

Chapter III

P Group Language Descriptions

The PG Languages

The PG languages of the SW branch of the Tai family of languages share several features which distinguish them from other languages of the SW branch. In all PG languages, the PT voiced stop series *b, *d and *g are realized in the modern dialects with unaspirated voiceless stops, /p/, /t/ and /k/. For all PG languages, the PT initial consonant clusters with either *r or *l as the second element have been reduced to simple initial consonant phonemes. No modern PG language has a phoneme /r/. *r has become /h/†. The PG languages uniformly have a correspondence between the B and DL tone categories. In addition, the isogloss of Figure 3 shows that the SWT PG languages can be defined geographically.

In the following sections we will review various sources of data for PG languages. The presentation of the languages' phonologies will follow the conventions presented in Chapter I. Additional information concerning a language's phonology or the phonetic nature of a given

† Tai Ahom is the exception with /r/; see Chapter Vi: Discussion.

phoneme can be found in the source documents cited. The PG languages[†] to be considered are: Tai Mao, Tai Khamti, Tai N'ua, Tai Lü, Tai Yai, Tai Yuan, Tai Khün, White Tai, Black Tai, and Red Tai.

Tai Mao

Tai Mao is spoken in the border area between the northern Shan States, Myanmar and Yunnan Province, China. The Tai Mao refer to the Shweli River as the *Nam Mao*, themselves as *Tai Mao* and their area as *Məng Mao*. Reference to the Tai Mao can be found as early as Cushing's 1881 Shan dictionary:

The Tai family is divided into several linguistic groups, viz. the Siamese, Laos (Lau), Burmese Shan, Tai-Mou or Tai-Khe (called Chinese-Shans), Khamti and Ahom. They extend from the gulf of Siam northwards in Yunnan and thence westwards into Assam (Cushing 1881: 1).

Although it appears little synchronic or diachronic analysis of Tai Mao has ever been undertaken.

Harris (1975) identifies one of his Tai N'ua dialects as Tai Mao. His informant for Tai Mao was from the town of Nam Kham, one of the larger towns within the Tai Mao area. Nam Kham is located along the Shweli River near the Burma Road border crossing between China and Myanmar.

[†] The debate over whether it is more appropriate to call divergent forms of Tai speech dialects or languages will not be taken up here. Throughout the word "language" is used.

Following Harris, in 1979 Linda Young collected language data from transient Tai Mao speakers in Chiang Mai Province, Thailand. Her speakers were originally from the towns of Nam Kham and Mu Tse. These communities are about 30 kilometers apart on the Burmese side of the Shweli river. Young's collection of materials includes texts, glossaries and wordlists. In 1985 these were published as Shan Chrestomathy: An Introduction to the Tai Mao Language and Literature. In terms of volume the largest portion of Young's texts are from previously published sources (possibly Chinese Dehong Tai sources). Young also comments that her informant would write out the texts before their elicitation sessions. Such a procedure could be expected to produce an influence from the written form on her data. James Matisoff makes the following comments on the linguistic value of Young's data in his introduction to Young's chrestomathy.

The professional Tai linguist will find much delightful and challenging material in these pages, but should bear in mind that this work is primarily a contribution to cultural anthropology, and only incidentally to linguistics

(Matisoff 1985: vii).

Because of Matisoff's comments and my own feeling that some of Young's data has been unduly influenced by the written form, only language generalization will be drawn from Young's work.

1. Language Informants

The primary source of information on Tai Mao will come from my own fieldnotes. Since the fall of 1991 I have had the opportunity to

gather oral texts and wordlists from several Tai Mao speakers living in Bangkok. My two principle language informants are Maü Haung /mau 54/ ከ၁၅ 24/ and Haang Seang /ha:ŋ 54 ၁၅၅ 24/.

Maü Haung (MH) is 45 years old and was born in Mu Tse, Shan States. His family is monolingual and work as rice farmers. In his 45 years, MH has been outside of the Mu Tse area for three periods of time. The first was in his mid teens when for several years he lived in the southern part of the Shan States. Later, when in his early twenties, MH left the Mu Tse area to work in Bangkok for a 2-3 year period. Finally about four years ago, MH came to live in Bangkok. During these two periods of time in Bangkok MH has learned to read and write Central Thai. According to Thai speakers he also speaks Thai but with a fairly strong accent. In addition to Tai Mao and Thai, MH can reportedly speak Tai Yai, but not Burmese, Chinese or English.

Haang Seang (HS) is 29 years old and was born in the Nam Kham area, Shan States. He comes from a monolingual family, whose occupation is primarily tea and rice farming. He lived and was educated in the Tai Mao area until his entrance to university at 20 years old. HS is the first member of his family to have attended university. At this point, HS has been living outside the Tai Mao area for several years. During this time he has chosen to live with Tai Mao speakers. When asked why he does not also live with Tai Yai speakers from Myanmar his response is that it is easier to live with Tai Mao speakers as there is not any confusion when communicating. HS speaks Tai Yai, Burmese and English and has been learning some Thai while living in Thailand.

Both HS and MH are considered to be good speakers of Tai Mao by the group of Tai Mao speakers in Bangkok. Both can read and write

