhert* 'suit'

	non-past	past	imperative
1s>3s	dherdu	dhêrtʌ	
1s>3D	dherdusu	dhêrtʌsu	
1s>3P	dherdunu	dhêrtʌnu	
1DI>3	dheri	dheriti	
1DE>3	dheru	dherutu	
1PI>3	dherki	dhertiki	
1PE>3	dherkʌ	dhertʌkʌ	
2s>3s	ʔidherdʉ	ʔidhêrtɛ	dherde
2s>3D	ʔidhêrsu	ʔidhêrtɛsu	
2s>3P	ʔidhêrnu	ʔidhêrtɛnu	
2D>3	ʔidheri	ʔidheriti	dherije
2N>3	ʔidherni	ʔidhertɛnu	dhernuje
3s>3s	dherdʉ	dhêrtɛ	
3>3(D)	dhêrsu	dhêrtɛsu	
3>3(P)	dhêrnu	dhêrtɛnu	
2/3s>1s	ʔidherŋʌ	ʔidherʌtʌ	dherʌje
2/3D>1s	ʔidherŋʌsu	ʔidherʌtʌsu	dherʌsuje
2/3P>1s	ʔidherŋʌnu	ʔidherʌtʌnu	dherʌnuje
2/3>1DI	ʔidheri	ʔidheriti	
2/3>1DE	ʔidheru	ʔidherutu	dheruje
2/3>1PI	ʔidherki	ʔidhertiki	
2/3>1PE	ʔidherkʌ	ʔidhertʌkʌ	dherkʌje
3,1D/PE>2s	ʔidher	ʔidhêrtɛ	
3,1D/PE>2D	ʔidheri	ʔidheriti	
3,1D/PE>2P	ʔidherni	ʔidhertɛnu	
1s>2s	dhernɛ	dherteni	
1s>2D	dhêrsu	dhertɛnsu	
1s>2P	dhêrnu	dhertɛnnu	

Table 48: Detransitive verb *tshelt* 'be clear'

	non-past	past
3s	tsheldʉ	tshêltɛ

Table 49: Intransitive verb *pi* 'come (level)'

	non-past	past	imperative
1s	piŋʌ	piŋʌtʌ	
1DI	piji	pîiti	
1DE	piju	piîtu	
1PI	piki	piktiki	
1PE	pikʌ	piktʌkʌ	
2s	ʔipi	ʔipū:tɛ	pū:je
2D	ʔipiji	ʔipîiti	pîije
2N	ʔipini	ʔiputnu	pûnje
3s	pi	pū:tɛ	
3D	piji	pîiti	
3N	pinu	putnu	

Table 50: Intransitive verb *dzhip*
'get spoiled (pumpkin)'

	non-past	past
3s	dzhʌp	dzhiptɛ

Table 51: Intransitive verb *dzhit* 'get wet'

	non-past	past	imperative
1s	dzhâjŋʌ	dzhistʌ	
1DI	dzhitsi	dzhisti	
1DE	dzhitsu	dzhistu	
1PI	dzhʌçki	dzhʌçtiki	
1PE	dzhʌçkʌ	dzhʌçtʌkʌ	
2s	ʔidzhâj	ʔidzhistɛ	dzhitstse
2D	ʔidzhitsi	ʔidzhisti	dzhitsije
2N	ʔidzhânni	ʔidzhistɛnu	dzhisnuje
3s	dzhâj	dzhistɛ	
3D	dzhitsi	dzhisti	
3N	dzhânnu	dzhistɛnu	

Table 52: Intransitive verb *ghik* 'be entangled'

	non-past	past
3s	ghû:	ghiktɛ

Table 53: Intransitive verb *lim* 'sprout'

	non-past	past
3s	lʌm	lîmtɛ

Table 54: Intransitive verb *ŋin* 'be afraid'

	non-past	past	imperative
1S	ŋʌjŋʌ	ŋĩːstʌ	
1DI	ŋĩːtsi	ŋĩːsti	
1DE	ŋĩːtsu	ŋĩːstu	
1PI	ŋʌjki	ŋʌjtiki	
1PE	ŋʌjkʌ	ŋʌjtʌkʌ	
2S	ʔiŋʌj	ʔiŋĩːstɛ	ŋĩːtse
2D	ʔiŋĩːtsi	ʔiŋĩːsti	ŋĩːtsije
2N	ʔiŋʌjni	ʔiŋĩːstɛnu	ŋĩːsnuje
3S	ŋʌj	ŋĩːstɛ	
3D	ŋĩːtsi	ŋĩːsti	
3N	ŋʌjnu	ŋĩːstɛnu	

Table 55: Intransitive verb *biŋ* 'look nice'

	non-past	past	imperative
1S	būːŋʌ	biŋʌtʌ	
1DI	biŋi	biŋiti	
1DE	biŋu	biŋutu	
1PI	bʌŋki	bʌŋtiki	
1PE	bʌŋkʌ	bʌŋtʌkʌ	
2S	ʔibʌŋ	ʔibîŋtɛ	bîŋje
2D	ʔibiŋi	ʔibiŋiti	biŋije
2N	ʔibūːni	ʔibiŋtɛnu	biŋnuje
3S	bʌŋ	bîŋtɛ	
3D	biŋi	biŋiti	
3N	būːnu	biŋtɛnu	

Table 56: Transitive verb *bi* 'give'

	non-past	past	imperative
1S	biŋʌ	bîŋtʌ	
1DI	biji	bîiti	
1DE	biju	bîitu	
1PI	biki	biktiki	
1PE	bikʌ	biktʌkʌ	
2S	ʔibi	ʔibitɛ	bije
2D	ʔibiji	ʔibîiti	bîije
2N	ʔibini	ʔibutnu	bûnje
3S	bi	bitɛ	
3D	bisu	bitsu	
3N	binu	bitnu	
2/3S>1S	ʔibiŋʌ	ʔibiŋʌtʌ	biŋʌje
2/3D>1S	ʔibiŋʌsu	ʔibiŋʌtʌsu	biŋʌsuje
2/3P>1S	ʔibiŋʌnu	ʔibiŋʌtʌnu	biŋʌnuje
2/3>1DI	ʔibiji	ʔibîiti	
2/3>1DE	ʔibiju	ʔibîitu	biije
2/3>1PI	ʔibiki	ʔibiktiki	
2/3>1PE	ʔibikʌ	ʔibiktʌkʌ	bikʌje
3,1D/PE>2S	ʔibi	ʔibūːtɛ	
3,1D/PE>2D	ʔibiji	ʔibîiti	
3,1D/PE>2P	ʔibini	ʔibutnu	
1S>2S	binɛ	bîntɛni	
1S>2D	bînsu	bîntɛnsu	
1S>2P	bînnu	bîntɛnnu	

Table 57: Transitive verb *khip* 'cook'

	non-past	past	imperative
1S>3S	khibu	khibutʌ	
1S>3D	khibusu	khibutʌsu	
1S>3P	khibunu	khibutʌnu	
1DI>3	khipi	khipiti	
1DE>3	khipu	khiputu	
1PI>3	khʌpki	khʌptiki	
1PE>3	khʌpkʌ	khʌptʌkʌ	
2S>3S	ʔikhĩːbʉ	ʔikhîːptɛ	khĩːbe
2S>3D	ʔikhîːpsu	ʔikhîːptɛsu	
2S>3P	ʔikhîːpnu	ʔikhîːptɛnu	
2D>3	ʔikhipi	ʔikhipiti	khipije
2N>3	ʔikhîmni	ʔikhiptɛnu	khipnuje
3S>3S	khĩːbʉ	khîːptɛ	
3>3(D)	khîːpsu	khîːptɛsu	
3>3(P)	khîːpnu	khîːptɛnu	

Table 58: Transitive verb *sit* 'give up; leave'

	non-past	past	imperative
1s>3s	sidu	sî:tʌ	
1s>3D	sidusu	sî:tʌsu	
1s>3P	sidunu	sî:tʌnu	
1DI>3	sitsi	sisti	
1DE>3	sitsu	sistu	
1PI>3	sʌçki	sʌçtiki	
1PE>3	sʌçkʌ	sʌçtʌkʌ	
2s>3s	ʔisî:dʉ	ʔisî:tɛ	sî:de
2s>3D	ʔisî:tsu	ʔisî:tɛsu	
2s>3P	ʔisî:tnu	ʔisî:tɛnu	
2D>3	ʔisitsi	ʔisisti	sitsije
2N>3	ʔisânni	ʔisistɛnu	sisnuje
3s>3s	sî:dʉ	sî:tɛ	
3>3(D)	sî:tsu	sî:tɛsu	
3>3(P)	sî:tnu	sî:tɛnu	
2/3s>1s	ʔisâjŋʌ	ʔisistʌ	sitsʌje
2/3D>1s	ʔisâjŋʌsu	ʔisistʌsu	sitsʌsuje
2/3P>1s	ʔisâjŋʌnu	ʔisistʌnu	sitsʌnuje
2/3>1DI	ʔisitsi	ʔisisti	
2/3>1DE	ʔisitsu	ʔisistu	sitsuje
2/3>1PI	ʔisʌçki	ʔisʌçtiki	
2/3>1PE	ʔisʌçkʌ	ʔisʌçtʌkʌ	sʌçkʌje
3,1D/PE>2s	ʔisâj	ʔisistɛ	
3,1D/PE>2D	ʔisitsi	ʔisisti	
3,1D/PE>2P	ʔisânni	ʔisistɛnu	
1s>2s	sânnɛ	sântɛni	
1s>2D	sânsu	sântɛnsu	
1s>2P	sânnu	sântɛnnu	

Table 59: Transitive verb *kik* 'tie'

	non-past	past	imperative
1s>3s	kigu	kigutʌ	
1s>3D	kigusu	kigutʌsu	
1s>3P	kigunu	kigutʌnu	
1DI>3	kiki	kikiti	
1DE>3	kiku	kikutu	
1PI>3	kʌkki	kʌktiki	
1PE>3	kʌkkʌ	kʌktʌkʌ	
2s>3s	ʔikî:gʉ	ʔikî:ktɛ	kî:ge
2s>3D	ʔikî:ksu	ʔikî:ktɛsu	
2s>3P	ʔikî:knu	ʔikî:ktɛnu	
2D>3	ʔikiki	ʔikikiti	kikije
2N>3	ʔikû:ni	ʔikiktɛnu	kiknuje
3s>3s	kî:gʉ	kî:ktɛ	
3>3(D)	kî:ksu	kî:ktɛsu	
3>3(P)	kî:knu	kî:ktɛnu	

Table 60: Transitive verb *tshim*
'push to the other side'

	non-past	past	imperative
1s>3s	tshimu	tshimutʌ	
1s>3d	tshimusu	tshimutʌsu	
1s>3p	tshimunu	tshimutʌnu	
1di>3	tshimi	tshimiti	
1de>3	tshimu	tshimutu	
1pi>3	tshʌmki	tshʌmtiki	
1pe>3	tshʌmkʌ	tshʌmtʌkʌ	
2s>3s	ʔitshĩːmʉ	ʔitshîmtɛ	tshĩːme
2s>3d	ʔitshîmsu	ʔitshîmtesu	
2s>3p	ʔitshîmnu	ʔitshîmtenu	
2d>3	ʔitshimi	ʔitshimiti	tshimije
2n>3	ʔitshʌmni	ʔitshimtenu	tshimnuje
3s>3s	tshĩːmʉ	tshîmtɛ	
3>3(d)	tshîmsu	tshîmtesu	
3>3(p)	tshîmnu	tshîmtenu	
2/3s>1s	ʔitshʌmŋʌ	ʔitshimʌtʌ	tshimʌje
2/3d>1s	ʔitshʌmŋʌsu	ʔitshimʌtʌsu	tshimʌsuje
2/3p>1s	ʔitshʌmŋʌnu	ʔitshimʌtʌnu	tshimʌnuje
2/3>1di	ʔitshimi	ʔitshimiti	
2/3>1de	ʔitshimu	ʔitshimutu	tshimuje
2/3>1pi	ʔitshʌmki	ʔitshʌmtiki	
2/3>1pe	ʔitshʌmkʌ	ʔitshʌmtʌkʌ	tshʌmkʌje
3,1d/pe>2s	ʔitshʌm	ʔitshîmtɛ	
3,1d/pe>2d	ʔitshimi	ʔitshimiti	
3,1d/pe>2p	ʔitshʌmni	ʔitshimtenu	
1s>2s	tshʌmnɛ	tshʌmteni	
1s>2d	tshʌ̂msu	tshʌmtensu	
1s>2p	tshʌ̂mnu	tshʌmtennu	

