

## TONAL CHANGE IN THE TAI LANGUAGES OF NORTHEAST INDIA<sup>1</sup>

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Currently four languages of the Southwestern Branch of the Tai family are actively spoken in Assam, Northeast India. These are Aiton, Khamti, Khamyang and Phake. There are in addition several other communities who identify themselves as Tai, such as the Ahom and Turung, but who no longer speak the Tai language. Using the methodology established by Gedney (1972), the tonal systems of each of these languages have been studied and will be exemplified in this presentation. Based on this linguistic evidence a historical reconstruction of tone change will be proposed. This will then be compared with the findings of some other scholars, particularly the tones of Khamti as reported by William Robinson (1849), who, unlike most other scholars of his time, was able to distinguish and record the tones of the language. A reconstruction of the tonal system of Robinson's Khamti will be presented. Reconstructions for the tonal systems of the Tai varieties in Northeast India in several stages from Proto-Tai up until the present day will be proposed.

Keywords: Tai languages, Northeast India, Tones, Language Change, Tone Change, Southwestern Tai

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DEF	Definite	IMP	Imperative	NEG	Negative
POST	Postposition	PRT	Particle		

## 1. INTRODUCTION

The most salient differences between languages in the Tai family are often found in their tonal systems, in terms of the number, distribution and realisation of those tones. This paper will present a comprehensive study of the tonal systems of the Tai languages still spoken in Assam State, Northeast India, and propose a history of the tonal systems for those languages which are in the Shan sub-group, within the Southwestern branch of the Tai family.

### 1.1 *The Tai peoples of Northeast India*

Tai speaking peoples have entered the northeast of India in several waves over the past eight centuries. According to both oral traditions and historical documents, the first group of Tais to arrive were the Ahoms, led by a prince of Mau Lung, Sukapha, who crossed the mountains from Burma into Assam in 1228 and set up a kingdom. The ethnonym of this group is the same as the name Assam, pronounced [aħom] in Assamese, and is thought to be cognate with both Siam and Shan (see Edmondson and Solnit 1997:340). Assam is now the name of a state of the Republic of India, the majority of whose population are Hindu and speak an Indo-European language, Assamese. The Ahoms remain a distinct ethnic group in Assam, but they have largely assimilated with the majority Hindu population and no longer speak Tai language as a mother tongue.

Mau Lung, or Mūng Mau (məŋ<sup>2</sup> māu<sup>2</sup> loŋ<sup>6</sup> in Phake), had been founded in the sixth century by Tais who moved from Southern Yunnan into the Shweli valley, Burma, with the capital at Si Lan in what is now northern Shan State. In 1204 the capital was moved to Mūng Mau (Edmondson and Solnit 1997:340).

In the last 300 years, 6 other groups of Tais have settled in India. These are the Khamti, Phake, Aiton, Khamyang, Tairong or Turung and Nora (Diller 1992:5). Each of these groups was literate, using their own scripts derived from either the Burmese or Mon

scripts. Some of the historical chronicles of these communities have been translated (Aimya Khang Gohain MS for Phake, Morey 1999 for Aiton). It appears that these groups migrated northwest from Mau Lung at around the same time as Sukapha, and established small polities (Muangs) in the valleys of northern Burma and in the region of the India-Burma border.

The Phake Chronicles, based on documents that are several hundred years old, tell the history of a Tai polity called Phake (məŋ<sup>2</sup> phā<sup>4</sup> ke<sup>5</sup>) situated in the Hukong valley. These chronicles list a series of Phake kings (cau<sup>3</sup> phā<sup>4</sup>), who appear to have ruled over this polity for several centuries (Aimya Khang MS:11). The Phake traditions state that the Phakes left the Hukong area in 1775 and moved to Assam. The Phake Chronicles also mention the Talung (=Turung?) and Khamyang as at least place names (Aimya Khang MS:12), and also mention Khamti as an ethnic group.

A recently discovered Ahom manuscript<sup>2</sup>, also several hundred years old, mentions Aiton, Khamyang and Khamti as the names of small polities in contact with the Ahom kings at the time of Sukapha. The Khamyang Chronicle (Panjok 1981) tells of the Khamyangs coming into Assam at the time of Sukapha, and then retiring into the mountains and setting up a polity at Nong Yang Lake, from which they derive their name. Nong Yang Lake is in the mountains on the border of India and Burma. No ancient Turung history has yet been found, but a modern chronicle written in the mid 20<sup>th</sup> century tells of the Turung settling by the Tarung River, a tributary in the Upper Chindwin valley, Kachin State, Burma.

