CHAPTER 2

LITERATURE REVIEW

This chapter presents a review of the literature relating to the subject areas referred to in the title of thesis, namely phonology, language use and literacy. In order to put these topics in the broader context, Section 2.1 gives a brief review of the literature relating to Khuen culture and history. Section 2.2 describes the comparative method applied to Tai languages and William J. Gedney's tone box framework. These provide a framework for analysing and describing Tai languages in general and are therefore foundational to the investigations presented in this thesis. Section 2.3 reviews and presents a synthesis of previous work on Khuen phonology. Sections 2.4 and 2.5 review, respectively, the literature on Language Use and Literacy.

2.1 Khuen Culture and History

Specific aspects of Khuen culture and lifestyle are described in 'Chieng Tung: Its way of life' a publication of Wat Tha Kradas, Chiang Mai. The book was compiled to commemorate the awarding in 1998 of the highest rank of 'Master of Dhamma' to Venerable Sai Khemacari, Abbot of Wat Ceng Yuen, Keng Tung. The book describes many aspects of life in Keng Tung and the countryside outside the city. Most striking is the prominent place of the Buddhist clergy in Khuen society. Of particular note for the topic of this thesis is the role played by the Buddhist clergy in promoting Khuen literacy, both by organising literacy classes and by making Khuen reading materials available. Venerable Ananda Aditadhammo, Abbot of Wat Tha Kradas in Chiang Mai, is acknowledged for his contributions to promoting Khuen culture and literacy, not least for his role in instigating the development of a computer font for the Khuen script. This font is used and an explanation of the Khuen script is given in Peltier (1993). Peltier (1998:310) mentions that Khuen literacy materials are used not only in Shan State but also among the Lue in Xishuangbanna of southwestern China.

The exact origins of the Khuen are not known. Evidence in Hartmann (1998) suggests that Tai peoples in general originated in Guangxi and Guizhou provinces of southern China. Wyatt (2003:5) describes the migration of the Tai peoples westward and southward as the powerful Chinese and Vietnamese increased their control of coastal areas of Guangxi and northern Vietnam and then northwestward up the Red River valley in the first few centuries A.D. This migration led to the geographic divergence of the Tai peoples which in turn led to linguistic and cultural divergence. The upland river valleys where the Khuen settled were relatively sparsely populated. O'Connor (1995) attributes the success of the Tai peoples over the Mon-Khmer peoples who inhabited the region to their superior rice cultivation techniques: the more dependable the rice crop produced by a particular group, the greater the population that could be sustained and hence the greater the power of the group. As well as growth of the group from within, Lebar et al. (1964:187) describe a process whereby other groups were assimilated into the more dominant Tai community.

Different waves of migration saw various Tai groups moving into what is now southern and central Myanmar. The Khuen eventually became established in Keng Tung, but there is still some debate over the details of how this came to be. Seidenfaden (1958:49) cited in Lebar et al. (1964:213) asserted that the Keng Tung valley was settled by Tai emigrants from Nanchao, who imposed their rule on a Mon-Khmer population called 'Khüns'. Sai Kam Mong (2004:16) gives a summary of other accounts of the Khuen arrival. However the Khuen came to be there and whatever his relationship to the Khuen, it is clear that King Mang Rai had a major influence on Keng Tung as a political centre. First and foremost Keng Tung was part of Mang Rai's Lan Na kingdom and although the fortunes of the latter fluctuated over the centuries following Mang Rai's death in 1317, the Mang Rai dynasty continued to rule in Keng Tung right up to the 20th Century (Peltier 1996:305; Wyatt 2003:33-19). Khuen influence was not limited to Keng Tung. Grabowsky (1998) reports that the ruling family in Murng Sing were also Khuen

although the populace of the small State of Chiang Khaeng – of which Murng Sing was the capital – were Lue.

Aroonrut (1998:50) and Forbes (2006:28) describe the relocation to Chiang Mai of large Khuen communities from Keng Tung under King Kawila's circa 1797 policy of 'putting vegetables in baskets and putting people in muang'. The Khuen were skilled lacquer ware artists and silversmiths (Aroonrut 1998:50). Even today the area south of the old walled city between Wualai Road and Nantaram Road has many shops selling hand crafted silverware but there is just one remaining shop selling 'khoen ware' (Hargreave 2002:173).

Lebar et al. (1964:213) emphasise that both culturally and economically the Khuen had much closer ties with China and Thailand than with Burma. The reason for Keng Tung's association with Burma rather than China or Chiang Mai is described as follows by Mi Mi Khaing, wife of Sao Saimong, a member of the royal household of Keng Tung:

> Kengtung as part of Burma is, in reality, a political anomaly, the result of astuteness on the part of Chiefs in the past, who elected to remain under the suzerainty of distant Mandalay, to which yearly gifts of gold and silver flowers were all that were required, rather than under the yoke of Ayuthia and Chiengmai so much better placed for effective interference. (Mi Mi Khaing circa 1955)

The relative isolation of Keng Tung from the Burmese seat of power referred to by Mi Mi Khaing above is due to the formidable physical barrier presented by the Salween River and accompanying mountain ranges which run from north to south bisecting the whole of Shan State (see Figure 4). When the British Raj in India took possession of the last remaining portion of the Kingdom of Burma in 1886, they were faced with a major logistical challenge of exercising control over such inaccessible regions as Keng Tung (Wyatt 2005:xii). In early 1887 therefore a young British military officer was sent on a spying mission to Keng Tung, to scout out the land and to advise on the feasibility of a British force entering Shan State from Thailand (Younghusband 2005). Logistical challenges notwithstanding, the British had taken control over all the Shan States by 1890

although they ruled through the local princes or 'sawbwas', whom they encouraged to get a Western education (Sai Kam Mong 2004:57-61). The arrival of the British meant the increasing use of English as the language of administration (Egerød 1959:213).

The following section describes the comparative method as applied to Tai languages. Although historical reconstruction is not the focus of this study, there are two reasons why the reconstructed proto language is relevant: firstly, the reconstructed proto language is based on a wealth of data from many Tai languages so it serves as a guide in analysing wordlists from several Khuen varieties. Secondly the proto language provides a framework for describing the phonological segments of the modern varieties.

2.2 Comparative Tai

The comparative method seeks to determine genetic relationships between speech varieties by establishing regular sound correspondences between the various speech varieties under investigation. The method compares lists of words from contemporary speech varieties and aims to posit an original 'proto-form' from which the modern varieties can be plausibly said to have developed by a series of consistent sound changes over the centuries. As part of his critique of the application of the comparative method to Tai languages, Diller (1998:7-8) observes that there are many exceptions to the rules defined by Li's (1977) reconstruction of Proto-Tai (PT). One such exception led Li (1989) to propose a refinement of his original reconstruction. The fact that Gedney ([1979] 1989) could propose a different refinement that equally well accounted for the data demonstrates that the comparative method is not always a 'strictly mechanical clockwork algorithm' (Diller 1998:7). Notwithstanding, Li's (1977) book retains its status as the classical reference in comparative Tai. Robinson (1994) summarised Li's results and used them in his classification of SWT P-group languages. The following two sections present in turn the reconstructed PT consonants and vowels as well as outlining their reflexes in modern varieties.

2.2.1 PT consonants

The reconstructed PT initial consonants are laid out in Figure 7.

Manner of Articulation		Place of Articulation				
		Labial	Dental	Palatal	Velar	Laryngeal
Stop	Aspirated	*ph	*th	*ch	*kh	
	Unaspirated	*p	*t	*c	*k	*ʔ
	Glottalised	*ʔb	*ʔd			
	Voiced	*b	*d	*ɟ	*g	
Fricative	Voiceless	*f		*s	*x	*h
	Voiced	*v		*z	*ɣ	
Nasal	Voiceless	*hm	*hn	*hɲ	*hŋ	
	Voiced	*m	*n	*ɲ	*ŋ	
Liquid	Voiceless		*hr	*hl		
	Voiced		*r	*l		
Approximant	Voiceless	*hw				
	Glottalised			*ʔj		
	Voiced	*w		*j		

Figure 7 PT initial consonants (adapted from Li 1977:58 and Robinson 1994:18)

In Table 2 these PT consonants provide a framework for describing the reflexes in contemporary varieties which will be compared with Khuen later in this thesis, namely Standard Thai, Northern Thai, Shan, Tai Lue and Tai Mao. The order of the entries in Table 2 is taken from Li (1977:255-257).

