

# Consonant Systems of Chiru and Dukpa: A Case Study

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## Abstract

Chiru is a language spoken by the Chiru people, one of the tribal communities of the state of Manipur. It has been recognized by the Government of India as scheduled tribe in 1957. The total population of Chiru is 8599 according to 2011 Census Report. This language has the genetic features of Tibeto-Burman. It has SOV word order and pronominal marking on verb. In Chiru, nineteen consonantal phonemes are seen. Out of these, four are voiceless unaspirated and three are aspirated plosives. The language has two voiced unaspirated plosives, three nasals, four fricatives, two approximants and one lateral approximant. Dukpa people are mainly inhabited in the Buxa Tiger Reserve Hills of Alipurduar district of West Bengal, and Dukpa is the language spoken by them. The language belongs to Tibeto-Burman language family. The term Dukpa is derived from the Tibetan word, 'Drugpa', which denotes the combined interpretation of 'Drug' means 'dragon' and 'pa' means 'resident'. According to the 2011 Census conducted for Kalchini Block, the total population of Dukpa is 1951. In Dukpa, twenty-three consonant phonemes can be established. In this paper, the consonant systems of Chiru and Dukpa will be discussed in detail.

**Keywords:** Consonant system, Clusters, Consonant combinations.

## 1. INTRODUCTION

Chiru and Dukpa languages belong to Tibeto-Burman language family. Chiru belongs to the Kuki-Chin group of TB language family (G.A. Grierson 1904). Chiru has SOV word order and pronominal marking on verb. Different word classes are formed by the affixation. The Chiru people settle scattered in different parts of Manipur state. Dukpa belongs to Central Bodish group of languages (Bradley, 1997). Dukpa people found settle mainly in the Buxa Tiger Reserve hills of Alipurduar district of West Bengal. Both Dukpa and Chiru languages have Tibeto-Burman language features, which includes SOV word order, agglutinative verb morphology and phonemic tone.

## 2. Objectives

The main objectives of the paper are:

- a. To study the consonant systems of Dukpa and Chiru.
- b. To analyse the consonantal combinations in both the languages.

## 3. Methodology

The data collection for Chiru was mainly done at *Waithou Chiru* of Imphal East district, Manipur. For

the purpose, informants of different age groups were chosen and data was collected. A list of vocabularies which includes the list of household articles, kinship terms and frequently used words were prepared in English as well as in Manipuri. For collecting data, electronic gadgets were used. The interview method was also applied for data collection.

The field work for Dukpa was carried out in the *Buxa Hill forest area* of Alipurduar District where Dukpa inhabitants are feasible. The data was procured from the different villages of Buxa hill forest. The *Chunabhati* and *Lepchakha* were the main areas of data collection. A self-made questionnaire of Hindi/Bengali and English and Dukpa equivalent were created. The data is collected as a primary source where native speakers are directly involved either individually or through group conversation. The data has been recorded with the help of *Dell laptop* and *Samsung S20* hand set for the purpose of quality sounds from both sexes i.e., male and female for detail analysis.