Khamti was a larger polity than the others. Chamberlain (1975:59), on the authority of Luce (1958), states that Khamti was first mentioned in Pagan inscriptions in 1192, before Sukapha entered Assam. Leach (1964:34) lists the Khamti states that were

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<sup>2</sup> I was fortunate to be shown a copy of this manuscript by Nabin Shyam Phalung in Guwahati in 2004. The copy had been collected by Sri B.K. Gohain. Its provenance and current location are unknown.

found in Upper Burma, and mentions that they were dependent on the Kingdom of Mogaung, a Tai polity called Muang Kong (muŋ<sup>2</sup> kɔŋ<sup>2</sup>) in Aiton and known as Nora in Ahom sources (Leach 1964:241). The impetus for at least some Khamti migration into India was the downfall of the Mogaung princes in the 18<sup>th</sup> century (Leach 1964:34). There are Khamti Chronicles, but no translations of these into English are available.

Most of the Khamtis now live in either Arunachal Pradesh or in Burma, and I have not been able to visit either of those locations. Within Assam itself, most of the Khamtis live in Borkhamti village, Narayanpur, in Lakhimpur district on the north bank of the Brahmaputra. The ancestors of the present villagers were transported there by the British after a war between the British and the Khamtis in the 1820s.

The Aitons have oral traditions that appear to be based on manuscripts which tell of the Aitons living in the Hukong valley at the time of Sukapha (13<sup>th</sup> century) and then migrating to a place called Kolang, where they set up an Aiton polity. The oral traditions also report that the Aitons were in contact with the Ahom kings at the time of the Ahom King Suhummung (1497-1539), also known as Dehingia Raja. This is confirmed by the Ahom chronicles, which tell of Suhummung fighting wars with the Aitons<sup>3</sup> (Baruah 1930:54).

By the late 18<sup>th</sup> century, all of these groups had entered Assam and settled in villages along tributaries of the Brahmaputra River. This period coincided with the troubles that led to the end of the Ahom Kingdom, the temporary occupation by Burma and the eventual conquest of Assam by the British in 1826. Since this time, contact with non-Tai speaking groups and isolation from the Tai speaking homelands has put pressure on the maintenance of the Tai language, and the Khamyang community has largely shifted to

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<sup>3</sup> In the translation of this passage, Barua misleadingly uses the term Itania Nagas. In the original text, however, they are simply referred to as Aiton ~~any~~.



speaking Assamese, with Tai language maintained only by elderly people in a single village.

The Turung no longer speak Tai at all, but a variety of Singpho, a Tibeto-Burman language. Aitons and Turungs are intermarried, and so Tai speakers are still to be found in Turung villages. All Tais in Assam are now bilingual in Assamese and many now also know English.

The present locations and populations of the Tai speaking groups in Assam are given in Table 1:

Community	Number of speakers	Place
Aiton	1500 speakers	Dhonsiri Valley, south bank of the Brahmaputra
Khamti	500 speakers in Assam, several thousand in Arunachal Pradesh & also in Burma	Dikrong Valley, Narayanpur, north bank of the Brahmaputra
Khamyang	50 speakers in Pawaimukh village	Buri Dihing Valley, south bank
Phake	2000 speakers	Buri Dihing Valley, south bank

*Table 1: Tai speaking groups in Assam*

From the historical record detailed above, we can surmise that although these Tai groups did not settle in Assam itself until perhaps some time in the last 300 years, they were nevertheless in contact with the Ahom kingdom from an early time, and have lived in reasonably close proximity to each other since leaving Mau Lung. The historical record seems to show that all of these groups were politically part of the overall group called Shan. The linguistic relationship between their language varieties and those of the Shans of Burma and China will be further investigated below in section 2.3.

## 2. THEORETICAL BACKGROUND

### 2.1 *Tones in Tai Languages*

Tai languages consist of a lexicon that is mostly monosyllabic, in which each syllable carries a tone. Gedney (1972) recognised that the native vocabulary of all languages and dialects of the Tai family falls into 20 groups of words. It is hypothesised that at an earlier stage of the Tai language (characterised by Gedney as “at the time of tonal splits”) there were three tones on live syllables, (called smooth syllables by Gedney), and two more on dead or checked syllables<sup>4</sup>.

