


An outline of the sound structure of Lhagang Choyu: A newly recognised highly endangered language in Khams Minyag

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1. Introduction

his article provides a preliminary phonological sketch of Lhagang Choyu—a Tibeto-Burman language variety that has not undergone previous linguistic analysis. The analysis is based on only around 700 words, which the present authors were able to collect during two fieldwork trips conducted in 2015 and 2016.¹ This paper also attempts to compare the phonology of Lhagang Choyu with its closest related language, i.e. Choyu (a.k.a. Queyu; ISO 639-3 code: qvy). This comparison is based on previous studies of Choyu (e.g., Wang 1991; Nishida 2008; Lu 1985; Nagano & Prins 2013).

Lhagang Choyu has not gained much interest from researchers despite the fact that there are many publications focusing on the region (traditionally called Minyag or Minyag Rabgang of Khams).² Several general reference works concerning the region where Lhagang Choyu is spoken have been published, e.g., Yang (1994), *Kangding Xianzhi* (1995), Ikeda (2003), and Rig-'dzin bsTan-srung (2015); yet none of these mention Lhagang Choyu. Anthropological works, e.g., Schneider (2013), (2016), and Tan (2013a; 2013b), also do not mention Lhagang Choyu. There are also several linguistic descriptions on the nearby non-Tibetic language of Minyag (or Darmdo Minyag) that do not mention Lhagang Choyu, e.g., Sun (1983), Huang (1991; 2009), Song (2006), and Dawa Drolma & Suzuki (2016). The first report regarding the sociolinguistic situation of the Lhagang Choyu language was published in Suzuki & Sonam Wangmo (2016a), and it is listed as a language in Roche & Suzuki (2017). Unfortunately, by the time the

¹ We conducted a third fieldwork trip in 2017; however, we were not able to collect more words.

² Toponyms that have originated from Tibetan are first given in Chinese pinyin, followed by a Tibetan romanised transliteration (based on de Nebesky-Wojkowitz 1956: xv) and finally by a transliteration style used henceforth in the article.

authors of this present paper became aware of Lhagang Choyu's existence, Lhagang Choyu had already become moribund. It is likely that there are no longer speakers that acquired Lhagang Choyu as a mother tongue; with less than 100 people who have acquired it as a second language. It has been spoken in only one hamlet called Täge [Thabs-mkhas; Thamkhas] of Tagong [lHa-sgang; Lhagang] Town, Kangding [Dar-mdo] Municipality, Ganzi [dKar-mdzes] Tibetan Autonomous Prefecture, Sichuan Province, China (Fig. 1 & 2).³

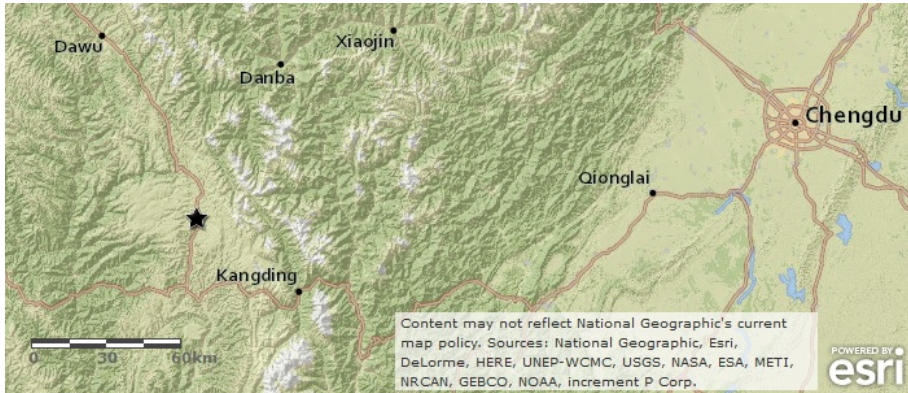


Fig. 1 — Geographical position of Lhagang Town⁴

The language data was collected from speakers living in Lhagang Village—the cultural and administrative centre of Lhagang Town. Most Lhagang Choyu speakers are now speakers of Khams Tibetan (ISO 639-3 code: khg), of which their spoken variety is the Thamkhas dialect of the Minyag Rabgang dialect group.⁵ Those who are able to speak Lhagang Choyu usually do not use Lhagang Choyu anymore and instead speak Khams Tibetan. They use Khams Tibetan even within their family in which all the members are from Thamkhas Hamlet. Hence, the second author, native of Lhagang Village, has recently discovered that most middle-aged and younger villagers living in Lhagang Village do not even know the existence of the

³ There is another spelling for this hamlet: Thal-skas (Rig-'dzin bsTan-srung 2015: 55).

⁴ The figures in the article were designed by Arc GIS online: <https://www.arcgis.com/home/webmap/viewer.html>

⁵ Khams Tibetan should be considered as a language complex rather than a single language. See Tournadre (2014) and Suzuki (2015b; 2016). The Thamkhas dialect of the Minyag Rabgang dialect group is closely related to the Zhonglu subdialect mentioned by sKal-bzang 'Gyur-med (1985). For a detailed description based on sound changes (or shared innovations) corresponding to Literary Tibetan, see Suzuki (2016). For descriptions of dialects belonging to this group, see Suzuki (2007) and Suzuki & Sonam Wangmo (2015; 2017).

Lhagang Choyu language.

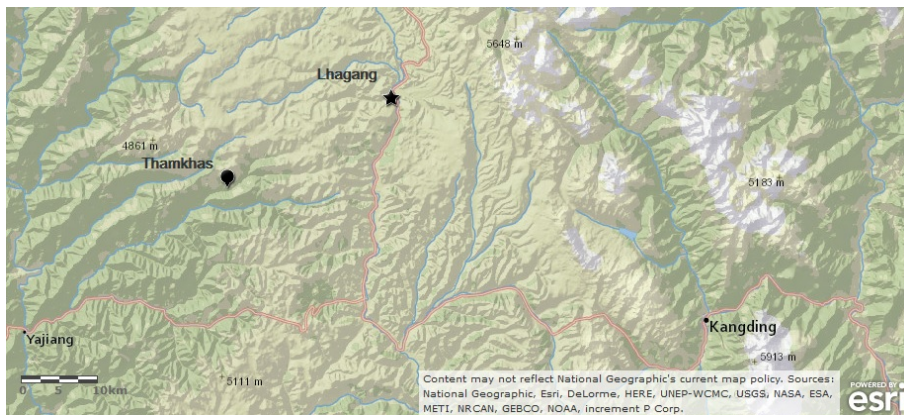


Fig. 2 — Geographical position of Thamkhas Hamlet and Lhagang Village

As the language name suggests, Lhagang Choyu is considered as a language closely related to the Choyu language, particularly to the dialect of Choyu spoken to the west of Thamkhas Hamlet (Suzuki & Sonam Wangmo 2016a). According to a traditional oral story, ancestors of Tibetans who are now living in Thamkhas Hamlet migrated more than 200 years ago from the present Choyu-speaking area of Xinlong [Nyag-rong] County.⁶ Thus, we can hypothesise an existence of a historical relationship between Lhagang Choyu and Choyu. In addition, a few Lhagang Choyu speakers remember being able to communicate with some Tibetans from the Choyu-speaking area of Nyagrong (*nyag rong logs skad* ‘Nyagrong’s local speech’) by using Lhagang Choyu (or *skad logs* ‘impure language’).⁷ The reported intelligibility between the variety of Choyu spoken in Nyagrong and

⁶ The person that we interviewed clearly mentions that her ancestors came from a place called /tɕʰo ji/; however, none of the Tibetans from Thamkhas Village who live in Lhagang Village know the exact place of /tɕʰo ji/, and they just say “somewhere in Nyagrong.” The first author conducted several interviews in Litang [Li-thang] County where he was told by a Choyu-speaking lama that “Choyu” just denoted today’s Zituoqi [rTse-thog-gshis] Township of Xinlong County; there are no locations called Choyu within the territory of Litang County. In other interviews, the first author has confirmed that no Choyu speakers living in Litang County consider the toponym “Choyu” as designating an area within Litang.

⁷ The first author has also confirmed that Tibetans (Khams speakers) in Litang County often call the Choyu language *skad logs* in contrast with *mi nyag skad* ‘the Minyang language(s)’ (which includes Darmdo Minyang and Nyagrong Minyang). The term *skad logs* is difficult to translate well, but the morpheme *logs* definitely carries a pejorative sense that, when used in *skad logs*, can also mean ‘biased’, ‘slanting’, ‘leaning’, and ‘non-authentic’.

Lhagang Choyu certainly suggests a close linguistic relationship between the two varieties within the highly variegated language situation of this area (Roche & Suzuki 2017; 2018). However, there have been no systematic studies of intelligibility between these languages.

Several dialects of Choyu have undergone analysis by linguists; e.g., the dialect in Youlaxi [gYang-la-gshis] Township of Xinlong County (Wang 1991), the dialect in Rongpa [Rong-pa] Township of Litang [Li-thang] County (Nishida 2008), the dialect in Tuanjie Township (Lu 1985) and the dialect in Gala/Xiala Township (Nagano & Prins 2013) of Yajiang [Nyag-chu-kha] County.⁸ Figure 3 shows the geographical distribution of these Choyu dialects and the location of Thamkhas Hamlet. In addition, Figure 3 shows how Thamkhas is located in a different valley from all the other Choyu dialects. The Choyu dialects are principally spoken along the Nyagchu River Valley.

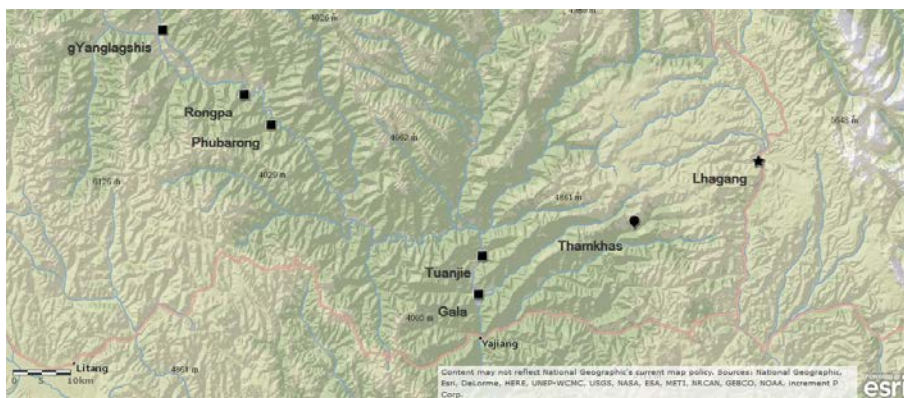


Fig. 3 — Geographical position of Lhagang Choyu (indicated with a star) and Choyu (shown with black squares)

In Table 1, we can observe as comparison of eleven lexemes in Lhagang Choyu and five Choyu dialects (Tuanjie, Gala, Phubarong, Rongpa, and gYanglagshis).

Table 1 — Limited lexical comparison between Lhagang Choyu and Choyu⁹

	Lhagang Choyu	Choyu				
meaning	Lhagang	Tuanjie	Gala	Phubarong	Rongpa	gYanglagshis

⁸ Lu (1985) names the language in Tuanjie Township “Zhaba;” however, it is rather a dialect of Choyu (Wang 1991). Xiala is locally pronounced as [kala] in Sichuanese (Southwestern Mandarin), as shown in Nagano & Prins (2013), and thus henceforth, we will refer to this dialect as ‘Gala’.

⁹ Sources: Lhagang Choyu: the present authors’ field note; Tuanjie: Lu (1985) and Sun (1991); Gala: Nagano & Prins (2013); Phubarong: the first author’s field notes; Rongpa: Nishida (2008); gYanglagshis: Wang (1991).

person	ṽṽu	ṽṽu ^o	ṽṽə	ṽṽu	^o ṽṽə	ṽṽə ^o
pig	ṽve	we ^o	-	ṽve	^o vue	ve ^o
head	ṽq'o	xo ^o	χo	ṽq'o	^o q'o	q'o ^o
blood	ṽsə'	sai ^o	sai	ṽsuw	^o si	si ^o
meat	ṽt'o	t'o ^o	t'o	ṽt'o	^o t'o	t'o ^o
tooth	ṽki	ku ^o	ku	ṽki	-	ski ^o
sun	ṽmi tsi	ṽi ^o mur ^o	ɲuma	ṽmə' tsə	^o pə	pu ^o
year	ṽk'a	ko ^o	lə'sə	ṽkwə	^o ku	kuə ^o
yesterday	ṽji' ɛə	ji ^o 'si ^o	ji'sə	ṽji sə	^o vi:ji	vu:ji ^o

There are three lexemes of interest in Table 1 worth commenting on. Firstly, no Tibeto-Burman language, at least from the data that is available, has forms for the lexeme 'sun' similar to the forms in Lhagang Choyu and the Phubarong dialect of Choyu, i.e. /ṽmi tsi/ and /ṽmə' tsə/ respectively (e.g., see Shirai et al. 2016). Secondly, the word for 'tooth' with a /k-/ initial is attested only in Lhagang Choyu and Choyu among the languages of western Sichuan (see Suzuki and Sonam Wangmo 2016a). Thirdly, the word for 'person' with a voiceless nasal is also unique to Lhagang Choyu and Choyu among the languages spoken in the vicinity (see Huang 1992). These three unique lexical commonalities suggest a close relationship between Lhagang Choyu and Choyu.

From the data provided by previous works on Choyu, the Choyu language can be divided into two dialect groups based on the number of consonant clusters a dialect has. gYanglagshis and Rongpa have many, whereas Tuanjie and Gala have fewer than gYanglagshis and Rongpa. This typologically superficial feature reflects a historical divergence within Choyu and may be a clue for understanding whether or not Lhagang Choyu is related to the Choyu dialects in Nyagrang, as the oral migration history given by Thamkhas Tibetans suggests. For this purpose, we should first clarify the phonology of Lhagang Choyu, then seek shared innovations attested in etyma.

