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A Sketch Grammar of Siyuewu Khroskyabs

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Appendix. Compendium of Khroskyabs verbs

A Sketch Grammar of Siyuewu Khroskyabs

Introduction¹

Khroskyabs is a rGyalrongic (Tibeto-Burman) language of northwestern Sichuan province in the People's Republic of China. There are an estimated 10,000 speakers of Khroskyabs living in Rngaba/Aba Tibetan and Qiang Autonomous Prefecture (Huang, 2003; Lhawa, 2019). Khroskyabs speakers identify as ethnically Tibetan, and the language is under immense social pressure both from Amdo Tibetan (the prestige language of the community) and Mandarin Chinese (the language of schooling) (Lhawa, 2018). There is also some lexical borrowing from both Tibetan and Sichuan Mandarin.

Data for this sketch of Khroskyabs comes from a year-long (three term) Field Methods course sequence undertaken at the University of Oregon from Fall 2017-Spring 2018. Our work included in-class elicitation and analysis as well as supplementary one-on-one sessions with our speaker-consultant, Yulha Lhawa.

Yulha was an undergraduate student at UO whose first language is Khroskyabs (specifically, the dialect of her village, Siyuewu). She is also fluent in Amdo Tibetan, Mandarin (Sichuan) Chinese, and English, having received formal schooling in all of these languages. Yulha is a language preservationist, committed to the documentation and revitalization of her heritage language. She has already conducted her own substantial documentation projects, and graduated with a degree in Linguistics in the Spring of 2018. She received a mark of Distinction from the Clark Honors College for the honors thesis that she wrote about directional prefixes in her language.

In addition to Yulha's own work, previous work on this language includes that of Lai Yunfan, who has worked extensively with the closely related Wobzi dialect of Khroskyabs (e.g. Lai, 2017, 2013, etc.), and has done comparative and historical work across the Khroskyabs dialects (Lai, 2016). Previous work on Khroskyabs and closely related languages also includes Huang Bufan (2001, 2003, 2007), Sun (2000a, 2000b), and Yin Weibin (2007).

This sketch is subject to the usual limitations that come from working with a single speaker at a (very) far geographic remove from the larger community and sociolinguistic context. Yulha's linguistic training and personal motivation have been a key advantage in this enterprise.

¹The authors are both very grateful for the many detailed comments on this manuscript from Yunfan Lai and one anonymous reviewer, which has helped us to enrich and strengthen this description.

(Allison) - I would like to express my deep gratitude for the yearlong collaboration with Yulha, as well as to my Field Methods classmate Xuan Guan and our professor and guide Scott DeLancey. I also thank Spike Gildea, Don Daniels, and Doris Payne for their helpful comments in preparing this description. I hope that future research will continue to give Yulha and other Khroskyabs speakers the tools they need to understand and to maintain their heritage language.

(Yulha) - This collaboration work was carried out during my undergraduate studies at Robert D. Clark Honors College at University of Oregon in 2013-2018. I would like to express my sincere gratitude to our Professor Scott DeLancey for offering this learning opportunity on how to document a language primarily by interacting with a native speaker of that language. I learned a lot both as a native speaker and as a linguistic student. I want to thank Allison and Guan Xuan for tolerating my mischievous nature when eliciting all the crazy consonant clusters in my language. Also, thank you for allowing to eat my lunch in the sessions sometimes when I had to run between classes. I spent one meaningful year sharing, and at the same time, learning my language with all of you. Thank you.

Notes about Notation

Khroskyabs is an oral language that does not yet have a writing system. In the phonology description we will use standard phonetic and phonemic notation. In all other parts of this sketch the data will be presented in a working orthography, which is phonemic and based on IPA.

Throughout this paper, we indicate that the example was taken from our narrative texts with a square bracket naming the text and giving the line number from our ELAN annotations, like this:

(Ex.) $\chi p^h \zeta \hat{\sigma}$ ə-zæmê næ-dâd zəŋō
bear one-rel.mother/child DOWN-exist FIN
'There was a mother bear and baby bear.' [RabbitBear2]²

We will leave unmarked those examples taken from elicitation.

As noted above, the Khroskyabs lexicon includes borrowings from both Tibetan and Chinese. Where these borrowings are synchronically transparent we note this in the text. These notes are especially important in the analysis of the phonological system. The etymological traces of older borrowings, and the question of loanwords versus cognates, are topics for further historical-comparative research.

1. Phonology³

1.1. Segments

We begin this sketch grammar with a description of the three main phonemic categories in Khroskyabs phonology: vowels, consonants, and tones.

1.1.1 Vowels

Khroskyabs has a symmetrical seven vowel phonemic system. The vowel space is plotted in Table 1.

² One reviewer noted that the text examples given in this grammar sketch seem to have come from only two texts. In fact, together we recorded and transcribed six short texts, including two 'frog stories' (Mayer, 1967, 1969), one procedural text, two personal narratives, and one traditional narrative spoken by Yulha's mother.

³ We note here that instrumental phonetic analysis would clarify and give richer detail to many of the patterns we observe throughout this section.

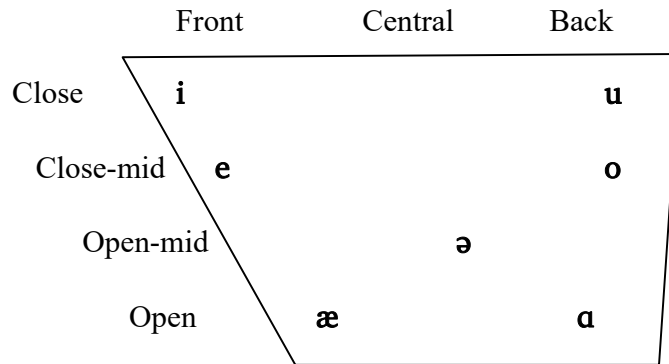


Table 1. Plot of Khroskyabs vowel inventory

The most noticeable pattern of vocalic allophonic variation is with the central vowel /ə/, which is backed to [ɯ] or [ɤ] in front of a word-final velar fricative /ɣ/. Word-final velar fricatives are quite common in this language, and have coarticulation effects on peripheral vowels as well – /i/ is realized as [i̠], while /e/, /æ/, and /ɑ/ transition to a weakly articulated high back vowel that makes the segment sound almost like a diphthong.

- (1) /ə/ > [ɯ] or [ɤ]/__ ɣ#
 /i/ > [i̠]/__ ɣ#
 /e/ > [e̠]/__ ɣ#
 /æ/ > [æ̠]/__ ɣ#
 /ɑ/ > [ɑ̠]/__ ɣ#

These are all presumably identical processes; since schwa lacks features of its own, it fully assimilates to the high unround back vowel when coarticulation occurs. Similarly, [i̠] is most likely [i + ɯ̠], but the distinction is quite hard to hear.

There are two interesting things to note about this pattern. The first is that in natural speech the word-final velar fricative is often weakly articulated, and in fact is barely perceptible. The backed (and sometimes diphthong-like) coarticulation of the nucleus vowel is often the only perceptual evidence of its presence at the end of the word.

- (2) /n̄/ → [n̄] ‘breast’ /mn̄ɣ/ → [mn̄ɣ̠] ‘red’

The second is that there are also many word-final uvular fricatives in this language, but the uvular does *not* condition the same backing/raising coarticulation.

- (3) /p̄ɣ/ → [p̄ɣ̠] ‘pig’ /p̄ɣ̠/ → [p̄ɣ̠] ‘handle’

In our data the back vowel always precedes /ɣ/ in words that end in this consonant, which is to say that it is not clear from monomorphemic words whether /ɣ/ conditions backing as /ɣ̠/ does.

However, morphological processes do show such backing; see for example discussion of the medial reflexive prefix *ɸvjæ-* and an example of its effects on other prefix vowels in Section 4.4.3.

1.1.2 Consonants

Khroskyabs has a rich system of consonants, including a three-way contrast in manner of articulation in stops (with the exception of uvulars) and five different places of articulation for stops and nasals. Perhaps the most noteworthy phonological feature of this language is the system of fricatives at seven different places of articulation.

	Bilabial	Labio-dental	Dental	Retroflex	Alveo-palatal	Palatal	Velar	Uvular
Plosive	p, p ^h , b		t, t ^h , d			c, c ^h , ʃ	k, k ^h , g	q, q ^h
Nasal	m		n			ɲ	ŋ	ɴ
Fricative		f, v	s, z	ʂ, ʐ	ç, ʒ	ç	x, ɣ	χ, ʁ
Lateral fricative			ɬ					
Affricates			ts̄, ts̄ ^h , dz̄		tʃ̄, dʒ̄			
Approximant						j		
Lateral approximant			l					

Table 2. Chart of Khroskyabs consonant inventory

1. Stops

Plosive consonants in this language contrast in three ways: voiced, voiceless unaspirated, and voiceless aspirated. Example (near-)minimal triplets are:

- (4) *bâd* ‘easy’ *pâɸ* ‘handle’ *p^hâd* ‘mountain’
dôd ‘hole’ *tô* ‘come towards’ *t^hô* ‘cook’
ʃâ ‘many’ *câ* ‘3SG’ *c^hâ* ‘half’
gôɣ ‘to bend’ *kû* ‘to be inside something’ *k^hû* ‘to put in something’

Uvular stops only contrast for aspiration; there is no voiced uvular stop⁴.

- (5) *q̄d̄* ‘dense’ (for liquids e.g. soup tea) *q̄^hd̄* ‘owl’

Yulha produces dental stops (and laterals) in an almost exaggerated way, with the tongue sometimes visible between the teeth, making it clear that they are dental.

Palatal stops sometimes sound like palatalized velar stops, but their distribution makes it clear that they are phonemic. The pairs in (6) show complimentary distribution even before a palatalizing vowel, and in (7) the velar stop before *i* is somewhat palatalized but is still clearly distinguishable (further back) than the palatal stop preceding *ə*.

- (6) *sci* ‘cooking tripod’ *ski* ‘hot weather’
 nscāz̄₅ ‘fear₁’ *skākə* ‘end, behind’
 c^hēd ‘old (in age)’ *kætāɛ* ‘clever, competent, well-behaved’
 gōy ‘basket (to carry on the back)’ *jōy* ‘lower back’

- (7) *ts^həgījə*
 ts^həgī = jə
 clothes=PL

2. Affricates

Khroskyabs also has five affricates: /ts/, /ts^h/, /dz/, /tɕ/, and /dʒ/.

Voiceless affricates contrast for aspiration as voiceless stops do. An example near-minimal triplet is:

- (8) *d̄zāēd* ‘bark₁’ *tsāēz̄* ‘fragile’ *ts^hāēd* ‘goat’

We did not collect any examples of an aspiration contrast for /tɕ/. However, this three-way aspiration contrast is one piece of evidence that affricates are segments, rather than stop + fricative sequences (note that fricatives do not themselves have this three-way contrast). There is also phonotactic evidence for single-segment affricates, in particular the fact that affricates can occur as medial consonants in word-initial sequences. Three-consonant sequences are well attested in Khroskyabs, but we only have one example of a word-initial sequence of four consonants, indicating that the best analysis for ex. (9) is a CCC sequence, with /d̄z̄/ as a single segment.

⁴ An anonymous reviewer noted that this lack of voiced uvular obstruents follows typological expectations.

⁵ Verb stem glosses throughout this description will be marked with a subscript, which refers to the stem alternation which is described in Sec 2.2.3.

(9) *nd̥zyī* ‘rust’

See section 1.2.2 for further discussion of these phonotactic arguments.

3. Nasals

Nasal consonants at four different places of articulation are distributed throughout word environments in our data. A fifth nasal, the uvular, is only found as a verbal prefix marking impersonal constructions⁶ (see section 4.4.6), e.g.:

(10) *ndāl* ‘one beats someone’ *njâv* ‘one sleeps’

The uvular nasal does not occur in other environments, but it does contrast in that initial position with other nasals; compare the following two words:

(11) *ndêd* ‘to love/to like’ *ndêd* ‘one likes someone’

Thus we have analyzed /N/ as a phoneme, though one with very limited distributional possibilities. (Note that it also manifests when a stem-initial nasal assimilates to the uvular stop prefix in reciprocal constructions; see Sec 4.4.4)

We will note that we do not have a minimal pair contrasting the uvular nasal to the velar nasal, but there are two phenomena that interact to account for this. One is that the velar nasal rarely occurs in word-initial consonant clusters (a notable exception is the pronoun *ŋgâ* ‘1PL.EXCL’), meaning that word-initial /ŋ/ is almost always followed by a vowel. The other is that all verb stems are consonant-initial, meaning that, because the uvular nasal only occurs as a verbal prefix, it is always followed by a consonant.

4. Fricatives

Khroskyabs has an especially rich inventory of fricatives, with a seven-way contrast in place of articulation and a two-way contrast in voicing. In our data collection we do not have an example minimal septuplet; however, the following (near) minimal quintuplets show key distinctions:

(12) *və-* PROG
zə COND
zê say₂
zən PROG (standalone particle)
yəz help₁

(13) *vdā* four
zdâγ be.sad

⁶ Yunfan Lai (p.c.) suggests that this impersonal prefix may have originated from the combination of *κ-* and *n-*, which would explain its unusual synchronic distribution.

<i>zđû</i>	meet ₁
<i>ydā</i>	buy
<i>ɸdâ</i>	at.all

The seventh fricative, palatal /ç/, is rare in our corpus, but minimal pairs such as (14) show that there is a contrast between the palatal and alveo-palatal. Note that we do not have evidence of a voiced palatal fricative.

- (14) *çō* ‘to burn’ *çô* ‘to look after smthg’
 çâ ‘hybrid yak-cow’ *ç^hâ* ‘barley’

Fricatives occur in any phonological environment. Retroflex fricatives are particularly widely distributed. A major allophonic process in Khroskyabs consonants involves the retroflex fricatives /ʂ/ and /ʐ/, which often sound like a rhotic tap or trill when following another consonant in running speech, and like a rhotic approximant or trill in word-final position⁷. Thus:

- (15) /pʂâm/ > [prâm] ‘white’
 /qʂā/ > [qrā] ‘tall/big’
 /nts^hjâz^hk^ho/ > [nts^hjâr^hk^ho] ‘angry’
 /ɸjêz/ > [ɸjêɹ] ‘vein’
 /dāz/ > [dāɹ]/ [dār] ‘close/nearby’

In careful, clear speech, these sounds reveal themselves to all be retroflex fricatives.

5. Approximants

Khroskyabs has one approximant, the voiced palatal /j/.

- (16) *jōγ* ‘arm’
 jâm ‘house/home’

1.1.3 Tone

There are two lexical tones in Khryoskabs, a level tone and a falling tone. These tones are independent of conditioning factors such as vowel nucleus or coda consonants, as can be seen in these minimal pairs:

⁷ Yunfan Lai (p.c.) notes that this phoneme historically was a trill and suggested that these are allophones of /r/. However, we have inspected spectrograms from our data of this sound in a variety of environments (i.e. vowel medially, word initially, word finally) and in none of these cases do we see evidence of the rapid tongue taps that would be expected of a trill; rather, spectrogram evidence confirms our perception of fully fricated retroflex sounds. We suggest future research that employs high-quality recordings and phonetic analysis to further investigate this.

(17)	$z\hat{e}$	‘one’	$z\bar{e}$	‘to say’
	$t\gamma\hat{a}d$	‘fist’	$t^h\gamma\bar{a}d$	‘to stab’
	$\gamma\hat{e}$	‘to rub’	$\gamma\bar{e}$	‘rabbit’
	$t^h\hat{e}$	‘to drink’	$t^h\bar{e}$	‘a meal/food’
	$st\hat{u}$	‘straight’	$st^h\bar{u}$	‘spit (n.)’
	$n\hat{o}v$	‘deep’	$nzz\bar{o}v$	‘to suck’
	$t\hat{c}^h\hat{o}v$	‘to sew’	$t\bar{c}^h\bar{o}v$	‘to break’

Tones have some coarticulation effects on open syllables; in particular, word-final vowels with level tone are normally articulated with a glottal stop at the end, whereas word-final vowels with falling tone often end with some bare aspiration.

Only one syllable in each word carries tone. In polysyllabic words, non-tone-bearing syllables exhibit some phonetic effects when the falling tone is on an initial syllable (but not when it is word-final):

(18)	$/\hat{a}d\hat{u}c\hat{a}e\hat{d}/$	\rightarrow	$[\hat{a}d\hat{u}c^h\hat{a}e\hat{d}]$	‘older sibling’		$/\hat{a}e\chi p\hat{i}/$	\rightarrow	$[\hat{a}e\chi p\hat{i}]$	‘last year’
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In general, the level tone is unmarked, and is only discernible because of its effects on word final vowels, discussed above, or in minimal pairs where it contrasts with the falling tone. Note for example that there are no corresponding phonetic effects on non-tone-bearing syllables in polysyllabic words when the lone tone-bearing syllable has level tone; a fuller description of tone sandhi is an anticipated direction for future research. Outside of Section 1, we only transcribe level tone when it is in contrast (see for example the discussion of stem alternation in verbs, section 2.2.3). Note also that we use the IPA mid-tone character to transcribe the level tone; it is the contrast between contour (level vs. falling) that is meaningful in this two-tone system, rather than relative pitch. Other analysts (e.g. Lai) analyze both tones as being high in pitch and transcribe them as such.

1.2. Phonotactics

Having described the phonemic segments in section 1.1, we now describe the patterns of these segments at the ends and at the beginnings of words.

1.2.1 Word-final position

In an unusual pattern, word-final position in Khroskyabs is always *voiced*. This means that any vowel can be word-final, but consonants are limited to the following possibilities:

	Bilabial	Labiodental	Dental	Retroflex	Alveo-palatal	Palatal	Velar	Uvular
Plosive			d					
Nasal	m		n			ɲ	ŋ	
Fricative		v	z	ʐ			ɣ	ʁ
Approximant						j		
Lateral approximant			l					

Table 3. Consonants attested in word-final position

The dental stop is the only stop possible in this position, while all voiced fricatives except the alveopalatal are attested (we suspect it, also, will be found word-finally in future research). The dental stop /d/ is unusual, and is strongly articulated in final position, so much so that it sounds almost geminate in words in citation form.

This is in contrast with the voiced fricatives, in particular the back fricatives, which are often devoiced in word-final position in natural speech. These are analyzed as ‘underlying voiced’ based on two pieces of evidence: 1) on analogy with the rest of the possible coda consonants, which are all voiced; and 2) in clear, carefully-articulated speech, Yulha produced these sounds with voicing. Even so, these final fricatives are often so weakly articulated that we need other evidence to detect their existence (in particular vowel co-articulation; see Sec 1.1.1).

When the final consonant is /m/, the vowel nucleus is almost always /ə/. We have two examples of different nucleus vowels, but these are transparent borrowings from Tibetan which could explain their unusual nature.

- (19) *ɣəm* ‘door’
nbəm ‘shy/shameful’
ndzəm ‘soft; kind’ (Tibetan loanword: འཇམ་མཚོ།)
səm ‘heart; mind’ (Tibetan loanword: སེམས།)

1.2.2 Initial position

Whereas word-final position is a very limited environment in Khroskyabs words, there seem to be very few limitations on what segments, or what sequences of segments, can occur in word-initial position.

Word-initial vowels are rare and are limited to low vowels. Some examples of word-initial /æ/ and /a/ are shown in (20):

- (20) *ǣmæ* ‘mother’ *æxpî* ‘last year’
ætâ ‘that’ *âdac^hæd* ‘older sibling’

There are also very restricted examples of word-initial schwa and word-initial /o/:

- (21) *âlam* ‘one wingspan’ *ojô* ‘upward’
âmt̪çæŋ ‘one pouchful’ *ojô²ovâ* ‘to go up’
âtæzpe ‘one half a kilo’

The schwa words are all units of measure beginning with the numeral prefix *â-* ‘one.’ Similarly, all words that begin with *o-* are clearly related to the sense of upward direction; see Section 4.1 for a description of how the word ‘upward’ is etymologically related to a common verbal prefix.

Words can also start with any single consonant segment (including affricates).

Word-initial two-consonant sequences pattern as follows:

Initial consonant	Followed by
Labiodental fricatives	Dental, palatal, and uvular stops – agree in voicing Dental, retroflex, alveo-palatal, velar, and uvular fricatives – agree in voicing Affricates (rare but attested – e.g. <i>vdz̪ə</i> ‘friend, partner’) Voiced approximants [for voiced /v/ only]
Dental, alveopalatal, and retroflex fricatives	Stops, fricatives, and affricates – agree in voicing Nasals /j/
Bilabial stops	Retroflex fricative – agree in voicing /j/
Dental stops	Velar fricatives /j/
Velar and uvular stops	Retroflex fricatives - voiced only
/l/	/b/, /v/, /ʁ/ Voiced affricates Nasals

/ɣ/	/d/, /l/, /v/, /z/ Nasals
/x/	/p/, /s/, /tʃ/, /t/
Uvular fricatives	Stops & fricatives – agree in voicing Nasals and voiced approximants [for voiced uvular only]
Nasals	stops, affricates, other nasals, voiced or voiceless; /j/, also /l/
/tʃ/	/ʃ/

Table 4. Attested word-initial consonant+consonant sequences

This list is by no means exhaustive; it simply represents the patterns in the data gathered so far. Sequences not listed here are unattested, but this should not be interpreted as unallowable.

We offer some notes about the patterns in Table 4:

1. There is a general tendency for CC sequences to agree in voicing; nasals and /l/ follow other voiced consonants, but follow only a restricted set of voiceless consonants.
2. Labiodental fricatives can precede all nonlabial stops and fricatives; uvular fricatives precede all non-uvular stops and fricatives.
3. The voiced velar stop /g/ is not attested as the initial consonant in any word-initial CC sequences.
4. Though there are examples of almost any phone preceding a /j/, there are no /kj/, /k^hj/, or /gj/ sequences. The phonemic status of palatal stops precludes the possibility of velar stop + /j/ sequences (or at least, it is not clear how such sequences would be distinct from the single-segment phonemes).
5. Palatalized /n/, that is, /n+/j/ is pronounced differently and is in complementary distribution to the palatal nasal:

(22) *nɔ̃ɛɛ* ‘black’ *njɔ̃ɛɛ* ‘to lick’

6. Though rare, we do have two examples of an affricate followed by a retroflex fricative:

(23) *tʃʂɔ̃ɛz* ‘narrow’ *tʃ^hʂɔ̃ɛ* ‘salty’

There are also examples of words that begin with tri-consonantal sequences. These are rare enough that it is difficult to identify any robust patterns, but the examples in our data do display commonalities: the initial consonant is always a nasal or fricative, and the second consonant is usually a fricative or an affricate. Consonants usually agree in voicing but do not always (example

(24) shows the range of possible combinations, but does not correspond to the relative frequency of each combination – for example, clusters with /fsn/ are far more common than /vsɲ/.)

(24)	<i>fsnâ</i>	‘today’
	<i>fslâ</i>	‘to study, to learn ₁ ’
	<i>nlvâɣ</i>	‘lucky ₂ ’
	<i>nscescêd</i>	‘to have a good time ₂ ’
	<i>ntsɣâd</i>	‘to sell ₁ ’
	<i>nɣtsôlo</i>	‘to crawl ₁ ’
	<i>nzdâm</i>	‘foggy ₁ ’
	<i>ɣstôɁ</i>	‘ugly ₁ ’
	<i>ɣsp^hæɣæl</i>	‘frog’
	<i>vsɲænva</i>	‘idiot’

There is only one example of a lexeme that begins with a quadri-consonantal sequence:

(25)	<i>ɣsqzê</i>	‘pigeon’
------	--------------	----------

Sometimes, morphological processes produce words that have such sequences, as for example when the verb includes the causative prefix *f-* or *s-*.

(26)	<i>fsqzâ</i>	‘raise (children)’ =	<i>f-sqzâ</i>
			CAUS-be.big ₁

The rarity of CCCC sequences is one of the phonotactic arguments for the analysis of affricates as distinct phonemes. Much more common are CCC sequences, and in particular /n/ is the initial consonant in many different CCC combinations. Thus we prefer to analyze *ntsɣâd* ‘to sell’ and *nɣtsôlo* ‘to crawl’ in (24) as fitting this pattern when analyzed as three consonants, one of which is an affricate.

We have been careful in this description to call word initial C+C a “sequence” rather than a “cluster.” This is because Yulha produces each consonant fully, and does not seem to elide or otherwise coarticulate consonants as one would expect from true clusters. Some consonant sequences are articulated so fully that they could be transcribed as sesquisyllables; this is especially true of C+stop sequences:

(27)	<i>ngâ</i>	> [n.gâ]	1PL.EXCL
	<i>lmâd</i>	> [l.mâd]	‘to forget’
	<i>tyâd</i>	> [t.ɣâd]	‘fist’

The voiced uvular fricative is especially perceptually challenging in terms of syllabification; preceding a consonant it seems almost like a full vowel +/Ɂ/ (though note that there is no preglottalization of the ‘vowel’):

(28) *v̂b̂* > [αʁ.b̂] ‘to cry’

Because of their full articulation, C+C sequences seem to have a longer duration than single segments (though note that we did not do instrumental phonetic analysis to determine durational differences). Impressionistically we perceive the very limited set of affricates (single segments) as shorter in duration than the many possible stop + fricative sequences. A fuller analysis of syllabification and the structure of consonant structures is an important next step in understanding the phonology of Siyuewu Khroskyabs (though see Lai, 2013, for discussion of consonant clusters in Wobzi Khroskyabs.)

1.3.Morphophonemics

The remaining sections of this sketch grammar describe the morphosyntax of Khroskyabs. Before diving into this description, we note some common morphological processes that are encountered often throughout the rest of this paper, and how these affect the pronunciation of words.

