

ระบบเสียงคะฉิ่นทางภาคเหนือของประเทศไทย

Kachin Phonology in Northern Thailand

เฉลิมชัย ไชยชมภู¹ และสุดฤทัย อรุณศิริโรจน์²

Chalermchai Chaichompoo¹ And Sudruthai Arunsiro²

^{1,2}คณะมนุษยศาสตร์และสังคมศาสตร์

^{1,2}Faculty of Humanities and Social Sciences

^{1,2}มหาวิทยาลัยราชภัฏเชียงใหม่

^{1,2}Chiang Mai Rajabhat University

บทคัดย่อ

วัตถุประสงค์ของการวิจัยในครั้งนี้คือศึกษาระบบเสียงภาษาคะฉิ่น ประกอบไปด้วยโครงสร้างพยางค์ เสียงพยัญชนะ เสียงสระ และเสียงวรรณยุกต์ที่พูดในทางตอนเหนือของประเทศไทยโดยใช้ทฤษฎีระบบเสียงของ Pike ในการวิเคราะห์ภาษา โดยการรวบรวมข้อมูลในครั้งนี้ได้จากผู้บอกภาษาชาวคะฉิ่นจำนวน 30 คนรวบรวมจากชุดคำศัพท์จำนวน 766 คำจากรายการคำศัพท์ของ SIL เอเชียตะวันออกเฉียงใต้ และแอฟริกา ผลการวิจัยพบเสียงพยัญชนะจำนวน 24 หน่วยเสียง โดยเป็นพยัญชนะต้นจำนวน 24 หน่วยเสียงและพยัญชนะท้ายจำนวน 9 หน่วยเสียง สำหรับเสียงสระพบสระเดี่ยวจำนวน 10 หน่วยเสียงโดยไม่พบสระประสม และพบเสียงวรรณยุกต์จำนวน 5 หน่วยเสียง นอกจากนี้การวิจัยครั้งนี้ยังมุ่งประเด็นในการวิเคราะห์เรื่องโครงสร้างพยางค์รองและมีการเปรียบเทียบผลของการวิจัยกับงานวิจัยของ Kurabe (2014) ผู้ซึ่งวิเคราะห์ภาษาคะฉิ่นมาตรฐานในประเทศพม่า

คำสำคัญ: คะฉิ่น ระบบเสียง พยัญชนะ สระ วรรณยุกต์

Abstract

The objective of this investigation is to study the Kachin phonology including syllabic structures, and consonantal, vocalic and tonal phonemes of Kachin as spoken in northern Thailand by using Phonemics of Pike (1947) to analyze the language. The data collection was collected from 30 Kachin informants and is based on 766 lexical items from the SIL Southeast Asian and African Wordlists. The findings reveal that there are 24 consonantal phonemes, All of them can occur word-initially and nine of which can occur word-finally, ten monophthongs without diphthongs, and five tones. This article also discusses minor syllables and compares the findings with those of Kurabe (2014), who investigated Standard Jingpho in Myanmar.

Keywords: Kachin, phonology, consonants, vowels, tones

1. Introduction

Kachin is a Tibeto-Burman language spoken in four countries in Asia, namely Myanmar, China, India, and Thailand. This is because Kachin State is located in the most northern part of Myanmar, bordering China to the north and east and India to the west. Due to successive wars between the Burmese army and the Kachin Liberation Army, the Kachin have been forced to migrate to the three neighboring countries as war refugees (Kathu, M. et. al., 2012).

Kachin is classified in the Sino-Tibetan Language Family under the Tibeto-Burman sub-family. The language is classified under the Burmic branch of the Tibeto-Burman sub-family (Shafer, 1955), while Benedict (1972) classified the language as one of the seven branches of the sub-family. Matisoff (1978) classified the language based on geographical aspects and Benedict's classification and categorized Kachin under the Jingpho-Nungish-Luish sub-branch. He further elaborated that the three languages were closely similar. In 2000, Matisoff investigated more information about the classification of the language and concluded that Kachin is more closely related to Luish than other Tibeto-Burman languages. Bradley (2002) explored more data about the classification of the language and made a comparative study of others' works. He then classified Kachin under the Sal sub-branch in the Tibeto-Burman sub-family as shown in Figure1.

