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**The Phonology of Lhangsu,
an Undescribed Northern-Burmish Language**
(北部ビルマ下位語群の未記述言語ランスー語の音韻論)

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1 Introduction

Although the language spoken by Lhaovo (Maru), a tribe constituting Kachin ethno-cultural group, shows a certain degree of geographical (or sub-tribal) variation, its overall picture has seldom been clarified. To fill this gap, I worked with speakers of various geographical varieties, residing in Myitkyina, the capital of Kachin state, since 2013. In this paper, I present a preliminary description of the phonological system of the language spoken by “Lhangsu” people regarded as a sub-group of Lhaovo.

1.1 Lhaovo people

Lhaovo people mainly inhabit the Kachin and Shan States of Myanmar, and Yunnan Province of China. In Kachin State, they originally lived in the watershed of Nmai Hka River in Sawlaw and Chipwe Townships. The population of Lhaovo in China is approximately 5,600 (Dai, 2005, p.3), and that in Myanmar is about 100,000 (Lhaovo Littero-Cultural Committee, undated, p.1)

Until recently these people were referred to using their Jinghpaw and Burmese name, “Maru”. In China they are called *Làngsù*, a name which strongly resembles “Lhangsu” discussed in this study. Hereafter I will use only “Lhaovo”.

1.2 Varieties in the languages spoken by Lhaovo people

In this section, I show the varieties of languages spoken by Lhaovo people attested until now. All varieties are (or were) originally spoken in Sawlaw township of Kachin state^{*1} except Lhangsu, which is (or was) spoken in Sumprabum township. All of them are considered to belong to the Northern sub-branch of Burmish branch, Lolo-Burmese, Tibeto-Burman.

1. Laungbyid-Dago? Lhaovo (Autonym) /lauŋ^Fpyit^Ftăko?^F/. Lhaovo orthography {Laung Byid Da-go,}^{*2,*3}

^{*1} Since foreigners are currently prohibited to enter both Sumprabum and Tsawlaw townships, it is impossible to examine the present situation of the varieties in this area.

^{*2} In Lhaovo orthography, punctuation marks , : ; ’ ” are used as tonal notations.

^{*3} It corresponds to *Dago’ Lawng Bit* in *Ethnologue*.

This variety is spoken in southern Sawlaw Township up to Maw Kyaung^{*4} river in the east side of Nmai Hka River (*Laung Byid* in the variety), one of the two main tributaries of Ayeyarwady, and up to Mt. Shan Ngaw Bum^{*5} in the west side. It is named after Laung Byid and Dago?, the name of hill area between Nmai Hka and one of its tributary Ngochang Hka. This variety is also spoken in the basin of Nmai Hka in Chipwe Township.

Laungbyid-Dago? is regarded as the standard among the varieties. In this study, I refer it to as Lhaovo in the narrow sense.

2. Gyanno? Autonym [kjen³⁵ noʔ²¹]. Lhv. /kyan^H noʔ^F/. Lhv. orth. {Gyan'' No,}^{*6}

This variety is originally spoken in the villages in the west side of Nmai Hka in northern Sawlaw Township down to Shan Ngaw Bum, such as Wase^{*7} and Wamyit^{*8}. Some Gyanno? families have moved to the south of Sumprabum city and inhabited villages such as Satak (now deserted) and Kying Dawt.

3. Thoʔlhang Autonym [tʰaʔ²¹ lɔ̃²²]. Lhv. /thoʔ^H lɔ̃^F/. Lhv. orth. {Tho' Lhao}^{*9}

This variety is originally spoken in Htaw Lang^{*10} and a few surrounding villages in the east side of Nmai Hka.

4. Lakin Autonym [lǎ² kɛ̃²²]. Lhv. /lǎkin^F/. Lhv. orth. {La-kin}^{*11}

This variety is originally spoken in Lakin village^{*12}, which is not far from Htaw Lang. Lakin and Thoʔlhang are two distinct varieties but similar to each other.

5. Lhangsu Autonym [laŋ⁵³ su⁵³]. Lhv. /lɔ̃^F su^F/. Lhv. orth. {Lhao su}^{*13}

According to my consultant, Lhangsu people have lived in several villages in the area between Hkrang Hka, a tributary of Mali Hka, and its tributary Sanin Hka.^{*14} Their inhabited area is distant from the rest of Lhaovo people and surrounded by Jinghpaw. Therefore the variety has borrowed immensely, including basic vocabularies, from Jinghpaw. Jinghpaw people refer to them as *Wunji Wunla Ga* and regard them as their subgroup (Keita Kurabe, personal communication).

Lhangsu should not be confused with a variety of Lhaovo in China, which is called *Làngsù* 浪速 in Chinese.^{*15}

^{*4} The river flows into Nmai Hka at 26.435N, 98.288E (GNS, All coordinate data are rounded to three decimal place by the author.)

^{*5} 26.349N, 98.172E (GNS)

^{*6} Perhaps it corresponds to *Gawan Naw'* in *Ethnologue*. The latter seems incorrect.

^{*7} 98.264E, 26.466N (Myanmar PCodes)

^{*8} 98.271E, 26.449N (Myanmar PCodes)

^{*9} Perhaps it corresponds to *Hlo' lan* in *Ethnologue*. The latter seems to be a misspelling.

^{*10} 98.373E, 26.637N (Myanmar PCodes)

^{*11} *Laking* in *Ethnologue*.

^{*12} 98.399E, 26.599N (Myanmar PCodes)

^{*13} *Lawng Hsu* in *Ethnologue*.

^{*14} My consultant told me that Lhangsu was spoken in villages such as Sharehkan, N-gawk Hkyet, Naw Dan, Hting Sa and Ma Rawng. Hting Sa might be "Hting Sar Hkan" in Myanmar PCodes, but I could not identify the other villages.

^{*15} When I met several members of Lhaovo Literature and Cultural Committee in Myitkyina in January 2014, one of them explained to me that there are 12 "patois". They include {Da-go.}, {Gyan'' no.}, {Tho' Lhao}, {La-Kin} and {Lhao Su} mentioned above, as well as /cě̃ɣaŋ^L/ {Je:-Qang:}, /phauŋ^H coŋ^L/ {Phaung'' Jao:}, /pǎ̃še^H/ {Ba-she''}, /tsoŋ^H puk^H/ {Zao'' Bug'}, /coŋ^H mo^H/ {Jao'' Mo''}, /xoʔ^F mo^H lauŋ^L lam^L/ {Go, Mo'' - Laung: Lam:} and /xəŋ^H kau^H/ {Hhang'' Gau''}. I have collected about 500 words of

Table 1 shows the distribution of varieties spoken by Lhaovo people as well as other NBsh languages in Kachin State.



Fig. 1 Distribution of Northern Burmish languages in Kachin State

1.3 Fieldwork

I conducted preliminary research on Lhangsu in Tatkon ward of Myitkyina in 1–20 Nov. 2013 and 27–31 Dec. 2014.

The consultant for the fieldwork was a male born in 1950. His birthplace is /təŋ²² ka²²/ village in Sumprabum township.^{*16} He moved to the present residence in 1973. In addition to his mother tongue Lhangsu, he can speak Jinghpaw, Lhaovo and Burmese.

2 Phonology

In this section, I provide an overview of the phonology of Lhangsu language.

The canonical syllable structure of Lhangsu is shown in (1).

- (1) (C_i(j))(w)V(C_f)/T
 C_i: Initial consonant, V: Vowel, C_f: Final consonant, T: Tone.
 j = Medial consonant, w = Vowel on-glide.

/phauŋ^H coŋ^L/ but could not find any significant differences between it and Laungbyid-Dago?. Among the other six “candidates” for varieties, /tsoŋ^H puk^H/ might be an alias of Laungbyid-Dago?, and /ɣo^F mo^H lauŋ^L lam^L/ and /coŋ^H mo^H/ might be subsumed to Gyanno?. Nevertheless, further investigations is needed to decide whether each candidate is a true variety or not.

^{*16} I cannot identify the location of the village. According to the consultant, it is near La Hkaw Ga (97.974E, 26.648N, Myanmar PCodes) and Hkin Dawng (98.018E, 26.641N, Myanmar PCodes) villages.

2.1 Treatment of creaky phonation

Northern Burmish (hereafter NBsh) languages such as Zaiwa, Lacid, Lhaovo, Bola and Lhangsu indicate the opposition between creaky and non-creaky phonation of vowels phonetically. In general, vowels with creaky phonation do not cooccur with aspirated stops/affricates and voiceless fricatives.

There are mainly two solutions for the phonological treatment of creaky phonation.

The first solution is to attribute it to vowels. In this analysis, we have two series of consonants and two series of vowels. Almost all descriptions by Chinese scholars (*e.g.* Dai 2005 on Langsu (Lhaovo), Dai and Li 2007 on Leqi (Lacid), Dai et al. 2007 on Bola), as well as Yabu (1982) and Sawada (1999) have adopted this solution.

Table 1 “Vocalic” solution of creakiness

	C[−ASPIRATED]	C[+ASPIRATED]
V[−CREAKY]	[CV]	[C ^h V]
V[+CREAKY]	[C _~ V]	—

Alternatively, we could attribute the feature to consonants, setting up three consonant series. Burling’s (1967) analysis of Maru (Lhaovo) and Atsi (Zaiwa), and Lustig’s (2010) analysis of Zaiwa have used the solution.