PT	Standard Thai	Northern Thai	Lue Jinghong	Lue Murng Yorhng[9]	Shan	Mao
***p**	p	p	p	p	p	p
***ph**	p^h	p^h	p^h	p^h	p^h	p^h
***b**	p^h	p	p	p	p	p
***ʔb**	b	b	b	b	m	m
***m**	m	m	m	m	m	m
***hm**	m	m	m	m	m	m
***f**	f	f	f	f	p^h	p^h
***v**	f	f	f	f	p^h	p^h
***w**	w	w	w	w	w	w
***hw**	w	w	w	w	w	w
***t**	t	t	t	t	t	t
***th**	t^h	t^h	t^h	t^h	t^h	t^h
***d**	t^h	t	t	t	t	t
***ʔd**	d	d	d	d	l	l
***n**	n	n	n	n	n	n
***hn**	n	n	n	n	n	n
***l**	l	l	l	l	l	l
***hl**	l	l	l	l	l	l
***r**	r	h	h	h	h	h
***hr**	h	h	h	h	h	h
***s**	s	s	s	s	s[10]	s
***z**	s	s	s	s	s	s
***c**	c	c	c	c	c	c
***ch**	c^h	(c^h) (c)	c	c^h	c	c
***ɟ**	c^h	(c^h) (c)	c	c	c	c
***ɲ**	j	ɲ	j	j	j	j
***hɲ**	j	ɲ	j	j	j	j
***j**	j	j	j	j	j	j
***ʔj**	j	j	j	j	j	j
***k**	k	k	k	k	k	k
***kh**	k^h	k^h	x	x	k^h	k^h
***g**	k^h	k	k	k	k	k
***ŋ**	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ
***hŋ**	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ

[9] This spelling follows the conventions described in Appendix 1 for place names in Myanmar. Alternative spellings include Mong Yawng; Muong Yong; Muang Yong; Mueng Yong.

[10] Orawan (1985:66-68) uses the symbol /ts/ but does not give a phonetic description of the sound it represents or how it contrasts with /c/.

PT	Standard Thai	Northern Thai	Lue Jinghong	Lue Murng Yorhng[9]	Shan	Mao
***x**	k^h	k^h	x	x	k^h	k^h
***ɣ**	k^h	k^h	x	x	k^h	k^h
***ʔ**	ʔ	ʔ	ʔ	ʔ	ʔ	ʔ
***h**	h	h	h	h	h	h

Table 2 Initial consonant reflexes in SWT languages

The data for the two Tai Lue varieties comes from Gedney (1996:xx-xxiii) with reference also to Robinson (1994:60) and Li (1977). It should be noted that Gedney's data was collected in 1964 and remained as unpublished fieldnotes until edited and published by Hudak in 1996. The Shan data comes from Orawan (1984) and the Tai Mao data is from Robinson (1994:48-51). The Northern Thai (Tai Yuan) data comes from Ruengdet (1982); Robinson (1994:65-68) and The Northern Thai Dictionary (Chiang Mai Rajabhat Institute 1996). In the table brackets around a particular phoneme indicate that the status of that phoneme is unclear, usually because of dialectal variation in the language concerned. The column headed 'Standard Thai' in the table is shaded to emphasise the fact that Standard Thai is different to the other languages represented in the picture in that the PT voiced stops *b, *d, *ɟ, *g developed into homorganic voiceless aspirated /p^h, t^h, c^h, k^h/ stops whereas in the other languages they developed into homorganic voiceless unaspirated stops /p, t, c, k/. This distinction was used by Chamberlain (1975:50) as the primary criterion in the subdivision of SWT languages.

The entries in Table 2 show a great deal of uniformity. The small differences that do exist are noted in the order in which they appear in the table. The reflexes of *ʔb in Shan and Mao are both /m/ in contrast to the reflexes in the other varieties, namely /b/. The reflexes of *f and *v in Shan and Mao are both /p^h/ in contrast to the reflexes in the other varieties, namely /f/. The reflexes of *ʔd in Shan and Mao are both /l/ in contrast to the reflexes in the other varieties, namely /d/. Although

not apparent from the entries in the table, there is still some evidence of /r/ as a phoneme in Lue. Li (1977:142) claims that Lue has a literary pronunciation [hr-], a voiceless alveolar trill, as the reflex of *r whereas in ordinary speech the reflex is [h]. Pranee et al. ([1998] 2000:276) concur with Li's observation that PSWT *tr>t and *thr>h in all SWT languages they observed. Specific evidence is given for Lue and although Khuen is not specifically mentioned its compliance with the general rule is implied. Gedney (1996:xxiii) reports that /r/ exists as an initial consonant but it is little in evidence in his data. Gedney (1996:xxv) reports that there is frequently variation between /h/ and /r/ with /r/ being used in the literary form and /h/ used in the spoken form. The Lue data used by Robinson (1994)[11] does not show any evidence of /r/ being preserved. The present author speculates that the dates when the respective data were collected as well as the home location of the LRPs could account for the discrepancies. The later the date when the data was collected, the weaker the evidence is for /r/ as an initial consonant phoneme.

Gedney (1996:xxii) reports that only Lue Murng Yorhng has the aspirated stop /ch/ but Li (1977:167) reports /ch/ as the modern reflex of *ch. This is the first of several instances where Murng Yorhng differs from Jinghong. Ruengdet (1982:3) asserts that [ch] is pronounced freely by educated speakers of Northern Thai but corresponds to the phoneme /c/. The Northern Thai Dictionary (Chiang Mai Rajabhat Institute 1996:5) asserts that /ch/ might not be used in some varieties of Northern Thai. It is therefore placed in brackets in Table 2. Northern Thai is the only variety included in Table 2 to preserve the palatal nasal /ɲ/ as a phoneme although Gedney (1996:xxv) reports that it occurs as an allophone of /ŋ/ in Lue

[11] Robinson's primary source of Lue data was Yu Tsui Nung et al. ([1979], 1984).

Murng Yorhng. Both Lue varieties studied by Gedney (1996) preserve /x/ as the modern reflex of *x and *ɣ. Furthermore there is no contrastive evidence for the existence of /kh/ as a separate phoneme in these varieties, although Li (1964) reported such a contrast in the Lue variety he studied.

Li (1977:255-257) also reconstructs a number of initial consonant clusters. These are laid out in Figure 8 which is a slightly re-arranged version of Robinson's synthesis of Li's work (Robinson 1994:19).

			2nd consonant		
			***l**	***r**	***w**
1st consonant	**Labial**	***pʰ**	*pʰl/r		
		***p**	*pl	*pr	
		***ʔb**	*ʔbl/r		
		***b**	*bl	*br	
		***f**		*fr	
		***v**	*vl	*vr	
		***m**	*ml/r		
	Dental	***tʰ**	*tʰl	*tʰr	
		***t**	*tl	*tr	
		***ʔd**	*ʔdl/r		
		***d**	*dl	*dr	
		***n**	*nl/r		
	Velar	***kʰ**	*kʰl	*kʰr	*kʰw
		***k**	*kl	*kr	*kw
		***g**	*gl	*gr	*gw
		***x**		*xr	*xw
		***ɣ**			*ɣw
		***ŋ**	*ŋl/r		*ŋw

Figure 8 PT initial consonant clusters (adapted from Robinson 1994:19 and Li 1997:255-257)

Li (1977:58) reconstructs six final consonants: the stops *p, *t, *k and the nasals *m, *n, *ŋ. Regarding final *w and *y, Li (1977:58) adopts the stance that 'what

has generally been considered as a final semivowel will be treated as a member of the vowel cluster.' Robinson (1994:26-27) points out the inconsistency of Li's stance as evidenced by the distributional limitations of the vowel diphthongs and triphthongs created by Li's stance. This work will therefore follow Robinson (1994:27) in considering *w and *y as final consonants as shown in Figure 9.