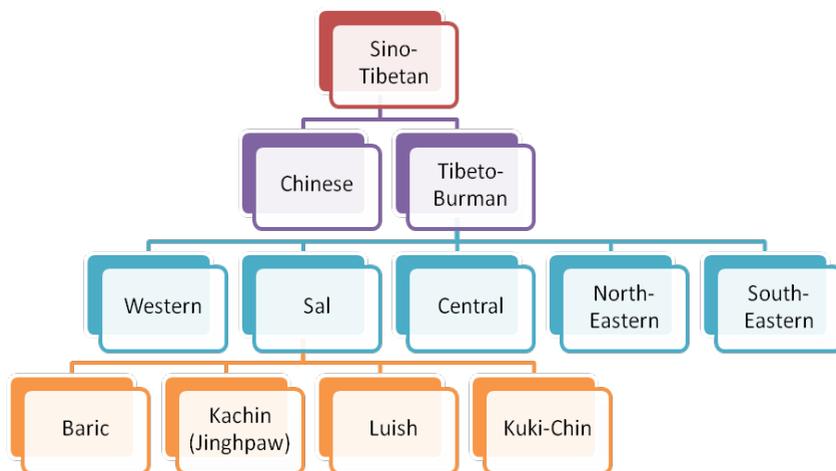


Figure 1 Classification of Kachin in the Tibeto-Burman sub-family (Bradley 2002)

In Thailand, the 2001 figures show that there were approximately 15,000 Kachin residents living in two provinces, Chiang Mai and Mae Hong Son. The original and only village where Kachin migrants first settled was at Ban Mai Samakkhee. The first wave of migrants originated from Shan State about 40 years ago. The village is in Moo 14, Tambon Muang Na, Chiang Dao District, Chiang Mai Province, which is under the supervision of the Nong Khieo Royal Project, a highland research and development institute (Kathu, M. et. al., 2012).

From a preliminary survey, it has been discovered that the Kachin is a small ethnic minority group with no distinct socio-political role in Thailand. However, from an investigation on a long history of the group, it is revealed that the ethnic group has a rich history and culture. Lander (1966) stated that investigating an ethnic language would reflect the culture of that particular ethnic group. It is also believed that language and culture are closely related, with the latter exerting influences on structures and language use of that ethnic

group. Studying the Kachin language, be it phonological or syntactic structures, semantics, or language use, would reflect the culture of the ethnic group. Understanding the language would enable us to understand the culture of the Kachin. Moreover, research studies on Kachin in Thailand are relatively few.

2. Objective of the study

The main objective of this investigation is to study the phonology, syllabic structures, and consonantal, vocalic and tonal phonemes of Kachin as spoken in northern Thailand by using Phonemics of Pike (1947) to analyze the language. Additionally, Kachin tones are acoustically analyzed by applying the Praat Program, in order to understand the phonological system of the language, which would enable us to better perceive diverse accounts and culture of the ethnic group as well as to preserve the ethnic language from being at risk from extinction.

3. Methodology

This analysis of Kachin phonology was based on a four-month field data collection at Ban Mai Samakkhee Village, Tambon Muang Na, Chiang Dao District, Chiang Mai Province, from May to June, 2015. The data were collected from 30 Kachin informants and is based on 766 words from SIL Southeast Asian and African Wordlists. The words are lexical items of everyday life, such as from nature, body parts, clothes, food and drinks, houses, utensils and tools, and verbs. The informants were asked how to pronounce each word in their own native language two or three times and the researcher repeated until it was certain that the word was pronounced correctly. The words were then recorded with a portable MP3 multi-media player. After that, each word was transcribed by using the IPA symbols. The phonological analysis covers syllabic structures,

consonantal and vocalic phonemes, and tonemes. For the tonal analysis, the Praat Program, 6.0.19 version, was implemented to find out fundamental frequencies (F0) of the tones and the Microsoft Excel program was applied to process the data. The analysis results of the Kachin phonology are based on Phonemics of Pike (1947).