Table 2 “Consonantal” solution of creakiness

	C[+PLAIN]	C[+CREAKY]	C[+ASPIRATED]
	[CV]	[C _~ V]	[C ^h V]

At first sight, the “vocalic” solution seems straightforward because the vowels show the opposition of creakiness phonetically. This solution also enables the establishment of less segmental phonemes than the “consonantal” solution.

Nevertheless, I adopt the latter solution along with that of Burling (1967) et als. because it has an advantages over the “vocalic” solution in describing simplex-causative verb pairs. Similar to other NBsh languages, Lhangsu has a set of lexical simplex-causative verb pairs. Under the “consonantal” solution, the patterns of verb pairs are roughly generalized as follows:

Pattern I:		Pattern II:	
Simplex	Causative	Simplex	Causative
PLAIN initials	CREAKY initials	PLAIN initials	ASPIRATED initials
<i>ta</i> ²¹ “to ascend”	(<i>wa</i> ²¹ -) <i>t’a</i> ⁵³ “to raise”	<i>kja</i> ⁵⁵ “to descend”	(<i>wa</i> ²¹ -) <i>k^hja</i> ⁵⁵ “to drop”
<i>lɔŋ</i> ²¹ “to fall down”	<i>l’ɔŋ</i> ²¹ “to fell down”	<i>tʃək</i> ²¹ “to be torn”	<i>tʃ^hək</i> ⁵³ “to tear”
<i>maw</i> ⁵⁵ “to be amazed”	<i>m’aw</i> ⁵⁵ “to cheat”	<i>yu</i> ⁵⁵ “to look at”	(<i>wa</i> ²¹ -) <i>xu</i> ⁵⁵ “to show”

If the “vocalic” solution is adopted, the generalization of the patterns of the simplex-causative verb pairs would be more complicated. Therefore, I adopt the latter solution.*¹⁷

*¹⁷ Another reason to favor the “consonantal” solution is that it provides a simpler description of tonal split

2.2 Initial consonants (C_i)

Table 3 shows the inventory of initial consonants in Lhangsu.

Table 3 Lhangsu initial consonants

	LABIAL	DENTAL	ALVEOLAR	PALATAL	VELAR	GLOTTAL
NASAL	<i>m/m'</i>		<i>n/n'</i>	<i>(ɲ)</i>	<i>ŋ/ŋ'</i>	
STOP/ AFFRICATE	<i>p/p' / p^h (ts/ts')</i>		<i>t/t' / t^h</i>	<i>tʃ/tʃ' / tʃ^h</i>	<i>k/k' / k^h ʔ</i>	
FRICATIVE	<i>f</i>		<i>s</i>		<i>ʃ ʂ / x h</i>	
LATERAL			<i>l/l'</i>			
FLAP			<i>(r)</i>			
APPROXIMANT	<i>w</i>			<i>j/j'</i>		

Lhangsu consonants are classified into three series, PLAIN, CREAKY, and ASPIRATED. Members of each series are summarized in Table 4.

Table 4 Three series of Lhangsu initial consonants

PLAIN	<i>p-, t-, tʃ-, k-, m-, n-, ŋ-, l-, j-, w-, ʃ-</i>
CREAKY	<i>pʼ-, tʼ-, tʃʼ-, kʼ-, ʔ-, mʼ-, nʼ-, ŋʼ-, lʼ-, jʼ-,</i>
ASPIRATED	<i>p^h-, t^h-, tʃ^h-, k^h-, f-, x-, s-, ʃ-, h-</i>

The presence of an initial glottal stop /ʔ/ is confirmed by the fact that it prevents the following vowel to be pronounced in a sequence with the vowel of the preceding syllable. /ʔ/ is usually followed by a creaky vowel and counted as a CREAKY consonant phoneme.

All fricatives are included in ASPIRATED series, except /ʃ/, which is a PLAIN consonant phoneme. An approximant consonant /w/ is included in the PLAIN series.

Dental affricates /ts-, tsʼ-/ and palatal nasal /ɲ-/ seem to occur only in non-native words (e.g., from Jinghpaw and Chinese). Alveolar flap /r-/ occurs only in grammatical morphemes and non-native words.

(2) Examples of initial consonant phonemes

<i>p-</i>	<i>pəm</i> ²²	“mountain”	<i>tʃ-</i>	<i>tʃək</i> ²¹	“to be torn”
<i>pʼ-</i>	<i>pʼa</i> ²²	“to be thin”	<i>tʃʼ-</i>	<i>tʃʼəp</i> ⁵³	“to suck”
<i>p^h-</i>	<i>p^hoŋ</i> ⁵⁵	“to open”		<i>tʃʼin</i> ⁵³	“to be sour”
			<i>tʃ^h-</i>	<i>tʃ^hin</i> ⁵³	“rice”
				<i>tʃ^haʔ</i> ⁵³	“navel”
<i>t-</i>	<i>tuŋ</i> ²²	“wing”			
	<i>twi</i> ²²	“tooth”			
<i>tʼ-</i>	<i>waʔ</i> ²¹ - <i>tʼa</i> ²²	“to set, to put”	<i>k-</i>	<i>kuʔ</i> ²¹	“puddy”
	<i>tʼəp</i> ⁵³	“to seize”	<i>kʼ-</i>	<i>ǎ²kʼuʔ</i> ⁵³	“bark”
<i>t^h-</i>	<i>t^hoʔ</i> ⁵³	“to exit”	<i>k^h-</i>	<i>k^hwi</i> ²²	“dog”
	<i>t^ha</i> ²²	“salt”			
			<i>ʔ-</i>	<i>ʔu</i> ⁵⁵	“egg”

than “vocalic” solution. See Section 3.3.

<i>m-</i>	<i>l'aj</i> ⁵³ <i>mwe</i> ²² “snake”	<i>j-</i>	<i>ja</i> ²² “field”
<i>m'-</i>	<i>m'əŋ</i> ⁵⁵ “to get ripen”	<i>j'-</i>	<i>j'əm</i> ⁵³ “house”
<i>n-</i>	<i>ne</i> ²¹ “to be red”	<i>w-</i>	<i>wət</i> ²¹ “to wear”
	<i>nu</i> ²¹ “to be green”	<i>f-</i>	<i>fən</i> ⁵³ “to send”
<i>n'-</i>	<i>n'ut</i> ⁵³ “mouth”	<i>ɣ-</i>	<i>ɣi</i> ²² “water”
	<i>laʔ</i> ²¹ <i>n'u</i> ²² “finger”	<i>x-</i>	<i>xaʔ</i> ⁵³ “to be ashamed”
<i>ŋ-</i>	<i>ŋaj</i> ²¹ “to be small”	<i>s-</i>	<i>su</i> ⁵³ “person”
<i>ŋ'-</i>	<i>ŋ'aʔ</i> ⁵³ “bird”		<i>sa</i> ²² “meat, flesh”
<i>l-</i>	<i>la</i> ³⁵ “to go”	<i>f-</i>	<i>fit</i> ⁵³ “eight”
<i>l'-</i>	<i>l'am</i> ⁵³ “lance, spear”	<i>h-</i>	<i>ni</i> ²² <i>haw</i> ²² “wind”
<i>ts-</i>	<i>mo</i> ²² <i>tsa</i> ²² “socks” <Jhp. <i>maw</i> ^M <i>za</i> ^M <Bur. <Hindi <Persian <i>mojā</i>		
<i>ts'-</i>	<i>məʔtʃi</i> ²² <i>ts'i</i> ²¹ “to cure” <Lhs. “medicine” + Jhp. <i>tsi</i> ^L “to cure”		
<i>ɲ-</i>	<i>ɲen</i> ²¹ <i>mun</i> ²² “beard” cf. Jhp. <i>ning</i> ^L <i>mun</i> ^M * ¹⁸		
<i>r-</i>	<i>rin</i> ³⁵ <i>tʰəm</i> ⁵⁵ “mortar” <Jhp. <i>rin</i> ^H “to grind” + Lhs. “mortar”		

2.3 Medial consonant: -j-

The two approximant consonants /-j-/ and /-w-/ can occur between an initial consonant and a vowel. Their distributions in this position are fairly different. /-j-/ cooccurs only with labial nasals, labial stops and velar stops, and therefore it is appropriate to treat it as a medial consonant. (As for /-w-/ analyzed as a vowel on-glide, see 2.5.)

Some words borrowed from Jinghpaw contain the medial /-r-/.

(3) Examples of consonant clusters with medial /-j-/

<i>pj-</i>	<i>pja</i> ²¹ “bee”	<i>mj-</i>	<i>mjaʔ</i> ²¹ “eye”
<i>p'j-</i>	<i>p'ji</i> ²² “to close”	<i>m'j-</i>	<i>m'juʔ</i> ⁵³ “white yam”
<i>p^hj-</i>	<i>p^hji</i> ⁵³ “to cut”		
<i>kj-</i>	<i>kjuʔ</i> ²¹ “to fear, to be scared”	<i>mr-</i>	<i>kom</i> ²² <i>mr</i> <i>aŋ</i> ²¹ “horse” <Jhp.
<i>k'j-</i>	<i>k'juʔ</i> ⁵³ “to dry”		
<i>k^hj-</i>	<i>k^hju</i> ²² “to bend”		

2.4 Vowels (V)

Lhangsu has six vowels. /a/ is centralized, /e/ and /o/ are raised, and /u/ is advanced. The vowel transcribed by schwa is an unrounded central vowel whose aperture varies from mid-close to mid-open.