The primary purpose of this article is to provide a phonological sketch of Lhagang Choyu using the limited lexical data that is available. Since the language is already moribund, it has been difficult to access and obtain language data. Many word forms have been forgotten and replaced by Khams Tibetan. Making a long sentence using only Lhagang Choyu is basically impossible for the remaining speakers in Thamkhas Hamlet. Therefore, we provide an analysis based only on about 700 words as well as some fragments of morphological data. Thus, this article cannot provide a complete phonological analysis, but rather will attempt to make some preliminary claims about the phonology of Lhagang Choyu based on the data that is available. In addition, our phonological analysis follows a more "broad phonetic" approach to analysis (Timberlake 2004: 28). There are several reasons we take this approach. First, our data is limited, and thus making

strong claims about the phonology seems unwise. Second, there are sounds in Lhagang Choyu that need “extensive discussion about the actual properties of the sounds, rendering binary decisions about what is or is not phonemic uninformative” (Timberlake 2004: 28). For example, Lhagang Choyu has two labio-dental continuants (the approximate *v* and the fricative *v*), both of which we represent in the consonant inventory. The approximate *v* and the fricative *v* might indeed be a single phoneme, but the present data suggest that at these sound are at least partially contrastive. Thirdly, our approach is more conducive to doing dialectology, which is an urgent research need from an areal perspective. An approach that is overly focused on phonological economy does not always reflect how a native speaker may perceive dialect variation and may even hide some of the contrasts that are primarily motivated by dialect variation. Following the phonological analysis, we provide a preliminary comparative analysis of the phonology and lexicon of Lhagang Choyu with a number of Choyu dialects. Our conclusion is that Lhagang Choyu is related most closely to the Choyu dialects of Nyagrong.¹⁰

2. A preliminary phonological sketch

A preliminary phonological sketch of Lhagang Choyu is described below, divided into four parts: consonants, vowels, suprasegmentals, and phonotactics. Typically it is indispensable in phonological analysis to find minimal pairs. Unfortunately, only a small number of minimal pairs can be found in our Lhagang Choyu database of 700 words. However, we do have enough data to provide a rough and preliminary phonological sketch based on minimal and near-minimal pairs as well as complementary distribution.

-Consonant inventory

From our data, we propose 54 consonants in Lhagang Choyu, as is shown in the following table:

Table. 2 – Consonant inventory of Lhagang Choyu

plosive	p ^h	t ^h	tʰ	k ^h	q ^h	
	p	t	t	k	q	?
	b	d	d	g		
affricate		ts ^h	tʃ ^h	tɕ ^h		
		ts	tʃ	tɕ		
		dz		dz		

¹⁰ Due to limited accessibility to Lhagang Choyu, the authors cannot provide an exhaustive linguistic comparison, as is provided in Huang (2001).

fricative	(ϕ)*	s	ʃ	ʂ	ʈ	x		h
	v	z	ʒ		ʈ̥	ç	ɸ	ɦ
nasal	m	n	ɳ		ɳ̥	ŋ	ɲ	
	ɱ	ɳ̥			ɳ̥̥	ŋ̥	ɲ̥	
liquid		l		r				
		ɭ						
approximan	w	ʋ				j		
t								

* /ϕ/ appears only as a preinitial and never as a main initial. See discussion in 3.2.2.

N.B.1. /d/ and /dz/ do not appear as simple initials. Since other voiced obstruents exist just as simple initials, we can propose the existence of the two consonants.

N.B.2. /ʔ/: Glottal stops could be interpreted as an allophone of a zero-initial. However, we prefer to analyze glottal stops as a consonant phoneme because it provides a simpler explanation of syllable structure as requiring a consonant onset. See Phonotactics for further explanation.

Complex initials are attested and include the following preinitials:

/v-, b-, ϕ-, v-, w-, m-, x-, ç-/.

-Vowels

There are eleven vowels in Lhagang Choyu, as seen in Table 3.

Table 3 – Vowels of Lhagang Choyu

i	e	ɛ	a	ɑ	ɔ	o	u	ɯ	ɯ	ə
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Three secondary articulations (nasalisation, velarisation, and labialisation) are attested, as discussed with examples in Section 3.3.2.

-Suprasegmentals

Lhagang Choyu has a word-tone system, distinguishing two types of tone: ‘high’ and ‘low’. We represent the high tone with the symbol $\bar{}$ and the low tone with the acute accent symbol $\acute{}$, both of which we place before the word. Pitch height can be identified phonetically for the first two syllables of a word, but the third syllable of trisyllabic words is always atonal. Stress is also contrastive and is represented with \prime , which denotes that the preceding syllable has stress. In multi-syllabic words, stress causes the following syllable to become atonal. See Section 4 for further explanation.

-Phonotactics

Lhagang Choyu's basic syllable template is CV, and its maximum is $^{\circ}CV$, of which the first two elements ($^{\circ}C$) are preinitials. We do not have any examples in our data of a syllable without an initial consonant. Preinitials are either nasals (prenasalisation and heterorganic / $^{\circ}m/$), glottal fricatives (preaspiration), or oral sounds such as / $^{\circ}p, ^{\circ}b, ^{\circ}\phi, ^{\circ}v, ^{\circ}x, ^{\circ}y, ^{\circ}w/$. Syllables are always open.

3. Segmental sound structure

When doing phonology, it is typical to conduct analysis on native words and loanwords separately. However, due to the small amount of data, this methodology is not feasible. Lhagang Choyu has many Tibetan loanwords, several of which are not so similar to any other dialect in the surrounding area.¹¹ We suppose that these Tibetan loanwords are quite old and have adapted to the sound structure of Lhagang Choyu. Therefore, we include Tibetan loanwords as necessary data for phonological analysis.

3.1 Combining initials and vowels

The following table (Table 4) contains all the possible combinations of initials with vowels found in our data. Attested combinations are marked with an X. We are not making a claim that these are all the possible combinations of simple initial consonants with vowels as the data we have is very limited. Initials here can occur with or without a preinitial. Vowels can be with or without secondary articulation (e.g., nasalisation, velarisation, and labialisation).

Table 4 — Combinations of initials and vowels

	i	e	ɛ	a	ɑ	ɔ	o	u	ʊ	u	ə
p [•]		X		X	X		X	X			X
p	X	X	X	X			X	X	X		X
b	X	X	X	X				X	X		
t [•]				X	X		X	X			
t	X	X		X	X		X	X	X	X	X
d	X	X	X	X				X			X
t [•]		X		X	X		X	X			
f	X	X		X	X	X	X	X	X		X
d			X	X	X		X	X	X		
k [•]	X	X		X				X	X		X

¹¹ Based on the authors' field notes. Lexical data regarding any variety of Khams Tibetan distributed around the Lhagang Choyu-spoken area has not been published in a systematic way except for Suzuki and Sonam Wangmo (2015, 2016b), who describe the Lhagang dialect of Khams Tibetan and the Shingnyag dialect of Amdo Tibetan respectively.

k	X	X	X	X			X	X	X		X
g	X	X		X	X		X	X	X		X
q				X	X		X		X		X
q̣				X			X				
ʔ				X			X	X			X
tṣ		X		X		X	X	X			X
ts	X	X		X	X		X	X			X
dz		X		X			X		X		
tʃ					X				X		X
tʃ̣				X							
tẹ	X	X					X	X	X	X	X
te	X	X		X	X		X	X	X		X
dẓ		X	X	X	X	X			X		X
v				X				X	X		X
s	X	X	X	X	X		X	X	X		X
z	X	X		X		X	X	X	X		X
ʃ	X			X	X				X		X
ʒ				X						X	X
ʃ̣				X							
e	X	X		X	X	X	X	X	X		X
ẓ	X	X		X			X	X			X
x		X	X					X			
y				X	X		X	X			
ɸ		X		X	X		X				X
h	X			X				X			
ɦ											X
m	X	X	X	X	X		X	X			X
ṃ		X	X						X		
n	X	X	X	X			X	X	X		X
ṇ	X			X	X						X
ɳ							X				
ɳ̣	X	X		X			X				
ɳ̣̄	X	X		X							
ŋ				X							X
ŋ̣		X					X	X			X
ɲ									X		X
ɲ̣		X	X		X		X	X	X		X
l	X			X	X		X	X			
r	X	X	X	X	X		X	X	X		X
w				X		X	X	X			X
v	X	X							X		X
j	X			X	X	X	X		X	X	

3.2 Consonants

Examples of consonants are provided in this section organised according to manner of articulation. Simple consonants initials are discussed in 3.2.1 and consonant clusters are discussed in 3.2.2.

3.2.1 Simple consonant initials

-obstruents

labial plosives

/pʰ/ /ᵀpʰa/ ‘pig year’

- /p/ /ṽpəʼ tʃa/ 'insect'; /ṽʒa pa/ 'father (address term)'
 /b/ /ṽtəʼ be tə/ 'like this'

alveolar-retroflex plosives

- /tʰ/ /ṽtʰa re/ 'far'
 /t/ /ṽta pʰo/ 'put (soil) on'; /ṽta ra/ 'cheese'
 /d/ No simple initial examples; see prenasalisation and preaspiration.
 /ṭʰ/ /ṽṭʰa xu/ 'kettle'
 /ṭ/ /ṽṭi/ 'mule'; /ṽṭo mu/ 'straight'
 /ḍ/ No simple initial examples; see prenasalisation in 3.2.2.

velar-uvular-glottal plosives

- /kʰ/ /ṽkʰa/ 'snow'; /ṽkʰu/ 'smoke'
 /k/ /ṽtəa ka/ 'thing'; /ṽki/ 'tooth'
 /g/ /ṽga pu/ 'big'; /ṽgu za/ 'noodle'
 /qʰ/ /ṽqʰa pi/ 'story'; /ṽqʰo/ 'head'
 /q/ /ṽqa zi/ 'pony'; /ṽqo zə/ 'tall'
 /ʔ/ /ṽʒa ma/ 'mother'; /ṽʔo di/ 'throat'

alveolar-postalveolar-prepalatal affricates

- /tsʰ/ /ṽtsʰaʷ tsʰaʷ/ 'thin'
 /ts/ /ṽtsəʷ/ '3rd person singular'
 /dz/ No simple initial examples; see prenasalisation and preaspiration in 3.2.2.
 /tʃʰ/ /ṽtʃʰu/ 'dog'
 /tʃ/ /ṽpəʼ tʃa/ 'insect'
 /tʃʰ/ /ṽtʃʰo kʰɔ̃/ 'kettle'
 /tʃ/ /ṽtʃu/ 'waste'
 /dz/ No simple initial examples; see prenasalisation and preaspiration in 3.2.2.

-continuants

labial-labiodental fricatives and approximants

- /v/ /ṽvə/ 'tsampa (roasted barley)'
 /w/ /ṽwəʼ zi/ 'mdzo (hybrid of yak and cow)'
 /ʋ/ /ṽʋəʼ və/ 'soft'

These three are likely to be contrastive as simple initials.

alveolar-postalveolar-prepalatal fricatives

- /s/ /ṽse/ 'wood'

/z/ /'ze/ 'liver'
 /ʃ/ /ʃə rə/ 'bone'
 /ʒ/ /'zə/ 'water'
 /ʂ/ /'ta ʂa/ 'tear up'
 /ɕ/ /'ɕe/ 'who'
 /ʐ/ /'ze/ 'house'

velar-uvular-glottal fricatives

/x/ /'xə zi/ 'calf'; /'tʰa xu/ 'earthen jar'
 /ɣ/ /'ɣa/ 'fox'; /'ɣu pa/ 'owl'
 /ɣ̥/ /'kʰa/ 'gate'; /'kʰe/ 'neck'
 /h/ /'hu ts'a/ 'chili'
 /ɦ/ /'ɦə qə le/ 'wear a ring'; /'ku ɦu/ 'exchange'
 Full contrast between these sounds is not attested.

labial, alveolar, postalveolar, and prepalatal nasals

/m/ /'ma/ 'butter'
 /m̥/ /'m̥e/ 'hair'
 /n/ /'ni/ 'ear'
 /n̥/ /'n̥i/ 'nose'
 /n̄/ /'n̄o' n̄o/ 'bitter'; cf. /'no^hbu/ 'jewel'
 /n̥̄/ /'n̥̄i' n̥̄i/ 'black'
 /n̄̄/ /'n̄̄i/ 'knee'

velar-uvular nasals

/ŋ/ /'ŋə ŋo/ 'we'
 /ŋ̥/ /'ŋ̥ə' ŋ̥ə/ 'blue'
 /N/ /'Nə' Nə/ 'bright'
 /N̥/ /'N̥ə' N̥ə/ 'yellow'

liquids and approximants

/l/ /'lu/ 'stone'
 /l̥/ /'l̥a/ 'wind'
 /r/ /'ra/ 'female yak'
 /j/ /'jo/ 'rabbit year'

3.2.2 Complex consonants

There is a rich inventory of complex consonant cluster initials attested in Lhagang Choyu, which also appear in the majority of the dialects of Choyu. Prenasalisation /^NC/ and preaspiration /^hC, ^hC/

make up the majority of consonant clusters; however, labial plosive and continuant preinitials /^hC, ^hC, ^hϕC, ^hʷC, ^hɲC/, and velar continuant preinitials /^hC, ^hʷC/ are also attested. Due to insufficient data, we cannot confirm the entire system of complex initials; however, we can give a preliminary sketch. Regarding our phonetic representations, even though preinitial sounds are neutralised (especially in voicing), we still represent each cluster in its pre-neutralised state, following previous works on Choyu dialects.¹²

-Prenasalisation

Homorganic prenasalisation appears before a main initial with voiced or aspirated obstruents. E.g.,

/ ^m b/	/ ^m ba/ 'light (a fire)'; cf. / ^h ta ^h ba/ 'hide'
/ ⁿ d/	/ ⁿ du/ 'food'
/ ⁿ ɖ/	/ ⁿ ɖu/ 'thunder, dragon'; cf. / ^h ɖu ku/ 'button'
/ ^ŋ g/	/ ^ŋ g ^a la/ 'day before yesterday'; cf. / ^h g ^a / 'front'
/ ⁿ dz/	/ ⁿ dzo/ 'female mdzo'
/ ⁿ dz/	/ ⁿ dza/ 'rainbow'; cf. / ^h dza la/ 'street'
/ ^m p̃/	/ ^m p̃a/ 'vomit'; cf. / ^h p̃a rə/ 'over there'
/ ^{t̃} /	/ ^{t̃} a/ 'sputum'; cf. / ^h t̃a pe/ 'forehead'
/ ^{ʈ̃} /	/ ^{ʈ̃} a/ 'thin (in diameter)'
/ ^h k̃/	/ ^h k̃i ma/ 'kidney'
/ ^{t̃s̃} /	/ ^{t̃s̃} u/ 'lake'
/ ^{ñ} t̃/	/ ^{ñ} t̃ə/ 'horn'; cf. / ^h kə t̃a/ 'be boiled'
/ ^{h̃} t̃ẽ/	/ ^{h̃} t̃ẽi/ 'salt'; cf. / ^h qa' t̃ẽi/ 'good, beautiful'

-Preaspiration

Preaspiration appears before unaspirated or voiced obstruent and continuant main initials. Voicing of the preinitial depends on the voicing of the main initial, and is thus neutralised. Therefore, we could unify the description with one phonetic symbol (choosing either /^hC/ or /^{h̃}C/); however, we represent both the voiced and voiceless forms in order to stay consistent with our broad phonetic approach. Some examples have a variant of preaspiration as a specific oral consonant. E.g.,

/ ^{h̃} p/	/ ^{h̃} pu/ 'incense'; cf. / ^h ji pu/ 'rye'
/ ^{h̃} t/	/ ^{h̃} to/ 'excrement'; cf. / ^h tu/ 'fall'
/ ^{h̃} t̃/	/ ^{h̃} t̃u ku/ 'reincarnated lama'; cf. / ^h t̃u/ 'breast'

¹² Taking Sun (1991) and Huang (1992) into consideration, we find that this style is commonly accepted among descriptions of relevant Tibeto-Burman languages. Although there is a criticism against this method from a phonological approach, we still follow the convention of Sun (1991) and Huang (1992).