		Place of articulation			
		Labial	**Dental**	**Palatal**	**Velar**
Manner of articulation	**Stop**	*p	*t		*k
	Nasal	*m	*n		*ŋ
	Approximant	*w		*y[12]	

Figure 9 PT final consonants (adapted from Robinson 1994:26 and Li 1997:58)

2.2.2 PT vowels

As all the languages considered in this thesis are in the Southwestern branch of the Tai language family, the vowel system of Proto-Southwestern Tai (PSWT) is presented (Li 1977:300-301). PSWT also has phonemic length distinctions which is advantageous for the present discussion. Li (1977:300-301) reconstructed a vowel system consisting of 12 monophthongs, 12 diphthongs and 2 triphthongs. This system is presented in Figure 10.

Monophthongs			
	*i, *iː	*ɯ, *ɯː	*u, *uː
	*e		*o
	*ɛː	*a, *aː	*ɔː
Diphthongs			
	*ia, *iu	*ɯa	*ua
		*əi	
	*ɛːu	*ai, *aːi, *aɯ, *au, *aːu	*ɔːi
Triphthongs			
	*iau		*uai

Figure 10 PSWT vowels (adapted from Li 1977:300)

[12] Li used the symbol 'y' for the palatal semivowel which in IPA is represented by the symbol 'j'.

Note that Figure 10 differs from Robinson's (1994:26) account of Li's reconstruction because Robinson omits *iu but includes *ɛ, *ə, *ɔ.

Li's vowel system can be re-stated by considering final [i] and [u] as semivowels *j and *w respectively. This is presented in Figure 11. The system has 13 monophthongs, 4 diphthongs and no triphthongs.

Monophthongs			
	*i, *iː	*ɯ, *ɯː	*u, *uː
	*e	*ə	*o
	*ɛː	*a, *aː	*ɔː
Diphthongs			
	*ia	*ɯa	*ua
		*aɯ	

Figure 11 PSWT vowels without final semivowels (Robinson 1994:26)

Whereas the PT consonants provided a good framework to compare the initial consonants of the languages studied in this thesis, the PSWT vowels are not quite adequate for comparing the vowel systems. Table 3 therefore simply lists the vowels of the languages under consideration in this thesis. The symbol ✓ signifies that a particular variety has a particular phoneme whereas the symbol X signifies that a particular variety does not have a particular phoneme.

Phoneme	Standard Thai	Northern Thai	Lue Jinghong	Lue Murng Yorhng	Shan	Mao
i	✓	✓	✓	✓	✓	✓
iː	✓	✓	✓	✓	X	X
ɯ	✓	✓	✓	✓	✓	✓
ɯː	✓	✓	✓	✓	X	X
u	✓	✓	✓	✓	✓	✓
uː	✓	✓	✓	✓	X	X
e	✓	✓	✓	✓	✓	✓
eː	✓	✓	✓	✓	X	X
ɤ	✓	✓	✓	✓	✓	✓
ɤː	✓	✓	✓	✓	X	X
o	✓	✓	✓	✓	✓	✓
oː	✓	✓	✓	✓	X	X
ɛ	✓	✓	✓	✓	✓	✓
ɛː	✓	✓	✓	✓	X	X
a	✓	✓	✓	✓	✓	✓
aː	✓	✓	✓	✓	✓	✓
ɔ	✓	✓	✓	✓	✓	✓
ɔː	✓	✓	✓	✓	X	X

Table 3 Monophthong phonemes in SWT languages

In this thesis the close-mid back unrounded vowel /ɤ/ is used instead of the close-mid central unrounded vowel /ə/. This is done in the interests of consistency. It should be remembered that it is a phonemic label and does not imply any judgement on the phonetic quality of this vowel for the languages the author has not personally listened to in the course of this study. For the languages he has listened to for this study, /ɤ/ is used as the phonemic label because [ɤ] is considered an accurate description of the phonetic quality of the vowel.

Table 3 shows that all six varieties exhibit phonemic length for the open central unrounded vowel, i.e., /a/ is a separate phoneme to /aː/. For the other vowel

positions Standard Thai, Northern Thai and both Lue varieties exhibit phonemic length whereas Shan and Mao do not.

Table 4 presents the diphthongs observed in the various languages.

Phoneme	Standard Thai	Northern Thai	Lue Jinghong	Lue Murng Yorhng	Shan	Mao
ia	✓	✓	X	X	X	X
ɯa	✓	✓	X	X	X	X
ua	✓	✓	X	X	X	X
aɯ	X	X	X	X	✓	✓

Table 4 Diphthong phonemes in SWT languages

It is clear from the table that Standard Thai and Northern Thai share the diphthongs /ia, ɯa, ua/ whereas none of the other varieties have these diphthongs. Note that where Standard Thai or Northern Thai words feature the diphthongs /ia, ɯa, ua/, the cognates in Lue have the monophthongs /e:, ə:, o:/ and Shan and Mao have the monophthongs /e, ə, o/[13]. Shan and Mao are the only two varieties that have the diphthong /aɯ/ which deserves special note. Both Orawan (1985:63) and Robinson (1994:51-52) posit this as a single vowel phoneme citing its distributional restriction to open syllables. In this thesis /aɯ/ is considered a diphthong for consistency with the proto-form as shown in Figure 11.

2.2.3 PT tones

Although various authors have devised systems of analysing and representing tonal patterns in Tai languages, Gedney's (1972) system is 'the most logical, best organized, and most clearly labeled' (Hartmann 1986:173). As such it has become the standard and so will be used in this work where it is referred to as the 'Gedney tone box framework'. The framework is set out in Figure 12 and consists of the

[13] Since length is not contrastive for the close-mid vowels in Shan and Mao, the phonemes are labelled /e, ə, o/ but their phonetic realisation is [e:, ə:, o:].

cross tabulation of four categories of PT initial consonants with five categories of PT tones. The resulting framework has 20 separate tone boxes representing mutually exclusive environments which together are adequate for describing the vast majority[14] of Tai tonal systems.

		PT tones				
		A	**B**	**C**	**DS**	**DL**
Initials at time of tonal splits	**Voiceless friction sounds** ****s, *hm, *ph*, etc.**	1	5	9	13	17
	Voiceless unaspirated stops ****p, *t, *k*, etc.**	2	6	10	14	18
	Glottal ****ʔ, *ʔb, *ʔd*, etc.**	3	7	11	15	19
	Voiced ****b, *m, *l, *z*, etc.**	4	8	12	16	20
		Live[15] syllables			Dead[16] syllables	

Figure 12 Gedney's tone box framework (adapted from Gedney 1972:434)

The boxes are often labelled by a column reference followed by a row reference. Thus boxes 1-4 in Figure 12 above would be labelled A1-A4; boxes 5-8 would be labelled B1-B4; etc. In conjunction with the tone box framework Gedney (1972:434-436) devised a wordlist for eliciting entries for each of the tone boxes described above. Gedney's framework will be used to describe the tone systems of the various languages studied in this thesis. For the sake of illustration first the tone system of Standard Thai is presented on its own, and then compared with Northern Thai, Lue Jinghong, Lue Murng Yorhng, Shan and Mao. Figure 13

[14] Gedney himself (1972:436) mentions that Saek has two different tones in Box 1. A variety of Nung also has two tones in Box 1 although the same features that determine the split are different to those conditioning the split in Box 1 observed in Saek. Court (1998) argues for a further column to be added for dead syllables ending in a glottal stop.

[15] For definition see Glossary.

[16] For definition see Glossary.

shows the tonal distribution for Standard Thai. The bold lines in Figure 13 mark the tone splits.

	A	B	C	DS	DL
1. Voiceless friction sounds	5[17]	2	3	2	2
2. Voiceless unaspirated stops	1				
3. Glottal					
4. Voiced		3	4	4	3

Figure 13 Tone distribution in Standard Thai (adapted from Gedney 1972:433)

The tonal systems for several Tai languages spoken in regions where Khuen speakers live are displayed in Figure 14. The numbering of the tonemes is the numbering proposed by the original authors.