*¹⁸ It is highly conceivable that Lhangsu borrowed some words from a Jinghpaw dialect other than Standard Jinghpaw, e.g. Hkahku.

Table 5 Lhangsu vowels

	FRONT	CENTRAL	BACK
CLOSE	<i>i</i> [i]		<i>u</i> [u]
MID	<i>e</i> [e]	ə [ə]~[ɜ]	o [ʌ]
OPEN		<i>a</i> [ä]	

/ə/ without final consonant occurs only in weak syllables. (See 2.9.)

(4) Vowels in open syllables

-i	<i>mji</i> ²¹	“fire”	-a	<i>t^ha</i> ²²	“salt”
	<i>ǎ²si</i> ²²	“to bear (fruit)”		<i>la</i> ²¹	“to come HOME”
	<i>k^hji</i> ⁵³	“leg, foot”		<i>wa</i> ²¹ <i>se</i> ²²	“pole, stick”
	<i>yi</i> ²²	“water”			
	<i>si</i> ⁵⁵	“to do”	-o	<i>no</i> ²¹ <i>tɕuŋ</i> ²²	“cow, bull”
	<i>ǎ²tɕi</i> ⁵⁵	“what”		<i>sam</i> ⁵³ <i>so</i> ²²	“blade, edge”
-e	<i>ne</i> ²¹	“to be red”	-u	<i>ʔu</i> ⁵⁵	“egg”
	<i>ɲe</i> ²¹ <i>kəŋ</i> ²¹	“forehead”		<i>wət</i> ²² <i>pu</i> ²¹ <i>wət</i> ²² <i>maj</i> ²²	“clothes”
	<i>ta</i> ²¹ <i>we</i> ²²	“food”		<i>la</i> ²¹ <i>p^hu</i> ⁵⁵	“arm”
				<i>su</i> ⁵³	“person”
				<i>k^hju</i> ²²	“to bend”
				<i>la</i> ²¹ <i>n^hu</i> ²²	“finger”

2.5 Vowel on-glide: -w-

/-w-/ cooccurs only with vowels /-i, -e/ in native words. Therefore, I treat /-w-/ as a vowel on-glide, not as a medial consonant. In non-native words, /-w-/ also occurs with /-ə(n)/.

(5) Examples of rhymes with on-glide /-w-/

-wi	<i>twi</i> ²²	“tooth”	-we	<i>l^haŋ</i> ⁵³ <i>mwe</i> ²²	“snake”
	<i>no</i> ²¹ <i>lwi</i> ²¹	“buffalo”		<i>mwe</i> ²¹	“taro”
	<i>k^hwi</i> ²²	“dog”		<i>t^hut</i> ²¹ <i>kan</i> ²² <i>p^hwe</i> ⁵⁵	“to spit”
	<i>swi</i> ²²	“blood”		<i>tɕwe</i> ³⁵	“to arrive”
	<i>t^hwi</i> ⁵³	“sound, voice”		<i>nwe</i> ²¹	“to be warm”

2.6 Final consonants (C_f): -m, -p, -n, -t, -ŋ, -ʔ/-k, -w, -j

Three nasal, four stop and two off-glide consonant phonemes stand as a final consonant in Lhangsu. /-ʔ/ and /-k/ are in a complementary distribution in native words.

Table 6 Lhangsu rhymes

OPEN	CLOSED								
-a	-am	-ap	-an	-at	-aŋ	-aʔ	(-ak)	-aw	-aj
-o	-om	-op	(-on)	(-ot)	-oŋ	-oʔ	(-ok)		(-oj)
-ə*	-əm	-əp	-ən	-ət	-əŋ		-ək		
-e	(-em)		(-en)		(-eŋ)	(-eʔ)			
-u	-um	-up	-un	-ut	-uŋ	-uʔ	(-uk)		
-i	(-im)	(-ip)	-in	-it	(-iŋ)		(-ik)		
-we									
-wi									
			(-wən)		(-awŋ)				

* occurs only in weak syllables.

(6) Rhymes with final /-m/

-am	<i>t^ham⁵³</i>	“hair”
	<i>tʃ^ham²²</i>	“to be cool”
	<i>tam²²</i>	“bridge”
-om	<i>ʔam²²p^haʔ⁵³kom²²</i>	“bowl”
	<i>ǎ²k'om⁵³</i>	“to be empty”
	<i>n'ək⁵³lom^{3e}</i>	“to be interested in”
-əm	<i>j'əm⁵³</i>	“house”
	<i>pəm²²</i>	“mountain”
	<i>təm²²-la²¹</i>	“to return”
-um	<i>k^hjum⁵³</i>	“to meet”
	<i>nap²¹tʃ^hum⁵⁵</i>	“morning”

(7) Rhymes with final -p

-ap	<i>l'am²²ma²²k^hjap⁵³</i>	“month”
	<i>k'jin⁵⁵tap²¹</i>	“to attach”
	<i>ŋ'ap⁵³</i>	“to read”
	<i>mjaŋ⁵⁵tap²¹</i>	“needle”
-op	<i>ŋ'op⁵³</i>	“to cover”
	<i>mo²ʔop⁵³si²²</i>	“tomato”
-əp	<i>j'əp⁵³</i>	“to sleep”
	<i>pəp²¹</i>	“to be rotten”
	<i>ɣǎ²tʃam²¹səp⁵³</i>	“to be thirsty”
-up	<i>k^hjuŋ²²p'up⁵³</i>	“owl”

(8) Rhymes with final -n

-an	<i>na²¹pan²¹</i>	“flower”
	<i>ŋ'an⁵³</i>	“mist/frost”
	<i>san²²</i>	“to scatter”
-ən	<i>wən²¹</i>	“to bear on one's back”

	<i>ʏə²mən²²k^hoŋ⁵³</i>	“north”
	<i>tən²²</i>	“eagle”
-un	<i>kun²¹</i>	“to be exhausted”
	<i>tʃun²²loŋ²²</i>	“island”
-in	<i>tʃ^hin⁵³</i>	“to be sour”
	<i>tʃ^hin⁵³</i>	“rice”
	<i>k^hjin⁵³</i>	“to choose”

(9) Rhymes with final -t

-at	<i>sat⁵³</i>	“to kill”
	<i>k^hat⁵³</i>	“to let s.o. come in”
-ət	<i>pət²¹</i>	“to rub, to scrub”
	<i>wət²¹</i>	“to wear”
	<i>ŋ^hət⁵³</i>	“COPULA”
-ut	<i>k^hut⁵³</i>	“to take off”
	<i>n^hut⁵³</i>	“mouth”
	<i>k^hut⁵³</i>	“to build”
-it	<i>fit⁵³</i>	“eight”
	<i>p^hjit⁵³</i>	“to cut”
	<i>tʃ^hit⁵³</i>	“to be dark”

(10) Rhymes with final -ŋ

-aŋ	<i>mjaŋ²¹</i>	“to find”
	<i>sam⁵³pjaŋ²²</i>	“sword”
-oŋ	<i>p^hoŋ⁵⁵</i>	“to open”
	<i>t^hoŋ⁵⁵</i>	“to write”
-əŋ	<i>k^həŋ⁵³</i>	“thread”
	<i>ləŋ²²təŋ²¹</i>	“neck”
	<i>k^həŋ⁵¹</i>	“to be firm”
-uŋ	<i>k^huŋ²²</i>	“throat”
	<i>tuŋ²²</i>	“wing”
-iŋ	<i>pjiŋ⁵³</i>	“to request, to ask”
	<i>mjiŋ²²</i>	“night”

(11) Rhymes with final -ʔ/-k

-aʔ	<i>mjaʔ²¹</i>	“eye”
	<i>ŋ^haʔ⁵³</i>	“bird”
	<i>tʃaʔ²¹</i>	“to exist”
-oʔ	<i>ʏoʔ²¹</i>	“rat”
	<i>t^hoʔ⁵³</i>	“to exit”
-ək	<i>sək⁵³təŋ²²</i>	“tree”
	<i>tʃ^hək⁵³</i>	“mutton”
	<i>ʏək²¹</i>	“to beat, to hit”
-uʔ	<i>kuʔ²¹</i>	“puddy”

<i>k^hjuɿ⁵³</i>	“six”
<i>luɿ²¹təŋ²²</i>	“stone”

(12) Rhymes with final -w

-aw	<i>ɾaw²²</i>	“pan, pot”
	<i>naw²¹</i>	“to like”
	<i>tʃaw⁵³</i>	“to say”

(13) Rhymes with final -j

-aj	<i>ŋaj²¹</i>	“to be small”
	<i>tā²t^haj⁵³</i>	“ten”
	<i>laɿ³⁵</i>	“to come”

If non-native words are considered more variety of rhymes can be identified.