/ ^h k/	/ ⁻ kə/ 'voice, language'; cf. / ^ˈ kə/ 'directional prefix'
/ ^h ts/	/ ⁻ tsə/ 'thread'; cf. / ^ˈ tsə/ '3 rd person pronoun'
/ ^h tɕ/	/ ⁻ tɕə/ 'iron'; cf. / ^ˈ tɕə/ 'tea'
/ ^h s/	/ ⁻ sə/ 'gold'; cf. / ⁻ sə/ 'blood'
/ ^h l̥/	/ ⁻ li/ 'tongue'; cf. / ⁻ li ki/ 'stairs'
/ ^h b/	/ ⁻ bɛ ba/ 'frog'
/ ^h d/	/ ⁻ dɛ/ 'seven'
/ ^h g/	/ ⁻ gu za/ 'lunch'; cf. / ^ˈ gu za/ 'noodle'
/ ^h dz/	/ ⁻ dzɯ/ 'trousers'
/ ^h dʒ/	/ ⁻ dʒa la/ 'street'
/ ^h z/	/ ⁻ zo/ 'girl, daughter'; cf. / ⁻ zo/ 'fry'
/ ^h ʒ/	/ ⁻ ʒə/ 'sickle'; cf. / ⁻ ʒa və/ 'wooden bowl'
/ ^h ʒ/	/ ⁻ zi/ 'wait'; cf. / ^ˈ ze/ 'peaceful'
/ ^h ʂ/	/ ⁻ ʂa/ 'power'; cf. / ^ˈ ʂo/ 'help'
/ ^h m/	/ ⁻ mi/ 'wound'; cf. / ⁻ mi tsi/ 'sun'
/ ^h n/	/ ⁻ na me/ 'daughter-in-law'; cf. / ⁻ na/ 'bean flour'
/ ^h n̥/	/ ⁻ n̥i be/ 'old'; cf. / ⁻ n̥i/ 'name'
/ ^h ŋ/	/ ⁻ ŋa bu/ 'sweet'; cf. / ^ˈ ŋa/ 'I'
/ ^h l/	/ ⁻ la/ 'thigh'; cf. / ⁻ la me/ 'dream'
/ ^h r/	/ ⁻ ri/ 'skin'; cf. / ^ˈ ri/ 'road'
/ ^h w/	/ ⁻ wa/ 'yak hair tent'; cf. / ^ˈ wa/ 'under'
/ ^h j/	/ ⁻ ju/ 'turquoise'

-Labial preinitials

Labial preinitials include various obstruents and nasals (e.g., /^hC, ^hC, ^hɕ, ^hɕ/). The only labiodental preinitial is the voiced fricative /^hv/, and in some cases, it can alter with a labial approximant counterpart /^hw/. Nasal labial preinitials must be considered as heterorganic labial prenasalisation; hence, /^hb/ and /^hɸ/ are excluded in the forms below (see Prenasalisation above). Within our limited data, labial preinitials seem to be in complimentary distribution in terms of manner of articulation as well as voicing. In particular, /^hv/ sometimes appears as a prefix for verbal morphology and can precede any voiceless initials, including fricatives. We thus keep /^hv/ and /^hɸ/ in contrast at this present stage of research regardless of the lack of minimal pairs.

Only a few combinations are attested. The lack of systematicity might be due to insufficient data. E.g.,

/ ^h t̥/	/ ⁻ t̥o ^h t̥o ^h / 'white'
/ ^h t/	/ ^ˈ ta ta/ 'flat'; cf. / ^ˈ ta pe/ 'monk'

/ʳk/	/ˈta ʳke/ 'wear (a hat)'
/ʳtɕ/	/ˈʳtɕəˈaʳ ʳtɕəˈa/ 'sour'; cf. /ˈtɕəˈa/ 'friend'
/ʳs/	/ˈtə ʳsuw/ 'full'
/ʳd/	/ˈkʰa ʳda ˈla bi/ 'chat'; cf. /ˈta ʰde/ 'fly'
/ʳʃ/	/ˈʳʃi ʳʃi/ 'thin'
/ʳɕ/	/ˈʳɕə/ 'cock'; cf. /ˈɕə/ 'earth'
/ʳz/	/ˈʳzəˈ ʳza/ 'hot (spicy)'; /ˈzə/ 'root of pteridophyte'
/ʳʒ/	/ˈʳʒə ʳtu ma/ 'square'
/ʳʒ/	/ˈʳzi/ 'be hungry'; cf. /ˈʰzi/ 'wait'
/ʳn/	/ˈta ʳnu/ 'smell'; cf. /ˈnu/ 'west'
/ʳl/	/ˈʳla me/ 'lama'; cf. /ˈla me/ 'dream'
/ʳr/	/ˈʳra/ 'body hair'; cf. /ˈre/ 'horse'
/ʳr/	/ˈre/ 'horse'; cf. /ˈre tɕə tə/ 'all'
/ʳd/	/ˈʳdʰa/ 'rice'
/ʳdz/	/ˈʳdzaˈ ʳdza/ 'hot (temperature)'; cf. /ˈdze/ 'pillar'
/ʳdz/	/ˈqə ʳdzu/ 'grasp'; cf. /ˈʰdzu ʳka/ 'pulse'
/ʳn/	/ˈʳne/ 'listen'; cf. /ˈne ʳdze/ 'you two'
/ʳtʰ/	/ˈʳtʰo/ 'alveolum'; cf. /ˈtʰo/ 'meat', /ˈtʰo/ 'cooked'
/ʳkʰ/	/ˈtə ʳkʰəˈa/ 'turn over (something)'; cf. /ˈkə ʳkʰə/ '(someone) turn over'

-Velar preinitials

Velar preinitials include only fricatives, which seem to be neutralised in voicing based on the main initial. There is a clear pronunciation difference between velar preinitials and preaspiration. Although there are no minimal pairs, there are still some words that are in contrast with non-velar preinitials.

Only a few combinations are attested. E.g.,

/ʳŋ/	/ˈta ʳŋo/ 'chew'
/ʳl/	/ˈqə ʳlə/ 'shit'; cf. /ˈʳli/ 'tongue'
/ʳr/	/ˈʳru ʳru tu tə/ 'laugh'; cf. /ˈru/ 'grass', /ˈʳri/ 'skin', /ˈre/ 'horse'

-Cluster of three consonants

Only one cluster consisting of three consonants has been attested. The type of cluster consists of the following: nasal preinitial + obstruent preinitial + main initial.

/ʳpʰ/	/ˈʳpʰe ve/ 'beads'; cf. /ˈʳpʰa ʳpʰa/ 'thin (in diameter)'
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The word 'beads' is considered to be a Tibetan loan originating from *phreng ba*. In the Rangakha dialect of Khams Tibetan (spoken in the vicinity of the Lhagang Choyu-speaking area), there is also the

prenasalised form /^hte wa:/ ‘beads’ (Suzuki 2007:153). The Lhagang Choyu form suggests a sound change: */p^hreŋ wa/ > */p^hre wa/ > /^hte ve/.

3.3 Vowels

3.3.1 Simple vowels

The following contrasts can in the vowels of Lhagang Choyu:

/i/-/e/-/ɛ/-/a/

/i/ /^hmi tsi/ ‘sun’; /^hvi ^hdu/ ‘pig food’

/e/ /^hm̄e/ ‘hair’; /^hve/ ‘pig’; /^hse/ ‘log’

/ɛ/ /^hm̄ɛ/ ‘medicine’; /^hkɛ sa/ ‘cushion’; /^hsɛ ma/ ‘bean’

/a/ /^hma/ ‘butter’; /^hka’ wa/ ‘steamed bun’

/u/-/o/-/ɔ/-/ɑ/

/u/ /^hmu/ ‘sky’; /^hlu/ ‘stone’

/o/ /^hmo zi/ ‘cat’; /^hlo ma/ ‘leaf’; /^htɕ^hu ts^ho/ ‘time’

/ɔ/ /^hnɔ ŋa/ ‘inside’; /^hts^hɔ’ ts^hɔ/ ‘short’

/ɑ/ /^hma mi/ ‘soldier’

/ʌ/-/ə/-/ɯ/

/ʌ/ /^htʌ tʌ ^hla/ ‘quarrel’; /^htɕ^hʌ/ ‘sūtra’

/ə/ /^hmə/ ‘fire’; /^htɕ^hə/ ‘dog year’

/ɯ/ /^hm̄ɯ/ ‘person’; /^htɕ^hɯ mi/ ‘water spring’

/a/-/ɑ/

/a/ /^htə’ ^hla/ ‘loose’; /^hʔa’ tɕa/ ‘elder sister’

/ɑ/ /^hji ^hla/ ‘twist’; /^hɕi tɕa/ ‘broom’

/u/-/ɯ/

/u/ /^hv^hu/ ‘belly’

/ɯ/ /^hv^hɯ ^hɕu/ ‘navel’

/u/-/ʌ/

/u/ /^hhə tɕ^hu/ ‘uncover’

/ʌ/ /^htɕ^hʌ/ ‘sūtra’

Note that there are no minimal or near-minimal pairs to show contrast between the vowels /ɔ/ and /ɑ/. However, nasalised forms, as seen in 3.3.2, reveal the possibility of contrast between /ɔ/ and /ɑ/.

3.3.2 Vowels with secondary articulation

There are three types of secondary articulation that occur with vowels: nasalisation, velarisation, and labialisation. More than one type of secondary articulation cannot co-occur within the same syllable, according to the present data.

-Nasalised vowels

Nasalised vowels can be found in independent words and in words that have undergone alternations due to verb agreement morphology. For example, some verbs index the first person agent/actor with vowel nasalisation. We have not conducted a systematic analysis; however, we were able to record verb agreement indexed by nasalisation in a few elicited verbs. Verb agreement through nasalisation is evidence that Lhagang Choyu has a set of nasalised vowels.

Many nasalised vowels which appear in word-medial position occur before prenasalisation. In this case, the nasalisation of the vowel could be due to the phonetic effect of anticipating the following nasal. However, there are examples where the vowel is not nasalised before a nasal consonant; and examples where a vowel is nasalised even before a non-nasal consonant. Compare the following examples:

/ʼts̃^hõ^hba/ 'merchant' (nasalised vowel + prenasalised initial)

/ʼwa^h ʼḏa/ 'sow' (non-nasalised vowel + prenasalised initial)

/ʼsẽ^hgi/ 'lion' (nasalised vowel + non-prenasalised initial)

Due to the small number of examples, we represent nasalisation in every instance that it occurs, even though it may not be entirely phonological in every instance. Our data contains the following nasalised vowels: /ĩ, ẽ, ǣ, õ, ǔ, ǻ/. The existence of near minimal pairs also suggests that nasalisation is a distinctive feature.

Examples of nasalised vowels in word-final position, which rarely appear, are as follows:

/ĩ/ /ʼḥĩ/ 'cloud'; cf. /ʼti/ 'mule'

/ẽ/ /ʼkə zẽ/ 'I sleep'

/ǣ/ /ʼtsǣ/ 'I milk'

/õ/ /ʼrə yõ/ 'rabbit'; cf. /ʼyo/ '(inanimate things) exist (on an upper side)'

/ǔ/ /ʼzǔ/ 'copper'

/ǻ/ /ʼḥǻ/ 'ox'; cf. /ʼḥǻ/ 'vulture'

Examples of nasalised vowels in word-medial position ('nasalised vowel + non-prenasalised initial' type) are as follows:

/ẽ/ /ʼsẽ^hgi/ 'lion'

/õ/ /ʼḥlõ^hka/ 'wind'

/ǔ/ /ʼḥdzǔ^hku/ 'green'

/ã/ /'jä ji/ 'potato'

-Velarised vowels

Some vowels have a velarised counterpart, which is pronounced as either a velarised vowel [V^y], a vowel followed by a velar approximant [Vu], or a vowel followed by a palatal approximant [Vj]. These three features are always free variants. Hence they can phonologically be described as /V^y/. The velarised vowels do not always form a contrast with their plain counterparts.

Our data contains the following velarised vowels: /ε^y, a^y, α^y, ɔ^y, o^y, u^y, ə^y/. The existence of minimal and near-minimal pairs suggests that velarisation is a distinctive feature.

/ε^y/ /'nε^y/ 'milk'
 /a^y/ /'na^y/ 'bean flour'
 /α^y/ /'tα^y/ 'tiger'; cf. /'tα/ po/ 'spoon'
 /ɔ^y/ /'tɔ^y/ 'yak'
 /o^y/ /'h_oo^y/ 'skin'; cf. /'h_oo/ 'flea'
 /u^y/ /'h_uu^y/ 'seed'; cf. /'h_uu/ 'song'
 /ə^y/ /'sə^y/ 'blood'; cf. /'sə/ 'comb'

As presented above, velarised vowels are contrastive with their corresponding simple vowel counterparts.

-Labialised vowels

[ɰ] is not in the consonant inventory nor does it occur as an allophone of /w/. However, some vowels have a labialised counterpart, which is pronounced as [ᵝV] or [ʷV]. This secondary feature is most properly referred to as labio-velarisation; however, we will simply refer to it as labialisation in this article. In Lhagang Choyu, labialisation always precedes a vowel. In preparation for the articulation of an initial consonant, it does not influence the manner of articulation; for example, /'h-i/ 'rain' is not pronounced as [ɰwi] or [ɸwi], but as [hwi] ([h_ɰwi] is also acceptable).

Within the data available at present, labialised vowels are: /^ɰi, ^ɰe, ^ɰa, ^ɰα, ^ɰo, ^ɰə/. The existence of minimal pairs suggests that labialisation is a distinctive feature.