4. Kachin phonology

The analysis of the data is aimed at finding out syllabic structures, consonantal and vocalic phonemes, and tonemes of Kachin as spoken at the study area. The findings are detailed as follows.

4.1 The syllabic structures of Kachin

There are two kinds of syllabic structures in Kachin: major and minor syllables. In the major syllable structure, all consonantal phonemes can occur in the initial position of the onset (C_1), whereas only /r/, /w/, and /j/ can occur in the second position of complex onsets (C_2). Complex onsets (C_1C_2) may consist of a stop (bilabial, alveolar, velar), affricate (alveolar), or nasal (bilabial, velar) plus /-r-/, /-w-/, or /-j-/. In the coda, only nine consonantal phonemes may occur. All five tones (T) can occur in major syllables. Based on the data, CV and CVC are by far the most common major syllable types. The typical kind of Kachin major syllable, composing of an onset, a nucleus, and a tone, is the obligatory elements, while medial and coda are the optional elements, as diagramed in Figure 2.

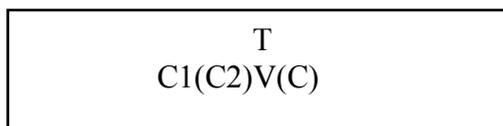


Figure 2 The Kachin major syllabic structure

The following table show some examples of the major syllabic structures found in the data.

Major syllable	Form	Gloss
CV	ru:	'a root'
CVC	nam	'forest'
CCV	dwī:	'sweet'
CCVC	próʔ	'east'

Table 1 Examples of Kachin major syllabic structures

Kachin also has a reduced (minor) syllable which has a schwa /ə/ or syllabic nasal /ŋ/ as its nucleus, and there is no coda found in minor syllable. All minor syllables have a mid-level tone and never occur word-finally. They cannot stand alone and are normally followed by a major syllable. Table2 illustrates words that include minor syllables.

Minor syllable	Form	Gloss
Cə	?ə.gā:	'earth'
ŋ	ŋ.gùp	'a mouth'

Table 2 Kachin minor syllabic structures

Based on the data, it is concluded that all words in Kachin are monosyllabic or disyllabic. Some of disyllabic words are sesquisyllabic words which consist of a reduced (minor) syllable as their first element plus full major syllable as their second element.

4.2 The consonantal phonemes of Kachin

From the analysis, it is found that there are 24 consonantal phonemes of Kachin as spoken at Ban Mai Samakkhee Village. All of them can occur word-initially and only nine phonemes can occur word-finally. Additionally, the following consonant segments are interpreted as single units for the simplicity of consonant inventory and to confirm to the CV language pattern: aspirated voiceless bilabial stop [p^h], aspirated voiceless alveolar stop [t^h], aspirated voiceless palatal stop [c^h], aspirated voiceless velar stop [k^h], and the affricate [ts] are interpreted as single units: /p^h t^h c^h k^h ts/.

Manner	Place		Bilabial	alveolar	Palatal	Velar	Glottal
	Qualities						
Plosives	vl.	unasp.	p	t		k	ʔ
	vl.	asp.	p ^h	t ^h	c ^h	k ^h	
	vd.	unasp.	b	d	ɟ	g	
Affricate	vl.	unasp.		ts			
Fricatives	vl.			s	ʃ		
	vd.			z			
Nasals	vd.		m	n	ɲ	ŋ	
Lateral	vd.			l			
Tap	vd.			r			
Glides	vd.		w		j		