Table 61: Transitive verb *siŋ* 'ask'

	non-past	past	imperative
1s>3s	siŋu	siŋutʌ	
1s>3d	siŋusu	siŋutʌsu	
1s>3p	siŋunu	siŋutʌnu	
1di>3	siŋi	siŋiti	
1de>3	siŋu	siŋutu	
1pi>3	sʌŋki	sʌŋtiki	
1pe>3	sʌŋkʌ	sʌŋtʌkʌ	
2s>3s	ʔisĩːŋʉ	ʔisîŋtɛ	sĩːŋe
2s>3d	ʔisîŋsu	ʔisîŋtesu	
2s>3p	ʔisîŋnu	ʔisîŋtenu	
2d>3	ʔisiŋi	ʔisiŋiti	siŋije
2n>3	ʔisūːni	ʔisiŋtenu	siŋnuje
3s>3s	sĩːŋʉ	sîŋtɛ	
3>3(d)	sîŋsu	sîŋtesu	
3>3(p)	sîŋnu	sîŋtenu	
2/3s>1s	ʔisūːŋʌ	ʔisiŋʌtʌ	siŋʌje
2/3d>1s	ʔisūːŋʌsu	ʔisiŋʌtʌsu	siŋʌsuje
2/3p>1s	ʔisūːŋʌnu	ʔisiŋʌtʌnu	siŋʌnuje
2/3>1di	ʔisiŋi	ʔisiŋiti	
2/3>1de	ʔisiŋu	ʔisiŋutu	siŋuje
2/3>1pi	ʔisʌŋki	ʔisʌŋtiki	
2/3>1pe	ʔisʌŋkʌ	ʔisʌŋtʌkʌ	sʌŋkʌje
3,1d/pe>2s	ʔisʌŋ	ʔisîŋtɛ	
3,1d/pe>2d	ʔisiŋi	ʔisiŋiti	
3,1d/pe>2p	ʔisūːni	ʔisiŋtenu	
1s>2s	sūːnɛ	sʌnteni	
1s>2d	sʌ̂nsu	sʌntensu	
1s>2p	sʌ̂nnu	sʌntennu	

Table 62: Transitive verb *tsir* 'pile up bricks'

	non-past	past	imperative
1s>3s	tsiru	tsirutʌ	
1s>3d	tsirusu	tsirutʌsu	
1s>3p	tsirunu	tsirutʌnu	
1di>3	tsiri	tsiriti	
1de>3	tsiru	tsirutu	
1pi>3	tsʌrki	tsʌrtiki	
1pe>3	tsʌrkʌ	tsʌrtʌkʌ	
2s>3s	ʔitsĩːrʉ	ʔitsîrtɛ	tsĩːre
2s>3d	ʔitsîrsu	ʔitsîrtesu	
2s>3p	ʔitsîrnu	ʔitsîrtenu	
2d>3	ʔitsiri	ʔitsiriti	tsirije
2n>3	ʔitsʌrni	ʔitsirtenu	tsirnuje
3s>3s	tsĩːrʉ	tsîrtɛ	
3>3(d)	tsîrsu	tsîrtesu	
3>3(p)	tsîrnu	tsîrtenu	

Table 63: Transitive verb *ɦil* 'knead'

	non-past	past	imperative
1s>3s	ɦilu	ɦilutʌ	
1s>3d	ɦilusu	ɦilutʌsu	
1s>3p	ɦilunu	ɦilutʌnu	
1di>3	ɦili	ɦiliti	
1de>3	ɦilu	ɦilutu	
1pi>3	ɦʌlki	ɦʌltiki	
1pe>3	ɦʌlkʌ	ɦʌltʌkʌ	
2s>3s	ʔiɦĩːlʉ	ʔiɦîltɛ	ɦĩːle
2s>3d	ʔiɦîlsu	ʔiɦîltesu	
2s>3p	ʔiɦîlnu	ʔiɦîltenu	
2d>3	ʔiɦili	ʔiɦiliti	ɦilije
2n>3	ʔiɦʌlni	ʔiɦiltenu	ɦilnuje
3s>3s	ɦĩːlʉ	ɦîltɛ	
3>3(d)	ɦîlsu	ɦîltesu	
3>3(p)	ɦîlnu	ɦîltenu	

Table 64: Transitive verb *ʔipt* 'put to sleep'

	non-past	past	imperative
1s>3s	ʔʌptu	ʔʌptʌ	
1s>3d	ʔʌptusu	ʔʌptʌsu	
1s>3p	ʔʌptunu	ʔʌptʌnu	
1di>3	ʔipi	ʔipiti	
1de>3	ʔipu	ʔiputu	
1pi>3	ʔʌpki	ʔʌptiki	
1pe>3	ʔʌpkʌ	ʔʌptʌkʌ	
2s>3s	ʔiʔʌptʉ	ʔiʔʌptɛ	ʔʌpte
2s>3d	ʔiʔʌpsu	ʔiʔʌptesu	
2s>3p	ʔiʔʌpnu	ʔiʔʌptenu	
2d>3	ʔiʔipi	ʔiʔipiti	ʔipije
2n>3	ʔiʔʌmni	ʔiʔiptenu	ʔipnuje
3s>3s	ʔʌptʉ	ʔʌpte	
3>3(d)	ʔʌpsu	ʔʌptesu	
3>3(p)	ʔʌpnu	ʔʌptenu	
2/3s>1s	ʔiʔʌmŋʌ	ʔiʔipʌtʌ	ʔipʌje
2/3d>1s	ʔiʔʌmŋʌsu	ʔiʔipʌtʌsu	ʔipʌsuje
2/3p>1s	ʔiʔʌmŋʌnu	ʔiʔipʌtʌnu	ʔipʌnuje
2/3>1di	ʔiʔipi	ʔiʔipiti	
2/3>1de	ʔiʔipu	ʔiʔiputu	ʔipuje
2/3>1pi	ʔiʔʌpki	ʔiʔʌptiki	
2/3>1pe	ʔiʔʌpkʌ	ʔiʔʌptʌkʌ	ʔʌpkʌje
3,1d/pe>2s	ʔiʔʌp	ʔiʔiptɛ	
3,1d/pe>2d	ʔiʔipi	ʔiʔipiti	
3,1d/pe>2p	ʔiʔʌmni	ʔiʔiptenu	
1s>2s	ʔʌmnɛ	ʔʌmteni	
1s>2d	ʔʌmsu	ʔʌmtensu	
1s>2p	ʔʌmnu	ʔʌmtennu	

Table 65: Transitive verb *sitt* 'heal (shaman)'

	non-past	past	imperative
1s>3s	sʌttu	sʌttʌ	
1s>3D	sʌttusu	sʌttʌsu	
1s>3P	sʌttunu	sʌttʌnu	
1DI>3	sitsi	sisti	
1DE>3	sitsu	sistu	
1PI>3	sʌçki	sʌçtiki	
1PE>3	sʌçkʌ	sʌçtʌkʌ	
2s>3s	ʔisʌttɨ	ʔisʌttɛ	sʌtte
2s>3D	ʔisʌtsu	ʔisʌttɛsu	
2s>3P	ʔisʌtnu	ʔisʌttɛnu	
2D>3	ʔisitsi	ʔisisti	sitsije
2N>3	ʔisânni	ʔisistɛnu	sisnuje
3s>3s	sʌttɨ	sʌttɛ	
3>3(D)	sʌtsu	sʌttɛsu	
3>3(P)	sʌtnu	sʌttɛnu	
2/3s>1s	ʔisâjŋʌ	ʔisistʌ	sitsʌje
2/3D>1s	ʔisâjŋʌsu	ʔisistʌsu	sitsʌsuje
2/3P>1s	ʔisâjŋʌnu	ʔisistʌnu	sitsʌnuje
2/3>1DI	ʔisitsi	ʔisisti	
2/3>1DE	ʔisitsu	ʔisistu	sitsuje
2/3>1PI	ʔisʌçki	ʔisʌçtiki	
2/3>1PE	ʔisʌçkʌ	ʔisʌçtʌkʌ	sʌçkʌje
3,1D/PE>2s	ʔisâj	ʔisistɛ	
3,1D/PE>2D	ʔisitsi	ʔisisti	
3,1D/PE>2P	ʔisânni	ʔisistɛnu	
1s>2s	sânnɛ	sântɛni	
1s>2D	sânsu	sântɛnsu	
1s>2P	sânnu	sântɛnnu	

Table 66: Transitive verb *ghrikt* 'hold'

	non-past	past	imperative
1s>3s	ghrʌktu	ghrʌktʌ	
1s>3D	ghrʌktusu	ghrʌktʌsu	
1s>3P	ghrʌktunu	ghrʌktʌnu	
1DI>3	ghriki	ghrikiti	
1DE>3	ghriku	ghrikutu	
1PI>3	ghrʌkki	ghrʌktiki	
1PE>3	ghrʌkkʌ	ghrʌktʌkʌ	
2s>3s	ʔighrʌktɨ	ʔighrʌktɛ	ghrʌkte
2s>3D	ʔighrʌksu	ʔighrʌktɛsu	
2s>3P	ʔighrʌknu	ʔighrʌktɛnu	
2D>3	ʔighriki	ʔighrikiti	ghrikije
2N>3	ʔighrû:ni	ʔighrɪktɛnu	ghriknuje
3s>3s	ghrʌktɨ	ghrʌktɛ	
3>3(D)	ghrʌksu	ghrʌktɛsu	
3>3(P)	ghrʌknu	ghrʌktɛnu	
2/3s>1s	ʔighrû:ŋʌ	ʔighrikʌtʌ	ghrikʌje
2/3D>1s	ʔighrû:ŋʌsu	ʔighrikʌtʌsu	ghrikʌsuje
2/3P>1s	ʔighrû:ŋʌnu	ʔighrikʌtʌnu	ghrikʌnuje
2/3>1DI	ʔighriki	ʔighrikiti	
2/3>1DE	ʔighriku	ʔighrikutu	ghrikuje
2/3>1PI	ʔighrʌkki	ʔighrʌktiki	
2/3>1PE	ʔighrʌkkʌ	ʔighrʌktʌkʌ	ghrʌkkʌje
3,1D/PE>2s	ʔighrû:	ʔighriktɛ	
3,1D/PE>2D	ʔighriki	ʔighrikiti	
3,1D/PE>2P	ʔighrû:ni	ʔighriktɛnu	
1s>2s	ghrû:nɛ	ghrântɛni	
1s>2D	ghrânsu	ghrântɛnsu	
1s>2P	ghrânnu	ghrântɛnnu	

Table 67: Transitive verb *mimt* 'think'

	non-past	past	imperative
1s>3s	mʌmdu	mâmtʌ	
1s>3D	mʌmdusu	mâmtʌsu	
1s>3P	mʌmdunu	mâmtʌnu	
1DI>3	mimi	mimiti	
1DE>3	mimu	mimutu	
1PI>3	mʌmki	mʌmtiki	
1PE>3	mʌmkʌ	mʌmtʌkʌ	
2s>3s	ʔimʌmdʉ	ʔimâmtɛ	mʌmde
2s>3D	ʔimâmsu	ʔimâmtɛsu	
2s>3P	ʔimâmnu	ʔimâmtɛnu	
2D>3	ʔimimi	ʔimimiti	mimije
2N>3	ʔimʌmni	ʔimimtɛnu	mimnuje
3s>3s	mʌmdʉ	mâmtɛ	
3>3(D)	mâmsu	mâmtɛsu	
3>3(P)	mâmnu	mâmtɛnu	
2/3s>1s	ʔimʌmŋʌ	ʔimimʌtʌ	mimʌje
2/3D>1s	ʔimʌmŋʌsu	ʔimimʌtʌsu	mimʌsuje
2/3P>1s	ʔimʌmŋʌnu	ʔimimʌtʌnu	mimʌnuje
2/3>1DI	ʔimimi	ʔimimiti	
2/3>1DE	ʔimimu	ʔimimutu	mimuje
2/3>1PI	ʔimʌmki	ʔimʌmtiki	
2/3>1PE	ʔimʌmkʌ	ʔimʌmtʌkʌ	mʌmkʌje
3,1D/PE>2s	ʔimʌm	ʔimîmtɛ	
3,1D/PE>2D	ʔimimi	ʔimimiti	
3,1D/PE>2P	ʔimʌmni	ʔimimtɛnu	
1s>2s	mʌmnɛ	mʌmtɛni	
1s>2D	mâmsu	mʌmtɛnsu	
1s>2P	mâmnu	mʌmtɛnnu	