/^ɰi/ /'h^ɰi/ 'rain'
 /^ɰe/ /'s^ɰe/ 'father (reference term)'; cf. /'se/ 'wood'
 /^ɰa/ /'ŋ^ɰa/ 'five'; cf. /'ŋa/ 'I'
 /^ɰα/ /'f^ɰα/ 'sugar'
 /^ɰo/ /'k^ɰo/ 'price'; cf. /'ko ŋa/ 'inside'

/^wə/ /^hg^wə/ 'book'

As presented above, labialised vowels with their corresponding simple vowel counterparts.

An exceptional case is attested as follows. There is an alternation between a prelabialised vowel and a prelabialised initial, which is not a common phenomenon, e.g., the word 'shoe' has two forms: /^zi/ and /^wzi/.

4. Suprasegmentals

Lhagang Choyu has a word-tone system with two contrastive pitch patterns: HIGH (˥) and LOW (˩). Only the first two syllables of a word can have a distinct pitch pattern; after which low pitch patterns follow. Hence, no more than the first two syllables of a word are considered as the tone-bearing unit (TBU). This is similar to the tonal system of Lhasa Tibetan analyzed by Kitamura (1977), Hoshi (1991) and Hoshi (2003).

Pitch height is clear at the word-initial position for most words, and speakers generally do not accept an alternation of the pitch height. There are, however, a few exceptions, e.g., words which allow either of the two heights to appear such as /[˥]mə, [˩]mə/ 'fire'. No additional phonation is contrastive (e.g., creaky voice, breathy voice, etc.; see Zhu 2010; Suzuki 2015a). Falling pitch never functions as a phonological feature. At the end of an utterance, the pitch pattern is generally falling. For instance, the word for 'sun' /[˩]mi tsi/ is pronounced as [mi[˥]tsi[˥]] in citation form. However, when pronounced three times continuously in citation form it will be [mi[˥]tsi[˥] mi[˥]tsi[˥] mi[˥]tsi[˥]]—a falling pitch appears only in the last utterance. This happens in phrases as well. For example, a sequence of two monosyllabic words /[˥]h*˥*i/ 'rain' and /[˥]tu/ 'fall' is transcribed as /[˥]h*˥*i [˥]tu/ 'it rains'. However, the pitch of the first word always stays high and level, e.g., [h[˥]i[˥]], whereas the pitch of the second word tends to fall, e.g., [tu[˥]].

We place the diacritic for marking tone in the word-initial position. This transcription convention follows Kitamura (1977). Some monosyllabic examples of tonal contrast are as follows:

HIGH	/ [˥] ea/	/ [˥] nə/	/ [˥] na/	/ [˥] lu/	/ [˥] jo/
	'east'	'you'	'read'	'stone'	'left'
LOW	/ [˩] ea/	/ [˩] nə/	/ [˩] na/	/ [˩] lu/	/ [˩] jo/
	'earth'	'tail'	'fish'	'sheep'	'rabbit year'

Some examples of contrast found between monosyllabic and disyllabic forms yet not in a derivational relationship, are as follows (an apostrophe within a word marks stress; see the explanation below):

HIGH	/ˈze' ze/	/ˈɣa' ɣa/	/ˈni/
	'fragrant'	'difficult';	'name'
LOW	/ˈze/	/ˈɣa/	/ˈni ni/
	'peaceful'	'extend';	'little'

Examples of polysyllabic words are given below. However, minimal pairs of polysyllabic words demonstrating tonal contrast have not been attested so far.

HIGH	/ˈzɔ̃ ma/	/ˈtɕã ^h ga/	/ˈjo	qo	/ˈt̪ã lã t̪ã lã/
	'milk cow'	'ginger'	ma/		'long ago'
			'left'		
LOW	/ˈzɔ zi/	/ˈtɕa' tɕa/	/ˈre	q̪a	/ˈma ro p̪e
	'cowshed'	'rough'	t̪a/		p̪e/ 'pitiful'
			'stable'		

Although the TBU is no more than the first two syllables of a word, several polysyllabic examples demonstrate that the second syllable may be pronounced with a low pitch pattern, which makes the second syllable appear to be atonal. This is similar to what has been reported in Lhasa Tibetan: tones for disyllabic words with specific suffixes display have two different realisations (Kitamura 1977; Hoshi 1991). One realisation is a tone pattern that fully covers both the syllables and forms a single TBU; and the other realisation is the tone is primarily on the first syllable and the second syllable just has a "light tone." This difference in Lhasa Tibetan is morphophonological.

Caplow (2016:182) describes the existence of stress in some Tibetic languages. Stress is used in some Tibetic languages to distinguish minimal pairs across lexical categories. Her definition of stress is, "the relative prominence of a syllable with respect to neighbouring syllables" (2016:182).

The phenomenon attested in Lhagang Choyu is quite similar to that of Lhasa Tibetan described by Kitamura (1977). Disyllabic words possessing an atonal second syllable are primarily reduplicated word forms, especially adjectives as well as words with a suffix. We analyze this feature as *stress* falling on the first syllable. Even though the first syllable itself has no prominence, it is highlighted by an atonalised second syllable. For our transcription convention, we propose an apostrophe (') after the first syllable rather than a stress diacritic.

Stress in Lhagang Choyu is related not only to the phonology but also to morphology. For example, the diminutive /zi/ which makes a derivation of a 'young animal' from nouns denoting animals is atonal;

however, when this syllable is not a diminutive, it can bear a tone.
Compare:

Stressed /^ˉxɛ' zi/ 'calf', /^ˉts'a' zi/ 'kid', /^ˉpə' zi/ 'piglet'
Plain /^ˉmo zi/ 'cat (not for kitten)'

In some cases of verbs with a prefix, stress can appear on the prefix and not on the root. Examples are:

Stressed /^ˉla'-za/ 'DIR¹³-drop', /^ˉta'-pə/ 'DIR-rot', /^ˉla'-tso/
'DIR-sit'
Plain /^ˉla-la/ 'DIR-do', /^ˈta-p'o/ 'DIR-put, cover'

We have no minimal pairs in our data that display a contrast of stress vs. no stress. However, whether the second syllable is atonalised or not is a crucial feature for speakers. There might be minimal pairs that we have not recorded. Therefore, we maintain a representation of stress in the present description for further research.

To sum up, Lhagang Choyu has both word-tone and stress. This suprasegmental system, except for the restriction of the TBU, is similar to that of the Keihan dialect of Japanese (Ōno and Sibata eds. 1977).

5. Comparison of the sound structure and shared etyma

The present article presents the hypothesis that Lhagang Choyu and Choyu are genetically related based on sociolinguistic evidence as well as on a comparison of peculiar words found in the data of this present paper with the same words found in Suzuki & Sonam Wangmo (2016a). In this section, we attempt to demonstrate this more rigorously; and further to show that Lhagang Choyu is typologically closer to the Choyu variety in Nyagrong than the Choyu variety in Nyagchu even though the Nyagchu variety is closer to Lhagang Choyu than the Nyagrong variety in terms of geographical distance. Even though we have only been able to provide a preliminary sketch of the sound structure of Lhagang Choyu, a brief comparison of cognates shared between Lhagang Choyu and Choyu dialects is worth attempting. The discussion here is just a preparatory work for further research on Lhagang Choyu as well as other Choyu varieties.

The following discussion consists of two parts: the sound structure of three Choyu dialects (gYanglagshis, Rongpa, and Tuanjie), and lexical comparison of etyma which show how shared innovations exist. All the data from Choyu dialects are limited to descriptions

¹³ DIR: directional prefix. Due to a lack of data, we cannot provide an exact meaning of each prefix.

provided in the previous works: Wang (1991) for the gYanglagshis dialect, Nishida (2008) for the Rongpa dialect, and Lu (1985) for the Tuanjie dialect. The ordering of the presentation of these dialect descriptions will be based on each dialect's relative geographical position, from west to east. Thus the order will be gYanglagshis, Rongpa, and Tuanjie, respectively. Due to the limitation of data, the lexical comparison is conducted with only three varieties: Lhagang Choyu, gYanglagshis Choyu (Huang 1992), and Tuanjie Choyu (Sun 1991).

We use the same transcription conventions as the original sources except for the retroflex affricate /tʂ/ and /tʂʰ/ which we write as /tʂ/ and /tʂʰ/, respectively.

5.1 Sound structure of three Choyu dialects

5.1.1 Consonant inventories

The consonant inventory of the gYanglagshis dialect is displayed in Table 5 followed by a comment regarding complex initials.

Table 5 – Consonant system of the gYanglagshis dialect¹⁴

p ^h	t ^h				k ^h	q ^h
p	t				k	q
b	d				g	G
	ts ^h	tʃ ^h	tʂ ^h	tʂʰ		
	ts	tʃ	tʂ	tʂʰ		
	dz	dʒ	dʒ	dʒ		
	sɿ	ʃ	ʂ	ʂ	x	χ
v	zɿ	ʒ		ʒ	ɣ	ʁ
m	n			ŋ	ŋ	
m̥	n̥			ŋ̥	ŋ̥	
	l		r			
w					j	

Complex initials are 144 in total, in which preinitials include: homorganic prenasalised consonants and /m-, p-, b-, s-, z-, l-, t-, ʃ-, r-, ʒ-, ʒ-, ɛ-, z-, k-, χ-, ʁ-/.

The consonant inventory of the Rongpa dialect is displayed in Table 6 followed by a comment regarding the complex initials.

¹⁴ Adapted from Wang (1991). We have changed the symbols tʂ and tʂʰ to tʂ and tʂʰ, respectively.

Table. 6 – Consonant system of the Rongpa dialect¹⁵

p ^h	t ^h				k ^h	q ^h
p	t				k	q
b	d				g	G
	ts ^h		tʂ ^h	tɕ ^h		
	ts		tʂ	tɕ		
	dz		dʒ	dz		
f	s	ʃ	ʂ	ɕ	x	χ
v	z	ʒ	ʐ	ʑ	ɣ	ʁ
m	n			ŋ	ŋ	
m̥	n̥			ŋ̥	ŋ̥	
	l					
	l̥					
w			r		j	
			ɹ			

Complex initials are 116 in total, in which preinitials include preaspirated consonants, homorganic prenasalised consonants, and /^{m-}, /^{p-}, /^{t-}, /^{s-}, /^{z-}, /^{l-}, /^{ʂ-}, /^{ɕ-}, /^{ʒ-}, /^{ʑ-}, /^{ɣ-}, /^{ʁ-}/.
 The consonant inventory of the Tuanjie dialect is displayed in Table 7 followed by a comment regarding the complex initials.

Table. 7 – Consonant system of the Tuanjie dialect¹⁶

p ^h	t ^h				k ^h	q ^h
p	t				k	q
b	d				g	
	ts ^h	tʂ ^h	tɕ ^h			
	ts	tʂ	tɕ			
	dz	dʒ	dz			
	sʃ	ʂ	ɕ	x		h
v	z	ʒ	ʐ	ɣ		fi
m	n		ŋ	ŋ		
m̥	n̥		ŋ̥	ŋ̥		
	l	r				
w				j		

Complex initials are limited to homorganic prenasalised voiced plosives and affricates, and labial plosives plus /z/.
¹⁵ Adapted from Nishida (2008). Some phonetic symbols were changed.
¹⁶ Adapted from Lu (1985), who does not state each articulatory position and manner. Some phonetic were symbols changed.

Based on the description above, we list following outstanding typological differences in Lhagang Choyu and Choyu:

- A. Existence of postalveolar initials
- B. Existence of uvular nasals
- C. Number of complex initials
- D. Existence of preaspiration
- E. Existence of labial nasal preinitials
- F. Existence of prepalatal fricative preinitials
- G. Existence of velar plosive preinitials

Table 8 contrasts the features above.

Table 8 – Discrepancies of consonant features

	A	B	C	D	E	F	G
Lhagang Choyu	+	+	60	+	+	-	-
gYanglagshis	+	-	144	-	+	+	+
Rongpa	+	-	116	+	+	+	+
Tuanjie	-	-	9	-	-	-	-

5.1.2 Vowels and rhymes

Regarding vowels, it is better to examine not only the simple vowels but also the structure of rhymes (vowel+final).

Number and quality of distinctive vowels in the gYanglagshis dialect below:

Tongue position contrast: /i, e, ε, a, ə, ʊ, y, u, o, ɔ/

No simple vowel/nasalised vowel contrast is attested.

Complex vowels: /ie, iε, io, ue, uε, ua, uə, ye, yə, ei/.

/-r/, /-n/, and /-ŋ/ can appear as finals.

Number and quality of distinctive vowels in the Rongpa dialect below:

Tongue position contrast: /i, e, ε, a, ə, ʊ, i, ə, u, o, ɔ/

Simple vowel/nasalised vowel contrast is attested in /i, e, a, ʊ, i, u, o/.

Complex vowels: /ie, io, ue, ua, ui, ʊi, ei/.

Rhotic vowels: /ir, ʊr, er, ar, or, ur/.

Number and quality of distinctive vowels in the Tuanjie dialect below:

Tongue position contrast: /i, ɿ, y, e, ə, ε, ə, ʋ, a, o, u, ʊ, i/

Simple vowel/nasalised vowel contrast is attested except for /ɿ, ʋ, ʊ, i/.

Complex vowels: /ei, ei, ai, əu, au/, /ui, ue, uε, uε, ua, yε/, /uei, iau/

Based on the description above, Lhagang Choyu and Choyu have following typological differences:

Table. 9 – Existence of specific rhyme features

	nasalised vowels	nasal finals	/-r/ final	rhotic vowels	velarised vowels	labialised vowels
Lhagang Choyu	+	-	-	-	+	+
gYanglagshis	-	+	+	-	-	-
Rongpa	+	-	-	+	-	-
Tuanjie	+	-	-	-	-	-

5.1.3 Suprasegmentals

A simple comparison of suprasegmentals across language varieties is difficult unless the methodology of analysis is the same in each variety. Various methods have been used to describe suprasegmentals in Choyu varieties. A comparison of the number of tones and the superficial description (broad phonetic pitch patterns) in Lhagang Choyu and dialects of Choyu can be seen in Table 10.

Table. 10 – Suprasegmental features

	number of distinctive tones	superficial description
Lhagang Choyu	2 + 1 (stress)	H (˘), L (˘), ˘
gYanglagshis	3 + 1 (atonal)	55, 13, 31 + atonal 33
Rongpa	2	H, L
Tuanjie	4	55, 53, 35, 33

Based on a superficial description of tones, Lhagang Choyu has a similar system to the Rongpa dialect in number of distinctive tones. However, the description of Lhagang Choyu applies to a word-tone system whereas the descriptions of Choyu dialects apply a syllable-tone system. Lhagang Choyu needs a stress marker in addition to tone markers. The existence of an 'atonal' category is attested in the gYanglagshis dialect, which could be similar to Lhagang Choyu's system of stress.