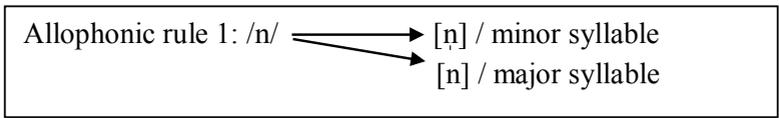
Table 3 Kachin consonantal phonemes

From table 3, the Kachin consonantal phonemes at Ban Mai Samakkhee Village can be divided into seven categories. They are 12 plosives with four aspirated and eight unaspirated, one affricate, three fricatives, five nasals with one syllabic sound, one lateral, one tap, and two approximants. The examples below are the Kachin consonantal phonemes as they appear in the initial

position. The following list contains contrasts which establish the phonemic status of the consonants. There are mainly two kinds of contrasts found in the data: contrast in identical environment (CIE) and contrast in analogous environment (CAE).

CAE	/p/	[pù:]	‘intestine’	/b/	[làbù:]	‘trousers’
CIE	/p/	[pù:]	‘intestine’	/p ^h /	[p ^h ù:]	‘expensive’
CAE	/p/	[là pu:]	‘snake’	/p ^h /	[nūm p ^h ù:]	‘dust’
CAE	/t/	[tīŋ]	‘rice planting’	/d/	[diŋdiŋ]	‘straight’
CAE	/t/	[tèŋ]	‘real’	/t ^h /	[t ^h èt]	‘to order’
CAE	/k/	[kūm.fū:]	‘sugarcane’	/k ^h /	[k ^h ūm]	‘to protect’
CAE	/k/	[kùm.bà:]	‘to fold’	/g/	[gùm]	‘to bend down’
CAE	/s/	[sǐn]	‘liver’	/z/	[zim]	‘quiet’
CIE	/s/	[san]	‘far’	/ʃ/	[ʃan]	‘before’
CIE	/m/	[mà:]	‘a child’	/w/	[wà:]	‘to return’
CAE	/n/	[nàm]	‘forest’	/l/	[lam]	‘a road’
CAE	/ɲ/	[ɲi:]	‘near’	/j/	[jǐʔ]	‘highland field’
CAE	/ŋ/	[ŋàŋ]	‘durable’	/g/	[gaŋ]	‘pull’
CAE	/ts/	[tsiŋ]	‘grass’	/c ^h /	[c ^h jiŋ]	‘a drum’
CAE	/j/	[jū:]	‘to grill’	/j/	[ju:]	‘to see’
CIE	/l/	[lù:]	‘to have’	/r/	[rù:]	‘a root’

For allophonic rule of the alveolar nasal consonant, [n] and [ɲ] are found to be in complementary distribution. The voiced alveolar nasal [n] becomes the syllabic nasal [ɲ] in the minor syllable. Thus, the voiced alveolar nasal [n] is chosen to be the phoneme. The following section shows its allophonic rule followed by examples.



Examples:

[n]		[ŋ]	
[na:]	‘ear’	[ŋ.ra:]	‘bone’
[nû:]	‘mother’	[ŋ.lùŋ]	‘stone’
[nàm]	‘forest’	[ŋ.ʃaŋ]	‘waist’
[naŋ]	‘drunk’	[ŋ.ruŋ]	‘horn’
[nàt]	‘to burn’	[ŋ.tâ:]	‘house’
[nɔ̃j]	‘to hang’	[ŋ.tʰɔ̃j]	‘brightness’

Enfield (2005) proposes three main sources of minor syllables: fossilized lexical morphemes, bound grammatical morphemes, and syllable expansion through epenthetic vowels. The minor syllables found in this study may originate from a grammatical prefix in the form of bound morpheme in word-initial position. Based on the data, further evidence to support this assumption is that the minor syllable only occurs in nouns. Due to the limitation in the Kachin wordlists, more research is needed to investigate what kind of main sources of Kachin minor syllables exist.

For Kachin final consonants, there are nine consonants that can occur at the final position of the syllable. They include /-p, -t, -k, -, -m, -n, -N, -w, -j/. The following examples illustrate words with the final consonants.

