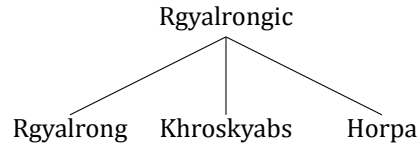


# Old Chinese vs. Rgyalrongic initials

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## 1 Rgyalrongic languages

Figure 1: Rgyalrongic Group (Sun 2000)



Rgyalrong: Situ, Japhug, Tshobdun, Zbu

Khroskyabs: Core Khroskyabs (Wobzi, Siyuewu, Guanyinqiao), Njorogs

Horpa: Stau, Stodsde, Dgebshes

Table 1: Wobzi Verbal Template

-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2
<i>sê-</i>	<i>æ-, næ-, etc.</i>	<i>u-</i> <i>â-</i>	<i>mə-</i> <i>tə-/tʰæ-</i> <i>ê-/ɛə-</i>	<i>zə-</i>	<i>ʁ-</i>	<i>N-</i>	<i>v-</i>	<i>s-</i> <i>z-</i>	<i>ɣjæ-</i>	Noun	Verb	<i>ŋ, -j, -n</i>	<i>-Ca/u</i>
Inflectional					Derivational					Stem	Inflectional	RDP	

### Prefixes:

- 1 Incorporation
- 2 Reflexive *ɣjæ-*
- 3 Causative *s-*, causative *z-*
- 4 Causative *v-*
- 5 Autobenefactive *N-*
- 6 Intransitive-Reciprocal *ʁ-*
- 7 Irrealis *zê-*
- 8 Negative *mə-/ma-/ma-*, prohibitive *tə-/tʰæ-*, interrogative *ê-/ɛə-*
- 9 Inverse *u-* Irrealis *â-*
- 10 Directional-aspectual *æ-, næ-, kə-, nə-, læ-, və-, rə-*
- 11 Progressive *sê-*

### Suffixes:

- 1 Personal endings *-ŋ, -j, -n*
- 2 Reduplicated syllables

## 2 Rgyalrongic consonant clusters

- Huang (2007): 396+ in Guanyinqiao
  - *ɣvrɔzɣê* 'geminate, hatch'
- Yin (2007): 319+ in Njorogs

- *ʁvgre*<sup>55</sup> 'spear'

- Wobzi: 330+ in Wobzi

- *ʁnzbrá* 'to dare'

- *ʁjnzdə~jndzdə* 'to cause to buy for each other'

- (1) a. *ʁ-j <n-z> də~j <n-z> də*  
 RECP-j<AUTOBEN-CAUS-buy<sub>1</sub>~j-<AUTOBEN-CAUS>RECP  
 to cause to buy for each other
- b. *n-u-ma-ʁ <n-s- >jæ-sá-ŋ*  
 PFV-INV-NEG<sub>2</sub>-ʁ-AUTOBEN-CAUS-REFL-kill<sub>2</sub>-1SG  
 He didn't cause me to kill myself for his sake.

### 3 Some Old Chinese examples with complex initials

- (2) a. 含 *hán* \*Cə-m-kʰ[ə]m  
 b. 粗 *cū* \*Nə-s.rʰa  
 c. 莖 *jīng* \*m-k-lʰ<r>eŋ  
 d. 懶 *lǎn* \*[N-kə.]rʰanʔ  
 e. 教 *jiào* \*s.kʰraw-s  
 f. 韻 *yùn* \*[m-qʷ]<r>i[n]-s

### 4 \*t- prefix

The reconstruction of pre-initial \*t-:

經 \*t-kʰreŋ > trhjeng > chēng 'red'

涇 \*k.lʰeŋ > keng > jīng 'a vein of water (Shuōwén)'

Prefixal \*t-:

- Forming intransitive verbs: 出 \*t-khut 'to go/come out'; 懾 \*t-nip 'to be afraid'
- **Inalienable nouns**