(14) Examples of closed rhymes found only in non-native words

-em	<i>t'em²¹si²² mu²¹</i>	“to be tender, to be gentle” <Jhp. <i>tem^Lsi^L</i> + ?Lhs. “to do”
-im	<i>tsim²¹</i>	“to be calm, to be quiet” <Jhp. <i>zim^L</i>
-ip	<i>ʃəŋ²¹nɪp²¹</i>	“shadow” <Jhp. <i>shing^Lnip^L</i>
-on	<i>ʃə²k'on²¹</i>	“to praise” <Jhp. <i>shākawn^L</i>
-en	<i>tsen²¹taw²¹</i>	“scissors” <Jhp. <i>zen^Ldau^L</i> ? <Chinese 剪刀
-ot	<i>t^hot²¹</i>	“to move” <Jhp. <i>htawt^L</i> . cf. Lhv. <i>thut^F</i>
-eŋ	<i>k^haɿ²¹reɿ⁵³</i>	“wave” <Jhp. <i>hka^{?L}leng^H</i>
-ak	<i>ǎ²sak²¹</i>	“age” <Jhp. <i>ǎsak^L</i>
	<i>tʃak²¹</i>	“machine” <Jhp. <i>jak^L</i> <WB {cak'}. cf. Lhv. <i>cak^F</i>
-ok	<i>kok²¹</i>	“to bark” <Jhp. <i>gawk^L</i>
-uk	<i>laɿ²¹ka²¹p'uk⁵³</i>	“book” <Jhp. <i>lai^Lka^M</i> “book” + Lhs. “to stack” cf. Lhv. <i>muk^Fsuk^Hpauk^H</i> “book” (“paper” + “to stack”)
-ik	<i>tʃauŋ²¹p'jik⁵³</i>	“(school) to close” <Jhp. <i>jawng^L</i> (or Bur. <i>caun^L</i>) “school” + Jhp. <i>pyik^H</i> “to close”
-eɿ	<i>t^heɿ⁵³</i>	“to be hot” <Jhp. <i>hte^{?H}</i>
-oj	<i>k^hoɿ⁵³-ju²¹</i>	“to borrow (money)” <Jhp. <i>hkoɿ^M</i> “to lend/borrow (money)” + Lhs. “to take”
-wən	<i>jwən²²</i>	“to grieve, to be sad” <Jhp. <i>yawn^M</i>

2.7 Syllabic nasals

A nasal consonant phoneme /m/ stands as a syllabic nasal in Lhangsu native phonology.

(15) Examples with syllabic nasal

<i>m</i>	<i>mji²²m²¹</i>	“gun” <i>cf.</i> Lhv. <i>myi^Lʔam^F</i>
	<i>m⁵⁵pu²²si²²</i>	“gourd” <i>cf.</i> Lhv. <i>ʔam^Fpaui^Lši^L</i>
	<i>-m²¹</i>	“SENTENCE MARKER: IRREALIS” <i>e.g.</i> <i>ŋa²²ta²¹-m²¹</i> (I eat-IRL)

Some of the loanwords from Jinghpaw have an initial syllabic nasal. Kurabe (2016) analyses the syllabic nasal in Jinghpaw as /n/, which assimilates to the place of articulation of the following consonants (p.40). In Lhangsu, we may set up syllabic /m/ for such loanwords because among the nasal consonants only /m/ can stand word- and clause-finally as syllabic nasal, as seen above.

(16) Syllabic nasal in loanwords

<i>m¹puj²²li²²</i> [m ¹ ...]	“airplane” < Jhp. <i>n^Lbung^Mli^M</i> “airplane”
<i>m²tup²¹tap²¹mji²¹k^hjom⁵⁵</i> [n ² ...]	“fireplace” <i>cf.</i> Jhp. <i>n^Ldup^L</i> “blacksmith”
<i>m²²k^hu²²</i> [ŋ ²² ...]	“pillow” <i>cf.</i> Jhp. <i>bung^Lhkum^L</i> “pillow”

2.8 Tones (T)

Lhangsu has four tones.

Table 7 Lhangsu tones

21	mainly with PLAIN initials; often 31 after 22
53	mostly with CREAKY and ASPIRATED initials ^{*19}
22	
55	with a variant 35

Drastic pitch declination was commonly observed in the speech of the consultant, even in short sentences such as *tʃ^hi⁵⁵-lo⁵³ ya^{ʔ21} ŋ^ʔət⁵³-na²¹*. (this-TOP fowl COPULA-RLS) “This is a fowl”. This declination often makes the determination of tones fairly difficult, particularly in the case of some grammatical morphemes in clause final position.

Lhaovo and Zaiwa have tonal morphemes that trigger tonal alternation to the preceding syllable (Sawada 2005, Lustig 2010), and Lacid has similar abstract morphemes that trigger vowel lengthening (Dai and Li 2007). However, Lhangsu has neither of them.

^{*19} In fact, a motivation of “consonantal” solution of creaky phonation is that it enables to simplify the generalization on the distribution of tones.

2.9 Weak syllables

Similar to other Burmish languages, Lhangsu has weak syllables. They are pronounced weakly and shortly. Two vowels, /-a/ and /-ə/, occur in weak syllables of Lhangsu.

/a/ without any initial is a familiar Tibeto-Burman prefix. It occurs as an inherent part of some nouns. It also functions as nominalizing and negative prefixes.

(17) ă

Inherent: $\check{a}^2p^{h_a}{}^{55}$ “father”, $\check{a}^2m^{j_i}{}^{55}$ “mother”, \check{a}^2la^{21} “male”, \check{a}^2ma^{22} “female”, \check{a}^2si^{22} “fruit”, $\check{a}^2t^{h_a}j^{22}$ “bottom” etc.

Nominalizing: $\check{a}^2p^{h_j}u^{53}$ $j\text{oj}^{22}$ “white”, $\check{a}^2t^{f\text{ə}m}{}^{22}$ “raw food” etc.

Negative: \check{a}^2-ta^{21} “not to eat”, $\check{a}^2-t^{f_a}{}^{21}$ “not to exist” etc.

In addition, a few prefixes with /-a/ are attested.

(18) Că

$k\check{a}^2na^{21}$ “crow”, $\eta\check{a}^2\gamma a^{22}t^{h\text{ə}p}{}^{53}$ “cabbage”

The weak syllables with /-ə/ are mostly the results of syllable weakening.

(19) Că

$t\check{ə}^2m^{j_i}{}^{21}$ “daughter” (< ta^{21} “child” + $m^{j_i}{}^{21}$ “woman”),

$\gamma\check{ə}^2pu^{22}$ “hot water” (< γi^{22} “water” + pu^{22} “to be hot”),

$k^{h_j}\check{ə}^2t^{u_j}{}^{22}$ “shoes” (< $k^{h_j}j^{22}$ “foot” + $t^{u_j}{}^{22}$ “to get on”) etc.

3 Sound correspondence between Lhangsu and other Burmish languages

In this section, I examine the correspondence of Lhangsu sounds with those of other Burmish languages, such as Bola, Lhaovo, Lacid, Zaiwa and Written Burmese (WB, and also Old Written Burmese, OWB). In the tables of this section, data on Bola and Zaiwa forms are based on Nishi (1999), originally from Huang (1992). Lhangsu, Lhaovo and Lacid are based on my own data.

An underbar after the initial C- in Bola, Lhaovo, Lacid and Zaiwa data indicates that creaky vowels follow the initial. The braces in WB and OWB forms indicate that they are transliterations of Burmese script in my own system.

3.1 Initials

First, I explore the correspondence of Lhangsu initials (including initial clusters with medial -j-), grouped by the manner and place of articulation, with other NBsh languages and WB (OWB).

3.1.1 Stops and nasals: velar

Table 8 shows the correspondence of Lhangsu velar stops and nasals with other NBsh languages and WB (OWB).

Velar stops accompanied by medial /-j-/ in Lhangsu correspond to OWB velar stops with subscript consonant letters {-l} and {-r}, but not with {-y}, which corresponds with the palatal affricates of the languages.

Every initial (including clusters) is specified for “palatalness”. An initial is assigned the feature [+J] if it is palatal, /r-/ or a cluster with /-j-/. If not, it is assigned [-J]. The palatalness of an initial affects the correspondence relation of the rhyme following it.

Table 8 Initials: velar stops/nasals

Lhangsu	Bola	Lhaovo	Lacid	Zaiwa		WB (OWB)
k-	k-	k-	k-	k-		{k-} ㄱ
k'-	k'-	k'-	k'-	k'-	-J	{kh-} ㅋ
k ^h -	kh-	kh-	kh-	kh-		
ŋ-	ŋ-	ŋ-	ŋ-	ŋ-		{ng-} ㅇ
ŋ'-	ŋ'-	ŋ'-	ŋ'-	ŋ'-	-J	{ng-h-} ㆁ
kj-	kj-	ky-	ky-	kj-		{kɛy-} ㄱㅇ (< {k:l-} ㄱㅇ) / {k:r-} ㄱㅇ
k'j-	k'j-	ky'-	ky'-	k'j-	+J	{khɛy-} ㅋㅇ (< {kh:l-} ㅋㅇ) / {kh:r-} ㅋㅇ
k ^h j-	khj-	khy-	khy-	khj-		

3.1.2 Stops and nasals: palatal/alveolar

Table 9 shows the correspondence of Lhangsu palatal stops/nasals, and alveolar stops/nasals with other NBsh languages and WB (OWB).