/júp/	‘lie down’
/dùt/	‘sell’
/jàk/	‘difficult’
/kʰǎʔ/	‘water’
/bùm/	‘mountain’
/sun/	‘to tell’
/naŋ/	‘drunk’
/pɛ:w/	‘a cat’
/maj/	‘food’

Moreover, there are 20 sets of consonant clusters found in Kachin. Only three consonant clusters occur as a second member of an initial consonant. They include /-r-, -w-, -j-. The following table shows the co-occurrence of the consonant clusters.

Initial consonant \ Consonant cluster	r	w	j
p-	O	X	O
p ^h -	O	X	O
b-	O	X	O
k-	O	X	O
k ^h -	O	X	O
g-	O	O	O
t ^h -	X	O	X
d-	X	O	X
ts-	X	O	X
ŋ-	X	O	O
c ^h -	X	X	O
m-	X	X	O

O = occurrence

X = non-occurrence

Table 4 Distribution of initial consonants and consonant clusters of Kachin

The following examples are the consonant clusters found in the data.

/prɔŋ/	‘east’
/kran/	‘to cut’
/k ^h rɪt/	‘fear’
/grɪp/	‘to wink’
/t ^h wi:/	‘to hit’
/dwī:/	‘sweet’
/gwī:/	‘a dog’
/tswi:/	‘pus’
/bjɪn/	‘to exist’
/kjɪn/	‘to hurry’
/k ^h jén/	‘to prepare’
/gǰɪt/	‘to tie’
/mjɪŋ/	‘name’
/c ^h jū:/	‘thorn’
/gum p ^h rò:/	‘silver’
/ŋjɪp/	‘snot’

4.3 The vowel phonemes of Kachin

The vowel phonemes function as the nucleus in the syllable. Based on the data, there are ten monophthongs with five short vowels and five long vowels. Surprisingly, no diphthongs are found in the data. The result reveals that the feature of vowel length plays a crucial role in Kachin as a phonemic distinctive feature. It can distinguish the meanings of words. Table 5 presents the ten monophthongs with their phonemic features.

Tongue position \ Tongue height	Front		Central	Back	
	unrounded		unrounded	rounded	
High	i	i:		u	u:
Mid	e				
Low	ɛ:		a	a:	ɔ ɔ:

Table 5 Kachin vowel phonemes

The following list contains contrasts which establish the phonemic status of the vowels.

Set 1 of the vowel contrasts

/i/	[ɗiʔ]	‘pot’
/i:/	[di:]	‘testicles’
/i/	[zim]	‘quiet’
/e/	[zén]	‘clever’
/i:/	[ri:]	‘rattan’
/e:/	[rê:]	‘yes’
/e:/	[c ^h je:]	‘to know’
/ɛ:/	[c ^h je:]	‘torn’

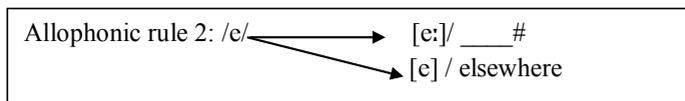
Set 2 of the vowel contrasts

/a/	[wàʔ]	‘a pig’
/a:/	[wa:]	‘teeth’

Set 3 of the vowel contrasts

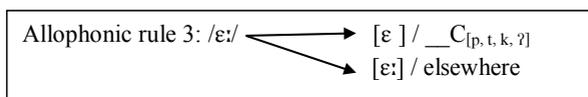
/ɔ/	[wət]	‘a leech’
/ɔ:/	[wɔ:j]	‘a monkey’
/u/	[k ^h ùt]	‘cooked’
/u:/	[k ^h u:]	‘a hole’

Burquest (2001: 32) stated that two phonetically similar segments are in complementary distribution when these segments are each consistently found in distinct contexts in the phonetic data. In Kachin, there are two allophonic rules as follows.



From the rule above, the vowels [e] and [e:] are found to be in complementary distribution. The mid-front unrounded short vowel /e/ is chosen to be the phoneme. The mid-front unrounded short vowel becomes the mid-front unrounded long vowel in the word final position. The instances from Kachin are shown in the following examples.