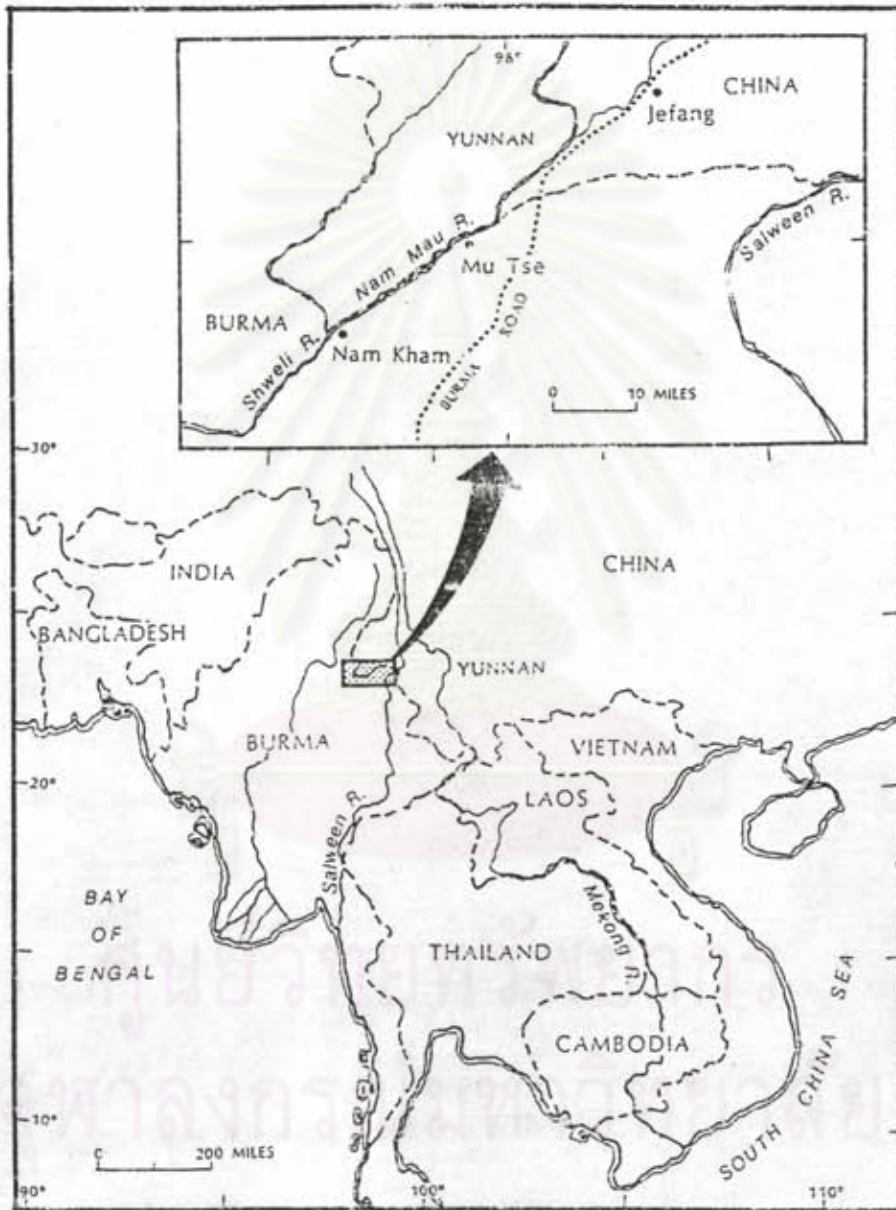
several scripts used for Tai Mao including the old Shan script (as in Cushing 1888) and the script currently used for Tai Nua publications originating from China (as presented in Young 1985). Both also have a knowledge of the literature and traditional history of their ethnic group.

Figure 7 shows the location of Nam Kham and Mu Tse and the area along the Shweli River which is home to the Tai Mao.



ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Figure 7 Map of Tai Mao Area



(Young 1985: viii).

2. Tai Mao Syllable Structure

Tai Mao is a monosyllabic language with CV^T and CVC^T syllable types. We will refer to the former as OPEN syllables, the latter as CLOSED syllables.[†] The full consonant inventory can fill the obligatory syllable initial consonant, but as is typical of Tai languages the syllable final position takes only a restricted set of consonants. The set of syllable final consonants are: /m/, /n/, /ŋ/, /w/, /y/, /p/, /t/, and /k/. Each syllable also has a tone. Length is not a syllable contrastive feature.

3. Tai Mao Tone

Tai Mao has six phonemic tones on LIVE syllables. These are: 1) rising tone as in /kau 24/: 'to stir', 2) mid level as in /kau 33/: 'I', 3) narrow fall as in /kau 54/: 'to disturb', 4) low level as in /kau 11/: 'old', 5) high wide fall as in /kau 51/: 'nine', and 6) high level as in /kau 55/: 'owl'. For DEAD syllables there is a restricted set of 4 tones. These four tones correspond to the rising, mid level, low level, and high level tones for LIVE syllables: a mid rising tone as in /kop 34/: 'frog', or /lip 34/: 'raw', a mid slightly falling tone as in /lut 32/: 'blood' or /iok 32/: 'outside', a low falling tone as in /huk 21/: 'gums', /pot 21/: 'lungs' or /mok 21/: 'flower', and a high tone as in /nok 55/: 'bird', or /luk 55/: 'child'. In my data, neither of the falling tones, narrow fall or wide fall, occur on DEAD syllables.

[†] As was pointed out in Chapter II a second division of syllable types for Tai languages is LIVE versus DEAD syllables where the former are OPEN syllables plus CLOSED syllables with continuants as their final consonant. DEAD syllables are those with a stop as the final consonant.

Syllable:	/pha/	vs.	/phan/	vs.	/phat/
Syllable Type:	OPEN LIVE		CLOSED LIVE		CLOSED DEAD

By following Gedney (1972) several interesting points emerge in the distribution of Tai Mao tones. Table 15 summarizes Tai Mao tone distribution based on the PT tone categories A, B, C, DL, DS and PT initial consonant classes. This distribution of tones based on the author's field notes agrees with that of Young (1985) but Harris (1975) reports only five tones for Tai Mao. Harris's distribution of tones shows a coalescing of the tones in the C tone box so that C123 and C4 have the same tone reducing the total number of tones from six to five.

Table 15 Tai Mao Tone Distribution

Proto-Tai Initials	Proto-Tai Tones				
	A	B	C	DL	DS
1. Friction Sounds	1				
2. Voiceless Unaspirated	2	4	5	4	1
3. Glottal Sounds					
4. Voiced Sounds	3	2	6	2	6

Unlike most PG languages Tai Mao has a three way tone split for the A tone: A1-23-4 and an A23 and B4 tone box coalesce. We will see that this coalescence is typical for all of the PG languages which have an A1-23-4 tone split. As is typical of PG languages the B and DL tones correspond. For Tai Mao, distribution on tones in the DL and DS categories is not completely consistent. There are for example DS words with DL tones such as /mit 6/: 'knife' and /luk 6/: 'child' and DL words with DS tones such as /tap 4/: 'liver'.

4. Tai Mao Consonants

A phonemic analysis of our language data shows that there are 15 syllable initial consonants in Tai Mao. Table 16 lists these consonants.

