PHONEMIC INVENTORY IN LUNGKHIM

Tara Mani Rai

This article attempts to explore the phonemes embedded to the Lungkhim. There are altogether 29 phonemes in Lungkhim. Of them, there are 6 vowels and 23 consonants. Consonants show four-way contrasts or oppositions: place of articulation, manner of articulation, voicing and aspiration.

Keywords: Lungkhim, phoneme, inventory, consonant, vowel

1. Introduction[1]

Lungkhim [*sic* Linkhim], a Kirat Rai language belongs to the Himalayish sub-group within Tibeto-Burman group of the Sino-Tibetan language family. The term Lungkhim [*lung* 'stone'+*khim* 'house'] refers to the people as well as the language they speak. The origin of this language is supposed to be Limkhim [*sic*] of the northern part of Bhojpur district but no speaker is found there. Lungkhim speakers are only found in a village of Ilam called Ahale of Suryodaya Municipality where there are a handful of speakers (Rai and Gautam, 2018).

This is not only a preliterate language but also an undescribed language. The census 2011 shows that there are 129 speakers (CBS 2012). But the recent sociolinguistic survey of the Lungkhim language (Rai and Gautam, 2018) has exposed that there are no more than a dozen speakers.

The data for identifying the phonemes were gathered from the speakers from Suryadaya municipality -10, Ilam of Eastern Nepal. Also the focus group discussion was entertained to rectify the data collected.

2. The Vowel phonemes[2]

This section deals with the vowels and their description and distribution in Lungkhim.

2.1 Vowels

Vowels in Proto-Tibeto Burman [3] (henceforth, PTB) are made up of the five phonemes: /*a/, /*o/, /*u/, /*i/, /*e/ which appear both in medial and final postions (Bendict 1972:57-58).

Unlike PTB vowel phonemes, Lungkhim exhibits 6 vowels along with phonemic length contrast as in the other Kirati languages: Kulung (Tolsma, 1999:10), Dumi (van Driem, 1993:40), Limbu (van Driem, 1987: 11), Wambule (Opgenort, 2002: 97), Sunuwar–Kõits (Rapacha, 2005:57). Lungkhim possesses the mid back vowel /ʌ/ which is an Indospheric influence, especially Nepali as in Camling ~ Chamling (Ebert, 1997: 10; Rai, 2012:35); Chhathare Limbu (Tumbahang, 2011:30). Kirati languages like Athpare (Eberet, 1997:15) exhibits the five vowel phonemes as in PTB vowel phonemes. Unlike Lungkhim, the phoneme /i/ as in Bantawa (Doornenbal, 2009:17), a short unrounded high back *[ɯ],* a short high central and the phoneme /œ/, a short unrounded mid front vowel exist in Dumi (van Driem, 1991:40-59). In terms of the size, number of the vowels across the world, Lungkhim may be placed to as a large vowel inventory (6-14) language (Maddieson, 2008b).

In terms of vowel height, there are two high vowels: /i/ and /u,/ two mid vowels: /e/ and /o/

---

[2] With the exceptption of *a,* however, pure vowels in final position are rare, while combinations of vowel +w or y are characteristics of the system as a whole (Bendict 1972: 57-58).

[3] Himalayish Tibeto Burman languages like Chepang (Caughley 1982: 34), Bhujel (Regmi 2007: 69), and Kaike (Regmi 2013: 67) have the six-vowel system where the vowel length is not contrastive. This is an average vowel size in the world languages (Maddieson 2008).

and two low vowels /ʌ/ and /a/. The high and mid vowels contrast in terms of backness: high front vowel /i/ and high back vowel /u/ and mid front vowel /e/ and mid back vowels /o/ while the low vowel /a/ is central and /ʌ/ is back. Table 1 presents the oral vowels in Lungkhim.

Table 1: Inventory of the oral vowels

	Front - Round	Central	Back + Round
High	i		u
Mid	e		o
			ʌ
Low		a	

2. 2 Description and distribution of vowels

The Lungkhim vowels can be classified into three categories: (a) front vowels (b) central vowels and (c) back vowels. Table 2 presents the categories like front, central and back vowels.