[pjɛn]	‘to fly’	[pje:]	‘to slap’
[c ^h jeʔ]	‘to split’	[c ^h je:]	‘to know’
[zɛn]	‘to cut’	[rɛ:]	‘yes’
[ɲ.sɛn]	‘voice’	[d̪ɪŋ.jɛ:]	‘a broom’



From allophonic rule 3 above, the vowels [ɛ] and [ɛ:] are found to be in complementary distribution. The low-front unrounded long vowel /ɛ:/ is chosen to be the phoneme. The low-front unrounded long vowel becomes the low-front unrounded short vowel in syllables ended with stops /p/, /t/, /k/, /ʔ/. The instances from Kachin are shown in the following examples.

[sɛp]	‘to peel’	[c ^h je:]	‘torn’
[ɲɛp]	‘to floor’	[ɲɛ:w]	‘a cat’

4.4 The tonemes of Kachin

Tone is the use of pitch in syllables to distinguish their lexical meanings. Kachin at Ban Mai Samakkhee Village is a tonal language and there are five tones in this language as follows.

1. Mid-level tone, /unmarked/, phonetically realized as [33]
2. Low-falling tone, /˨˨/, phonetically realized as [31]
3. High-falling tone, /˨˨˨/, phonetically realized as [352]
4. High-level tone, /˨˨˨/, phonetically realized as [44]
5. High-rising tone, /˨˨˨/, phonetically realized as [35]

For convenience, the tone marks are used in this article. The following sets of words are used to compare the five tones in Kachin as spoken in the study area.

/mid-level/ and /low-falling/

[nam]	‘unhusked rice’	[nàm]	‘forest’
[lùŋ pu:]	‘cave’	[pù:]	‘intestines’

/low-falling/ and /high-falling/

[wà:]	‘to return’	[wâ:]	‘father’
[nà:]	‘to hear’	[jà nâ:]	‘night’

/high-falling/ and /high-level/

[rê:]	‘yes’	[rū:]	‘to pour’
[bô:]	‘pluck’	[wō:]	‘float’

[jê:]	‘to sweep’	[jǐʔ]	‘highland field’
[ka tsû:]	‘shrimp’	[tʰú:]	‘rub, scrub’

/high-rising/ and /high-level/

[pát]	‘to close’	[pā:]	‘flat’
[sǎŋlǎŋ dán]	‘explain’	[sān:]	‘ask’

The following is a set of words is used to distinct the five tones found in the data.

/sa:/	‘to go’
/sà:/	‘to send’
/jā:/	‘to eat’
/wâ:/	‘father’
/tsáʔ/	‘whiskey’

5. Conclusion

Kachin is one of the languages in the subgroupings of the Tibeto-Burman sub-family. The study findings reveal that two kinds of syllabic structures are found in the language: major syllable and minor syllable. This finding appears to support the study of Enfield (2005). He describes that the occurrences of major and minor syllables are areal features of Southeast Asian languages, including Tibeto-Burman, Mon-Khmer and Tai-Kadai languages. In Kachin, the major syllable starts with an obligatory onset followed by an optional medial, a nucleus, an optional coda, and tone. For the nucleus, it is composed of short and long vowels. Kachin also has a reduced (minor) syllable which has a schwa /ə/ or syllabic nasal /n/ as its nucleus. There is no coda in minor syllables. This

is in line with Chang (2009), who has stated that minor syllables generally are characterized as having no coda.

There are 24 consonantal phonemes with 20 sets of initial consonant clusters. All of the consonantal phonemes can appear syllable-initially, whereas only nine phonemes can occur syllable-finally. Furthermore, there are ten single vowel phonemes but there are no diphthongs. As a tonal language, there are five tones of Kachin as spoken in the study area, which include mid-level, high-level, low-falling, high-falling, and high-rising tones respectively.