The three tones on live syllables, hereafter called live tones, are conventionally referred to as A, B and C; whilst the dead tones, that is tones on syllables with final /-k/, /-t/, /-p/, are referred to as D-long and D-short, depending on the length of the vowel. The stage of the language which Gedney called “the time of the tonal splits” is similar to a stage known as Proto-Tai. Some scholars (such as Brown 1985) have proposed that these proto-tones were not contour tones as they often are in the daughter languages today, but may have had different phonation types, such as normal voice, whispered voice and creaky voice<sup>5</sup>. This is not uncontroversial, and is discussed together with other issues relating to tonogenesis in more detail below in section 2.4.

Gedney’s 20 groups of words, or tone boxes as they have come to be known, are presented in Table 2. The individual boxes are usually referred to by a combination of the letter marking the tone and the number marking the consonant group, as A1, which refers to

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<sup>4</sup> The terms ‘live’ and ‘dead’ syllable are used by some scholars in the Tai field. Since words with final stops (called ‘dead’ or ‘checked’) have different tonal outcomes from words with final vowels or nasals (called ‘live’ or ‘smooth’), it is this distinction that is crucial in the study of Tai tones.

<sup>5</sup> I am grateful to Randy LaPolla for reminding me that this is very similar to the Burmese tonal system, a coincidence that begs further investigation.

a word having a live syllable with the ‘A’ tone and an initial consonant that was an originally voiceless friction sound in the proto language. With the exception of a few irregular words, in any given Tai language all words that were in any given box, for example A1, in the proto language will have the same tone as each other, although the contour, relative pitch and register of that tone may vary from language to language.

		Proto-Tai Tones					
		A	B	C	D-short	D-long	
Initials, at the time of tonal splits	1	Voiceless friction sounds, <i>*s, hm, ph</i> , etc.	1	5	9	13	17
	2	Voiceless unaspirated, <i>*p</i> , etc.	2	6	10	14	18
	3	Glottal, <i>*ʔ, ʔb</i> , etc.	3	7	11	15	19
	4	Voiced, <i>*b, m, l, z</i> , etc.	4	8	12	16	20
		Smooth Syllables			Checked Syllables		

*Table 2: The Tai Tone Boxes (after Gedney 1972)*

Interestingly, the Standard Thai writing system, developed in the 13<sup>th</sup> century or before, is also reflected in Table 2. In this writing system, there are different symbols marking the originally voiced series from those that mark the originally voiceless friction series. In modern Standard Thai there has been a merger of these two series, so that \*ph and \*b are both realised as /ph/, but they are written with different symbols. Furthermore, in the Standard Thai writing system, the tone marks mark the original tones A, B and C

rather than the modern manifestation of those tones<sup>6</sup>. For example, the same tone mark is used for C1 words (box 9) as for C4 words (box 12), even though these today have quite different tones (high falling tone for C1 and high tone for C4).

As mentioned earlier, at the Proto-Tai stage (at the time of the tonal splits), the original three tones may not have been contour tones and may have had very different profiles from those today. If, as is believed, the proto C tone was characterised by creaky voice, then words commencing with a voiced stop on that C tone (C4) would have differed from words commencing with the same voiced stop but with the B tone, in so far as the former was creaky voice and the latter was not.

However, words with initial voiced stops would have been pronounced with lower pitch than those with initial voiceless stops, because of the tendency of voiced initials to depress the pitch of the words that follow them. It is hypothesised that as a result of this, combined with the merging of initial voiced consonants to voiceless (either aspirated or unaspirated), tonogenesis or tone-split arose, and the different pitch levels of words came to be contrastive<sup>7</sup>. For example, in languages where voiced stops merged with voiceless aspirated stops, the word which was *\*bii* (A4) 'fat' would become *\*phii* (A4) and thus identical to *\*phii* (A1) 'ghost'. The lower pitch on the new word *\*phii* (A4) 'fat' would then become the contrastive feature that would disambiguate it from *\*phii* (A1) 'ghost'. The model just presented suggests that the voiced series would tend to have lower tones and the voiceless series higher tones. In other words, there is a split between a higher and lower series on tones.