#### 4. Discussion and analysis

In Chiru, nineteen consonantal phonemes are seen. They are /p, b, t, d, c, k, p<sup>h</sup>, t<sup>h</sup>, k<sup>h</sup>, m, n, ŋ, v, s, z, h, w, r, l/. It has four voiceless unaspirated and three aspirated plosives, i.e., /p, t, c, k/ and /p<sup>h</sup>, t<sup>h</sup>, k<sup>h</sup>/ respectively. No aspirated voiced plosives are seen in this language. The language has two voiced unaspirated plosives, i.e., /b, d/, three nasals /m, n, ŋ/, four fricatives /v, s, z, h/, two approximants /w, r/ and one lateral approximant /l/. It may be observed that, the plosives /p, t, k/ have contrast between the aspirated and unaspirated; however not in case of other plosives. Also, the voiceless velar plosive /k/ does not have its contrastive voiced phoneme. In case of Dukpa, twenty-three consonant phonemes can be established i.e., /p, p<sup>h</sup>, b, t, t<sup>h</sup>, d, c, c<sup>h</sup>, k, k<sup>h</sup>, g, m, n, ŋ, s, z, ʃ, h, r, l, w and y/. Consonants in the language can be classified in terms of place of articulations (bilabial, alveolar, post-alveolar, palatal, velar, and glottal) and the same phonemes can further be categorized into manner of articulations such as stop, nasals, fricatives, lateral, trill and semi-vowels. Dukpa has four voiceless unaspirated and four aspirated stops like /p, t, c, k/ and /p<sup>h</sup>, t<sup>h</sup>, c<sup>h</sup>, k<sup>h</sup>/. It has also three voiced unaspirated stops i.e., /b, d, and g/ whereas no aspirated voiced stops are noticed in the language. Dukpa has four basic nasals /m, n, ŋ and η/, four fricatives, i.e., /s, z, ʃ and h/. The voiced alveolar fricative /z/ is very frequent in the language whereas post-alveolar fricative /ʃ/ is also noticed. The other consonantal phonemes in the language are lateral and trill phonemes /l/ and /r/. Besides the above phonemes two more semi-vowels /w/ and /y/ are also existed in the language. The following Table 1 and Table 2 show the consonant charts in Chiru and Dukpa respectively.

**Table 1: Consonant chart of Chiru**

Manner of Articulation		Place of Articulation											
		Bilabial		Labio-dental		Alveolar		Palatal		Velar		Glottal	
		vl	vd	vl	vd	vl	vd	vl	vd	vl	vd	vl	vd
Plosives	Un-asp.	p	b			t	d	c		k			
	Asp.	p <sup>h</sup>				t <sup>h</sup>				k <sup>h</sup>			
Nasals			m				n				ŋ		
Fricatives					v	s	z					h	
Approximants			w				r						
Lateral Approximants							l						

**Table 2: Consonant chart of Dukpa**

Manner of Articulation		Place of Articulation											
		Bilabial		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
		vl	vd	vl	vd	vl	vd	vl	vd	vl	vd	vl	vd
Stops	Un-asp.	p	b	t	d			c		k	g		
	Asp.	p <sup>h</sup>		t <sup>h</sup>				c <sup>h</sup>		k <sup>h</sup>			
Fricatives				s	z	ʃ							h
Nasals			m		n				ɲ		ŋ		
Lateral					l								
Trill					r								
Semi-Vowel			w						y				

**5. Consonants minimal pair contrasts**

All the consonant phonemes have been established on the basis of the following contrasting pairs.