Table 68: Transitive verb *ŋint* 'be afraid of'

	non-past	past	imperative
1s>3s	ŋʌndu	ŋântʌ	
1s>3D	ŋʌndusu	ŋântʌsu	
1s>3P	ŋʌndunu	ŋântʌnu	
1DI>3	ŋīːtsi	ŋīːsti	
1DE>3	ŋīːtsu	ŋīːstu	
1PI>3	ŋʌjki	ŋʌjtiki	
1PE>3	ŋʌjkʌ	ŋʌjtʌkʌ	
2s>3s	ʔiŋʌndʉ	ʔiŋântɛ	ŋʌnde
2s>3D	ʔiŋânsu	ʔiŋântɛsu	
2s>3P	ʔiŋânnu	ʔiŋântɛnu	
2D>3	ʔiŋīːtsi	ʔiŋīːsti	ŋīːtsije
2N>3	ʔiŋʌjni	ʔiŋīːstɛnu	ŋīːsnuje
3s>3s	ŋʌndʉ	ŋântɛ	
3>3(D)	ŋânsu	ŋântɛsu	
3>3(P)	ŋânnu	ŋântɛnu	
2/3s>1s	ʔiŋʌjŋʌ	ʔiŋīːstʌ	ŋīːtsʌje
2/3D>1s	ʔiŋʌjŋʌsu	ʔiŋīːstʌsu	ŋīːtsʌsuje
2/3P>1s	ʔiŋʌjŋʌnu	ʔiŋīːstʌnu	ŋīːtsʌnuje
2/3>1DI	ʔiŋīːtsi	ʔiŋīːsti	
2/3>1DE	ʔiŋīːtsu	ʔiŋīːstu	ŋīːtsuje
2/3>1PI	ʔiŋʌjki	ʔiŋʌjtiki	
2/3>1PE	ʔiŋʌjkʌ	ʔiŋʌjtʌkʌ	ŋʌjkʌje
3,1D/PE>2s	ʔiŋʌj	ʔiŋīːstɛ	
3,1D/PE>2D	ʔiŋīːtsi	ʔiŋīːsti	
3,1D/PE>2P	ʔiŋʌjni	ʔiŋīːstɛnu	
1s>2s	ŋʌjnɛ	ŋʌjtɛni	
1s>2D	ŋâjsu	ŋʌjtɛnsu	
1s>2P	ŋâjnu	ŋʌjtɛnnu	

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

	non-past	past	imperative
1S>3S	tshʌldu	tshʌ̂ltʌ	
1S>3D	tshʌldusu	tshʌ̂ltʌsu	
1S>3P	tshʌldunu	tshʌ̂ltʌnu	
1DI>3	tshili	tshiliti	
1DE>3	tshilu	tshilutu	
1PI>3	tshʌlki	tshʌltiki	
1PE>3	tshʌlkʌ	tshʌltʌkʌ	
2S>3S	ʔitshʌldʉ	ʔitshʌ̂ltɛ	tshʌlde
2S>3D	ʔitshʌ̂lsu	ʔitshʌ̂ltɛsu	
2S>3P	ʔitshʌ̂lnu	ʔitshʌ̂ltɛnu	
2D>3	ʔitshili	ʔitshiliti	tshilije
2N>3	ʔitshʌlni	ʔitshiltɛnu	tshilnuje
3S>3S	tshʌldʉ	tshʌ̂ltɛ	
3>3(D)	tshʌ̂lsu	tshʌ̂ltɛsu	
3>3(P)	tshʌ̂lnu	tshʌ̂ltɛnu	
2/3S>1S	ʔitshʌlŋʌ	ʔitshilʌtʌ	tshilʌje
2/3D>1S	ʔitshʌlŋʌsu	ʔitshilʌtʌsu	tshilʌsuje
2/3P>1S	ʔitshʌlŋʌnu	ʔitshilʌtʌnu	tshilʌnuje
2/3>1DI	ʔitshili	ʔitshiliti	
2/3>1DE	ʔitshilu	ʔitshilutu	tshiluje
2/3>1PI	ʔitshʌlki	ʔitshʌltiki	
2/3>1PE	ʔitshʌlkʌ	ʔitshʌltʌkʌ	tshʌlkʌje
3,1D/PE>2S	ʔitshʌl	ʔitshiʌ̂ltɛ	
3,1D/PE>2D	ʔitshili	ʔitshiliti	
3,1D/PE>2P	ʔitshʌlni	ʔitshiltɛnu	
1S>2S	tshʌlnɛ	tshʌltɛni	
1S>2D	tshʌ̂lsu	tshʌltɛnsu	
1S>2P	tshʌ̂lnu	tshʌltɛnnu	

Table 70: Intransitive verb *ɦo* 'come'

	non-past	past	imperative
1S	ɦɵŋʌ	ɦɵŋʌtʌ	
1DI	ɦɵji	ɦɵ̂iti	
1DE	ɦɵju	ɦɵ̂itu	
1PI	ɦɵki	ɦɵktiki	
1PE	ɦɵkʌ	ɦɵktʌkʌ	
2S	ʔiɦɵ	ʔiɦɔ̃:tɛ	ɦɔ̃:je
2D	ʔiɦɵji	ʔiɦɵ̂iti	ɦɵ̂ije
2N	ʔiɦɵni	ʔiɦɵtnu	ɦɵ̂nje
3S	ɦɵ	ɦɔ̃:tɛ	
3D	ɦɵji	ɦɵ̂iti	
3N	ɦɵnu	ɦɵtnu	

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

	non-past	past	imperative
1S	soɵ̂mŋʌ	sɵpʌtʌ	
1DI	sɵpi	sɵpiti	
1DE	sɵpu	sɵputu	
1PI	soɔpki	soɔptiki	
1PE	soɔpkʌ	soɔptʌkʌ	
2S	ʔisoɔp	ʔisɵptɛ	sɵpje
2D	ʔisɵpi	ʔisɵpiti	sɵpije
2N	ʔisoɵ̂mni	ʔisɵptɛnu	sɵpnuje
3S	soɔp	sɵptɛ	
3D	sɵpi	sɵpiti	
3N	soɵ̂mnu	sɵptɛnu	

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

	non-past	past	imperative
1S	joɵ̂jŋʌ	jɵstʌ	
1DI	jɵtsi	jɵsti	
1DE	jɵtsu	jɵstu	
1PI	joɔçki	joɔçtiki	
1PE	joɔçkʌ	joɔçtʌkʌ	
2S	ʔijoɵ̂j	ʔijɵstɛ	jɵtstse
2D	ʔijɵtsi	ʔijɵsti	jɵtsije
2N	ʔijoɵ̂nni	ʔijɵstɛnu	jɵsnuje
3S	joɵ̂j	jɵstɛ	
3D	jɵtsi	jɵsti	
3N	joɵ̂nnu	jɵstɛnu	

Table 73: Intransitive verb *ʔok* 'crow'

	non-past	past
3S	ʔɵ̂:	ʔɵktɛ

Table 74: Intransitive verb *tshom* 'dance'

	non-past	past	imperative
1S	tshoɔmŋʌ	tshɵmʌtʌ	
1DI	tshɵmi	tshɵmiti	
1DE	tshɵmu	tshɵmutu	
1PI	tshoɔmki	tshoɔmtiki	
1PE	tshoɔmkʌ	tshoɔmtʌkʌ	
2S	ʔitshoɔm	ʔitshɵ̂mtɛ	tshɵ̂mje
2D	ʔitshɵmi	ʔitshɵmiti	tshɵmije
2N	ʔitshoɔmni	ʔitshɵmtɛnu	tshɵmnuje
3S	tshoɔm	tshɵ̂mtɛ	
3D	tshɵmi	tshɵmiti	
3N	tshoɔmnu	tshɵmtɛnu	

Table 77: Intransitive verb *bhor* 'grow'

	non-past	past	imperative
1S	bhoɔrŋʌ	bhɵrʌtʌ	
1DI	bhɵri	bhɵriti	
1DE	bhɵru	bhɵrutu	
1PI	bhoɔrki	bhoɔrtiki	
1PE	bhoɔrkʌ	bhoɔrtʌkʌ	
2S	ʔibhoɔr	ʔibhɵ̂rtɛ	bhɵ̂rje
2D	ʔibhɵri	ʔibhɵriti	bhɵrije
2N	ʔibhoɔrni	ʔibhɵrtɛnu	bhɵrnuje
3S	bhoɔr	bhɵ̂rtɛ	
3D	bhɵri	bhɵriti	
3N	bhoɔrnu	bhɵrtɛnu	

Table 75: Intransitive verb *tson* 'jump'

	non-past	past	imperative
1S	tsoɔjŋʌ	tsē:stʌ	
1DI	tsē:tsi	tsē:sti	
1DE	tsē:tsu	tsē:stu	
1PI	tsoɔjki	tsoɔjtiki	
1PE	tsoɔjkʌ	tsoɔjtʌkʌ	
2S	ʔitsoɔj	ʔitsē:stɛ	tsē:tse
2D	ʔitsē:tsi	ʔitsē:sti	tsē:tsije
2N	ʔitsoɔjni	ʔitsē:stɛnu	tsē:snuje
3S	tsoɔj	tsē:stɛ	
3D	tsē:tsi	tsē:sti	
3N	tsoɔjnu	tsē:stɛnu	

Table 78: Intransitive verb *ghol* 'grow in width'

	non-past	past
3S	ghoɔl	ghɵ̂ltɛ

Table 76: Intransitive verb *khoŋ* 'come'

	non-past	past	imperative
1S	khō:ŋʌ	khɵŋʌtʌ	
1DI	khɵŋi	khɵŋiti	
1DE	khɵŋu	khɵŋutu	
1PI	khoŋki	khoŋtiki	
1PE	khoŋkʌ	khoŋtʌkʌ	
2S	ʔikhoŋ	ʔikhɵ̂ŋtɛ	khɵ̂ŋje
2D	ʔikhɵŋi	ʔikhɵŋiti	khɵŋije
2N	ʔikhō:ni	ʔikhɵŋtɛnu	khɵŋnuje
3S	khoŋ	khɵ̂ŋtɛ	
3D	khɵŋi	khɵŋiti	
3N	khō:nu	khɵŋtɛnu	

Table 79: Transitive verb *phlo* 'help'

	non-past	past	imperative
1S	phlɵ̂ŋʌ	phlɵ̂ntʌ	
1DI	phlɵji	phlɵ̂iti	
1DE	phlɵju	phlɵ̂itu	
1PI	phlɵki	phlɵktiki	
1PE	phlɵkʌ	phlɵktʌkʌ	
2S	ʔiphlɵ	ʔiphlɵtɛ	phlɵje
2D	ʔiphlɵji	ʔiphlɵ̂iti	phlɵ̂ije
2N	ʔiphlɵni	ʔiphlotnu	phlɵ̂nje
3S	phlɵ	phlɵtɛ	
3D	phlɵsu	phlɵtsu	
3N	phlɵnu	phlɵtnu	
2/3S>1S	ʔiphlɵŋʌ	ʔiphlɵŋʌtʌ	phlɵŋʌje
2/3D>1S	ʔiphlɵŋʌsu	ʔiphlɵŋʌtʌsu	phlɵŋʌsuje
2/3P>1S	ʔiphlɵŋʌnu	ʔiphlɵŋʌtʌnu	phlɵŋʌnuje
2/3>1DI	ʔiphlɵji	ʔiphlɵ̂iti	
2/3>1DE	ʔiphlɵju	ʔiphlɵ̂itu	phlɵije
2/3>1PI	ʔiphlɵki	ʔiphlɵktiki	
2/3>1PE	ʔiphlɵkʌ	ʔiphlɵktʌkʌ	phlɵkʌje
3,1D/PE>2S	ʔiphlɵ	ʔiphlō:tɛ	
3,1D/PE>2D	ʔiphlɵji	ʔiphlɵ̂iti	
3,1D/PE>2P	ʔiphlɵni	ʔiphlotnu	
1S>2S	phlɵnɛ	phlɵ̂ntɛni	
1S>2D	phlɵ̂nsu	phlɵ̂ntɛnsu	
1S>2P	phlɵ̂nnu	phlɵ̂ntɛnnu	