Table 16 Tai Mao Initial Consonants

p	t	c	k	ʔ
ph	th		kh	
	s			h
m			ŋ	
w	l	y		

Of the languages we will be considering in this study, Tai Mao has the smallest inventory of initial consonants. The lack of distinction between /n/ and /l/ as well as a more common PG language lack of distinction between aspirated stops and fricatives in the labial and velar positions, the lack of voicing distinction for stops and the lack of labialized velar phonemes (k^w, etc.) creates this reduced initial consonant inventory.

Concerning the loss of distinction between /n/ and /l/, when asked how to pronounce a word such as 'bird', MH will say /lok DL4/ whereas HS will say /nok DL4/. When these pronunciations, /lok DL4/ versus /nok DL4/ are reproduced for MH and he is asked which one is correct, MH responds that the people who can't read or write Tai Mao will say /lok DL4/ but that those who can read will say /nok DL4/. He'll often add that in his village if you say /nok DL4/ instead of /lok DL4/ people will comment that you are showing off. MH reports a similar response from villagers when one does not palatalize velar fricatives before front vowels. Unfortunately I did not have the same opportunities to pursue this line of questioning with HS.

Both MH and HS have a free variation between /x/ and /s/ before front vowels /i/ and /e/. Examples include /sɛ m 1/: 'needle', /set 4/: 'kind of small frog', /se 1/: 'fishnet' and /si 5/: 'excrement'. There is also an occasional free variation between /k/ and /c/ such as in /cip 1/: 'petal'.

As is typical of Tai languages the syllable final consonants in Tai Mao are limited to p, t, k, m, n, ŋ, y and w, where y and w have co-occurrence restrictions. The vowels: u, o, ɔ, a, a:, can occur before y and i, e, ɛ, a, a:, can occur before w. A syllable final glotta' constriction co-occurs with the low level tone, high level tone and the high falling tone as a variation of the pronunciation of these tones.

5. Tai Mao Vowels

Tai Mao has a typical SWT system of nine phonemic vowel qualities. For Tai Mao, vowel length is distinctive only between /a/ and /a:/. In addition to these vowels, Tai Mao has the diphthong /aw/ whose distribution is limited to OPEN syllables. Table 17 lists these vowels.

Table 17 Tai Mao Vowels

i	ɯ	u
e	ə	o
ɛ	a	ɔ
	a:	
	aw	

In our analysis of Tai Mao, /aw/ is considered to be a single vowel phoneme which has a phonetic realization as a diphthong and with a distribution which is limited to OPEN syllables. In this thesis when we

speak of diphthongs we will be referring to those diphthongs which have a more regular distribution, namely: /ia/, /ua/, and /ua/. Tai Mao's phoneme inventory does not include these diphthongs.

Tai Nüa

Also known as Dehong Tai or Chinese Shan, our information on Tai Nüa comes primarily from two sources, Gedney (1976) and Yu Tsui Nung (1979)[†]. Reference will also be made to Harris (1975) and Xiang Dao (1990). Both sets of language data come from Tai Nüa dialects spoken in southwestern Yunnan Province in the Tai Dehong - Jing Pho Autonomous Region. Gedney's data comes from the village of *Məng Vo* reportedly located in the south-southwest corner of Yunnan Province west of Pu-er.

1. Tai Nüa Tone

Tai Nüa is a monosyllabic language where each syllable has a tone. Yu Tsui Nung and Gedney show inventories of six tones for Tai Nüa and the same distribution of tones for the PT categories in LIVE syllables. For DEAD syllables Yu Tsui Nung and Gedney disagree on the correspondence of DEAD tones with LIVE tones but their tone distribution is the same. Gedney describes the Tai Nüa tones as: 1) rising, 2) mid falling, 3) high falling, 4) low level, 5) low falling with glottal constriction, and 6) low rising with glottal constriction. As was mentioned for Tai Mao, Harris also records five tones for Tai Nüa resulting from the coalescing of the

[†] As reported in Kullavanijaya (1984).

tones in the C column. In our study we will be following the tones as presented by Gedney and Yu Tsui Nung. Table 18 shows the Tai Nüa tone distribution of Gedney.

Table 18 Tai Nüa Tone Distribution

Proto-Tai Initials	Proto-Tai Tones				
	A	B	C	DL	DS
1. Friction Sounds	1				
2. Voiceless Unaspirated		4	5	4	1
3. Glottal Sounds	2				
4. Voiced Sounds	3	2	6	2	2

The distribution of tone in Tai Nüa has several interesting points. Like Tai Mao, Tai Nüa has a three way split of tone in the A tone: A1-23-4 as well as the typical coalescing of the A23 and B4 tone boxes. The coalescence of DL4 and DS4 as indicated by both Yu Tsui Nung and Gedney. As is typical of PG languages Gedney reports that the B tone and DL tone correspond. Although there is also some ambiguity. Gedney states that his two informants used the exact opposite tones from each other on DL versus DS words (Gedney 1976: 65).

2. Tai Nüa Consonants

Gedney's inventory of initial consonants for Tai Nüa numbers 17 whereas Yu Tsui Nung reports 16. The difference is that, like Tai Mao, Yu Tsui Nung does not report a contrast between [n] and [ɲ]. This reduces their consonant inventory to 16. Another difference between the two consonant inventories is that Yu Tsui Nung reports /ŋ/ whereas Gedney

lists this phoneme as /ɲ/. There is not a contrast between velar and palatal nasals reported in either source. In our study we will follow Yu Tsui Nung's consonant inventory for Tai Nüa. This is shown in Table 19.

Table 19 Tai Nüa Initial Consonants

p	t	c	k	ʔ
ph	th		x	
f	s			h
m			ŋ	
v	i	y		

As is typical of Tai languages the syllable final consonants are limited to p, t, k, m, n, ŋ, y, and w, where y and w have co-occurrence restrictions. Only the vowels: u, o, ɔ, ɯ, ə, a, a: can occur before y and only i, e, ɛ, ə, a, a:, can occur before w. A syllable final glottal stop occurs with tones which have final glottal constriction as part of the basic tone.

3. Tai Nüa Vowels

Tai Nüa has a typical Tai system of nine phonemic vowel qualities. Vowel length is distinctive only between /a/ and /a:/. Tai Nüa has the vowel phoneme /aʊ/. Yu Tsui Nung also reports the diphthong /ua/ in Chinese borrowed terms but no diphthongs are reported by any of the researchers on Tai Nüa to regularly occur in PT cognates. As a result, no other diphthongs are included in the inventory of Tai Nüa vowels. Table 20 lists these vowels.