Chiru			Dukpa		
/p/ vs /b/	/pu/	‘grandfather’	/p/ vs /b/	/pì/	‘to torn’
	/bu/	‘rice’		/bì/	‘root out’
/b/ vs /k/	/ba/	‘bird’	/p/ vs /p <sup>h</sup> /	/pá/	‘cut into pieces’
	/ka/	‘tree’		/p <sup>h</sup> á/	‘far’
/c/ vs /s/	/ca/	‘little/small’	/t/ vs /d/	/tá/	‘horse’
	/sa/	‘animal’		/dá/	‘arrow’
/r/ vs /k <sup>h</sup> /	/ro/	‘bamboo’	/t/ vs /t <sup>h</sup> /	/tá/	‘horse’
	/k <sup>h</sup> o/	‘village’		/t <sup>h</sup> á/	‘blood’
/t/ vs /t <sup>h</sup> /	/tuk/	‘to cut’	/k/ vs /g/	/ká/	‘wheat’
	/t <sup>h</sup> uk/	‘deep’		/gá/	‘who’
/n/ vs /t <sup>h</sup> /	/nem/	‘cheap’	/k/ vs /k <sup>h</sup> /	/ká/	‘wheat’
	/t <sup>h</sup> em/	‘cane’		/k <sup>h</sup> á/	‘mouth’
/s/ vs /z/	/san/	‘to help’	/c/ vs /c <sup>h</sup> /	/cú/	‘ten’
	/zan/	‘night’		/c <sup>h</sup> ú/	‘water’
/n/ vs /m/	/mai/	‘pumpkin’	/m/ vs /n/	/má/	‘butter’
	/nai/	‘baby’		/ná/	‘feeling ill’
/n/ vs /b/	/nu/	‘mother’	/n/ vs /ŋ/	/ná/	‘sick’
	/bu/	‘rice’		/ŋá/	‘five’
/n/ vs /ŋ/	/noi/	‘below’	/n/ vs /ɲ/	/nám/	‘sky’
	/ŋoi/	‘white’		/ɲám/	‘shield’
/t/ vs /d/	/teŋ/	‘towards’	/s/ vs /ʃ/	/sá/	‘mud’
	/deŋ/	‘to’		/fá/	‘meat’
/k/ vs /k <sup>h</sup> /	/ko/	‘nine’	/s/ vs /h/	/sò/	‘soil’
	/k <sup>h</sup> o/	‘village’		/hò/	‘deer noise’
/v/ vs /z/	/vok/	‘pig’	/l/ vs /r/	/lá/	‘god’
	/zok/	‘to rear’		/rá/	‘goat’
/p/ vs /p <sup>h</sup> /	/pu/	‘grandfather’	/w/ vs /y/	/wáp/	‘black’

	/p <sup>h</sup> u/	‘roof’		/yáp/	‘right’
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### 6. Distribution of Chiru and Dukpa Consonants

On the basis of above minimal pairs of Chiru and Dukpa languages, the consonant phonemes have been established. All the nineteen consonant phonemes of Chiru and the twenty-three consonant phonemes of Dukpa occur in the word initial and medial position in the respective languages. The occurrence of all the consonantal phonemes of Chiru, i.e., /p, b, t, d, c, k, p<sup>h</sup>, t<sup>h</sup>, k<sup>h</sup>, m, n, ŋ, v, s, z, h, w, r, l/ and all the consonantal phonemes of Dukpa, i.e., /p, p<sup>h</sup>, b, t, t<sup>h</sup>, d, c, c<sup>h</sup>, k, k<sup>h</sup>, g, m, n, ɲ, s, z, ʃ, h, r, l, w and y/ in the word initial and medial position may be considered as one of the typological features of Tibeto-Burman languages. Both Chiru and Dukpa being languages of the same family share the same feature. The distribution of Chiru and Dukpa consonant phonemes are discussed as below.

**/p/ can occur in the initial, medial and final positions of the word.**

	Chiru		Dukpa	
Initial	/pon/	‘cloth’	Initial	/pèp/ ‘leech’
	/ponleder/	‘dress’		/pámsì/ ‘snail’
Medial	/r↔pak/	‘flat’	Medial	/lámpo/ ‘bull’
	/uipui /	‘female dog’		/lápki/ ‘elbow’

**/p<sup>h</sup>/ can occur only in the initial and medial positions of the word.**

	Chiru		Dukpa	
Initial	/phainim/	‘maize’	Initial	/p <sup>h</sup> úni/ ‘to wipe off’
	/p <sup>h</sup> uŋ/	‘clan’		/p <sup>h</sup> izu/ ‘opposite’
Medial	/ponp <sup>h</sup> a/	‘bed sheet’	Medial	/lap <sup>h</sup> ù/ ‘radish’
	/saŋphai/	‘banana flower’		/kep <sup>h</sup> á/ ‘waist’

**/b/ can occur only in the initial and medial positions of the word.**

	Chiru		Dukpa	
Initial	/b↔rcoŋpi/	‘sparrow’	Initial	/bóm/ ‘big’
	/beri/	‘cigarette’		/bòlo/ ‘near’
Medial	/↔bak/	‘bat’	Medial	/leblè/ ‘flat’
	/simbu/	‘owl’		/gásibè/ ‘why’