Gedney gives example words for each of his 20 boxes. These words can be used to discover and test the tonal system of any Tai

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<sup>6</sup> The A tone is unmarked in the writing system.

<sup>7</sup> I am very grateful to Prof. Jerold Edmondson for pointing out that tonogenesis is possible even when the voiced~voiceless contrast remains. In several Tai varieties in Vietnam, for example Tay Cao Bang, the originally voiced consonants have remained contrastive.

language or dialect. Generally Tai dialects have between 4 and 7 separate “tonemes”. The tone boxes presented below in section 3 were established by using a word list based on that in Gedney (1972). Thus it is usually possible to establish the tonal system of a language with comparatively few words.

## **2.2     *Subgrouping within the Tai language family***

The Tai language family has long been treated as forming three subgroups, Southwestern Tai, Central Tai and Northern Tai (Li 1960). Some scholars have questioned whether Southwestern Tai and Central Tai should be regarded as separate subgroups (e.g. Chamberlain 1975, but see Luo 1997:100), and Luo (1997:232) has suggested that a Northwestern Tai branch, including Dehong and possibly Khamti, should be recognised. In this paper, we do not propose to revisit these issues, and will follow Li’s classification. All of the languages discussed here fall within his Southwestern Tai subgroup.

Further subgrouping within these broader groups has been more problematic. Luo (1997:101) ascribed this to “a mismatch between lexical and phonological features with regard to subgrouping, which may be attributed to lexical diffusion”. Based on phonological evidence, both from tones and consonants, Fang Kuei Li (1977:44-55) presented a classification of the relationship between tonal systems and initial consonants found in the various languages of each of the three subgroups, positing four types of systems (see Luo 1997:33-37 for an in-depth discussion of this classification). In effect, these four types form part of the necessary criteria for further subgrouping.

One of the most salient features that distinguishes some Southwestern Tai languages from others is the reflex of the proto voiced stops in Tai languages. For Standard Thai, also called Siamese, and Lao, the reflex of proto *\*b*, *\*d* and *\*g* initials are

voiceless aspirated stops (ph, th and kh)<sup>8</sup>, but for most of the other languages in Southwestern Tai, including those of the Shan group, the reflex of these initials is voiceless unaspirated, (p, t and k)<sup>9</sup>. For this reason Chamberlain (1975) refers to PH languages (those with voiceless aspirated reflexes) and P languages (those with voiceless unaspirated reflexes).

A second distinguishing feature within the Southwestern group are tonal systems, with two main systems being apparent. What has been termed bipartition by Haudricourt (1972) refers to the situation where there is a simple tonal split between the originally voiceless series (row 4 in Table 2) and the other consonants. Tripartition has been coined to describe a situation where there is a three way split, most commonly between the originally voiceless friction sounds (row 1), the originally voiceless unaspirated and glottal sounds grouped together (rows 2 and 3) and the originally voiced sounds (row 4). The term is usually extended to refer to a situation where there may be a split between row 1 and the other rows for one tone (most often A) and splits between rows 123 and row 4 in the other tones. By the narrower definition of tripartition, Khamyang (see below section 3.4) shows tripartition for A tones, whereas by the wider definition, Phake (see below section 3.1) can be said to show tripartition. Among the Southwestern Tai languages, tripartition is rarely found outside the A tone<sup>10</sup>.

Chamberlain (1975) originally proposed that tripartition was a feature only of PH languages. However, even by 1975 it was clear that tripartition was found in P languages, as he established from his own work on Nüa (1975:50). Chamberlain did postulate that what

<sup>8</sup> I am also grateful to Prof. Jerold Edmondson for reminding me that this may at least in part be due to other factors, such as proto \*f changing to /ph/ in many varieties, something that does not occur in standard Thai and Lao.

<sup>9</sup> Among the languages of Assam at least, some words which had clusters where the first member was a voiced stop have voiceless aspirate reflexes today, with the clustering dropped, such as \*gw > /kh/.

<sup>10</sup> In Kam, a more distantly related variety in the Tai-Kadai family, there is tripartition in A, B, C, DL, and DS tones (Jerold Edmondson p.c.).

he called A1-23(-)4 splitting<sup>11</sup>, in other words tripartition, would be found to be not widespread in the P group, unless “it occurs in more of the northern Shan dialects for which we have no reliable data at the present.” Data presented in this paper will show that Chamberlain’s postulation does not hold, as all of the Tai varieties in Assam show tripartition<sup>12</sup>.