Table 2: Description of oral vowels in Lungkhim

i	[i]	high, front, unrounded
e	[e]	mid, front, unrounded
a	[a]	low, central, unrounded
u	[u]	high, back, rounded
ʌ	[ʌ]	mid, back, unrounded
o	[o]	mid, back, rounded

a. Front vowels

Lungkhim has two front vowels: /i/ and /e/. They are realized in all positions: initial, medial and final. Minimal pairs of the front vowels are presented in (1).

(1)　/i/ versus /e/
　　/imma/　　'to sleep'
　　/emma/　　'to get up'

b. Central vowels

There is a central vowel /a/ in Lungkhim. This is found in initial, medial and final positions. This is unrounded. The minimal pairs of the central vowel are presented in (2).

(2)　/a / versus /ʌ/
　　/bʌkʌk /　　'walker'
　　/bakʌk /　　'dancer'

c. Back vowels

Lungkhim has three back vowels: /o/, /u/ and /ʌ/. These three vowels are found in all positions: initial, medial and final. /o/, /u/ round vowels. Minimal pairs of the rounded back vowels are presented in (3).

(3)　/o/ versus /u/
　　/oma/　　'to burn'
　　/uma/　　'to escort '

d. High vowels

There are two short high vowels /i/ and /u/ in Lungkhim. The phonological oppositions between the high vowels are illustrated in (4).

(4)　/i/ versus /u/
　　/sima/　　'to die'
　　/suma/　　'thinly'

e. Mid vowels

There are two short mid vowels /e/ and /o/. They are found in all positions: initial, medial and final as others in Lungkhim. Minimal pairs of these vowels are given in (5)

(5)　/e/ versus /o/
　　/temma/　　'to ask'
　　/tomma/　　'to cough'

Table 3 and 4 present the distribution of vowels in word initial, word medial and word final position in Lungkhim.

Table 3 shows that all the six vowels in the Lungkhim language occur word initially, word medially, and word finally. Further, Table 4 shows the positional distribution along with the examples.

Table 3: Distribution of the oral vowels in Lungkhim

Oral vowels	Word initial	Word medial	Word final
i	+	+	+
e	+	+	+
a	+	+	+
ʌ	+	+	+
o	+	+	+
u	+	+	+

Table 4: Distribution of oral vowels with examples

Vowels	Word initial	Word medial	Word fimal
i	/imama/ 'to sleep'	/sima/ 'to die'	/ki/ 'louse'
e	/emma/ 'to stand up'	/eteŋa/ 'to be similar'	/tsʰebe/ 'property'
a	/apa/ 'father'	/umkada/ 'to be quite'	/ŋa/ 'fish'
ʌ	/ʌna/ 'you'	/kʌkma/ 'to stire'	/dʌkʌ/ 'root'
o	/okma/ 'to nail'	/kotsuma/ 'dog'	/kʰeʔtapo/ 'past'
u	/umma/ 'to lay out'	/kʰʌtsuma/ 'fly'	/kʰu/ 'yam'

3. Consonants

Tibeto-Burman (TB) consists of 16 proto-initial consonants: * /g/, /k/, /ŋ/, /d/, /t/, /n/, /s/, /z/, /r/, /l/, /b/, /p/, /m/, /r/, /w/, /y/ (Benedict, 1972:13) and some more added in the array of initial consonants reconstructed in (Matisoff, 2003:15). Many factors have been involved in the proliferation of manner contrast in the Tibeto-Burman languages. One is clearly areal contact.

Matisoff (2003) notes that many Himalayish languages of Nepal (*e.g.* including, Chamling, Chepang, Dumi, Khaling, Kulung, Limbu, Newar and Thulung) have developed a series of voiced aspirates due to indospheric influence, first confined to borrowings from Indo-Aryan, but now occurring in native TB vocabulary items as well.

In terms of the number of consonants across the languages of the world, Lungkhim may be categorized as moderately large (23-33) language (Maddieson, 2008a).

This language has a glottal stop as in Kulung (Tolsma, 1999:14), Dumi (van Driem, 1993:49), Chhathare Limbu (Tumbahang, 2011:38); Yamphu (Rutgers, 1998:13). Wambule (Opgenort, 2002:74-75), Bantawa (Doornenbal, 2009:32). Kõits-Sunuwar (Rapacha, 2005:69), Athpare (Ebert, 1997:15) and Koyee (2015).