**/t/ can occur in the initial, medial and final positions of the word in Chiru; whereas in Dukpa it is occur only in initial and medial positions of the word.**

	Chiru		Dukpa	
Initial	/tilo/	‘onion’	Initial	/tabsá/ ‘kitchen’
	/tiŋku/	‘ginger’		/taŋkú/ ‘smoke’
Medial	/b↔tok/	‘duck’	Medial	/k <sup>h</sup> atí/ ‘chair’
	/hutcoi/	‘gift’		/tutámi/ ‘boatman’
Final	/serat/	‘cow’	Final	-- --
	/r↔bot/	‘leech’		-- --

**/t<sup>h</sup>/ can occur only in the initial and medial positions of the word.**

Chiru		Dukpa		
Initial	/t <sup>h</sup> ↔ihai/	‘mango’	Initial /t <sup>h</sup> á/	‘blood’
	/t <sup>h</sup> ep/	‘fold’	/t <sup>h</sup> etá/	‘stick’
Medial	/b↔t <sup>h</sup> ↔pi/	‘papaya’	Medial /ment <sup>h</sup> ó/	‘flower’
	/at <sup>h</sup> uk/	‘deep’	/gòt <sup>h</sup> al/	‘ash’

**/d/ can occur only in the initial and medial positions of the word.**

Chiru		Dukpa		
Initial	/d↔rak <sup>h</sup> a/	‘grape’	Initial /dólom/	‘brinjal’
	/derk <sup>h</sup> opnek/	‘belt’	/dimì/	‘key’
Medial	/↔dum/	‘sky-blue’	Medial /kánđu/	‘anklet’
	/edi/	‘two’	/sadìn/	‘mat’

**/c/ occurs initially and medially in the word.**

Chiru		Dukpa		
Initial	/c↔mpra/	‘lemon’	Initial /cet <sup>h</sup> án/	‘desert’
	/cem/	‘dagger’	/cì/	‘one’
Medial	/b↔rconpi/	‘sparrow’	Medial /òmcu/	‘pond’
	/ricat/	‘cockroach’	/ṅàce /	‘we’

**/c<sup>h</sup>/ occurs initially and medially in the word, in Dukpa; however the phoneme is not present in Chiru language.**

Chiru		Dukpa		
Initial	-- --	Initial	c <sup>h</sup> ú	‘water’
	-- --		c <sup>h</sup> ádin	‘mat’
Medial	-- --	Medial	c <sup>h</sup> áp <sup>h</sup> a	‘urine’
	-- --		rimc <sup>h</sup> è	‘bug’

**/k/ can occur in the initial, medial and final positions of the word.**

Chiru		Dukpa		
Initial	/k↔i/	‘I’	Initial /kúto/	‘basket’
	/k↔poi/	‘pomegranate’	/kèrni/	‘to boil’
Medial	/rekmes↔i/	‘chilly’	Medial /saṅká/	‘beggar’
	/tiNku/	‘ginger’	/t <sup>h</sup> uṅkú/	‘short’
Final	/rik/	‘lice’	Final /lók/	‘return’
	/m↔t <sup>h</sup> ↔k/	‘itch’	/tók/	‘win’

**/g/ occurs initially and medially in the word, in Dukpa; however the phoneme is not present in Chiru language.**

Chiru		Dukpa		
Initial	-- --	Initial	/gì/	‘knife’

--	--	/goròm/	‘sugar’
Medial	--	Medial /apegutó/	‘papaya’
--	--	/sagá/	‘ginger’

**/k<sup>h</sup>/ occurs initially and medially in the word.**

Chiru		Dukpa		
Initial	/k <sup>h</sup> aileN/	‘cradle’	Initial /k <sup>h</sup> i/	‘ice’
	/k <sup>h</sup> ainom/	‘spider’	/k <sup>h</sup> ám/	‘leg’
Medial	/nik <sup>h</sup> o/	‘day’	Medial /dùk <sup>h</sup> e/	‘thunder’
	/kek <sup>h</sup> or/	‘handicap’	/mèŋk <sup>h</sup> aŋ/	‘hospital’