Table 80: Transitive verb *ʔop* 'shoot'

	non-past	past	imperative
1s>3s	ʔobu	ʔobutʌ	
1s>3D	ʔobusu	ʔobutʌsu	
1s>3P	ʔobunu	ʔobutʌnu	
1DI>3	ʔɵpi	ʔɵpiti	
1DE>3	ʔɵpu	ʔɵputu	
1PI>3	ʔɔɔpki	ʔɔɔptiki	
1PE>3	ʔɔɔpkʌ	ʔɔɔptʌkʌ	
2s>3s	ʔiʔē:bʉ	ʔiʔê:ptɛ	ʔē:be
2s>3D	ʔiʔê:psu	ʔiʔê:ptɛsu	
2s>3P	ʔiʔê:pnu	ʔiʔê:ptɛnu	
2D>3	ʔiʔɵpi	ʔiʔɵpiti	ʔɵpije
2N>3	ʔiʔôɔmni	ʔiʔɵptɛnu	ʔɵpnuje
3s>3s	ʔē:bʉ	ʔê:ptɛ	
3>3(D)	ʔê:psu	ʔê:ptɛsu	
3>3(P)	ʔê:pnu	ʔê:ptɛnu	
2/3s>1s	ʔiʔôɔmŋʌ	ʔiʔɵpʌtʌ	ʔɵpʌje
2/3D>1s	ʔiʔôɔmŋʌsu	ʔiʔɵpʌtʌsu	ʔɵpʌsuje
2/3P>1s	ʔiʔôɔmŋʌnu	ʔiʔɵpʌtʌnu	ʔɵpʌnuje
2/3>1DI	ʔiʔɵpi	ʔiʔɵpiti	
2/3>1DE	ʔiʔɵpu	ʔiʔɵputu	ʔɵpuje
2/3>1PI	ʔiʔɔɔpki	ʔiʔɔɔptiki	
2/3>1PE	ʔiʔɔɔpkʌ	ʔiʔɔɔptʌkʌ	ʔɔɔpkʌje
3,1D/PE>2s	ʔiʔɔɔp	ʔiʔɵptɛ	
3,1D/PE>2D	ʔiʔɵpi	ʔiʔɵpiti	
3,1D/PE>2P	ʔiʔôɔmni	ʔiʔɵptɛnu	
1s>2s	ʔôɔmnɛ	ʔôɔmtɛni	
1s>2D	ʔôɔmsu	ʔôɔmtɛnsu	
1s>2P	ʔôɔmnu	ʔôɔmtɛnnu	

Table 81: Transitive verb *rot* 'hit a target'

	non-past	past	imperative
1s>3s	rodu	rô:tʌ	
1s>3D	rodusu	rô:tʌsu	
1s>3P	rodunu	rô:tʌnu	
1DI>3	rɵtsi	rɵsti	
1DE>3	rɵtsu	rɵstu	
1PI>3	rɔɔçki	rɔɔçtiki	
1PE>3	rɔɔçkʌ	rɔɔçtʌkʌ	
2s>3s	ʔirē:dʉ	ʔirê:tɛ	rē:de
2s>3D	ʔirê:tsu	ʔirê:tɛsu	
2s>3P	ʔirê:tnu	ʔirê:tɛnu	
2D>3	ʔirɵtsi	ʔirɵsti	rɵtsije
2N>3	ʔiroônni	ʔirɵstɛnu	rɵsnuje
3s>3s	rē:dʉ	rô:tɛ	
3>3(D)	rô:tsu	rê:tɛsu	
3>3(P)	rô:tnu	rê:tɛnu	
2/3s>1s	ʔiroôjŋʌ	ʔirɵstʌ	rɵtsʌje
2/3D>1s	ʔiroôjŋʌsu	ʔirɵstʌsu	rɵtsʌsuje
2/3P>1s	ʔiroôjŋʌnu	ʔirɵstʌnu	rɵtsʌnuje
2/3>1DI	ʔirɵtsi	ʔirɵsti	
2/3>1DE	ʔirɵtsu	ʔirɵstu	rɵtsuje
2/3>1PI	ʔirɔɔçki	ʔirɔɔçtiki	
2/3>1PE	ʔirɔɔçkʌ	ʔirɔɔçtʌkʌ	rɔɔçkʌje
3,1D/PE>2s	ʔiroôj	ʔirɵstɛ	
3,1D/PE>2D	ʔirɵtsi	ʔirɵsti	
3,1D/PE>2P	ʔiroônni	ʔirɵstɛnu	
1s>2s	roônnɛ	roôntɛni	
1s>2D	roônsu	roôntɛnsu	
1s>2P	roônnu	roôntɛnnu	

Table 82: Transitive verb *phrok* 'untie'

	non-past	past	imperative
1s>3s	phrogu	phrogutʌ	
1s>3D	phrogusu	phrogutʌsu	
1s>3P	phrogunu	phrogutʌnu	
1DI>3	phrɵki	phrɵkiti	
1DE>3	phrɵku	phrɵkutu	
1PI>3	phrokki	phroktiki	
1PE>3	phrokkʌ	phroktʌkʌ	
2s>3s	ʔiphrɛ̄:gɵ	ʔiphrɛ̂:ktɛ	phrɛ̄:ge
2s>3D	ʔiphrɛ̂:ksu	ʔiphrɛ̂:ktɛsu	
2s>3P	ʔiphrɛ̂:knu	ʔiphrɛ̂:ktɛnu	
2D>3	ʔiphrɵki	ʔiphrɵkiti	phrɵkije
2N>3	ʔiphrɵ̂:ni	ʔiphrɵktɛnu	phrɵknuje
3s>3s	phrɛ̄:gɵ	phrɛ̂:ktɛ	
3>3(D)	phrɛ̂:ksu	phrɛ̂:ktɛsu	
3>3(P)	phrɛ̂:knu	phrɛ̂:ktɛnu	
2/3s>1s	ʔiphrɵ̂:ŋʌ	ʔiphrɵkʌtʌ	phrɵkʌje
2/3D>1s	ʔiphrɵ̂:ŋʌsu	ʔiphrɵkʌtʌsu	phrɵkʌsuje
2/3P>1s	ʔiphrɵ̂:ŋʌnu	ʔiphrɵkʌtʌnu	phrɵkʌnuje
2/3>1DI	ʔiphrɵki	ʔiphrɵkiti	
2/3>1DE	ʔiphrɵku	ʔiphrɵkutu	phrɵkuje
2/3>1PI	ʔiphrokki	ʔiphroktiki	
2/3>1PE	ʔiphrokkʌ	ʔiphroktʌkʌ	phrokkʌje
3,1D/PE>2s	ʔiphrɵ̂:	ʔiphrɵktɛ	
3,1D/PE>2D	ʔiphrɵki	ʔiphrɵkiti	
3,1D/PE>2P	ʔiphrɵ̂:ni	ʔiphrɵktɛnu	
1s>2s	phrɵ̂:nɛ	phrɵ̂ntɛni	
1s>2D	phrɵ̂nsu	phrɵ̂ntɛnsu	
1s>2P	phrɵ̂nnu	phrɵ̂ntɛnnu	

Table 83: Transitive verb *lom* 'look for'

	non-past	past	imperative
1s>3s	lomu	lomutʌ	
1s>3D	lomusu	lomutʌsu	
1s>3P	lomunu	lomutʌnu	
1DI>3	lɵmi	lɵmiti	
1DE>3	lɵmu	lɵmutu	
1PI>3	loɔmki	loɔmtiki	
1PE>3	loɔmkʌ	loɔmtʌkʌ	
2s>3s	ʔilɛ̄:mɵ	ʔilɛ̂mtɛ	lɛ̄:me
2s>3D	ʔilɛ̂msu	ʔilɛ̂mtɛsu	
2s>3P	ʔilɛ̂mnu	ʔilɛ̂mtɛnu	
2D>3	ʔilɵmi	ʔilɵmiti	lɵmije
2N>3	ʔiloɔmni	ʔilɵmtɛnu	lɵmnuje
3s>3s	lɛ̄:mɵ	lɛ̂mtɛ	
3>3(D)	lɛ̂msu	lɛ̂mtɛsu	
3>3(P)	lɛ̂mnu	lɛ̂mtɛnu	
2/3s>1s	ʔiloɔmŋʌ	ʔilɵmʌtʌ	lɵmʌje
2/3D>1s	ʔiloɔmŋʌsu	ʔilɵmʌtʌsu	lɵmʌsuje
2/3P>1s	ʔiloɔmŋʌnu	ʔilɵmʌtʌnu	lɵmʌnuje
2/3>1DI	ʔilɵmi	ʔilɵmiti	
2/3>1DE	ʔilɵmu	ʔilɵmutu	lɵmuje
2/3>1PI	ʔiloɔmki	ʔiloɔmtiki	
2/3>1PE	ʔiloɔmkʌ	ʔiloɔmtʌkʌ	loɔmkʌje
3,1D/PE>2s	ʔiloɔm	ʔilɛ̂mtɛ	
3,1D/PE>2D	ʔilɵmi	ʔilɵmiti	
3,1D/PE>2P	ʔiloɔmni	ʔilɵmtɛnu	
1s>2s	loɔmnɛ	loɔmtɛni	
1s>2D	loɔ̂msu	loɔmtɛnsu	
1s>2P	loɔ̂mnu	loɔmtɛnnu	

Table 84: Transitive verb *tsoŋ* 'add'

	non-past	past	imperative
1s>3s	tsoŋu	tsoŋutʌ	
1s>3D	tsoŋusu	tsoŋutʌsu	
1s>3P	tsoŋunu	tsoŋutʌnu	
1DI>3	tseŋi	tseŋiti	
1DE>3	tseŋu	tseŋutu	
1PI>3	tsoŋki	tsoŋtiki	
1PE>3	tsoŋkʌ	tsoŋtʌkʌ	
2s>3s	ʔitsə̄ːŋʉ	ʔitsê̂ŋtɛ	tsə̄ːŋe
2s>3D	ʔitsê̂ŋsu	ʔitsê̂ŋtɛsu	
2s>3P	ʔitsê̂ŋnu	ʔitsê̂ŋtɛnu	
2D>3	ʔitsoŋi	ʔitsoŋiti	tsoŋije
2N>3	ʔitsō:ni	ʔitsoŋtɛnu	tsoŋnuje
3s>3s	tsə̄ːŋʉ	tsê̂ŋtɛ	
3>3(D)	tsê̂ŋsu	tsê̂ŋtɛsu	
3>3(P)	tsê̂ŋnu	tsê̂ŋtɛnu	

Table 85: Transitive verb *khor* 'fry'

	non-past	past	imperative
1s>3s	khoru	khorutʌ	
1s>3D	khorusu	khorutʌsu	
1s>3P	khorunu	khorutʌnu	
1DI>3	khəri	khəriti	
1DE>3	khəru	khərutu	
1PI>3	khoɔrki	khoɔrtiki	
1PE>3	khoɔrkʌ	khoɔrtʌkʌ	
2s>3s	ʔikhə̄ːrʉ	ʔikhê̂rtɛ	khə̄ːre
2s>3D	ʔikhê̂rsu	ʔikhê̂rtɛsu	
2s>3P	ʔikhê̂rnu	ʔikhê̂rtɛnu	
2D>3	ʔikhəri	ʔikhəriti	khərije
2N>3	ʔikhoɔrni	ʔikhərtɛnu	khərnuje
3s>3s	khə̄ːrʉ	khê̂rtɛ	
3>3(D)	khê̂rsu	khê̂rtɛsu	
3>3(P)	khê̂rnu	khê̂rtɛnu	

Table 86: Transitive verb *tol* 'push'

	non-past	past	imperative
1s>3s	tolu	tolutʌ	
1s>3D	tolusu	tolutʌsu	
1s>3P	tolunu	tolutʌnu	
1DI>3	təli	təliti	
1DE>3	təlu	təlutu	
1PI>3	toɔlki	toɔltiki	
1PE>3	toɔlkʌ	toɔltʌkʌ	
2s>3s	ʔitə̄ːlʉ	ʔitê̂ltɛ	tə̄ːle
2s>3D	ʔitê̂lsu	ʔitê̂ltɛsu	
2s>3P	ʔitê̂lnu	ʔitê̂ltɛnu	
2D>3	ʔitəli	ʔitəliti	təlije
2N>3	ʔitoɔlni	ʔitê̂ltɛnu	təlnuje
3s>3s	tə̄ːlʉ	tê̂ltɛ	
3>3(D)	tê̂lsu	tê̂ltɛsu	
3>3(P)	tê̂lnu	tê̂ltɛnu	
2/3s>1s	ʔitoɔlŋʌ	ʔitəlʌtʌ	təlʌje
2/3D>1s	ʔitoɔlŋʌsu	ʔitəlʌtʌsu	təlʌsuje
2/3P>1s	ʔitoɔlŋʌnu	ʔitəlʌtʌnu	təlʌnuje
2/3>1DI	ʔitəli	ʔitəliti	
2/3>1DE	ʔitəlu	ʔitəlutu	təluje
2/3>1PI	ʔitoɔlki	ʔitoɔltiki	
2/3>1PE	ʔitoɔlkʌ	ʔitoɔltʌkʌ	toɔlkʌje
3,1D/PE>2s	ʔitoɔl	ʔitê̂ltɛ	
3,1D/PE>2D	ʔitəli	ʔitəliti	
3,1D/PE>2P	ʔitoɔlni	ʔitəltɛnu	
1s>2s	toɔlnɛ	toɔltɛni	
1s>2D	toɔ̂lsu	toɔltɛnsu	
1s>2P	toɔ̂lnu	toɔltɛnnu	