In any case, it is not possible to compare these suprasegmental systems because each variety has been analyzed with a different framework. Thus, in the next subsection, we will compare the lexicon across these varieties, but we will have to ignore suprasegmentals until there is more data for each of these varieties.

5.2 Lexical comparison

To begin this subsection, we will briefly confirm that Lhagang Choyu has word forms shared with Choyu varieties. Due to a limitation of data, we will only take examples from gYanglagshis Choyu (Huang 1992) and Tuanjie Choyu (Sun 1991), keeping the original description style and symbols.

Firstly, we display peculiar words from Lhagang Choyu. There are several words which are attested in neither of the two Choyu dialects nor in Tibetic languages.

Table 11 — Peculiar forms to Lhagang Choyu¹⁷

Meaning	gYanglagshis	Tuanjie	Lhagang Choyu
sun	pu ⁵⁵	ŋi ³⁵ mu ³⁵ (TL)	ˉmi tsi
book	χpe ⁵⁵ tʃha ⁵⁵ (TL)	dzu ³⁵ dzu ³⁵	ˉ ^h g ^w ə
big	qo ⁵⁵ rzi ¹³	kə ³⁵ kə ⁵⁵	ˉga pu
butterfly	kə ⁵⁵ pu ⁵⁵ le ¹³ ble ⁵⁵	pə ³⁵ lə ³⁵	ˉʃu

All the Lhagang Choyu forms in Table 11 are not of Tibetic origin. They should be considered as native words. A similar form to /ˉmi tsi/ ‘sun’ is found in Phubarong Choyu (/ˉməʹ ˈtsə/; see Table 1). A cognate of /ˉ^hg^wə/ ‘book’ is found in a Choyu dialect spoken in Lithang (Suzuki & Sonam Wangmo 2018x); and is recorded as *dgod* in the Tibetan script in *Litang Xianzhi* (1996:474). It is highly possible for more cognates to be found after more research has been done on Choyu dialects.

Internal comparison is based on cognates tied to regular sound correspondences. We will present some phonological correspondences among these varieties, though this is difficult due to the insufficient quantity of data on the one hand, and because of the abundance of Tibetan loans in Lhagang Choyu on the other hand. Hence, here we just seek whether or not Lhagang Choyu has any forms which potentially correspond to any Choyu varieties.

Based on the differences pointed out in 5.1, we will give a comparison of a limited amount of lexical data. Taking examples from three varieties, gYanglagshis Choyu, Tuanjie Choyu, and Lhagang Choyu, we discuss the following phenomena: (1) postalveolar and uvular initials as well as a postalveolar nasals;¹⁸ (2) preaspiration; (3) nasal preinitials; (4) oral preinitials; (5) velarised rhymes; and (6) labialised rhymes.

Examples of postalveolar and uvular initials are as follows:

Table 12 — Postalveolar and uvular initials for Lhagang Choyu

Meaning	gYanglagshis	Tuanjie	Lhagang Choyu
dog	ʃtʃhi ³⁵	tehu ³⁵	ˉtʃu
insect	pu ⁵⁵ tʃa ³⁵	bu ³⁵ tea ³⁵	ˉpəʹ tʃa
horn	tʃhi ³⁵ mbə ³⁵	zə ³⁵ tɕo ³⁵ (TL)	ˉ ^h tʃə
bone	ʃə ³⁵ rə ³⁵	-	ˉʃə rə

¹⁷ (TL) denotes a Tibetic loan.

¹⁸ As far as the authors know, among Choyu varieties, the postalveolar nasal simple initial only exists as a phoneme in Lhagang Choyu. See 3.2.1.

highland barley (qingke)	ʃa ⁵⁵	ʂe ⁵⁵ nɛ ⁵⁵	ʃə ⁵⁵
water	ʒi ¹³	zi ⁵⁵	ʒə
day after tomorrow	qha ⁵⁵ se ⁵⁵	xō ⁵⁵ khi ⁵³	qo se
head	qo ⁵⁵	xo ⁵³	qo
gate	ka ¹³	ya ⁵⁵	ka
yellow	ŋu ⁵⁵ ŋu ⁵³ ; cf. ŋə ⁵⁵ 'gold'	ŋā ³³ ŋā ⁵³ ; cf. ŋe ⁵⁵ 'gold'	ŋə ⁵⁵ ŋə
sweet	tʃhi ⁵⁵ tʃhi ³³	ŋa ⁵⁵ ŋa ⁵⁵ (TL?)	ŋu ⁵⁵ ŋu / ʰŋa ⁵⁵ ʰbu (TL)
bitter	rnuā ⁵⁵ rnuā ³³	na ³³ na ⁵⁵	no ⁵⁵ no

Based on the data in Table 12, we can find sound correspondences among the three varieties. Lhagang Choyu and gYanglagshis Choyu maintain the same articulatory positions for consonant initials except for Lhagang Choyu's uvular nasals in /ŋə⁵⁵ ŋə/ 'yellow' and /ŋu⁵⁵ ŋu/ 'sweet' and prenasalisation + postalveolar in /ʰtʃə/ 'horn'. Tuanjie Choyu differs from both Lhagang Choyu and gYanglagshis: postalveolars instead of prepalatals, and uvulars instead of velars (cf. Table 7). Tuanjie Choyu also has uvular plosives in its consonant inventory, as seen in Table 7. We have not found cognates with uvular nasals among the varieties. The word /ŋə⁵⁵ ŋə/ 'yellow' in Lhagang Choyu might correspond to 'gold' in the two Choyu dialects (in gYanglagshis pronounced /ŋə⁵⁵/ and Tuanjie pronounced /ŋe⁵⁵/). The word /ŋu⁵⁵ ŋu / - /ʰŋa⁵⁵ ʰbu/ 'sweet' in Lhagang Choyu is similar to the Tuanjie Choyu pronunciation of the same word /ŋa⁵⁵ ŋa⁵⁵/; however, it is possible that the Tuanjie form is a Tibetic loan. Note that Lhagang Choyu has two forms for 'sweet': a native word /ŋu⁵⁵ ŋu/ and a Tibetic loan /ʰŋa⁵⁵ ʰbu/. As for the word /no⁵⁵ no/ 'bitter', the postalveolar nasal can correspond to either a complex denti-alveolar nasal in gYanglagshis (/rnuā⁵⁵ rnuā³³/) or a simple denti-alveolar nasal (/na³³ na⁵⁵/) in Tuanjie.

Examples of preaspiration are as follows:

Table 13 – Correspondence of preaspiration in Lhagang Choyu

Meaning	gYanglagshis	Tuanjie	Lhagang Choyu
excrement	ctye ⁵⁵	qhe ⁵³	ʰto
tongue	lli ⁵⁵	lo ⁵³	ʰli
daughter	zo ¹³ pɛe ⁵⁵	zō ⁵⁵	ʰzo
skin	ri ¹³ rie ⁵⁵	ri ⁵³	ʰri
belly	lvu ⁵⁵ / rvu ⁵⁵	bu ⁵⁵	vu
tail	rnə ¹³	ŋa ⁵⁵ ma ⁵⁵	no

As Table 13 displays, preaspiration in Lhagang Choyu either corresponds to an oral preinitial in gYanglagshis (/ɕtye⁵⁵/ ‘excrement’ and /ɕli⁵⁵/ ‘tongue’) or zero (/zo¹³ pce⁵⁵/ ‘daughter’ and /ri¹³ riε³³/ ‘skin’) in gYanglagshis. Since Tuanjie has neither preaspiration nor oral preinitials, we can find no sound correspondences for this feature. In addition, a simple initial in Lhagang Choyu corresponds to a complex initial in gYanglagshis. This means that an existence of preaspiration does not always have a corresponding preinitial in gYanglagshis. Preaspiration in Lhagang Choyu also appears in Tibetic loans, many of which are not shared with gYanglagshis.

Examples of nasal preinitials (including prenasalisation) are as follows:

Table 14 – Correspondence of nasal preinitials in Lhagang Choyu

Meaning	gYanglagshis	Tuanjie	Lhagang Choyu
food	mdy ¹³	du ⁵⁵	ṽdu
meat	tho ⁵⁵	thō ⁵⁵	ṽt ⁵⁵ o
salt	tchi ⁵⁵	tshi ³³	ṽt ⁵⁵ ci
goat	tshε ⁵⁵	tshε ³³	ṽts'a
horn	tʃhi ⁵⁵ mbə ⁵⁵	za ³⁵ teo ³³ (TL)	ṽtʃə
rice	mdzje ¹³ (TL)	ndzε ³⁵ (TL)	ṽdʒa (TL)
listen	yur ¹³ lnə ³³	kə ³⁵ nu ⁵⁵	ʹne

Most examples with a nasal preinitial do not have any common sound correspondences among the three varieties. However, looking at the form of the main initial, each example is probably in a cognate relationship except for /za³⁵ teo³³/ ‘horn’ in Tuanjie, which is of a Tibetic origin, as well as /kə³⁵ nu⁵⁵/ ‘listen’ in Tuanjie. Prenasalisation does exist in Choyu varieties; however, as far as the data shows, most examples are Tibetic loans. Native forms with prenasalisation, unfortunately, lack Lhagang Choyu counterparts.

Examples of oral preinitials are as follows:

Table 15 – Correspondence of oral preinitials in Lhagang Choyu

Meaning	gYanglagshis	Tuanjie	Lhagang Choyu
white	ptʃho ⁵⁵ ptʃho ³³	tʃhō ⁵⁵ tʃhō ³³	ṽt ⁵⁵ o ^v t ⁵⁵ o ^v
full	psɔ ⁵⁵	lo ⁵⁵ sa ⁵⁵	ʹtə ⁵⁵ suu
thin	pei ⁵⁵ pei ³³	ʃy ⁵⁵ ʃy ³³	ṽf ⁵⁵ i ^v f ⁵⁵ i
hungry	tə ⁵⁵ bze ³³	zy ³⁵ rə ³³	ʹzi
horse	bre ³³	gi ³³	ṽre

For oral preinitials, we have only found sound correspondences among labials. Since Tuanjie lacks this series of preinitials, we can confirm an existence of sound correspondence of Lhagang Choyu

forms with gYanglagshis. The data of gYanglagshis suggest that various preinitials of Lhagang Choyu can be analysed as a single neutralised preinitial;¹⁹ however, it should be confirmed after a clarification of verbal morphology in Lhagang Choyu which might have a /p-/ prefix pronounced [p-] as in the word /'tə̃sɯ/ 'full'.

Examples of velarised rhymes are as follows:

Table 16 – Correspondence of velarised rhymes in Lhagang Choyu

Meaning	gYanglagshis	Tuanjie	Lhagang Choyu
milk	ŋi ⁵⁵ ne ⁵⁵	nu ⁵⁵ tchi ⁵⁵	ṽne ⁵⁵
long	qa ³³ ʂsi ⁵⁵	se ³³ se ⁵⁵	ṽse ⁵⁵ se ⁵⁵
wet	tsu ⁵⁵ tsu ³³	tse ³³ tse ⁵⁵	'tṽsa ⁵⁵ tsa ⁵⁵
nail (finger)	ʂtse ³³ eni ⁵⁵	le ⁵⁵ tʂa ⁵⁵	ṽtṽsa ⁵⁵
seed	rlu ³³	lø ³³	ṽ ^h lu ⁵⁵
blood	si ⁵⁵	sai ³³	ṽsə ⁵⁵

There seems to be no regularity regarding how a velarised rhyme corresponds to the same words in Choyu varieties. It remains to be discussed whether velarisation in Lhagang Choyu is an independent innovation or a retention. However, looking at Tibetic loans in Lhagang Choyu, we can find that the language has velarised vowels as a sound correspondence of LT final consonants. This fact suggests that velarisation is a reflex of finals from archaic loan words.

Examples of labialised rhymes are as follows:

Table 17 – Correspondence of labialised rhymes in Lhagang Choyu

Meaning	gYanglagshis	Tuanjie	Lhagang Choyu
rain	xi ⁵⁵	xu ⁵⁵	ṽ ^h i
father	pse ³³	a ³³ pha ³³	ṽs'e
five	ŋua ⁵⁵	ŋua ⁵⁵ teã ³³	ṽ ^h ṽa
silver	ŋe ⁵⁵	ŋui ⁵⁵	ṽ ^h ṽa

Based on the examples in Table 17, labialised vowels correspond to a rounded vowel (/xu⁵⁵ / 'rain' in Tuanjie, /ŋua⁵⁵ teã³³ / 'five' in Tuanjie, /ŋua⁵⁵ / 'five' in gYanglagshis and /ŋui⁵⁵ / 'silver' in Tuanjie) and a labial preinitial (/pse³³ / 'father' in gYanglagshis). In Lhagang Choyu, /ṽ^hṽa / 'five' and /ṽ^hṽa / 'silver' form a minimal pair with or without preaspiration; however, 'five' and 'silver' do not form minimal pairs in gYanglagshis and Tuanjie. It is beyond the scope of this paper to investigate this feature.

¹⁹ The first author's research in Litang County has revealed that a simplification of preinitials is also attested in Rongpa Choyu and Lhayul Choyu among the younger generation.