1.3.1 Effects of certain verbal suffixes on verb stem vowels

Simple present-tense verbs inflect for person and number; Table 7 and Table 8 (in Sec 2.2.2) give the intransitive and transitive paradigms. (Note that /d/ final verb stems lose that consonant when person agreement suffixes are added.) The first-person dual inflection is -*γ*, which conditions the backing and raising of the verb stem vowel, as described in Sec 1.1.1:

(29) <i>v̂</i>	‘go’	<i>ẑə-v̂-γ</i> ZE-go1-1DU	→ [ẑəv̂ûγ]	‘1DU go’
<i>q̂ĥæ̂d̂</i>	‘laugh’	<i>q̂ĥæ̂d̂-γ</i> laugh1-1DU	→ [q̂ĥâ̂ŵγ]	‘1DU laugh’

The verb stem vowel also raises (or gains a high vowel off-glide) when the vowel is inflected for first person plural -*j* and second person plural -*ŋ*:

(30) <i>ẑə-v̂-j</i>	→[ẑəv̂îj]	‘1PL go’	<i>ẑə-v̂-ŋ</i>	→ [ẑəv̂îŋ]	‘2PL go’
	ZE-go2-1PL		ZE-go2-2PL		
<i>q̂ĥæ̂d̂-j</i>	→[q̂ĥâ̂j]	‘1PL laugh’	<i>q̂ĥæ̂d̂-ŋ</i>	→ [q̂ĥâ̂ŋ]	‘2PL laugh’
	laugh1-1PL		laugh1-2PL		

Notice that like with the velar fricative effects, in these environments peripheral vowels exhibit backing followed by a raised off-glide-like segment, while schwa fully assimilates to the high vowel.

Schwa and /æ/ also back before the velar nasal of the first person singular form (schwa also rounds):

- (31) $zə-v\hat{ə}-\eta$ → [zəvôŋ] ‘1SG go’ $q^h\hat{e}d-\eta$ → [q^hâŋ] ‘1SG laugh’
 ZE-go2-1SG laugh1-1SG

Conversely, the front vowels /e/ and /i/ retain their full pronunciation but are realized as VV sequences in the 1SG form:

- (32) $z\bar{e}-\eta$ → [zĕœŋ] ‘1SG have’
 have-1SG

Interestingly, these effects of the suffix consonant seem to happen with verbs even across consonant-final verb stems (see section 1.3.3 for additional discussion of the metathesis seen with the 1SG suffix):

- (33) [ŋmb^jâŋm] ‘fly’
 [ŋmb^jôŋm] ‘1SG fly’
 [ŋmb^jûmɣ] ‘1DU fly’
 [ŋmb^jîmj] ‘1PL fly’

1.3.2 Effect of the reflexive marker on the preceding vowel

The reflexive prefix $ɛv$ comes between the initial prefix slot and the verb (see Section 4 for full discussion of verbal prefixes). In natural speech the initial $ɛ$ - of this prefix reduces to the point where it is no longer easy to hear, or is only perceived because of its effects on the preceding vowel. Thus for the verb prefix in (34), in natural speech the [ɛ] is unarticulated and the [æ] vowel backs to [ɑ]:

- (34) $t^h\bar{e}$ $n\alpha-\mathcal{E}v$ $j\alpha-tsv\hat{u}-\eta$ → [t^hæ nɑvjætsvuŋ]
 smthg DOWN-REFL-be.injured-1SG
 ‘I hurt myself.’

See also Lai (2017) for a discussion of a similar phenomenon in Wobzi Khroskyabs.

1.3.3 Metathesis/assimilation

Certain verbal affixes, in particular nasals, trigger metathesis/assimilation processes on verb stems. This can be seen in example (33) above, and in (35) with the verb $t\hat{c}\hat{a}v$ ‘break₂’. When the first person singular agreement marker $-\eta$ is added to this verb (and other consonant-final verbs), it sounds more like nasalization of the vowel, or a metathesis of the nasal with the stem-final consonant (which could amount to the same thing perceptually).

- (35) $t\hat{c}\hat{a}v + -\eta \neq t\hat{c}^h\hat{a}v\eta$
 $t\hat{c}\hat{a}v + -\eta = t\hat{c}^h\hat{a}\tilde{v} \approx t\hat{c}^h\hat{a} < \eta > v$

Lai (2017: 360) describes metathesis in the autobenefactive in the neighboring Wobzi dialect, wherein the n - prefix comes between two consonants in certain stem-initial consonant

clusters. The example he gives for Wobzi Khroskyabs is *ɣd̪ə* ‘to buy.’ However, when we discussed this in elicitation Yulha felt that in Siyuewu dialect this was an assimilation of the nasal prefix to the velar consonant; in other words, at least in Yulha’s intuition:

- (36) n- + *ɣd̪ə* ≠ *ɣnd̪ə*
 n- + *ɣd̪ə* = *ŋd̪ə*

2. Word classes

Sections 3 and 4 describe in some detail the morphology associated with nouns and with verbs, respectively. Before diving into this morphology, we first describe in this section some of the distributional and syntactic properties of the word classes of Khroskyabs.

2.1. Nouns

The structural properties of the noun phrase are described here, followed by a description of pronouns. The system of clitics that attach to nouns and noun phrases is described in Section 3.

2.1.1 The Noun Phrase

Nouns can take articles *tə* ‘the’ or *zæ* ‘one/a’ (see Section 2.3.1). Articles must follow the nouns they modify, and form an NP with them – that is, no other word from outside the NP can come between the noun and the article. NPs can move around fairly freely but cannot occur in final position (clauses are strictly verb-final; see Section 2.2.1). Example (37) is given with three different word orders, all of which are equally acceptable:

- (37)
- | | | | | |
|----|------------------------------|----------------------|-------------------------------|-------------------------------|
| a. | [<i>cə̂=ɣə̂</i>] | [<i>mdzæ̂z tə</i>] | [<i>nun=k^he</i>] | <i>nu-k^hā</i> |
| | 3SG=ERG | rice | DET 2SG=DAT | OUTWARD.INV-give ₂ |
| | ‘He gave the rice to you.’ | | | |
| b. | [<i>nûnk^he</i>] | [<i>mdzæ̂z tə</i>] | [<i>cə̂ɣə̂</i>] | <i>nuk^hā</i> |
| c. | [<i>nûnk^he</i>] | [<i>cə̂ɣə̂</i>] | [<i>mdzæ̂z tə</i>] | <i>nuk^hā</i> |

We have bracketed the three NPs in these examples to illustrate their positions, and the structure of noun + determiner.

2.1.2 Pronouns

Khroskyabs has ten personal pronouns, as listed in Table 5:

1SG	ɲê	2SG	nû	3SG	cê
1DU	ɲənê	2DU	ɲêne	3DU	cêne
1PL.EXCL	ɲgê	2PL	ɲênjə	3PL	cêjə
1PL.INCL	ɲənjê				

Table 5. Personal pronouns in Khroskyabs

The inclusive/exclusive distinction is only found in the 1st person plural forms; all other plurals and duals are the same form regardless of clusivity. Pronouns take nominal case marking but they do not take articles. Pronouns are not always expressed; in texts especially, definite participants are commonly not expressed.

An important note to make is that in a traditional narrative collected by Yulha which we transcribed together, the protagonist (Rabbit Baby) is almost never referred to with the third person pronoun *cə*. Often the pronoun is omitted altogether, but when it is included, the pronoun used is the reflexive *je*, rather than *cə* (all other actors in the story are *cə*, not *je*).

- (38) *jê = zə* *nə-p^hoçêd₂* *zəŋō*
REFL=ISM OUTWARD-run.away FIN
‘[Rabbit Baby] ran away.’ [RabbitBear47]

We do not know if this is a feature of narrative texts, a preference of the individual speaker telling the story (the speaker who gave this text is Yulha’s mother, not Yulha herself), or if there is some other reason for the pattern. A much larger body of recorded texts would help to address this question.

First and second singular pronouns have a special form for genitive case, *ɲêŋ* and *nûŋ* respectively. These are simply frozen, unanalyzable forms, and perhaps are even undergoing some semantic bleaching. For example, from elicitation session we have the following two examples:

- (39) *nûŋ* *êmə* *ɲəla* *jêd*
2SG.GEN mother where exist₂
‘Where is your mother?’

- (40) *nûŋ = jə* *sū = jə* *ɲəla* *jêd*
2SG.GEN=GEN livestock=PL where exist₂
‘Where is your yak?’

It is clear that *nûŋ* is an acceptable genitive form of *nû*, but then is *nunjə* doubly-marked? In fact, *nûŋ* and *ɲêŋ* are the pronoun stems for both genitive and dative for 2SG and 1SG, respectively. They do not take this special form in any other case (42).

- (41) *cê = γə* *nûŋ = k^he* *χpī* *zə* *nu-fçîd*
3SG=ERG 2SG=DAT story one OUTWARD.INV-tell₂
‘He told you the story.’

- (42) $n\hat{u} = \gamma$ $\eta\hat{c}\hat{e}$ $vd\bar{e}-\eta$
 2SG=ERG 1SG see₂-1SG
 ‘You saw me.’

	Stem	GEN forms	DAT form
1SG	$\eta\hat{c}\hat{e}$	$\eta\hat{c}\hat{e}n, \eta\hat{c}\hat{e}n = j\partial$	$\eta\hat{c}\hat{e}n = k^h e$
2SG	$n\hat{u}$	$n\hat{u}n, nun = j\partial$	$nun = k^h e$

Table 6. Case-marked pronoun forms

2.2. Verbs

The other major word class in Khroskyabs is the class of verbs, which include property concepts (discussed below). Verbs can be nominalized with a set of clitics (see Section 4.5.3).

2.2.1 Clause position

Verbs always occur clause-finally, and there is one finite verb per clause.

- (43) $\eta\hat{c}\hat{e}$ $j\hat{a}m$ $z\hat{a}$ $t^h\hat{o}-\eta$
 1SG house one build₁-1SG
 ‘I (will) build a house.’

- (44) $j\hat{a}m$ $z\hat{a}$ $n-t^h\hat{o}-\eta$
 house one AUT-build₂-1SG
 ‘I built a house.’

- (45) $c\hat{a} = \gamma\partial$ $\eta\hat{c}\hat{e}n = k^h e$ $j\hat{e} = j\partial$ $j\hat{a}m$ $t\partial$ $o-t^h\hat{o}-\eta$ $z\hat{a}$
 3SG=ERG 1SG=DAT REFL=GEN house DET UP-build₂-1SG say
 ‘He told me that he had built the/his house.’

Note that in the third example, there are two verbs occurring in sequence. Here, the final verb $z\hat{a}$ ‘say’ is quotative; the discrepancy in the person marking makes it clear that these are actually two clauses, one embedded inside the other. A more accurate translation might be “‘I built (my own) house’, he said to me.’

2.2.2 Hierarchical alignment and verbs

Khroskyabs has a hierarchical alignment system reflected in both verbal and nominal morphology. Verbs in intransitive clauses simply agree with their single arguments (S), as in **Table 7**. Transitive clauses are sensitive to person ranking of A and P, as in **Table 8**. The inverse marker

is used when a second person acts on a first person ($2 > 1$), and anytime a third person is acting on any person ($3 > 1, 2, \text{ or } 3$).

First person		Second person		Third person	
1SG	V-ŋ	2SG	V-n	3SG	V
1DU	V-ɣ	2DU	V-z	3DU	V
1PL	V-j	2PL	V-ŋ	3PL	V

Table 7. Intransitive paradigm

Transitive clauses are sensitive to the person ranking of A and P. Transitive clauses exhibit the following marking:

A	P	1	2	3
1			V-n	V-ŋ
2		INV-V-ŋ		V-n
3		INV-V-ŋ	INV-V-n	INV-V

Table 8. Transitive paradigm

As such, the hierarchical ranking is $1 > 2 > 3$. Note that this table gives the forms for singular A and P arguments as an illustration of the pattern; dual and plural arguments will be indexed accordingly, as shown in (46), where the conditional clause is 1A3P and the verb is indexed for the 1st person plural A:

- (46) *cə̂ = ɣə̂ mdzə̂z tə̂ tʰô̂ ŋə̂ŋə̂ kə̂-zɣə̂d-j zə̂*
 3SG=ERG rice DET cook₁ 1PL.INCL INWARD-ask₁-1PL if
 ‘He will make the rice if we ask him.’

Inverse marking on verbs corresponds to ergative marking on agent nouns:

- (47) *ɣlə̂-ɣə̂ zô̂ɣ a-dzid̂*
 rabbit=ERG wild.root UP.INV-eat₂
 ‘The rabbit ate the wild roots.’

It is important to note that the inverse marking on verbs is also dependent on the system of directional prefixes, and that in instances when these directional prefixes are not present – i.e. in Stem 1 verbs that do not indicate direction – there is no inverse verbal marking (see section 4.2). That is, inverse marking is one possible component of an inverse construction, but hierarchical alignment patterns are not strictly dependent on overt verbal marking. See section 5.2.1 for a fuller description of the properties of grammatical relations in Khroskyabs.

Thus both verbal and nominal morphology in Khroskyabs exhibits an empathy hierarchy split, in a pattern attested in related Tibeto-Burman languages (DeLancey, 1981). Jacques & Antonov characterize Khroskyabs as a ‘nearly-canonical’ direct/inverse system (2014: 315); in fact, ‘slightly less canonical’ than its rGyalrongic neighbors in that there is no direct/inverse contrast in the nonlocal domain (3rd person).

2.2.3 Stem alternations

Another distinctive trait of verbs is that they all have stem alternations (with the possible exception of the copula). Verbs come in pairs, referred to in the literature as Stem 1 and Stem 2. Stem 1 verbs are used for simple realis non-past clauses. Stem 2 verbs are used for everything else – irrealis constructions, past tense, any clause marked for aspect, etc. Throughout this description, we have noted the stem number for each verb in a subscript on the gloss.

- (48) Stem 1 – simple realis, non-past
ŋæ jâm zæ t^hô-ŋ
 1SG house one build₁-1SG
 ‘I (will) build a house.’

Stem 2 – everything else (past, aspectual, irrealis...)
jâm zæ o-t^hô-ŋ
 house one UP-build₂-1SG
 ‘I built a house.’

Verb stem pairs can alternate in a number of different ways, almost always via change to the vowel, whether in tone or place of articulation. Analysis of the possible alternations of verb stems comes from a compendium of 224 verbs that we collected, which includes a list Yulha herself compiled, supplemented by verbs elicited using both a standard Chinese word list and the CALMSEA list (Matisoff, 1978). This verb compendium is included as an Appendix to this sketch grammar. Note that stem 2 verbs normally require verbal prefixes, a system which is described in Section 4.1; this requirement is strong enough that sometimes even isolated verbs in elicitation were given with these prefixes. That prefix system is separate from the *stem* alternation patterns discussed here, and in (49) we have parsed these prefixes out where they are given.

- (49) Possible alternations in verb stems:
- Same vowel, different tone, but tone difference goes either way:

‘eat ₁ ’	<i>dzîd</i>	‘pour ₁ ’	<i>dū</i>
‘eat ₂ ’	<i>a-dzîd</i>	‘pour ₂ ’	<i>na-dû</i>

- Same tone different vowel

‘flatten ₁ ’	<i>yzdâv</i>
‘flatten ₂ ’	<i>yzdîv</i>

- Different tone AND different vowel

‘push ₁ ’	<i>sk^hǣγ</i>
‘push ₂ ’	<i>sk^hâγ</i>

- Options for Stem 2 (Stem 1 is stable)
 - Alternate either tone OR vowel:

‘safekeep ₁ ’	<i>vdǣɁ</i>
‘safekeep ₂ ’	<i>vdâɁ</i> OR <i>vdǣɁ</i>

 - Alternate tone, and optionally also alternate vowel:

‘add ₁ ’	<i>njǣɁ</i>
‘add ₂ ’	<i>njîɁ</i> OR <i>njǣɁ</i>

 - Alternate BOTH tone and vowel, with a choice of vowel:

‘release ₁ ’	<i>lǣd</i>
‘release ₂ ’	<i>lîd</i> OR <i>lâd</i>

In addition to these, we have one example of a verb stem pair that appears to be suppletive:

- ‘come.out₁’ *tô*
- ‘come.out₂’ *t^hôd*

Thus it is clear that the alternation is lexical rather than grammatical; that is, despite the first impression given by examples like (48) above, this alternation does not constitute a morphological tone system.

2.2.4 Property concepts

According to our analysis, property concepts do not form a true separate word class in Khroskyabs (e.g. ‘adjective’).⁸ Rather, properties are indicated by verbs, as evidenced by their position in the clause, their stem alternation, and their co-occurrence with verbal morphology.

(50) *ǣtǎ γlǎ tǎ zǎ-qǣǎ*
 that rabbit DET ZE-big₁
 ‘That rabbit is big.’

(51) *nû zǎ-zê-n ηǣ kǎ-dâz-η-si*
 2SG ZE-be.small₁-2SG 1SG INWARD-old₂-1SG-MIR
 ‘You are short, and I am old.’

⁸ Though Guan (2018) argues that subtle differences in behavioral properties can be taken as evidence that property concepts are a distinct subclass of verbs. Lai refers to this category as ‘stative verbs’, e.g. (2018).

2.3. Other minor word classes

2.3.1 Articles

Khroskyabs has two articles: the definite article *tə* ‘the’, and *zæ* ‘a’, which on its own is the word ‘one,’ and which also acts as an indefinite article.

(52) *nûn=jə jâm tə ŋâtə zə-ŋō*
2SG=GEN house DET which ZE-COP
‘Which is your house?’

(53) *jâm zæ və-t^hō-ŋ*
house one PROG-build₂-1SG
‘I am building a house.’

Pronouns never take articles⁹, and full nouns do not require them. In both text and elicitation, *tə* is much more frequent. Sentences that are translated with the indefinite article ‘a’ in English very often have no article at all, and the use of *zæ* seems to have a little more semantic emphasis than the English article does. For example, to compare with (53) we have:

(54) *jâm və-t^hō-ŋ*
house PROG-build₂-1SG
‘I am building [a] house.’

Though we transcribe both articles as separate lexemes, in fast speech they often are phonologically bound to the nouns they follow. They are also followed by case and plural noun phrase clitics (see 2.1.1), and can co-occur with possession:

(55) *câtə ɣlē tə=jə zə-pšâm*
this rabbit DET=PL ZE-be.white₁
‘These rabbits are white.’

(56) *ɣdâ tə=gə χsp^hæjæ̃l zæ vdē zəŋo*
water DET=LOC frog one see₂ FIN
‘...in the river they saw a frog.’ [Frog7]

(57) *χp^hsâ lŋāκ tə=jə zβâləmzə*
bear baby DET=GEN chest ISM
‘...as for the Bear Baby's chest...’ [RabbitBear31]

The question word *ŋâtə* ‘which?’ appears to be etymologically related to the definite determiner *tə*; it can be used as a standalone argument but can also occur in the determiner position in a noun phrase (see Section 5.5.2)

⁹ A possible counter-example, *câtə* ‘this’ / *cə-tə* ‘this-DET’ is discussed in 2.3.2. Note also that personal pronouns can be followed by the discourse particle *tətə*, which we analyze as an emphatic particle rather than an article.

2.3.2 Demonstratives

Khroskyabs has two demonstratives, *cə(tə)* ‘this’ and *ætə* ‘that.’ In elicitation these words consistently precede the nouns that they refer to (as opposed to articles, which always follow their nouns).

(58) *cətə mdzəz tə zə-məm*
 this rice DET ZE-be.tasty₁
 ‘This rice is tasty.’

(59) *ætə mdzəz tə-də zə-məm*
 that rice DET-also ZE-be.tasty₁
 ‘That rice is also tasty.’

(60) *cə ɣlə tə zə-pšəm*
 this rabbit DET ZE-be.white₁
 ‘This rabbit is white.’

The proximal demonstrative can be realized either as *cə* or *cətə*; we do not have enough examples in our data to describe the conditions for this alternation. There are no examples of *ætə* as a standalone word meaning ‘that’.

The noun modified by a demonstrative also takes an article, and the sentence is judged unacceptable if the post-nominal article is omitted:

(61) **cətə ɣlə zəpšəm*

This seems to indicate that when functioning as a determiner, demonstratives obligatorily co-occur in with the definite article:

[DEM + Noun + *tə*]

This formulation of the demonstrative construction is given further strength from the fact that the demonstrative *must* immediately precede its noun:

(62) **ɣlə tə cətə zəpšəm*

The example above was deemed acceptable only in the case of left-dislocation, i.e. ‘The rabbit, this one is white.’

These same words can also be used as demonstrative pronouns, which occur without an article:

(63) *ætə sə = ɣə zə*
 that who=ERG say₂
 ‘Who said that?’

Note that the question word ‘who’ takes ERGative marking, meaning this is a transitive clause (see section 3.1), and that therefore the demonstrative *ǣtə* must be a pronoun, rather than a determiner.

2.3.3 Particles

Khroskyabs particles serve various discourse functions. Those that fall under the category of ‘information structure markers’ we gloss ‘ISM’. Others we gloss as ‘DP’, ‘discourse particle.’ Particles are also an important part of the evidentiality system. A larger body of texts and discourse data would help illuminate the subtle functions of these particles; we will not discuss them further in this sketch.

We discuss the sentence-final particle *zəŋo* under the section on the *ŋo* copula (section 5.1.1); the question particle *tɕəɣ* is discussed as part of question formation (section 5.5.1).

3. Nominal morphology

Khroskyabs has a set of bound morphemes that attach to the ends of noun phrases to indicate case. Because this set of morphemes can occur on different word classes, including nouns, determiners, and (nominal argument) question words, we analyze them as clitics rather than affixes.

Nouns are not obligatorily marked for case. Rather, the five cases which we describe here are used for a limited set of grammatical functions. Nouns can also be marked with a plural clitic, =*ɣə*; see Section 3.6.

A discussion of compounding is not included here but is an important area for future analysis.

3.1.ERGative

Khroskyabs has a hierarchical, rather than a strictly ergative, alignment system (see Section 2.2.2 for verbal indexation and 5.2.1 for other alignment properties). Ergative case marks *only* A arguments of transitive clauses, but importantly *it does not mark all A arguments of all transitive clauses*, but rather interacts with the system of inverse marking on the verb.

In (64) and (65), the A argument is marked by ergative clitic =*ɣə*. In (66), the A arguments of the two coordinated clauses are unmarked.

(64) *χp^hʂə̄ tə = ɣə* *ɣl̄e* *tə* *na-s̄id*
 bear DET=ERG rabbit DET DOWN.INV-kill₂
 ‘The bear killed the rabbit.’

(65) *m̄ave = ɣə* *v̄avu* *na-s̄id*
 grandmother=ERG grandfather DOWN.INV-kill₂
 ‘Grandmother killed grandfather.’

- (66) *ŋĕ ylē zæ næ-sîd-ŋ ska nû xp^hşđ zæ næ-sîd-n*
 1SG rabbit one DOWN-kill₂-1SG while 2SG bear one DOWN-kill₂-2SG
 ‘I killed a rabbit while you killed a bear.’

3.2.DATIVE

The clitic =*k^he* ‘DAT’ marks the recipient argument of ditransitive clauses, as in (67). It is also used for the addressee of speech events as in (68). We discuss ditransitivity in Section 5.2.1.1.

- (67) *cĕ = γə cĕ bəzzē tə cĕ = k^he nu-sŋĕ*
 3SG=ERG that knife DET 3SG=DAT OUTWARD.INV-loan₂
 ‘He loaned her that knife.’

- (68) *ŋəla ɕĕ-n ylē tə = k^he ku-zĕ zəŋo*
 where go₁-2SG rabbit DET=DAT INWARD.INV-say₂ FIN
 ‘“Where are you going?” [he] said to the rabbit.’ [RabbitBear68]

3.3.GENITIVE

The genitive clitic =*jə* is most frequently used for possession. It is also used for benefactive arguments in benefactive constructions (see 6.3.2).

- (69) *cĕ = jə bəzzē sĕ = γə nə-fkĕ*
 3SG=GEN knife who=ERG DOWN.INV-steal₂
 ‘Who stole his knife?’

3.4.INSTRUMENTAL

Instruments are marked with the instrumental case clitic =*γə* (this is identical to ERG.)

- (70) *cĕ = γə zgəmə zæ = γə zdāv tə nə-tɕ^həv*
 3SG=ERG stone one=INSTR window DET DOWN.INV-break₂
 ‘He broke the window with a stone.’

The word ‘use’ is rare and is generally limited to tools, so in examples of instruments elicited with the English “use an INSTR to V” construction, the Khroskyabs equivalent is a simple “V with INSTR”.

- (71) *cĕ = γə bəzzē zĕ = γə xp^hşđ ɕi nə-dzĕv*
 3SG=ERG knife one=INSTR bear flesh DOWN.INV-cut₂
 ‘He used a knife to cut up the bear meat.’ = literally “with a knife he cut the bear meat”

Given that this clitic is homophonous with the ergative case clitic, in some cases this leads to ambiguity of the case function. For example, which case is being marked by =*γə* in (72)?

- (72) *k^havâ = γə* *ɸjê-zə* *na-p^həm-si*
snow=ERG/INSTR sheep-pen DOWN.INV-cover₂-MIR
?‘Snow covered the sheep pen.’ / ‘The sheep pen was covered with/by snow.’

In this example, snow might be the A argument marked by ergative – “Snow covered the sheep pen.” It might also be a passive construction, with the patient argument (the sheep pen) left as the single argument, and snow marked with the instrumental as an oblique agent-of-passive, perhaps – “The sheep pen was covered by snow.” There are several clues outside the noun phrase in question that disambiguate the case. In particular, the inverse marking on the verb (see Section 2.2.2), the lexical transitivity inherent to the verb (see Section 5.2), and the nature of ‘passives’ in Khroskyabs (see Section 5.3) make it clear that this is in fact a transitive clause with an ergative case-marked noun.

3.5.LOCative

There is a locative clitic, =*gə*, which is used for both static locations (ex. 73) and destinations (ex. 74).

- (73) *qlô* *zæ = gə* *c^həmts^hôŋ* *zæ* *næ-zjē*
valley one=LOC household one DOWN-stay₂
‘In a valley there was a household...’ [RabbitBear122.1]

- (74) *jê-zə* *æçəvə* *snoylā = gə* *o-çəd* *zəŋo*
REFL-ZE so.then moon=LOC UP-go₂ FIN
‘So then he went up to the moon.’ [RabbitBear152]

3.6.PLural

In addition to the case-marking morphology described in the preceding subsections, nouns can be marked with the plural clitic =*jə*. Like case marking, this attaches to the determiner if there is one (75), and directly onto the noun if there is not. The plural clitic follows case clitics (76). Note that this is the same *jə* that is used to form plural pronouns (see **Table 5**, section 2.1.2).