3.1 Phonemic inventory of consonants

The consonants of the Lungkhim language are described in terms of place of articulation, manner of articulation, aspiration and voicing. Table 5 presents the inventory of the Lungkhim consonants.

Table 5 shows that Lungkhim has 23 consonants[4]. They show four-way contrasts or oppositions: place of articulation, manner of articulation, voicing and aspiration. According to place of articulation, there exist six types of consonant phonemes. They are bilabial, dental, alveolar, palatal, velar and glottal. On the basis of manner of articulation, there are seven types of consonants. They are stops, nasals, affricates, fricatives, trills, laterals and approximants.

Table 5: Inventory of the Lungkhim consonants

Manners of articulation	Places of articulation					
	Bilabial	Dental	Alveolar	Palatal	Velar	Glottal
Stops: Voiceless, unaspirated Voiceless, aspirated Voiced, unaspirated Voiced, aspirated	p pʰ b (bʰ)	t tʰ d dʰ			k kʰ g	ʔ
Nasal: Voiced, unaspirated	m		n		ŋ	
Affricate: Voiceless, unaspirated Voiceless, aspirated Voiced, unaspirated Voiced, aspirated			ts tsʰ dz (dzʰ)			
Fricative:			s			ɦ
Trill: Voiced, unaspirated			r			
Lateral: Voiced, unaspirated			l			
Approximants: Voiced, unaspirated	w			j		

---

[4]There is not found the minimal pairs for the phoneme /bʰ/ and /dzʰ/.

3.2 Description and distribution of consonants

i) Stops

Lungkhim has 11 stops. They have a symmetrical arrangement of aspirated (voiceless aspirated and voiced aspirated) and unaspirated stops. There are four types of stops in the Lungkhim language. They are bilabial, dental, velar and glottal stops.

a) Bilabial stops

Bilabial consonants are those that are produced by a combined movement of both lips in their articulation, the two lips closely approach or touch each other. There are phonologically distinctive bilabial sops in Lungkhim: /p/, /pʰ/, and /b/.But there is not found the minimal pair of /bʰ/.

In the production of each one of them the soft palate is raised and the nasal resonator is shut off. Lung air is compressed behind this closure, during which stage the vocal cords are held wide apart for /p/ and /pʰ/, but they vibrate for all or part of the compression stage for /b/ and /bʰ/ according to their situation in the utterance as in (6).

(6) /p/   pakʌk   'to get tired of'
     /pʰ/   pʰakʌk   'qurrellor'
     /b/   bakʌk   'to give'

b) Dental stops

There are four phonologically distinctive dental stops in Lungkhim: /t/, /tʰ/, /d/ and /dʰ / as in (7).

(7) /t /   temma   'to ask'
     /tʰ/   tʰemma   'to lift out'
     /d /   dupkak   'getting ripen'
     /dʰ/   dʰupkak   'killing by penetrating'

d) Velar stops

There are only three phonologically distinctive velar stops: /k/, /kʰ/ and /g/. But the minimal pair of /bʰ/ was not found.

e) Glottal stop

There is a glottal stop /ʔ/. In the articulation of this stop, the velum is raised and the nasal resonator is shut off, the primary obstruction to the airstream is formed by vocal folds coming tightly together.

(8) /k/   ki   'louse'
     /kʰ/   kʰi   'how disgusting'
     /g/   gi   'cow'
     /ʔ/   aʔwa   'oil'
             awa   'species'

Table 6 presents the distributions of the stops in word initial, intervocalic and word final position.

Table 6: Distributions of stops

	(# -)	(V–V)	(- #)
/p/	+	+	+
/pʰ/	+	+	-
/b/	+	+	-
/t/	+	+	-
/tʰ/	+	-	-
/d/	+	+	-
/dʰ/	+	+	-
/k/	+	+	+
/kʰ/	+	-	-
/g/	+	-	-
/ʔ/	-	+	-

Table 7 presents the examples of the positional distribution of the stop consonants in the Lungkhim language.