6. Discussion

Nevertheless, Kurabe (2014), who investigated the phonology of standard Kachin in Myanmar, revealed different findings from this investigation. He found 31 consonantal phonemes, which include /p, t, k, ʔ, p^h, t^h, k^h, b, d, g, m, n, ŋ, ʔm, ʔn, ʔŋ, s, ʃ, ts, c, dz, w, y, ʔw, ʔy, l, j, r, ʔl, ʔr, (h)/. There are 16 sets of initial consonant clusters, including /pr, br, p^hr, kr, gr, k^hr, py, by, p^hy, ky, gy, k^hy, my, ny, ʔmy, ʔny/. There are nine consonantal phonemes that can occur syllable-finally, including /p, t, k, ʔ, m, n, ŋ, w, y/. Monophthongs include /i, u, e, ə, o, a/ and diphthongs are /ui, oi, ai, au/. Diphthongs can be found with a vowel followed by glides, which include /uy, oy, ay, aw/ and diphthongs do not occur in open syllables. There are four tones, which are high, mid, low, and high-low respectively. The high and low tones occur in checked syllables with plosives as the final consonants. It is hypothesized that the differences of the two findings may be due to changes of Kachin in Thailand as a result of language contact. As Kurabe (2014) stated, Kachin languages and dialects in Myanmar are primarily divided into a northern group and a southern group. The northern group has preglottalized consonants whereas no preglottalized one was found in the southern group. From eliciting data in the interviews, Kachin at Ban Mai

Samakkhee Village were originated from the northern part of Kachin State in Myanmar. When internal conflict between the Myanmar government and the Kachin Independence Army occurred, Kachin moved southward through the south of Myanmar, Thaton, Mae-ai, Chiangmai in Thailand to finally arrive Ban Mai Samakkhee Village in Chiang Dao. As a result, the Kachin languages and dialects had changed through migration. Preglottalized consonants which are the characteristic of the northern group were lost and these sounds have developed to a single main consonant phoneme. This phenomenon in lines with Muysken (1999) who stated that phonology is very susceptible to change and as a result of word borrowing due to the language contact.

For the phoneme /h/ in Kurabe (2014), he stated that the phoneme in the initial position is mostly found in interjectives or onomatopoeic words. However, this phoneme is not found in any lexical items in the wordlists used for this investigation.

Some findings in this investigation are similar to those of Kurabe (2014). For instance, the initials /w/ and /ŋ/ do not occur with front vowels. Kurabe further noted that there was a phenomenon of language change in Kachin in Myanmar, that is, young Kachin speakers tend to add the prefix /ʔə/ to a monosyllabic word to change it into a disyllabic word. This prefix does not have any meaning. This phenomenon is against the finding of this investigation on the minor syllable, /ŋ/, where the structure of minor syllable may be derived from a grammatical prefix in the form of bound morpheme in word-initial position. Moreover, all the words with minor syllable discovered in this investigation are nouns. It is thus imperative to further conduct a study on this issue to prove the functions of this minor syllable.

According to Kurabe (2014), standard Jingpho as spoken in Shan State has a tendency to make frequent use of the meaningless prefix /ʔə/ to change monosyllabic words into disyllabic ones. For instance, /gā:/ 'earth' in Kachin in Shan State is pronounced as /ʔə.gā:/ in Kachin in Thailand. This is the same with the syllabic nasal found in Kachin at Ban Mai Samakkhee Village. From comparing lexical items of Kachin in Myanmar from Inglis, Sampu, Janseng and Jana (2005), it is found that Kachin in Thailand uses the meaningless prefix /ŋ/ to change monosyllabic words into disyllabic ones. For instance, *gup* 'a mouth' in Kachin Myanmar becomes /ŋ.gùp/ in Kachin in Thailand, *nrung* 'a horn' becoming /ŋ.ruŋ/, or *nshang* 'the waist' becoming /ŋ.ʃa:ŋ/ respectively. The finding in this investigation supports that of Beyer (1992) in that a striking feature in the development of Tibetan has been an increasing tendency toward disyllabism in word formation.

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