- (75) *câtə* *ylā* *tə = jə* *zə-pšəm*
this rabbit DET=PL ZE-be.white₁
‘These rabbits are white.’

- (76) *ydâ* *tə = gə = jə* *o-nqlî*
water DET=LOC=PL UP-come.out₂
‘...they came up out of the waters.’ [Frog31]

The use of the =*jə* clitic is not only in situations that translate as plurality. Example (77), from text, is from a list of actions the Rabbit Baby was taking; note that there is only one baby in this part of the story, though *lɣav* is marked with the plural. This seems to be a feature of lists.

(77) *sū = jə* *nu-sîd* *zæ* *lbū* *nu-k^hû*
 livestock=PL OUTWARD.INV-kill₂ and hay OUTWARD.INV-fill.up₂
 ‘...[he] killed the livestock & filled them/it with hay...’

lɣāɓ = jə *nu-sîd* *zæ*
 baby=PL OUTWARD.INV-kill₂ and
 ...killed the baby and...’ [RabbitBear129 and 130]

4. Verbal morphology

Khroskyabs has a rich repertoire of verbal prefixes. In addition, Khroskyabs verbs take person/number agreement suffixes, and can also take a few other suffixes/clitics.

In this section we sketch the system of verbal morphology as found in the data at our disposal.

4.1. Directional prefix system

The prefixes in the initial affix position on verbs have directional meaning, with most coming transparently from directional adverbs.

	up	down	up- stream	down- stream	across the river on shady side/ right/ inward	across the river on sunny side/ left/ outward	direction neutral	direction neutral
Set 1 (roots/ relator nouns)	ojô	nē	lē	vī	kī	nī		
Set 2 (Basic)	o-	næ-	læ-	və-	kə-	nə-	zə-	æ-
Set 3 (Inverse)	ɑ-	nɑ-	lɑ-	vu-	ku-	nu-	zɯ-	ɑ-

Table 9. Directional adverbs and prefixes. Reproduction of Table 6 in Lhawa (2018: 26)

Lhawa (2018: 49) investigates the directional meaning of these prefixes in great detail, and demonstrates how speakers utilize these directional meanings to “create a vivid mind map” of narrative events.

Verbs of translational motion are obligatorily marked for direction using one of these prefixes (their corresponding adverbs can optionally also be used).

- (78) *bzō s̄a-qʰs̄ā t̄ə = j̄ə n̄û t̄ə = ḡə n̄æ-ç̄æ-n*
 horse SUPER-big DET=GEN ear DET=LOC DOWN-go1-2SG
 ‘Go [down] into the ear of the biggest horse’ [RabbitBear73]

In these cases, the directional prefixes preserve their transparent semantics.

However, this system of prefixes has extended non-spatial uses. All Stem 2 verbs¹⁰ in Khroskyabs are obligatorily marked with one of these prefixes. This is true of both motion (ex. 79) and non-motion (ex. 80) verbs.

- (79) *dōd z̄æ t̄ə = ḡə n̄æ-ç̄pʰû-ŋ æç̄əv̄æ t̄jæz̄mej̄əç̄ə*
 hole one DET=LOC DOWN-fall2-1SG so.then whatsit
 ‘I fell into a hole.’ [Wolf17]

- (80) *n̄ê m̄ôv̄m̄oβ v̄î t̄e-ç̄ə â̄m̄æ = kʰe n̄æ-fs̄lâ-ŋ*
 1SG momo do2 DET-then mother=DAT DOWN-learn2-1SG
 ‘I learned how to make momos from my mother.’ [Momos12]

Because directional prefixes are so often used in non-directional senses, we gloss these morphemes with capital letters (e.g. ‘DOWN’ rather than ‘down’), to indicate their status as a semantic/syntactic category rather than a simple lexical meaning. See Section 4.3 for further discussion of the direction prefixes as markers of aspect.

Another interesting component of this system is the so-called ‘neutral directions’, *z̄ə-* and *æ-*. Unlike the other prefixes, they do not have any transparent etymological relationship to an adverb denoting direction. They also rarely refer explicitly to direction. However, they are in paradigmatic distribution with the other directional prefixes, and we do have a very few cases of explicitly ‘unspecified’ direction :

- (81) *ç̄sp̄æj̄ǣl ŋ̄əl̄ā z̄ə-ç̄âd z̄æ = j̄ə ç̄pʰi t̄ə z̄ə-ŋ̄o*
 frog where ZE-go2 say2=GEN story DET ZE-COP
 ‘the story of so-called Frog Where Did You Go’ [Frog2]

The prefix *æ-* is not found in our current text corpus and its participation in the directional system remains a topic for future research. The prefix *z̄ə-* on the other hand is quite frequent in texts, but it very rarely is semantically connected to direction. See Section 4.3.6 for discussion of the discourse functions of this prefix.

In addition to their transparently directional sense, and their grammaticalized functions, the directional prefixes in Khroskyabs show metaphorical extensions. To give just one short set of examples, the prefix *n̄ə-* OUTWARD is the preferred prefix for Stem 2 verbs that involve events of EXTENSION:

- (82) *nuf̄s̄š̄ê* extend
nul̄âd release; let go; set free
nupʰiç̄ open up (e.g. an umbrella)
nats̄h̄û fat/fatten

¹⁰ There are two exceptions to this – the sensory verbs *vdê/vdē* ‘see₁/see₂’ and *smê/smē* ‘hear₁/hear₂’ (All other sensory verbs require a prefix in Stem 2.)

As well as TRANSFER:

- (83) *nusŋē* loan
nuzŋē borrow
nuk^ha give

Metaphorically, perhaps *nulmâd* ‘forget’ belongs in this list. The semantics of these extended lexical uses of the directional prefixes is, unfortunately, beyond the scope of this sketch grammar, but presents an exciting area for future analysis and description.

4.2. Interaction of the directional system with hierarchical alignment (i.e. INV forms)

We analyze the directional + inverse as a single, frozen unit (note that this is what the “Set 3” in **Table 9** indicates). This analysis is based on two pieces of evidence:

1) the inverse never occurs in isolation. That is, it can only occur in combination with the directional prefixes; as Yulha put it, the inverse has to be “hosted” by a preceding prefix. In situations that do not require these prefixes, there is no way to overtly mark the inverse relationship. For example, the following sentence has a Stem 1 verb that does not require a directional prefix, and (as was discussed in Section 2.1.2) pronominal arguments can be unexpressed; as a result, the sentence is ambiguous and can either mean “I love [someone]” or “[someone] loves me.”

- (84) *ŋê* *ndâ-ŋ*
 1SG like-1SG

2) the vowels in inverse prefixes are too idiosyncratic to be explained by phonological processes. Sometimes these vowel differences could be explained as a V + /u/ assimilation, such as when a directional prefix ends in schwa.

- (85) *və-dzīd-ŋ* → *vu-nk^hək^ha-ŋ*
 PROG-eat-1SG PROG.INV-chase-1SG

- (86) *kə-t^hō-n* → *ku-t^hō*
 INWARD-cook-2SG INWARD.INV-cook

- (87) *zə-zâm* → *zu-zâm*
 ZE-take.away₂ ZE.INV-take.away₂

However, when the directional prefix *o-* is used, it becomes /a/ in the inverse, and the vowels in *næ-* and *æ-* also becomes /a/ in the inverse:

- (88) *o-zgê-n* → *a-zgê-n*
 UP-lift-2PL UP.INV-lift-2PL
- (89) *næ-ndûd-ŋ* → *na-ndûd-ŋ*
 DOWN-love₂-1SG DOWN.INV-love₂-1SG

Thus, if this were a synchronic phonological process, we would have to account for the following: /ə/ + /u/ → u, /o/ + /u/ → a, and /æ/ + /u/ → a. These forms are not motivated by general phonological principles, nor are they seen elsewhere as productive processes in the language. Thus we choose to analyze the directional + inverse as a single non-segmentable portmanteau form.

4.3. Tense/Aspect

Tense and aspect are marked on Khrosyabs verbs using the morphological components of verb stem alternation and directional prefixes.

4.3.1 Past tense

Past tense in Khrosyabs is expressed by a Stem 2 verb, conjugated for person and number, minimally taking a directional prefix.

- (90) *nû* *cê = k^he* *χpī* *zæ* *nə- fêî-n*
 2SG 3SG=DAT story one OUTWARD-tell₂-2SG
 ‘You told the story to him.’
- (91) *cê = γə* *ŋcên = k^he* *χpī* *zæ* *nu-fêîd*
 3SG=ERG 1SG=DAT story one OUTWARD.INV-tell₂
 ‘He told the story to me.’

4.3.2 Nonpast

Reference to present and future times use the same morphology, a Stem 1 verb plus other appropriate morphology. To specify a particular nonpast time, another morpheme (perhaps a time word) needs to be included:

- (92) *jâm* *zæ* *t^hô-ŋ*
 house one make₁-1SG
 ‘I (will) build a house.’
- (93) *nâzi* *jâm* *zæ* *t^hô-ŋ*
 tomorrow house one make₁-1SG
 ‘I will build a house tomorrow.’

Nonpast can also be used for habitual actions:

- (94) *jâm t^hô-ŋ*
house make₁-1SG
‘I build houses.’

Note that the only difference between (92) and (94) is the determiner ‘one.’

4.3.3 Aspect – Inchoative *o-* versus inceptive *nə-*

The directional prefixes *o-* ‘UP’ and *nə-* ‘OUTWARD’, when combined with verbs that do not normally take them, signal a beginning. Specifically, when *nə-* attaches to dynamic verbs, this signals the *start of an activity*; when *o-* combines with stative verbs this signals a *change of state* (i.e. the start of a new state, in a contrastive sense.) Following Bybee et al (1994), we call these aspectual categories **inceptive** (beginning of an activity) and **inchoative** (beginning of a state).

The use of *o-* as an inchoative, or *nə-* as an inceptive seems to divide verbs into two classes, which we call **dynamic** and **stative**. Most verbs appear to be lexically determined as either dynamic or stative.

Dynamic		Stative	
<i>q^hêd</i>	laugh ₁	<i>jê</i>	lightweight ₁
<i>næq^hîd</i>	laugh ₂	<i>næjê</i>	lightweight ₂
<i>nəq^hîd</i>	start to laugh	<i>ojê</i>	become lightweight
<i>*oq^hîd</i>		<i>*nəjê</i>	
<i>ŋəɸ</i>	black ₁	<i>χtɸ^həz</i>	sour ₁
<i>næŋəɸ</i>	black ₂	<i>næχtɸ^həz</i>	sour ₂
<i>nəŋəɸ</i>	become black	<i>oχtɸ^həz</i>	become sour
<i>*oŋəɸ</i>		<i>*nəχtɸ^həz</i>	

Table 10. Some examples of dynamic vs. stative verbs

Another interesting thing to note is that the prefixes determine categories that would not be predicted based on the semantics of the translations; note for example ‘black’, which is marked as a dynamic verb (in fact all color terms can take the inceptive but not the inchoative prefix). Another example is the verb ‘steal’, which in its English translation at least, would appear to be a dynamic verb, but in Khroskyabs takes the inchoative but not the inceptive prefix:

- (95) *fkâ* steal₁
nəfkā steal₂
ofkā - you used to not steal but you have become a thief
**nəfkā*

Similarly, the combination of these prefixes in their aspectual senses with verb stems are sometimes translated very differently than might have been anticipated based on the English gloss. For example, the verb *fsōy* had been translated as ‘dawn’, but the combination of aspectual prefixes with this verb reveal some complex semantics:

- (96) *fsōy* dawn₁
kə-fsûy INWARD-dawn₁ ‘The day breaks.’ [this is the default prefix]
næ-fsûy DOWN-dawn₁ ‘The light comes down (through the skylight maybe).’ [can only be directional]
nə-fsûy OUTWARD-dawn₁ ‘The electricity has been going on and off all day, and now the lightbulb has come back on.’ [inceptive]
o-fsûy UP-dawn₁ ‘It wasn’t bright before and now it is.’ [inchoative]

More examples from a richer body of texts would shed further light on this potentially interesting pattern.

4.3.4 Aspect – Progressive *və-*

One strategy for encoding progressive aspect is to use an existential verb in an auxiliary position in the clause, as in (97):

- (97) *jâm zæ t^hô zən-jâ-ŋ*
house one make now-exist-1SG
‘I am building a house.’

However, this construction only appears rarely in elicitation and is not found at all in the (admittedly small) text corpus we collected. Far more frequently, a progressive action is marked by the prefix *və-* ‘downstream’, as in (98).

- (98) *jâm zæ və-t^hō-ŋ*
house one PROG-make₂-1SG
‘I am building a house.’

Indeed, the aspectual use of this prefix is much more frequent in texts than its directional sense; example (99) is a line from the very first text we transcribed:

- (99) *çə t^hjâ və-dzîd-n ku-zâ zəŋo*
then what PROG-eat₁-2SG INWARD.INV-say₁ FIN
‘“What are you eating?” he said.’ [RabbitBear99.2]

On analogy with the other directional prefixes and their extended uses, it seems appropriate to gloss the progressive morpheme as DOWNSTREAM. However, because of the overwhelming frequency of the grammatical rather than lexical sense of the morpheme, we maintain the glossing ‘PROGRESSive’.

This morpheme is polysemous, and the verb stem it attaches to interacts with the possible meanings of this prefix. Verbs that cannot be construed as motion events cannot take *və-* as a directional (D); with these verbs, *və-* can *only* mean progressive aspect (100). Like with *o-* and *nə-*, lexical aspect restricts which verbs can occur with *və-* in an aspectual sense (A). Telic verbs cannot take PROG *və-*; these can only take *və-* as literally downstream (101). In comparison with these two examples, verbs that are both motion events and atelic are ambiguous as to the function of *və-* (102).

- (100) *q^hæd* laugh₁
næq^hid laugh₂ = “He laughed.”
vəq^hid (A) PROG-laugh₂ = “He is laughing/he was laughing.”
vəq^hid *(D) DOWNSTREAM-laugh₂ = ???
- (101) *ndzədzāv* fall.over₁
nændzədziv fall.over₂ = “He fell over.”
vəndzədziv *(A) PROG-fall.over₂ = ???
vəndzədziv (D) DOWNSTREAM-fall.over₂ = “He fell over downstream/downhill.”
- (102) *p^hōγ* cross.mountain₁
læp^hūγ upstream-cross.mountain₂ = “He crossed the mountain (moving in an upstream direction).”
vəp^hūγ (A) PROG-cross.mountain₂ = “He is crossing/was crossing the mountain.”
vəp^hūγ (D) DOWNSTREAM-cross.mountain₂ = “He crossed the mountain (moving in a downstream direction).”

4.3.5 Aspect – imperfective *næ-*

Arguably, the prefix *næ-* ‘DOWN’ is used for imperfective aspect in Khroskyabs. One piece of evidence for this hypothesis is that it is the preferred prefix for property concepts and other stative verbs; it is also the default for habituals and existentials:

- (103) *ntç^hê* HABIT₁ (this is an auxiliary for habitual actions or states)
næ-ntç^hû HABIT₂
ŋo COP₁ (used for equative/attributive constructions)
næ-ŋû COP₂
dâd exist₁ (used for existential constructions)
næ-dâd exist₂

Other pieces of evidence for this analysis are, however, shaky or missing. The frequency of *næ-* as a default prefix may indeed be motivated by its aspectual reading; it might also be due to metaphorical extension, or it may have become a ‘default’ – anything not otherwise semantically marked will default to *næ-* in Stem 2. Note for example that quite a few verbs that are inherently telic, not stative, take *næ-* as the default prefix:

(104) *natç^hɣv* break; snap
nas^hɣd kill

(105) *nandæp^lā* strike
næbûd collapse

(Though also note that all of the above are also verbs of DESTRUCTION or INJURY, which may be metaphorically linked to downward motion).

In texts *næ-* is also overwhelmingly frequent, but again it is not clear if this is motivated by aspect, lexical defaults, or any number of other possible considerations. Note for example that, though *næ-* is the default for auxiliaries this does not entirely account for its frequency in texts; only 31 of the 133 tokens of *næ-* marked verbs in our text corpus are the auxiliaries given in (103).

4.3.6 Discourse function – referential *zə-*

Finally, we describe the intriguing case of the ‘neutral directional’ prefix *zə-*. Though this prefix belongs in paradigmatic relationship with the other directionals (as shown in **Table 9**), it behaves quite differently.

Like the prefix *və-* ‘PROG’, the function of *zə-* in texts is rarely that of a true directional. Much more frequently, *zə-* is used in what we call “referential function” – that is, it is used when the event described by the verb is discrete and identifiable. Because this prefix is grammatical, but its exact function is not precisely understood at this time, we use the gloss ZE for this morpheme. An example of *zə-* in this extended function is:

(106) *p^hâd* *tə* *zə-vdê-ŋ*
 mountain DET ZE-see₁-1SG
 ‘I see the mountain from here.’

This prefix occurs frequently with the copula in text. The lexeme *zəŋo* has also grammaticalized into a sentence final particle. As Khroskyabs clauses are verb-final, it is not surprising to find the particle grammaticalized in this position. We can distinguish between *zəŋo* ZE-COP and *zəŋo* FIN by determining whether there is another finite verb in the clause; thus compare:

(107) *ŋəlā* *lŋāx* *zə* *næ-dâd=pa* *zə-ŋo*
 where child one DOWN-exist₁=NMLZ ZE-COP
 ‘There was a boy...’ [Frog3.1]

(108) *χspæjçēl* *zə* *æ-ne=γə* *zə* *ku-dzê* *zəŋo*
 frog one DEM-DU=ERG ISM INWARD.INV-catch₂ FIN
 ‘They two caught a frog.’ [Frog4]

In (107), the verb *nædâd* ‘existed’ is marked with a nominalizing clitic; hence the only possible finite verb in this sentence is *zəŋo*, which must therefore be functioning as the copula. In (108) on the other hand, the verb *kudzê* ‘they caught’ is fully finite. There is no evidence elsewhere

in the language of sequences of finite verbs within a single clause (see 2.2.1); so in this case, *zəŋo* cannot be the finite verb, and is instead the sentence final particle.

4.4. Other verbal prefixes

The remaining verbal prefixes are eclectic and, unlike the first-position prefixes, there is no clear single historical origin for them as a set. What they have in common is that they occur between the directional prefix (if there is one) and the verb stem; they are not in paradigmatic opposition with each other, as at least some can co-occur with each other.

4.4.1 *mə-* NEGative

The negative prefix *mə-* is used to negate all verbs except for the copula *ŋo*, which has the suppletive negative form *may* (see Section 5.1.1).

- (109) *o-mə-jū zəŋo*
 UP-NEG-speak₂ FIN
 [Tiger] didn't speak. [RabbitBear91]

4.4.2 *tə-* PROHibitive

In imperative constructions, the verb is marked with the 2nd person suffix and no additional morphology. Negative imperatives use the prohibitive prefix *tə-* in intermediate position.

- (110) *næ-q^hæ-n*
 DOWN-laugh₁-2SG
 'Laugh.' / 'You laugh.'
- (111) *næ-tə-q^hæ-n*
 DOWN-PROH-laugh₁-2SG
 'Don't laugh.'
- (112) *mdzæzo-tə-dzî-n*
 rice UP-PROH-eat-2SG
 'Don't eat the rice.'

We note that the examples above all have directional prefixes though they are Stem 1 verbs; this is most likely to be an accident of the limited set of examples available for the imperative/prohibitive, rather than an obligatory feature of imperatives (note in particular that (110) could be translated as either an imperative or a simple present tense.)

4.4.3 **ɸvjæ-** REFLEXive

Reflexive constructions take the prefix *ɸvjæ-*. (see discussion of the phonological effects of this prefix in Section 1.3.2).

- (113) *tʰæ næ-ɸvjæ-ʔsvû-ŋ*
 smthg DOWN-REFL-be.injured₂-1SG
 ‘I hurt myself.’
- (114) *næ-ɸvjæ-ʔscâ-ŋ*
 DOWN-REFL-CAUS-dirty₂-1SG
 ‘I got myself dirty.’
- (115) *næ-ɸvjæ-ʔsqêl-n*
 OUTWARD-REFL-CAUS-DIRTY₂-2SG
 ‘You got yourself dirty.’

Reflexives contrast functionally with autobenefactives (see Section 4.4.5 below). The reflexive construction seems to imply intentionality; when an effect was unintentional the autobenefactive is used.

4.4.4 **ɸ+RED-** RECIProcal

The prefix for reciprocals is *ɸ+RED-*; that is, the voiced uvular fricative followed by reduplication of the verb stem. The most straightforward example of this form is given in (116), with the voiced fricative and a full reduplication of the full verb stem.

- (116) *cə = jə ɸ + vde ~ vdē*
 3SG=PL RECIP-see₂
 ‘They saw each other.’

The uvular fricative devoices before voiceless verb stems; before nasal consonants it is often realized as a uvular nasal rather than a fricative + nasal sequence:

- (117) ‘RECIP~hear₁’ /ɸ + sme ~ smê/ → [χsmesmê]
 ‘RECIP~pull.out₁’ /ɸ + jo ~ jōd/ → [nojõd] or [ɸjõjõd]

Verb stem reduplication in reciprocal forms exhibit several different patterns, the most common of which we will describe here. We will treat the patterns of monosyllabic verb stems first, and then discuss the somewhat different patterns of polysyllabic stems. Generally we will give only the Stem 1 forms to illustrate the pattern, unless the Stem 2 form exhibits a different pattern, and/or the comparison between the two is illuminating.

Pattern 1: Onset + nucleus reduplication

Reciprocal forms of monosyllabic verb stems show reduplication of the onset and nucleus. Thus the reciprocal forms of the monosyllabic, vowel-final stems (i.e. stems with no coda) as in (118) reduplicate fully, while consonant-final stems lose their codas in the reduplicant, as in (119):

(118)	‘see ₁ ’	<i>vdê</i>	‘RECIP-see ₁ ’	<i>ɜ + vdê ~ vdê</i>
	‘pour ₁ ’	<i>dū</i>	‘RECIP-pour ₁ ’	<i>ɜ + du ~ dū</i>
	‘put,place ₁ ’	<i>dī</i>	‘RECIP-put,place ₁ ’	<i>ɜ + di ~ dī</i>
	‘cook ₁ ’	<i>t^hô</i>	‘RECIP-cook ₁ ’	<i>χ + t^ho ~ t^hô</i>
(119)	‘feel, touch ₁ ’	<i>māz̥</i>	‘RECIP-feel,touch ₁ ’	<i>ɜ + ma ~ māz̥</i>
	‘eat ₁ ’	<i>dzîd</i>	‘RECIP-eat ₁ ’	<i>ɜ + dzi ~ dzîd</i>
	‘keep ₁ ’	<i>vdêɜ</i>	‘RECIP-keep ₁ ’	<i>ɜ + vdæ ~ vdêɜ</i>
	‘scratch ₁ ’	<i>sp^hşōγ</i>	‘RECIP-scratch ₁ ’	<i>ɜ + sp^hşo ~ sp^hşōγ</i>
	‘cover ₁ ’	<i>p^hām</i>	‘RECIP-cover ₁ ’	<i>χ + p^hə ~ p^hām</i>

Note that codas are dropped regardless of the stem-final consonant; the verb stems in example (119) end in stops, fricatives, and nasals, none of which are reduplicated in the reciprocal form. In our verb compendium, there are no examples of syllable codas in reciprocal reduplicants.

Pattern 2: Reduplicant vowel optionally changes to /æ/

In Stem 1 verbs, the nucleus vowel in the reduplicant is almost always a faithful copy of the stem vowel, as the above examples illustrate. However, in Stem 2 verbs, it is common for the vowel to change. The most common pattern is for stem vowels to change to /æ/; this is similar to the vowel alternation in bare Stem 1 vs. Stem 2 verbs, as discussed in Section 2.2.3. Most of these vowel-altered forms were given as options; that is, there are two acceptable reciprocal Stem 2 forms, one of which preserves the nucleus vowel, while the other has /æ/ in the reduplicant:

(120)	‘scratch ₂ ’	<i>sp^hşûγ</i> ¹¹	‘RECIP-scratch ₂ ’	<i>ɜ + sp^hşæ ~ sp^hşûγ</i>	or	<i>ɜ + spu ~ sp^hşûγ</i>
	‘steal ₂ ’	<i>fkê</i>	‘RECIP-steal ₂ ’	<i>χ + fke ~ fkê</i>	or	<i>χ + fkæ ~ fkê</i>
	‘bite ₂ ’	<i>nşç^hîd</i>	‘RECIP-bite ₂ ’	<i>nşç^hæ ~ nşç^hîd</i>	or	<i>nşç^hi ~ nşç^hîd</i>

The vowel alternation in the Stem 2 form is not found in the reduplication pattern of the Stem 1 form, as seen in (121), where the Stem 1 forms of the same verbs contain faithful copies of the onset plus nucleus vowel:

(121)	‘scratch ₁ ’	<i>sp^hşōγ</i>	‘RECIP-scratch ₁ ’	<i>ɜ + sp^hşo ~ sp^hşōγ</i>
	‘steal ₁ ’	<i>fkê</i>	‘RECIP-steal ₁ ’	<i>χ + fke ~ fkê</i>
	‘bite ₁ ’	<i>nşç^hād</i>	‘RECIP-bite ₁ ’	<i>nşç^ha ~ nşç^hād</i>

¹¹ Note that for the sake of visual clarity in this analysis we will use the reciprocal form without any directional prefixes, though many of the Stem 2 forms in the Verb Compendium are given with these prefixes; see Section 4.1 for a description of the inextricability of directional prefixes and Stem 2 verb forms.

Pattern 3: Reduplicant vowel obligatorily changes to /æ/

A few Stem 2 forms were given with the vowel change to /æ/ as the only possible form. This seems to correspond to vowel quality in Stem 1. All of these verbs either have low vowels in their bare Stem 1 forms as in (122), or the vowel in the Stem 1 reciprocal form also changes to /æ/ as in (123).