Table 87: Transitive verb *sopt* 'beat'

	non-past	past	imperative
1s>3s	soɔptu	soɔptʌ	
1s>3D	soɔptusu	soɔptʌsu	
1s>3P	soɔptunu	soɔptʌnu	
1DI>3	søpi	søpiti	
1DE>3	søpu	søputu	
1PI>3	soɔpki	soɔptiki	
1PE>3	soɔpkʌ	soɔptʌkʌ	
2s>3s	ʔisoɔptʉ	ʔisoɔptɛ	soɔpte
2s>3D	ʔisoɔpsu	ʔisoɔptɛsu	
2s>3P	ʔisoɔpnu	ʔisoɔptɛnu	
2D>3	ʔisøpi	ʔisøpiti	søpije
2N>3	ʔisoɗmni	ʔisøptɛnu	søpnuje
3s>3s	soɔptʉ	soɔpte	
3>3(D)	soɔpsu	soɔptɛsu	
3>3(P)	soɔpnu	soɔptɛnu	
2/3s>1s	ʔisoɗmŋʌ	ʔisøpʌtʌ	søpʌje
2/3D>1s	ʔisoɗmŋʌsu	ʔisøpʌtʌsu	søpʌsuje
2/3P>1s	ʔisoɗmŋʌnu	ʔisøpʌtʌnu	søpʌnuje
2/3>1DI	ʔisøpi	ʔisøpiti	
2/3>1DE	ʔisøpu	ʔisøputu	søpuje
2/3>1PI	ʔisoɔpki	ʔisoɔptiki	
2/3>1PE	ʔisoɔpkʌ	ʔisoɔptʌkʌ	soɔpkʌje
3,1D/PE>2s	ʔisoɔp	ʔisøptɛ	
3,1D/PE>2D	ʔisøpi	ʔisøpiti	
3,1D/PE>2P	ʔisoɗmni	ʔisøptɛnu	
1s>2s	soɗmnɛ	soɗmtɛni	
1s>2D	soɗmsu	soɗmtɛnsu	
1s>2P	soɗmnu	soɗmtɛnnu	

Table 88: Transitive verb *bhrott* 'call'

	non-past	past	imperative
1s>3s	bhroɔttu	bhroɔttʌ	
1s>3D	bhroɔttusu	bhroɔttʌsu	
1s>3P	bhroɔttunu	bhroɔttʌnu	
1DI>3	bhrøtsi	bhrøsti	
1DE>3	bhrøtsu	bhrøstu	
1PI>3	bhroɔçki	bhroɔçtiki	
1PE>3	bhroɔçkʌ	bhroɔçtʌkʌ	
2s>3s	ʔibhroɔttʉ	ʔibhroɔttɛ	bhroɔtte
2s>3D	ʔibhroɔtsu	ʔibhroɔttɛsu	
2s>3P	ʔibhroɔtnu	ʔibhroɔttɛnu	
2D>3	ʔibhrøtsi	ʔibhrøsti	bhrøtsije
2N>3	ʔibhroɗnni	ʔibhrøstɛnu	bhrøsnuje
3s>3s	bhroɔttʉ	bhroɔtte	
3>3(D)	bhroɔtsu	bhroɔttɛsu	
3>3(P)	bhroɔtnu	bhroɔttɛnu	
2/3s>1s	ʔibhroɗjŋʌ	ʔibhrøstʌ	bhrøtsʌje
2/3D>1s	ʔibhroɗjŋʌsu	ʔibhrøstʌsu	bhrøtsʌsuje
2/3P>1s	ʔibhroɗjŋʌnu	ʔibhrøstʌnu	bhrøtsʌnuje
2/3>1DI	ʔibhrøtsi	ʔibhrøsti	
2/3>1DE	ʔibhrøtsu	ʔibhrøstu	bhrøtsuje
2/3>1PI	ʔibhroɔçki	ʔibhroɔçtiki	
2/3>1PE	ʔibhroɔçkʌ	ʔibhroɔçtʌkʌ	bhroɔçkʌje
3,1D/PE>2s	ʔibhroɗj	ʔibhrøstɛ	
3,1D/PE>2D	ʔibhrøtsi	ʔibhrøsti	
3,1D/PE>2P	ʔibhroɗnni	ʔibhrøstɛnu	
1s>2s	bhroɗnnɛ	bhroɗntɛni	
1s>2D	bhroɗnsu	bhroɗntɛnsu	
1s>2P	bhroɗnnu	bhroɗntɛnnu	

Table 89: Transitive verb *ɦokt* 'shout at'

	non-past	past	imperative
1s>3s	ɦoktu	ɦoktʌ	
1s>3D	ɦoktusu	ɦoktʌsu	
1s>3P	ɦoktunu	ɦoktʌnu	
1DI>3	ɦɵki	ɦɵkiti	
1DE>3	ɦɵku	ɦɵkutu	
1PI>3	ɦokki	ɦoktiki	
1PE>3	ɦokkʌ	ɦoktʌkʌ	
2s>3s	ʔiɦoktʉ	ʔiɦoktɛ	ɦokte
2s>3D	ʔiɦoksu	ʔiɦoktɛsu	
2s>3P	ʔiɦoknu	ʔiɦoktɛnu	
2D>3	ʔiɦɵki	ʔiɦɵkiti	ɦɵkije
2N>3	ʔiɦô:ni	ʔiɦoktɛnu	ɦɵknuje
3s>3s	ɦoktʉ	ɦoktɛ	
3>3(D)	ɦoksu	ɦoktɛsu	
3>3(P)	ɦoknu	ɦoktɛnu	
2/3s>1s	ʔiɦô:ŋʌ	ʔiɦɵkʌtʌ	ɦɵkʌje
2/3D>1s	ʔiɦô:ŋʌsu	ʔiɦɵkʌtʌsu	ɦɵkʌsuje
2/3P>1s	ʔiɦô:ŋʌnu	ʔiɦɵkʌtʌnu	ɦɵkʌnuje
2/3>1DI	ʔiɦɵki	ʔiɦɵkiti	
2/3>1DE	ʔiɦɵku	ʔiɦɵkutu	ɦɵkuje
2/3>1PI	ʔiɦokki	ʔiɦoktiki	
2/3>1PE	ʔiɦokkʌ	ʔiɦoktʌkʌ	ɦokkʌje
3,1D/PE>2s	ʔiɦô:	ʔiɦɵktɛ	
3,1D/PE>2D	ʔiɦɵki	ʔiɦɵkiti	
3,1D/PE>2P	ʔiɦô:ni	ʔiɦɵktɛnu	
1s>2s	ɦô:nɛ	ɦôntɛni	
1s>2D	ɦônsu	ɦôntɛnsu	
1s>2P	ɦônnu	ɦôntɛnnu	

Table 91: Transitive verb *bont* 'touch'

	non-past	past	imperative
1s>3s	boondu	boôntʌ	
1s>3D	boondusu	boôntʌsu	
1s>3P	boondunu	boôntʌnu	
1DI>3	bē:tsi	bē:sti	
1DE>3	bē:tsu	bē:stu	
1PI>3	boojki	boojtiki	
1PE>3	boojkʌ	boojtʌkʌ	
2s>3s	ʔiboondʉ	ʔiboôntɛ	boonde
2s>3D	ʔiboônsu	ʔiboôntɛsu	
2s>3P	ʔiboônnu	ʔiboôntɛnu	
2D>3	ʔibē:tsi	ʔibē:sti	bē:tsije
2N>3	ʔiboojni	ʔibē:stɛnu	bē:snuje
3s>3s	boondʉ	boôntɛ	
3>3(D)	boônsu	boôntɛsu	
3>3(P)	boônnu	boôntɛnu	
2/3s>1s	ʔiboojŋʌ	ʔibē:stʌ	bē:tsʌje
2/3D>1s	ʔiboojŋʌsu	ʔibē:stʌsu	bē:tsʌsuje
2/3P>1s	ʔiboojŋʌnu	ʔibē:stʌnu	bē:tsʌnuje
2/3>1DI	ʔibē:tsi	ʔibē:sti	
2/3>1DE	ʔibē:tsu	ʔibē:stu	bē:tsuje
2/3>1PI	ʔiboojki	ʔiboojtiki	
2/3>1PE	ʔiboojkʌ	ʔiboojtʌkʌ	boojkʌje
3,1D/PE>2s	ʔibooj	ʔibē:stɛ	
3,1D/PE>2D	ʔibē:tsi	ʔibē:sti	
3,1D/PE>2P	ʔiboojni	ʔibē:stɛnu	
1s>2s	boojnɛ	boojtɛni	
1s>2D	boôjsu	boojtɛnsu	
1s>2P	boôjnu	boojtɛnnu	

Table 90: Detransitive verb *ʔomt* 'ripen'

	non-past	past
3s	ʔoomdʉ	ʔoômtɛ

Table 92: Transitive verb *noŋt* 'accuse'

	non-past	past	imperative
1s>3s	nondu	nôntʌ	
1s>3D	nondusu	nôntʌsu	
1s>3P	nondunu	nôntʌnu	
1DI>3	neŋi	neŋiti	
1DE>3	neŋu	neŋutu	
1PI>3	noŋki	noŋtiki	
1PE>3	noŋkʌ	noŋtʌkʌ	
2s>3s	ʔinondʉ	ʔinônte	nonde
2s>3D	ʔinônsu	ʔinôntɛsu	
2s>3P	ʔinônnu	ʔinôntɛnu	
2D>3	ʔineŋi	ʔineŋiti	neŋije
2N>3	ʔinō:ni	ʔineŋtenu	neŋnuje
3s>3s	nondʉ	nônte	
3>3(D)	nônsu	nôntesu	
3>3(P)	nônnu	nôntenu	
2/3s>1s	ʔinō:ŋʌ	ʔineŋʌtʌ	neŋʌje
2/3D>1s	ʔinō:ŋʌsu	ʔineŋʌtʌsu	neŋʌsuje
2/3P>1s	ʔinō:ŋʌnu	ʔineŋʌtʌnu	neŋʌnuje
2/3>1DI	ʔineŋi	ʔineŋiti	
2/3>1DE	ʔineŋu	ʔineŋutu	neŋuje
2/3>1PI	ʔinoŋki	ʔinoŋtiki	
2/3>1PE	ʔinoŋkʌ	ʔinoŋtʌkʌ	noŋkʌje
3,1D/PE>2s	ʔinoŋ	ʔinôŋtɛ	
3,1D/PE>2D	ʔineŋi	ʔineŋiti	
3,1D/PE>2P	ʔinō:ni	ʔineŋtenu	
1s>2s	nō:nɛ	nontɛni	
1s>2D	nônsu	nontensu	
1s>2P	nônnu	nontɛnnu	