**/m/ can occur in the initial, medial and final positions of the word.**

Chiru		Dukpa		
Initial	/me/	‘meat’	Initial /mò/	‘she’
	/motoi/	‘python’	/má/	‘butter’
Medial	/k↔minton/	‘guava’	Medial /hemà/	‘before’
	/t↔mpui/	‘plenty’	/nàmdi/	‘season’
Final	/↔nc↔m/	‘mustard’	Final /nìm/	‘sky’
	/khainom/	‘spider’	/sáim/	‘earthquake’

**/n/ can occur in the initial, medial and final positions of the word.**

Chiru		Dukpa		
Initial	/nu/	‘mother’	Initial /napá/	‘nose’
	/n↔N/	‘mother’	/nip/	‘old’
Medial	/m↔nta/	‘brinjal’	Medial /gìntu/	‘ember’
	/munui/	‘to smile’	/hani/	‘jackal’
Final	/kik <sup>h</sup> in/	‘half pant’	Final /mámin/	‘ointment’
	/muzun/	‘urine’	/bùsin/	‘fuel’

**/p/ occurs initially and medially in the word, in Dukpa; however the phoneme is not present in Chiru language.**

Chiru		Dukpa		
Initial	--	Initial	/ɲiú/	‘honey’
	--		/ɲiu/	‘pock’
Medial	--	Medial	/naɲi/	‘to peel’
	--		/neɲi/	‘to prick’

**/ŋ/ can occur in the initial, medial and final positions of the word.**

Chiru		Dukpa		
Initial	/Na/	‘fish’	Initial /ŋà/	‘I’
	/Nai/	‘mother’	/ŋáŋla/	‘banana’
Medial	/aNoi/	‘white’	Medial /tuŋkár/	‘conch’

	/ziŋa/	‘tomorrow’		/t <sup>h</sup> úŋku/	‘short’
Final	/rimiN/	‘name’	Final	/pláŋ/	‘bat’
	/k <sup>h</sup> eN/	‘plate’		/t <sup>h</sup> àŋ/	‘ground’

**/s/ occurs initially and medially in the word.**

	<b>Chiru</b>			<b>Dukpa</b>	
Initial	/saki/	‘deer’	Initial	/sá/	‘clay’
	/sekor/	‘horse’		/sìlpa/	‘dew’
Medial	/makotsin/	‘window’	Medial	/namsì/	‘weather’
	/nisun/	‘afternoon’		/t <sup>h</sup> úsam/	‘joint’

**/z/ occurs initially and medially in the word.**

	<b>Chiru</b>			<b>Dukpa</b>	
Initial	/ziNa/	‘tomorrow’	Initial	/za/	‘tea’
	/zu/	‘liquor’		/zèm/	‘sand’
Medial	/muzu/	‘rat’	Medial	/kuzù/	‘cuckoo’
	/mazan/	‘yesterday’		/kabzá/	‘hinge’

**/ʃ/ occurs initially and medially in the word, in Dukpa; however the phoneme is not present in Chiru language.**

	<b>Chiru</b>			<b>Dukpa</b>	
Initial	-- --		Initial	/ʃi/	‘louse’
	-- --			/ʃozóni/	‘cholera’
Medial	-- --		Medial	/nùʃa/	‘beef’
	-- --			/nuʃiŋ/	‘plant’

**/h/ occurs initially and medially in the word.**

	<b>Chiru</b>			<b>Dukpa</b>	
Initial	/ha/	‘teeth’	Initial	/hòta/	‘raw’
	/hai/	‘glass’		/hup/	‘sip’
Medial	/uit↔hop/	‘swim’	Medial	/mahì/	‘buffalo’
	/ruhui/	‘whistle’		/zahá/	‘paddy’