(122)	‘release ₁ ’	<i>lãd</i>	‘RECIP-release ₁ ’	<i>ɓ + læ ~ lãd</i>
	‘release ₂ ’	<i>lîd</i>	‘RECIP-release ₂ ’	<i>ɓlæ ~ lîd</i>
	‘press ₁ ’	<i>sk^hãɣ</i>	‘RECIP-press ₁ ’	<i>ɓ + sk^hæ ~ sk^hãɣ</i>
	‘press ₂ ’	<i>sk^hɣɣ</i>	‘RECIP-press ₂ ’	<i>ɓ + sk^hæ ~ sk^hɣɣ</i>
	‘kill ₁ ’	<i>s^hãd</i>	‘RECIP-kill ₁ ’	<i>ɣ + s^ha ~ s^hãd</i>
	‘kill ₂ ’	<i>s^hîd</i>	‘RECIP-kill ₂ ’	<i>ɣ + sæ ~ sîd</i>
(123)	‘point at ₁ ’	<i>t^hæme kãstô</i>	‘RECIP-point at ₁ ’	<i>t^hæme kə-ɣ + stæ ~ stô</i> (=lit. ‘show finger’)
	‘point at ₂ ’	<i>t^hæme kustô</i>	‘RECIP-point at ₂ ’	<i>t^hæme kə-ɣ + stæ ~ stô</i>

In an apparently related pattern, several bare Stem 2 forms were given with two possible vowels, while their corresponding reciprocals have only /æ/ in both the reduplicant and the stem:

(124)	‘keep ₂ ’	<i>vdãɓ</i> or <i>vdãɓ</i>	‘RECIP-keep ₂ ’	<i>ɓ + vdæ ~ vdãɓ</i>
	‘rob ₂ ’	<i>p^hšîɓ</i> or <i>p^hšãɓ</i>	‘RECIP-rob ₂ ’	<i>ɓ + p^hšæ ~ p^hšãɓ</i>

There are also two examples of Stem 2 forms with optional vowel alternation that preserve these optional forms in the reciprocal (but note that here also, the reduplicant has /æ/ regardless of the stem vowel):

(125)	‘scrape (hair) ₂ ’	<i>vzîz</i> or <i>vzãz</i>	‘RECIP-scrape (hair) ₂ ’	<i>ɓ + vzæ ~ vzîz</i> or <i>ɓ + vzãz ~ zãz</i>
	‘accumulate ₂ ’	<i>fsâɓ</i> or <i>fsãɓ</i>	‘RECIP-accumulate ₂ ’	<i>ɓ + fsæ ~ fsâɓ</i> or <i>ɓ + fsæ ~ ãɓ</i>

Pattern 4: Partial reduplication

As several examples above show, the reduplicant is usually the onset plus the nucleus of the monosyllabic stem, but never the coda. However, in all polysyllabic verb stems only the final syllable (minus the coda) is reduplicated, with the preceding syllables simply shifted to the left; similarly, in some monosyllabic verb stems, a portion of the onset does not reduplicate, shifting some of the onset consonants to the left. We treat these as subtypes of the same pattern, highlighting the reduplicant in the examples by inserting another + between the reduplicant and the portion of the stem that is not reduplicated.

We begin by illustrating the clear case of polysyllabic verb stems, which demonstrate that it is specifically the onset and nucleus of the *final* syllable of the verb stem that is reduplicated. Unlike monosyllabic stems, in polysyllabic stem reduplication, the nucleus vowel reduces to schwa, as in (126):

(126)	‘watch ₁ ’	<i>n̄jêmo</i>	‘RECIP-watch ₁ ’	<i>Ɂ + n̄je + m̄â ~ mo</i>
	‘listen ₁ ’	<i>s̄ŋîŋa</i>	‘RECIP-listen ₁ ’	<i>χ + s̄ŋi + ŋ̄â ~ ŋa</i>
	‘support.with.hand ₁ ’	<i>ndzæfstâɁ</i>	‘RECIP-support.with.hand ₁ ’	<i>Ɂ + ndzæ + fstâ ~ fstâɁ</i>

The reciprocal form *Ɂ + ndzæ + fstâ ~ fstâɁ* ‘RECIP-support.with.hand₁’ makes it clear that complex onsets of final syllables can be preserved in the reduplicated form, but there are also examples where only a subset of the onset cluster is reduplicated, as in (127):

(127)	‘rub.with.hands ₂ ’	<i>nləylê</i>	‘RECIP-rub.with.hands ₂ ’	<i>N + ləɣ + lə ~ lê</i>
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This same pattern, in which only a subset of the complex onset is reduplicated, also occurs in monosyllabic verb stems:

(128)	‘complete ₁ ’	<i>sjōy</i>	‘RECIP-complete ₁ ’	<i>χ + s + jō ~ jōy</i>
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These reductions in stem-initial consonant clusters do not seem to be driven by phonotactics, as seen in the differential behavior of the same consonant sequences in different reduplicated verbs. For example, compare the tri-consonantal sequences in the two verbs in (129), and the /nl/ sequences in the pair in (130); in each of these pairs, the first verb reduplicates the entire onset whereas the second verb reduplicates only part of the onset:

(129)	‘bite ₁ ’	<i>n̄ɕ^hād</i>	‘RECIP-bite ₁ ’	<i>n̄ɕ^hā ~ n̄ɕ^hād</i>
	‘thicken ₁ ’	<i>nspôz</i>	‘RECIP-thicken ₁ ’	<i>N + spo ~ spôz</i>
(130)	‘UP-pry ₁ ’	<i>o-nlêy</i>	‘UP-RECIP-pry ₁ ’	<i>o-nlæ ~ nlêy</i>
	‘buckle ₁ ’	<i>nlæd</i>	‘RECIP-buckle ₁ ’	<i>N + læ ~ læd</i>

While one might try to rescue a consistent phonological pattern in reduplication by giving these otherwise analogous surface stems a different underlying representation, such distinctions in representation would have to be lexically specified. Another lexically specified approach would be to analyze these stems as historical compounds, such that the original verb stem is always monosyllabic and reduplicates fully (excepting the coda), whereas the segments and/or syllables that do not reduplicate represent morphological material added later, making these forms all older compounding stems.

A similar analysis might help to make sense of the anomalous behavior of one polysyllabic stem, ‘promise’. Here, the material that is not reduplicated is further separated from the reduplicated portion of the stem, occurring to the left of the *Ɂ*- prefix, which otherwise always precedes entire stems. (Note that ‘promise₁’ is also the only polysyllabic verb in our compendium in which the vowel in the reduplicant does *not* reduce to /ə/.) In the Stem 2 forms, the directional prefix *ku-* also *follows* the first syllable /ɣa/, which even more strongly suggests that this stem is in fact a compound of an older free morpheme *ɣa* (gloss unknown, as it has not been encountered elsewhere in the data) and the verb stem *zê/zâ* (which, without /ɣa/, means ‘say’ in Khroskyabs).

(131)	‘promise ₁ ’	<i>ɣâzæ</i>	‘RECIP-promise ₁ ’	<i>ɣa + ɸ + zæ ~ zê</i>
	‘promise ₂ ’	<i>ɣâku-zə</i>	‘RECIP-promise ₂ ’	<i>ɣakə + ɸ + zə ~ zê</i>

Under this bimorphemic analysis of ‘promise’, it no longer represents an exception to the polysyllabic pattern of vowel shift to /ə/, but rather fits neatly into the most frequent reduplication pattern for monosyllabic stems.

Pattern 5: No reduplication

There are also a few examples of polysyllabic verbs that do not reduplicate; they simply add the prefix *ɸ*- to form the reciprocal. The syllables of these verbs are repetitive, making them look ‘reduplicated’ even in their bare forms.

(132)	‘drag ₁ ’	<i>nɕəzɕə̃</i>	‘RECIP-drag ₁ ’	<i>N-ɕəzɕə̃</i>
	‘drag ₂ ’	<i>nɕəzɕə̃</i>	‘RECIP-drag ₂ ’	<i>N-ɕəzɕə̃</i>
	‘create.chaos ₁ ’	<i>vzjæzɕlêz</i>	‘RECIP-create.chaos ₁ ’	<i>ɸ + vzjæzɕlêz</i>
	‘create.chaos ₂ ’	<i>vzjæzɕlîz</i> or <i>vzjæzɕlêz</i>	‘RECIP-create.chaos ₂ ’	<i>ɸ + vzjæzɕlîz</i> or <i>ɸ + vzjæzɕlêz</i>

There is also one example where the Stem 1 form of the reciprocal is given with both of the patterns just described (final syllable reduplication, or none), which are equally acceptable (133).

(133)	‘smell ₁ ’	<i>nləlâm</i>	‘RECIP-smell ₁ ’	<i>ɸ + nləlê ~ ləm</i> or <i>ɸ + nləlâm</i>
	‘smell ₂ ’	<i>nləlâm</i>	‘RECIP-smell ₂ ’	<i>ɸ + nlələ ~ ləm</i>

Summary of patterns

These are some of the most common attested patterns of reduplication in reciprocal forms of verbs. A description of less frequent patterns and seemingly anomalous forms are a topic for further data collection and research. Other interesting topics for further analysis include how this reduplication interacts with other morphology (for example, we have a few examples in the compendium which appear to be causativized forms); and what these examples can tell us about the nature of the syllable in Khroskyabs.

Table 11 gives the counts of verb stems and reciprocal reduplication patterns found in the current verb compendium (see appendix). The patterns are as follows:

- Pattern 1 – full onset + faithful nucleus vowel
- Pattern 2 – full onset + vowel changes to /æ/ in reduplicant
- Pattern 3 – full onset + faithful vowel or /æ/ given as acceptable forms
- Pattern 4 – partial reduplication of the base
- Pattern 5 – no apparent reduplication
- “Other” – examples that do not fit one of the more common patterns

Note that there are a handful of examples which show more than one of these patterns, and these are counted twice. For example, the verb in (133) is counted both as a Pattern 4 and a Pattern

5 in Stem 1, since both options were given. Note also that, as described earlier, Pattern 4 accounts for some monosyllabic and some polysyllabic stems.

These counts are not meant to indicate statistical significance, but rather to show the relative frequency of the different reduplication strategies.

Monosyllabic stems (total = 131)			Polysyllabic stems (total = 21)		
	Stem 1	Stem 2		Stem 1	Stem 2
Pattern 1	81	43	Pattern 4	12	12
Pattern 2	2	19	Pattern 5	5	4
Pattern 3	2	43	Other	5	5
Pattern 4	8	5			
Other	38	31			

Table 11. Counts of reduplication patterns in reciprocal verb stems

Unlike the ‘passives’ and ‘antipassives’ described in Section 5.3, reciprocal is a morphological valence-decreasing construction. Verbs that are lexically transitive lose their inverse marker in a reciprocal construction, which we take as evidence that the two-argument verb becomes a one-argument verb.

- (134) ‘sprain/wrench₂’ *nu-k^hlud*
 OUTWARD.INV-wrench₂
- ‘RECIP-wrench₂’ *nə-bk^hlu~k^hlud*
 OUTWARD-RECIP~wrench₂

4.4.5 **n-** AUTobenefactive

Things that you do to benefit yourself take the AUTobenefactive prefix *n-*.

- (135) *jâm* *t^hō-ŋ*
 house build₁-1SG
 ‘I will build a house.’
- (136) *jâm* *zæ* *n-t^hō-ŋ*
 house one AUT-build₁-1SG
 ‘I will build myself a house.’

Note that actions undertaken on behalf of immediate family members can take the autobenefactive, even though it does not benefit the self who is speaking:

- (137) *ŋəjâŋ æmæ kə-n-vdā-ŋ*
 1REFL mother INWARD-AUT-look.after-1SG
 ‘I looked after my mother.’

In this example, it is possible to say *kəvdəŋ* (the verb without the autobenefactive prefix), but Yulha indicates that it seems a little distant, since it is your mother.

Also note that, in addition to its ‘autobenefactive’ function, this prefix is also used for semantically ‘middle’ constructions, such as a patient’s change of state following an event (Givón, 2001b: 116):

- (138) *tʰæmē næ-n-tsô-ŋ*
 finger DOWN-AUT-hurt₂-2SG
 ‘I hurt myself (cut my finger).’ → on accident, vs.

- (139) *næ-ɸvjæ-ɩ-svû-ŋ*
 DOWN-REFL-CAUS-be.injured-1SG
 ‘I hurt myself.’

4.4.6 N- IMPERSONAL

Impersonal constructions take the uvular nasal prefix *N-*, which we gloss as IMPRS. One remarkable fact about this prefix is that it is the only form in Khroskyabs that utilizes the uvular nasal as a phoneme (note that it contrasts with the autobenefactive prefix *n-*).

- (140) *pʰād tə (zə-)N-vdê*
 mountain DET (EVID-)IMPRS-see₁
 ‘You can see the mountain.’ (i.e. it is possible to see it from here).
 Also, ‘I can see the mountain.’

Yulha indicates that the impersonal construction (ex. 140) can mean either “it is possible to/anyone can” and also “I can” (perhaps just by extension.)

- (141) *pʰād tə (zə-)vdê-ŋ*
 mountain DET (EVID)-see-1SG
 ‘I can see the mountain from here.’
 * “Anyone can see the mountain.”

- (142) *pʰād tə (zə-)vdê-n*
 mountain DET (EVID-)see-2SG
 ‘You can see the mountain from here.’
 * “Anyone can see the mountain.”

4.4.7 \hat{a} - IRRealis?

Lai (2017) identifies the prefix \hat{a} - as an irrealis marker. In the elicitation data we collected, the prefix occurs in irrealis constructions, such as the desiderative (143) and the conditional (144). It also co-occurs with causative constructions and there is no obvious irrealis meaning. Yulha notes that ‘let me’ (145) and ‘make me’ (146) are not distinguished morphologically in Khroskyabs.

- (143) *câ-γə mdzâz tə kə-â-t^hô zə nœ-nts^hâ-ŋ*
 3SG-ERG rice DET INWARD-IRR-cook₁ if DOWN-think/want₂-1SG
 ‘I wish he would cook the rice.’
- (144) *ŋcên zɣalām zœ o-ts^hə-n œtə-γə nə-â-mə-ł-sîd-ŋ zə*
 1SG-GEN chest one UP-hit-2SG that-ERG OUTWARD-IRR-NEG-CAUS-kill₂-1SG if
 ‘‘You shoot my chest once, if that doesn’t kill me...’’ [RabbitBear34]
- (145) *âva = γə bzō â-ł-ŋstsô-ŋ*
 father=ERG horse IRR-CAUS-ride₁-1SG
 ‘My father lets me ride the horse.’
- (146) *âva = γə sū n-â-s-lû-ŋ*
 father=ERG livestock OUTWARD-IRR-CAUS-herd₂-1SG
 ‘My father made me herd the yaks.’

Note that the verb in example (146) should be marked for inverse, but the OUTWARD.INV inverse prefix form *na-* is not detectable. It is possible that the vowel was fully deleted or assimilated to the IRR prefix; obtaining further examples of IRR prefix following other vowel-final prefixes would better illustrate this phenomenon.

4.4.8 $z\hat{ə}$ - EVIDential

The intermediate prefix $z\hat{ə}$ - ‘EVID’ (marked with high falling tone) is part of the evidential system in Khroskyabs. This system is not yet fully understood, but some examples were collected in elicitation:

- (147) *k^hâva nœ-tô*
 snow DOWN-come
 ‘It snows.’ (general statement about the world)
- (148) *k^hâva nœ-z $\hat{ə}$ -tô*
 snow DOWN-EVID-come
 ‘It is snowing.’ (and I see it myself right now)

This prefix has a falling tone, which clearly distinguishes it from the $zə$ - prefix that is part of the directional system (discussed in Sections 4.1 and 4.3.6.)

4.4.9 ʈ- /s-/f- CAUSATIVE

The causative prefix in Khroskyabs is alternately realized as one of three voiceless fricatives: /ʈ/, /s/, or /f/. The form of the causative is lexically determined; each verb root selects only one of the allomorphs regardless of its phonological form. Note for example that all three prefixes are attested preceding stems that begin with a sibilant:

ʈ- causative	s- causative	f- causative
ʈ-scæɭ ‘CAUS-dirty ₂ ’	s-zje ‘CAUS-sit ₂ ’	f-scâz ‘CAUS-fear ₁ ’
ʈ-svud ‘CAUS-injure ₂ ’	s-ʂzu ‘CAUS-dry ₂ ’	f-staʂ ‘CAUS-be.close ₁ ’
ʈ-sîd ‘CAUS-kill ₂ ’	s-t ^h ô ‘CAUS-build ₁ ’	f-st ^h u ‘CAUS-boil ₂ ’

Table 12. Examples of attested causative forms

These forms remain consistent even when additional prefixes precede the causative prefix verbs:

- (149) *næ-ɛvjæ-ʈ-sqâ-ŋ*
 DOWN-REFL-CAUS-be.dirty₂-1SG
 ‘I got myself dirty.’
- (150) *ɛjī = k^he* *ɛ-f-scâz*
 tiger=DAT IMPRS-CAUS-fear₁
 ‘Tigers are feared.’
- (151) *vâca* *tə* *t^ha* *ɛjī* *tə* *nə-u-ʂs-jē* *zəŋo*
 edge.of.cliff DET upon tiger DET OUTWARD-INV-CAUS-sit₂ FIN
 ‘(Rabbit) made the Tiger sit on the edge of the cliff.’ [RabbitBear116]

For a much fuller discussion of causative morphology in Khroskyabs dialects, see Lai (2016). Note that the examples in this table are citation forms of the causative verbs; in running speech the s- prefix metathesizes with the stem-initial fricatives in ‘sit’ (→ *ɟsjē*) as shown in ex. (151), and in ‘dry’ (→ *χsɛū*). A similar methathesis is not observed with other stem initial consonants or for the other two causative prefixes.

Note that morphological causatives are somewhat restricted in Khroskyabs; the causative prefix is not used with nonagentive causatives (e.g. ‘I got full from eating too much,’ ‘The tiger died from falling off the cliff’), with caused motion (‘I moved the ladder to the wall,’ ‘I put the cup on the table’), or with some other types of causatives (‘I felled the tree.’)

Causative constructions add an A argument to a clause. For example, the lexically intransitive verb “boil/be boiling” is given in (152); in the causative construction (153), the S argument of the intransitive sentence becomes the P and an A (causer) argument is added:

- (152) *ɣdâ* *o-ts^hū*
 water UP-boil₂
 ‘The water boiled.’

- (153) $y d \hat{a}$ ($c \hat{a} = y \hat{a}$) $a-f-t s^h \bar{u}$
 water (3SG=ERG) UP.INV-CAUS-boil₂
 ‘She boiled the water.’

The increase in valence is indicated both by the (optional) addition of an ergative agent, as well as the (obligatory) use of the inverse form of the directional prefix. Example (154) shows a causative construction based on a transitive sentence “He will build my house”. An (unexpressed) A argument ‘1SG’ is added, as evidenced by the indexing on the verb; the P argument of the transitive sentence (‘my house’) remains the P, and the causee (the A argument of the transitive, ‘3SG’) is marked by the DATive case.

- (154) $\eta \hat{a} e n = j \hat{a}$ $j \hat{a} m$ $z \hat{a} e$ $c \hat{a} = k^h e$ $s-t^h o-\eta$
 1SG=GEN house one 3SG=DAT CAUS-build₁-1SG
 ‘I will make him build me a house.’

See section 5.2.1 for more on Grammatical Relations.

4.4.10 (t) $\epsilon^h \hat{a}$ (y)- Question

This prefix is one of the strategies used for forming polar questions (see Section 5.5.1). It is etymologically related to the standalone question particle $t \epsilon^h \hat{a} y$ (see Lai, to appear), and in clear, hyperarticulated speech it is pronounced as such. However, in natural speech as a prefix, the final /y/ tends to be lost. This is understandable given the fact that all verb stems are consonant initial.

Following a consonant, the prefix will start with the affricate /t ϵ /, following a vowel (or clause-initial) it will be / ϵ / . Given the fact that almost all prefixes that would precede this intermediate position prefix are vowel-final, this prefix is most often pronounced simply as [$\epsilon \hat{a}$].

- (155) $c \hat{a} = y \hat{a}$ $m d z \hat{c} \hat{e} z$ $k u-\epsilon \hat{a}-t^h \bar{o}$ $\rightarrow k u-t \epsilon^h \hat{a} y-t^h \bar{o}$
 3SG=ERG rice IRR.INV-Q- make
 ‘Did he cook the rice?’

4.4.11 so- and s \hat{a} - ‘Comparative’ and ‘Superlative’

Two other prefixes that occur in our data are the comparative *so-* and superlative *s \hat{a} -*. These are different in kind to the prefixes treated so far, in that they are *nominalizing* prefixes. As discussed in Section 2.2.4, property concepts are verbs in Khroskyabs. However, property concept verbs that take the superlative prefix have nominal properties; they occur in positions other than clause-final, they take determiners, and they take case marking. Thus, it is not surprising that they do not occur with other verbal morphology.

- (156) $[b z \bar{o}$ $s \hat{a}-q^h z \bar{a}$ $t \hat{a} = j \hat{a}]$ $j \hat{u}$ $t \hat{a} = g \hat{a}$ $n \hat{a} e-\epsilon \hat{a}-n$ $k u-z \hat{a}$ $z \hat{a} \eta o$
 [horse SUPER-big DET=GEN] ear DET=LOC DOWN-go₁-2SG INWARD.INV-say FIN
 ‘“Get into the ear of the biggest horse,” he said.’ [RabbitBear73]

Interestingly, these are the only examples where an element comes between a noun and its determiner. This suggests that, though the nominalizer is a prefix on the verb, it is the whole clause that has been nominalized:

$N + V \Rightarrow [N + V]_{\text{Nominalized}} \text{DET}$

This is shown in the first phrase of (152), where the determiner follows the nominalized verb *q^hzɑ* but serves as the definite determiner for the whole phrase, ‘(of the) biggest horse’.

4.5. Suffixes and clitics

In this section, we distinguish between affixes and clitics on phonological grounds. For example, person/agreement markers have morphophonemic effects on the verb stem, as described in section 1.3.1; whereas, the MIRative suffix we describe in 4.5.2 partially assimilates to the verb stem. Both behaviors argue for an analysis that these are verbal suffixes. Khroskyabs also has other morphemes that follow verbs but that do not have such phonological effects and that, in some cases, are etymologically related to standalone words (such as the discourse particles briefly mentioned in Section 2.3.3). These we analyze and gloss throughout this description as verbal clitics. In section 4.5.3 we describe the most common type of enclitics in our data.

4.5.1 Person/number agreement

Khroskyabs verbs are marked for person and number, according to the pattern illustrated in **Table 7** and **Table 8** in Section 2.2.2. An important thing to note is that the third person form of verbs is identical to what could be called the ‘bare stem’, and that this is the same form for all third persons regardless of number. These forms with no explicit marker are still fully verbal and fully finite (i.e. they show all of the other morphosyntactic properties of verbs, such as directional prefixes, clause-final position, etc.).

(157) *zdāv na-tçâv-ŋ*
 window DOWN-break₂-1SG
 ‘I broke the window.’

(158) *câ = γə zdāv na-tçâv*
 3SG=ERG window DOWN.INV-break₂
 ‘He broke the window.’

4.5.2 -(t)s^hi MIRative

The mirative suffix is *-ts^hi* following a stem-final consonant, or *-si* following a stem-final vowel. The mirative is used in contexts where new information is expressed, or something unexpected. Examples (159) and (160) are both taken from personal narratives of Yulha’s childhood. In the first, Yulha was being chased by a wolf while out herding sheep; she barely

managed to escape by jumping into a small hole. In the second, she comes home from boarding school to find an (unexpected) baby brother.

- (159) *æ-çəvælæsi næ-nlvā-ŋ-si çəntç^hê*
 DEM-so DOWN-be.lucky₁-1SG-MIR very
 ‘I was really lucky!’ [ChasedbyWolf16]
- (160) *æçəvæŋjāκ mŋâd zæ a-n-çpô-si=je zə-mŋâd*
 so.then child like/as one UP.INV-AUT-hold₂-MIR=like ze-like/as
 ‘it looked like she was holding a baby or something.’ [NewBaby17]

In elicitation Yulha would sometimes give the same sentence twice, once without the mirative and once with it; when asked about the semantic difference, she would say that the mirative gives the sentence more “flavor.”

- (161) *χsnā ylē kə-zdû-ŋ=mə tə=γə ɛjī tə na-sîd-ts^hi*
 yesterday rabbit INWARD-meet₂-1SG=NOM DET=ERG tiger DET outward.INV-kill₂-MIR
 ‘The rabbit I met yesterday killed a tiger.’
- (162) *losçêz nəmna zə-ŋō fsnâ zə-ŋō-si*
 Spring.Festival when ZE-COP today ZE-COP-MIR
 ‘When is the Spring Festival?’ ‘It’s today!’

4.5.3 Nominalizers

There are several different clitics which serve to nominalize the verb phrase. We gloss all of these as NMLZ.

- (163) *ylē sâd=mə tə ŋê næ-ŋû-ŋ*
 rabbit kill₁=NMLZ DET 1SG DOWN-COP₂-1SG
 ‘The rabbit was killed by me’ (lit. ‘I was the killer of the rabbit.)
- (164) *zdāv tç^hov=pa tə ŋê næ-ŋû-ŋ*
 window break₁=NMLZ DET 1SG DOWN-COP₂-1SG
 ‘The window was broken by me’ (lit. ‘I was the breaker of the window.’)
- (165) *zôγ dzîd=spi ndê-n*
 wild.root eat₁=NMLZ like₁-2SG
 ‘You like to eat wild roots.’ (lit. ‘You like [wild root-eating].’)

As these examples illustrate, the nominalizers as a set have a range of different functions, and in the case of =*mə* and =*pa* in (163) and (164), these functions sometimes seem to overlap. The exact functional domains of these nominalizers is a topic for further analysis.

5. Simple clauses

In this section we describe clauses that consist of one finite verb. We first describe nonverbal predicates, before touching on simple verbal predicate types including question formation.