	A	B	C	DS	DL
1	5	2	3	2	2
2	1				
3					
4		3	4	4	3

Standard Thai (Gedney 1972:433)

	A	B	C	DS	DL
1	5	2	6	1	2
2					
3	1				
4		3	4	4	3

Northern Thai (Ruengdet 1982)

	A	B	C	DS	DL
1	1	2	3	1	2
2					
3					
4	4	5	6	5	5

Lue Jinghong (Gedney 1996)

	A	B	C	DS	DL
1	1	2	3	1	2
2					
3	4				
4		5	6	5	5

Lue Murng Yorhng (Gedney 1996)

	A	B	C	DS	DL
1	1	3	4	2	3
2					
3					
4	2	4	5	5	4

Shan (Orawan 1984)

	A	B	C	DS	DL
1	1	4	5	1	4
2	2				
3					
4	3	2	6	6	2

Mao (Robinson 1994)

Figure 14 Tone systems of languages closely related to Khuen

[17] The numbering of the Standard Thai tonemes in this thesis follows Gedney (1972:433) and M.R. Kalaya and Abramson (1999) who use a numbering based on the Standard Thai orthography explained below. The orthographic tone marks have an inherent order as follows: - (zero); ◌่ [ma:j^{45} ʔe:k^{21}]; ◌้ [ma:j^{45} tʰo:^{33}]; ◌๊ [ma:j^{45} tri:^{33}]; ◌๋ [ma:j^{45} tɕat^{21}ta^{21}wa:^{33}] (see for example Benjawan 2002). The numbering of tones is that obtained by applying the orthographic tone marks to a live syllable beginning with a middle class consonant, such as กา [ka:^{33}]. The orthographic, phonetic and phonemic transcriptions are thus as follows. กา [ka:^{33}] /ka:^{1}/; ก่า [ka:^{21}] /ka:^{2}/; ก้า [ka:^{42}] /ka:^{3}/; ก๊า [ka:^{45}] /ka:^{4}/; ก๋า [ka:^{24}] /ka:^{5}/.

Table 5 presents a comparison of the tone systems depicted in Figure 14. The tone splits are marked by bold lines.

<table>
<tr><th>Tone Box Reference</th><th>Standard Thai</th><th>Northern Thai</th><th>Lue Jinghong</th><th>Lue Murng Yorhng</th><th>Shan</th><th>Mao</th></tr>
<tr><td>A1</td><td>5</td><td rowspan="2">5</td><td rowspan="3">1</td><td rowspan="2">1</td><td rowspan="3">1</td><td>1</td></tr>
<tr><td>A2</td><td rowspan="3">1</td><td rowspan="2">2</td></tr>
<tr><td>A3</td><td rowspan="2">1</td><td rowspan="2">4</td></tr>
<tr><td>A4</td><td>4</td><td>2</td><td>3</td></tr>
<tr><td>B1</td><td rowspan="3">2</td><td rowspan="3">2</td><td rowspan="3">2</td><td rowspan="3">2</td><td rowspan="3">3</td><td rowspan="3">4</td></tr>
<tr><td>B2</td></tr>
<tr><td>B3</td></tr>
<tr><td>B4</td><td rowspan="4">3</td><td>3</td><td>5</td><td>5</td><td rowspan="4">4</td><td>2</td></tr>
<tr><td>C1</td><td rowspan="3">6</td><td rowspan="3">3</td><td rowspan="3">3</td><td rowspan="3">5</td></tr>
<tr><td>C2</td></tr>
<tr><td>C3</td></tr>
<tr><td>C4</td><td>4</td><td>4</td><td>6</td><td>6</td><td>5</td><td>6</td></tr>
<tr><td>DS1</td><td rowspan="3">2</td><td rowspan="3">1</td><td rowspan="3">1</td><td rowspan="3">1</td><td rowspan="3">2</td><td rowspan="3">1</td></tr>
<tr><td>DS2</td></tr>
<tr><td>DS3</td></tr>
<tr><td>DS4</td><td>4</td><td>4</td><td>5</td><td>5</td><td>5</td><td>6</td></tr>
<tr><td>DL1</td><td rowspan="3">2</td><td rowspan="3">2</td><td rowspan="3">2</td><td rowspan="3">2</td><td rowspan="3">3</td><td rowspan="3">4</td></tr>
<tr><td>DL2</td></tr>
<tr><td>DL3</td></tr>
<tr><td>DL4</td><td>3</td><td>3</td><td>5</td><td>5</td><td>4</td><td>2</td></tr>
</table>

Table 5 Tone distribution in languages closely related to Khuen

Figure 14 and Table 5 show that both Standard Thai and Shan have five phonemic tones, with both languages showing a coalescence of the B4 and C1-3 tone categories. They differ however in the A column – A1-234 versus A123-4 respectively. The other four varieties all have six phonemic tones but have differences in the tone splits. Northern Thai and Lue Murng Yorhng have identical splits. There have been several studies of Northern Thai tones. Gardner (n.d.) and Person (1998) both compared Northern Thai varieties from locations outside of Chiang Mai with the Chiang Mai variety and found identical tone splits but came to different conclusions as to how the tones on dead syllables should be associated with the tonemes observed on live syllables. Tai Mao is unique among these varieties in having a tripartite division of the A column, namely A1-23-4.

Having described the phonology of languages spoken in the areas neighbouring those areas where Khuen speakers live, attention is given to previous research about Khuen phonology.

2.3 Khuen Phonology

This section presents the details of each of the previous studies of Khuen in turn as well as a comparison of the findings.

2.3.1 Soren Egerød (1959)

Egerød (1959) described Khuen phonology and script but did not identify his phonological description with any particular location or variety other than stating that his research 'commenced with a stay in Kengtung in 1957' (Egerød 1959:123). The 20 initial consonant phonemes reported by Egerød are presented in Figure 15. Where there is variation in the phonetic realisation or the phonetic realisation is different from the phoneme label, this difference is made explicit in the chart. For example Egerød (1959:123) explains that the phoneme /c/ which is normally realised as the affricate [ts] 'is sometimes palatalized, especially before /i(i)/ and /e(e)/.' Since this appears to be conditioned variation, the two allophones [ts] and [tɕ] are listed as alternatives. In examples where no conditioning environment is specified, the symbol ~ is used to denote free variation between the allophones, e.g. /m/ [m]~[m̥].

		Place of Articulation				
		Labial	**Alveolar**	**Palatal**	**Velar**	**Glottal**
Manner of articulation	**Stop**	/pʰ/	/tʰ/		/kʰ/	
		/p/	/t/		/k/	/ʔ/
		/b/ [ʔb]	/d/ [ʔd]			
	Affricate		/c/ [ts] or [tɕ]			
	Fricative	/f/ [ɸ]	/s/			/h/
	Nasal	/m/ [m]~[m̥]	/n/ [n]~[n̥]		/ŋ/ [ŋ]~[ŋ̊]	
	Trill		/r/			
	Lateral approximant		/l/			
	Approximant	/w/		/j/		

Figure 15 Initial consonant phonemes of Khuen from Egerød (1959:125)

There are only nine consonants that occur in syllable-final position. These are shown in Figure 16.

		Place of articulation				
		Labial	**Alveolar**	**Palatal**	**Velar**	**Glottal**
Manner of articulation	**Stop**	b	d		g	ʔ
	Nasal	m	n		ŋ	
	Approximant	w		j		

Figure 16 Syllable-final consonant phonemes of Khuen from Egerød (1959:125)

Egerød (1959:125) also reported a number of initial consonant clusters in 'Burmese-Shan' loanwords. These are summarised in Figure 17.