Before proceeding to examine the current state of thinking with regard to the subgrouping within the P group of languages, it will be necessary to briefly mention another classification of the Tai languages, on the internet version of the SIL Ethnologue consulted in mid 2004. Here, four subdivisions of the Tai languages were listed, the Central, Northern and Southwestern that were established by Li (1960), and a fourth, described as East Central. The only language present in this last group was Turung, who live at the extreme west of the Tai speaking world. As mentioned above, Turung people now speak a Tibeto-Burman language. Very few sources remain giving information about their original Tai speech, and these are certainly not enough to suggest that Turung should be regarded as belonging to any separate subgroup within Tai.

### **2.3     *Subgrouping of the Shan languages***

Edmondson and Solnit (1997:338-42) have reviewed the literature on classification of Shan varieties, pointing out that the older sources tended to distinguish Shan, in a narrow sense, from Khamti to the West, Khuun and Luu to the east and from the language of Northern Thailand to the south. The languages directly to the north of Shan are sometimes called Chinese Shan, or simply *Nɔ̃*; literally ‘upper’.

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<sup>11</sup> In this paper, the dash will be used to notate contrastive tones within a column, and an equal sign to denote a merger across columns.

<sup>12</sup> Tripartition is also found in many Kam-Sui languages that are not PH, as well as Nung in Vietnam, which is not PH (Jerold Edmondson, p.c.).

For their study of Shan, Edmondson and Solnit collected data from speakers from both China and Burma, and gave tonal information about the speech of those individuals in their paper. Their conclusions, on the basis of the tonal systems, was to divide Shan into two groups, a northern group showing tripartition and a southern group showing bipartition. Edmondson and Solnit's Northern Group (1997:355), is characterised by a tone box such as that presented in Table 3, based on data collected at Mangshi, Dehong prefecture, Yunnan province, China.<sup>13</sup>:

	A	B	C	DL	DS
1	25				
2		21	31	31	13
3	33				
4	51	33	52	55	

Table 3: Northern Shan tone box (tone values for Mangshi),  
after Edmondson and Solnit (1997: 355)

Although the A4 tone is here marked by Edmondson and Solnit as 51, their pitch trajectory for it (1997:348) clearly shows a marked rise over the first half of the tone, before a very steep fall. This trajectory is very similar to the 2<sup>nd</sup> tone of Phake (see below section 3.1), and shows a totally different trajectory from the C4 tone which has an immediate fall and no rise.

As mentioned above, the proto C tone may have exhibited creaky phonation (see further below, section 2.4). Edmondson and Solnit note that both reflexes of the C tone in Mangshi are “of shorter duration than A and B and finish with obvious glottal

<sup>13</sup> Table 3 uses pitch numbers to indicate tone height and contour, following Edmondson and Solnit.



constriction” (1997:349). The other two varieties tested by them that have been included in the Northern Group, Namkham and Muse, also have “final glottal catch” (1997:353).

For the southern Shan varieties, Edmondson and Solnit offer a quite different distribution of tones, as shown in Table 4:

	A	B	C	DL	DS
1					
2	325	221	332	31	35
3					
4	44	332	41	33	53

*Table 4: Southern Shan tone box (tone values for Panglong)  
after Edmondson and Solnit (1997b:355)*

Interestingly, they point out that while the trajectory of the tones C123 and B4 are similar, and seem to merge, “the distinctive feature may be a rapid glottal constriction in C123 that can at times even be released to form a quasi-syllable” (1997:343). It will be claimed below that glottalisation or creakiness, reflexes of the original creaky nature of proto tone C, are contrastive in the Tai varieties in Assam. However, for the varieties of Shan that Edmondson and Solnit call ‘southern Shan’, this may not be the case, as the Shans themselves recognise a merger B4=C123, both being written with the same tone mark in the modern Shan writing system.<sup>14</sup>

Returning to the question of bipartition and tripartition among the tonal systems of Tai languages, we now know that tripartition is quite common throughout the so-called P languages of

<sup>14</sup> Speaking of Panglong, Prof. Jerold Edmondson (p.c.) advised me that he could “well imagine that they would use the same writing system for both but still make a difference in speech.”