Table 9 Initials: palatal and alveolar stops/nasals

Lhs.	Bol.	Lhv.	Lcd.	Zwa.		WB (OWB)
tʃ-	tʃ-	c-	c-	tʃ-		{kɛy-} ㄱㅇ (< {kɛy-}) / {c-} ㄱ
tʃ'-	tʃ'-	c'-	c'-	tʃ'-	+J	{khɛy-} ㅋㅇ (< {khɛy-}) / {ch-} ㄷ
tʃ ^h -	tʃh-	ch-	ch-	tʃh-		
t-	t-/ts-	t-	t-	t-		{t-} ㄷ
		ts-	ts-	ts-		{c-} ㄷ
t'-	t'-	t'-	t'-	t'-	-J	{th-} ㅌ
	t'-/ts'-	ts'-	ts'-	ts'-		{ch-} ㅌ
t ^h -	th-	th-	th-	th-		{th-}
	th-/tsh-	tsh-	tsh-	tsh-		{ch-}
n-	n-	n-	n-	n-	-J	{n-} ㄴ
	ɲj-	ñ-	ñ-	ɲj-	-J (Lhs.)/+J (others)	{Ñ-} ㄴ
n'-	n'-	n'-	n'-	n'-	-J	{n-h-} ㄴ
	ɲj'-	ñ'-	ñ'-	ɲj'-	-J (Lhs.)/+J (others)	{Ñ-h-} ㄴ

Palatal affricates of Lhangsu as well as other NBsh languages correspond to either velar initial letters with subscript consonant letter {kɛy-, khɛy-} or palatal initial letters {c-, ch-} of OWB.

Lhangsu alveolar stops correspond to either alveolar stops or dental affricates in Lhaovo, Lacid and Zaiwa. The case of Bola is more complex. Dental affricates in Lhaovo,

Lacid and Zaiwa correspond partly to dental stops and partly dental affricates of Bola, as seen in Table 10.

Table 10 Lhangsu alveolar stops and their correlates in other NBsh languages

※ Bola data are supplemented by Dai et al. (2007)

	Lhs.	Bol.	Lhv.	Lcd.	Zwa.	WB
“to eat”	<i>ta</i> ²¹	<i>ta</i> ³¹	<i>tso</i> ^L	<i>tso</i> ^L	<i>tso</i> ²¹	{caa:}
“son”	<i>ta</i> ²¹	<i>ta</i> ³¹	<i>tso</i> ^L	<i>tso</i> ^L	<i>tso</i> ²¹	–
“salt”	<i>tʰa</i> ²²	<i>tha</i> ³⁵	<i>tsho</i> ^L	<i>tsho</i> ^H	<i>tsho</i> ⁵⁵	{chaa:}
“to connect”	<i>tʰaʔ</i> ⁵³	<i>tshaʔ</i> ³¹	<i>tshoʔ</i> ^H	<i>tshoʔ</i> ^F	<i>tshoʔ</i> ⁵⁵	{chak’}
“bridge”	<i>tam</i> ²²	<i>tsɛ</i> ⁵⁵	<i>tsɛ</i> ^F	<i>tsam</i> ^F	<i>tsam</i> ⁵¹	–
“hair”	<i>tʰam</i> ⁵³	<i>tshɛ</i> ⁵⁵	<i>tshɛ</i> ^F	<i>tsham</i> ^L	<i>tsham</i> ⁵¹	{chaM}
“ten”	<i>tʰaj</i> ⁵³	<i>-thai</i> ⁵⁵	<i>tshe</i> ^F	<i>tshi</i> ^L	<i>tshe</i> ⁵¹	{chay’}
“neck”	<i>-təj</i> ²¹	<i>-taij</i> ³¹	<i>-tsaj</i> ^L	<i>-tsəj</i> ^L	<i>-tsij</i> ²¹	{caN˘:}
“mortar”	<i>tʰəm</i> ⁵⁵	<i>tsham</i> ⁵⁵	<i>tsham</i> ^F	<i>(tshəm)</i> ³³	<i>tshum</i> ⁵¹	{chuM}
“to cough”	<i>t’aw</i> ²²	<i>tau</i> ³¹	<i>tsuk</i> ^H	<i>tsok</i> ^H	<i>tsau</i> ²¹	{chui:}
“kite; hawk”	<i>tən</i> ²²	<i>tsən</i> ⁵⁵	<i>tsum</i> ^F	<i>tson</i> ^F	<i>tsun</i> ⁵¹	{c=wan’}
“tooth”	<i>twi</i> ²²	<i>tui</i> ⁵⁵	<i>tsauy</i> ^F	<i>tsə</i> ^F	<i>tsui</i> ⁵¹	{c=way’}

The factor of split between alveolar stops and dental affricates in Bola must be the rhymes. However, I could not establish a reasonable formulation temporarily.^{*20}

Lhangsu alveolar nasals correspond to either alveolar or palatal nasals in the other languages, and assigned [–J] irrespective of the correspondence to other NBsh languages.

3.1.3 Stops and nasals: labial

Table 11 shows the correspondence of Lhangsu labial stops and nasals with other NBsh languages and WB (OWB). Unlike the velars, the split factored by the type of medials does not occur.

^{*20} For the data in Table 10, WB {c-, ch-} which precede open rhymes or rhymes with final {-y’, -N˘} correspond to Bola /t-, th-/. The environments do not seem to constitute a natural class.

Table 11 Initials: labial stops/nasals

Lhs.	Bol.	Lhv.	Lcd.	Zwa.		WB (OWB)
<i>p-</i>	<i>p-</i>	<i>p-</i>	<i>p-</i>	<i>p-</i>	-J	{p} 〇
<i>p'-</i>	<i>p'-</i>	<i>p'-</i>	<i>p'-</i>	<i>p'-</i>		{ph} ㉔
<i>p^h-</i>	<i>ph-</i>	<i>ph-</i>	<i>ph-</i>	<i>ph-</i>		
<i>m-</i>	<i>m-</i>	<i>m-</i>	<i>m-</i>	<i>m-</i>	-J	{m} ㊦
<i>m'-</i>	<i>m'-</i>	<i>m'-</i>	<i>m'-</i>	<i>m'-</i>		{m=h} ㊧
<i>pj-</i>	<i>pj-</i>	<i>py-</i>	<i>py-</i>	<i>pj-</i>	+J	{p=y} ㉑ / {p=r} ㉒ (< {p=r} ㉒, {p=l} ㉓)
<i>p'j-</i>	<i>pj'-</i>	<i>py'-</i>	<i>py'-</i>	<i>pj'-</i>		{ph=y} ㉑ / {ph=r} ㉒ (< {ph=r} ㉒, {ph=l} ㉓)
<i>p^hj-</i>	<i>phj-</i>	<i>phy-</i>	<i>phy-</i>	<i>phj-</i>		
<i>mj-</i>	<i>mj-</i>	<i>my-</i>	<i>my-</i>	<i>mj-</i>	+J	{m=y} ㉑ / {m=r} ㉒ (< {m=r} ㉒, {m=l} ㉓)
<i>m'j-</i>	<i>mj'-</i>	<i>my'-</i>	<i>my'-</i>	<i>mj'-</i>		{m=h=y} ㉑ / {m=h=r} ㉒ (< {m=h=r} ㉒, {m=h=l} ㉓)

3.1.4 Other consonants

Table 12 shows the correspondence of approximants, laterals, fricatives, and the glottal stop of Lhangsu with other NBsh languages and WB (OWB).

Table 12 Initials: miscellaneous

Lhs.	Bol.	Lhv.	Lcd.	Zwa.		WB (OWB)
<i>j-</i>	<i>j-</i>	<i>y-</i>	<i>y-</i>	<i>j-</i>	+J	{y} ㉔
<i>j'-</i>	<i>j'-</i>	<i>y'-</i>	<i>y'-</i>	<i>j'-</i>		{@i-} ㉔ <i>j'əm⁵³</i> “house”; <i>j'əp⁵³</i> “to sleep”
<i>ɣ-</i>	<i>ɣ-</i>	<i>ɣ-</i>	<i>ɣ-</i>	<i>v-</i>	+J	{r} ㉑
<i>x-</i>	<i>x-</i>	<i>ɣ'-</i>	<i>f-</i>	<i>x-</i>		{r=h} ㉑
<i>l-</i>	<i>l-</i>	<i>l-</i>	<i>l-</i>	<i>l-</i>	-J	{l} ㉔
<i>l'-</i>	<i>l'-</i>	<i>l'-</i>	<i>l'-</i>	<i>l'-</i>		{l=h} ㉑
<i>w-</i>	<i>v-</i>	<i>v-</i>	<i>v-</i>	<i>v-</i>	-J	{w} 〇
<i>f-</i>	<i>f-</i>	<i>f-</i>	<i>f-</i>	<i>x-</i>		{w=h} ㉑
<i>s-</i>	<i>s-</i>	<i>s-</i>	<i>s-</i>	<i>s-</i>	-J	{s} ㉔
<i>f-</i>	<i>f-</i>	<i>š-</i>	<i>š-</i>	<i>f-</i>	-J (Lhs.)/+J (others)	
<i>f-</i>	<i>f-</i>	<i>š-</i>	<i>š-</i>	<i>f-</i>	+J	{r=h} ㉑ (< {y=h} ㉑) <i>fit⁵³</i> “eight” 12–13cWB {y-hac'} ㉑ ⁵ / {y-hat'} ㉑ ⁵
<i>h-</i>	<i>h-</i>	<i>h-</i>	<i>h-</i>	<i>x-</i>	-J	
<i>ʔ-</i>	∅	<i>ʔ-</i>	<i>ʔ-</i>	∅	-J	{@} ㉔

Lhangsu dental fricatives correspond to both dental fricatives and palatal fricatives of the other NBsh languages, and assigned [-J] constantly like Lhangsu /*n-*/.

The only attested native Lhangsu word with palatal fricative is *fit⁵³* “eight”. In Modern WB, it is written with the letters {r-h-}, and in OWB it was written with the letters {y-h-}.

3.2 Rhymes

In this section, I classify WB (OWB) rhymes basically by the vowel signs they contain, and examine how rhymes of Lhangsu (and other NBsh languages) correspond to these classified rhymes.