		2nd consonant		
		j	**w**	**r**
1st consonant	**pʰ**	pʰj		
	p	pj		
	m	mj		
	tʰ		tʰw	tʰr
	t		tw	tr
	s		sw	sr
	kʰ	kʰj	kʰw	
	k	kj	kw	

Figure 17 Initial consonant clusters of Khuen from Egerød (1959:125)

The Khuen vowels identified by Egerød are presented in Figure 18. Note that all nine vowel positions are claimed to have phonemic length despite the comment that 'under the influence of Shan there is a tendency to confuse /i/ with /ii/, /y/ with /yy/ and /u/ with /uu/ (in writing as well as in speech)' (Egerød 1959:125).

	Front	Central	Back
High	i ii	y [ɨ] yy [ɨː]	u uu
Mid	e ee	ə əə	o oo
Low	ɛ ɛɛ	a aa	ɔ ɔɔ

Figure 18 Vowel phonemes of Khuen from Egerød (1959:125)

Egerød (1959:124) identified six phonemic tones whose distribution is laid out in Figure 19.

	A	B	C	DS	DL
1. Voiceless friction sounds	1	3	5	2	3
2. Voiceless unaspirated stops					
3. Glottal	2				
4. Voiced		4	6	6	4

Figure 19 Tone distribution in Khuen from Egerød (1959:127)

2.3.2 William J. Gedney ([1964], 1994)

In 1964 Gedney collected extensive field notes on two varieties of Khuen ('Klang Muong Khuen' and 'Baan Veng Khuen') although these were not published for 30 years (Gedney 1994). The phonological descriptions of the two varieties are identical apart from one minor detail which will be indicated in the description that follows. Gedney identified 19 initial consonant phonemes as laid out in Figure 20. Where there is variation in the phonetic realisation of the phoneme this is made explicit in the chart.

		Place of Articulation				
		Labial	**Alveolar**	**Palatal**	**Velar**	**Glottal**
Manner of articulation	**Stop**	/pʰ/	/tʰ/		/kʰ/	
		/p/	/t/	/c/	/k/	/ʔ/
		/b/	/d/			
	Fricative	/f/ [f]~[ɸ]	/s/			/h/
		/v/ [v]~[β][18]				
	Nasal	/m/	/n/		/ŋ/	
	Lateral approximant		/l/			
	Approximant			/y/		

Figure 20 Initial consonant phonemes of Khuen from Gedney ([1964] 1994:978-979)

Gedney identified essentially the same nine final consonants as Egerød (1959) although where Egerød had voiced stops, Gedney had homorganic voiceless stops. The nine final consonant phonemes are laid out in Figure 21.

		Place of articulation				
		Labial	**Alveolar**	**Palatal**	**Velar**	**Glottal**
Manner of articulation	**Stop**	p	t		k	ʔ
	Nasal	m	n		ŋ	
	Approximant	w		y		

Figure 21 Syllable-final consonant phonemes of Khuen from Gedney (1994:979)

Gedney did not analyse the vowel system phonologically. Nine different phonetic vowel positions are reported with long and short distinctions in each position as shown in Figure 22.

[18] This free variation is only noted for the Klang Muong variety.

	Front	Central	Back	
	Unrounded	Unrounded	Unrounded	Rounded
High	i ii		ɯ ɯɯ	u uu
Mid	e ee		ɤ ɤɤ	o oo
Low	ɛ ɛɛ	a aa		ɔ ɔɔ

Figure 22 Vowel phones of Khuen from Gedney ([1964] 1994:979)

Gedney identified six phonemic tones whose distribution is laid out in Figure 23.

	A	B	C	DS	DL
1. Voiceless friction sounds	1	2	3	4	2
2. Voiceless unaspirated stops					
3. Glottal	4				
4. Voiced		5	6	6	5

Figure 23 Tone distribution in Khuen from Gedney ([1964] 1994)

2.3.3 Rasi Petsuk (1978)

The most detailed phonological study of Khuen to date is by Rasi Petsuk (1978). She asserted that there are three varieties of Khuen, namely, 'Khün Kang Muang', 'Khün Muang Lang' and 'Weng Khün' (Rasi 1978:2). She described in detail the phonology of 'Khün Kang Muang' as 'spoken in the Kat Htai village cluster located approximately five kilometres south of Keng Tung town' (Rasi 1978:2). She identified 16 initial consonant phonemes as displayed in Figure 24. The first entry in Figure 24 exemplifies the style of representing Rasi's data. Rasi showed that the phoneme /p^h/ exists in its own right by evidence of contrast with the other phonemes listed in Figure 24. She states that in some words there is free variation [f]~[p^h]. She does not point out that the free variation occurs in the reflexes of PT *v and *f. Since this free variation is limited to certain words, the table simply lists both realisations.

		Labial	Alveolar	Palatal	Velar	Glottal
Manner of articulation	**Stop**	/p^h/ [p^h] or [f]	/t^h/		/k^h/ [k^h] or [x]	
		/p/	/t/		/k/	/ʔ/
	Affricate		/c/ [tɕ]			
	Fricative		/s/ [s] or [$tɕ^h$]			/h/
	Nasal	/m/	/n/		/ŋ/	
	Lateral approximant		/l/ [l], [d] or [ɾ]			
	Approximant	/w/ [w] or [b]		/j/		

Figure 24 Initial consonant phonemes of Khuen from Rasi (1978:5)

Rasi reported the same nine final consonants as Gedney ([1964] 1994). These syllable-final consonants are laid out in Figure 25.

		Place of articulation				
		Labial	**Alveolar**	**Palatal**	**Velar**	**Glottal**
Manner of articulation	**Stop**	p	t		k	ʔ
	Nasal	m	n		ŋ	
	Approximant	w		j		

Figure 25 Syllable-final consonant phonemes of Khuen from Rasi (1978:8-9)

Rasi identified nine vowel positions with phonetic length distinctions in all positions. Length was only contrastive for the three low vowel positions viz. [ɛ], [a], [ɔ]. Variation in length for the non-low vowels is non-contrastive and long and short vowels can be shown to be in complementary distribution making them allophones of the same phoneme. The vowel system is laid out in Figure 26. For the non-low vowels the conditioning features for the realisation of the allophones of a particular phoneme are not specified.

	Front	Central	Back
High	/i/ [i] or [iː]	/ɯ/ [ɯ] or [ɯː]	/u/ [u] or [uː]
Mid	/e/ [e] or [eː]	/ə/ [ə] or [əː]	/o/ [o] or [oː]
Low	/ɛ/ /ɛː/	/a/ /aː/	/ɔ/ /ɔː/

Figure 26 Vowel phonemes of Khuen from Rasi (1978:6)

Rasi (1978:43-48) also studied vowel correspondences between Khuen and Standard Thai. These are presented in Figure 27.

	Front		Central		Back	
Monophthongs						
	Thai	**Khuen**	**Thai**	**Khuen**	**Thai**	**Khuen**
High	/i/	/i/ [i]	/ɯ/	/ɯ/ [ɯ]	/u/	/u/ [u]
	/iː/[19]	/i/ [i] or [iː]	/ɯː/	/ɯ/ [ɯ] or [ɯː]	/uː/	/u/ [u] or [uː]
Mid	/e/	/ɛ/	/ə/	/ɔ/ or /ɯ/	/o/	/ɔ/
	/eː/	/e/ [eː]	/əː/	/ə/ [əː]	/oː/	/o/ [oː]
Low	/ɛ/	/ɛː/	/a/	/aː/	/ɔ/	/ɔː/
	/ɛː/	/ɛː/	/aː/	/aː/	/ɔː/	/ɔː/
Diphthongs						
	/ia/	/e/	/ɯa/	/ə/	/ua/	/o/

Figure 27 Vowel correspondences between Standard Thai and Khuen from Rasi (1978:43-48)

The most striking feature in Figure 27 is the correspondence of the Thai mid vowels /e/ and /o/ with Khuen low vowels /ɛ/ and /ɔ/ respectively. The Khuen mid vowels /e/, /ə/ and /o/ correspond to the Thai diphthongs /ia/, /ɯa/ and /ua/ respectively.

[19] Note that whereas Thai /i/ corresponds with the short realisation of Khuen /i/ [i], Thai /iː/ sometimes corresponds with short realistation /i/ [i] and sometimes with the long realisation /i/ [iː].