Southwestern Tai. Notably, tripartition is found both in the southern languages within Southwestern Tai (Standard Thai, Southern Thai, Lao etc.) and in the Northwestern ones (India, most of the varieties in Dehong). Geographically separating these two groups are a number of P languages that show bipartition, some of which are Shan, and some of which are not. On lexical, grammatical and other phonological grounds, we would normally regard the languages of Dehong and Northeast India as being closely related to what Edmondson and Solnit have called southern Shan, even though they have tripartite tone systems. The presence of tripartition in these geographically and historically distinct parts of the Southwestern Tai would suggest either that tripartition arose twice independently in separate locations, or else that bipartition is a development from a Proto-Southwestern Tai that had a tripartite division of tones.

The analysis of tone partitions is further complicated by a group of Tai varieties whose tones divide the originally voiceless aspirate from the originally glottal initials (rows 2 and 3 in Table 2). These were characterised by Haudricourt (1972) as being a form of tripartition, but Hartmann (1984:24) regards this as a form of bipartition. None of the Shan languages exhibit a tonal split of this kind.

## 2.4 *The original Tai tones*

In the *Handbook of comparative Tai*, Li (1977:24) stated that whilst it is possible to reconstruct a tonal system for Proto-Tai, it is “difficult to reconstruct the phonetic character of the tones, such as level, rising, falling, etc.” In her reconstruction, Jonsson (1991:158) similarly concluded that “the tone content of Proto-Southwestern Tai ... cannot be determined since in the daughter languages each tone is represented by virtually every tone in different cognates. Though tones A, B and C of W(ritten Thai) have been associated with level, falling and rising tones in Chinese and Vietnamese, we

cannot conclude that tones A, B and C indeed were level, falling and rising tones in Proto-Southwestern Tai.”

Strecker (1979) discussed the difficulties of positing any sort of phonetic content for the proto-tones, pointing out the “phonetics of the tonal correspondences are very diverse and puzzling”. After a careful study of the tones of various Lanna varieties, spoken in Northern Thailand and in Laos, Strecker proposed a phonetic reconstruction of Proto-Lanna (1979:190) and one for Shan (1979:196). His Shan reconstruction is presented here as Table 5:

	A	B	C
1	15	21?	43?
2			
3			
4	35	33?	41?

*Table 5: Reconstruction of Shan tones by Strecker (1979:196)*

Sagart (1989:89) went further, proposing a reconstruction, here presented as Table 6, of Proto-Tai tones based on tonal correspondences between Chinese and Tai that were first worked out by Gaston Maspéro in 1911.

As mentioned earlier, some scholars had proposed that one of the Proto-Tai tones was ‘whispered’ or breathy voice. One piece of evidence for this is Sanskrit words like *sneha* ‘love philtre’ which were been borrowed into standard Thai with final *-h*, by a regular rule that saw the dropping of final short *-a*. These are accepted into the B tone category. Sagart rejected suggestions that the B tone might have been breathy voice, since “no reflex of that tone has been reported to show final aspiration” and “glottalisation in reflexes of Tone B ... is common, although often restricted to tone categories that merge subsets of Proto-Tai tones B and C”. In his reconstruction, Sanskrit words borrowed into standard Thai with final *-h* would be “assigned to the only tone of Siamese that ended in a laryngeal consonant, i.e. tone B” (1989:89).

Proto-Tone	Proposed Reconstruction
A	syllables ending in a sonorant, modal voice
B	syllables ending in a glottal stop, modal voice
C	syllables ending in a sonorant, creaky voice <sup>15</sup>
D	syllables ending in a oral stop, modal voice

*Table 6: Reconstruction of Proto-Tai tones after Sagart (1989)*

Brown (1985:113,128) also posited phonetic profiles for these proto tones, regarding them as having two key features, length and register. The A, B and C tones were all regarded as long, in combination with what he called ‘final elements’ reconstructed as whisper, normal voicing and creaky voicing respectively. The two D tones were both regarded as having a register Brown categorised as ‘glottal catch’, but where the DL tone was long and the DS tone was short.