- (3) a. 妯 *\*t-qoŋ* 'fatherinlaw'  
 b. 肘 *\*t-[k]<r>uʔ* 'elbow'  
 c. 齒 *\*t-[kh]ə(ŋ)ʔ* or *\*t-ŋ əʔ* 'front teeth'  
 d. 喙 *\*t]o[rʔ]-s, \*]o[rʔ]-s* 'snout'  
 e. 臭 *\*t-qhu(?)*-s 'foul smell'

Japhug Rgyalrong indefinite prefix: *tu-*/*ty-*

- (4) a. *tu-zo* 'oneself'  
 b. *a-zo* '1sg'  
 c. *ny-zo* '2sg'

d. *w-zo* '3sg'

- (5) a. *tu-ŋga* 'clothes'  
b. *tu-ku* 'head'  
c. *tu-rju* 'speech'  
d. *tx-rjit* 'child'  
e. *tu-zgrw* 'elbow'

Traces in Khroskyabs (Wobzi):

- (6) a. *tvê* 'fist'  
b. *zbxæ* < \**t-pjæ* 'plait'  
c. *tə-ná* 'sauce'

## 5 Causative and Anti-causative

### 5.1 Anti-causative

- (7) a. 敗 \*p<sup>ʰ</sup>ra[t]-s > paejH > bàì 'defeat (v.t.)'  
敗 \*N-p<sup>ʰ</sup>ra[t]-s > baejH > bàì 'suffer defeat'  
b. 折 \*tet > tsyet > zhé 'bend; break (v.t.)'  
折 \*N-tet > dzyet > shé 'bend (v.i.)'  
c. 見 \*k<sup>ʰ</sup>en-s > kenH > jiàn 'see (v.)'  
見 \*N-[k<sup>ʰ</sup>en-s > henH > xiàn 'appear' (< 'be seen')

Table 2: Anticausative in Japhug Rgyalrong

Base verb	Gloss	Anticausative	Gloss
<i>ftʂi</i>	to melt tr.	<i>ndzi</i>	to melt intr.
<i>kio</i>	to cause to slip	<i>ŋgio</i>	to slip
<i>plut</i>	to destroy tr.	<i>mblut</i>	to be destroyed
<i>pryt</i>	to cut	<i>mbryt</i>	to be cut
<i>qryt</i>	to separate	<i>ngryt</i>	to be separated
<i>t<sup>h</sup>w</i>	to build	<i>ndw</i>	to appear
<i>tʂaβ</i>	to beat	<i>ndzaβ</i>	to be beaten
<i>χtyr</i> < Tib <i>gtor</i>	to disperse	<i>ɛndyr</i>	to be dispersed

Japhug *χtyr* 'to disperse' < Tibetan *gtor*

Japhug *ɛndyr* 'to be disperse' ≠ Tibetan 'thor

Table 3: Anticausative in Zbu Rgyalrong

Base verb	Gloss	Anticausative	Gloss
<i>ftɕwí</i>	to melt tr.	<i>ndzŵí</i>	to melt intr.
<i>wót</i>	to destroy	<i>mbót</i>	to be destroyed
<i>ʔ<sup>h</sup>rat</i>	to cut	<i>ʔmbrat</i>	to be cut
<i>qæχ</i>	to peel	<i>ngæχ</i>	to be peeled
<i>tɕ<sup>h</sup>êv</i>	to stumble tr.	<i>ndzêv</i>	to fall down
<i>twæ</i>	to open tr.	<i>ndwæ</i>	to be open

Table 4: Anticausative in Wobzi Khroskyabs

Base verb	Gloss	Anticausative	Gloss
<i>ftɕ<sup>h</sup>ê</i>	to melt tr.	<i>dzê</i>	to melt intr.
<i>k<sup>h</sup>læ</i>	to perish	<i>glæ</i>	to die out
<i>ntɕ<sup>h</sup>tɕ<sup>h</sup>áv</i>	to trip	<i>ndzədzáv</i>	to tumble
<i>nts<sup>h</sup>ây</i>	to wear	<i>dzây</i>	to be there (attached)
<i>p<sup>h</sup>rê</i>	to loosen	<i>brê</i>	to become loose
<i>tɕ<sup>h</sup>æv</i>	to break tr.	<i>dzæv</i>	to break intr.
<i>tɕêrə</i>	to tear	<i>dzêrə</i>	to be torn intr.