Rasi identified five phonemic tones whose distribution is laid out in Figure 28. The most notable feature of this distribution is the lack of tone split in the B and DL columns.

<table>
<tr><th></th><th>A</th><th>B</th><th>C</th><th>DS</th><th>DL</th></tr>
<tr><td>1. Voiceless friction sounds</td><td rowspan="2">1</td><td rowspan="3">3</td><td rowspan="2">4</td><td rowspan="2">2</td><td rowspan="3">3</td></tr>
<tr><td>2. Voiceless unaspirated stops</td></tr>
<tr><td>3. Glottal</td><td rowspan="2">2</td></tr>
<tr><td>4. Voiced</td><td>5</td><td>5</td></tr>
</table>

Figure 28 Tone distribution in Khuen from Rasi (1978:109)

2.3.4 Wyn Owen (2003)

Owen (2003) analysed data from Lah Murng village, which lies in Kat Taw village tract, about 12 miles northeast of Keng Tung. The 19 initial consonant phonemes are laid out in Figure 29.

<table>
<tr><th colspan="2" rowspan="2"></th><th colspan="5">Place of Articulation</th></tr>
<tr><th>Labial</th><th>Alveolar</th><th>Palatal</th><th>Velar</th><th>Glottal</th></tr>
<tr><td rowspan="8">Manner of articulation</td><td rowspan="3">Stop</td><td>/p^{h}/</td><td>/t^{h}/</td><td></td><td>/k^{h}/</td><td></td></tr>
<tr><td>/p/</td><td>/t/</td><td></td><td>/k/</td><td>/ʔ/</td></tr>
<tr><td>/b/</td><td>/d/</td><td></td><td></td><td></td></tr>
<tr><td>Affricate</td><td colspan="2">/c/ [tɕ]</td><td></td><td></td><td></td></tr>
<tr><td>Fricative</td><td>/f/</td><td>/s/</td><td></td><td></td><td>/h/</td></tr>
<tr><td>Nasal</td><td>/m/</td><td>/n/</td><td></td><td>/ŋ/</td><td></td></tr>
<tr><td>Lateral approximant</td><td></td><td>/l/</td><td></td><td></td><td></td></tr>
<tr><td>Approximant</td><td>/w/</td><td></td><td>/j/</td><td></td><td></td></tr>
</table>

Figure 29 Initial consonant phonemes of Khuen from Owen (2003:5)

Since the nine final consonant phonemes identified by Owen are the same as those presented by Gedney ([1964] 1994) and Rasi (1978) they are not tabulated here.

Owen identified nine distinctive vowel positions with contrastive length in the low vowels. The vowel phonemes are laid out in Figure 30.

	Front	Central	Back
High	i	ɯ	u
Mid	e	ɤ	o
Low	ɛ ɛː	a aː	ɔ ɔː

Figure 30 Vowel phonemes of Khuen from Owen (2003:11)

Owen identified five phonemic tones whose distribution is laid out in Figure 31. Note that these tone splits agree with those of Rasi (1978:109).

	A	B	C	DS	DL
1. Voiceless friction sounds	1	3	4	2	3
2. Voiceless unaspirated stops					
3. Glottal	2				
4. Voiced			5	5	

Figure 31 Tone distribution in Khuen from Owen (2003:15)

2.3.5 Wyn Owen (2004a)

Owen (2004a) recorded and analysed the tones of an elderly speaker from Lah Murng village. The distribution of these tones is laid out in Figure 32. There is an apparent conflict between this analysis and that of Owen (2003) where there was no split in the B column. The best way to reconcile this conflict is to consider the ages of the LRPs for the two studies: the older LRP has a B123-4 tone split whereas the younger LRP has no split in the B column, i.e. B1234. The conflict can be reconciled by proposing a coalescence of the B4 tone with the tone of B123 among younger members of the Lah Murng community, although it should be emphasised that this is a hypothesis rather than an established fact.

	A	B	C	DS	DL
1. Voiceless friction sounds	1	3	5	2	3
2. Voiceless unaspirated stops					
3. Glottal	2				
4. Voiced		4	6	6	4

Figure 32 Tone distribution in Khuen Lah Murng from Owen (2004a)

2.3.6 Wyn Owen (2004b)

Owen (2004b) analysed data from Wan Wo which is situated about 7 miles east from Keng Tung in the Murng Lang village tract. There were 20 phonemes in the inventory of initial consonants. These are presented in Figure 33.

		Place of Articulation				
		Labial	**Alveolar**	**Palatal**	**Velar**	**Glottal**
Manner of articulation	**Stop**	/p^h/	/t^h/		/k^h/	
		/p/	/t/		/k/	/ʔ/
		/b/	/d/			
	Affricate		/c/ [ts]			
	Fricative	/f/	/s/			/h/
	Nasal	/m/	/n/		/ŋ/	
	Trill		/r/			
	Lateral approximant		/l/			
	Approximant	/w/		/j/		

Figure 33 Initial consonant phonemes of Khuen from Owen (2004b:1)

The same nine final consonants as Gedney ([1964]1994) were identified so they are not tabulated here. The same nine vowel positions as other authors were observed. Contrastive vowel length was found in two low vowels viz. /a, ɔ/ however acoustic measurements of vowel duration revealed no consistent pattern that could be used to distinguish short vowels from long vowels even for the two low vowels with contrasts in identical environments. The vowels are presented in Figure 34.

	Front	**Central**	**Back**
High	i	ɯ	u
Mid	e	ɤ	o
Low	ɛ	a aː	ɔ ɔː

Figure 34 Vowel phonemes of Khuen from Owen (2004b:1)

Owen identified six phonemic tones whose distribution is laid out in Figure 35.

	A	B	C	DS	DL
1. Voiceless friction sounds	1	3	5	2	3
2. Voiceless unaspirated stops					
3. Glottal	2				
4. Voiced		4	6	6	4

Figure 35 Tone distribution in Khuen from Owen (2004b:2)

2.3.7 Phinnarat Akharawatthanakun (2007)

Phinnarat Akharawatthanakun (2007) studied several Tai languages (including Khuen) spoken in Nan Province of Thailand. Her particular interest was phonological change attributable to language contact. She identified six phonemic tones whose distribution is laid out in Figure 36.

	A	B	C	DS	DL
1. Voiceless friction sounds	1	3	5	2	3
2. Voiceless unaspirated stops					
3. Glottal	2				
4. Voiced		4	6	5	4

Figure 36 Tone distribution in Khuen of Nan Province from Phinnarat (2007)

2.3.8 Pranee Kullavanijaya et al. ([1998] 2000)

Pranee et al. ([1998] 2000) studied 88 Tai speech varieties in China, Vietnam, Laos and Thailand. Particular attention was paid to the tone systems which were used to determine subgroups of the Southwestern branch of the Tai language family. They identified six phonemic tones for Khuen in Chiang Mai Province Thailand and noted 'a rather peculiar phenomenon in Tai Khuen, i.e. C123, has merged with DL4' (Pranee et al. [1998] 2000:282). Although the authors do not make the point, the implication of their observation is that for this Khuen variety B≠DL. The distribution is laid out in Figure 37. The blank cells in the figure represent tonal categories for which no information was reported.

	A	B	C	DS	DL
1. Voiceless friction sounds	1	3	5		
2. Voiceless unaspirated stops					
3. Glottal	2				
4. Voiced		4	6		5

Figure 37 Tone distribution in Khuen of San Patong from Pranee et al. ([1998] 2000:281)

2.3.9 Synthesis of previous Khuen research

This section presents a synthesis of the previous research on Khuen as described in detail in the foregoing sections. First the consonants are compared in Table 6. If a particular author reports a particular phoneme, this is represented by a ✓ symbol in the table. If there is no such evidence, an X is placed in that cell. If there is free or conditioned variation or if there is a difference between the phonemic label and the phonetic realisation then this is made explicit in the table.