3.2.1 OWB {-a} group

Table 13 shows the rhymes of NBsh languages corresponding to OWB rhyme notations with “zero” vowel sign transliterated as {-a}.*²¹ The rhymes with /-ŋ/ corresponding to OWB {-aN~}, and the rhymes with /-k/ corresponding to WB {-ac'} are not included here; they are mentioned in {-i} group later.

Table 13 Rhymes: OWB {-a} group

Lhs.	Bol.	Lhv.	Lcd.	Zwa.		WB (OWB)	
-a	-a	-o	-o	-o/a		{-a} ○○○	<i>n'a</i> ⁵³ “nose”; <i>kja</i> ⁵⁵ “to fall”
-aj	-ai	-ay/e	-i	-e		{-ay'} ○ωδ○	<i>ŋaj</i> ²¹ “to be small” <i>we</i> ²¹ “to buy”
-e	-ε	-ay	-ə	-ui			
-am	-ē	-eŋ	-am	-am		{-am'} ○δ○	<i>sam</i> ⁵³ <i>so</i> ²² “blade” <i>yom</i> ⁵³ “bear”
-om			-om	-om			
-ap	-εʔ	-eʔ	-ap	-ap		{-ap'} ○δ	<i>nap</i> ²¹ <i>tʰum</i> ⁵⁵ “morning”
-an	-ē	-in	-an	-an	-J	{-an'} ○𑄳	<i>na</i> ²¹ <i>par</i> ²¹ “flower” <i>wən</i> ²¹ “bear on one's back”
-ən	-ɔn	-əm	-on	-un			
-in	-ɔn	-in	-en	-in	+J	{-an'} {-an~'} ○𑄳 < OWB{-yan'} 𑄳𑄳	<i>tʰin</i> ⁵³ “rice” <i>tʰin</i> ⁵³ “to be sour” 13cOWB {kh-yan'}
-at	-εʔ	-eʔ	-at	-at	-J	{-at'} ○δ	<i>sat</i> ⁵³ “to kill” <i>wət</i> ²¹ “to wear”
-ət			-ot	-ut			
-it	-ɔt/εʔ	-it/eʔ	-it/et	-it	+J	{-at'} {-ac'} ○δ < OWB{-yat'} 𑄳𑄳	<i>pʰji</i> ⁵³ “to cut” <i>fi</i> ⁵³ “eight” cf. <i>tʰi</i> ²² “to love” 13cOWB {kh-yat'}
-aj	-ɔŋ	-oŋ	-aj	-aj		{-ang'} ○𑄳	<i>mjaŋ</i> ²¹ “to see”
-aʔ	-aʔ	-oʔ	-oʔ	-oʔ/aʔ		{-ak'} ○𑄳	<i>ŋ'aʔ</i> ⁵³ “bird”

Lhangsu has the maximum number of rhymes with vowel /-a/ in the NBsh languages examined in this study. Assuming that these rhymes had the vowel *a also in the stage of Proto Burmish, the table means that Lhangsu preserves the Proto Burmish vowel *a the most among the languages.

WB {-an'}, {-at'} correspond to Lhangsu /-in/, /-it/ with [+J] initials, and /-an/, /-at/ with [-J] initials. WB {-an~'} and {-ac'} traced back to OWB {-an'} and {-at'} also

*²¹ In Indic scripts, a rhyme notation (and syllable notation, too) without any overt vowel signs notates a rhyme (syllable) with a “default vowel” of the script system. In Burmese script (not only modern WB but also OWB), the “default vowel” is -a, transliterated by {-a} in my own transliteration system.

correspond to Lhangsu /-in/, /-it/. Note that OWB initial consonants are accompanied by the medial consonant letter {-y}.

3.2.2 OWB {-i} group

Table 14 shows the rhymes of NBsh languages corresponding to OWB rhymes transliterated by {-i}.

Table 14 Rhymes: OWB {-i} group

Lhs.	Bol.	Lhv.	Lcd.	Zwa.		WB (OWB)	
-e	-ɛ	-e	-i	-e	-J	{-i} འི་	<i>ne</i> ²¹ “to be red”
-i/e	-i	-i/e	-i	-i	+J		<i>mji</i> ²¹ “fire”; <i>si</i> ²² “fruit”
-e	-ɛ		-i	-e	-J	{-e} ར་ <OWB {-iy'} འོ་	<i>we</i> ²¹ “to be distant”
-i	-i/ɔi/ui	-a	-it	-i/ai			<i>ni</i> ²¹ “to stay”
-i	-i/ɔi	-it	-it	-i/ui	+J		<i>k^hji</i> ⁵³ “leg”
-om	-am	-am	-om	-um		{-im'} འི་	<i>ɔ²tfom</i> ²² “raw thing”
-op	-ap	-ap	-op	-up		{-ip'} འི་	<i>j'ap</i> ⁵³ “to sleep”
?	?	?	?	?		{-in'} འི་	
-ok	-ot	-at	-ot	?		{-it'} འི་	<i>t^hak</i> ⁵³ “goat”
-əŋ	-aŋ	-aŋ	-əŋ	-iŋ		{-aN~} འོ་ < PTB *-iŋ/in/en (Matisoff, 2003)	<i>ləŋ</i> ²² <i>ləŋ</i> ²¹ “neck”
-ək	-ak	-ak	-ək	-ik		{-ac'} འོ་ < PTB/PLB *-ik (Matisoff, 2003)	<i>pək</i> ²¹ “to shoot”

The rhymes with /-ŋ/ corresponding to OWB {-aN~}, and the rhymes with /-k/ in NBsh languages corresponding to OWB {-ac'} are grouped here, based on their PTB forms presented by Matisoff (2003).

The rhymes corresponding to WB {-i} in the languages except Lacid show the split factored by the feature [±J] of initials preceding them.^{*22}

Lhangsu *t^hək*⁵³ “goat” is peculiar in that it has /-k/ unlike the cognates in other NBsh languages, which share /-t/ with WB/OWB. The peculiarity might be attributed to the [+J] feature of the initial.

I did not observe any sure instances of rhyme corresponding to WB {-in'} in either Lhangsu or other NBsh languages.

3.2.3 OWB {-u/-o} group

Table 15 shows the rhymes of NBsh languages corresponding to WB/OWB rhymes transliterated by {-u} or {-o}.^{*23}

^{*22} In Bola, Lhaovo and Lacid, there are several rhymes which correspond to OWB {-iy'}. The distributions of the rhymes still remain unclear though it might be in some way related to the types of initials.

^{*23} It might be simply referred to as “{-u} group”, accepting Matisoff's (2003) PTB forms for {-ong'} and {-ok'}.

Table 15 Rhymes: OWB {-u/-o} group

Lhs.	Bol.	Lhv.	Lcd.	Zwa.		WB (OWB)	
-u	-u	-au	-u	-u	-J	{-u} ㄹᄇᄇ	ʔu ⁵⁵ “egg”
-u	-u	-u	-u	-u	+J		p ^h ju ²¹ “to be white”
-we	-ui/ø	-auy	-ə/u	-ui		{-we} ㄹᄇᄇ < OWB {-uy'} ㄹᄇᄇ	l'au ⁵³ mwe ²² “snake”
-wi	-ui	-a	-wit	-ui			khwi ²² “dog”
-əm	-am	-am	-om	-um		{-um'} ㄹᄇᄇᄇ	pəm ²² “mountain”
-əp	-ap	-ap	-op	-up		{-up'} ㄹᄇᄇ	tʃəp ⁵³ “to suck”
-un	-ɔn	-an	-on	?		{-un'} ㄹᄇᄇ	kun ²¹ “to be lost”
-ut	-ɔt	-at	-ot	-ut		{-ut'} ㄹᄇᄇ	n'ut ⁵³ “mouth”
-uŋ	-auŋ	-auŋ	-uŋ	-uŋ		{-ong'} ㄹᄇᄇᄇ < PTB *-uŋ (Matisoff, 2003)	kuy ²² la ²¹ “body”
-uʔ	-auʔ	-auk	-uk	-uʔ		{-ok'} ㄹᄇᄇᄇ < PTB *-uk (Matisoff, 2003)	kju ²¹ “to fear”

The factor of the split of rhymes of Lhangsu (and also Bola, Lhaovo and Lacid) corresponding to OWB {-uy'} are unclear, similar to that of {-iy'}.

In Lhangsu, Bola, Lacid and Zaiwa, more than one rhymes correspond to WB {-ut'}. I suspect that it is another case of splitting factored by [±J], but it is hardly confirmed due to the rarity of instances.

3.2.4 OWB {-wa} group

Table 16 presents the rhymes of NBsh languages corresponding to OWB rhymes transliterated as {-wa}.

Table 16 Rhymes: OWB {-wa} group

Lhs.	Bol.	Lhv.	Lcd.	Zwa.		WB (OWB)	
-o	-ɔ	-u	-o/u	-o		{-wa} ㄹᄇᄇᄇ	no ²¹ tʃuŋ ²² “cow, bull”
-wi	-ui	-auy	-ə	-ui		{-way'} ㄹᄇᄇᄇᄇ	twi ²² “tooth”
?	?	?	?	?		{-wam'} ㄹᄇᄇᄇ	
?	?	?	?	?		{-wap'} ㄹᄇᄇᄇ	
-ən/un	-ɔn	-əm	-on	-un		{-wan'} ㄹᄇᄇᄇ	tən ²² “eagle”
-ət	-ɔt	-øʔ	-ot	-ut	-J	{-wat'} ㄹᄇᄇᄇ	pət ²¹ “to rub”
-ut	-ɔt	-at	-ot	-ut	+J		kʰut ⁵³ “to take off”
-oŋ	-uŋ	-uŋ	-aŋ	-oŋ		{-wang'} ㄹᄇᄇᄇᄇ	pʰoŋ ⁵⁵ “to open”
-oʔ	-ɔʔ	-uk	-uʔ	-oʔ		{-wak'} ㄹᄇᄇᄇᄇ	yoʔ ²¹ “rat”

The split of Lhangsu rhymes corresponds to WB {-wat'} is factored by the feature [±J] of initials. This also applies to Lhaovo.