5.1. Nonverbal predicates

Here we describe some of the constructions that correspond to Payne's (1997: 111-128) nonverbal predication functions. Section 5.1.1 describes the Equative and Proper Inclusion constructions, which take the copula *ηο* 'COPula'. Section 5.1.2 covers the Existential and Locative constructions which use a set of three verbs (*jed*, *dəd*, and *stîd*, 'EXIST') depending on animacy and moveability. Section 5.1.3 describes the transitive verb *ze* 'have.' All the constructions in this section use verbs that take verbal morphology, occur clause-finally, and (with the possible exception of the copula) they show Stem 1 and Stem 2 alternation. These constructions are nonverbal in the sense that they have a semantically empty verb indicating a nonverbal predicate nucleus (Overall, Vallejos, & Gildea, 2018: 3).

5.1.1 *ηο/māγ* - COPula

The COPula, *ηο*, along with its negative *māγ*, is used for Proper Inclusion and Equative functions.

Proper Inclusion

- (166) *ɸosān*¹² *ηô-η*
student COP-1SG
'I am a student.'
- (167) *ɸosān* *ηô-n*
student COP-2SG
'You are a student.'
- (168) *ɸosān* *māγ*
student NEG.COP
'She is not a student.'

Equative

- (169) *câṭə* *ηâṇ* *lḡāḅ* *ηō*
this 1SG.GEN child COP
'This is my child.'

¹² Chinese loanword, 学生

In section 4.3.6 we describe the sentence-final particle *zəŋo* and its contrast with the ZE-COP predicate. Recall that, because there must be one and only one finite verb in each predicate, the presence or absence of another finite verb disambiguates these homophonous words. Thus (170) shows the sentence-final particle, while (171) must be the copula.

(170) *ʋmā = jə* *ku-çô* *næ* *ɤdē* *mə-vâ* *zəŋo*
 fire=PL INWARD.INV-make.fire but at.all NEG-come FIN
 ‘[He] made the fires but [Rabbit Mom] didn’t come at all.’ [RabbitBear12]

(171) *sū* *ŋətə = jə* *nûn* *zə-ŋo*
 livestock which=PL 2SG.GEN ZE-COP
 ‘Which livestock is yours?’

5.1.2 *jed/ dəd/ stîd* – ‘EXIST’

In addition to the copula, three verbs glossed as ‘exist’ are used for the Existential and Locative functions. Word order disambiguates the two functions; locatives have the order [S LOC EXIST], as in examples (172-174):

Locative – Inanimate, contingent:

(172) *q^hû* *zôdzə t^ha* *zə- stîd*
 bowl table upon ZE-exist₁
 ‘The bowl is on the table.’

Locative – Inanimate, permanent:

(173) *nûn* *jəm* *ŋəlā* *dād*
 2SG.GEN house where exist₁
 ‘Where is your house?’

Locative – Animate:

(174) *nûn* *əmə* *ŋəlā* *jəd*
 2SG.GEN mother where exist₁
 ‘Where is your mother?’

Existential predicates on the other hand have a [LOC S EXIST] order, (175-177).

Existential:

(175) *sɪtʂ^huan = gə* *ɤjī* *jəd/dād*
 Sichuan=LOC tiger exist₁
 ‘There are leopards in Sichuan.’

(176) *ætə səpō tə-gə ɛʃō zæ næ-dād*
 that tree DET-LOC hole one DOWN-exist₂
 ‘...there was a hole in the tree...’ [Frog21]

(177) *æ so-tə jâm vjū la-ʃə zə-ʃêd*
 EXCL COMPAR-DET house person ISM-PL ZE-exist₂
 ‘Ah! There were so many people at (my) house...’ [NewBaby13.1]

The copula *ʃêd* is most appropriately used to describe the place where an animate person or thing is currently located (or sitting), whereas *dād* indicates where something is permanently situated. (Note that this is true both for the Existential and for the Locative examples given above). The third copula, *stîd*, is for moveable inanimate objects¹³. Formerly animate actors become ‘contingent inanimates’ under certain circumstances:

(178) *jêvu tə zôdzə tʰa zə-ʃêd*
 cat DET table upon ZE-exist₂
 ‘The cat is on the table.’

(179) *jêvu tə zôdzə tʰa zə-stîd*
 cat DET table upon ZE-exist
 ‘The cat is on the table’ → the cat is dead.

5.1.3 Possession

Possession in Khroskyabs is expressed using the transitive verb *zə* ‘have’. There does not appear to be any distinction between alienable versus inalienable possession, animacy, etc.

(180) *mô zæ zê-ŋ*
 younger.brother one have-1SG
 ‘I have a (younger) brother.’

(181) *sū zæ zê-ŋ*
 livestock one have-1SG
 ‘I have a yak.’

(182) *jâm zæ zê-ŋ*
 house one have-1SG
 ‘I have a house.’

(183) *ætə cə=ʃə jâm zə-māy, cə=ʃə jâm mu-zê*
 that 3SG=GEN house ZE-NEG 3SG=ERG house NEG.INV-have
 ‘That is not his house, he doesn’t have a house.’

¹³ Note that we do not currently have an example of *stîd* in an existential predicate, but presume that it could be similarly used in that function.

Note that ‘have’ takes the inverse marker in example (183), demonstrating that possessive constructions are transitive.

5.2. Verbal predicates

As evidenced by synchronic morphosyntax, the significant parameter for transitivity in Khroskyabs is the number of participants in a clause (Hopper and Thompson, 1980). We refer to single argument clauses as intransitive clauses, and two argument clauses as transitive. Verbs in Khroskyabs seem to be marked lexically for valence – that is, we have not found evidence of labile verbs; changing the valence of a verb requires overt marking. For example, in order for a lexically intransitive verb to add an argument, it requires a valence-increasing suffix such as a causative:

(184) *γd̂* *o- ts^hū*
 water UP-boil₂
 ‘The water boiled.’

(185) *γd̂* (*ĉ = γ̂*) *a-f- ts^hū*
 water (3SG=ERG) UP.INV-CAUS-boil₂
 ‘She boiled the water.’

For more about the causative prefix, see 4.4.10.

5.2.1 Grammatical relations

Core arguments in Khroskyabs include S, A, P, T, and R. Throughout this description we have avoided terms such as ‘subject’ and ‘object’. It has been argued that most Trans-Himalayan languages are more accurately described as hierarchical rather than subject-indexing languages (e.g. DeLancey, 2015), and Khroskyabs is indeed governed by a hierarchical alignment system, as manifested in both nominal and verbal morphology (for fuller discussion see Sections 2.2.2 and 3.1).

Core arguments are those that can be indexed on the verb. We follow Dryer (2005) in defining S as the single argument of a single-argument clause, A as the more agent-like of a two-argument clause, and P as the more patient-like of a two argument clause. S, A, and P can all control verb indexation depending on their ranking in the hierarchy (see **Table 7** and **Table 8** for intransitive and transitive verb paradigms.)

(186) *o-dzīd-ŋ*
 UP-eat₂-1SG
 ‘I ate.’ => S controls indexation

(187) *zdāv* *næ-ṭ̣̣v-ŋ*
 window DOWN-break₂-1SG
 ‘I broke the window.’ => A controls indexation

- (188) *câ = yə* *ŋê* *vdē-ŋ*
 3SG=ERG 1SG see₂-1SG
 ‘He saw me.’ => P controls indexation

The hierarchy in Khroskyabs always follows 1 > 2 > 3. Second person arguments are always indexed on the verb; see DeLancey (2014) for comparison within the Tibeto-Burman family. First person arguments are indexed unless there is a second person in the clause.

Inverse marking on verbs and ergative case marking on nouns are the other components of the overt coding of the hierarchy. In 2>1 (189) and all 3rd person A sentences, the A argument will be marked with =yə ‘ERG’, and if there is a directional prefix, it will be in its inverse form (190). In all other domains, both the A and P arguments are unmarked, and the verb prefix is in its direct form (191 & 192):

- (189) *nû = yə* *ŋê* *vdē-ŋ*
 2SG=ERG 1SG see₂-1SG
 ‘You saw me.’

- (190) *ylē = yə* *zôγ* *a-dzid*
 rabbit=ERG wild.root UP.INV-eat₂
 ‘The rabbit ate the wild roots.’

- (191) *ŋê* *nû* *vdē-n*
 1SG 2SG see₂-2SG
 ‘I saw you.’

- (192) *ŋê* *mdzêz* *o-dzid-ŋ*
 1SG rice UP-eat₂-1SG
 ‘I ate the rice.’

Other case marking is used to mark non-core arguments. The 1st person DAT case in (193) is an oblique rather than a core argument, as evidenced by the fact that there is no 1st person agreement suffix and no inverse marking on the verb:

- (193) *câ* *ŋêŋ = k^he* *næ-nscāz*
 3SG 1SG=DAT DOWN-fear₂
 ‘He was afraid of me.’

However, as we describe in the following section, there is some intriguing evidence that R arguments, which are always marked with DATIVE case, are in fact core arguments.

For the most part, transitive sentences have APV word order, while intransitive sentences are usually S(Obl)V. But the position of noun phrases is at least to some extent context-dependent, as illustrated by the alternate word orders offered in example (37); the order given in (37b), represented here as (194) is PAV:

- (194) *nûŋ = k^he* *mdzêz* *tə* *câ = yə* *nu = k^hā*
 2SG=DAT rice DET 3SG=ERG OUTWARD.INV-give₂
 ‘He gave the rice to you.’

Thus the overt coding properties in Khroskyabs – verb indexation, noun flagging, and word order – provide some evidence of an argument’s core or non-core status, but do not show any consistent pattern that might be characterized as a ‘subject’ in this language. Similarly, we have not found any covert syntactic subject properties. The evidence for core status is central to the analysis of ditransitives, to which we turn next.

5.2.1.1 Ditransitives

We use the term ditransitive to describe a clause with three arguments, which I will refer to as A, T, and R. Lai (2017: 424) describes a split alignment system in the Wobzi dialect, where some verbs take indirective alignment (the T argument is marked as the P argument in a transitive clause would be), and others take secundative (the R argument is marked like P). We investigated this phenomenon in the neighboring Siyuewu dialect.

Nominal morphology in Khroskyabs ditransitives is consistent: A arguments are marked with ERGative case under the same conditions that govern ERGative in transitives, or else are unmarked; T arguments are unmarked; and R arguments take the DATive case suffix =*k^he*. In terms of nominal morphology, ditransitive alignment in Khroskyabs is indirective (T = P).

However, inspection of person marking on verbs in ditransitive clauses shows an entirely different alignment system governed not just by grammatical relations but also by hierarchical ranking.

- (195) *câ = jə* *bəz̥z̥ē tə* *câ = k^he* *nu-sjê*
 3SG=ERG knife DET 3SG=DAT OUTWARD.INV-loan₂
 ‘He loaned the knife to her.’
- (196) *câ = jə* *bəz̥z̥ē tə* *ŋcân = k^he* *nu-sjê-ŋ*
 3SG=ERG knife DET 1SG=DAT OUTWARD.INV-loan₂-1SG
 ‘He loaned the knife to me.’
- (197) *câ = jə* *bəz̥z̥ē tə* *nûn = k^he* *nu-sjê-n*
 3SG=ERG knife DET 2SG=DAT OUTWARD.INV-loan₂-2SG
 ‘He loaned the knife to you.’

In (195-197), the agreement marking on the verb indexes the R argument, rather than the 3rd person T. Thus we have evidence of a possible secundative (R = P) alignment system in Khroskyabs, marked by verb agreement. However, further examples show that it is SAP ranking, rather than the R argument, that is governing the person marking. Consider the following:

- (198) *câ = jə* *ŋcân* *câ = jə* *c̣mæ = k^he* *nu-sjê-ŋ*
 3SG=ERG 1SG 3SG=GEN mother=DAT OUTWARD.INV-loan₂-1SG
 ‘He loaned me to his mother.’
- (199) *câ = jə* *nû* *ŋcân = k^he* *nu-sjê-n*
 3SG=ERG 2SG 1SG=DAT OUTWARD.INV-loan₂-2SG
 ‘He loaned you to me.’

(200) $c\hat{\partial} = \gamma\partial$ $\eta\hat{\epsilon} \text{ } \text{tj}\bar{i} = k^h e$ $nu\text{-}b\hat{o}\text{-}\eta$
 3SG=ERG 1SG tiger=DAT OUTWARD.INV-feed-1SG
 ‘He fed me to the tigers.’

(201) $mdz\hat{\epsilon}z$ $t\bar{\partial}$ $\eta\hat{\epsilon}n = k^h e$ $nu\text{-}b\hat{o}\text{-}\eta$
 rice DET 1SG=DAT OUTWARD.INV-feed-1SG
 ‘(You/He) fed me rice.’

In (198), (199), and (200), the verb agrees with the T argument, but notice also that in those three examples, the T argument outranks the R according to the hierarchy of Khroskyabs (1 vs. 3, 2 vs. 1, and 1 vs. 3, respectively). Compare these with the verb in (201), which agrees with the 1SG R argument. Thus it seems that NP flagging always marks the R argument as DAT, while verbal indexation marks the highest ranking core argument in the clause (whether A, T or R). This also suggests that P, T, and R are core arguments; as there is no evidence that oblique 1st or 2nd person arguments can control indexation in this way.

We have explored this unusual system to some extent, but there is certainly more to discover, especially as it is not easy to think of possible ditransitive verbs that would take human actors as T arguments in order to test this system (cf. Siewierska & van Lier, 2012) – note for example that ‘introduce’ is not ditransitive in Khroskyabs.

This hierarchical system seems to be systematic in ditransitives, though apparent counterexamples did arise in elicitation. For example, the verb $k^h a$ ‘give’:

(202) $c\hat{\partial} = \gamma\partial$ $\eta\hat{\epsilon}n = k^h e$ $mdz\hat{\epsilon}z \text{ } t\bar{\partial}$ $nu\text{-}k^h \bar{a}$
 3SG=ERG 1SG=DAT rice DET OUTWARD.INV-give₂
 ‘He gave the rice to me.’

This example leads us to analyze $k^h a$ ‘give’ as a transitive, rather than a ditransitive, verb (e.g. it is perhaps better translated with the English verb ‘transfer’). If $\eta\hat{\epsilon}nk^h e$ is an oblique recipient rather than a core R argument, that would explain why it is not indexed on the verb.

5.3. ‘Passives’ and ‘antipassives’

There is no distinct grammatical construction for the categories of passive and antipassive. There is no morphological or syntactic change in these constructions, and indeed the morphological patterns suggest that the verbs retain their transitivity. As such, we discuss these here only as functional categories.

Examples in Khroskyabs elicited using English agentless passive clauses yield transitive clauses with no agent expressed. In these examples the verb is conjugated for third person, and the patient argument does not have any special marking consistent with promotion to the single argument of the clause.

(203) $\chi p^h \text{ } \text{z}\hat{\partial} = \gamma\partial$ $\gamma l\bar{e}$ $t\bar{\partial}$ $na\text{-}s\hat{i}d$
 bear=ERG rabbit DET DOWN.INV-kill₂
 ‘The bear killed the rabbit.’

- (204) *ylē tə na-sîd*
 rabbit DET DOWN.INV-kill₂
 ‘The rabbit was killed.’

In Khroskyabs, animate agents cannot be expressed in an oblique phrase. Elicited examples using the ‘by-phrase’ construction from English results in two strategies: a) the active construction, or b) an equative copular construction with a nominalized verb.

- (205) *ylē tə næ-sî-ŋ*
 rabbit DET DOWN-kill₂-1SG
 ‘I killed the rabbit.’

- (206) The rabbit was killed by me.
 a. *ylē tə næ-sî-ŋ*
 b. *ylē sîd = mə-tə ŋê næ-ŋû-ŋ*
 rabbit kill=NMLZ-DET 1SG DOWN-COP-1SG
 lit. ‘The rabbit-killer was me.’

Examples elicited with English passive constructions and inanimate agents use the active construction type in Khroskyabs; for example, eliciting ‘‘I was blown away by the wind’’ yields ex. (196):

- (207) *χpâzjə = γə nu-çspjâ-ŋ*
 wind=ERG OUTWARD.INV-blow.away₂-1SG
 ‘The wind blew me away.’

Here the wind must be the A argument, as there is inverse marking on the verb, indicating the sentence is transitive. Thus, though the ergative case marker is homophonous with the instrumental, the verbal prefix disambiguates the argument roles (see discussion in Section 2.2.2).

However, in the case of simple present tense verbs, which do not take verbal prefixes, the case marker is more ambiguous. Example (208) is presented again (see ex. 72, section 3.4); this inverse makes it clear that the snow is the A of this example. However, the valence of the clause in example (209) is not clear, so snow could either be an A or an oblique instrument.

- (208) *k^hâva = γə ʒjê-za na-p^hâm-si*
 snow=ERG sheep-pen DOWN.INV-cover₂-MIR
 ‘Snow covers our sheep pen.’
- (209) *stsô-çə ʒjê-za k^hâva = γə p^hâm*
 winter-then sheep-pen snow=INST/ERG cover₁
 ‘In the winter, our sheep pen is hidden in snow.’

Conceivably, word order could be taken as evidence of the argument status of *k^hâva = γə*, but see discussion in 5.2.1 about word order as a coding property of grammatical relations.

One final note: passive-like expressions with natural forces can also be expressed using the copula + nominalized verb, as in example (210). However, Yulha notes that, while such a sentence is possible, it is slightly odd.

- (210) *câ=jə* *jâm vu-vãd=pa* *bôz næ-ŋû*
 3SG=GEN house DOWNSTREAM.INV-carry.away=NMLZ flood DOWN-COP₂
 ‘His house was destroyed by a flood.’ lit. ‘The flood is [destroyer of his house.]’

Lai (2017: 354-5) describes what he calls a *passif-intransitif* prefix *ɸ-* in the Wobzi dialect, which is used for *passif sans agent* (agentless passive), *réci-proque* (reciprocal), and *personne générique* (‘generic’; what we have called impersonal) constructions. We did not find any evidence in texts or in elicitation of this prefix in the Siyewu dialect that Yulha speaks either.

Similarly, we have found no evidence of special grammar for antipassive constructions in Khroskyabs. Sentences elicited with antipassive functional value – that is, in transitive-intransitive sentence pairs which remove the patient argument in the intransitive – simply omit the patient NP from an equivalent transitive example.

- (211) *mdzêz o-dzi-ŋ*
 rice UP-eat₂-1SG
 ‘I ate the rice.’

- (212) *o-dzi-ŋ*
 UP-eat-1SG
 ‘I ate.’

Inverse marking of verbs in antipassive constructions (as well as the ergative case marking on agents) show that the clause remains transitive, even when there is no expressed P:

- (213) *ylē=yə* *zôγ* *a-dzid*
 rabbit=ERG wild.roots UP.INV-eat
 ‘The rabbit ate the wild roots.’

- (214) *ylē=yə* *a-dzid*
 rabbit=ERG UP.INV-eat
 ‘The rabbit ate.’
 (Note that *ylē adzid* = ‘Rabbit was eaten.’)

5.4. Light verbs

There are some light verb constructions in Khroskyabs that use the word *vi* ‘do, make’¹⁴. Here are some examples.

¹⁴ Yunfan Lai (2020, p.c.) notes that light verb constructions are also attested with the verbs *lãd* ‘release’ and *tsʰə* ‘hit’.

- (215) *âmcæ = γə dʒədā vî na-ldzē-ŋ*
 mother=ERG book do DOWN.INV-teach-1SG
 ‘My mother taught me to read.’ (lit. ‘Mother taught me to do books.’)
- (216) *âmcæ = γə jâṃ nōŋ ɛlâ nœ-vî-n jōγ zǣ*
 mother=ERG house inside song DOWN-do-2SG ABIL say₂
 ‘My mother said “You can sing in the house.”’ (lit. ‘You can do songs inside the house.’)
- (217) *tsâz vi-çǣd-ŋ zâ = ska*
 milk do-go₁-1SG say₁=NMLZ
 ‘As (she) said, “I’ll go do the milking,”...’ [RabbitBear136.1]

In light verb constructions, there is stem alternation on the main verb but no evidence that the semantically empty *vî* similarly alternates. However, in constructions where ‘do, make’ is the sole verb, there is a meaningful stem alternation.

- (218) *γvâ pəγ ya pəγ nə-t^hōd pjā a-vî zəŋo*
 tsampa puff.of.flour OUTWARD-come₂ grey UP.INV-make₂ FIN
 ‘A puff of tsampa flour came out and made [the air] grey.’ [RabbitBear134.2]

5.5. Questions

Questions are simple, single-verb predicates in Khroskyabs. Polar questions are formed with a question particle or its etymologically related verb prefix; content questions are formed by placing one of the set of question words into the appropriate argument position.

5.5.1 Polar questions

Polar questions are formed with the question particle (*t*)çəγ, placed either at the end of the clause or in a prefix slot between the directional prefix and the verb stem (see Section 4.4.11). The choice of *tçəγ* as a standalone particle and *çə-* as a verbal prefix depends on discourse considerations. The prefix is used in a referential, specific kind of question (compare with discussion of *zə-* prefix in Section 4.3.6), while the particle is used for more general yes/no questions or for contrastive questions.

- (219) *jâṃ zǣ o-çə-t^hō-n*
 house one UP-Q-build₂-2SG
 ‘Did you build a house?’
- (220) *âṣtə nûn = jə zə-çə-ŋō*
 that 2SG=GEN house ZE-Q-COP
 ‘Is that your house?’
- (221) *sū zē-n tçəγ*
 livestock possess-2SG QP
 ‘Do you have any livestock?’

- (222) *nûn=jə jâm ɕuen=jə jâm so-qṣā ɕəḏy*
 2SG=GEN house Xuan=GEN house COMPAR-big QP
 ‘Is your house bigger than Xuan’s?’

5.5.2 Content questions

Content questions are formed with a question word, and do not use the question particle/prefix. These clauses are verb final, as are declarative sentences, and the question words seem able to go into any position in the sentence other than clause-finally.

- (223) *nûn-jə jâm tə ηətə zə-ηō*
 2SG-GEN house DET which ZE-COP
 ‘Which (one) is your house?’

- (224) *ηəlā zə-və-n*
 where ZE-go-2SG
 ‘Where are you going?’

- (225) *ɕjê-za sə-kəntaḅ tə ηəlā dād*
 sheep-pen SUPER-close DET where exist
 ‘Where is the nearest sheep pen?’

The question words collected in elicitation are:

<i>ηəlā</i>	where?/where to?	<i>nəmna</i>	when?
<i>tʰjæ</i>	what?	<i>tʰjæ mɲâd</i>	how? (lit. ‘what way?’)
<i>sə</i>	who?	<i>tʰjôy</i>	why?
<i>ηətə</i>	which?		

Table 13. Content question words

Note that, like LOCative case, *ηəla* ‘where’ is used both for motion events (224) and for static locations (225). Also note that pronominal question words *tʰjæ* ‘what?’ and *sə* ‘who?’ can take nominal morphology, such as case marking (226) and plurality, and that *ηətə* ‘which?’ can occur in the determiner slot in a noun phrase (227).

- (226) *ɕətə jâm tə sâ=yə a-tʰō*
 that house DET who=ERG UP.INV-build₂
 ‘Who built that house?’

- (227) *sū ηətə=jə nûn zəηō*
 livestock which=PL 2SG.GEN ZE-COP
 ‘Which animals are yours?’

6. Complex clauses

This section describes clauses that contain more than one inflected verb. In coordination, two full clauses are combined either by juxtaposition or by conjunction words. The other construction types described in this section usually involve the nominalization of one clause in order to form a complex clause with another (finite) clause. This section is organized somewhat pragmatically rather than theoretically, meaning this set is not exhaustive of complex clauses in Khroskyabs nor is the organization of subsections meant as an explicit classification of these types.

6.1.Coordination

There are several different ways of coordinating two clauses in Khroskyabs. Unmarked coordination is expressed by simple juxtaposition, as in (228):

- (228) *ŋê dzā kə-t^hō-ŋ cə̂ = γə mdzəz ku-sχī*
 1SG tea INWARD-make-1SG 3SG=ERG rice INWARD.INV-cook
 ‘I made the tea and he cooked the rice.’

Clauses can also be joined by the conjunction *zæ*, which we have glossed throughout this description as ‘and,’ though the Khroskyabs word emphasizes sequentiality more than the English gloss necessarily implies. Khroskyabs uses *zæ* not as a simple coordinating conjunction, but instead deploys it for a more adverbial function.

- (229) I made the tea and cooked the rice.
 a. *dzā kə-t^hō-ŋ mdzəz kə-sχē-ŋ*
 tea INWARD-make-1SG rice INWARD-cook-1SG
 b. *dza kət^hoŋ zæ mdzəz kəsχeŋ*

Use of the conjunction in (229b) emphasizes the sequentiality of the events; I made the tea, and then I made the rice.

Coordinated clauses can also be joined by *næ* ‘but’ or *ska* ‘while’ (meaning, ‘at the same time’), which contrasts the two clauses:

- (230) *nê γlē zæ næ-sī-ŋ ska/næ nû χp^hšâ zæ næ-sī-n*
 1SG rabbit one DOWN-kill-1SG while/but 2SG bear one DOWN-kill-2SG
 ‘I killed a rabbit, while/but you killed a bear.’

- (231) *nû zə-zê-n ŋê kə-dâz-ŋ-si næ ŋhne ɣnæ-ne zə-mpjæz-ɣ*
 2SG ZE-small-2SG 1SG INWARD-old-1SG-MIR but 1DU two-DU ZE-beautiful-1DU
 ‘You are short, and I am old, but we are both beautiful.’

6.2.Experiencer constructions

Constructions with the word ‘like’ and ‘dislike’ behave like simple transitive clauses:

(232) *zôγ ndê-η*
 wild.roots like₁-1SG
 ‘I like wild roots.’

(233) *ηê cê næ-ndû-η*
 1SG 3SG DOWN-like₂-1SG
 ‘I liked him.’

(234) *bzô mæ-ndê-η*
 horse NEG-like₁-1SG
 ‘I do not like horses.’