Initial Consonant Phonemes		Egerød (1959)	Gedney (1964)	Rasi (1978)	Owen (2003)	Owen (2004b)
Labial	**pʰ**	✓	✓	[pʰ] or [f]	✓	✓
	p	✓	✓	✓	✓	✓
	b	[ʔb]	✓	X	✓	✓
	f	[ɸ]	[f] or [ɸ]	X	✓	✓
	v	X	[v] or [β]	X	X	X
	w	✓	X	[w] or [b]	✓	✓
	m	[m] or [m̥]	✓	✓	✓	✓
Alveolar	**tʰ**	✓	✓	✓	✓	✓
	t	✓	✓	✓	✓	✓
	d	[ʔd]	✓	X	✓	✓
	s	✓	✓	[s] or [tɕʰ]	✓	✓
	n	[n] or [n̥]	✓	✓	✓	✓
	r	✓	X	X	X	✓
	l	✓	✓	[l], [d] or [ɾ]	✓	✓
Post alveolar	**c**	[ts] or [tɕ]	✓	[tɕ]	[tɕ]	[ts]
Palatal	**j**	✓	y	✓	✓	✓
Velar	**kʰ**	✓	✓	[kʰ] or [x]	✓	[kʰ] or [x]
	k	✓	✓	✓	✓	✓
	ŋ	[ŋ] or [ŋ̊]	✓	✓	✓	✓
Glottal	**ʔ**	✓	✓	✓	✓	✓
	h	✓	✓	✓	✓	✓
Total		20	19	16	19	20

Table 6 Comparison of initial consonant phonemes from previous Khuen research

Although a high degree of agreement is apparent in Table 6, the following comments discuss the points of divergence of the different varieties.

The number of PT words beginning with the voiced stops *ʔb and *ʔd is relatively small and so the functional load on them is relatively low. Rasi (1978:13-15) found that there was free variation in their modern reflexes, namely [b]~[w] and [d]~[l] although /w/ and /l/ existed as phonemes in their own right. In the absence of contrastive evidence between [b] and [w] and [d] and [l] respectively, Rasi

concluded that [b] and [d] did not deserve phonemic status. A similar situation pertains for PT *v whose modern reflex showed free variation, i.e. [f]~[p^h]. Since Rasi found that /p^h/ is a phoneme in its own right, she did not accord phonemic status to [f]. Gedney has /v/ as the reflex of PT *w and *hw whereas all of the other varieties have /w/. No variety has both phonemes. The main outstanding difference between the varieties therefore is whether or not the modern varieties preserve a distinctive reflex for PT *r. As can be seen from Table 6, the varieties described by Egerød (1959) and Owen (2004b) have the alveolar trill phoneme /r/ but the other three varieties do not have such a phoneme. Rasi asserts that the phones [ɾ] and [l] are in free variation in initial position in words derived from PT *r.

The final consonants are compared in Table 7. Evidence of a particular phoneme is signalled by ✓ whereas if there is no such evidence then an X is inserted.

Final Consonant Phonemes		**Egerød (1959)**	**Gedney (1964)**	**Rasi (1978)**	**Owen (2003)**	**Owen (2004b)**
Labial	**p**	X	✓	✓	✓	✓
	b	✓	X	X	X	X
	m	✓	✓	✓	✓	✓
	w	✓	✓	✓	✓	✓
Alveolar	**t**	X	✓	✓	✓	✓
	d	✓	X	X	X	X
	n	✓	✓	✓	✓	✓
Palatal	**j**	✓	y	✓	✓	✓
Velar	**k**	X	✓	✓	✓	✓
	g	✓	X	X	X	X
	ŋ	✓	✓	✓	✓	✓
Glottal	**ʔ**	✓	✓	✓	✓	✓
Total		9	9	9	9	9

Table 7 Comparison of final consonant phonemes from previous Khuen research

As can be seen from Table 7, the finals are all but identical. Egerød (1959) reported voiced stops /b/, /d/ and /g/ whereas all other authors reported homorganic voiceless stops /p/, /t/ and /k/.

The vowel systems of the different varieties are compared in Table 8. Gedney (1964) did not draw phonological conclusions so only phonetic transcriptions are presented in the first data column. Owen (2003; 2004b) found contrastive length in open and open-mid vowels but, although phonetic length was observed in close and close-mid vowels, there was insufficient evidence to draw phonological conclusions about its phonemic status for those vowels. In the final two columns of Table 8 therefore only phonetic transcriptions are given for close and close-mid vowels.

Vowel positions		**Egerød (1959)**	**Gedney (1964)**	**Rasi (1978)**	**Owen (2003)**	**Owen (2004b)**
Front unrounded	i	/i/ /ii/	[i] [ii]	/i/→[i] [ii]	[i] [ii]	[i] [ii]
	e	/e/ /ee/	[e] [ee]	/e/→[e] [ee]	[e] [ee]	[e] [ee]
	ɛ	/ɛ/ /ɛɛ/	[ɛ] [ɛɛ]	/ɛ/ /ɛɛ/	/ɛ/ /ɛɛ/	/ɛ/ /ɛɛ/
Central unrounded or Back unrounded	ɨ or ɯ	/ɨ/ /ɨɨ/	[ɯ] [ɯɯ]	/ɯ/→[ɯ] [ɯɯ]	[ɯ] [ɯɯ]	[ɯ] [ɯɯ]
	ə or ɤ	/ə/ /əə/	[ɤ] [ɤɤ]	/ə/→[ə] [əə]	[ɤ] [ɤɤ]	[ɤ] [ɤɤ]
	a	/a/ /aa/	[a] [aa]	/a/ /aa/	/a/ /aa/	/a/ /aa/
Back rounded	u	/u/ /uu/	[u] [uu]	/u/→[u] [uu]	[u] [uu]	[u] [uu]
	o	/o/ /oo/	[o] [oo]	/o/→[o] [oo]	[o] [oo]	[o] [oo]
	ɔ	/ɔ/ /ɔɔ/	[ɔ] [ɔɔ]	/ɔ/ /ɔɔ/	/ɔ/ /ɔɔ/	/ɔ/ /ɔɔ/

Table 8 Comparison of vowel systems from previous Khuen research

Each study identifies nine distinct vowel positions although there are slight variations in the exact nature of two of those positions. The substantive differences between the different works lie in the phonemic status of the length distinctions identified by all authors. At one extreme Egerød claims length to be phonemic in all nine positions whereas at the other extreme Rasi asserts that length is phonemic only the three low vowel positions. In the six non-low vowel positions the length distinctions can be explained by the environment in which they occur (Rasi 1978:18-21). Gedney points out that no phonological analysis had been performed for the vowels and so the length distinctions at each position are simply reported with no comment on the phonemic status of length. Owen (2003) follows the same pattern as Rasi for the low vowels, namely that since there is evidence of contrastive length for the low vowels, both long and short variants deserve phonemic status. Owen (2004b) found contrastive evidence only for /a/ and /a:/ and /ɔ/ and /ɔ:/. For the non-low vowels, Owen (2003; 2004b) leaves the question unresolved and simply reports that there is variation in length.

The tonal systems for the five varieties described above plus two further varieties of Khuen spoken in Thailand are compared in Table 9.

Tone Box Reference	Egerød (1959)	Gedney (1964)	Rasi (1978)	Owen (2003)	Owen (2004a)	Owen (2004b)	Pranee et al. (1998)	Phinnarat (2007)
A1	1	1	1	1	1	1	1	1
A2								
A3	2	2	2	2	2	2	2	2
A4								
B1	3	3	3	3	3	3	3	3
B2								
B3								
B4	4	4			4	4	4	4
C1	5	5	4	4	5	5	5	5
C2								
C3								
C4	6	6	5	5	6	6	6	6
DS1	2	2	2	2	2	2		2
DS2								
DS3								
DS4	6	6	5	5	6	6		5
DL1	3	3	3	3	3	3		3
DL2								
DL3								
DL4	4	4			4	4	5	4

Table 9 Comparison of tone systems from previous Khuen research

All seven varieties reveal the same pattern of splits and mergers for the A column, namely A12-34. The C and DS columns also pattern in the same way for all varieties, namely C123-4 and DS123-4. A further feature that holds true for all varieties is the identical patterns of the B and DL columns, i.e. B=DL. The main difference between the varieties is whether or not the tone in B4 is distinct from the tone for B123. All varieties apart from Rasi (1978) and Owen (2003) show a distinction. According to Gedney (1972:423) when two Tai varieties have different numbers of tones, one would normally expect them to be different dialect. Khuen speakers however normally claim that any differences between Khuen varieties are insignificant and cause no impediment to intelligibility.