If Brown is correct, then only one of the three tones of Proto-Tai on live syllables was realised as having a ‘plain’ phonation type, namely the B tone, and the other proto-tones had ‘special’ phonation types, namely whisper and creaky voicing. Considering that the number of words having the A tone greatly exceeds the number having either B or C, if we accept Brown’s hypothesis, we need to posit a proto-language where most of the words did not have ‘plain’ phonation. None of the daughter languages resemble this model today.

Both Brown and Sagart reconstructed creaky voice for the C tone. Many daughter languages, including Khamti, Khamyang and Phake (see below Section 3), have either creaky or glottal final tones in their reflexes of some or all of the C tones. Creakiness is

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<sup>15</sup> Realised with -s in Old Chinese.

generally thought to have originated from the anticipation of a following glottal stop, rather than final glottal catch being a development from creakiness by the gradual normalising of the phonation until there is only a final glottal stop left. This would suggest that we might reconstruct final glottal as the proto tonal feature and creakiness as a later development, one which may have developed quite recently given that it is most salient on the Khamti C4 tone, whereas in Phake it found with C123.

If we were to reconstruct the proto C tone as being final glottal rather than creaky voice, then we would see it developing into three types of tones in reflexes of the C tone: normal phonation, like the Phake C4 tone, final glottal catch, as in Khamyang C4, and creaky phonation throughout the syllable, as in Khamti C4. This would suggest that an originally final glottal could develop in both directions: complete loss of glottal in one case (Phake C4) and anticipation of glottal in another (creakiness in Khamti C4). If this is so, then probably creaky voice can deteriorate into final glottal catch.

Brown's analysis of the A tone as having been originally whispered is clearly problematic. In contemporary Tai languages, wherever there are traces of breathy phonation at all, it is found with B tones, not A tones (Jerold Edmondson, p.c.). Another piece of evidence against Brown's analysis comes from loan words into Standard Thai. Most loan words from Pali and Sanskrit are accepted into Standard Thai in the A tone category. There is no evidence to suggest that these words had anything but normal phonation. If the B tone was originally breathy and the A tone originally normal phonation, the motivation for this assignment of tone categories would be more transparent.

One piece of evidence that may be said to support Brown's position is that in many Tai languages there is a merger between the tones of B and DL. If B tones represented words with originally plain phonation, and DL those with plain phonation and final stops,

then the pairing of these two tones becomes easier to explain. Chamberlain (1975:51) regards this merger as being probably a feature of Proto-Tai. This pattern is not, however, found in some more distantly related members of the family.

A further advantage of Brown's hypothesis is that it provides a motivation for the development of contour tones as reflexes of the proto A tone, and for level tones as reflexes of proto B. It was Haudricourt (1954) who pointed out that final *-h*, (itself possibly arising from final *-s*) can be a 'pitch depressor', and lead to falling tones. Matisoff (1994:285) reminded us that Haudricourt (1954) and Pulleyblank (1961) both posited "the idea of deriving the non-level tone categories of Chinese from phonation types which arose from the decay of final syllables like *\*-ʔ* and *\*-s* ...." Thus, if Brown were correct, words which are reflexes of proto A may originally have been final *-h* or *-s* then lost the final consonants, but retained a reflex of them, first in whispered voice and then in some kind of tonal manifestation.

Among the Tai languages spoken in Assam, the A tones are usually contour tones, either falling or rising, and where they are level tones, as will be shown below in Section 5, this is probably due to quite recent mergers. Following Haudricourt (1954) we would be able to explain at least the falling tones as arising from a decay of a final fricative into a whispered phonation.

As Matisoff (1973: 741) pointed out, however, final *-ʔ* is thought to have had the opposite effect from final *-s* and final *-h*, raising the pitch and leading to rising tones. If the creaky phonation that Brown reconstructed for the C tone of Proto-Tai arose from the decay of *-ʔ*, then we would expect rising tones to be more common among the reflexes of proto tone C, something that we do not find, although the reflex of C123 in Khamti is very clearly rising (see below section 3.3).

Thurgood (2002:341) argued that there are contrary examples to the traditional picture of final glottal stop leading to rising tones and

final *-h* leading to falling tones. For example, although it has generally been believed that final *-h* would lead to a lowering of pitch, and hence falling tones, as Thurgood (2002:342) pointed out, the final *-h* of the Chamic languages has led to a high tone reflex in Tsat. Thurgood further speculated that “once final *-h* [nonbreathy] and *-h̥* [breathy] are systematically distinguished ... there will be far less variability in the effect of these finals on pitch.” No such distinctions amongst the laryngeals have yet been identified or posited for languages of the Tai family.