In clauses expressing fear, the experiencer of the fear is structured as an S argument both in terms of nominal morphology and verb agreement. The stimulus of the fear is marked with dative case, and is apparently not indexed on the verb as a core argument, as shown in ex. (237).

(235) *βjî=k^he nscêaz-η*
 tiger=DAT fear₁-1SG
 ‘I am afraid of tigers.’

(236) *nû ηcêⁿ=k^he nscêz-n*
 2SG 1SG=DAT fear₁-2SG
 ‘You are afraid of me.’

(237) *cê ηcê=k^he nscêz*
 3SG 1SG=DAT fear₁
 ‘He is afraid of me.’

When the stimulus of fear is a verb, the verb takes the dative clitic though it is not explicitly nominalized: there are no nominalizer morphemes, the verb takes verbal prefixes, and can even agree in person and number with the (unexpressed) S argument of the nominalized clause. The difference between (238) and (239) is that (238) means I fear my own falling, specifically, and (239) means I am afraid of falling in general.

(238) *næ-χpô-η=k^he nscêz-η*
 down-fall₁-1SG=DAT fear₁-1SG
 ‘I am afraid of falling.’ (lit. ‘I fear [I will fall].’)

(239) *næ-χpôγ=k^he nscêz-η*
 DOWN-fall₁=DAT fear₁-1SG
 ‘I am afraid of falling.’

6.3. Adverbial clauses

The remaining set of clause-combining constructions that we describe here are adverbial. In these constructions, the adverbial clause is usually nonfinite, as evidenced either by a nominalizing morpheme on the verb or by the use of a bare verb stem without inflection for person and number (though note that for Abilitative, 6.3.3, this doesn't appear to always be the case).

6.3.1 Cause/purpose constructions

There is no lexeme or morpheme that translates to “because” in this language. Rather, purpose clauses are clauses that precede their outcomes. The verbs can be in bare stem form (240) or nominalized (241).

- (240) $\chi p^h \zeta \hat{\alpha} = k^h e$ $n \bar{\alpha} - n s c \bar{\alpha} \zeta$ $z \bar{\alpha}$ $\chi p^h \zeta \hat{\alpha}$ $n \bar{\alpha} - s \hat{i} d$
 bear=DAT OUTWARD-fear and/therefore bear OUTWARD.INV-kill₂
 ‘He killed the bear because he was afraid.’
 lit. ‘He was afraid of the bear and then he killed the bear.’

- (241) $[\chi p^h \zeta \hat{\alpha} = \gamma \bar{\alpha}$ $mu - s \hat{\alpha} d - s c e]$ $j \hat{e} = \gamma \bar{\alpha}$ $\chi p^h \zeta \hat{\alpha}$ $n \bar{\alpha} - s \hat{i} d$ $z \bar{\alpha} \eta \theta$
 [bear=ERG NEG.INV-kill-NMLZ] REFL=ERG bear OUTWARD.INV-kill₂ FIN
 ‘He killed the bear [so that the bear didn’t kill him.]’

Though there is no lexeme that translates directly as ‘therefore,’ the word $z \bar{\alpha}$ ‘and’ and $\epsilon \bar{\alpha} n \bar{\alpha}$ ‘so.then’ were given as a possibilities in this construction.

- (242) $c \hat{\alpha}$ $o - n t s j a \zeta k \bar{o}$ $(z \bar{\alpha} / \epsilon \bar{\alpha} n \bar{\alpha})$ $z d \bar{\alpha} v$ $n \bar{\alpha} - t \zeta^h \bar{\alpha} v$
 3SG UP-be.angry (and/so.then) window DOWN.INV-break₂
 ‘He broke the window because he was angry.’ (lit. ‘He became angry so then he broke the window.’)
- (243) $c \hat{\alpha}$ $n \bar{\alpha} - m \bar{o}$ $\epsilon \bar{\alpha} n \bar{\alpha} / z \bar{\alpha}$ $\gamma l \bar{e}$ $t \bar{\alpha}$ $n \bar{\alpha} - s \hat{i} d$
 3SG OUTWARD-be.hungry so.then/and rabbit DET DOWN.INV-kill₂
 ‘He killed the rabbit because he was hungry.’ (lit. ‘He was hungry so then he killed the rabbit.’)

Note however that $z \bar{\alpha}$ is not always possible; in the example (244), the addition of $z \bar{\alpha}$ was judged unacceptable:

- (244) $\eta \hat{\alpha} \bar{e} n$ $\epsilon \bar{o} \zeta m \bar{\alpha} n \bar{\alpha} - s \zeta \bar{e}$ $\epsilon \bar{\alpha}$ $(*/z \bar{\alpha})$ $c \hat{\alpha} = \gamma \bar{\alpha}$ $n u - p^h \hat{u} d$
 1SG.GEN hair DOWN-be.long so $(*/\text{and})$ 3SG=ERG OUTWARD.INV-cut₂
 ‘She cut my hair because it was too long.’

The fact that $z \bar{\alpha}$ seems to emphasize the sequential relationship between two clauses (see Section 6.1) may explain why it is not acceptable here, as the first clause represents a state rather than a preceding event.

6.3.2 Benefactives

The autobenefactive prefix and its functions were discussed in section 4.4.5. Things done for someone else have two different options. One strategy uses possession – a pronoun marked with a genitive. Another strategy involves using a nominalized verb (perhaps as a purpose clause).

(245) I will build her a house.

a. [*câ=jə jâṃ zæ*] *tʰô-ŋ*
 [3SG=GEN house one] build-1SG
 ‘I (will) build [her house].’

b. *câ(=jə) zjê-sce jâṃ*
 3SG(=GEN) sit1-NMLZ house
 lit. something like ‘I (will) build her staying-place house.’

The second strategy is preferred, especially in examples where the first strategy would lead to ambiguity in interpretation. For example:

(246) *nûn=jə mdzêz gə-sbā-ŋ*
 2SG.GEN=GEN rice finish-cook2-1SG

can either mean “I cooked rice for you” (i.e. for your benefit) or “I cooked your rice” (i.e. it was your uncooked rice but you are not necessarily the beneficiary of the cooking). To disambiguate in this case, it is preferable to say:

(247) *nûn mdzêz dzî(-n)=spi gə-sbā-ŋ*
 2SG.GEN rice eat(-2SG)=NMLZ finish-cook2-1SG
 ‘I cooked your rice for (your) eating.’

6.3.3 Abilitative

Abilitative constructions are formed with the verb *yo* ‘can/be able to’, preceded by another verb or verb phrase, which we take to be headed by the verb *yo* (similar to the English construction “be able to X”). The abilitative verb is marked for person/number. The other verb is most often the bare stem. There are some examples from elicitation where an inflected verb was acceptable or at least possible in this construction (249).

(248) *jâṃ zæ n-tʰô yô-ŋ*
 house one AUT-build ABIL-1SG
 ‘I can build myself a house.’

(249) *jâṃ zæ n-tʰô-ŋ yô-ŋ*
 house one AUT-build-1SG ABIL-1SG
 ‘I can build myself a house.’

7. Conclusion

As is the case with any sketch grammar, this description of Khroskyabs has only scratched the surface; throughout, we have highlighted many intriguing avenues for discovery. We are hopeful that this description will be valuable for the comparative study of trans-Himalayan languages and linguistics. We are even more hopeful that this work will be interesting and helpful to current and future speakers of the Khroskyabs language.

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Appendix. Compendium of Khroskyabs verbs

In our documentation of Siyuewu Khroskyabs, we collected forms for 224 verbs. For each of these, we collected Stem 1 and Stem 2 forms, as well as, where applicable, reciprocal forms for both Stem 1 and Stem 2. This data is assembled and presented here.

The first pages of this appendix contain the entire list of verb stems and forms. The following pages give these verbs again, organized by their reciprocal reduplication patterns:

Pattern 1 – full onset + faithful nucleus vowel

Pattern 2 – full onset + vowel changes to /æ/ in reduplicant

Pattern 3 – full onset + faithful vowel or /æ/ given as acceptable forms

Pattern 4 – partial reduplication of the base

Pattern 5 – no apparent reduplication

Other – examples that do not fit one of the more common patterns

See Section 4.4.4 for description and analysis of these patterns.

Note that if the Reciprocal Stem 1 and Reciprocal Stem 2 forms exhibit different patterns, the verb will be listed in each of those sections, and the form which does not match the pattern for that page will be greyed out. For example, the Stem 1 reciprocal form for ‘kill₁’ *s^hâd* is *χs^ha^hsâd*, which fits with Pattern 1, but the reciprocal form for ‘kill₂’ *nas^hîd* is *næχsæîd*, which fits Pattern 2. Therefore, the verb stem ‘kill’ appears in the list for both Pattern 1 and Pattern 2; the Stem 2 form is greyed out in the Pattern 1 list, and the Stem 1 form is greyed out in the Pattern 2 list.

Note also that some verb stems have two equally acceptable reciprocal forms that fit into different patterns. These verbs appear in the lists for both acceptable patterns.

Wordlist.number	English translation	Stem 1	Recip1	Stem 2	Recip2
YL.86	accumulate	fsæʰ	ʰfsæʰfsæʰ	fsəʰ/fsæʰ	ʰfsæʰfsəʰ / ʰfsæʰfsæʰ
YL.95	add	ɲjæʰ	ɲjæʰɲjæʰ	ɲjɪʰ/ɲjæʰ	ɲjæʰɲjæʰ
Mat.161	alive	xs ^h û		oxs ^h û	
Mat.141	awaken	st ^h əz		ost ^h əz	
Mat.154	be ashamed	bəm		næbəm	
Mat.136	be born	dəd		nædəd	
YL.16	be drunk	nvōɣ	ʰsvovōɣ	nvûɣ	ʰsvæʰvûɣ / ʰsvuvûɣ
Mat.135	be many	ʰbōɣ		næʰbûɣ	
YL.34	be true	ɲōz		ɲûz	
YL.36	become thick (poridge)	nspōz	nspospōz	nspûz	nspæʰspûz / nspuspûz
CWL.991	bend	gōɣ		kəgûɣ	
YL.22	bend (waist)	gōɣ	ʰzgozɡōɣ	gûɣ	ʰzgæʰzɡûɣ / ʰzguzɡûɣ
YL.65	big, old (sister)	c ^h æd	ʰc ^h æc ^h æd	c ^h id	ʰc ^h æc ^h id
CWL.931	bite	ɲʃc ^h rad	ɲʃc ^h ac ^h rad	kunʃc ^h id	kənʃc ^h æʃc ^h id
YL.38	bite, hold in the mouth	ɲʃc ^h rad	N/ʰɲʃc ^h anʃc ^h rad	ɲʃc ^h id	N/ʰɲʃc ^h ænʃc ^h id / N/ʰɲʃc ^h inʃc ^h id
YL.87	bitter	tç ^h æʰ	ʰtç ^h ætç ^h æʰ	tç ^h æʰ	ʰtç ^h æʰæʰ
Mat.179	black	ɲæʰ		næɲæʰ	
CWL.923	blink; wink	ɪdzâmɟzam		nəɪdzæmdzām	
CWL.970	block	ʃts ^h ē	χʃts ^h est ^h ē	nuʃts ^h ē	nəχʃts ^h est ^h ē
YL.31	blow	mɲōd	ʰsmɲomɲōd [this includes caus]	mɲûd	ʰsmɲæmɲûd / ʰsmɲumɲûd
Mat.193	boil	f ^h ts ^h û/ʰts ^h û		af ^h ts ^h û/ʰots ^h û	
YL.33	boil (the status of boiling)	bōz	ʰzbozbōz	bûz	ʰzbæʰzbûz / ʰzbuzbûz
YL.59	bold	sjaʃc ^h æd	ʰsjaʃc ^h æc ^h æd	sjaʃc ^h id	ʰsjaʃc ^h æʃc ^h id; ʰsjaʃc ^h ic ^h id
YL.5	break (to pieces) [it sounds like an intransitive verb to me - Y.L.]	dʒōv	ʰtç ^h otç ^h ōv	dʒəv	ʰtç ^h ætç ^h əv / ʰtç ^h əv
CWL.1004	break; snap	tç ^h ōv (break)	ʰtç ^h ōtç ^h ōv	natç ^h əv	næʰtç ^h ətç ^h əv
YL.13	build (by laying bricks or stone, a wall)	ʃt ^h ōɣ	ʰʃt ^h oʃt ^h ōɣ	ʃt ^h ûɣ	ʰʃt ^h æʃt ^h ûɣ / ʰʃt ^h uʃt ^h ûɣ
YL.51	build (houses)	fsɣāɣ	ʰfsɣaf ^h sɣāɣ	fsɣîɣ	ʰfsɣæʰfsɣîɣ / ʰfsɣif ^h sɣîɣ

Mat.210	burn	jō	χjojō	kujō	kəχjojō
CWL.1006	button up; buckle	nlæd	ɛnlælad	kunfəd	kəɛnləfəd
Mat.200	buy	γdā	ɛγdəγdā	kuydā	kəɛγdəγdā
CWL.998	carry	dzē	ɛdzədzē	adzê	kəɛdzədzê 互相抓着
YL.100	cause chaos	vzjæzɫæzɫ	ɛvzjæzɫæzɫ	vzjæzɫɪzɫ/-læzɫ	ɛvzjæzɫɪzɫ / ɛvzjæzɫlæzɫ
YL.20	cause something to fall	p ^h æylōγ	ɛsp ^h æyləlōγ	p ^h æylûγ	ɛsp ^h æyləlûγ
YL.46	cause to fall over	ntç ^h ətç ^h av	ɛtç ^h ətç ^h av	ntç ^h ətç ^h iv	ɛtç ^h ətç ^h iv
YL.76	cause to land/descend	zbāv	ɛzbæzbāv	zbiv	ɛzbæzbiv
YL.90	chew	ntçævtçæɸ		ntçævtçəɸ/æɸ	
CWL.955	clap	tçævla ɬtsətɬə		tçævla kuɬtsətɬə	
Mat.146	climb, ascend	nzɸəzɸa		onzɸəzɸa	
CWL.919	close (one's eyes)	χsmezɫmūγ		kəχsmezɫmūγ	
YL.50	coarse	ɬsvāγ	ɛɬsvaɬsvāγ	ɬsviv	ɛɬsvaɬsviv / ɛɬsvivɬsviv
Mat.169	cold	ɬk ^h ō		næɬk ^h ō	
YL.26	collapse	bōd		būd	
YL.37	come out (as in the sweat comes out)	tō		t ^h ōd	
YL.24	complete	sjōγ	ɛsjojōγ	sjûγ	ɛsjæjûγ / ɛsjujûγ
CWL.938	condense	tç ^h æɸ		kətç ^h æɸ	
Mat.192	cook	t ^h ezɔ t ^h ō	t ^h ezɔ χt ^h ot ^h ō	t ^h ezɔ kut ^h ō	kəχt ^h ot ^h ō
CWL.961	cover	p ^h əm	χp ^h əp ^h əm	nap ^h əm	næχp ^h əp ^h əm
YL.15	cross (a mountain)	p ^h ōγ	ɛsp ^h op ^h ōγ	p ^h ûγ	ɛsp ^h əp ^h ûγ / ɛsp ^h up ^h ûγ
CWL.950/951	cry out	χtsəγzɫa		nəχtsəγzɫa	
YL.29	cut, sever	p ^h ōd	ɛp ^h op ^h ōd	p ^h ūd	ɛp ^h əp ^h ud / ɛp ^h up ^h ud
YL.82	cut, chop	dzæγ	ɛdzædzæγ	dzəγ	ɛdzædzəγ
YL.12	dawn	fsōγ	ɛfsɔfsōγ	fsûγ	ɛfsæfsûγ / ɛfsufsfûγ
YL.6	deep (water)	nōv	nsnonōv	nōv/nûv	nsnænōv / nsnənfōv
YL.92	destroy; extinguish (Mat.198)	p ^h jæɸ	ɛp ^h jæp ^h jæɸ	p ^h jiv/p ^h jæɸ	ɛp ^h jæp ^h jæɸ
Mat.140	die	s ^h ə		nəs ^h əd	
Mat.196	dig	slû	χsluslû	naslû	næχsluslû

CWL.939	dissolve	dʒə		kədʒə	
CWL.997	drag	nɔ̃ɔ̃zɔ̃ə	nɔ̃ɔ̃zɔ̃ə	nanɔ̃ɔ̃zɔ̃ə	nænɔ̃ɔ̃zɔ̃ə
CWL.968	drape over shoulder	gī	ɛgigī	kugī	kæɛgigī
Mat.156	dream	zɪmō	ɛzɪmozɪmō	nazɪmō	næɛzɪmozɪmō
CWL.928	drink	t ^h ê	χt ^h et ^h ê	nut ^h ê	χt ^h et ^h ê
YL.9	dull	k ^h lōγ	ɛsk ^h lɔk ^h lɔγ	k ^h lūγ	ɛsk ^h læk ^h lūγ / ɛsk ^h ûk ^h lūγ
CWL.926	eat	dzīd	ɛdzidzīd	adzid	oɔ̃dzidzīd
Mat.151	emerge	ɲqlæ		oɲqlī	
YL.25	explode, pop (corn)	ɛbōγ	ɛbobōγ	ɛbūγ	ɛbæbūγ / ɛbubūγ
CWL.986	extend	fsɔ̃ɛ	nəχfsɔ̃ɛfsɔ̃ɛ	nufɔ̃ɛ	nəχfsɔ̃ɛfsɔ̃ɛ
YL.96	extinct	dæɛ		dīɛ/dæɛ	
YL.47	fall over	ndzədʒav	ɛtɛ ^h ətɛ ^h av [note: this is causative form]	ndzədʒiv	ɛtɛ ^h ətɛ ^h iv
Mat.145	fall; wither	χp ^h ōγ		næχp ^h ūγ	
Mat.163	fat	ts ^h ū		nəts ^h ū	
Mat.152	fear	nscêz		nənsçêz	
CWL.927	feed (a person)	bə	ɛbəbə	nubə	næɛbəbə
YL.68	feel discouraged/air leakage	lgæd	ɛlɔ̃gælgæd	lgīd	ɛlɔ̃gælgīd
CWL.1002	feel; stroke; touch	māz	ɛmamāz	namāz	næɛmamāz
YL.14	finish, complete	jōγ	ɛsjojōγ	jūγ	ɛsjæjūγ / ɛsjujūγ
YL.45	flatten	γzdav	ɛγzdavγzdav	γzdīv	ɛγzdæγzdīv / ɛγzdiγzdīv
Mat.148	fly	ɲb ^h əm		nəɲb ^h əm	
YL.77	fold (quilt)	ftæv	ɛftæftæv	ftīv	ɛftæftīv
Mat.155	forget	lm̄əd	ɛlm̄əlm̄əd	nulm̄əd	nəɛlm̄əlm̄əd
Mat.165	full	vγī		ovγī	
YL.27	full (water)	fsōd	ɛfsɔ̃fsōd	fsūd	ɛfsæfsūd / ɛfsufsūd
Mat.186	give	k ^h ɑ	χk ^h ak ^h ɑ	nuk ^h ɑ	nəχk ^h ak ^h ɑ
YL.69	give up	p ^h æd	ɛp ^h æp ^h æd	p ^h əd	ɛp ^h æp ^h əd
CWL.936	gnaw, nibble	mɔ̃ɔ̃ɛlū	mɔ̃ɔ̃ɛlɔ̃	namɔ̃ɔ̃ɛlū	næɛmɔ̃ɔ̃ɛlɔ̃
YL.57	good at	mk ^h æ	ɛmk ^h æmk ^h æ	mk ^h ī	ɛmk ^h æmk ^h ī

YL.91	good, alright	ts ^h æɸ	ɸts ^h æts ^h æɸ	ts ^h îɸ/ts ^h æɸ	ɸts ^h æts ^h æɸ
Mat.194	grind	ɣdʒəz		nɑɣdʒəz	
YL.94	hang	ɸŋæɸ	ɸŋæɸŋæɸ	ɸŋəɸ/ɸŋæɸ	ɸŋæɸŋæɸ
YL.11	have, grow (plants) [it still sounds like an	dzōɣ	ɸts ^h ots ^h ōɣ	dzūɣ	ɸts ^h æts ^h ūɣ / ɸts ^h uts ^h ūɣ
CWL.952	hear	smê	χsmesmê	smē	χsmesmē
Mat.173	heavy	zɔ̃d		næzɔ̃d	
CWL.962	hide	sp ^h id	χp ^h isp ^h id	kusp ^h id	kəχsp ^h isp ^h id / keχsp ^h isp ^h æd
CWL.972	hide	χpid		kəχpid	
YL.52	hoe	mbẓɑɣ	ɸzbẓɑzbẓɑɣ	mbẓɰɣ	ɸzbẓæzbẓɰɣ / ɸzbẓɰzbẓɰɣ
YL.48	hold (on the shoulder)/lucky	nlṿɑɣ		nlṿɰɣ	
YL.40	ignite	sɪ̃d	ɸsnasnɪ̃d	sɪ̃d	ɸsnæsnɪ̃d / ɸsnɪ̃snɪ̃d
Mat.162	ill, sick	ŋəm		næŋəm	
YL.21	increase	ɸnbôɣ		ɸnbūɣ	
YL.61	install (light bulb)	spẓæd	ɸspẓæspẓæd	spẓɪ̃d	ɸspẓæ/ispẓɪ̃d
Mat.164	itchy	nʃc ^h ad		nænʃc ^h id	
CWL.1009	jab; poke; stab	zdzô	kəɸdzodzô	kuzdzô	kəɸdzodzô
CWL.935	keep in the mouth	ndzê		kundzê	
Mat.202	kill	s ^h ad	χs ^h a ^h s ^h ad	nas ^h id	næχsæsisid
Mat.153	know	ts ^h ê	χts ^h ets ^h ê	kuts ^h ê	kəχts ^h ets ^h ê
YL.64	laugh	q ^h æd	ɸsq ^h æq ^h æd	q ^h id	ɸsq ^h æq ^h id
Mat.197	let go; set free; loosen	læd	ɸlæɪlæd	nulæd	næɸlæɪd
CWL.934	lick, lap	ŋjæɸ	ɸŋjæŋjæɸ	ɑŋjæɸ	oɸŋjæŋjæɸ
YL.43	lightning	nsɪ̃v	ɸnslansɪ̃v	nslɪ̃v	ɸnslænsɪ̃v / ɸnslɪ̃nslɪ̃v
Mat.183	lightweight	jê		næjê	
YL.73	like, love	nɔ̃dæd	n/ɸdændæd	ndū̃d	ɸdændū̃d
CWL.925	listen	ɸŋɪ̃ŋɑ	χɸŋɪ̃ŋɪ̃ŋɑ	næɸŋɪ̃ŋɑ	næχɸŋɪ̃ŋɪ̃ŋɑ

Mat.166	long	szê		næszê	
CWL.933	masticate, chew	ndzævdzæv		nandzævdzæv	
YL.60	match, fit	mp ^h zæd	Ɂmp ^h zæmp ^h zæd	mp ^h zîd	Ɂmp ^h zæmp ^h zîd
YL.35	modify, edit, fix	ntçæftçōz	Ɂtçæftçōz	ntçæftçûz	Ɂtçæftçûz
CWL.1010	move backward and forward; swing	lænʝô, vənʝô		lænʝô, vənʝô	
Mat.181	new	s ^h æzpa		næs ^h æzpa	
Mat.160	old	ďaz		kəďaz	
YL.62	open mouth	zɁæd	ɁzɁæzɁæd	zɁîd	ɁzɁæzɁîd
CWL.920	open one's mouth (to say something)	zɁæd		ozɁîd	
YL.99	open up (umbrella)	p ^h jæz	Ɂsp ^h jæp ^h jæz	p ^h jîz / p ^h jæz	Ɂsp ^h jæp ^h jîz / Ɂsp ^h jæp ^h jæz
YL.10	pasture	lōy	Ɂslolōy	lûy	Ɂslæluŷ / Ɂslulûy
CWL.976	pick	p ^h ôd	Ɂp ^h op ^h ôd	nup ^h ûd	Ɂp ^h op ^h ôd
CWL.981	pick up	osjê	oɁsjesjê	asjê	oɁsjesjê
YL.49	pile up	st ^h as ^t raŷ	Ɂsst ^h as ^t raŷ	st ^h as ^t hîŷ	Ɂsst ^h æst ^h îŷ
CWL.1012	pinch	Ɂdzæz		næɁdzæz	
CWL.957	point at	t ^h æme kæstô	t ^h æme kæɁstæstô	t ^h æme kustô	t ^h æme kæɁstæstô
YL.81	pop (balloon)	b ^h æy	Ɂp ^h æp ^h æy	b ^h êy	Ɂp ^h æp ^h êy
CWL.929/930	pour	dū	Ɂdudū	nadû	næɁdudû
YL.28	praise	fstôd	Ɂfstofstôd	fstûd	Ɂfstæfstûd / Ɂfstufstûd
YL.79	press	sk ^h æy	Ɂsk ^h æsk ^h æy	sk ^h êy	Ɂsk ^h æsk ^h êy
CWL.965	press	sk ^h raŷ	Ɂsk ^h æsk ^h raŷ	nask ^h êy	næɁsk ^h æsk ^h êy
YL.98	pretty, beautiful	mp ^h jæz		mp ^h jîz/mp ^h æz	
CWL.947	promise	Ɂazæ	Ɂæzæzæ	Ɂakuzə	Ɂæzæzəzə
CWL.993	pry	onlæy	onlænlæy	anlæy or anlîy	onlænlæy / onlænlîy
CWL.992	pull	fsêz	Ɂfsefsêz/ Ɂfsæfsez	nafsêz	næɁfsefsêz
YL.30	pull out (grass)	Ɂôd	N/ɁɁɁɁôd	Ɂûd	N/ɁɁæɁûd / N/ɁɁɁɁûd