No instances of rhyme corresponding to WB {-wam'} and {-wap'} is attested in either Lhangsu or other NBsh languages.

3.2.5 OWB {-ui} group

Finally, Table 17 shows the rhymes of NBsh languages corresponding to OWB rhymes transliterated by {-ui}.

Table 17 Rhymes: OWB {-ui} group

Lhs.	Bol.	Lhv.	Lcd.	Zwa.		WB (OWB)	
-aw	-au	-uk	-ok	-au	-J	{-ui}<OWB{-uiw'}/-uw'/{-iw'}<PLB *-əw $\begin{matrix} \circ & \circ & \circ & \circ \\ \text{L} & \text{L} & \text{L} & \text{L} \end{matrix}$	<i>k^haw</i> ²² “to steal”
-u	-u	-uk	-ok	-ui	+J		<i>k^hju</i> ²² “to break”
ʔ-əŋ	ʔ	ʔ	ʔ	ʔ		{-uing'} $\begin{matrix} \circ & \circ & \circ \\ \text{L} & \text{L} & \text{L} \end{matrix}$ < PTB *-u:ŋ	<i>k'əŋ</i> ⁵³ “to be hard”; <i>t'əŋ</i> ⁵³ “to sit”
ʔ-ək	ʔ	ʔ	-uk	ʔ		{-uik'} $\begin{matrix} \circ & \circ & \circ \\ \text{L} & \text{L} & \text{L} \end{matrix}$ < PTB *-u:k	<i>yək</i> ²¹ “to beat” cf. Lcd. <i>yuk</i> ^L

Again, the split in Lhangsu, Bola and Zaiwa are factored by [±J].

A few forms that correspond to WB {-uing'} and {-uik'} were found in Lhangsu. Among them, *yək* “to beat” has a cognate form in Lacid.

3.3 Tones

Table 18 summarizes the tonal correspondence between the languages. Note that the creaky phonation of vowels and the aspiration of consonants equally function as a factor of tonal split in not only Lhangsu but also other NBsh languages. The fact favors the “consonantal” solution over “vocalic” solution of creaky phonation.

Table 18 Tones

	Lhs.		Bol.	Lhv.	Lcd.	Zwa.	WB
	22 _(N) /21 _(V) 53	C- C', C ^h	55	<i>F</i> (21)	<i>F</i> (21) <i>L</i> (22)	51 C C-, Ch	Tone 1
-V#/ -VN ^{#2}	21	C-	31	<i>L</i> (22)	<i>L</i> (22)	C	Tone 2 {-V#}/ {-VN} ^{#1}
	22	C', C ^h	35	<i>L</i> , <i>H</i> ^{#3}	<i>H</i> (44)	21 C C-, Ch	
	55		35	<i>H</i> (44)	<i>H</i> (44) <i>HF</i> (42)	55 C C-, Ch	Tone 3
-VC ^{#2}	21	C	31	<i>F</i> (21)	<i>F</i> (21)	21 C	{-VC} ^{#1}
	53	C', C ^h	55	<i>H</i> (44)	<i>HF</i> (42)	55 C-, Ch	

#1 {-N} = {-ng', -N', -n'', -n', -m'(-M), -y'(-Y)}; {-C} = {-k', -c', -t', -p'}

#2 -N = nasal and approximant finals; -C = stop finals, but rhymes ending with /-t, -k/ in Lhv. and Lcd. corresponding to WB {-e}(<OWB {-iy'}) and {-ui} (<{-uiw'}) fall in -VN class.

#3 Lhv. syllables containing rhymes ending with /-t, -k/ but counted as -VN bear tone ^H, not ^L.

(20)–(23) show the tonal correspondence of Lhangsu syllables with CREAKY or ASPIRATED initials with Lhaovo and Written Burmese.

(20) V#/VN, CREAKY/ASPIRATED initials: Lhs. 53; Lhv. F; WB Tone 1

<i>āk'om</i> ⁵³	“to be empty”	Lhv. <i>ʔākəm</i> ^F	
<i>ŋ'an</i> ⁵³	“mist/frost”	Lhv. <i>ŋin</i> ^F	
<i>j'əm</i> ⁵³	“house”	Lhv. <i>yam</i> ^F	WB { @im' }
<i>l'aj</i> ⁵³ <i>mwe</i> ²²	“snake”	Lhv. <i>loŋ</i> ^F <i>mau</i> ^F	
<i>k^hjin</i> ⁵³	“to choose”	Lhv. <i>khyin</i> ^F	
<i>t^ham</i> ⁵³	“hair”	Lhv. <i>tsheŋ</i> ^F	WB {chaM}
<i>t^hwi</i> ⁵³	“sound, voice”	Lhv. <i>thø</i> ^F	
<i>fən</i> ⁵³	“to send”	Lhv. <i>vɪn</i> ^F ~ <i>fin</i> ^F	
<i>sam</i> ⁵³ <i>pjaŋ</i> ²²	“sword”	Lhv. <i>seŋ</i> ^F <i>pyoŋ</i> ^F	WB {saM} “iron”

(21) V#/VN, CREAKY/ASPIRATED initials: Lhs. 22; Lhv. L(H); WB Tone 2

<i>wa</i> ²¹ ~ <i>t'a</i> ²²	“to set, to put”	Lhv. <i>tø</i> ^L	WB {thaa:}
<i>la</i> ²¹ ~ <i>n'u</i> ²²	“finger”	Lhv. <i>lo</i> ^{2F} ~ <i>nuk</i> ^H	WB {lak'N~hui:}
<i>p'a</i> ²²	“to be thin”	Lhv. <i>pø</i> ^L	WB {phaa:}
<i>ʔaw</i> ²²	“pan, pot”	Lhv. <i>ʔuk</i> ^H	WB { @ui: }
<i>k^hwi</i> ²²	“dog”	Lhv. <i>kha</i> ^L	WB {kh-we:}
<i>k^hju</i> ²²	“to bend”	Lhv. <i>khyuk</i> ^H	WB {kh-yui:}
<i>t^ha</i> ²²	“salt”	Lhv. <i>tshø</i> ^L	WB {chaa:}
<i>t^ham</i> ²²	“to be cool”	Lhv. <i>cheŋ</i> ^L	WB {kh-yam':}
<i>sa</i> ²²	“meat, flesh”	Lhv. <i>sø</i> ^L	WB { @a.saa: }
<i>swi</i> ²²	“blood”	Lhv. <i>sa</i> ^L	WB {s-we:}

(22) V#/VN, CREAKY/ASPIRATED initials: Lhs. 55; Lhv. H; WB Tone 3

<i>k'jin</i> ⁵⁵ <i>tap</i> ²¹	“to attach”	Lhv. <i>kyin</i> ^H <i>te</i> ^{2F}	
<i>t'a</i> ⁵⁵	“to rise”	Lhv. <i>tø</i> ^H	WB {tha}
<i>t'əm</i> ⁵⁵	“to forbid”	Lhv. <i>tam</i> ^H	
<i>m'a</i> ⁵⁵	“to teach”	Lhv. <i>mø</i> ^H	
<i>m'əŋ</i> ⁵⁵	“to get ripen”	Lhv. <i>maŋ</i> ^H	WB {m=haN~.}
<i>ʔu</i> ⁵⁵	“egg”	Lhv. <i>ʔau</i> ^H	WB {u}
<i>wa</i> ²¹ ~ <i>k^hja</i> ⁵⁵	“to drop”	Lhv. <i>khyo</i> ^H	WB {khyā}
<i>t^haj</i> ⁵⁵	“to run after”	Lhv. <i>choŋ</i> ^H	
<i>j'əm</i> ⁵³ <i>səŋ</i> ⁵³ ~ <i>p^ha</i> ⁵⁵	“husband”	Lhv. <i>yam</i> ^F <i>saj</i> ^F ~ <i>pho</i> ^H	WB { @a.pha } “male”
<i>p^hoŋ</i> ⁵⁵	“to open”	Lhv. <i>phuŋ</i> ^H	WB {ph-wang' .}

(23) VC, CREAKY/ASPIRATED initials: Lhs. 53; Lhv. H

<i>k'ju</i> ⁵³	“to dry”	Lhv. <i>kyauk</i> ^H	WB {kh-rok'}
<i>t'əp</i> ⁵³	“to seize”	Lhv. <i>tsap</i> ^H	WB {chup'}
<i>n'ək</i> ⁵³	“heart”	Lhv. <i>nak</i> ^H	WB {n=hac'luM:}
<i>t'əp</i> ⁵³	“to suck”	Lhv. <i>cap</i> ^H	WB {cup'}
<i>k^hju</i> ⁵³	“six”	Lhv. <i>khyauk</i> ^H	WB {kh-rok'}
<i>t^ho</i> ⁵³	“to exit”	Lhv. <i>thuk</i> ^H	WB {th-wak'}
<i>t^hit</i> ⁵³	“to be dark”	Lhv. <i>chat</i> ^H	WB {chit' } “to be quiet”
<i>p^hjit</i> ⁵³	“to cut”	Lhv. <i>phyit</i> ^H	WB {ph-rat'}
<i>fit</i> ⁵³	“eight”	Lhv. <i>se</i> ^{2F}	WB {r=hac'}
<i>xa</i> ⁵³	“to be ashamed”	Lhv. <i>yo</i> ^{2F}	WB {r=hak'}

(24)–(28) show the tonal correspondence of Lhangsu syllables with PLAIN initials with Lhaovo and Written Burmese.