**/l/ can occur in the initial, medial and final positions of the word.**

	<b>Chiru</b>			<b>Dukpa</b>	
Initial	/lam/	‘dance’	Initial	/lò/	‘year’
	/loi/	‘field’		/lám/	‘road’
Medial	/muluN/	‘heart’	Medial	/olá/	‘crow’
	/k <sup>h</sup> ailiN/	‘ant’		/zili/	‘cat’
Final	/miNsel/	‘mirror’	Final	/got <sup>h</sup> ál/	‘ash’
	/p <sup>h</sup> el/	‘fail’		/naŋsèl/	‘forest’

**/r/ can occur in the initial, medial and final positions of the word.**

Chiru			Dukpa		
Initial	/rek/	‘throat’	Initial	/rì/	‘hill’
	/ricat/	‘bed bug’		/rá/	‘goat’
Medial	/↔r↔ki/	‘horn’	Medial	/ŋeró/	‘relatives’
	/s↔r↔/	‘poor’		/kakrú/	‘pumpkin’
Final	/k <sup>h</sup> aisor/	‘grasshopper’	Final	/zukár/	‘planet’
	/n↔kor/	‘ear’		/t <sup>h</sup> ár/	‘flag’

**/w/ occurs initially, medially and finally in the word, in Dukpa; whereas the phoneme can occur only in the initial and final positions in Chiru language.**

Chiru			Dukpa		
Initial	/waip <sup>h</sup> in/	‘dust’	Initial	/wáŋzu/	‘blouse’
	/warikte/	‘sparrow’		/waŋ/	‘blessing’
Medial	/s↔wai/	‘husk’	Medial	/nawá/	‘tomorrow’
	/h↔wai/	‘bean’		/kewá/	‘potato’
Final	--	--	Final	/zòw/	‘sickle’
	--	--		/gáw/	‘amulet’

**/v/ occurs initially and medially in the word, in Chiru; however the phoneme is not found in Dukpa language.**

Chiru			Dukpa		
Initial	/vak/	‘crow’	Initial	--	--
	/vun/	‘skin’		--	--
Medial	/iva/	‘to swallow’	Medial	--	--
	/avi/	‘to hide’		--	--

**/y/ occurs in the word initial and medial positions in Dukpa; however the phoneme is not found in Chiru language.**

Chiru			Dukpa		
Initial	--	--	Initial	/yáwa/	‘itch’
	--	--		/yarnì/	‘to scratch’
Medial	--	--	Medial	/tatoyáiaŋ/	‘till’
	--	--		/hèyop/	‘to nurse’

**The following table shows the distribution of consonants in all three positions of the word.**

**Table 3: Distribution of Chiru and Dukpa consonantal phonemes**

Chiru				Dukpa			
Phoneme	Initial	Medial	Final	Phoneme	Initial	Medial	Final
/p/	+	+	+	/p/	+	+	+
/b/	+	+	-	/b/	+	+	-

/p <sup>h</sup> /	+	+	-	/p <sup>h</sup> /	+	+	-
/t/	+	+	+	/t/	+	+	-
/t <sup>h</sup> /	+	+	-	/d/	+	+	-
/d/	+	+	-	/t <sup>h</sup> /	+	+	-
/c/	+	+	-	/c/	+	+	-
/k/	+	+	+	/c <sup>h</sup> /	+	+	-
/k <sup>h</sup> /	+	+	-	/k/	+	+	+
/m/	+	+	+	/g/	+	+	-
/n/	+	+	+	/k <sup>h</sup> /	+	+	-
/ŋ/	+	+	+	/m/	+	+	+
/s/	+	+	-	/n/	+	+	+
/h/	+	+	-	/ɲ/	+	+	-
/z/	+	+	-	/ŋ/	+	+	+
/v/	+	+	-	/s/	+	+	+
/r/	+	+	+	/z/	+	+	-
/l/	+	+	+	/ʃ/	+	+	-
/w/	+	+	-	/h/	+	+	-
				/r/	+	+	+
				/l/	+	+	+
				/w/	+	+	+
				/y/	+	+	+

### 7. Consonant Combinations

The consonant combinations in these two languages can be discussed in two types, i.e., (i) consonant cluster and (ii) consonant sequence. Chiru and Dukpa have initial and medial consonant clusters which occur within the syllable boundary; however no final cluster is noticed in the languages. The occurrence of medial clusters in the languages is very rare. In Chiru, most of the consonant clusters are in loan or borrowed words. They are discussed below.