Table 20 Tai Nüa Vowels

i	ɯ	u
e	ə	o
ɛ	a	ɔ
	a:	
	au	

Tai Khamti

Our information on Tai Khamti comes from Harris (1976). Harris's informant was a native Khamti Shan speaker from the village of Naan Cong Kham in the Lohit district of the North East Frontier Agency, India. We will also make reference to Weidert (1977). Unfortunately Weidert does not give us any information on the background of his Tai Khamti informants nor the location of the dialect which they speak. Clément (1985) reports that Tai Khamti is also spoken in the Kachin State, Myanmar.

1. Tai Khamti Tone

Tai Khamti is a monosyllabic language where each syllable has a tone. Harris reports Tai Khamti as having five tones on LIVE syllables. There are an additional two tones on DEAD syllables which Harris associates with two of his LIVE syllable tones. Weidert's distribution of tone is identical to Harris's. Harris describes his 5 tones as 1) high level, 2) mid falling, 3) high falling, 4) mid rising with glottal constriction, and 5) low falling with glottal constriction. Table 21 summarizes the distribution of tone in Tai Khamti.

Table 21 Tai Khamti Tone Distribution

Proto-Tai Initials	Proto-Tai Tones				
	A	B	C	DL	DS
1. Friction Sounds	1				
2. Voiceless Unaspirated	2	1	4	1	1
3. Glottal Sounds					
4. Voiced Sounds	3	2	5	2	2

The distribution of tone in Tai Khamti has several interesting points. Unlike most PG languages Khamti Tai has a three way split of tone of the A tone: A1-23-4. In this study only the three languages, Tai Mao, Tai Nüa, and Tai Khamti have this tone split. Tai Khamti also has the coalescence of the tone categories A23 and B4 which is typical for PG languages which have a A1-23-4 tone split. The coalescence of A1 and B123 is unique to Tai Khamti and results in a five tone rather than six tone system for LIVE syllables. As is typical of PG languages the B tone and DL tone correspond. For Tai Khamti there is no phonemic distinction between DL and DS tones,[†] therefore B also corresponds with DS.

2. Tai Khamti Consonants

Harris reports that there are 16 syllable initial consonants in Tai Khamti. Weidert's data agrees with Harris although his phonological analysis eliminates the initial glottal stop as co-occurring with vowel initial

[†] Phonetically Harris reports that *DS tones are "slightly raised in pitch" (Harris 1976 114).

words. As a result Weidert's consonant inventory is reduced from 16 to 15. Table 22 lists the Tai Khamti initial consonants.

Table 22 Tai Khamti Initial Consonants

p	t	c	k	ʔ
ph	th		kh	
	s			h
m	n		ŋ	
w	l	y		

As is typical of Tai languages the syllable final consonants are limited to p, t, k, m, n, ŋ, y, and w, where y and w have co-occurrence restrictions. Only the vowels: u, o, ɔ, a, a: can occur before y and only i, e, ε, a, a: can occur before w. A syllable final glottal stop occurs with tones which have final glottal constriction as part of the basic tone.

3. Tai Khamti Vowels

Harris reports that Tai Khamti has a typical Tai system of nine phonemic vowel qualities where vowel length is distinctive only between /a/ and /a:/. Tai Khamti also has the vowel phoneme /ɛw/. Table 23 lists these vowels. Weidert's vowel inventory for Tai Khamti does not include the central vowel /ə/. Words such as 'house, home' or 'salt' which are reported as /hən A1/ and /kə A2/ by Harris are reported as /hwn A1/ and /kw A2/ by Weidert.

Table 23 Tai Khamti Vowels

i	ɯ	u
e	ɛ	o
ɛ	a	ɔ
	a:	
	aw	

For Tai Khamti, Harris reports an *ɛi* diphthong followed by /w/ in the words "to whistle" and "to announce". These two examples appear to be borrowings. As no other examples of diphthongs are reported, we will not include the diphthong *ɛi* in the inventory of Tai Khamti for this study.

Tai Lü

Our word list for Tai Lü comes primarily from Yu Tsui Nung (1979). Yu Tsui Nung reports Tai Lü to be spoken in the northern most part of Vietnam and Thailand, the Southern part of Yunnan, China, and the north eastern corner of Myanmar. Tai Lü is also reportedly spoken in Laos (Clément 1985). The dialect represented in Yu Tsui Nung's data is from the Sipsongbanna Autonomous Region in Yunnan Province, China. Reference will also be made to Williams (1986) as well as Hanna (1989) and Xiang Dao (1990).

1. Tai Lü Tone

Tai Lü is a monosyllabic language where each syllable has a tone. Tai Lü has six tones on LIVE syllables. There are an additional three tones on DEAD syllables which are in complementary distribution with

LIVE syllable tones. Yu Tsui Nung (1979) describes these tones as 1) High level: 55, 2) high falling: 51, 3) mid rising: 35, 4) mid level 33, 5) low rising: 13, and 6) low level: 11. Table 21 summarizes the distribution of tone for Tai Lü.

Table 24 Tai Lü Tone Distribution

Proto-Tai Initials	Proto-Tai Tones				
	A	B	C	DL	DS
1. Friction Sounds					
2. Voiceless Unaspirated	1	3	5	3	1
3. Glottal Sounds					
4. Voiced Sounds	2	4	6	4	4

The distribution of tone in Tai Lü follows the "Great Tone Split" which divided the proto tones into two groups distinguishing the proto voiced initial consonant class from the other initial consonant classes. As is typical of PG languages the B tone and DL tone correspond. Yu Tsui Nung's Tai Lü shows coalescence the DL4 and DS4 tone boxes. Hanna's (1989) Tai Lü from Nam Waen village in Chiang Kham, Payao Thailand, shows basically the same tone split although for Hanna, there is a distinction between the DL4 and DS4 tone categories but no distinction between the DL123 and DS123 boxes. According to Williams's (1986) data it is only Hanna's Tai Lü from Nam Waen village which has this particular tone coalescence.

2. Tai Lü Consonants

Yu Tsui Nung and Xiang Dao both report the same 21 syllable initial consonants for Tai Lü. Tai Lü syllable initial consonants are shown in Table 25. Here and elsewhere when labialized velars are the only syllable initial candidates for resegmentation as consonant clusters they will be considered as phonemes. This issue is taken up again in the discussion of the Tai Yai consonant inventory. A contrast between /x/ and /kh/ is reported by Li (1964) but again according to Williams (1986) only Li's dialect of Tai Lü from Cheng Tung, Yunnan reports this phonemic contrast. We will return to discuss dialect differences in Tai Lü in Chapter V.