Khroskyabs chain shift:

voiced stops < proto-prenasalised voiced stops

sonorants < proto-voiced stops

Direction: voiceless base → voiced anticausative

## 5.2 Causative \*s-

- (8) a. 蒸 \*təŋ 'to rise (of steam)'  
 升 \*s-təŋ 'to lift up, to save, to present to'
- b. 當 \*tʰaŋ 'match (v.); have the value of, rank with'  
 商 \*s-taŋ 'to estimate'
- c. 視 \*gijʔ 'look, see'  
 示 \*s-gijʔ-s 'show (v.)'
- d. 譌 \*ŋʰak 'speak frankly'  
 愬 \*s-ŋʰak-s 'complain, accuse'
- (9) Causative *s-* in Siyuewu Khroskyabs
- a. *s-rsváy* 'CAUS-coarse' → *r <ʃ> sváy* 'to cause to be coarse'
- b. *s-ɲcô* 'CAUS-throw' → *ʃ <s> cô* 'to cause to throw'
- c. *s-mpjæpjû* 'CAUS-suck (in the mouth)' → *ʃ <s> pjæpjû* 'to cause to suck'
- d. *s-mqlóy* 'CAUS-swallow' → *f <s> qlóy* 'to cause to swallow'

## 6 Nominalisation

Japhug Rgyalrong: *kw-* (S/A); *ky-* (P); *sy-* (Oblique); *ky-/kw-* (infinitive)  
Tshobdun Rgyalrong: *kə-* (S/A); *kɛ-* (P); *sɛ-* (Oblique); *kɛ-/kə-* (infinitive)

- (10) Tshobdun Rgyalrong *ndze* 'to eat'
- kə-ndze* 'he who eats'
  - kɛ-ndze* 'that is eaten'
  - sɛ-ndze* 'eating place'
  - kɛ-ndze* 'to eat, eating'

### 6.1 Nominalising \*k-

Deriving non-finite verbs that can be interpreted as nouns:

- (11) a. 鬼 \*k-ɳuj? 'ghost'  
威 \*ɳuj 'awe-inspiring'  
畏 \*ɳuj-s > 'jw+jH > wèi 'fear (v.); threaten'
- b. 匡 \*k-phan 'square basket'  
方 \*C-pan 'square'
- c. 考 \*k-r<sup>s</sup>u? 'old; deceased father'  
老 \*C.r<sup>s</sup>u? 'old'

### 6.2 Oblique \*s-

Oblique can mean several things: the surrounding environment, the instrument, the time/moment, the recipient, etc.

- (12) Japhug Rgyalrong
- w-sy-fɕɕt*  
3SG.POSS-NMLZ:O-speak  
the one to talk to
  - w-sy-ji*  
3SG.POSS-NMLZ:O-plant  
time to plant
  - w-sy-ɣi*  
3SG.POSS-NMLZ:O-come  
the place to come
- (13) a. 𠵿 \*ɳrak 'go against'  
朔 \*s-ɳrak 'first day of month (when the moon changes from waning to waxing)'

- b. 通 \*l̥oŋ ‘penetrate’  
窗 \*s-l̥<r>oŋ ‘window (where light penetrates)’
- c. 亡 \*maŋ ‘flee, disappear, die’  
喪 \*s-m̥aŋ ‘mourning, burial’
- d. 以 \*l̥əʔ ‘take, use’  
鋤 \*sə.l̥əʔ ‘handle of plow/sickle (instrument of holding)’