CWL.1001	pull out; pull up	ɲōd (has to have a prefix)	ɛɲoɲōd	ɑɲūd	oɛɲɲoɲūd
YL.80	push	ɲʂk ^h æɣ	ɛsk ^h æsk ^h æɣ	ɲʂk ^h æɣ	ɛsk ^h æsk ^h æɣ
Mat.209	put, place	dī	ɛdidī	nudī	næɛdidī
YL.32	quiet, piece	ts ^h æɛsōd		ts ^h æɛsūd	
Mat.172	red	mɲōɣ		næmɲōɣ	
CWL.1007	rein in	ntɕ ^h ī	ɛntɕ ^h īntɕ ^h ī	nantɕ ^h ī	næntɕ ^h īntɕ ^h ī
YL.70	release	læd	ɛlæɫæd	līd/ɫæd	ɛlæɫīd / ɛlæɫæd
CWL.973	replace	p ^h ʃə	ɣp ^h ʃəp ^h ʃə	nup ^h ʃə	oɣp ^h ʃəp ^h ʃə
YL.63	return (something)	jæd	ɛjæjæd	jīd	ɛjæjīd
YL.83	reverse (the way of putting on shoes)	sp ^h æp ^h æɣ	ɛsp ^h æp ^h æɣ	sp ^h æp ^h æɣ	ɛsp ^h æp ^h æɣ
Mat.176	ripe, well-cooked	smē		næsmē	
YL.93	rob, take by forces	p ^h ʂæɛɛ	ɛp ^h ʂæɛ-p ^h ʂæɛɛ	p ^h ʂīɛɛ/p ^h ʂæɛɛ	ɛp ^h ʂæɛp ^h ʂæɛɛ
YL.42	roll	dʒav	ɛtɕhatɕhav	dʒīv	ɛtɕhætɕīv / ɛtɕitɕhīv
CWL.999	roll up	dʒəl		kudʒəl	
Mat.175	round	ɣfəm		næɣfəm	
CWL.977	rub with the hands	nləɣlê	nləɣlê [ɣ in final syllable is possible but uncommon now, reduced]	nunləɣlê	nənləɣlêlê
Mat.150	run, flee	p ^h ōɕæd		nəp ^h oɕəd	
YL.89	safekeep, to keep	vɔ̄æɛ	ɛvɔ̄ævɔ̄æɛ	vɔ̄æɛ/vɔ̄æɛɛ	ɛvɔ̄ævɔ̄æɛ
CWL.946	say	zæ	ɛzæzæ	kuzə	kæɛzəzə
CWL.984	scatter	tɕ ^h æloy	ɣtɕ ^h æɫəloy	natɕ ^h æɫūɣ	naxtɕ ^h æɫəlūɣ
YL.97	scrape (hair)	vʒæzɫ	ɛvʒævʒæzɫ	vʒīz/vʒæzɫ	ɛvʒævʒīz / ɛvʒævʒæzɫ
CWL.1013	scratch	ndzæɛɕqɑ	ɛndzæɛɕqɑ	nandzæɛsqɑ	nændzæɛɕqɑsqɑ
CWL.958	scratch	sp ^h zōɣ	ɣsp ^h zæsp ^h zōɣ	nasp ^h zūɣ	næɣsp ^h zæsp ^h zūɣ
YL.17	scratch (due to itch)	sp ^h ʂōɣ	ɛsp ^h ʂosp ^h ʂōɣ	sp ^h ʂūɣ	ɛsp ^h ʂæsp ^h ʂūɣ / ɛsp ^h ʂusp ^h ʂūɣ

CWL.918	see	vdê	ɸvdêvdê	vdê	ɸvdêvdê
Mat.208	sell	n̄ts ^h γ̄əd	ɸn̄ts ^h γ̄əts ^h γ̄əd	nun̄ts ^h γ̄əd	nǣn̄ts ^h γ̄ənts ^h γ̄əd
YL.7	set fire to	γdzōv	ɸγdzoydzōv	γdzə/γdzūv	ɸγdzæγdzəv / ɸγdzəγdzəv
YL.2	sew	tɕ ^h ōv	ɸtɕ ^h otɕ ^h ōv	tɕ ^h əv	ɸtɕ ^h ætɕ ^h əv / ɸtɕ ^h ətɕ ^h əv
YL.8	sharp	zōγ	ɸzozōγ	zūγ	ɸzæzūγ / ɸzuzūγ
CWL.1008	shoot	odvaz _ɿ		odvaz _ɿ	
Mat.144	sit	zjê		nəzjê	
YL.66	skin (animals)	zɕæd	ɸzɕæzɕæd	zɕid	ɸzɕæzɕid
Mat.137	sleep, lie down	ʃəv		kəʃəv	
CWL.953	smell	nləfəm	ɸnləfələm; ɸnləfəm	anləfəm	oɸnləfələm
YL.78	smooth, flat	vlæγ	ɸfslæfslæγ [causative?]	vlīγ	ɸfslæfslīγ
YL.53	smoothen	mbləγ	ɸzblazbləγ [requires causative]	mbliγ	ɸzblæzblīγ / ɸzblizblīγ
Mat.177	soft (to touch)	ndzæm		nændzæm	
Mat.171	sour	χtɕ ^h əz _ɿ		næχtɕ ^h əz _ɿ	
YL.58	speak	fɕ ^h æd	ɸfɕ ^h æfɕ ^h æd	fɕ ^h id	ɸfɕ ^h æfɕ ^h id / ɸfɕ ^h ifɕ ^h id
YL.44	spicy	zdzav	ɸzdzazdzav	zdziv	ɸzdzæzdziv / ɸzdzizdziv
CWL.967	sprain/wrench	k ^h lōd	χk ^h lɔk ^h lōd	nuk ^h lūd	nəχk ^h læk ^h lūd / nəχk ^h luk ^h lud
CWL.917	spy upon; pry about	mbjælbjū		næmbjælbjū	
CWL.969	squeeze	tɕ ^h ad	χtɕ ^h atɕ ^h ad	latɕ ^h id	kəχtɕ ^h ætɕ ^h id / kəχtɕ ^h itɕ ^h id
YL.41	squeeze (toothpaste)	tɕ ^h ad	ɸtɕ ^h atɕ ^h ad	tɕ ^h id	ɸtɕ ^h ætɕ ^h id / ɸtɕ ^h itɕ ^h id
YL.88	squeeze (waater)	fts ^h æɸ	ɸfts ^h æfts ^h æɸ	fts ^h əɸ/fts ^h æɸ	ɸfts ^h æfts ^h æɸ
Mat.143	stand	tɕ ^h əz _ɿ a		otɕ ^h əz _ɿ a	
Mat.188	steal	fkê	χfkɛfkê	nafkê	næχfkɛfkê / nəχfkæfkê
YL.1	steam (buns, momo etc.)	zblōv	ɸzblɔzblōv	zbləv	ɸzblæzbləv / ɸzbləzbləv
YL.39	strange	mzad		mzid	
CWL.956	strike	ndæp ^h a	ɸndæp ^h əp ^h a	nandæp ^h a	nǣndæp ^h əp ^h a
CWL.942	suck	mb ^h æb ^h ū		namb ^h æb ^h ū	
YL.4	suck, inhale, absorb	ndzzōv	ndzzōdzzōv	ndzzəv/ndzzūv	ndzædzəv / ndzədzəv

CWL.963	support with hand	ndzæfsfɑɐ	ɛndzæfsfɑstɑɐ	nandzæfsfɑɐ	næɛndzæfstɑfsfɑɐ
CWL.937	surplus	zɛd		nəzɛd	
CWL.940/941	swallow	mɔəlɔɣ		namɔəlɔɣ	
Mat.168	sweet	tʰə		nætʰə	
CWL.954	take	ndzɛ	ɛndzɛndzɛ	andzɛ	oɛndzɛndzɛ
CWL.924	take aim	ɛmɣɔɣ	kəɛmɣɔmɣɔɣ	kuɛmɣɔɣ	kəɛmɣɔmɣɔɣ
YL.72	take off (clothes)	ntʰæd	ɛtʰætʰæd	ntʰûd	ɛtʰætʰûd
YL.71	take out, to fish	tʰæd	ɛtʰætʰæd	tʰûd	ɛtʰætʰûd
Mat.167	tall	qʂɑ		næqʂɑ	
CWL.979	tear	tɕəzɔd	χtɕəzɔzɔd	natɕəzɔd	nəχtɕəzɔzɔd
YL.54	thick	ʃɑɣ	N/ɛɣɑɣ	ʃɣ	N/ɛɣæɣ / N/ɛɣɣɣ
YL.3	thick (porridge)	dzɔv	ɛdzɔdzɔv	dzɛv/dzûv	ɛdzædzɛv / ɛdzædzɛv
Mat.159	thin	tʂəm		nætʂəm	
CWL.983	throw	zəncɔ	zəncəncɔ	zuncɔ	zəncəncɔ
CWL.990	throw out your chest	χfstû	χfstufstû/χfstæfstu	oχfstû	oχfstufstû/ oχfstæfstu
CWL.943	throw.up	npʰæz		nənpʰɣz	
Mat.187	tie	ʂcʰɛ	χʂcʰɛʂcʰɛ	kuʂcʰɛ	kəχʂcʰɛʂcʰɛ
YL.18	tie up	tsʰɔɣ	ɛtsʰotsʰɔɣ	tsʰûɣ	ɛtsʰætsʰûɣ / ɛtsʰutsʰûɣ
YL.84	to braid (hair)	zbjæz	ɛzbjæzbjæz	zbjɣz/zbjæz	ɛzbjæzbjɣz / ɛzbjæzbjæz
YL.74	touch, feel	ntʰævtæv	N/ɛntʰævtæv	ntʰævfəv	N/ɛntʰævfəv; kəntʰævtæv
CWL.1003	tremble; shiver	nfsʰæzɣɑ		nənfsʰæzɣɑ	
CWL.980	twist	dzɣɛ	ɛdzɣɛdzɣɛ	adzɣɛ	oɛdzɣɛdzɣɛ
CWL.978	twist hempen thread	ɛɣû		ɑɣjû	
CWL.944	vomit	mtɕʰənlæɐ	ɛmtɕʰənləlæɐ	næmtɕʰənlæɐ	næɛmtɕʰənləlæɐ
Mat.174	warm	tsʰɣd		nætsʰɣd	
Mat.195	wash	zɣɛ	ɛzɣɛzɣɛ	nuzɣɛ	næɛzɣɛzɣɛ
CWL.916	watch	ɣjɛmo	ɛɣjɛmɔmo	nanjɛmo	næɛɣjɛmɔmo
YL.23	wear (jewelries)	ntsʰɔɣ	N/ɛtsʰotsʰɔɣ	ntsʰûɣ	N/ɛtsʰætsʰûɣ / N/ɛtsʰæutsʰûɣ
YL.55	weave	ɕɑɣ	ɛdzɑdzɑɣ [requires causative]	dɣ	ɛdzædzɑɣ / ɛdzɣdzɑɣ

Full List

Mat.138	weep	ʷb̥ə		næʷb̥ə	
YL.75	wet	p ^h æv	ʷp ^h æp ^h æv	p ^h iv	ʷp ^h æp ^h iv
Mat.178	white	pʃəm		næpʃəm	
CWL.1011	wind; coil	fskôz̥	ʷfskoskôz̥	naskûz̥	næʷfskuskûz̥
CWL.966	wipe/rub	b'æz	ʷb'æb'æz	nub'æz	næʷb'æb'æz
YL.67	write	z̥æd	ʷz̥æz̥æd	z̥id/z̥id	ʷz̥æz̥id / ʷz̥æz̥id

Wordlist.number	English translation	Stem 1	Recip1	Recip1 pattern	Stem 2	Recip2	Recip2 pattern
CWL.946	say	zæ̃	ʒzæ̃zæ̃	Mono other	kuzə̃	kæ̃ʒzə̃zə̃	Mono 1
CWL.986	extend	fsɣ̃ē	nə̃xfsɣ̃efsɣ̃ē	Mono other	nufɣ̃ē	nə̃xfsɣ̃efsɣ̃ē	Mono 1
Mat.208	sell	n̄ts ^h ʏəd	ʒnts ^h ʏəts ^h ʏəd	Mono 4	nunts ^h ʏəd	nə̃nts ^h ʏənts ^h ʏəd	Mono 1
CWL.992	pull	fsêẓ	χfsɣ̃efsêẓ/ χfsæ̃fsẓ	Mono 3	nafsêẓ	nə̃xfsɣ̃efsêẓ	Mono 1
CWL.934	lick, lap	njæ̃ɐ	ʒnjæ̃njæ̃ɐ	Mono other	anjæ̃ɐ	õnjæ̃njæ̃ɐ	Mono 1
Mat.197	let go; set free; loosen	læ̃d	ʒlæ̃læ̃d	Mono other	nulæ̃d	nə̃ɐlæ̃læ̃d	Mono 1
CWL.1004	break; snap	tɕ ^h õv (break)	ʒtɕ ^h õtɕ ^h õv	Mono other	natɕ ^h əv	nə̃tɕ ^h tɕ ^h əv	Mono 1
YL.64	laugh	q ^h æ̃d	ʒsq ^h æ̃q ^h æ̃d	Mono 1	q ^h id	ʒsq ^h æ̃q ^h id	Mono other
CWL.1007	rein in	ntɕ ^h i	ʒntɕ ^h intɕ ^h i	Mono 1	nantɕ ^h i	nə̃ntɕ ^h intɕ ^h i	Mono 1
CWL.918	see	vdê	ʒvdêvdê	Mono 1	vdê	ʒvdêvdê	Mono 1
CWL.927	feed (a person)	bə̃	ʒbə̃bə̃	Mono 1	nubə̃	nə̃ɐbə̃bə̃	Mono 1
CWL.928	drink	t ^h ê	χt ^h et ^h ê	Mono 1	nut ^h ê	χt ^h et ^h ê	Mono 1
CWL.929/930	pour	dū	ʒdudū	Mono 1	nadū	nə̃ɐdudū	Mono 1
CWL.952	hear	smê	χsmesmê	Mono 1	smê	χsmesmê	Mono 1
CWL.954	take	ndzê	ʒndzêndzê	Mono 1	andzê	õndzêndzê	Mono 1
CWL.968	drape over shoulder	gī	ʒgigī	Mono 1	kugī	kə̃ɐgigī	Mono 1
CWL.973	replace	p ^h jə̃	χp ^h jə̃p ^h jə̃	Mono 1	nup ^h jə̃	õxp ^h jə̃p ^h jə̃	Mono 1
CWL.980	twist	dzzə̃	ʒdzzə̃dzzə̃	Mono 1	adzə̃	õdzzə̃dzzə̃	Mono 1
CWL.981	pick up	osjê	õx̣sjesjê	Mono 1	asjê	õx̣sjesjê	Mono 1
CWL.998	carry	dzê	ʒdzêdzê	Mono 1	adzê	kə̃ɐdzêdzê 互相抓着	Mono 1
Mat.153	know	ts ^h ê	χts ^h ets ^h ê	Mono 1	kuts ^h ê	kə̃x̣ts ^h ets ^h ê	Mono 1
Mat.156	dream	zmô	ʒzmomzomô	Mono 1	nazmô	nə̃ɐzmomzomô	Mono 1
Mat.186	give	k ^h ʌ	χk ^h ak ^h ʌ	Mono 1	nuk ^h ʌ	nə̃x̣k ^h ak ^h ʌ	Mono 1
Mat.187	tie	ʂc ^h ê	χʂc ^h eʂc ^h ê	Mono 1	kuʂc ^h ê	kə̃x̣ʂc ^h eʂc ^h ê	Mono 1
Mat.192	cook	t ^h eẓo t ^h ô	t ^h eẓo χt ^h ot ^h ô	Mono 1	t ^h eẓo kut ^h ô	kə̃x̣t ^h ot ^h ô	Mono 1
Mat.195	wash	zzə̃	ʒzzə̃zzə̃	Mono 1	nuzzə̃	nə̃ɐzzə̃zzə̃	Mono 1
Mat.196	dig	slû	χsluslû	Mono 1	naslû	nə̃x̣sluslû	Mono 1
Mat.200	buy	ɣdə̃	ʒɣdə̃ɣdə̃	Mono 1	kuydə̃	kə̃ɐɣdə̃ɣdə̃	Mono 1
Mat.209	put, place	dī	ʒdidī	Mono 1	nudī	nə̃ɐdidī	Mono 1
Mat.210	burn	jō	χjɔjō	Mono 1	kujō	kə̃x̣jɔjō	Mono 1
CWL.1002	feel; stroke; touch	māẓ	ʒmamāẓ	Mono 1	namāẓ	nə̃ɐmamāẓ	Mono 1
CWL.926	eat	dzid	ʒdzidzid	Mono 1	adzid	õdzidzid	Mono 1
CWL.961	cover	p ^h ə̃m	χp ^h ə̃p ^h ə̃m	Mono 1	nap ^h ə̃m	nə̃ɐp ^h ə̃p ^h ə̃m	Mono 1
CWL.966	wipe/rub	b ^h æ̃z	ʒb ^h æ̃b ^h æ̃z	Mono 1	nub ^h æ̃z	nə̃ɐb ^h æ̃b ^h æ̃z	Mono 1
Mat.155	forget	lm̄əd	ʒlm̄əlm̄əd	Mono 1	nulm̄əd	nə̃ɐlm̄əlm̄əd	Mono 1
CWL.924	take aim	ʒmj̄əɣ	kə̃ɐmj̄əmj̄əɣ	Mono 1	kumj̄əɣ	kə̃ɐmj̄əmj̄əɣ	Mono 1

YL.88	squeeze (waater)	fts ^h æx	ɸfts ^h æfts ^h æx	Mono 1	fts ^h əx/fts ^h æx	ɸfts ^h æfts ^h æx	Mono 1; Mono 3
YL.89	safekeep, to keep	vdæx	ɸvdævdæx	Mono 1	vdəx/vdæx	ɸvdævdæx	Mono 1; Mono 3
YL.91	good, alright	ts ^h æx	ɸts ^h æts ^h æx	Mono 1	ts ^h ɪx/ts ^h æx	ɸts ^h æts ^h æx	Mono 1; Mono 3
YL.92	destroy; extinguish (Mat.198)	p ^h jæx	ɸp ^h jæp ^h jæx	Mono 1	p ^h ɪx/p ^h jæx	ɸp ^h jæp ^h jæx	Mono 1; Mono 3
YL.93	rob, take by forces	p ^h ʒæx	ɸp ^h ʒæp ^h ʒæx	Mono 1	p ^h ʒɪx/p ^h ʒæx	ɸp ^h ʒæp ^h ʒæx	Mono 1; Mono 3
YL.94	hang	sŋæx	ɸsŋæŋæx	Mono 1	sŋəx/sŋæx	ɸsŋæŋæx	Mono 1; Mono 3
YL.95	add	njæx	ɸnjæŋjæx	Mono 1	njɪx/njæx	ɸnjæŋjæx	Mono 1; Mono 3
Mat.188	steal	fkê	ɸfkæfkê	Mono 1	nafkê	næɸfkæfkê / næɸfkæfkê	Mono 3
YL.25	explode, pop (corn)	ɸbôy	ɸbɸbôy	Mono 1	ɸbûy	ɸbæbûy / ɸbubûy	Mono 3
YL.84	to braid (hair)	zɸjæz	ɸzɸjæzɸjæz	Mono 1	zɸjɪz/zɸjæz	ɸzɸjæzɸjɪz / ɸzɸjæzɸjæz	Mono 3
CWL.969	squeeze	tɸ ^h ad	ɸtɸ ^h atɸ ^h ad	Mono 1	latɸ ^h id	kəɸtɸ ^h ætɸ ^h id / kəɸtɸ ^h itɸ ^h id	Mono 3
YL.1	steam (buns, momo etc.)	zɸlôv	ɸzɸblozɸlôv	Mono 1	zɸləv	ɸzɸblæzɸləv / ɸzɸblæzɸlɒv	Mono 3
YL.12	dawn	fsôy	ɸfsɸofsôy	Mono 1	fsûy	ɸfsæfsûy / ɸfsufsûy	Mono 3
YL.13	build (by laying bricks or stone, a wall)	ʒt ^h ôy	ɸʒt ^h ôʒt ^h ôy	Mono 1	ʒt ^h ûy	ɸʒt ^h æʒt ^h ûy / ɸʒt ^h uʒt ^h ûy	Mono 3
YL.17	scratch (due to itch)	sp ^h ʒôy	ɸsp ^h ʒôsp ^h ʒôy	Mono 1	sp ^h ʒûy	ɸsp ^h ʒæʒûy / ɸsp ^h ʒusɸʒûy	Mono 3
YL.18	tie up	ts ^h ôy	ɸts ^h ôts ^h ôy	Mono 1	ts ^h ûy	ɸts ^h ætst ^h ûy / ɸts ^h uts ^h ûy	Mono 3
YL.2	sew	tɸ ^h ôv	ɸtɸ ^h ôtɸ ^h ôv	Mono 1	tɸ ^h əv	ɸtɸ ^h ætɸ ^h əv / ɸtɸ ^h ətɸ ^h əv	Mono 3
YL.28	praise	fstôd	ɸfstɸfstôd	Mono 1	fstûd	ɸfstæfstûd / ɸfstufstûd	Mono 3
YL.29	cut, sever	p ^h ôd	ɸp ^h ôp ^h ôd	Mono 1	p ^h ûd	ɸp ^h æp ^h ud / ɸp ^h ûp ^h ud	Mono 3
YL.3	thick (poridge)	dzôv	ɸdzɸodzôv	Mono 1	dzəv/dzûv	ɸdzædzəv / ɸdzædzəv	Mono 3
YL.30	pull out (grass)	ɸôd	n/ɸɸɸɸôd	Mono 1	ɸûd	n/ɸɸæɸɸûd / n/ɸɸɸɸûd	Mono 3
YL.38	bite, hold in the mouth	nʒc ^h ad	n/ɸnʒc ^h anʒc ^h ad	Mono 1	nʒc ^h id	n/ɸnʒc ^h ænʒc ^h id / n/ɸnʒc ^h ɪnʒc ^h id	Mono 3
YL.40	ignite	snâd	ɸsnasnâd	Mono 1	snîd	ɸsnæsnîd / ɸsnisnîd	Mono 3
YL.41	squeeze (toothpaste)	tɸ ^h ad	ɸtɸ ^h atɸ ^h ad	Mono 1	tɸ ^h id	ɸtɸ ^h ætɸ ^h id / ɸtɸ ^h itɸ ^h id	Mono 3
YL.43	lightning	nsɻav	ɸnslansɻav	Mono 1	nsɻiv	ɸnslænsɻiv / ɸnslinsɻiv	Mono 3
YL.44	spicy	zɸdzav	ɸzɸdzazɸdzav	Mono 1	zɸdziv	ɸzɸdzæzɸdziv / ɸzɸdzizɸdziv	Mono 3
YL.50	coarse	ʒsvây	ɸʒsvasʒsvây	Mono 1	ʒsvîy	ɸʒsvæʒsvîy / ɸʒsviʒsvîy	Mono 3
YL.51	build (houses)	fsɻây	ɸfsɻafsvây	Mono 1	fsɻîy	ɸfsɻæfsɻîy / ɸfsɻifsvîy	Mono 3
YL.54	thick	ɸjây	n/ɸɸjây	Mono 1	ɸjîy	n/ɸɸjæjîy / n/ɸɸjijîy	Mono 3
YL.58	speak	fɸ ^h æd	ɸfɸ ^h æfɸ ^h æd	Mono 1	fɸ ^h id	ɸfɸ ^h æfɸ ^h id / ɸfɸ ^h ifɸ ^h id	Mono 3
YL.60	match, fit	mp ^h zæd	ɸmp ^h zæmp ^h zæd	Mono 1	mp ^h zîd	ɸmp ^h zæmp ^h zîd	Mono 2
YL.61	install (light bulb)	spzæd	ɸspzæspzæd	Mono 1	spzîd	ɸspzæ/ispzîd	Mono 3

CWL.1001	pull out; pull up	ɲōd (has to have a prefix)	ɛɲoɲōd	Mono 1	ɑɲŭd	oɛɲuɲŭd	Mono 1
CWL.976	pick	p ^h ōd	χp ^h op ^h ōd	Mono 1	nup ^h ŭd	χp ^h op ^h ōd	Mono other
YL.87	bitter	tɕ ^h æɸ	ɪtɕ ^h ætɕ ^h æɸ	Mono 1	tɕ ^h æɸ	ɪtɕ ^h æɸæɸ	Mono other
YL.57	good at	mk ^h æ	ɪmk ^h æmk ^h æ	Mono 1	mk ^h ŭ	ɪmk ^h æmk ^h ŭ	Mono 2
CWL.993	pry	onlæɣ	onlænlæɣ	Mono 1	anlæɣ or anlŭ	onlænlæɣ / onlænlŭ	Mono 3
Mat.202	kill	s ^h ād	χs ^h ɑ ^h sād	Mono 1	nas ^h id	næχsæsīd	Mono 2
YL.62	open mouth	zɸæd	ɪzɸæzɸæd	Mono 1	zɸid	ɪzɸæzɸid	Mono 2
YL.63	return (something)	jæd	ɪjæjæd	Mono 1	jid	ɪjæjid	Mono 2
YL.65	big, old (sister)	c ^h æd	ɪc ^h æc ^h æd	Mono 1	c ^h id	ɪc ^h æc ^h id	Mono 2
YL.66	skin (animals)	zɕæd	ɪzɕæzɕæd	Mono 1	zɕid	ɪzɕæzɕid	Mono 2
YL.67	write	zɕæd	ɪzɕæzɕæd	Mono 1	zɕid / zɕid	ɪzɕæzɕid / ɪzɕæzɕid	Mono 2
YL.69	give up	p ^h æd	ɪp ^h æp ^h æd	Mono 1	p ^h id	ɪp ^h æp ^h id	Mono 2
YL.70	release	læd	ɪlæləd	Mono 1	lid / lid	ɪlælid / ɪlælid	Mono 2
YL.71	take out, to fish	t ^h æd	ɪt ^h æt ^h æd	Mono 1	t ^h id	ɪt ^h æt ^h id	Mono 2
YL.75	wet	p ^h æv	ɪp ^h æp ^h æv	Mono 1	p ^h iv	ɪp ^h æp ^h iv	Mono 2
YL.76	cause to land/descend	zɸæv	ɪzɸæzɸæv	Mono 1	zɸiv	ɪzɸæzɸiv	Mono 2
YL.77	fold (quilt)	ftæv	ɪftæftæv	Mono 1	ftiv	ɪftæftiv	Mono 2
YL.79	press	sk ^h æɣ	ɪsk ^h æsk ^h æɣ	Mono 1	sk ^h əɣ	ɪsk ^h æsk ^h əɣ	Mono 2
YL.86	accumulate	fsæɸ	ɪfsæfsæɸ	Mono 1	fsəɸ / fsəɸ	ɪfsæfsəɸ / ɪfsæfsəɸ	Mono 3
YL.97	scrape (hair)	vzæɣ	ɪvzævzæɣ	Mono 1	vzɪɣ / vzæɣ	ɪvzævzɪɣ / ɪvzævzæɣ	Mono 3