Table 25 Tai Lü Initial Consonants

b	d				
p	t	c	k ^w	k	ʔ
ph	th		x ^w	x	
f	s				h
m	n			ŋ	
v	l	y			

As is typical of Tai languages the syllable final consonants are limited to p, t, k, m, n, ŋ, y, and w, where y and w have co-occurrence restrictions. Only the vowels: u, o, ɔ, ɯ, ə, a, a: can occur before y and only i, e, ɛ, ə, a, a: can occur before w. Xiang Dao reports that a syllable final glottal stop is contrastive for Tai Lü but gives no examples.

3. Tai Lü Vowels

Tai Lü has a typical Tai system of nine phonemic vowel qualities. Yu Tsui Nung reports that vowel length is only distinctive

between /a/ and /a:/ although points out that there seems to be a very small inventory of words where vowel length is distinctive for other vowel qualities. It is not clear whether the examples that are given are tonal minimal pairs and or if they are expressive forms. In either event it does not appear that vowel length is a regularly contrastive feature for vowels in Tai Lü other than between /a/ and /a:/. Tai Lü does not have the vowel phoneme /au/. Nor does Tai Lü have any other vowel diphthongs. Table 26 lists the Tai Lü vowels.

Table 26 Tai Lü Vowels

i	ɯ	u
e	ə	o
ɛ	a	ɔ
	a:	

Tai Yai

Also known as Shan, Burmese Shan or Tai Luang, Tai Yai is spoken throughout the Shan States, Burma as well as in parts of contiguous Mae Hong Son Province, Thailand. Our data comes from Poo-Israkij's (1985). Poo-Israkij's dialect is from Mae Hong Son Province, Thailand. Other well know sources of information on Shan include Cushing's (1881) dictionary of Shan, and Egerod's (1957) article on Shan phonology and script.

Data from Cushing's dictionary was not chosen as the basis of our analysis of Shan because it seems uncertain that Cushings data is from a single or even typical Shan dialect. Cushing in the introduction of his

Shan dictionary writes that "Dialect differences exist in several localities, but they are of no great importance. The most noticeable dialects are the Kheun . . . and the Leu . . ." (Cushing 1881: 6). It appears to the author that Cushing is not making much of the distinctions between Tai Yai, Tai Mao, Tai Khün and Tai Lü and because of this it seems that his data is likely to contain an admixture of data and of phonological characteristics from various Shan languages.

1. Tai Yai Tone

Tai Yai is a monosyllabic language where each syllable has a tone. Five tones on LIVE syllables are reported for Tai Yai. There are an additional three tones on DEAD syllables which can be associated with LIVE syllable tones. Poo-Israkij describes these tones as: 1) mid rising, 2) high rising, 3) low falling with glottal constriction, 4) mid level with glottal constriction and 5) high falling with glottal constriction. Table 27 summarizes the distribution of tones for Tai Yai.

Table 27 Tai Yai Tone Distribution

Proto-Tai Initials	Proto-Tai Tones				
	A	B	C	DL	DS
1. Friction Sounds					
2. Voiceless Unaspirated	1	3	4	3	2
3. Glottal Sounds					
4. Voiced Sounds	2	4	5	4	5

The distribution of tone in Tai Yai follows the "Great Tone Split" which divided the proto tones into two groups distinguishing the

proto voiced consonant class by tone from the other initial consonants classes. Tai Yai shows a unique coalescence of the C123 and B4 tone boxes. This coalescence reduces the total number of tones based on a split of the three LIVE syllable PT tone categories from six to five. As is typical of PG languages the B tone and DL tone correspond.

2. Tai Yai Consonants

Poo-Israkij lists 17 syllable initial consonants for Tai Yai. For orthographic convenience, we have substituted the symbol /s/ for Poo-Israkij's /t̂s/ which corresponds with /s/ in the other PG languages. (Poo-Israkij does not offer a phonetic description for her /t̂s/ phoneme.) In this thesis we have added Poo-Israkij's initial consonant clusters /kw/ and /khw/ to the list of initial consonant phonemes as /k^w/ and /kh^w/ because these labialized velar clusters are found in PT cognates. Table 28 shows the consonant inventory for Tai Yai.

Table 28 Tai Yai Initial Consonants

b					
p	t	c	k ^w	k	ʔ
ph	th		kh ^w	kh	
	s				h
m	n			ŋ	
w	l	y			

In addition to /k^w/ and /kh^w/, Poo-Israkij reports six other consonant clusters for Tai Yai. These are found only in borrowed terms. In

all of these initial consonant clusters the second unit must be a semivowel, either /w/ or /y/†. Table 29 lists these clusters.

Table 29 Tai Yai Consonant Clusters in Borrowings

pw		cw
	tʰw	
	lw	
py		
my		

As is typical of Tai languages the syllable final consonants are limited to p, t, k, m, n, ŋ, y, and w, where y and w have co-occurrence restrictions. Only the vowels: u, ɔ, ɔ̄, ə, a, a: can occur before y and only i, e, ε, a, a: can occur before w.

3. Tai Yai Vowels

Tai Yai has a typical Tai system of nine phonemic vowel qualities. Vowel length is distinctive only between /a/ and /a:/. Tai Yai also has the vowel phoneme /aw/ but is not reported to have any other vowel diphthongs. Table 30 lists these vowels.

† The superscribing of the /w/ as the second element of /k^w/ and /kh^w/ in Table 28 is not meant to imply that a phonetic distinction from the /w/ as the second element in the clusters of Table 29. Rather it indicates the distinction between borrowings and Tai cognates. The same situation is true for Tai Khün which also has borrowed terms with semi-vowels as the second element in contrast with PT labialized velar stops.



Table 30 Tai Yai Vowels

i	ɯ	u
e	ə	o
ɛ	a	ɔ
	a:	
	aɯ	

Tai Yuan

Also known as Northern Thai, and Lanna Thai, Tai Yuan is spoken in northern Thailand being associated with the speech of Chiang Mai, Chiang Rai, Lamphun, Lampang, Phrae and Nan Provinces. Our primary sources of information on Tai Yuan are Bunphan (1980) and Rungreuangsrri (1991).