Lhangsu syllables with PLAIN initials corresponding to Lhaovo ^F syllables and WB Tone

1 syllables show a peculiarity: They have 21 if they are verbs, and 22 if they are nouns. Note that there are a few exceptions in verbs.

(24) V#/VN, PLAIN initials: Lhs. 21; Lhv. F; WB Tone 1

<i>kaj</i> ²¹	“to be good”	Lhv. <i>kay</i> ^F		
<i>ɲaw</i> ²¹	“to weep”	Lhv. <i>ɲuk</i> ^F	WB {ngui}	cf. <i>ɲaw</i> ²² <i>pji</i> ²² “tear”
<i>na</i> ²¹	“to ache”	Lhv. <i>no</i> ^F	WB {naa}	cf. <i>a</i> ² <i>na</i> ²² “illness”
<i>ne</i> ²¹	“to be red”	Lhv. <i>ne</i> ^F	WB {nii}	cf. <i>xu</i> ²² <i>ne</i> ²² “onion”
<i>pan</i> ²¹	“to end”	Lhv. <i>pin</i> ^F		
<i>pe</i> ²¹	“to know”	Lhv. <i>pa</i> ^F		
<i>mju</i> ²¹	“to bury”	Lhv. <i>myuk</i> ^F		
<i>ɣaj</i> ²¹	“to be hard”	Lhv. <i>yoŋ</i> ^F		
<i>lam</i> ²¹	“to be broad”	Lhv. <i>leŋ</i> ^F	cf. WB {@a.laM}	“unit of length”
<i>we</i> ²¹	“to buy”	Lhv. <i>vay</i> ^F	WB {way’}	

(25) V#/VN, PLAIN initials: Lhs. 22; Lhv. F; WB Tone 1

<i>yi</i> ²²	“to laugh”	Lhv. <i>yi</i> ^F	WB {ray’}	
<i>yo</i> ²²	“to rain”	Lhv. <i>yu</i> ^F	WB {r-waa}	
<i>kun</i> ²²	“net”	Lhv. <i>kəm</i> ^F	WB {k-wan’}	
<i>ɲa</i> ²²	“I”	Lhv. <i>ɲo</i> ^F	WB {ngaa}	
<i>tan</i> ²²	“year”	Lhv. <i>tsin</i> ^F		
<i>taŋ</i> ²² <i>k’aj</i> ⁵⁵	“back”	Lhv. <i>toŋ</i> ^F <i>kaun</i> ^F		
<i>naŋ</i> ²²	“you”	Lhv. <i>noŋ</i> ^F	WB {nang’}	
<i>mji</i> ²²	“ground”	Lhv. <i>myit</i> ^F	WB {m-re}<OWB {m-liy’}	
<i>ja</i> ²²	“hundred”	Lhv. <i>yo</i> ^F	WB {raa}<OWB {r-yaa}	
<i>a</i> ² <i>jam</i> ²²	“surrounding”	Lhv. <i>ʔäyerŋ</i> ^F	WB {@a.po’yaM}	“surface”
<i>-ya</i> ²²	“place”	Lhv. <i>-yo</i> ^F	WB {-raa}	
<i>sə</i> ² <i>yi</i> ²²	“skin”	Lhv. <i>šə</i> ^L <i>yit</i> ^F	WB {sa_re}	

(26) V#/VN, PLAIN initials: Lhs. 21; Lhv. L; WB Tone 2

<i>kja</i> ²¹	“to hear”	Lhv. <i>kyo</i> ^L	WB {k-raa:}	
<i>ɲa</i> ²¹	“fish”	Lhv. <i>ɲo</i> ^L	WB {ngaa:}	
<i>ta</i> ²¹	“to eat”	Lhv. <i>tso</i> ^L	WB {caa:}	
<i>na</i> ²¹	“ear”	Lhv. <i>no</i> ^L	WB {naa:}	
<i>na</i> ²¹ <i>pan</i> ²¹	“flower”	Lhv. <i>pin</i> ^L	WB {pan’:}	
<i>maw</i> ²¹ <i>yo</i> ²²	“to rain”	Lhv. <i>muk</i> ^L <i>yu</i> ^L	WB {mui: r-waa}	
<i>n’ut</i> ⁵³ <i>mwe</i> ²¹	“beard”	Lhv. <i>nat</i> ^H <i>mauy</i> ^L	WB {mut’chit’ mwe:}	
<i>li</i> ²¹	“to be heavy”	Lhv. <i>la</i> ^L	WB {le:}	
<i>no</i> ²¹ <i>lwi</i> ²¹	“buffalo”	Lhv. <i>nug</i> ^L <i>lauy</i> ^L	WB {k-l-waY}	
<i>we</i> ²¹	“to be distant”	Lhv. <i>va</i> ^L	WB {we:}	

(27) V#/VN, PLAIN initials: Lhs. 55–35; Lhv. H; WB Tone 3

<i>kja</i> ⁵⁵	“to descend”	Lhv. <i>kyo</i> ^H	WB {k-ya}	
<i>nu</i> ³⁵	“(plant) to be young”	Lhv. <i>nan</i> ^H	WB {nu}	
<i>tfwe</i> ³⁵	“to arrive”	Lhv. <i>cə</i> ^H		
<i>ɣa</i> ^{55-v}	“to be possible to V”	cf. Lhv. <i>yo</i> ^{-H} “to get”	cf. WB {ra}	“to get”
<i>la</i> ³⁵	“to go”	Lhv. <i>lo</i> ^H		
<i>laŋ</i> ³⁵	“to come”	Lhv. <i>li</i> ^H		

(28) VC, PLAIN initials: Lhs. 21; Lhv. F

<i>kuʔ²¹</i>	“puddy”	Lhv. <i>kauk^F</i>	WB {kok’}
<i>taʔ²¹</i>	“to ascend”	Lhv. <i>toʔ^F</i>	WB {tak’}
<i>naʔ²¹</i>	“to be black”	Lhv. <i>noʔ^F</i>	WB {nak’}
<i>tʃuʔ²¹</i>	“pubes”	Lhv. <i>cauk^F</i>	WB {cok’}
<i>pək²¹</i>	“to shoot”	Lhv. <i>pak^F</i>	WB {pac’}
<i>mjuʔ²¹</i>	“monkey”	Lhv. <i>myauk^F</i>	WB {m=yauk’}
<i>jaʔ²¹</i>	“to lick”	Lhv. <i>yoʔ^F</i>	WB {l=yak’}
<i>yaʔ²¹</i>	“fowls”	Lhv. <i>yoʔ^F</i>	WB {k-rak’}
<i>laʔ²¹</i>	“hand”	Lhv. <i>loʔ^F</i>	WB {lak’}
<i>waʔ²¹</i>	“pig”	Lhv. <i>voʔ^F</i>	WB {wak’}

4 Summary

The characteristics of Lhangsu observed in this study are summarized as follows.

Initials Merger of dental affricates and alveolar stops occurred. The palatal nasal converged with the alveolar nasal. The palatal fricative converged with dental fricative (with an exception *ʃit*⁵³ “eight”).

Rhymes Vowel *-a, perhaps in the stage of Proto-Burmish, is well preserved.

Tones Tone 1 as well as Tone 2 in WB does not correspond to a single tone in Lhangsu, and the tonal split is factored by the series to which the initial of the syllable belongs. A partial tonal flip-flop occurs with PLAIN initials.

I conclude that Lhangsu is a distinct NBsh language and not a dialect of Lhaovo, although Lhangsu people are a sub-group of Lhaovo people. The main reason for this distinction is tonal correspondence, which is also supported by other characteristics.*²⁴

I adopted the “consonantal” solution rather than the “vocalic” solution of creaky phonation. I also introduced a consonantal feature of palatalness, [±J], which functions as a factor of split in rhymes in not only Lhangsu but also other NBsh languages.

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*²⁴ The conclusion also leads to the claim that Lhangsu cannot be equated (and confused) with “Làngsù” in China. Most notably, “Làngsù” can never be the autonym, whereas “Lhangsu” certainly is.

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北部ビルマ下位語群の未記述言語ランスー語の音韻論
The Phonology of Lhangsu, an Undescribed Northern-Burmish Language

澤田 英夫

民族文化集団カチンを構成する民族の一つであるロンウォー Lhaovo (マル Maru) 人の話す言語の中には地理的あるいは下位部族的な変異が見られるが、その全体像についてはこれまでほとんど明らかにされてこなかった。筆者は 2013 年以来、ロンウォー人の話す言語変種の調査を、カチン州の州都ミッチーナーに居住する話者の協力を得て行ってきた。本稿は、ロンウォー人の下位部族とみなされる「ランスー Lhangsu」と呼ばれる人々が話す言語の音韻論の予備的な記述である。