Finally, we will make some observations regarding Tibetic loans. Examples of Tibetic loans are as follows:

Table 18 – Tibetic loans in Choyu and Lhagang Choyu

Meaning	gYanglagshis	Tuanjie	Lhagang Choyu	Literary Tibetan
fox	ptʃa ³⁵	wa ³⁵ (TL)	ʼya (TL)	<i>wa</i>
gold	ŋə ³⁵	ŋe ³⁵	ʼsə ³⁵ (TL)	<i>gser</i>
tiger	sta ³⁵ (TL)	ta ³⁵ (TL)	ʼta ³⁵ (TL)	<i>stag</i>
chicken	rdza ³⁵ bza ³⁵ (TL)	za ³⁵ (TL)	ʰea (TL)	<i>bya</i>
rabbit	ʰi ³⁵	zi ³⁵ ko ³⁵ (TL)	ʼrə yō ³⁵ (TL)	<i>ri bong</i>
old [thing]	nur ³⁵ pe ³⁵ (TL)	nē ³⁵ pi ³⁵ (TL)	ʼnī ʼbe (TL)	<i>rnying ba</i>
rice	mdziɛ ³⁵ (TL)	ndzɛ ³⁵ (TL)	ʼmɛa (TL)	<i>'bras</i>
Tibetan	pe ³⁵ ri ³⁵ (TL)	-	ʼpo pe (TL)	<i>bod rigs/ bod pa</i>

Many Tibetic loans are not shared within the three varieties. For the examples /ptʃa³⁵/ 'fox' in gYanglagshis, 'gold' (/ŋə³⁵/ in gYanglagshis and /ŋe³⁵/ in Tuanjie) and /ʰi³⁵/ 'rabbit' in gYanglagshis we can only find a Choyu word. The example 'Tibetan' has different lexical correspondences: /pe³⁵ ri³⁵/ in gYanglagshis comes from LT *bod rigs* 'Tibetan nationality'; and /ʼpo pe/ in Lhagang Choyu comes from LT *bod pa* 'Tibetan people'. We can claim that the variation of loan forms displayed in Table 18 reflects the historical process of lexical borrowing. Interestingly, the forms for 'fox' reveal different paths from which the forms descend. Lhagang Choyu borrowed /ʼya/ 'fox' from Minyag Rabgang Khams, whereas Tuanjie borrowed /wa³⁵/ 'fox' from Nyagchu Khams; both based on the pronunciation of neighboring varieties of Khams. The example 'chicken' might reflect a temporal difference in borrowing. The gYanglagshis form /rdza³⁵ bza³⁵/ appears to be the most archaic, and Lhagang Choyu form /ʰea/ appears the most recent. Evidence for this comes from the surrounding Tibetic varieties (such as Nyagrang, Lithang, Nyagchu, Lhagang, etc.) that have quite similar forms, e.g., /ʼea/ (Khams) and /ʰea/ (Amdo).²⁰ The examples /ʼsə³⁵/ 'gold' and /ʼta³⁵/ 'tiger' in Lhagang Choyu seem to maintain the consonant final of the Tibetic forms as a velarised vowel.²¹ The example /ʼmɛa/ 'rice' in Lhagang Choyu is a relatively old loan, maintaining the labial preinitial for LT 'br- as well as a LT rhyme -as. The loan in Lhagang Choyu /ʼnī ʼbe/ 'old' is also old, in which one can find a regular sound change LT *a* > /e/ or /i/, as in the second

²⁰ See Suzuki & Sonam Wangmo (2018).

²¹ The velarised feature and 'rhotic' feature may also be connected due to the similarity of an acoustic feature that F3 can fall down as suggested by several research results (Ladefoged 2006; Suzuki 2011, 2013).

syllable of /'po pe/ 'Tibetan'.

5.3 Recapitulation and remarks

Typological remarks regarding the phonology will be recapitulated as follows. From a quantitative viewpoint, the number of complex initials in Lhagang Choyu is different from any dialect of Choyu: less than gYanglagshis and more than Tuanjie. From a qualitative viewpoint, Lhagang Choyu and Rongpa are relatively close to each other, although differences exist. For example, in Lhagang Choyu the retroflex obstruent series are plosives, but in Choyu dialects they are affricates. In Lhagang Choyu and Tuanjie glottal sounds are phonemic, but they are not phonemic in gYanglashis and Rongpa. The existence of uvular nasals is a characteristic feature of Lhagang Choyu, which certainly forms a contrast with velar nasals, as displayed in 3.2.1. The word forms in 3.2.1 are not considered as loans. Hence, uvular nasals may be a native feature of Lhagang Choyu.²² In addition, it is noteworthy that all the varieties of Lhagang Choyu and Choyu do not have an aspiration contrast in fricatives despite its general existence in Khams Tibetan varieties overlapping with the Lhagang Choyu and the Choyu-linguistic area (see sKal-bzang 'Gyur-med 1985 for mBathang, Häsler 1999 for Derge, and Suzuki and Sonam Wangmo 2015 for Lhagang Village). As for the complex initial series, the emergence of preaspiration in Lhagang Choyu implies a simplification of complex initials. However, the Tuanjie dialect is different from other Choyu varieties in its lack of complex initials. Across the Choyu dialects (including Lhagang Choyu) simple vowels have less variation than consonants. It is reasonable to postulate that Lhagang Choyu's various secondary articulations for vowels correspond to the final consonants and diphthongs in Choyu dialects.

A preliminary lexical comparison between Lhagang Choyu, gYanglagshis and Tuanjie revealed the following features:

1. the existence of sound correspondences of postalveolars and uvulars between Lhagang Choyu and Choyu;
2. the relationship between preaspiration in Lhagang Choyu and oral preinitials in gYanglagshis;
3. an unclear relationship between prenasalisation of Lhagang Choyu and Choyu;
4. a clear relationship between labial preinitials in Lhagang Choyu and gYanglagshis; and
5. a clear sound correspondence of labialised vowels in Lhagang

²² One can also compare the cases of Minyag (Huang 1991) and Chengzhang Tibetan (Ye-shes 'Od-gsal A-tshogs 2008) as neighboring languages as well as a general discussion regarding uvulars in Tibeto-Burman (Huang 2012).

Choyu with a high rounded vowel /u/ in gYanglagshis and Tuanjie and with a labial preinitial /p/ in gYanglagshis.

The three varieties have Tibetic loans; however, their word forms suggest that their respective borrowing pathways might be different.

In sum, we can reasonably postulate that Tuanjie Choyu has a typologically independent position among Lhagang Choyu and Choyu varieties in terms of sound structure, which is simpler than gYanglagshis Choyu and Lhagang Choyu. Lhagang Choyu is more similar to gYanglagshis Choyu in terms of consonant correspondences. For lexical forms, Lhagang Choyu shares a number of cognates with Choyu; among the present data, we can find more examples which show sound correspondences between Lhagang Choyu and gYanglagshis than between Lhagang Choyu and Tuanjie. However, since lexical variation within Choyu has been unclear so far, we need data from more varieties of Choyu before firm conclusions can be made.

6. Conclusion

This article attempts to provide a rough sketch of the phonology of Lhagang Choyu based merely on about 700 words that the authors collected. An analysis of the phonology has revealed the following phenomena worth noting: the existence of uvular articulation, no aspiration contrast with fricatives, the existence of velarised and labialised vowels, and a word-tone system consisting of two tones (high and low), and stress as a distinctive feature.

A preliminary comparative analysis between Lhagang Choyu and Choyu dialects reveals that Lhagang Choyu is more similar to varieties spoken in Nyagrang and Lithang. Despite the geographical vicinity, it has quite a number of different features from the Tuanjie dialect. The Tuanjie dialect, spoken in the nearest area to the place where Lhagang Choyu is spoken, is typologically different from Lhagang Choyu, and even from other Choyu dialects.

The number of collected words is insufficient to describe in detail the sound structure of Lhagang Choyu due to its relatively complicated sound structure, which is similar to Choyu dialects described in Wang (1991) and Nishida (2008). In order to investigate the history and relationship between Lhagang Choyu and Choyu in more detail, it is necessary for more lexical items and texts from Lhagang Choyu and other Choyu dialects to be collected and analysed.

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*Appendix**Lhagang Choyu word list in an alphabetical order of the English entry*

N.B. Following abbreviations are used as necessary: (pl): plural; (sg): singular; (v): verb. We do not include grammatical information about the verbs (e.g., person indexation, TAM, egophoric evidentiality, etc.), due to insufficient data for giving us a clear understanding of the verbal system. Some supplementary words are added in square brackets to specify a given meaning. Most verbs appear with a directional prefix. Literary Tibetan (LT) cognates are shown in italics within square brackets after likely loanwords from Tibetic languages. See Suzuki and Sonam Wangmo (2015, 2016b, 2017) for the word forms of modern dialects spoken around the Lhagang Choyu-spoken area.

abbot	ṽkɑ̃ṽbu [LT <i>mkhan po</i>]
accomplish	ʼkə wu
afternoon	ṽə ʳd̪a; ṽə ʳd̪a ta sə
agate	ṽi zə [LT <i>gzi</i>]
age	ṽka
alcoholic drink	ṽwəʷ; ṽwoʷ
all	ʳre təə tə
alveolum	ṽt̪o
amber	ṽpo ɕe [LT <i>spos shel</i>]
ant	ṽpə ro / ṽi dza pə ro
arrive	ʳtu
arrow	ṽda [LT <i>mda'</i>]
ask	ʳte ka kə ʳla nə no
autumn	ṽto' ta ɕa
axe	ṽte ri [LT <i>sta re</i>]
back [body]	ʳi g̪ə te
back [position]	ʳpa; ṽka' nə
bad	ṽqa qa; ṽtsoʷ ʳtsoʷ

bark	ʼrə ^h tuw
barley	ṽk ^w a
be [copulative]	ʼtsə; ʼtsə
be afraid	ʼuə ^h təə
be boiled	ʼkə ^h tʃa; ṽtʃa ʼfa tə
be broken	ʼta ɕe
be cooked	ʼji tə
be deaf	ṽni puw to ji ṽma ṽnə tə
be drunk	ʼta zə
be enough	ʼta tɕe
be full	ʼkə ^h tɕi nə ʼta tɕe; ṽvu ^h tə ṽʒa ^h te te
be hot	ṽŋə zo tə
be hungry	ʼzi
be ill	ʼŋo ^h tə
be ripe	ṽŋe ʼji tə
be shy	ṽk ^w a k ^w a; ṽk ^w a ʼma ŋo nə
be sleepy	ṽmo ʼla tu tə; ṽqo mə sə
be thirsty	ṽɕe tə
be tired	ʼla ɣa
beads	ṽtɕe ve [LT <i>phreng ba</i>]
bean	ṽsɛ ma [LT <i>sran ma</i>]
bean flour	ṽna ^v
bear	ʼti mu [LT <i>dred mong</i>]; ʼwə rə
beautiful	ṽqa ^h tɕi; ṽ ^h tɕə ^h ʼtɕə ^h
bed	ṽza ^h tɕa
belly	ṽvu
bent	ʼgu gu [LT <i>sgur sgur</i>]
big; large	ʼga pu
bitter	ṽno ^h ŋo
black	ṽŋi ^h ŋi
blood	ṽsə ^v
bloom	ṽta pe
blow[the trumpet]	ṽpu ta nuw
blue	ṽŋə ^h ŋə
boar	ṽpu p ^w a [LT <i>pho phag</i>]
body hair	ṽŋe; ṽra
bone	ṽʃə rə
book	ṽŋg ^w ə
boot	ʼko tsə ṽz-i
borrow	ʼtə ŋe
bottle	ʼji tə ʼtã ^h -bi
bottom	ṽma la ʼtsə
bow (v); worship	ṽɕe ʼla ʼzo; ʼla ʼzo
bowl	ʼtã ^h -bi
box	ṽnɛ ^h gã

boy	ṽzi
bracelet	ʼla ᵂtʃi
brain	ṽ ^h le pa [LT <i>klad pa</i>]
break [a bowl]	ʼta ʕe
breakfast	ʼq̣a tṣa
breast	ʼṭu; ʼṭu te
bridge	ʼzã ^h be [LT <i>zam pa</i>]
bright	ṽ ^h ñə' nə
broom	ṽei tea
bucket	ṽṭə'u zu [LT <i>chu zo</i>]
bullet	ṽde wu [LT <i>mde'u</i>]
butter	ṽma [LT <i>mar</i>]
butterfly	ṽʃu
button	ʼ ^h du ku [LT <i>sgro</i>]
buttocks	ṽṣu ŋgu; ṽp̣o [LT <i>'phongs</i>]
buy	ʼku ku
calf	ṽxe' zi
carnivore	ṽṭəə'dze [LT <i>gcan gzan</i>]
carry on the back	ʼta ku
cat	ṽmo zi
catch cold	ʼṭə'a ṣə ṽq̣o' za ṣə
caterpillar fungus	ṽp̣ə' tʃa
cattle dung	ṽp̣a
celebrate the New Year	ʼlo'sa ṽea
chat	ṽḳa'da ʼla bi
cheap	ʼḳo ʼga bu
cheese	ʼta ra [LT <i>dar ba</i>]
chew	ʼta ᵂjo
chicken	ʼ ^h ea [LT <i>bya</i>]
child	ʼeo ʕe
chili	ṽhu tṣa
chin	ʼma ᵂki
claw	ʼwa rə
clean	ṽtṣō me [LT <i>gtsang ma</i>]
clear	ʼṭō mu [LT <i>dwang mo</i>]
climb a mountain	ʼrə ʔə ʼə ʕə
close [the mouth]	ṽpo ʼla ju; ṽpo; ʼndze
close[the door]	ʼrə ṭa; ʼrə ᵂta
cloth	ʼra [LT <i>ras</i>]; ʼra ᵂkuw [LT <i>ras skud</i>]
clothings	ṽḳə mə; ʼḳə mə
cloud	ṽṭi [LT <i>sprin</i>]
cock	ʼ ^h ea [LT <i>bya</i>]
cock year	ʼ ^h ea [LT <i>bya</i>]
cold [weather]	ʼuə ṭəə p̣i p̣i; ṽpo' po
collar	ṽḳə mə ṽta ^v gi

collect [woods]	ʼta sə
comb	ʼsə
comb (v)	ṽla t̪a
come	ṽʔə lo; ʼji tu pə
cooking stove	ʼt̪a k ^h e [LT <i>thab ka</i>]
copper	ʼz̪ɔ̃ [LT <i>zangs</i>]
coral	ṽɛw ru; ʼɛw ru [LT <i>byu ru</i>]
corner	ʼzo ɣo
correct	ʼze t̪ə
cought	ṽts̪a jo t̪ə
cowshed	ʼzo zi
cross[a bridge]	ʼkə ɛə
crow	ʰɛa ni ni
cushion	ʼkɛ sa; ṽ ^h de ṽdzə
cut off	ṽta q̪a
cut up [vegetable]	ʼla t̪ʃə
cut[meat]	ʼta q̪o
cypress	ṽɛu pa [LT <i>shug pa</i>]
cypress incense	ṽso [LT <i>bsang</i>]
dance	ṽlu
dance (v)	ṽlu t̪ə; ṽlu ʷlu
Dartsendo	ṽdu [LT <i>mdo</i>]
daughter	ṽ ^h zo
daughter-in-law	ṽ ^h na me [LT <i>mna' ma</i>]
day after tomorrow	ʼq̪o se
day before yesterday	ṽ ^h g̪a' la
day breaks	ṽmu ṽʔə so
daytime	ʼn̪i ʷbe [LT <i>nyin pa</i>]
deity	ṽje [LT <i>lha</i>]
dew	ʼzi pa [LT <i>zil pa</i>]
die	ʼt̪ə si
difficult	ṽya' ya
dinner	ṽt̪e' wu t̪ə
dirty	ṽt̪soʷ t̪soʷ
dish	ṽ ^h d̪əʷ [LT <i>sdir</i>]
do	ʼla la
do not have	ʼma t̪e tu
doctor	ṽm̪ɛ ʷba [LT <i>sman pa</i>]
dog	ṽt̪ʃu
dog year	ʼt̪ɛə [LT <i>khyi</i>]
domestic animal	ʼsə ṽt̪ɛə [LT <i>sems can</i>]
donkey	ṽkə rə
door	ṽɣa
downwards	ʼla zu
dragon	ʷdu [LT <i>'brug</i>]