#### 7.1. Consonant Clusters

	Chiru		Dukpa	
Initial	/kwa/	‘areca nut’	Initial	/pláŋ/ ‘bat’
	/klas/	‘class’		/trèn/ ‘train’
Medial	/kekokrui/	‘lace’	Medial	/záple/ ‘behind’
	/c↔wkri/	‘chair’		/kabrè/ ‘sometimes’

#### 7.2. Consonant Sequences

	Chiru		Dukpa	
-pp-	/↔r↔pa/	‘thin’	-dd-	/sud.dò/ ‘pebble’
-tp-	/k <sup>h</sup> ut.pui/	‘thumb’	-mm-	/lam.méndá/ ‘tomato’
-ns-	/muzun.sok/	‘to pass urine’	-nn-	/dún.ne/ ‘small pox’
-Nk-	/k <sup>h</sup> N.k↔m/	‘tumbler’	-pt-	/hap.tá/ ‘week’

-mb-	/r↔m.b↔tok/	‘wild duck’	-pk-	/gop.kàp/	‘garlic’
-ms-	/r↔m.s↔i/	‘wild cow’	-pb-	/láp.bìsito/	‘ankle’
-Nn-	/↔dic↔N.n↔/	‘twice’	-pc-	/t <sup>h</sup> áp.cepá/	‘actor’
-Nm-	/b↔t <sup>h</sup> iN.mut <sup>h</sup> uk/	‘woodpecker’	-kp-	/múk.pa/	‘fog’
-Np <sup>h</sup> -	/saN.p <sup>h</sup> ai/	‘banana flower’	-kt-	/sák.ta/	‘shoulder’
-Nk-	/↔koN.kar/	‘between’	-mn-	/nìm.núp/	‘sunset’
-Nk <sup>h</sup> -	/↔nzaN.k <sup>h</sup> a/	‘bitter gourd’	-mŋ-	/dèm.ŋgó/	‘candidate’
-nr-	/len.rasa/	‘pride’	-ŋn-	/tòŋ.ne/	‘by vision’
-kc-	/cik.ce/	‘stingy’	-ŋm-	/c <sup>h</sup> áj.mazò/	‘to clean’
-kk <sup>h</sup> -	/zak.k <sup>h</sup> ↔/	‘odour (armpit)’	-pn-	/t <sup>h</sup> ip.na/	‘shade’
-km-	/mik.mo/	‘eyebrow’	-kn-	/pák.ne/	‘scab’
-tm-	/k <sup>h</sup> ut.mitin/	‘nail’	-mt-	/tem.té/	‘full’
-tp-	/ret.pam/	‘balloon’	-md-	/nam.dì/	‘season’
-ps-	/rap.s↔r/	‘rainwater’	-mk <sup>h</sup> -	/dám.k <sup>h</sup> i/	‘warm’
-mp-	/cam.pi/	‘grass’	-nt <sup>h</sup> -	/men.t <sup>h</sup> ó/	‘flower’
-Nt <sup>h</sup> -	/muluN.t <sup>h</sup> a/	‘honest’	-ŋk <sup>h</sup> -	/t <sup>h</sup> úŋ.ku/	‘short’
-nn-	/in.n↔i/	‘to marry’	-ŋs-	/záŋ.sin/	‘slate’
-ts-	/m↔kot.sin/	‘window’	-nl-	/sìn.lap/	‘blessing’
-ks-	/s↔k.so/	‘snail’	-rb-	/nor.busìli/	‘rhinoceros’
-tc-	/khut.coi/	‘gift’	-lp-	/gyal.pò/	‘king’
-k -	/tak.z↔/	‘to tickle’	-lk <sup>h</sup> -	/ŋuèl.k <sup>h</sup> aŋ/	‘bank’
-kk-	/muk.kor/	‘inkpot’	-lt-	/p <sup>h</sup> úl.taka/	‘bat’