1. Tai Yuan Tone

Tai Yuan is a monosyllabic language where each syllable has a tone. Tai Yuan is reported to have six tones on live syllables, this is true for both sources of our data although it is reported that some dialects have seven tones. Bunphan (1980) graphs the six tones of Tai Yuan using a scale of five as: 1) low rising: 24 2) mid level: 33, 3) low falling: 21, 4) high falling: 42, 5) mid falling with glottal constriction: 32[?], and 6) high rising: 45. Table 31 summarizes the distribution of tone in Tai Yuan.

Table 31 Tai Yuan Tone Distribution

Proto-Tai Initials	Proto-Tai Tones				
	A	B	C	DL	DS
1. Friction Sounds	1				
2. Voiceless Unaspirated		3	5	3	1
3. Glottal Sounds	2				
4. Voiced Sounds		4	6	4	6

The distribution of tone in Tai Yuan has several interesting points. Unlike most PG languages which have an A123-4 tone split, Tai Yuan has an A tone split between the voiceless unaspirated stops and the glottal sounds: A12-34. In Rungruengsri (1991) the phonetic realization of tones which fall into the DL123 categories is uncertain although in consulting Bunphan (1980) and Purnell (1963) it appears, as is typical of PG languages, that the B tone and DL tone correspond.

2. Tai Yuan Consonants

Bunphan (1980) and Rungruengsri (1991) both report 20 syllable initial consonants in Tai Yuan. This does not include labialized velars. For comparative purposes we have included the labialized velar clusters, which are found in PT words, as initial consonant phonemes bringing the total inventory of initial consonants to 23. Table 32 lists the Tai Yuan initial consonants.

Table 32 Tai Yuan Initial Consonants

b	d				
p	t	c	kw	k	ʔ
ph	th		khw	kh	
f	s				h
m	n	ɲ		ŋ	
w	l	y			

Bunphan (1980) and Rungruengsri (1991) report 10 additional initial consonant clusters. In all of these initial consonant clusters the second unit is /w/. These clusters are: phw, tw, thw, sw, lw, cw, ɲw, ŋw, yw, and ʔw. As is typical of Tai languages the syllable final consonants are limited to p, t, k, m, n, ŋ, y, and w, where y and w have co-occurrence restrictions. Only the vowels: ua, wa, u, o, ɔ, a, a: can occur before y and only ia, i, ə, ɛ, a, a: can occur before w. Bunphan (1980) lists glottal stop among the syllable final consonants. We will return to this issue when we discuss contrastive vowel length below.

3. Tai Yuan Vowels

Tai Yuan has a typical Tai system of nine phonemic vowel qualities. Tai Yuan like all other PG languages also has a large inventory of PT words which indicate that the vowels /a/ and /a:/ are contrastive. For the other eight vowel qualities, contrastive pairs for vowel length are reported by both Bunphan and Rungruengsri. The final glottal reported by Bunphan being a feature of what could otherwise be called a short vowel in an OPEN syllable. Li (1977) in his discussion of vowel length in Siamese, which also has at least some minimal contrast for all nine monophthong vowels, claims that this length contrast in Siamese was introduced secondarily. This is also most likely true for Tai Yuan and may

even be a result of the influence of Standard Thai. Tai Yuan is not reported to have the vowel phoneme /au/ which many of the other PG languages have. Tai Yuan does have the three typical SWT high-low vowel diphthongs. Table 33 lists these vowels.

Table 33 Tai Yuan Vowels

i, i:	u, u:	ɯ, ɯ:
e, e:	ɛ, ɛ:	o, o:
ɛ, ɛ:	a, a:	ɔ, ɔ:
ia	ua	ua

Tai Khün

Our information on Tai Khün comes from Petsuk's (1978) MA thesis for Mahidol University. Petsuk reports that Tai Khün is spoken in the town and area surrounding Kengtung, Shan States, Myanmar as well as by Tai Khün communities which have migrated to Chiang Mai and Chiang Rai Provinces, Thailand. Petsuk's data comes from the Kat Htai village cluster approximately five kilometers south of Kengtung town, Myanmar.

1. Tai Khün Tone

Tai Khün is a monosyllabic language where each syllable has a tone. Tai Khün has five tones on LIVE syllables. There are an additional three tones on DEAD syllables which are in complementary distribution with the LIVE syllable tones. Petsuk describes these five tones as: 1) low rising, 2) low-mid rise (alternately mid-high rise of DEAD syllables), 3) low

fall, 4) mid falling with glottalisation, and 5) high falling. Table 34 summarizes the distribution of tone in Tai Khün.

Table 34 Tai Khün Tone Distribution

Proto-Tai Initials	Proto-Tai Tones				
	A	B	C	DL	DS
1. Friction Sounds	1				
2. Voiceless Unaspirated	-----	3	4	3	2
3. Glottal Sounds	2		-----		-----
4. Voiced Sounds			5		5

Tai Khün has a tone distribution which is similar to Tai Yuan. Unlike most PG languages which have an A tone split of A123-4 Tai Khün has an A tone split between the proto voiceless unaspirated sounds and the proto glottal sounds: A12-34. The coalescence of B123 and B4 is unique to Tai Khün and results in a 5 tone rather than 6 tone system for LIVE syllables. As is typical of PG languages the B tone and DL tone correspond. Hartmann (1984) working from Gedney's field notes shows a coalescing of the DS and DL tones for Tai Khün but Petsuk reports a distinction.

2. Tai Khün Consonants

Petsuk reports 18 syllable initial consonants for Tai Khün. Her phonemes include the two labialized velar stops /k^w/ and /kh^w/. Petsuk also reports a free variation between [b] and [w] and between [d] and [l]. This free variation is limited to *?b and *?d words which indicates either an influence from a Tai language which maintains the /b/ and /d/ phonemes for *?b and *?d words or, more likely, an ongoing loss of the

/b/ and /d/ phonemes in Tai Khün. The latter being more likely given that Egerod (1959) and the Tai Khün traditional orthography have these distinctions. In Table 35 we have added b (b~w) and d (d~l) to Petsuk's initial consonant inventory.