dragon year	ʼṅṅu [LT 'brug]
draw [a picture]	ʼkə ʒə
dream	ʼla ḥme
dream (v)	ʼla ḥme sə; ʼḥme ḥde
drink	ʼfiə tə
drop (v)	ʼla za
dry	ʼro ro; ʼro' ro
dry [clothes]	ʼla p'o
eagle	ʼḑea ḥgo [LT <i>bya rgod</i>]
ear	ʼni; ʼni pu to
earrings	ʼlō tu
earth;ground	ʼea
earthen jar	ʼt'a xu
earthquake	ʼea ʼmə mu
east	ʼea [LT <i>shar</i>]
eat	ʼkə tsə
egg	ʼḥgo ŋa [LT <i>sgo nga</i>]; ʼḥa ḥgo
eight	ʼḥdzɛ [LT <i>brgyad</i>]
elbow	ʼtu ṅdzɔ [LT <i>gru mjug</i>]
elder brother	ʼʔa ko; ʼzu mə ʼtu
elder sister	ʼʔa dze; ʼʔa' tɛa
empty	ʼtō ʼba [LT <i>stong pa</i>]
evening	ʼme zi
exchange	ʼku fiu
excrement	ʼto
excuse	ʼta ṅdzɔ
exist [person]	ʼtɛe
exist [thing on a place]	ʼyo
expensive	ʼk'o ʼqo zə
extend	ʼya
eye	ʼnɛ
eyebrow	ʼnɛ mə
eyelash	ʼnɛ mə
face	ʼq'ə' ʒə / ʼq'o' ʒə
fall asleep	ʼmə ʼla tu
false	ʼma tse tə
far	ʼt'a re [LT <i>thag ring</i>]
farmer	ʼrō ʼbe [LT <i>rong pa</i>]
fasten	ʼkə ʼtɛə
fat	ʼt'o ʼk'ə tə; ʼt'o ʼbo' tei
fat oil	ʼt'sa
father [address]	ʼʔa pa
father [reference]	ʼs'e
female deity	ʼje [LT <i>lha</i>]
female mdzo	ʼdzɔ [LT <i>mdzo</i>]

female yak	ṛa; ṛa
fetch	ḳə ku
few; little	ṅi ṅi
fight	ṭu tu la ʼvi
fill	ḷa ta
finger	ḷe ŋi
finish; be over	ḷa wu
fire	ṁə; ṁə
fish	ṅə [LT <i>nya</i>]
five	ṅa
five [things]	ṅaʼ tɕo
flat	ṭa ʼta
flea	ḷo
flour	ḥi lu və
flower	ṁə to [LT <i>me tog</i>]
fly (v)	ṭa ḥde
food	ṁdu
foot	ḥko; ḥku
forehead	ṭa pe [LT <i>thod pa</i>]
forget	ṭa ʼnə
fortune	ḥlo ʼta [LT <i>rlung rta</i>]
four	ṁə; ḥzə
four [things]	ṁəʼ tɕo
fox	ṭa
fragrant	ṁəʼ ze
free (time)	ṁsoʼ tə
friend	ṭəa
frog	ḥbe ba [LT <i>sbal ba</i>]
front	ḥga; ṅju [LT <i>sngon</i>]
front gate	ḥa ḥge pu
frost	ṭa mo [LT <i>ba mo</i>]
fry	ṁzo
full	ṭə ʼsuw
garlic	ṁə
gate	ḥa
get old	ḳə ʼta sə
get up	ṭə səʼ; ṭə kə
ghost; demon	ḷa ḥdi
ginger	ṭə ḥga [LT <i>skya sga</i>]
girl	ḥzo
give	ṭa ʼta; ṁta ʼvə
give birth	ṁta
glass	ṁə [LT <i>shel</i>]
glasses	ṁi ra [LT <i>mig ra</i>]
go out	ṁə ḥa ʼla sə

go upstairs	¬ṣa ṽta la; ṽṣa ɕə
go; leave	ṽla ɕə
goat	¬tsṽa
gold	¬ṣəṽ [LT gser]
good	¬qa' te'i
granddaughter	¬tsṽa mu [LT tsha mo]
grandfather	¬ṣa wu
grandmother	¬ma ma
grandson	¬tsṽa wu [LT tsha bo]
grass	¬ru
green	ṽḥdzəḥ k'u [LT ljong khu]
grey	¬tea' p'e p'e
gum	ṽja'ke [LT yar rkan]
gun	ṽtṣṽda
hail	ṽk'a ṽp'o
hair	¬m'e; ṽqa m'e
hammer	¬lu ṽe'e ta
Han Chinese	ṽḥdza [LT rgya]
hand	¬le
handle	ṽlu
hang [on the wall]	¬ṣa tṽ la; ṽṣa xa la
happy	ṽsẽṽbe ¬qa' te'i; ṽḥga [LT dga']
hard; solid	¬qṽṽ' qṽṽ
hat	ṽza [LT zhwa]
have a fever	ṽtsṽa p'e ṽra tṽ
have a headache	¬q'o ṽno
have; exist	ṽtṣo; ṽtei
he; she; it	ṽtsəṽ; ṽti; ṽdzə
head	¬q'o
heart	¬ṽa' mi
heat up [cold rice]	¬ko ḍo
heavy	¬ṽlṽ' ṽlṽ
help	ṽko
herbivore	ṽrə te
here	ṽtṣə ke
hide	ṽta ṽḥba
high; tall	ṽqo zə; ṽtṽṽṽbu
highland barley	¬ḍṽṽ
hit[a person]	ṽte ṽtu; ṽta ṽtu
hold;grasp	¬qə ṽdzuu
horn	¬ṽtḍṽṽ
horse	¬re
horse food	¬ri ṽdu
horse year	¬ṽta; ṽre
hot	¬ṽdza' ṽdza; ṽju' ḍju
hot pepper	¬hu tsṽa

hot water	ʼzə tʃa
house	ʼze; ʼze
how	ʼde' pe ro
how many	ʼde' ta
I	ʼŋa; ʼŋə nɔ
ice	ʼtɕa ro ʼsa
in the past	ʼɕə ɕə
incense	ʼpu
incorrect	ʼma ze tə
inn; hotel	ʼra wa
insect; worm	ʼpə' tʃa
insert; plant	ʼpʰaj pʰaj ʰdzɯ mə
inside	ʼnɔ ŋa; ʼko ŋa; ʼʁu gu
intestine	ʰdzɯ ma [LT <i>rgyu ma</i>]
iron	ʼtɕa [LT <i>lcags</i>]
jewel	ʼno ʰbu [LT <i>nor bu</i>]
kettle	ʼtʰa xu
key	ʼde mi [LT <i>lde mig</i>]
khatak	ʼka te [LT <i>kha btags</i>]
kid	ʼts'a' zi
kidney	ʼki ma [LT <i>mخال ma</i>]
kill	ʼtə sa
knee	ʼŋi
kneel	ʼŋi ʼkə su
knife	ʼtʰə' zi
knot	ʼdu pa [LT <i>mdud pa</i>]
knot (v)	ʼdu pa ʼkə ra
know	ʼha ʼla ku
know [how to write]	ʼʁa ŋu; ʼʁa ŋi
lake	ʼts'u [LT <i>mtsho</i>]
lama	ʼla me [LT <i>bla ma</i>]
language	ʼkə [LT <i>skad</i>]
last night	ʼpu ɕə
last year	ʼji ʼzi; ʼji ʼzi
laugh; smile	ʼʁu ʁu tu tə
lax; loose	ʼtə' ʰla
leaf	ʼlo ma [LT <i>lo ma</i>]
lean meat	ʼtə'o ʼqaʷ zi
learn	ʼkə ze
leave	ʼta pə
left	ʼjo [LT <i>g.yon</i>]; ʼjo qo ma; ʼpə' le
Lhagang	ʼja ʰgo [LT <i>lha sgang</i>]
lick; lap	ʼpə ʰdzi
light [weight]	ʼjɕ wu
light (a fire)	ʼba [LT ʼbar]

like this	ṽteə' be tə
lion	ʼsẽ gi [LT <i>seng ge</i>]
listen	ṽne
little	ʼŋi ŋi
liver	ʼze
lock	ṽtea lo
lock [the door]	ṽq'o ʼkə ru
log	ṽse
long	ṽsẽ ^y sẽ ^y
long time ago	ṽt'a la t'a la
look	ṽkə sə re
look after	ṽta' ze
lose [thing]	ʼma ʼta' t̃eo
lotus	ṽpe ma ṽmə to
louse	ṽeə [LT <i>shig</i>]
love;like	ṽfi ga [LT <i>dga'</i>]
low;short	ṽfi mẽ fi mẽ [LT <i>dma' dma'</i>]
lower [the head]	ʼfi gu fi gu ʼla zo
lower half-body	ʼk ^{hwa} a m̃e [LT <i>khog smad</i>]
lunatic person	ṽka' mu
lunch	ʼfi gu za [LT <i>dgonḡ zan</i>]
lung	ṽfi lo wa [LT <i>glo ba</i>]
mani stone pile	ṽla t's'a
many; much	ṽqa' zi
matter	ṽkə' lə ʼla la
mdzo	ṽwə' zi
meal;food	ṽdu
meat	ṽt'o
medicine	ṽm̃e
melt	ṽla ʼz̃u
merchant	ʼts̃õ ^m ba [LT <i>tshong pa</i>]
middle	ṽt̃ei ku
milk	ṽnẽ ^y
milk (v)	ʼla t'sə; ʼtsā
milk cow	ṽfi z̃õ ^m ma [LT <i>bzhon ma</i>]
mirror	ṽeə fi gu [LT <i>shel sgo</i>]
mole	ṽm̃e wa [LT <i>sme ba</i>]
monastery	ṽfi g̃õ ^m be [LT <i>dgon pa</i>]
money	ṽme zi
monk	ṽta' pe [LT <i>grwa pa</i>]
monkey	ṽt̃e [LT <i>spre'u</i>]
monkey year	ṽt̃i [LT <i>sprel</i>]
month	ṽli
moon	ṽfi da [LT <i>zla ba</i>]
morning	ʼnā ^m be [LT <i>nyin pa</i>]

morning [before the noon]	ʼt̥a ra
mother [address]	ʼʔa ma
mother [reference]	ʼmi
mother's uncle	ʼʔə zo
mountain	ʼq̥o; ʼrə ɣo
mouse	ʼh̥a; ʼh̥ə
mouse year	ʼɛə wa [LT <i>byi ba</i>]; ʼh̥ə
moustache	ʼŋa m̥e
mouth	ʼŋə
move [house]	ʼta p̥o
mow	ʼta q̥a
mule	ʼʈi [LT <i>drel</i>]
mushroom	ʼɛa mo [LT <i>sha mo</i>]
mute person	ʼh̥iɛ̃ ʼba [LT <i>glen pa</i>]
myself	ʼʔə n̥o ʔə n̥o
nail	ʼt̥saʸ
name	ʼni; ʼnə
narrate	ʼlə ʰɛɛ
narrow	ʼh̥i dza ʼza za
nasal mucus	ʼna pə
navel	ʼvɥ ɛu
near	ʼt̥a ni
neck	ʼɣe
necklace	ʼke ʰʈi [LT <i>ske dkris</i>]
need	ʼzi tə
needle	ʼq̥ɥ
new	ʼsa ʰbe [LT <i>gsar pa</i>]
New Year	ʼlo səʸ [LT <i>lo gsar</i>]
next year	ʼma se
nine	ʼh̥i ɣɥ [LT <i>dgu</i>]
nine [things]	ʼh̥i ɣɥʼ t̥ɛo
noodles	ʼgu za
north	ʼɛð [LT <i>byang</i>]
nose	ʼni
now	ʼʔo ko; ʼʔə ko
nun	ʼʔa ne [LT <i>a ne</i>]
oat	ʼji pu [LT <i>yug pu</i>]
offspring of a bull and a female yak	ʼwə ʼzi
oil	ʼh̥a
old [thing]	ʼh̥i ni ʰbe [LT <i>rnying pa</i>]
old [person]	ʼk̥a ʰga pu
old man	ʼh̥i ɣə pu [LT <i>rgad po</i>]
old woman	ʼh̥i ɣə mu [LT <i>rgad mo</i>]

on [the table]	ṽte [LT <i>steng</i>]
one	ṽtə
one [thing]	ṽtə' tɛ'o
onion	ṽtso [LT <i>tsong</i>]
open [a cover]	ʼhə tɛ'ə; ʼkə tɛ'ə
open [a door]	ʼka le ʼta t'a
outside	ṽʔa və; ʼka te
over there	ʼp'a rə
owl	ʼyü pa [LT <i>'ug pa</i>]
ox	ṽ ^h lā [LT <i>glang</i>]
ox year	ṽ ^h lā [LT <i>glang</i>]; ʼsə ^h tɛ'e [LT <i>sems can</i>]
paper	ʼeo ku [LT <i>shog bu</i>]
parents	ṽs'e mi
paste	ṽk'a ^v wa ṽqo ɔo; ṽkə ʒə la
paternal uncle	ṽʔa ku [LT <i>a ku</i>]
paternal uncle's wife	ṽʔa ne [LT <i>a ne</i>]
pea;bean	ṽsɛ ma [LT <i>sran ma</i>]
peaceful	ʼze
peach	ṽk'ā ^v bu [LT <i>kham bu</i>]
peacock	ṽ ^h ma ea [LT <i>rma bya</i>]
peel	ʼta k'a
pen	ʼee pi
person	ṽṽu
pick up	ʼta t'u ʼla de
picture	ʼrə mu [LT <i>ri mo</i>]
pig	ṽve
pig food	ṽvi du
pig year	ṽp'a [LT <i>phag</i>]
piglet	ṽpə' zi
pigsty	ʼve tɛ'o
pillar	ṽdze
pillow	ṽq'a' ko
pitiful	ʼma ro p'e p'e
place	ʼea
plairie	ṽru
plank	ṽeē dza
play	ṽtei tɛi ʼla ^h zo
plough	ṽle
pony	ṽqa zi
poor	ṽtəo' mə
porridge	ʼnɔɛ t'u [LT <i>'bras thug</i>]
potato	ʼjā ji
power	ʼ ^h k'a [LT <i>dbang</i>]
press; push down	ʼta t'o
price	ʼk'o [LT <i>gong</i>]