Table 93: Transitive verb *dhort* 'be useful for'

	non-past	past	imperative
1s>3s	dhoɔrdu	dhoɔ̂rtʌ	
1s>3D	dhoɔrdusu	dhoɔ̂rtʌsu	
1s>3P	dhoɔrdunu	dhoɔ̂rtʌnu	
1DI>3	dhɵri	dhɵriti	
1DE>3	dhɵru	dhɵrutu	
1PI>3	dhoɔrki	dhoɔrtiki	
1PE>3	dhoɔrkʌ	dhoɔrtʌkʌ	
2s>3s	ʔidhoɔrdʉ	ʔidhoɔ̂rte	dhoɔrde
2s>3D	ʔidhoɔ̂rsu	ʔidhoɔ̂rtɛsu	
2s>3P	ʔidhoɔ̂rnu	ʔidhoɔ̂rtɛnu	
2D>3	ʔidhɵri	ʔidhɵriti	dhɵrije
2N>3	ʔidhoɔrni	ʔidhɵrtɛnu	dhɵrnuje
3s>3s	dhoɔrdʉ	dhoɔ̂rte	
3>3(D)	dhoɔ̂rsu	dhoɔ̂rtesu	
3>3(P)	dhoɔ̂rnu	dhoɔ̂rtenu	
2/3s>1s	ʔidhoɔrŋʌ	ʔidhɵrʌtʌ	dhɵrʌje
2/3D>1s	ʔidhoɔrŋʌsu	ʔidhɵrʌtʌsu	dhɵrʌsuje
2/3P>1s	ʔidhoɔrŋʌnu	ʔidhɵrʌtʌnu	dhɵrʌnuje
2/3>1DI	ʔidhɵri	ʔidhɵriti	
2/3>1DE	ʔidhɵru	ʔidhɵrutu	dhɵruje
2/3>1PI	ʔidhoɔrki	ʔidhoɔrtiki	
2/3>1PE	ʔidhoɔrkʌ	ʔidhoɔrtʌkʌ	dhoɔrkʌje
3,1D/PE>2s	ʔidhoɔr	ʔidhɵ̂rte	
3,1D/PE>2D	ʔidhɵri	ʔidhɵriti	
3,1D/PE>2P	ʔidhoɔrni	ʔidhɵrtenu	
1s>2s	dhoɔrnɛ	dhoɔrtɛni	
1s>2D	dhoɔ̂rsu	dhoɔrtɛnsu	
1s>2P	dhoɔ̂rnu	dhoɔrtɛnnu	

Table 94: Transitive verb ***kolt*** 'chase'

	non-past	past	imperative
1S>3S	koɔldu	koɔ̂ltʌ	
1S>3D	koɔldusu	koɔ̂ltʌsu	
1S>3P	koɔldunu	koɔ̂ltʌnu	
1DI>3	kəli	kəliti	
1DE>3	kəlu	kəlutu	
1PI>3	koɔlki	koɔltiki	
1PE>3	koɔlkʌ	koɔltʌkʌ	
2S>3S	ʔikoɔldʉ	ʔikoɔ̂ltɛ	koɔlde
2S>3D	ʔikoɔ̂lsu	ʔikoɔ̂ltɛsu	
2S>3P	ʔikoɔ̂lnu	ʔikoɔ̂ltɛnu	
2D>3	ʔikəli	ʔikəliti	kəlije
2N>3	ʔikoɔlni	ʔikəltɛnu	kəlnuje
3S>3S	koɔldʉ	koɔ̂ltɛ	
3>3(D)	koɔ̂lsu	koɔ̂ltɛsu	
3>3(P)	koɔ̂lnu	koɔ̂ltɛnu	
2/3S>1S	ʔikoɔlŋʌ	ʔikəlʌtʌ	kəlʌje
2/3D>1S	ʔikoɔlŋʌsu	ʔikəlʌtʌsu	kəlʌsuje
2/3P>1S	ʔikoɔlŋʌnu	ʔikəlʌtʌnu	kəlʌnuje
2/3>1DI	ʔikəli	ʔikəliti	
2/3>1DE	ʔikəlu	ʔikəlutu	kəluje
2/3>1PI	ʔikoɔlki	ʔikoɔltiki	
2/3>1PE	ʔikoɔlkʌ	ʔikoɔltʌkʌ	koɔlkʌje
3,1D/PE>2S	ʔikoɔl	ʔikə̂ltɛ	
3,1D/PE>2D	ʔikəli	ʔikəliti	
3,1D/PE>2P	ʔikoɔlni	ʔikəltɛnu	
1S>2S	koɔlnɛ	koɔltɛni	
1S>2D	koɔ̂lsu	koɔltɛnsu	
1S>2P	koɔ̂lnu	koɔltɛnnu	

Table 95: Intransitive verb ***su*** 'itch'

	non-past	past	imperative
1S	sʉŋʌ	sʉŋʌtʌ	
1DI	sʉji	sʉ̂iti	
1DE	sʉju	sʉ̂itu	
1PI	sʉki	sʉktiki	
1PE	sʉkʌ	sʉktʌkʌ	
2S	ʔisʉ	ʔisū:tɛ	sū:je
2D	ʔisʉji	ʔisʉ̂iti	sʉ̂ije
2N	ʔisʉni	ʔisutnu	sûnje
3S	sʉ	sū:tɛ	
3D	sʉji	sʉ̂iti	
3N	sʉnu	sutnu	

Table 96: Intransitive verb ***ɦut*** 'burn'

	non-past	past
3S	ɦʌ̂j	ɦʉstɛ

Table 97: Intransitive verb ***dzhuk*** 'escape'

	non-past	past	imperative
1S	dzhû:ŋʌ	dzhʉkʌtʌ	
1DI	dzhʉki	dzhʉkiti	
1DE	dzhʉku	dzhʉkutu	
1PI	dzhukki	dzhuktiki	
1PE	dzhukkʌ	dzhuktʌkʌ	
2S	ʔidzhû:	ʔidzhʉktɛ	dzhʉkje
2D	ʔidzhʉki	ʔidzhʉkiti	dzhʉkije
2N	ʔidzhû:ni	ʔidzhʉktɛnu	dzhʉknuje
3S	dzhû:	dzhʉktɛ	
3D	dzhʉki	dzhʉkiti	
3N	dzhû:nu	dzhʉktɛnu	

Table 98: Intransitive verb ***ghrum*** 'be tired'

	non-past	past	imperative
1S	ghrʌmŋʌ	ghrʉmʌtʌ	
1DI	ghrʉmi	ghrʉmiti	
1DE	ghrʉmu	ghrʉmutu	
1PI	ghrʌmki	ghrʌmtiki	
1PE	ghrʌmkʌ	ghrʌmtʌkʌ	
2S	ʔighrʌm	ʔighrʉ̂mtɛ	ghrû̂mje
2D	ʔighrʉmi	ʔighrʉmiti	ghrʉmije
2N	ʔighrʌmni	ʔighrʉmtɛnu	ghrʉmnuje
3S	ghrʌm	ghrû̂mtɛ	
3D	ghrʉmi	ghrʉmiti	
3N	ghrʌmnu	ghrʉmtɛnu	

Table 99: Intransitive verb ***khun*** 'fall down'

	non-past	past	imperative
1s	khʌjŋʌ	khū̠:stʌ	
1DI	khū̠:tsi	khū̠:sti	
1DE	khū̠:tsu	khū̠:stu	
1PI	khʌjki	khʌjtiki	
1PE	khʌjkʌ	khʌjtʌkʌ	
2s	ʔikhʌj	ʔikhū̠:stɛ	khū̠:tse
2D	ʔikhū̠:tsi	ʔikhū̠:sti	khū̠:tsije
2N	ʔikhʌjni	ʔikhū̠:stɛnu	khū̠:snuje
3s	khʌj	khū̠:stɛ	
3D	khū̠:tsi	khū̠:sti	
3N	khʌjnu	khū̠:stɛnu	

Table 100: Intransitive verb ***ghur*** 'run'

	non-past	past	imperative
1s	ghʌrŋʌ	ghʉrʌtʌ	
1DI	ghʉri	ghʉriti	
1DE	ghʉru	ghʉrutu	
1PI	ghʌrki	ghʌrtiki	
1PE	ghʌrkʌ	ghʌrtʌkʌ	
2s	ʔighʌr	ʔighʉ̂rtɛ	ghʉ̂rje
2D	ʔighʉri	ʔighʉriti	ghʉrije
2N	ʔighʌrni	ʔighʉrtɛnu	ghʉrnuje
3s	ghʌr	ghʉ̂rtɛ	
3D	ghʉri	ghʉriti	
3N	ghʌrnu	ghʉrtɛnu	

Table 101: Transitive verb ***ʔu*** 'take care'

	non-past	past	imperative
1s	ʔʉŋʌ	ʔʉ̂ŋtʌ	
1DI	ʔʉji	ʔʉ̂iti	
1DE	ʔʉju	ʔʉ̂itu	
1PI	ʔʉki	ʔʉktiki	
1PE	ʔʉkʌ	ʔʉktʌkʌ	
2s	ʔiʔʉ	ʔiʔʉtɛ	ʔʉje
2D	ʔiʔʉji	ʔiʔʉ̂iti	ʔʉ̂ije
2N	ʔiʔʉni	ʔiʔʉtnu	ʔûnje
3s	ʔʉ	ʔʉtɛ	
3D	ʔʉsu	ʔʉtsu	
3N	ʔʉnu	ʔʉtnu	
2/3s>1s	ʔiʔʉŋʌ	ʔiʔʉŋʌtʌ	ʔʉŋʌje
2/3D>1s	ʔiʔʉŋʌsu	ʔiʔʉŋʌtʌsu	ʔʉŋʌsuje
2/3P>1s	ʔiʔʉŋʌnu	ʔiʔʉŋʌtʌnu	ʔʉŋʌnuje
2/3>1DI	ʔiʔʉji	ʔiʔʉ̂iti	
2/3>1DE	ʔiʔʉju	ʔiʔʉ̂itu	ʔʉije
2/3>1PI	ʔiʔʉki	ʔiʔʉktiki	
2/3>1PE	ʔiʔʉkʌ	ʔiʔʉktʌkʌ	ʔʉkʌje
3,1D/PE>2s	ʔiʔʉ	ʔiʔū:tɛ	
3,1D/PE>2D	ʔiʔʉji	ʔiʔʉ̂iti	
3,1D/PE>2P	ʔiʔʉni	ʔiʔʉtnu	
1s>2s	ʔʉnɛ	ʔʉ̂ntɛni	
1s>2D	ʔʉ̂nsu	ʔʉ̂ntɛnsu	
1s>2P	ʔʉ̂nnu	ʔʉ̂ntɛnnu	

Table 102: Transitive verb *gup* 'hide'

	non-past	past	imperative
1S>3S	gubu	gubutʌ	
1S>3D	gubusu	gubutʌsu	
1S>3P	gubunu	gubutʌnu	
1DI>3	gʉpi	gʉpiti	
1DE>3	gʉpu	gʉputu	
1PI>3	gʌpki	gʌptiki	
1PE>3	gʌpkʌ	gʌptʌkʌ	
2S>3S	ʔigʉ̂:bʉ	ʔigʉ̂:ptɛ	gʉ̄:be
2S>3D	ʔigʉ̂:psu	ʔigʉ̂:ptɛsu	
2S>3P	ʔigʉ̂:pnu	ʔigʉ̂:ptɛnu	
2D>3	ʔigʉpi	ʔigʉpiti	gʉpije
2N>3	ʔigʂmni	ʔigʉptɛnu	gʉpnuje
3S>3S	gʉ̄:bʉ	gʉ̂:ptɛ	
3>3(D)	gʉ̂:psu	gʉ̂:ptɛsu	
3>3(P)	gʉ̂:pnu	gʉ̂:ptɛnu	
2/3S>1S	ʔigʂmŋʌ	ʔigʉpʌtʌ	gʉpʌje
2/3D>1S	ʔigʂmŋʌsu	ʔigʉpʌtʌsu	gʉpʌsuje
2/3P>1S	ʔigʂmŋʌnu	ʔigʉpʌtʌnu	gʉpʌnuje
2/3>1DI	ʔigʉpi	ʔigʉpiti	
2/3>1DE	ʔigʉpu	ʔigʉputu	gʉpuje
2/3>1PI	ʔigʌpki	ʔigʌptiki	
2/3>1PE	ʔigʌpkʌ	ʔigʌptʌkʌ	gʌpkʌje
3,1D/PE>2S	ʔigʌp	ʔigʉptɛ	
3,1D/PE>2D	ʔigʉpi	ʔigʉpiti	
3,1D/PE>2P	ʔigʂmni	ʔigʉptɛnu	
1S>2S	gʂmnɛ	gʂmtɛni	
1S>2D	gʂmsu	gʂmtɛnsu	
1S>2P	gʂmnu	gʂmtɛnnu	