Table 35 Tai Khün Initial Consonants

b(b~w)	d(d~l)				
p	t	c	k ^w	k	ʔ
ph	th		kh ^w	kh	
	s				h
m	n			ŋ	
w	l	y			

As is typical of Tai languages the syllable final consonants are limited to p, t, k, m, n, ŋ, y, and w, where y and w have co-occurrence restrictions. Only the vowels: u, ə, o, ɔ:, a, a: can occur before y and only i, e, ε:, a, a: can occur before w. A syllable final glottal stop occurs with "phonetically short vowels" but does not appear to be contrastive.

Tai Khün has six additional initial consonant clusters which are found in borrowed terms. These initial consonant clusters are presented in Table 36.

Table 36 Tai Khün Initial Clusters in Borrowings

py	tw	ky
phy	sw	
my		

3. Tai Khün Vowels

Tai Khün has a typical Tai system of nine phonemic vowel qualities. Vowel length is contrastive for [a], [ɛ], and [ɔ], Petsuk reports that the length distinction in [ɛ], and [ɔ] resulted from the loss of the PT diphthongs. This process will be discussed further in Chapter V. Tai Khün does not have the vowel phoneme /aʊ/. Table 37 lists these vowels.

Table 37 Tai Khün Vowels

i	ɯ	u
e	ə	o
ɛ, ɛ:	a, a:	ɔ, ɔ:

White Tai

Our sources of information on White Tai come from Jean Donaldson's dictionary and phonology of White Tai (1961, 1963) as well as Gedney's (1964) comparison of White, Black and Red Tai. White Tai is spoken in the Lai Chao Province and adjacent areas of northwestern Vietnam (Clément 1985). Both Donaldson's and Gedney's data were collected in the early 1960s from White Tai speakers who had migrated from Lai Chao to the village of Tung Ngia in South Vietnam. This migration is reported to have taken place at about the time of the division of North and South Vietnam in 1954.

1. White Tai Tone

White Tai is a monosyllabic language where each syllable has a tone. White Tai has six tones on LIVE syllables. There are an additional two tones on DEAD syllables which can be associated with the LIVE syllable tones. Gedney describes White Tai tones as: 1) mid level, 2) high rising, 3) low rising with glottal constriction, 4) high level with glottal constriction, 5) mid rise/fall, and 6) falling with glottal constriction. Table 38 summarizes the distribution of tones in White Tai.

Table 38 White Tai Tone Distribution

Proto-Tai Initials	Proto-Tai Tones				
	A	B	C	DL	DS
1. Friction Sounds					
2. Voiceless Unaspirated	1	3	5	3	3
3. Glottal Sounds					
4. Voiced Sounds	2	4	6	2	2

The distribution of tone in White Tai follows the typical "Great Tone Split" which divided the proto tones into two groups distinguishing the proto voiced consonant class by tone from the other initial consonant classes. Although the distribution of tone in White Tai is the same as that of Black Tai, for White Tai Gedney chooses to associate the DL4 tone with the A4 tone rather than the B4 tone. Speaking about this correspondence between B and DL tones in White Tai as compared with Black Tai, Gedney comments that correspondance is a "mere accident" of phonetic similarity (Gedney 1964: 425). Gedney may in fact consider any correspondence between LIVE and DEAD syllable tones similarly accidental. Regardless of

Gedney's position it does seem possible to associate the DL tone with B tone in White Tai as we have for the other PG languages.

Gedney describes the DL4 tone as "level, somewhat higher than mid: ... with a long vowel the pitch falls slightly". Gedney's live syllable A4 tone is described as "level, somewhat higher than mid and glottalised". The B4 tone is described as "level, with a slight rise and fall, all at a pitch slightly higher than mid" (Gedney 1964: 419). The phonetic description of all three of these tones have the similarity of pitch at "level, slightly/somewhat higher than mid" and therefore a correspondence of DL4 with B4 rather than A4 could be argued. For White Tai, there is no phonemic distinction between DL and DS tones.

2. White Tai Consonants

Donaldson reports 25 syllable initial consonants in White Tai. Gedney agrees with this inventory although includes the /ʔ/ as a phoneme which Donaldson omits and he does not consider the labialized velars as initial consonants as Donaldson does. We will include the /ʔ/ and the labialized velars arriving at a total of 26 initial consonants. This is the largest inventory of consonants for a PG language. A complete set of contrasts between fricatives and aspirated stops is largely responsible for this large inventory. Table 39 lists these consonants.

Table 39 White Tai: Initial Consonants

b	d				
p	t	c	k ^w	k	ʔ
ph	th	ch	kh ^w	kh	
f	s		x ^w	x	h
m	n	ɲ	ŋ ^w	ŋ	
v	l	y			

As is typical of Tai languages the syllable final consonants are limited to p, t, k, m, n, ɲ, y, and w, where y and w have co-occurrence restrictions. Only the vowels: u, ə, ɔ, a, a: can occur before y and only i, e, ɛ, ə, a, a: can occur before w. A syllable final glottal stop is not contrastive for White Tai although a syllable final glottal stop occurs with tones which have final glottal constriction as part of the basic tone.

3. White Tai Vowels

White Tai has a typical Tai system of nine phonemic vowel qualities. Vowel length is only distinctive between /a/ and /a:/. White Tai has the vowel phoneme /aw/ but is not reported to have any other vowel diphthongs. Table 40 lists these vowels.

Table 40 White Tai Vowels

i	ɯ	u
e	ə	o
ɛ	a	ɔ
	a:	
	aw	

Black Tai

According to Gedney (1964), the center of the area where Black Tai is spoken is the city of Son La in northern Vietnam. Clément (1985, Indochina data from 1949) shows the Black Tai extending primarily west of Son La with pockets of Black Tai speakers located throughout northern Laos. Our sources of information on Black Tai are Fippinger (1970, 1989) and Gedney (1964).

1. Black Tai Tone

Black Tai is a monosyllabic language where each syllable has a tone. Black Tai has six tones on LIVE syllables. There are an additional two tones on DEAD syllables which are associated with LIVE syllable tones. Gedney (1964) describes the Black Tai tones as: 1) mid level, 2) high level, 3) high rising, 4) mid/high level, 5) low falling with glottal constriction, and 6) falling with glottal constriction. Table 41 summarizes the distribution of tone in Black Tai.