promise	ˈkʰɛ ˈta le
pull	ˈta ˈtʰu ˈtʰo
pull up	ˈqʰa
push	ˈta tʰu
put [soil] on	ˈta pʰo
quarrel	ˈtu tu ˈla
quick;fast	ˈtʰɛʰoʰ ˈtʰɛʰo
rabbit	ˈrə ɣo [LT <i>ri bong</i>]
rabbit year	ˈjo [LT <i>yos</i>]
rain	ˈhʰi
rain falls	ˈhʰi ˈtu; ˈmu ˈtu
rainbow	ˈndza [LT ˈjaʰ]
raise [pigs]	ˈkə zu
raise [the tail]	ˈhə tʰe; ˈkə tʰə
read	ˈnə
red	ˈŋeʰ ˈŋe; ˈŋiʰ ˈŋi
reincarnated lama	ˈtʰu ku [LT <i>sprul sku</i>]
remember	ˈsə be ˈsə tə
resemble	ˈndə ˈndə [LT ˈdra ˈdra]
return [home]	ˈʔə ˈgu ˈɛoʰ tʰə
rice	ˈndʰa [LT ˈbras]
rich	ˈtʰe tʰe
ride	ˈta ˈtʰe pe
right [hand]	ˈtoʰ le; ˈhi pa
ring	ˈʔa lo; ˈla tʰu
ring in a cow's nose	ˈni tə tʰu
river	ˈʒə
road	ˈri; ˈndza la [LT <i>rgya lam</i>]
rock	ˈlu
roof	ˈʔə ˈde
root	ˈru
rough	ˈtʰeʰ tʰe
round	ˈhʰwə ˈhʰwə
run	ˈtə jə
saddle	ˈta ˈga [LT <i>rta sga</i>]
saliva	ˈqʰa ʒə
salt	ˈtʰɛʰi
salty	ˈtʰɛʰiʰ ˈnə tə
sand	ˈtʰə ma [LT <i>bye ma</i>]
saw	ˈso tʰe
scarf	ˈpa re
school	ˈɛə ˈtə
scoop up[water]	ˈʔə ˈtʰe
script	ˈhʰgʰə
see	ˈru

seed	ṽṽṽṽṽ
sell	ṽṽṽṽṽ
seven	ṽṽṽṽṽ [LT <i>bdun</i>]
sew	ṽṽṽṽṽ
sew (v)	ṽṽṽṽṽ ṽṽṽṽṽ
shadow	ṽṽṽṽṽ [LT <i>grib nag</i>]
shake [head]	ṽṽṽṽṽ; ṽṽṽṽṽ
sheath	ṽṽṽṽṽ ṽṽṽṽṽ
sheep	ṽṽṽṽṽ [LT <i>lug</i>]
sheep year	ṽṽṽṽṽ [LT <i>lug</i>]
sheepfold	ṽṽṽṽṽ ṽṽṽṽṽ
shit	ṽṽṽṽṽ
shoe	ṽṽṽṽṽ; ṽṽṽṽṽ
shoot	ṽṽṽṽṽ ṽṽṽṽṽ
short	ṽṽṽṽṽ ṽṽṽṽṽ; ṽṽṽṽṽ ṽṽṽṽṽ
shoulder	ṽṽṽṽṽ ṽṽṽṽṽ [LT <i>phrag pa</i>]
show	ṽṽṽṽṽ ṽṽṽṽṽ
Sichuan pepper	ṽṽṽṽṽ ṽṽṽṽṽ [LT <i>g.yer ma</i>]
sickle	ṽṽṽṽṽ
silver	ṽṽṽṽṽ
silverweed	ṽṽṽṽṽ
sit;stay	ṽṽṽṽṽ; ṽṽṽṽṽ
six	ṽṽṽṽṽ [LT <i>drug</i>]
six [things]	ṽṽṽṽṽ ṽṽṽṽṽ
skin	ṽṽṽṽṽ; ṽṽṽṽṽ
sky	ṽṽṽṽṽ
sleep	ṽṽṽṽṽ; ṽṽṽṽṽ
sleeve	ṽṽṽṽṽ
slim	ṽṽṽṽṽ ṽṽṽṽṽ ṽṽṽṽṽ; ṽṽṽṽṽ ṽṽṽṽṽ ṽṽṽṽṽ
slow	ṽṽṽṽṽ
small	ṽṽṽṽṽ
smell	ṽṽṽṽṽ ṽṽṽṽṽ; ṽṽṽṽṽ ṽṽṽṽṽ ṽṽṽṽṽ
smoke	ṽṽṽṽṽ
smoke (v)	ṽṽṽṽṽ ṽṽṽṽṽ
smooth	ṽṽṽṽṽ ṽṽṽṽṽ
snake	ṽṽṽṽṽ
snake year	ṽṽṽṽṽ [LT <i>sbrul</i>]
snap	ṽṽṽṽṽ ṽṽṽṽṽ
snore	ṽṽṽṽṽ ṽṽṽṽṽ
snow	ṽṽṽṽṽ [LT <i>kha ba</i>]
snuff	ṽṽṽṽṽ
soft	ṽṽṽṽṽ ṽṽṽṽṽ
soil	ṽṽṽṽṽ
soldier	ṽṽṽṽṽ ṽṽṽṽṽ [LT <i>dmag mi</i>]
son	ṽṽṽṽṽ

son-in-law	ṽpə t̥o
song	ʼla jo; ṽ ^h lu [LT <i>glu</i>]
south	ṽjo [LT <i>lho</i>]
sour	ṽt̥eʼaʼ t̥eʼa
sow	ṽwaʼ ʳda
speech	ʼt̥eʼa ka ʼ ^h ceʼə
spicy; hot	ṽzaʼ ʳza; ṽno ʳzo t̥ə
spit	ṽt̥a ʼla t̥u
spleen	ṽt̥se ʳpa [LT <i>mtsher pa</i>]
spoon	ṽtaʼ po
spring	ṽeiʼ ta ea
sputum	ṽt̥a
square	ʼzə [ʳw ma]
stable	ʼre q̥a t̥a
stairs	ṽjiʼ ki
stand up	ṽʔə k̥o
star	ṽka ma [LT <i>skar ma</i>]
statue of Buddha	ṽsa ʳku [LT <i>sangs sku</i>]
steal	ʼta ku k̥a
steam (v)	ʼq̥ə q̥a
steamed bun	ṽkaʼ wa
steelyard	ṽ ^h dza me [LT <i>rgya ma</i>]
stomach	ṽvu
stone	ṽlu
stool	ṽtsuʼ t̥a
story	ʼq̥a ʳpi [LT <i>kha dpe</i>]
straight	ʼto mu [LT <i>drang mo</i>]
street	ʼ ^h dza la [LT <i>rgya lam</i>]
stūpa	ʼ ^h t̥eʼa ʳte [LT <i>mchod rten</i>]
sugar	ṽʃa
suckle	ʼnuu nuu ʼt̥e
summer	ṽ ^h jaʼ ta ea
sun	ṽmi tsi
surroundings	ṽk̥a ra ʼla vi
sūtra	ṽt̥eʼu [LT <i>chos</i>]
swear;vow	ṽt̥o ʳŋu
sweat	ṽn̥aʼ zə
sweep	ṽʔə ʳgu lə ʼka le
sweet	ṽ ^h ŋa ʳ ^h bu [LT <i>mngar po</i>]; ṽnuuʼ nuu
table	ṽt̥eʼoʳ tse [LT <i>cog tse</i>]
tail	ʼnə
talk	ṽk̥a ʳda ʼla bi
take	ṽʔa t̥e ʳwo ʼta ʳko
take with	ṽtaʼ ʳzo
taste	ṽʔa ze la ʳzo

tea	ʼtɛa [LT <i>ja</i>]
teach	ʼkə ze
teacher	ⁿʱge ʱge [LT <i>dge rgan</i>]
tear	ⁿnɛ' ʒə
tear up	ʼta ʂa
tell	ʼnɔ
ten	ⁿtɛw [LT <i>bcu</i>]
ten [things]	ⁿtɛw' tɛ'o
tent	ʼra ko [LT <i>ras gur</i>]
that	ʼtu ku
that [over yonder]	ʼp'a rə; ʼʔa və
there	ʼtu ku
these	ⁿʔə tɛə re
they	ʼze ʱdza; ʼdzə ʱtsə
thick	ⁿʒe' ʒe
thief	ⁿʱkuw ma [LT <i>rku ma</i>]
thigh	ⁿʱla [LT <i>brla</i>]
thin	ⁿʱa ʱa, ⁿʱji' ʱji
thin [in diametre]	ⁿts'aʸ ts'aʸ
thing	ⁿtɛa ka
think	ⁿtse' tə
this	ⁿʔə tɛə; ⁿʔə tɛi
this year	ʼpuw zi
thorn	ⁿtsəʸ [LT <i>tsher ma</i>]
thread	ⁿtsə
three	ʼso; ⁿso
three [things]	ʼso' tɛ'o
three days later	ⁿq'o ti
three days ago	ⁿg'a la ʱg'a la
throat	ⁿʔo ʱdi [LT <i>o mdud</i>]
thumb	ʼtɛ mo ʱdza ʱbu [LT <i>mthe mo rgyal po</i>]
thunder	ⁿɳdu [LT <i>'brug</i>]
thunder (v)	ⁿɳdu ʼta' tə
Tibetan	ʼpo pe [LT <i>bod pa</i>]
tiger	ⁿtaʸ [LT <i>stag</i>]
tiger year	ⁿtaʸ [LT <i>stag</i>]
tight	ʼtā ʱbu [LT <i>dam po</i>]
time	ⁿtɛw ts'o [LT <i>chu tshod</i>]
tip	ⁿq'o' ʱa
tobacco	ⁿk'u
today	ⁿpuw ɛə
together	ʼnɔ ʱbu ɛa
toilets	ⁿtɛ'o k'ə̃ [LT <i>chab khang</i>]
tomorrow	ʼʔa se
tomorrow night	ⁿsa' me

tongue	ᵐji
tonight	ᵐpu me
tooth	ᵐki
touch	ᵐkə ʰdze la ʰdzi
tread	ᵐta tɔ
tree	ᵐce
trousers	ᵐḥdzuu
true	ᵐḥde' tə
tsampa	ᵐvə; ᵐva
turn over	ᵐkə ʰkʷə ʰjə ʰkʷə
turn over [thing]	ᵐtə ʰkʷa
turquoise	ᵐḥju [LT <i>g.yu</i>]
twelve animal years	ᵐlo ʰta [LT <i>lo rtags</i>]
twenty	ᵐni ɕu [LT <i>nyi shu</i>]
twig fence	ᵐḥgu ra [LT <i>sgo ra</i>]
twins	ᵐtsəʸ [LT <i>mtshe</i>]
twist	ᵐji ʰa
two	ᵐni; ᵐne
two [things]	ᵐni' tɕo
two of them	ᵐtsəʸ ʰdze
two of us	ᵐʔa ʰdzə
two of you	ᵐne ʰdze
ugly	ᵐtsoʸ' ʰtsoʸ
uncover	ᵐḥə tɕu
under [the table]	ᵐwa
understand	ᵐha ʰku tə; ᵐha ʰta ke
unseam [clothing]	ᵐta ʃa
upper half-body	ᵐkʷa ʰta [LT <i>khog stod</i>]
upwards	ᵐʔa ta
urine	ᵐpaʸ
village	ᵐ[õᵐ]be [LT <i>grong pa</i>]
voice	ᵐkə [LT <i>skad</i>]
vomit	ᵐpɔ' la tu; ᵐpʰã
vulture	ᵐḥa [LT <i>glag</i>]
waist	ᵐtɕu
wait	ᵐḥzi; ᵐku' le ɕa
wake up	ᵐʔə tɕu sə
wall	ᵐḥtsi pa [LT <i>rtsig pa</i>]
walnut	ᵐta ʰga [LT <i>star kha</i>]
warm oneself [by a fire]	ᵐkə roʸ
wash [clothes]	ᵐla ʰtɕu
water	ᵐʒə
water spring	ᵐtɕu mi [LT <i>chu mig</i>]
we	ᵐʔa ɲa re; ʰjə ʰtsə

wear [clothes]	ṽta ke; ṽta ʳke
wear [ring]	ʳhə qə le
weave [basket]	ṽnu' tə
weave [hair]	ṽla ʳla
weep	ʳtə jo tə
weigh [food]	ʳə kə
west	ʳnu [LT <i>nub</i>]
wet	ʳtsaʸ tsaʸ; ṽtsaʸʸ tsaʸʸ
what	ṽde; ṽdə
wheat	ṽhɪluʸʸ
when	ʳde ʳta
where	ʳla ka
whip	ṽce ʳtəa
white	ṽtʳoʸʸʸ ʳtʳoʸʸʸ
who	ʳce
wind	ṽla; ʳhɪlɔ̄ kəa
window	ʳtə lu
winter	ʳhɪge' ta əa
wipe	ʳta əə əa
wolf	ʳhɪgo' ra; ʳhɪgo' tə
wood	ṽse
wooden bowl	ṽza və; ʳza və
wool	ʳzu
work	ʳle ʳka [LT <i>las ka</i>]
work (v)	ʳle ʳka ʳla ʳla; ʳla ʳlo
wound	ṽhɪmi
woven hair	ṽtə i ce ʳdzə
write	ʳkə rə
yak	ṽtʳəʸʸ
yak hair tent	ṽhɪwa [LT <i>sbra</i>]
yawn	ṽha' la ʳtu' tə
year	ṽkəa; ṽkəo
year before last	ṽtsi' zi
year after next	ʳqəʳə se
yellow	ṽŋə' ŋə
yesterday	ʳji' əə; ʳji' əə
yoghurt	ʳzo [LT <i>zho</i>]
you (sg)	ṽnə
you (pl)	ʳne ʳtsəʳə re; ʳne ʳtsəʳə
young	ʳkəa ʳza za
younger brother	ṽme ʳbu; ṽza mə ʳtu
younger sister	ṽse mu [LT <i>sring mo</i>]

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