## 8. Results and findings

(i) From the above discussion, it can be established that Chiru language has nineteen consonantal phonemes. They are: /p, b, t, d, c, k, p<sup>h</sup>, t<sup>h</sup>, k<sup>h</sup>, m, n, ŋ, v, s, z, h, w, r, l/. It has four voiceless unaspirated and three aspirated plosives, i.e., /p, t, c, k/ and /p<sup>h</sup>, t<sup>h</sup>, k<sup>h</sup>/ respectively. No aspirated voiced plosives are found in this language. This language has two voiced unaspirated plosives, i.e., /b, d/, three nasals /m, n, ŋ/, four fricatives /v, s, z, h/, two approximants /w, r/ and one lateral approximant /l/. It may be seen that, the plosives /p, t, k/ have contrast between the aspirated and unaspirated; however not in case of other plosives. Also, the voiceless velar plosive /k/ does not have its contrastive voiced phoneme.

(ii) Dukpa has twenty-three consonant phonemes, i.e., /p, p<sup>h</sup>, b, t, t<sup>h</sup>, d, c, c<sup>h</sup>, k, k<sup>h</sup>, g, m, n, ŋ, s, z, ʃ, h, r, l, w and y/. Out of these phonemes, the consonant phonemes /p, t, c, k/ are voiceless unaspirated stops and /p<sup>h</sup>, t<sup>h</sup>, c<sup>h</sup>, k<sup>h</sup>/ are aspirated stops. Three voiced unaspirated stops i.e., /b, d, and g/ is seen in this language, whereas no aspirated voiced stops are there. This language has four basic nasals /m, n, ŋ and ɲ/, four fricatives /s, z, ʃ and h/ where voiced alveolar fricative and post-alveolar fricatives are /z/ and /ʃ/ respectively. The other consonantal phonemes that are found in this language are lateral /l/ and trill phonemes /r/. Besides, two semi-vowels /w/ and /y/ are found in this language.

(iii) In both the languages, all the consonant phonemes can occur in the initial and medial positions of the words. In Chiru, the consonantal phonemes /p<sup>h</sup>, b, t<sup>h</sup>, d, c, k<sup>h</sup>, s, h, z, w, v/ and in Dukpa, the consonantal phonemes /p<sup>h</sup>, b, t, d, t<sup>h</sup>, c, c<sup>h</sup>, g, k<sup>h</sup>, ŋ, z, ʃ, h, w, v/ do not occur in the final position of the words.

(iv) The absence of voiced aspirated stops/plosives, which is one of the prominent typological features of Tibeto-Burman languages, is seen in both the languages. The presence of the post-alveolar fricative /ʃ/ in Dukpa may be due to the influence of Indo-Aryan languages like Bengali and Nepali, as the Dukpa speakers co-inhabit with these two communities.

## 9. Conclusions

It may be concluded from the above study that, although most of the consonantal phonemes established in Chiru and Dukpa languages are common to both, the five consonant phonemes in Dukpa, i.e., /c<sup>h</sup>, g, ɲ, ʃ, y/ are not present in Chiru language, whereas the Chiru consonant phoneme, i.e., /v/ is not found present in Dukpa. Although the phoneme /g/ could be seen in a very few words in Chiru, it could not be established clearly, as not enough data can support its presence in the language. Also, it may be mentioned that the phoneme /f/ which is present in some of the Kuki-Chin languages is absent in Chiru. There is still room for further research in this area in this language to ascertain about these consonantal phonemes.

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