## 7 Denominalisation

Table 5: Denominal prefixes in Wobzi Khroskyabs

Denominal prefixes	Gloss
<i>k-</i>	intransitive, stative verbs
<i>N-</i>	intransitive and transitive verbs
<i>m-</i>	transitive verb (a single example)
<i>v-</i>	intransitive and transitive verbs
<i>s-</i>	mainly transitive verbs
<i>z-</i>	transitive verb (a single example)

Table 6: Denominal prefixes in Japhug Rgyalrong

Denominal prefixes	Gloss
<i>nu-/ny-</i>	intr and tr
<i>ru-/ry-</i>	intr and tr
<i>yw-/yɣ-</i>	intr and tr
<i>su-</i>	tr with instrument, intr of position
<i>my-</i>	tr with body part, intr of position
<i>sy-</i>	intr (property)
<i>ayw-</i>	intr (property)

### 7.1 Denominal \*N-

- (14) a. 久 \*[k]<sup>w</sup>əʔ ‘a long time’  
舊 \*N-k<sup>w</sup>əʔ-s ‘old’
- b. 匀 yún \*[N-q]<sup>w</sup>i[n] ‘even, uniform’ (\*q<sup>w</sup>i[n]=cycle?)
- c. 光 \*k<sup>w</sup>əŋ ‘light’  
黄 \*N-k<sup>w</sup>əŋ ‘yellow’

### (15) Denominal *N-* in Wobzi Khroskyabs

- a. *n-lváy*  
DENOM-shoulder  
to carry on the shoulder

- b. *n-váγ*  
DENOM-alcohol  
to be drunk
- c. *n-nənê*  
DENOM-breast  
to drink milk (from breasts)
- d. *ɸ<N>sjê*  
ɸ<DENOM>-fart  
to be flatulent

(16) Denominal *nw-* in Japhug Rgyalrong

- a. *nw-k<sup>h</sup>rum*  
DENOM-punishment  
to be punished intr.
- b. *nw-kvntɕ<sup>h</sup>aɸ*  
DENOM-street  
to go into the street intr.
- c. *nw-krys*  
DENOM-speech  
to discuss tr.

## 7.2 Denominal \*m-

(17) Denominal *mɣ-* in Japhug Rgyalrong

- a. *mɣ-rzaβ*  
DENOM-wife  
marry a woman vt.
- b. *mɣ-rpaɸ*  
DENOM-shoulder  
carry on shoulder vt.
- c. *mɣ-ku*  
DENOM-head  
happened before vi.
- d. *mɣ-χcɣl*  
DENOM-middle  
be in the middle vi.

Forming volitional verbs in Old Chinese

- (18) a. 傳 \*tron-s 'relay post'  
傳 \*m-tron 'transmit'
- b. 毒 \*[d]<sup>s</sup>uk 'poison'  
毒 \*m-[d]<sup>s</sup>uk-s 'to poison'

- c. 被 \*p<sup>h</sup>(r)aj-s ‘cloak’  
 被 \*m-p<sup>h</sup>(r)aj-s ‘cover’  
 被 \*mə-p<sup>h</sup>(r)aj ‘cover oneself with’
- d. 背 \*p<sup>ʰ</sup>ək-s ‘back’  
 背 \*m-p<sup>ʰ</sup>ək-s ‘turn the back on’
- e. 倉 \*ts<sup>h</sup>aj ‘granary’  
 藏 \*m-tshfaŋ ‘store (v.)’
- f. 朝 \*t<r>aw ‘morning’  
 朝 \*m-t<r>aw ‘go to (morning) audience at court’
- g. 聚 \*m-ts<sup>h</sup>oʔ-s/\*m-ts<sup>h</sup>oʔ ‘bring together’ (cf. Tibetan *tsho* ‘herd, group, plural marker’)

### 7.3 Denominal \*s-

- (19) 署 \*m-taʔ-s ‘to place, position’