Table 41 Black Tai Tone Distribution

Proto-Tai Initials	Proto-Tai			Tones	
	A	B	C	DL	DS
1. Friction Sounds					
2. Voiceless Unaspirated	1	3	5	3	3
3. Glottal Sounds					
4. Voiced Sounds	2	4	6	4	1

The distribution of tone in Black Tai follows the typical "Great Tone Split" which divided the proto tones into two groups distinguishing the proto voiced initial consonant class from the other initial consonants. As is typical of PG languages the B tone and DL tone correspond. Similar to White Tai and Tai Khamti, Black Tai does not distinguish between DL and DS tone categories.

2. Black Tai Consonants

The Fippingers report 22 syllable initial consonants in Black Tai. Gedney reports the same consonant inventory but notes that there is fluctuation between /b/ and /v/ and /d/ and /l/ such that he is uncertain of the status of /b/ and /d/ as phonemes. Similar to Tai Khün we have added these units to the phoneme inventory as b (b~v) and d (d~v).[†] The inventory of Black Tai initial consonants is are shown in Table 42.

Table 42 Black Tai Initial Consonants

b(b~v)		d(d~v)			
p	t	c	k ^w	k	ʔ
	th		kh ^w	kh	
f	s				h
m	n	ɲ	ŋ ^w	ŋ	
v	i	y			

As is typical of Tai languages the syllable final consonants are limited to p, t, k, m, n, ŋ, y, and w, where y and w have co-occurrence

[†] Gedney's (1964) data from Black Tai and Red Tai differs from Petsuk's (1978) data from Tai Khün. All three languages show some variation between b~v/w and d~l in PT *?b and *?d initial words but Petsuk has concluded that the b~w and d~l variations are free variations and therefore uses a single symbol (with a footnote) whereas Gedney has not drawn a conclusion and reports the individual items as he recorded them.

restrictions. Only the vowels: ua, wa, u, ə, o, ɔ, a, a: can occur before y and only ia, i, ə, ε, a, a: can occur before w. A syllable final glottal stop is also contrastive for Black Tai. Gedney writes; "In Black Tai ... all final glottal stops have to be indicated because neither of the tones involved (DEAD syllable tones) falls together with any automatically glottalised tone for the free syllables (LIVE syllables)" (Gedney 1964: 450). Table 43 shows examples of this contrast.

Table 43 Black Tai Final Glottal Contrast

No Final Glottal		Final Glottal	
'old'	kɛ2	'yoke'	ʔcʔ2
'to join'	tɔ2	'bamboo strip'	tɔʔ2

3. Black Tai Vowels

Black Tai has a typical Tai system of nine phonemic vowel qualities, the vowel phoneme /aw/ and the three typical SWT high-low vowel diphthongs. Vowel length is distinctive only between /a/ and /a:/. Table 44 lists these vowels.

Table 44 Black Tai Vowels

i	ɯ	u
e	ə	o
ɛ	a	ɔ
	a:	
	aw	
ia	wa	ua

Red Tai

Clément (1985) shows Red Tai to be spoken in northwestern Vietnam and across the border in parts of Laos between 18° and 20° N latitude. Our source of information of Red Tai is limited to Gedney (1964). Gedney's data comes from Baan Naa Ngo Village, Sam Nuea Province, Laos. Gedney has himself expressed some concern over the quality of his transcriptions. The number of lexical items presented is also relatively small.

1. Red Tai Tone

Red Tai is a monosyllabic language where each syllable has a tone. Red Tai is reported to have five tones on LIVE syllables. There are an additional two tones on DEAD syllables which can be associated with LIVE syllable tones. Gedney describes the tones in Red Tai as: 1) rising, 2) mid with a slight fall, 3) high level, 4) low rising with glottal constriction, and 5) high falling with glottal constriction. Table 45 summarizes the distribution of tone in Red Tai.

Table 45 Red Tai Tone Distribution

Proto-Tai Initials	Proto-Tai Tones				
	A	B	C	DL	DS
1. Friction Sounds					
2. Voiceless Unaspirated	1	3	4	3	3
3. Glottal Sounds					
4. Voiced Sounds	2	4	5	4	

Like White and Black Tai, the distribution of tone in Red Tai follows the typical "Great Tone Split" which divided the proto tones into two groups distinguishing the proto voiced initial consonant class from the other initial consonants. Although unlike White and Black Tai, in Red Tai the B4 and C123 tone boxes have coalesced reducing the total inventory of tones from six to five. As is typical of PG languages the B tone and DL tone correspond. Red Tai also differs from White and Black Tai in that the Red Tai DL4 tone has not coalesced with the DS4 tone. This may be a result of an association between the B and DL tone categories.

2. Red Tai Consonants

Gedney reports 19 syllable initial consonants in Red Tai. To these we have added the labialized velars which Gedney also reports. Like Black Tai, for Red Tai, Gedney reports a fluctuation between /b/ and /v/ and /d/ and /l/ such that he is uncertain of the status of /b/ and /d/ as phonemes. This parallels the situation in Black Tai and like we have done for Black Tai and Tai Khün we have added these units to the phoneme inventory as b (b~v) and d (d~v). The initial consonant inventory for Red Tai is shown in Table 46.

Table 46 Red Tai Initial Consonants

b(b~v)		d(d~v)			
p	t	c	k ^w	k	ʔ
	th		kh ^w	kh	
f	s				h
m	n	ɲ	ŋ ^w	ŋ	
v	l	y			

As is typical of Tai languages the syllable final consonants are limited to p, t, k, m, n, ŋ, y, and w, where y and w have co-occurrence restrictions. Only the vowels: ua, wa, ɔ, a, a: can occur before y and only ia, i, ɛ, a, a: can occur before w.

3. Red Tai Vowels

Red Tai has a typical Tai system of nine phonemic vowel qualities as well as the three typical Tai high-low vowel diphthongs. Vowel length is distinctive only between /a/ and /a:/. Red Tai does not have the vowel phoneme /au/ as part of its inventory. Table 47 lists the Red Tai vowels.

Table 47 Red Tai Vowels

i	ɯ	u
e	ə	o
ɛ	a	ɔ
	a:	
ia	wa	ua

Gedney reports that he is uncertain about additional vowel length contrasts in Red Tai. He presents examples of length contrasts for i, ɯ, u, ə and ɔ. We will cite his data for vowel length as it is written. Gedney explains his system as follows: "Because the question of vowel length is uncertain, I have transcribed final vowels long, as in Siamese, and elsewhere described them as I heard them" (Gedney 1964: 444).