Table 7: Distributions of stops with examples

	Word initial (# -)	Intervocalic (V - V)	Word final (- #)
/p/	pitaŋ 'horn'	nepma 'feel shy'	sup 'skin'
/pʰ/	pʰʌkma'to depart'	pʰempʰelek 'beaten rice'	-----------
/b/	bʌk 'pig'	buŋbetma'to play with flower'	-----------
/t/	topma'touch'	tatotseŋ 'cheap'	-----------
/tʰ/	tʰemma 'to take off'	-----------	-----------
/d/	di ' liquor'	tsʰadima'mother-in-law'	-----------
/dʰ/	dʰemma'to fall'	-----------	-----------
/k/	kima'to get fear'	kʰukaktuma 'to cheat'	ɦuk 'hand'
/kʰ/	kʰʌŋma'to see'	-----------	-----------
/g/	gi'cow'	-----------	-----------
/ʔ/	-------------	aʔwa'oil'	

ii) Nasals

In Lungkhim, there are three phonologically distinctive nasal consonants: /m/, /n/ and /ŋ/. All three nasals appear in word initial, intervocalic and word final positions. In comparison to the nasals /m/ and /n/, the phoneme /ŋ/ is

comparatively rare at initial position. They are given below along with the minimal pairs (9).

(9) /ŋ/   laŋ   'fed up'
     /m/   lam   'finished'
     /ŋ/   mipma   'to recall'
     /ŋ/   ŋipma   'to cook'
     /ŋ/   ŋama   'lost'
     /m/   nama   'long'

iii) Affricates

There are three alveolar affricates: /ts/, /tsʰ/, and /dz/. Their phonological contrasts are given below as in (10).

(10) /ts/   tsama   'to eat'
     /tsʰ/   tsʰama   'to dance'
     /tsʰ/   tsoma   'to feed'
     /dz/   dzoma   'to sit randomly'

iv) Fricatives

Like other Tibeto Burman languages, Lungkhim has a few fricatives. They are: /s/, /ħ/. They show the phonological oppositions in the following pairs (11).

(11) /s/   sima   'to die'
     /ħ/   ħima   'to live'

v) Liquids

The lateral and trill in Lungkhim can be seen in the examples (12).

(12) /r/   rima   'to get dizzy'
      /l/   lima   'to take'

As can be seen in the example, there is only one trill /r/ and a lateral /l/. Moreover, the trills and laterals may be referred to as liquids.

vi) Approximants

There are two approximants in Lungkhim. They are: /w/, /j/ as in (13).

(13) /j/   jajama   'to ' cock'
      /w/   wwama   'to hen'

Table 8 presents the distributions of consonants (fricatives, affricates, nasals, laterals and liquids) in Lungkhim.

Table 8: Distributions of consonants (fricatives, affricates, nasals, and liquids)

	(# -)	(V - V)	(- #)
/ts/	+	+	-
/tsʰ/	+	+	-
/dz/	+	+	-
/r/	+	+	-
/l/	+	+	-
/m/	+	+	-
/n/	+	+	+
/ŋ/	+	+	+
/s/	+	+	-
/ħ/	+	+	-
/j/	+	+	-
/w/	+	+	-

Table 9: Distribution of consonants (fricatives, affricates, nasals, laterals and liquids) with examples

	Word initial (#-)	Intervocalic (v-v)	Word final (-#)
/ts/	tsukma 'to stop'	litsika 'four'	--------
/tsʰ/	tsʰʌpma 'to write'	tokmatsʰuŋmao 'to hope'	---------
/dz/	dzemmu 'to carry out'	--------	-------
/r/	raktukma 'get tired'	lʌtsʰera 'star'	---------
/l/	lʌkma 'to fill up'	lamlobaka 'fast'	----------
/m/	mubu 'stomach'	lumu 'lever'	----------
/n/	nakma 'to crawl'	senduma 'nail'	len 'day'
/ŋ/	ŋa 'fish'	ħaŋma 'queen'	haŋ 'king'
/s/	soŋma 'to move'	susa 'fruit'	----------
/ħ/	ħoma 'fat'	waħaŋma 'river'	----------
/j/	jema 'cold'	sja 'rice'	-----------
/w/	wapmu 'grab'	sãwa 'bufallo'	-----------

Table 9 presents distribution of consonants (fricatives, affricates, nasals, laterals and liquids) with examples in Lungkhim.