绪 \*s-m-taʔ ‘arrange in order’  
 叙 \*s-m-taʔ ‘to order’

- (20) Denominal *s-* in Wobzi Khroskyabs

- a. *ʁ<z>fô*  
 ʁ<DENOM>hole  
 dig
- b. *ʃ-tç<sup>h</sup>ʃ*  
 DENOM-road  
 to guide
- c. *s-ʁazéʃ*  
 DENOM-comb  
 to comb

### 7.4 Denominal \*<r>

- (21) a. 餘 \*la ‘remains, surplus’  
 除 \*l<r>a ‘remove’
- b. 畜 \*q<sup>h</sup>uk ‘collect; store (n.)’  
 畜 \*q<sup>h</sup><r>uk ‘to store (v.)’
- c. 裯 \*nik ‘a lady’s clothes nearest to the body’  
 黏 \*n<r>ik ‘to adhere’  
 昵 \*n<r>ik ‘close, intimate’

Denominal *ru-/rɻ-* in Japhug: generally intransitive. Production, becoming NOUN, or some tr or intr verbs related to the base noun.



(22) Denominal *rw-*, *rx-* in Japhug Rgyalrong

- a. *rx-pjɣz*  
DENOM-plait  
to plait
- b. *rw-tɕɣmw*  
DENOM-nun  
to become a nun
- c. *rx-spra*  
DENOM-handful  
to take a handful of

## 8 The typology of initial clusters, from a Rgyalrongic perspective

### 8.1 A layered morphology

Wobzi preinitial hierarchy → Templatic morphology:

(23) *ʁ-* > *j-* > NASALS > *v-* > *r-*, *l-* > *s-*, *z-* > INITIAL > MEDIAL

No hierarchy in Old Chinese:

- (24) a. 士 \**[m-s-]rəʔ* 'officer'  
    飼 \**s-m-lək-s* 'feed'
- b. 泉 \**s-N-ɣ<sup>w</sup>ar* 'spring, source'  
    層 \**N-s-tʰəŋ* 'in two storeys, double'

A layered morphology?

(25) 層 \**N-s-tʰəŋ* 'double' < 增 \**s-tʰəŋ* 'increase' < 登 \**tʰəŋ* 'ascend'  
    羨 \**s-N-qa[r]-s* 'covet, desire' (transitivised) < \*\**N-qa[r]-s* (stative verb) < \*\**qa[r]-s*

### 8.2 Tightly/loosely attached presyllables

- (26) a. 鼻 \**m-bi[t]-s* 'nose'  
    鼻 \**Cə-bi[t]-s* 'to smell vt.'
- b. 上 \**m-dəŋʔ* 'to put up'  
    上 \**Cə-dəŋʔ* 'to ascend'
- c. 麥 \**m-rʰək* 'wheat'  
    來 \**mə.rʰək* 'to come'

(27) Siyewu Khroskyabs preinitial \*N-

- a. *s-mpjæpjû* 'CAUS-suck.in.the.mouth' → *f<s>pjæpjû* 'to cause to suck'
- b. *s-mblíy* 'CAUS-step' → *n<z>blíy* 'to cause to step'

### 8.3 Comments on the pharyngealisation

Type B syllables:

- (28)
- \*-j- (Karlgren 1940, Li 1971, Baxter 1992)
  - long vowels (Pulleyblank 1962)
  - Plain consonants (opposed to pharyngealised Type A consonants) (Norman 1994, Baxter-Sagart 2014)
- (29) Indirect evidence as proposed by Baxter-Sagart
- 而 \*nə 外而淺; 乃 \*nʰə 內而深; 乃者難乎而也
  - 佛 \*b- < \*but < Sanskrit *buddha*

The contrast in Khroskyabs (only available to certain rhymes):

Table 7: Khroskyabs examples vs. Type A/Type B syllables in OC

Khroskyabs	Meaning	Old Chinese	Meaning
<i>mŋá</i>	five	五 *C.ŋʰaʔ	five
<i>qʰrǎ</i>	big	夏 [G]ʰra	great
<i>rvî</i>	axe	斧 *p(r)aʔ	axe
<i>dzî</i>	to eat	咀 *dzaʔ(?)	to chew ?