In seeking an explanation for the differences in the B column, two obvious factors to consider are the date of data collection and the home location of the LRP. Egerød (1959), Gedney ([1964] 1996), Rasi (1978) and Owen (2003) all worked with LRPs who could be described as speaking the 'Kang Murng' variety and

whose home locations are in relatively close proximity to each other so this does not appear to provide a cause of different tonal pattern. There are differences in the date of data collection – Egerød (1959) and Gedney (1964) are the earliest dates, while Rasi (1978) and Owen (2003) are the most recent dates. It is possible to hypothesise therefore that a merger of tones in the B column has taken place over the 40 or so years since Gedney collected his data. The LRP for Owen (2004a) was from the same village as the LRP for Owen (2003), but there was a generational difference between her and the younger (male) LRP for Owen (2003). Thus it is still possible to hypothesise change over time as the main cause of the difference in the tone patterns.

The home location of the LRPs for the other three studies would not be described as 'Klang Murng'. Owen (2004b) is from the Murng Lang village tract and both Pranee et al. (1998) and Phinnarat (2007) analysed data from Khuen villages in Thailand.

2.4 Language Use

There is little recent published research on language use in the Keng Tung area. Egerød (1959:213) observed that

> Khuen is the language of the ruling (Sawbwagyi) family of Kengtung and is as such being actively promoted as a language of administration and education it was in heavy competition with Burmese (the official language of the Union of Burma[20]), Shan (the second language of all other Shan States and very widely spoken in Kengtung), and English (the language in which most influential people received their training, to some extent still used by the administration).

Although the ruling elite were Khuen, the lowlands of Keng Tung State were inhabited by other Tai groups including Shan, Lue, Lao, Lem and Yun (Enriquez 1933:15). In fact the Khuen were primarily concentrated in the main Keng Tung valley (Enriquez 1933:16). Mi Mi Khaing (1955) estimated that the Khuen

comprised about 25% of the population of Keng Tung State. Khuen ethnic identity does not necessarily imply Khuen language use so estimates of Khuen population are better interpreted as representing the potential number of Khuen speakers.

Dodd ([1923] 1996:210) described Keng Tung as 'the crossroads of the nations' since it lay on a well used trade route connecting southwestern China with Rangoon and Bangkok. It was also a great meeting place of different ethnic groups who came to buy and sell goods at the market although some groups such as the Tai Nuea established a considerable presence in the city itself Dodd ([1923] 1996:172).

2.5 Literacy

Dodd ([1923] 1996:x) used the word 'literate' for those groups that had a written language, irrespective of how many members of the group could read or write. He travelled widely among Tai peoples of modern day northern Thailand, Shan State (Myanmar), Laos and southern China, and lived in Keng Tung from 1904-1907 (Dodd [1923] 1996:202-217). In the course of his Christian work he distributed much literature written in Lan Na script and found that the literature could be read by many of the Lao, the Khuen, the Lue and the Nuea (Dodd [1923] 1996:x). While there is not enough information given to infer what proportion of the groups listed that could read or write, it is at least possible to see that a century ago the Lan Na script was widely recognised among Tai peoples in much of the territory of the old Lan Na kingdom established by Mang Rai in the late 13th century and ruled from Chiang Mai (see Wyatt 2003:33-39). Wyatt (2003:70) further emphasises the significance of royal patronage of the strict, scholarly, textually oriented Sinhalese order of Buddhism 'whose informed, educated monks would long provide the society of Lan Na with vigorous intellectual leadership'. Penth (1994:15) noted that one of the features of the 'golden age of Lan Na circa

[20] The name of the country was changed to 'Union of Myanmar' in June 1989.

1400 – circa 1525' was 'a high percentage of literacy because young men often entered the monkhood for a period of time'.

The Buddhist scriptures and popular Jataka stories were written down in Khuen script and widely used. The belief that copying out a religious text earns merit for the copier led to many people copying stories on manuscripts. The normal practice was for the completed manuscript to be read out loud at a ceremony at the person's home and thereafter to be donated to the temple where it would be kept in the temple library (Peltier 1996:311-312). This practice accounts for the large number of ancient manuscripts and fragments still extant (see Peltier 1987). Moreover according to Peltier, Khuen classical literature is the best preserved of all 'the Tai groups of the Indochinese Peninsula' (Peltier 1993:23). The use of the Khuen script is especially strong in the Buddhist temples and is highly revered, although it is also used for non-religious purposes (Peltier 1993:21).

In recent years an increasing emphasis has been placed on literacy as of vital importance for both personal and community development. Various agencies of the United Nations promote and support literacy as part of their development initiatives and programmes. In Myanmar the United Nations Development Programme (UNDP) delivers assistance under a programme known as the Human Development Initiative (HDI). One area of focus initiated the setting up in 1994 of the first Community Learning Centres (CLCs) for isolated communities (UNESCO 2002). By 2001 a total of 71 such centres had been established (UNESCO 2002:1). A foundational element of the activities of the CLCs was teaching basic literacy in Burmese (UNESCO 2002:5). Despite being hampered by their lack of proficiency in Burmese, those who had participated in CLC literacy programmes in Shan State gained greater confidence both within their own communities and when venturing outside their immediate vicinity (UNESCO 2002:24).

In 1990 UNESCO, UNDP, UNFPA, UNICEF and The World Bank convened a meeting in Jomtien, Thailand for representatives of 155 countries. The result of

the meeting was 'The World Declaration on Education for All' which stated that 'Literacy programmes are indispensable because literacy is a necessary life skill in itself and the foundation of other life skills' (UNESCO et al. 1990). The outworking of commitments made at the meeting led to extensive surveys in both Cambodia[21] and Lao PDR[22] aimed at estimating the adult literacy rates for various subgroups of their populations. Both studies tested proficiency in reading, writing and numeracy and both studies found that the proportion of men who were literate was significantly higher than the proportion of women. Furthermore, the Lao National Literacy Survey (LNLS) (Lao People's Democratic Republic 2004) found that the self-assessed literacy proficiency rate was at least 25% higher than the rate estimated from test scores, as can be seen from the entries in Table 10.

	Total	**Male**	**Female**
Tested basic literacy rate (15-59)	45.2%	53.7%	36.9%
Reported literacy rate (15-59)	72.3%	79.5%	65.6%
Difference (reported-tested)	27.1%	25.8%	28.6%

Table 10 Basic literacy rates in Lao PDR (Lao People's Democratic Republic 2004:58)

Before moving on the protocol used in the LNLS is described as this author believes that the protocol could be responsible for at least some of the disparity between reported and tested rates. The LNLS sampled whole households, and upon arrival at a particular home interviewed the head of the household and among other things asked them for each member of their household could 'read, write and calculate in Lao language?' (Lao People's Democratic Republic 2004:77). Each member of the household for whom the head of the household answered this question positively was then tested using tests for reading, writing and numeracy. There are two potential areas for inaccuracy in this protocol. Firstly, it was the head of the household rather than the individual concerned who was responsible for the answer concerning reported literacy ability. Secondly and perhaps more importantly, the three different skills of reading, writing and

[21] Kingdom of Cambodia (2000)

[22] Lao People's Democratic Republic (2004)

calculating were lumped together in the same question. This forced a single response about the subject's ability in three different skills when different responses for the different skills might have been more appropriate. For example, a subject might be adept at reading and writing but very weak at calculating. The head of household might think that a positive answer to the overall question was merited since it was true for two out of the three skills. The protocol for interpreting the test results however was not like this – above average performance in say the reading test was not allowed to compensate for below-average performance in the numeracy test.

Having summarised previous research the following section gives a description of the theoretical foundations of the research and analysis in the present work.