Pattern 2

Wordlist.number	English translation	Stem 1	Recip1	Recip1 pattern	Stem 2	Recip2	Recip2 pattern
CWL.957	point at	t ^h æme kəstō	t ^h æme kəχstæstō	Mono 2	t ^h æme kustō	t ^h æme kəχstæstō	Mono 2
CWL.983	throw	zəncō	zəncəncō	Mono 2	zuncō	zəncəncō	Mono other
YL.60	match, fit	mp ^h zæd	ɛmp ^h zæmp ^h zæd	Mono 1	mp ^h zîd	ɛmp ^h zæmp ^h zîd	Mono 2
YL.57	good at	mk ^h æ	ɛmk ^h æmk ^h æ	Mono 1	mk ^h î	ɛmk ^h æmk ^h î	Mono 2
Mat.202	kill	s ^h ad	χs ^h ad ^h sad	Mono 1	nas ^h îd	næχsæsîd	Mono 2
YL.62	open mouth	zæd	ɛzæzæzæd	Mono 1	zîd	ɛzæzæzîd	Mono 2
YL.63	return (something)	jæd	ɛjæjæd	Mono 1	jîd	ɛjæjîd	Mono 2
YL.65	big, old (sister)	c ^h æd	ɛc ^h æc ^h æd	Mono 1	c ^h îd	ɛc ^h æc ^h îd	Mono 2
YL.66	skin (animals)	zæd	ɛzæzæzæd	Mono 1	zîd	ɛzæzæzîd	Mono 2
YL.67	write	zæd	ɛzæzæd	Mono 1	zîd/zæd	ɛzæzîd / ɛzæzæd	Mono 2
YL.69	give up	p ^h æd	ɛp ^h æp ^h æd	Mono 1	p ^h îd	ɛp ^h æp ^h îd	Mono 2
YL.70	release	læd	ɛlælæd	Mono 1	lîd/læd	ɛlælîd / ɛlælæd	Mono 2
YL.71	take out, to fish	t ^h æd	ɛt ^h æt ^h æd	Mono 1	t ^h îd	ɛt ^h æt ^h îd	Mono 2
YL.75	wet	p ^h æv	ɛp ^h æp ^h æv	Mono 1	p ^h îv	ɛp ^h æp ^h îv	Mono 2
YL.76	cause to land/descend	zbæv	ɛzbæzbæv	Mono 1	zbîv	ɛzbæzbîv	Mono 2
YL.77	fold (quilt)	ftæv	ɛftæftæv	Mono 1	ftîv	ɛftæftîv	Mono 2
YL.79	press	sk ^h æy	ɛsk ^h æsk ^h æy	Mono 1	sk ^h îy	ɛsk ^h æsk ^h îy	Mono 2
YL.82	cut, chop	dzæy	ɛdzædzæy	Mono other	dzîy	ɛdzædzîy	Mono 2
CWL.958	scratch	sp ^h zōy	χsp ^h zæsp ^h zōy	Mono other	nasp ^h zîy	næχsp ^h zæsp ^h zîy	Mono 2
CWL.965	press	sk ^h ay	χsk ^h æsk ^h ay	Mono other	nask ^h îy	næχsk ^h æsk ^h îy	Mono 2

Wordlist.number	English translation	Stem 1	Recip1	Recip1 pattern	Stem 2	Recip2	Recip2 pattern
CWL.992	pull	fsêz	χfsefsêz/ χfsæfsez	Mono 3	nafsêz	nəχfsefsêz	Mono 1
CWL.990	throw out your chest	χfstû	χfstufstû/χfstæfstu	Mono 3	oχfstû	oχfstufstû/ oχfstæfstu	Mono 3
YL.23	wear (jewelries)	nts ^h ôy	N/ɓts ^h ots ^h ôy	Mono 4	nts ^h ûy	N/ɓts ^h æts ^h ûy / N/ɓts ^h æuts ^h ûy	Mono 3; Mono 4
YL.24	complete	sjôy	ɓsjojôy	Mono 4	sjûy	ɓsjæjûy / ɓsjujûy	Mono 3; Mono 4
YL.36	become thick (poridge)	nspôz	nspospôz	Mono 4	nspûz	nspæspûz / nspuspûz	Mono 3; Mono 4
YL.88	squeeze (waater)	fts ^h æɓ	ɓfts ^h æfts ^h æɓ	Mono 1	fts ^h æɓ/fts ^h æɓ	ɓfts ^h æfts ^h æɓ	Mono 1; Mono 3
YL.89	safekeep, to keep	vdæɓ	ɓvdævdæɓ	Mono 1	vdæɓ/vdæɓ	ɓvdævdæɓ	Mono 1; Mono 3
YL.91	good, alright	ts ^h æɓ	ɓts ^h æts ^h æɓ	Mono 1	ts ^h îɓ/ts ^h æɓ	ɓts ^h æts ^h æɓ	Mono 1; Mono 3
YL.92	destroy; extinguish (Mat.198)	p ^h jæɓ	ɓp ^h jæp ^h jæɓ	Mono 1	p ^h jîɓ/p ^h jæɓ	ɓp ^h jæp ^h jæɓ	Mono 1; Mono 3
YL.93	rob, take by forces	p ^h ɛæɓ	ɓp ^h ɛæp ^h ɛæɓ	Mono 1	p ^h ɛîɓ/p ^h ɛæɓ	ɓp ^h ɛæp ^h ɛæɓ	Mono 1; Mono 3
YL.94	hang	sŋæɓ	ɓsŋæsŋæɓ	Mono 1	sŋîɓ/sŋæɓ	ɓsŋæsŋæɓ	Mono 1; Mono 3
YL.95	add	njæɓ	ɓnjænjæɓ	Mono 1	njîɓ/njæɓ	ɓnjænjæɓ	Mono 1; Mono 3
Mat.188	steal	fkê	χfkêfkê	Mono 1	nafkê	nəχfkêfkê / nəχfkæfkê	Mono 3
YL.25	explode, pop (corn)	ɓbôy	ɓbobôy	Mono 1	ɓbûy	ɓbæbûy / ɓbubûy	Mono 3
YL.84	to braid (hair)	zɓjæz	ɓzɓjæzɓjæz	Mono 1	zɓjîz/zɓjæz	ɓzɓjæzɓjîz / ɓzɓjæzɓjæz	Mono 3
CWL.969	squeeze	tɕ ^h ad	χtɕ ^h atɕ ^h ad	Mono 1	latɕ ^h id	kəχtɕ ^h ætɕ ^h id / kəχtɕ ^h itɕ ^h id	Mono 3
YL.1	steam (buns, momo etc.)	zɓlôv	ɓzɓlozɓlôv	Mono 1	zɓlæv	ɓzɓlæzɓlæv / ɓzɓlæzɓlæv	Mono 3
YL.12	dawn	fsôy	ɓfsofsôy	Mono 1	fsûy	ɓfsæfsûy / ɓfsufsûy	Mono 3
YL.13	build (by laying bricks or stone, a wall)	ɛt ^h ôy	ɓɛt ^h oɛt ^h ôy	Mono 1	ɛt ^h ûy	ɓɛt ^h æɛt ^h ûy / ɓɛt ^h uɛt ^h ûy	Mono 3
YL.17	scratch (due to itch)	sp ^h ɛôy	ɓsp ^h ɛosp ^h ɛôy	Mono 1	sp ^h ɛûy	ɓsp ^h ɛæɛûy / ɓsp ^h ɛusp ^h ɛûy	Mono 3
YL.18	tie up	ts ^h ôy	ɓts ^h ots ^h ôy	Mono 1	ts ^h ûy	ɓts ^h æts ^h ûy / ɓts ^h uts ^h ûy	Mono 3
YL.2	sew	tɕ ^h ôv	ɓtɕ ^h otɕ ^h ôv	Mono 1	tɕ ^h æv	ɓtɕ ^h ætɕ ^h æv / ɓtɕ ^h ætɕ ^h æv	Mono 3
YL.28	praise	fstôd	ɓfstofstôd	Mono 1	fstûd	ɓfstæfstûd / ɓfstufstûd	Mono 3
YL.29	cut, sever	p ^h ôd	ɓp ^h op ^h ôd	Mono 1	p ^h ûd	ɓp ^h æp ^h ud / ɓp ^h ûp ^h ud	Mono 3
YL.3	thick (poridge)	dzôv	ɓdzodzôv	Mono 1	dzæv/dzûv	ɓdzædzæv / ɓdzædzæv	Mono 3
YL.30	pull out (grass)	ɲôd	N/ɓɲopôd	Mono 1	ɲûd	N/ɓɲæɲûd / N/ɓɲupûd	Mono 3
YL.38	bite, hold in the mouth	ŋɛɕ ^h ad	N/ɓŋɛɕ ^h anɛɕ ^h ad	Mono 1	ŋɛɕ ^h id	N/ɓŋɛɕ ^h ænɛɕ ^h id / N/ɓŋɛɕ ^h inɛɕ ^h id	Mono 3
YL.40	ignite	sŋûd	ɓsnasŋûd	Mono 1	sŋîd	ɓsnæsnîd / ɓsnisnîd	Mono 3

Pattern 3

YL.41	squeeze (toothpaste)	tɕʰad	ɛtɕʰatɕʰad	Mono 1	tɕʰid	ɛtɕʰætɕʰid / ɛtɕʰitɕʰid	Mono 3
YL.43	lightning	nslāv	ɛnslanslāv	Mono 1	nsliv	ɛnslænsliv / ɛnslinsliv	Mono 3
YL.44	spicy	zɕdzāv	ɛzɕdzazɕdzāv	Mono 1	zɕdziv	ɛzɕdzæzɕdziv / ɛzɕdzizɕdziv	Mono 3
YL.50	coarse	ʂsvāy	ɛʂsvaʂsvāy	Mono 1	ʂsviy	ɛʂsvæʂsviy / ɛʂsviʂsviy	Mono 3
YL.51	build (houses)	fsyāy	ɛfsyafsyāy	Mono 1	fsyiy	ɛfsyæfsyiy / ɛfsyifsyiy	Mono 3
YL.54	thick	ʃay	n/ɛjaʃay	Mono 1	ʃiy	n/ɛjaʃiy / n/ɛjijiy	Mono 3
YL.58	speak	fɕʰæd	ɛfɕʰæfɕʰæd	Mono 1	fɕʰid	ɛfɕʰæfɕʰid / ɛfɕʰifɕʰid	Mono 3
YL.61	install (light bulb)	spzɕæd	ɛspzɕæspzɕæd	Mono 1	spzɕid	ɛspzɕæ/ispzɕid	Mono 3
CWL.967	sprain/wrench	kʰlōd	ɕkʰlokʰlōd	Mono other	nukʰlūd	nəɕkʰlækʰlūd / nəɕkʰlukʰlud	Mono 3
YL.27	full (water)	fsōd	ɛfsofsōd	Mono other	fsūd	ɛfsæfsūd / ɛfsufsūd	Mono 3
YL.45	flatten	yzdāv	ɛyzdaydzāv	Mono other	yzdīv	ɛyzdæyzdīv / ɛyzdiydzīv	Mono 3
YL.7	set fire to	ɣdzōv	ɛɣdzoydzōv	Mono other	ɣdzə/ɣdzūv	ɛɣdzæɣdzəv / ɛɣdzəɣdzəv	Mono 3
YL.8	sharp	zōy	ɛzozōy	Mono other	zūy	ɛzæzūy / ɛzuzūy	Mono 3
CWL.993	pry	onlæy	onlænlæy	Mono 1	anlæy or anlīy	onlænlæy / onlænliy	Mono 3
YL.86	accumulate	fsʰæɐ	ɛfsæfsʰæɐ	Mono 1	fsʰəɐ/fsʰæɐ	ɛfsæfsʰəɐ / ɛfsæfsʰæɐ	Mono 3
YL.97	scrape (hair)	vzʰæɕ	ɛvzʰæɐvzʰæɕ	Mono 1	vzʰiz/vzʰæɕ	ɛvzʰæɐvzʰiz / ɛvzʰæɐvzʰæɕ	Mono 3

Pattern 4

Wordlist.number	English translation	Stem 1	Recip1	Recip1 pattern	Stem 2	Recip2	Recip2 pattern
CWL.1006	button up; buckle	nlæð	ɸnlæ̀læ̀ð	Mono 4	kunl̩əð	kəɸnlə̀lə̀ð	Mono 4
CWL.931	bite	nʃc ^h ad	nʃc ^h aʃc ^h ad	Mono 4	kunʃc ^h id	kənʃc ^h æʃc ^h id	Mono 4
YL.23	wear (jewelries)	nts ^h ôɣ	n/ɸts ^h ots ^h ôɣ	Mono 4	nts ^h ûɣ	n/ɸts ^h æts ^h ûɣ / n/ɸts ^h æuts ^h ûɣ	Mono 3; Mono 4
YL.24	complete	sjôɣ	ɸsjojôɣ	Mono 4	sjûɣ	ɸsjæjûɣ / ɸsjujûɣ	Mono 3; Mono 4
YL.36	become thick (poridge)	nspôz	nspospôz	Mono 4	nspûz	nspæspûz / nspuspûz	Mono 3; Mono 4
Mat.208	sell	n̩ts ^h ÿəd	ɸn̩ts ^h ÿət̩s ^h ÿəd	Mono 4	nun̩ts ^h ÿəd	næɸn̩ts ^h ÿənt̩s ^h ÿəd	Mono 1
CWL.1011	wind; coil	fskôz̩	ɸfskoskôz̩	Mono 4	naskûz̩	næɸfskuskûz̩	Mono other
YL.4	suck, inhale, absorb	ndzzôv	ndzzôdz̩v	Mono 4	ndzzêv/ndzzûv	ndzædz̩v / ndzêdz̩v	Mono other

Pattern 4

Wordlist.number	English translation	Stem 1	Recip1	Recip1 pattern	Stem 2	Recip2	Recip2 pattern
CWL.936	gnaw, nibble	ɱjæʋlū	ɱjæʋʃəlu	Poly 4	nɑɱjæʋlū	næɱjæʋləlū	Poly 4
CWL.944	vomit	mtɕʰənlæʋ	ʋmtɕʰənləʃlæʋ	Poly 4	næmtɕʰənlæʋ	næʋmtɕʰənləlæʋ	Poly 4
CWL.977	rub with the hands	nləʋlē	nləʋʃələ [ʋ in final syllable is possible but uncommon now, reduced]	Poly 4	nunləʋlē	nənləʋləlē	Poly 4
YL.20	cause something to fall	pʰæʋlōʋ	ʋspʰæʋləlōʋ	Poly 4	pʰæʋlūʋ	ʋspʰæʋləlūʋ	Poly 4
CWL.1013	scratch	ndzæʃqɑ	ʋndzæʃqɑʃqɑ	Poly 4	nandzæʃqɑ	næʋndzæʃqɑʃqɑ	Poly 4
CWL.916	watch	ɱjēmo	ʋɱjəmōmo	Poly 4	nɑɱjēmo	næʋɱjēmōmo	Poly 4
CWL.925	listen	ʃɱŋɑ	χʃɱŋŋɑ	Poly 4	næʃɱŋɑ	næχʃɱŋŋɑ	Poly 4
CWL.963	support with hand	ndzæʃʃɑʋ	ʋndzæʃʃɑʃʃɑʋ	Poly 4	nandzæʃʃɑʋ	næʋndzæʃʃɑʃʃɑʋ	Poly 4
CWL.979	tear	tɕəzəd	χtɕəzəd	Poly 4	nɑtɕəzəd	nəχtɕəzəd	Poly 4
CWL.984	scatter	tɕʰələʋ	χtɕʰələʋ	Poly 4	nɑtɕʰələʋ	nəχtɕʰələʋ	Poly 4
CWL.956	strike	ndæpʰɑ	ʋndæpʰəpʰɑ	Poly 4	nandæpʰɑ	næʋndæpʰəpʰɑ	Poly 4
CWL.953	smell	nlələm	ʋnlələləm; ʋnlələm	Poly 4; Poly 5	ɑnlələm	oʋnlələləm	Poly 4

Pattern 5

Wordlist.number	English translation	Stem 1	Recip1	Recip1 pattern	Stem 2	Recip2	Recip2 pattern
CWL.997	drag	nɔ̃əzɔ̃ə	nɔ̃əzɔ̃ə	Poly 5	nɔ̃nɔ̃əzɔ̃ə	næNɔ̃əzɔ̃ə	Poly 5
YL.100	cause chaos	vzjæzɫæzɫ	ɸvzjæzɫæzɫ	Poly 5	vzjæzɫɪzɫ/-læzɫ	ɸvzjæzɫɪzɫ/ ɸvzjæzɫlæzɫ	Poly 5
YL.83	reverse (the way of putting on shoes)	sp ^h æp ^h æy	ɸsp ^h æp ^h æy	Poly 5	sp ^h æp ^h æy	ɸsp ^h æp ^h æy	Poly 5
YL.74	touch, feel	ntævtæv	N/ɸntævtæv	Poly 5	ntævfɔ̃v	N/ɸntævfɔ̃v; kəntævtæv	Poly 5
CWL.953	smell	nləfəm	ɸnləfələm; ɸnləfəm	Poly 4; Poly 5	nləfəm	oɸnləfələm	Poly 4

Wordlist.number	English translation	Stem 1	Recip1	Recip1 pattern	Stem 2	Recip2	Recip2 pattern
YL.87	bitter	tɕ ^h æɐ	ɛtɕ ^h ætɕ ^h æɐ	Mono 1	tɕ ^h æɐ	ɛtɕ ^h æɐæɐ	Mono other
YL.64	laugh	q ^h æd	ɛsq ^h æq ^h æd	Mono 1	q ^h îd	ɛsq ^h æq ^h îd	Mono other
CWL.976	pick	p ^h ôd	χp ^h op ^h ôd	Mono 1	nup ^h ûd	χp ^h op ^h ôd	Mono other
CWL.983	throw	zəncô	zəncəncô	Mono 2	zuncō	zəncəncō	Mono other
YL.4	suck, inhale, absorb	ndzzōv	ndzzōdzōv	Mono 4	ndzzəv/nd	ndzædzəv /ndzədzəv	Mono other
CWL.1011	wind; coil	fskôz	ɛfskoskôz	Mono 4	naskûz	næɛfskuskûz	Mono other
CWL.1004	break; snap	tɕ ^h ôv (break)	ɛtɕ ^h ôtɕ ^h ôv	Mono other	natɕ ^h əv	naɛtɕ ^h ətɕ ^h əv	Mono 1
CWL.986	extend	fssē	nəχfssəfssē	Mono other	nufssē	nəχfssəfssē	Mono 1
Mat.197	let go; set free; loosen	læd	ɛlæɫæd	Mono other	nufæd	næɛlæfæd	Mono 1
CWL.934	lick, lap	njæɐ	ɛnjænjæɐ	Mono other	anjæɐ	oɒnjænjæɐ	Mono 1
CWL.946	say	zæ	ɛzæzæ	Mono other	kuzə	kæɛzæzə	Mono 1
YL.82	cut, chop	dzæy	ɛdzædzæy	Mono other	dzəy	ɛdzædzəy	Mono 2
CWL.965	press	sk ^h ay	χsk ^h æsk ^h ay	Mono other	nask ^h əy	næχsk ^h æsk ^h əy	Mono 2
CWL.958	scratch	sp ^h zōy	χsp ^h zəsp ^h zōy	Mono other	nasp ^h zūy	næχsp ^h zəsp ^h zūy	Mono 2
YL.45	flatten	yzdāv	ɛyzdāydzāv	Mono other	yzdīv	ɛyzdæydzīv / ɛyzdiydzīv	Mono 3
YL.27	full (water)	fsôd	ɛfsofsôd	Mono other	fsûd	ɛfsæfsûd / ɛfsufsûd	Mono 3
YL.7	set fire to	yzōv	ɛydzoydzōv	Mono other	yzə/yzəz	ɛydzæydzəv / ɛydzæydzəv	Mono 3
YL.8	sharp	zōy	ɛzozōy	Mono other	zūy	ɛzæzūy / ɛzuzūy	Mono 3
CWL.967	sprain/wrench	k ^h lôd	χk ^h lok ^h lôd	Mono other	nuk ^h lûd	nəχk ^h læk ^h lûd / nəχk ^h luk ^h lûd	Mono 3
YL.16	be drunk	nvōy	ɛsvovōy	Mono other	nvūy	ɛsvævūy / ɛsvuvūy	Mono other
YL.22	bend (waist)	gōy	ɛzgozgoy	Mono other	gūy	ɛzgæzgūy / ɛzguzgūy	Mono other
CWL.970	block	sts ^h ē	χsts ^h est ^h ē	Mono other	nusts ^h ê	nəχsts ^h est ^h ê	Mono other
YL.31	blow	mŋōd	ɛsmŋomŋōd [this includes caus]	Mono other	mŋûd	ɛsmŋæmŋûd / ɛsmŋumŋûd	Mono other
YL.33	boil (the status of boiling)	bōz	ɛzbozbōz	Mono other	bûz	ɛzbæzbûz / ɛzbuzbûz	Mono other
YL.5	break (to pieces) [it splits]	dzōv	ɛtɕ ^h ôtɕ ^h ôv	Mono other	dzəv	ɛtɕ ^h ætɕ ^h əv / ətɕ ^h əv	Mono other
YL.15	cross (a mountain)	p ^h ōy	ɛsp ^h op ^h ōy	Mono other	p ^h ūy	ɛsp ^h æp ^h ūy / ɛsp ^h up ^h ūy	Mono other
YL.6	deep (water)	nôv	nsnonôv	Mono other	nəv/nûv	nsnænəv / nsnænəv	Mono other
YL.9	dull	k ^h lōy	ɛsk ^h lok ^h lōy	Mono other	k ^h lūy	ɛsk ^h læk ^h lūy / ɛsk ^h ûk ^h lūy	Mono other
YL.68	feel discouraged/airless	lgæd	ɛlzgælgæd	Mono other	lgîd	ɛlzgælgîd	Mono other
YL.14	finish, complete	jōy	ɛsjojōy	Mono other	jūy	ɛsjæjūy / ɛsjujūy	Mono other

Other

YL.11	have, grow (plants) [i]	dzōy	ɛts ^h ots ^h ōy	Mono other	dzûy	ɛts ^h æts ^h ûy / ɛts ^h uts ^h ûy	Mono other
CWL.962	hide	sp ^h id	χp ^h isp ^h id	Mono other	kusp ^h id	kəχsp ^h isp ^h id / keχsp ^h isp ^h æd	Mono other
YL.52	hoe	mbzāy	ɛzbzazbzāy	Mono other	mbzûy	ɛzbzæzbzûy / ɛzbzizbzûy	Mono other
CWL.1009	jab; poke; stab	zdzō	kædzodzō	Mono other	kuzdzō	kædzodzō	Mono other
YL.73	like, love	ndæd	n/ɛdændæd	Mono other	ndûd	ɛdændûd	Mono other
YL.99	open up (umbrella)	p ^h jæz	ɛsp ^h jæp ^h jæz	Mono other	p ^h jîz / p ^h jâ	ɛsp ^h jæp ^h jîz / ɛsp ^h jæp ^h jæz	Mono other
YL.10	pasture	lōy	ɛslolōy	Mono other	lûy	ɛslælûy / ɛslulûy	Mono other
YL.81	pop (balloon)	b ^h æy	ɛp ^h æp ^h æy	Mono other	b ^h ây	ɛp ^h æp ^h ây	Mono other
YL.80	push	ɲsk ^h æy	ɛsk ^h æsk ^h æy	Mono other	ɲsk ^h ây	ɛsk ^h æsk ^h ây	Mono other
YL.42	roll	dzāv	ɛtçatçhāv	Mono other	dzîv	ɛtçætçîv / ɛtçitçîv	Mono other
YL.78	smooth, flat	vlæy	ɛfslæfslæy [causative?]	Mono other	vlîy	ɛfslæfslîy	Mono other
YL.53	smoothen	mbļay	ɛzblazbļay [requires causative]	Mono other	mblîy	ɛzblæzblîy / ɛzblizblîy	Mono other
YL.72	take off (clothes)	nt ^h æd	ɛt ^h æt ^h æd	Mono other	nt ^h ûd	ɛt ^h æt ^h ûd	Mono other
YL.55	weave	dāy	ɛzdazdāy [requires causative]	Mono other	dîy	ɛzdæzdîy / ɛzdizdîy	Mono other
YL.59	bold	sjaʂc ^h æd	ɛsjɑʂc ^h æc ^h æd	Poly other	sjaʂc ^h id	ɛsjɑʂc ^h æʂc ^h id; ɛsjɑʂc ^h ic ^h id	Poly other
YL.46	cause to fall over	ntç ^h ətç ^h āv	ɛtç ^h ətç ^h āv	Poly other	ntç ^h ətç ^h îv	ɛtç ^h ətç ^h îv	Poly other
YL.47	fall over	ndzədzāv	ɛtç ^h ətç ^h āv [note: this is causative form]	Poly other	ndzədzîv	ɛtç ^h ətç ^h îv	Poly other
YL.35	modify, edit, fix	ntçæftçōz	ɛtçæftçōz	Poly other	ntçæftçûz	ɛtçæftçûz	Poly other
YL.49	pile up	st ^h ɑʂt ^h ay	ɛʂst ^h ɑʂt ^h ay	Poly other	st ^h ɑʂt ^h îy	ɛʂst ^h æʂt ^h îy	Poly other