- (30) Another piece of indirect evidence:  
夫 \*[b]a ‘this, that’ (complementiser?) c.f. French *bien* > *ben* > *ba*

## Related examples between Rgyalrong and Old Chinese

Rgyalrong	Meaning	Khroskyabs/Others	Meaning	Old Chinese	Meaning
		<i>pa</i> < * <i>ba</i> (KS Stau)	step	步 * <i>mə-b'a-s</i>	step
<i>ky-pyo</i>	to sew			纺 * <i>p'əŋ?</i>	to sew
<i>tx-jpyom</i>	ice	<i>rp<sup>h</sup>əm</i>	ice	冰 * <i>p.rəŋ</i>	firewood
<i>tu-ɾpa</i>	axe	<i>rvf</i>	axe	斧 * <i>p(r)a?</i>	axe
<i>tu-ɾpaŋ</i>	shoulder	<i>lváɣ</i>	shoulder	膊 * <i>p'ak?</i>	upper arm?
<i>pri</i>	ursus tibetanus	<i>χp<sup>h</sup>rê</i>	bear	羆 * <i>praj?</i>	ursus tibetanus
<i>anbaŋ</i>	to hide intr	<i>χpíd</i> (SYW Khros)	to hide	伏 * <i>[b]ək</i>	lie prostrate
<i>ky-mbi</i>	to give	<i>bê</i>	to give	畀 * <i>pi[t]-s</i>	to give
<i>nuqambuɔmjom</i>	to fly	<i>jmbjêɔm</i>	to fly	泛 * <i>p<sup>h</sup>(r)[o]m-s</i>	to float
<i>tu-mbri</i>	to call out	<i>brê</i>	loud	鳴 * <i>m.rəŋ</i>	to cry (birds)
<i>tu-mbri</i>	rope	<i>bré</i>	leather rope	繩 * <i>Cə.m.rəŋ</i>	rope
<i>tx-rmi</i>	name	<i>rmê</i>	name	名 * <i>C.məŋ</i>	name
<i>tu-mɳaŋ</i>	eye	<i>môɣ</i> (SYW Khros)	eye	目 * <i>C.m(r)[u]k</i>	eye
<i>tx-jmɳy</i>	mushroom	<i>lmôɣ</i> (SYW Khros)	mushroom	帽 * <i>m'uk-s</i>	hat
<i>tx-wi</i>	grandmother	<i>mâvi</i> (GYQ Khros)	grandmother	妣 * <i>ppi?</i>	to die
<i>ky-taŋ</i>	to weave	<i>dâɣ</i>	to weave	織 * <i>tək</i>	to weave
<i>ku-βde</i> < * <i>pə-tlej</i>	four	<i>vdê</i>	four	四 * <i>s.li[j]-s</i>	four
<i>tu-di</i> < * <i>lij</i>	arrow			矢	* <i>lij?</i>
<i>tx-ndɳy</i>	poison	<i>dâɣ</i>	poison	毒 * <i>[d]<sup>h</sup>uk</i>	poison
		<i>ndê</i>	to stop	停 * <i>Cə.[d]<sup>h</sup>əŋ</i>	stop
<i>tu-rna</i>	ear	<i>nû</i> < * <i>ni-k?</i>	ear	耳 * <i>C.nə?</i>	to sew
<i>ɳnɳ</i>	two	<i>jnê</i>	two	二 * <i>ni[j]-s</i>	two
<i>ky-no</i>	to expel			攘 * <i>naŋ</i>	to expel
<i>nut</i>	to burn	<i>nâd</i> (SYW Khros)	to burn	爇 * <i>not</i>	to burn