Table 103: Transitive verb *lut* 'tell'

	non-past	past	imperative
1S>3S	ludu	lû:tʌ	
1S>3D	ludusu	lû:tʌsu	
1S>3P	ludunu	lû:tʌnu	
1DI>3	lʉtsi	lʉsti	
1DE>3	lʉtsu	lʉstu	
1PI>3	lʌçki	lʌçtiki	
1PE>3	lʌçkʌ	lʌçtʌkʌ	
2S>3S	ʔilʉ̄:dʉ	ʔilʉ̂:tɛ	lʉ̄:de
2S>3D	ʔilʉ̂:tsu	ʔilʉ̂:tɛsu	
2S>3P	ʔilʉ̂:tnu	ʔilʉ̂:tɛnu	
2D>3	ʔilʉtsi	ʔilʉsti	lʉtsije
2N>3	ʔilʂnni	ʔilʉstɛnu	lʉsnuje
3S>3S	lʉ̄:dʉ	lʉ̂:tɛ	
3>3(D)	lʉ̂:tsu	lʉ̂:tɛsu	
3>3(P)	lʉ̂:tnu	lʉ̂:tɛnu	
2/3S>1S	ʔilʂjŋʌ	ʔilʉstʌ	lʉtsʌje
2/3D>1S	ʔilʂjŋʌsu	ʔilʉstʌsu	lʉtsʌsuje
2/3P>1S	ʔilʂjŋʌnu	ʔilʉstʌnu	lʉtsʌnuje
2/3>1DI	ʔilʉtsi	ʔilʉsti	
2/3>1DE	ʔilʉtsu	ʔilʉstu	lʉtsuje
2/3>1PI	ʔilʌçki	ʔilʌçtiki	
2/3>1PE	ʔilʌçkʌ	ʔilʌçtʌkʌ	lʌçkʌje
3,1D/PE>2S	ʔilʂj	ʔilʉstɛ	
3,1D/PE>2D	ʔilʉtsi	ʔilʉsti	
3,1D/PE>2P	ʔilʂnni	ʔilʉstɛnu	
1S>2S	lʂnnɛ	lʂntɛni	
1S>2D	lʂnsu	lʂntɛnsu	
1S>2P	lʂnnu	lʂntɛnnu	

Table 104: Transitive verb *phuk* 'wake up'

	non-past	past	imperative
1s>3s	phugu	phugutʌ	
1s>3d	phugusu	phugutʌsu	
1s>3p	phugunu	phugutʌnu	
1di>3	phʉki	phʉkiti	
1de>3	phʉku	phʉkutu	
1pi>3	phukki	phuktiki	
1pe>3	phukkʌ	phuktʌkʌ	
2s>3s	ʔiphʉ̄:gʉ	ʔiphʉ̂:ktɛ	phʉ̄:ge
2s>3d	ʔiphʉ̂:ksu	ʔiphʉ̂:ktɛsu	
2s>3p	ʔiphʉ̂:knu	ʔiphʉ̂:ktɛnu	
2d>3	ʔiphʉki	ʔiphʉkiti	phʉkije
2n>3	ʔiphû:ni	ʔiphʉktɛnu	phʉknuje
3s>3s	phʉ̄:gʉ	phʉ̂:ktɛ	
3>3(d)	phʉ̂:ksu	phʉ̂:ktɛsu	
3>3(p)	phʉ̂:knu	phʉ̂:ktɛnu	
2/3s>1s	ʔiphû:ŋʌ	ʔiphʉkʌtʌ	phʉkʌje
2/3d>1s	ʔiphû:ŋʌsu	ʔiphʉkʌtʌsu	phʉkʌsuje
2/3p>1s	ʔiphû:ŋʌnu	ʔiphʉkʌtʌnu	phʉkʌnuje
2/3>1di	ʔiphʉki	ʔiphʉkiti	
2/3>1de	ʔiphʉku	ʔiphʉkutu	phʉkuje
2/3>1pi	ʔiphukki	ʔiphuktiki	
2/3>1pe	ʔiphukkʌ	ʔiphuktʌkʌ	phukkʌje
3,1d/pe>2s	ʔiphû:	ʔiphʉktɛ	
3,1d/pe>2d	ʔiphʉki	ʔiphʉkiti	
3,1d/pe>2p	ʔiphû:ni	ʔiphʉktɛnu	
1s>2s	phû:nɛ	phûntɛni	
1s>2d	phûnsu	phûntɛnsu	
1s>2p	phûnnu	phûntɛnnu	

Table 105: Transitive verb *dum* 'meet'

	non-past	past	imperative
1s>3s	dumu	dumutʌ	
1s>3d	dumusu	dumutʌsu	
1s>3p	dumunu	dumutʌnu	
1di>3	dʉmi	dʉmiti	
1de>3	dʉmu	dʉmutu	
1pi>3	dʌmki	dʌmtiki	
1pe>3	dʌmkʌ	dʌmtʌkʌ	
2s>3s	ʔidʉ̄:mʉ	ʔidʉ̂mtɛ	dʉ̄:me
2s>3d	ʔidʉ̂msu	ʔidʉ̂mtɛsu	
2s>3p	ʔidʉ̂mnu	ʔidʉ̂mtɛnu	
2d>3	ʔidʉmi	ʔidʉmiti	dʉmije
2n>3	ʔidʌmni	ʔidʉmtɛnu	dʉmnuje
3s>3s	dʉ̄:mʉ	dʉ̂mtɛ	
3>3(d)	dʉ̂msu	dʉ̂mtɛsu	
3>3(p)	dʉ̂mnu	dʉ̂mtɛnu	
2/3s>1s	ʔidʌmŋʌ	ʔidʉmʌtʌ	dʉmʌje
2/3d>1s	ʔidʌmŋʌsu	ʔidʉmʌtʌsu	dʉmʌsuje
2/3p>1s	ʔidʌmŋʌnu	ʔidʉmʌtʌnu	dʉmʌnuje
2/3>1di	ʔidʉmi	ʔidʉmiti	
2/3>1de	ʔidʉmu	ʔidʉmutu	dʉmuje
2/3>1pi	ʔidʌmki	ʔidʌmtiki	
2/3>1pe	ʔidʌmkʌ	ʔidʌmtʌkʌ	dʌmkʌje
3,1d/pe>2s	ʔidʌm	ʔidʉ̂mtɛ	
3,1d/pe>2d	ʔidʉmi	ʔidʉmiti	
3,1d/pe>2p	ʔidʌmni	ʔidʉmtɛnu	
1s>2s	dʌmnɛ	dʌmtɛni	
1s>2d	dʌ̂msu	dʌmtɛnsu	
1s>2p	dʌ̂mnu	dʌmtɛnnu	

Table 106: Transitive verb *ɦuŋ* 'wait'

	non-past	past	imperative
1s>3s	ɦuŋu	ɦuŋutʌ	
1s>3D	ɦuŋusu	ɦuŋutʌsu	
1s>3P	ɦuŋunu	ɦuŋutʌnu	
1DI>3	ɦʉŋi	ɦʉŋiti	
1DE>3	ɦʉŋu	ɦʉŋutu	
1PI>3	ɦuŋki	ɦuŋtiki	
1PE>3	ɦuŋkʌ	ɦuŋtʌkʌ	
2s>3s	ʔiɦʉ̄:ŋʉ	ʔiɦʉ̂ŋtɛ	ɦʉ̄:ŋe
2s>3D	ʔiɦʉ̂ŋsu	ʔiɦʉ̂ŋtɛsu	
2s>3P	ʔiɦʉ̂ŋnu	ʔiɦʉ̂ŋtɛnu	
2D>3	ʔiɦʉŋi	ʔiɦʉŋiti	ɦʉŋije
2N>3	ʔiɦʉ̄:ni	ʔiɦʉŋtɛnu	ɦʉŋnuje
3s>3s	ɦʉ̄:ŋʉ	ɦʉ̂ŋtɛ	
3>3(D)	ɦʉ̂ŋsu	ɦʉ̂ŋtɛsu	
3>3(P)	ɦʉ̂ŋnu	ɦʉ̂ŋtɛnu	
2/3s>1s	ʔiɦʉ̄:ŋʌ	ʔiɦʉŋʌtʌ	ɦʉŋʌje
2/3D>1s	ʔiɦʉ̄:ŋʌsu	ʔiɦʉŋʌtʌsu	ɦʉŋʌsuje
2/3P>1s	ʔiɦʉ̄:ŋʌnu	ʔiɦʉŋʌtʌnu	ɦʉŋʌnuje
2/3>1DI	ʔiɦʉŋi	ʔiɦʉŋiti	
2/3>1DE	ʔiɦʉŋu	ʔiɦʉŋutu	ɦʉŋuje
2/3>1PI	ʔiɦuŋki	ʔiɦuŋtiki	
2/3>1PE	ʔiɦuŋkʌ	ʔiɦuŋtʌkʌ	ɦuŋkʌje
3,1D/PE>2s	ʔiɦuŋ	ʔiɦʉ̂ŋtɛ	
3,1D/PE>2D	ʔiɦʉŋi	ʔiɦʉŋiti	
3,1D/PE>2P	ʔiɦʉ̄:ni	ʔiɦʉŋtɛnu	
1s>2s	ɦʉ̄:nɛ	ɦuntɛni	
1s>2D	ɦʉ̂nsu	ɦuntɛnsu	
1s>2P	ɦʉ̂nnu	ɦuntɛnnu	

Table 107: Transitive verb *sur* 'wash'

	non-past	past	imperative
1s>3s	suru	surutʌ	
1s>3D	surusu	surutʌsu	
1s>3P	surunu	surutʌnu	
1DI>3	sʉri	sʉriti	
1DE>3	sʉru	sʉrutu	
1PI>3	sʌrki	sʌrtiki	
1PE>3	sʌrkʌ	sʌrtʌkʌ	
2s>3s	ʔisʉ̄:rʉ	ʔisʉ̂rtɛ	sʉ̄:re
2s>3D	ʔisʉ̂rsu	ʔisʉ̂rtɛsu	
2s>3P	ʔisʉ̂rnu	ʔisʉ̂rtɛnu	
2D>3	ʔisʉri	ʔisʉriti	sʉrije
2N>3	ʔisʌrni	ʔisʉrtɛnu	sʉrnuje
3s>3s	sʉ̄:rʉ	sʉ̂rtɛ	
3>3(D)	sʉ̂rsu	sʉ̂rtɛsu	
3>3(P)	sʉ̂rnu	sʉ̂rtɛnu	
2/3s>1s	ʔisʌrŋʌ	ʔisʉrʌtʌ	sʉrʌje
2/3D>1s	ʔisʌrŋʌsu	ʔisʉrʌtʌsu	sʉrʌsuje
2/3P>1s	ʔisʌrŋʌnu	ʔisʉrʌtʌnu	sʉrʌnuje
2/3>1DI	ʔisʉri	ʔisʉriti	
2/3>1DE	ʔisʉru	ʔisʉrutu	sʉruje
2/3>1PI	ʔisʌrki	ʔisʌrtiki	
2/3>1PE	ʔisʌrkʌ	ʔisʌrtʌkʌ	sʌrkʌje
3,1D/PE>2s	ʔisʌr	ʔisʉ̂rtɛ	
3,1D/PE>2D	ʔisʉri	ʔisʉriti	
3,1D/PE>2P	ʔisʌrni	ʔisʉrtɛnu	
1s>2s	sʌrnɛ	sʌrtɛni	
1s>2D	sʌ̂rsu	sʌrtɛnsu	
1s>2P	sʌ̂rnu	sʌrtɛnnu	

Table 108: Transitive verb *gul* 'cover'

	non-past	past	imperative
1s>3s	gulu	gulutʌ	
1s>3D	gulusu	gulutʌsu	
1s>3P	gulunu	gulutʌnu	
1DI>3	gʉli	gʉliti	
1DE>3	gʉlu	gʉlutu	
1PI>3	gʌlki	gʌltiki	
1PE>3	gʌlkʌ	gʌltʌkʌ	
2s>3s	ʔigꝢ̈:lʉ	ʔigʉ̂ltɛ	gꝢ̈:le
2s>3D	ʔigʉ̂lsu	ʔigʉ̂ltɛsu	
2s>3P	ʔigʉ̂lnu	ʔigʉ̂ltɛnu	
2D>3	ʔigʉli	ʔigʉliti	gʉlije
2N>3	ʔigʌlni	ʔigʉltɛnu	gʉlnuje
3s>3s	gꝢ̈:lʉ	gʉ̂ltɛ	
3>3(D)	gʉ̂lsu	gʉ̂ltɛsu	
3>3(P)	gʉ̂lnu	gʉ̂ltɛnu	
2/3s>1s	ʔigʌlŋʌ	ʔigʉlʌtʌ	gʉlʌje
2/3D>1s	ʔigʌlŋʌsu	ʔigʉlʌtʌsu	gʉlʌsuje
2/3P>1s	ʔigʌlŋʌnu	ʔigʉlʌtʌnu	gʉlʌnuje
2/3>1DI	ʔigʉli	ʔigʉliti	
2/3>1DE	ʔigʉlu	ʔigʉlutu	gʉluje
2/3>1PI	ʔigʌlki	ʔigʌltiki	
2/3>1PE	ʔigʌlkʌ	ʔigʌltʌkʌ	gʌlkʌje
3,1D/PE>2s	ʔigʌl	ʔigʉ̂ltɛ	
3,1D/PE>2D	ʔigʉli	ʔigʉliti	
3,1D/PE>2P	ʔigʌlni	ʔigʉltɛnu	
1s>2s	gʌlnɛ	gʌltɛni	
1s>2D	gʌ̂lsu	gʌltɛnsu	
1s>2P	gʌ̂lnu	gʌltɛnnu	