Most of the consonant phonemes occur in the word-initial position except the glottal stop /ʔ/. The consonants /p/, /pʰ/, /b/, /m/, /n/, /ŋ/ and /s/ occur in word initial, inter-vocalic and word final position. The segments /p/, /pʰ/, /b/, /t/, /tʰ/, /d/ /dʰ/, /k/, /kʰ/, /g/, /m/, /n/, /ŋ/, /ts/, /tsʰ/, /dz/, /s/, /ɦ/, /r/, and /l/ occur in the initial and intervocalic positions in Lungkhim.

4. Summary

Lungkhim is ever fast vanishing language since the speakers are less than a dozen. This language consists of 29 phonemes out of which there are 6 vowels and 23 consonants. The consonants show four-way contrasts or oppositions: place of articulation, manner of articulation, voicing and aspiration. According to place of articulation, there exist six types of consonant sounds. They are bilabial, dental, alveolar, palatal, velar and glottal. On the basis of manner of articulation, there are seven types of consonants in Lungkhim. They are stops, nasals, affricates, fricatives, trills, laterals and approximants.

References

Benedict, Paul. 1972. *Sino-Tibetan: A Conspectus*. Cambridge: Cambridge University Press.

Caughley, Ross C. 1982. *The Syntax and Morphology of the Verb in Chepang*. Canberra: The Australian National University.

Central Bureau of Statistics. 2012. *National Population and Housing Census 2011: National Report.* Kathmandu: Central Bureau of Statistics.

Doornenbal, Marius. 2009. *A Grammar of Bantawa.* The Netherlands: LOT.

Ebert, Karen H. 1994. *The Structures of Kiranti Languages.* Zurich: ASSAS.

Ebert, Karen H. 1997a. *Camling*. Munchen: LINCOM EUROPA.

Ebert, Karen H. 1997b. *A Grammar of Athpare*. Munchen: LINCOM EUROPA.

Maddieson, Ian. 2008b. "Vowel Quality Inventories". In Martin Haspelmath, Matthew S. Dryer, David Gil and Bernard Comrie. eds. 2-4.

Maddieson, Ian. 2008a. "Consonant Inventories". In Martin Haspelmath, Matthew S. Dryer, David Gil and Bernard Comrie. eds. 5-8.

Matisoff, James A. 2003. *Handbook of Proto Tibeto-Burman: System and Philosophy of Sino-Tibetan Reconstruction*. Berkeley: University of California Press.

Opgenort, Jean R. 2004. *A Grammar of Wambule.* Leiden, Boston: Brill.

Opgenort, Jean R. 2005. *A Grammar of Jero.* Leiden, Boston: Brill.

Rapacha, Lal Shyãkarelu. 2005. *A Descriptive Grammar of Kiranti-Kõits*. A PhD Dissertation, Jawaharlal Nehru University, New Delhi.

Rai, Tara M. 2015. *A Grammar of Koyee*. A PhD Dissertation, Tribhuvan University.

Rai, Tara M. and Bhim Lal Gautam. 2018. Lunghimbhasakosamajbhasabaigyanikadhyayn [A sociolinguistic survey of the Lungkhim Language]. A Report: Language Commission.

Regmi, Dan Raj. 2007. *The Bhujel Language.* A PhD Dissertation, Tribhuvan University.

Rutgers, Roland.1998. *Yamphu: Grammar, text and lexicon.* Leiden, The Netherlands: Research school CNWS.

Tolsma, Gerard Jacobus. 1999. *A Grammar of Kulung*. A PhD Dissertation, Universität, Leiden.

Tumbahang, Govinda Bahadur. 2007. *A Descriptive Study of Chhathare Limbu*. A PhD Dissertation, Tribhuvan University.

van Driem, G. 1993. *A Grammar of Limbu*. Berlin: Moutn de Gruter.

van Driem, G. 2003. *A Grammar of Limbu*. Berlin: Moutn de Gruter.