		<i>lâɣ</i>	to put in a bag, to wrap	袋 * <i>Cə.l'ək-s</i>	bag
		<i>rlâd</i> (SYW Khros)	to peel off	脱 * <i>l'ot</i>	to remove outer covering
<i>tu-ftsa</i>	nephew	<i>zi</i>	son, young boy	子 * <i>tsə?</i>	son, young man
<i>tu-ɾsɳy</i>	joint	<i>ɾts<sup>h</sup>ôɣ</i> (SYW Khros)	joint	節 * <i>ts'ik</i>	joint
<i>si</i>	tree	<i>sê</i>	tree, firewood	薪 * <i>[s]i[n]</i>	firewood
<i>ky-si</i>	to die	<i>sê</i>	to die	死 * <i>sij?</i>	to die
<i>χsum</i>	three	<i>çsəm</i>	three	三 * <i>s.rum</i>	three
<i>ky-suso</i>	to think	<i>nsəsê</i> (GYQ Khros)	to think	想 * <i>[s]aŋ?</i>	to think
<i>zri</i>	long	<i>srê</i>	long	辛 * <i>sri[n]</i>	long
<i>tx-zɾɳm</i>	root	<i>srəm</i>	root	參 * <i>srum</i>	medical root
<i>zɾɳy</i>	louse	<i>srô</i>	louse egg	蝨 * <i>srik</i>	louse
<i>qa-zo</i>	sheep	<i>ɣjê</i>	sheep	羊 * <i>gaŋ</i>	sheep
<i>yurza</i>	hundred	<i>ɳvjî</i> (SYW Khros); <i>ɾjî</i>	hundred	百 * <i>p'rak</i>	hundred
<i>tx-rzəŋ</i>	night	<i>ɾjâɣ</i>	night	夜 * <i>[ɣ]Ak-s</i>	to shout
<i>ku-rcat</i>	eight	<i>vjâd</i> (SYW Khros)	eight	八 * <i>p'ret</i>	eight
<i>ku-ɳaŋ</i>	black	<i>ɳæχ</i> (SYW Khros)	black	慝 * <i>ŋ'ək</i>	evil
<i>ku-rko</i>	hard	<i>ɾyê</i>	hard	剛 * <i>k'əŋ(?)</i>	hard
<i>çku</i>	scallion	<i>skû</i>	scallion	韭 * <i>s.[k](r)u?</i>	Allium
<i>tu-zgru</i>	elbow			肘 * <i>t-[k] &lt;r&gt; u?</i>	elbow
<i>ku-ngut</i>	nine	<i>ŋgô</i>	nine	九 * <i>[k]u?</i>	nine
<i>ky-ŋgra</i>	to fall			下 * <i>m-g'ra?-s</i>	to descend
<i>nuŋa</i>	cow	<i>ŋî</i>	cow	牛 * <i>[ŋ]<sup>h</sup>ə</i>	bovini
<i>ku-mŋu</i>	five	<i>mŋá</i>	five	五 * <i>C.ŋ'a?</i>	five
<i>ky-sŋa</i>	to revive			蘇 * <i>s-ŋ'a</i>	to revive
<i>ta-qaβ</i>	needle	<i>ɳáv</i>	needle	針 * <i>t.[k]əm</i>	needle
		<i>q<sup>h</sup>rá</i>	big	夏 * <i>[ɣ]<sup>h</sup>ra</i>	great
		<i>q<sup>h</sup>ê</i>	to laugh	呼 * <i>q<sup>h</sup>a-s</i>	to shout
<i>qro</i>		<i>sk<sup>h</sup>rôɣ</i> (SYW Khros)	ant	蟻 * <i>m-q<sup>h</sup>raj</i>	ant
<i>tu-rqo</i>	throat	<i>χɾqəi</i> < <i>χɾqi/χɾqê</i>	throat	膺 * <i>[q](r)əŋ</i>	breast