Table 109: Transitive verb *ɦutt* 'burn, reveal the culprit'

	non-past	past	imperative
1s>3s	ɦʌttu	ɦʌttʌ	
1s>3D	ɦʌttusu	ɦʌttʌsu	
1s>3P	ɦʌttunu	ɦʌttʌnu	
1DI>3	ɦʉtsi	ɦʉsti	
1DE>3	ɦʉtsu	ɦʉstu	
1PI>3	ɦʌçki	ɦʌçtiki	
1PE>3	ɦʌçkʌ	ɦʌçtʌkʌ	
2s>3s	ʔiɦʌttʉ	ʔiɦʌttɛ	ɦʌtte
2s>3D	ʔiɦʌtsu	ʔiɦʌttɛsu	
2s>3P	ʔiɦʌtnu	ʔiɦʌttɛnu	
2D>3	ʔiɦʉtsi	ʔiɦʉsti	ɦʉtsije
2N>3	ʔiɦʌ̂nni	ʔiɦʉstɛnu	ɦʉsnuje
3s>3s	ɦʌttʉ	ɦʌttɛ	
3>3(D)	ɦʌtsu	ɦʌttɛsu	
3>3(P)	ɦʌtnu	ɦʌttɛnu	
2/3s>1s	ʔiɦʌ̂jŋʌ	ʔiɦʉstʌ	ɦʉtsʌje
2/3D>1s	ʔiɦʌ̂jŋʌsu	ʔiɦʉstʌsu	ɦʉtsʌsuje
2/3P>1s	ʔiɦʌ̂jŋʌnu	ʔiɦʉstʌnu	ɦʉtsʌnuje
2/3>1DI	ʔiɦʉtsi	ʔiɦʉsti	
2/3>1DE	ʔiɦʉtsu	ʔiɦʉstu	ɦʉtsuje
2/3>1PI	ʔiɦʌçki	ʔiɦʌçtiki	
2/3>1PE	ʔiɦʌçkʌ	ʔiɦʌçtʌkʌ	ɦʌçkʌje
3,1D/PE>2s	ʔiɦʌ̂j	ʔiɦʉstɛ	
3,1D/PE>2D	ʔiɦʉtsi	ʔiɦʉsti	
3,1D/PE>2P	ʔiɦʌ̂nni	ʔiɦʉstɛnu	
1s>2s	ɦʌ̂nnɛ	ɦʌ̂ntɛni	
1s>2D	ɦʌ̂nsu	ɦʌ̂ntɛnsu	
1s>2P	ɦʌ̂nnu	ɦʌ̂ntɛnnu	

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

	non-past	past	imperative
1s>3s	kuktu	kuktʌ	
1s>3d	kuktusu	kuktʌsu	
1s>3p	kuktunu	kuktʌnu	
1di>3	kʉki	kʉkiti	
1de>3	kʉku	kʉkutu	
1pi>3	kukki	kuktiki	
1pe>3	kukkʌ	kuktʌkʌ	
2s>3s	ʔikuktʉ	ʔikuktɛ	kukte
2s>3d	ʔikuksu	ʔikuktɛsu	
2s>3p	ʔikuknu	ʔikuktɛnu	
2d>3	ʔikʉki	ʔikʉkiti	kʉkije
2n>3	ʔikû:ni	ʔikuktɛnu	kʉknuje
3s>3s	kuktʉ	kuktɛ	
3>3(d)	kuksu	kuktɛsu	
3>3(p)	kuknu	kuktɛnu	
2/3s>1s	ʔikû:ŋʌ	ʔikʉkʌtʌ	kʉkʌje
2/3d>1s	ʔikû:ŋʌsu	ʔikʉkʌtʌsu	kʉkʌsuje
2/3p>1s	ʔikû:ŋʌnu	ʔikʉkʌtʌnu	kʉkʌnuje
2/3>1di	ʔikʉki	ʔikʉkiti	
2/3>1de	ʔikʉku	ʔikʉkutu	kʉkuje
2/3>1pi	ʔikukki	ʔikuktiki	
2/3>1pe	ʔikukkʌ	ʔikuktʌkʌ	kukkʌje
3,1d/pe>2s	ʔikû:	ʔikʉktɛ	
3,1d/pe>2d	ʔikʉki	ʔikʉkiti	
3,1d/pe>2p	ʔikû:ni	ʔikʉktɛnu	
1s>2s	kû:nɛ	kûntɛni	
1s>2d	kûnsu	kûntɛnsu	
1s>2p	kûnnu	kûntɛnnu	

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

	non-past	past	imperative
1s>3s	tʌmdu	tâmtʌ	
1s>3d	tʌmdusu	tâmtʌsu	
1s>3p	tʌmdunu	tâmtʌnu	
1di>3	tʉmi	tʉmiti	
1de>3	tʉmu	tʉmutu	
1pi>3	tʌmki	tʌmtiki	
1pe>3	tʌmkʌ	tʌmtʌkʌ	
2s>3s	ʔitʌmdʉ	ʔitâmtɛ	tʌmde
2s>3d	ʔitâmsu	ʔitâmtɛsu	
2s>3p	ʔitâmnu	ʔitâmtɛnu	
2d>3	ʔitʉmi	ʔitʉmiti	tʉmije
2n>3	ʔitʌmni	ʔitʉmtɛnu	tʉmnuje
3s>3s	tʌmdʉ	tâmtɛ	
3>3(d)	tâmsu	tâmtɛsu	
3>3(p)	tâmnu	tâmtɛnu	
2/3s>1s	ʔitʌmŋʌ	ʔitʉmʌtʌ	tʉmʌje
2/3d>1s	ʔitʌmŋʌsu	ʔitʉmʌtʌsu	tʉmʌsuje
2/3p>1s	ʔitʌmŋʌnu	ʔitʉmʌtʌnu	tʉmʌnuje
2/3>1di	ʔitʉmi	ʔitʉmiti	
2/3>1de	ʔitʉmu	ʔitʉmutu	tʉmuje
2/3>1pi	ʔitʌmki	ʔitʌmtiki	
2/3>1pe	ʔitʌmkʌ	ʔitʌmtʌkʌ	tʌmkʌje
3,1d/pe>2s	ʔitʌm	ʔitûmtɛ	
3,1d/pe>2d	ʔitʉmi	ʔitʉmiti	
3,1d/pe>2p	ʔitʌmni	ʔitʉmtɛnu	
1s>2s	tʌmnɛ	tʌmtɛni	
1s>2d	tâmsu	tʌmtɛnsu	
1s>2p	tâmnu	tʌmtɛnnu	

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

	non-past	past	imperative
1s>3s	phlʌndu	phlând∧	
1s>3d	phlʌndusu	phlântʌsu	
1s>3p	phlʌndunu	phlântʌnu	
1di>3	phlʉ̄:tsi	phlʉ̄:sti	
1de>3	phlʉ̄:tsu	phlʉ̄:stu	
1pi>3	phlʌjki	phlʌjtiki	
1pe>3	phlʌjkʌ	phlʌjtʌkʌ	
2s>3s	ʔiphlʌndʉ	ʔiphlântɛ	phlʌnde
2s>3d	ʔiphlânsu	ʔiphlântesu	
2s>3p	ʔiphlânnu	ʔiphlântenu	
2d>3	ʔiphlʉ̄:tsi	ʔiphlʉ̄:sti	phlʉ̄:tsije
2n>3	ʔiphlʌjni	ʔiphlʉ̄:stenu	phlʉ̄:snuje
3s>3s	phlʌndʉ	phlânte	
3>3(d)	phlânsu	phlântesu	
3>3(p)	phlânnu	phlântenu	

Table 113: Transitive verb *thuŋt* 'stab'

	non-past	past	imperative
1s>3s	thundu	thûntʌ	
1s>3d	thundusu	thûntʌsu	
1s>3p	thundunu	thûntʌnu	
1di>3	thʉŋi	thʉŋiti	
1de>3	thʉŋu	thʉŋutu	
1pi>3	thuŋki	thuŋtiki	
1pe>3	thuŋkʌ	thuŋtʌkʌ	
2s>3s	ʔithundʉ	ʔithûnte	thunde
2s>3d	ʔithûnsu	ʔithûntesu	
2s>3p	ʔithûnnu	ʔithûntenu	
2d>3	ʔithʉŋi	ʔithʉŋiti	thʉŋije
2n>3	ʔithū:ni	ʔithʉŋtenu	thʉŋnuje
3s>3s	thundʉ	thûnte	
3>3(d)	thûnsu	thûntesu	
3>3(p)	thûnnu	thûntenu	
2/3s>1s	ʔithū:ŋʌ	ʔithʉŋʌtʌ	thʉŋʌje
2/3d>1s	ʔithū:ŋʌsu	ʔithʉŋʌtʌsu	thʉŋʌsuje
2/3p>1s	ʔithū:ŋʌnu	ʔithʉŋʌtʌnu	thʉŋʌnuje
2/3>1di	ʔithʉŋi	ʔithʉŋiti	
2/3>1de	ʔithʉŋu	ʔithʉŋutu	thʉŋuje
2/3>1pi	ʔithuŋki	ʔithuŋtiki	
2/3>1pe	ʔithuŋkʌ	ʔithuŋtʌkʌ	thuŋkʌje
3,1d/pe>2s	ʔithuŋ	ʔithʉ̂ŋte	
3,1d/pe>2d	ʔithʉŋi	ʔithʉŋiti	
3,1d/pe>2p	ʔithū:ni	ʔithʉŋtenu	
1s>2s	thū:nɛ	thunteni	
1s>2d	thûnsu	thuntensu	
1s>2p	thûnnu	thuntennu	

Table 114: Transitive verb *kurt* 'bring for'

	non-past	past	imperative
1s>3s	kʌrdu	kârtʌ	
1s>3D	kʌrdusu	kârtʌsu	
1s>3P	kʌrdunu	kârtʌnu	
1DI>3	kʉri	kʉriti	
1DE>3	kʉru	kʉrutu	
1PI>3	kʌrki	kʌrtiki	
1PE>3	kʌrkʌ	kʌrtʌkʌ	
2s>3s	ʔikʌrdʉ	ʔikârtɛ	kʌrde
2s>3D	ʔikârsu	ʔikârtɛsu	
2s>3P	ʔikârnu	ʔikârtɛnu	
2D>3	ʔikʉri	ʔikʉriti	kʉrije
2N>3	ʔikʌrni	ʔikʉrtɛnu	kʉrnuje
3s>3s	kʌrdʉ	kârtɛ	
3>3(D)	kârsu	kârtɛsu	
3>3(P)	kârnu	kârtɛnu	
2/3s>1s	ʔikʌrŋʌ	ʔikʉrʌtʌ	kʉrʌje
2/3D>1s	ʔikʌrŋʌsu	ʔikʉrʌtʌsu	kʉrʌsuje
2/3P>1s	ʔikʌrŋʌnu	ʔikʉrʌtʌnu	kʉrʌnuje
2/3>1DI	ʔikʉri	ʔikʉriti	
2/3>1DE	ʔikʉru	ʔikʉrutu	kʉruje
2/3>1PI	ʔikʌrki	ʔikʌrtiki	
2/3>1PE	ʔikʌrkʌ	ʔikʌrtʌkʌ	kʌrkʌje
3,1D/PE>2s	ʔikʌr	ʔikʉrtɛ	
3,1D/PE>2D	ʔikʉri	ʔikʉriti	
3,1D/PE>2P	ʔikʌrni	ʔikʉrtɛnu	
1s>2s	kʌrnɛ	kʌrtɛni	
1s>2D	kârsu	kʌrtɛnsu	
1s>2P	kârnu	kʌrtɛnnu	