Strecker (1979:178) argued that sometimes rising tones can become falling, or falling tones become rising. For example, he proposed that for some dialects of Lanna Tai, two originally rising tones, one low rising and one mid rising, became a rising and a falling tone respectively. The higher rising tone first became level, and later falling, motivated by a desire on the part of speakers “to make two tones which originally had the same contour but which differed in height sound as different as possible.” Taking Thurgood’s point together with Strecker’s, we can see that both rising and falling tones may have multiple possible antecedents.

Tonogenesis and tone change in the Tai languages must have been influenced by both consonant finals and consonant initials, with the initial consonants affecting the level of the pitch, rather than affecting the contour, “with voiced consonants leading towards lower pitch and voiceless consonants to a higher pitch.” (Matisoff 1973:941)

In positing reconstructions for the various stages of the tonal history of the Tai languages of Assam, we will need to ensure that the changes are well motivated. Brown (1985) proposed a comprehensive account of the changes in tones within Tai languages. In comparing, for example, the tones in the Southern Thai town of Chaiya today with his reconstruction for 1750, Brown proposed several changes (1985:194), including:

- (1)
  - a. 1\*DL 23 split from \*C123 and merged with \*DL 4;
  - b. The \*A1=\*B1 tone loses its slight initial rise at the beginning.

These changes are well motivated. DL23 words are all dead syllables with long vowels. Their overall phonetic profile is thus similar to the words in box DL4, and it is not difficult to understand why they might merge with another DL tone. The reconstructed tone for DL23 in 1750 is mid level, which is not such a large change to the modern realisation as a low level tone with a slight rise. Moreover, the initial consonants of DL23 in Chaiya are all different from those of DL4; thus a tone merge would not produce homophones. DL1 did not merge with DL23 and DL4. DL1 words have initial voiceless aspirated consonants, and due to the merger of voiced consonants with voiceless aspirates, so do DL4 words. There is thus a very clear motivation for the tones of DL1 and DL4 to remain distinct.

### 3. THE TONAL SYSTEMS OF THE TAI LANGUAGES SPOKEN IN NE INDIA TODAY

#### 3.1 *Phake*

The first comprehensive study of the Phake language was undertaken by the Thai scholar Dr. Banchob Bandhumedha, who first visited Assam in 1955 looking for speakers of the Tai Ahom language (Navavan Bandhumedha 2002). On finding that Ahom was not spoken as an everyday tongue, she concentrated her efforts on the living Tai varieties and collected word lists and texts in all the varieties (Banchob 1961). At the time of her death, in 1987, she had published a Phake-Thai-English dictionary, with phonological notes.

Like the present writer, she did most of her research on Phake in the village of Namphakey, near Naharkatia, Dibrugarh District.



Based on Banchob (1987), the tone chart in Table 7 has been derived. Banchob employed an arbitrary numbering system for marking the tones of Phake rather than the use of alphanumeric pitch numbers or diacritics. Her system has been employed in all my publications on Phake, including here.

After working in Namphakey and in several other Phake villages, I found that the distribution of the tones was exactly as Banchob had described (Morey 2005). Table 8 presents a wave form and pitch diagram for five of the Phake tones as pronounced by Ee Nyan Khet of Namphakey village, for the words listed in (2), showing the contours of these various tones.

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

1	even tone with a slight rising at the end	mā <sup>1</sup>	‘shoulder’
2	high tone	mā <sup>2</sup>	‘to come’
3	grave tone, with a glottal stop	mā <sup>3</sup>	‘mad’
4	falling tone	mit <sup>4</sup>	‘seeds, knife’
5	grave tone	mā <sup>5</sup>	‘not’
6	high rising tone	mā <sup>6</sup>	‘dog’

*Table 7: Tones in Phake (after Banchob 1987)*

- (2)
- a. mā<sup>6</sup> ‘dog’
  - b. mā<sup>4</sup> ‘horse’
  - c. mā<sup>3</sup> ‘crazy’
  - d. mā<sup>1</sup> ‘shoulder’
  - e. mā<sup>2</sup> ‘come’

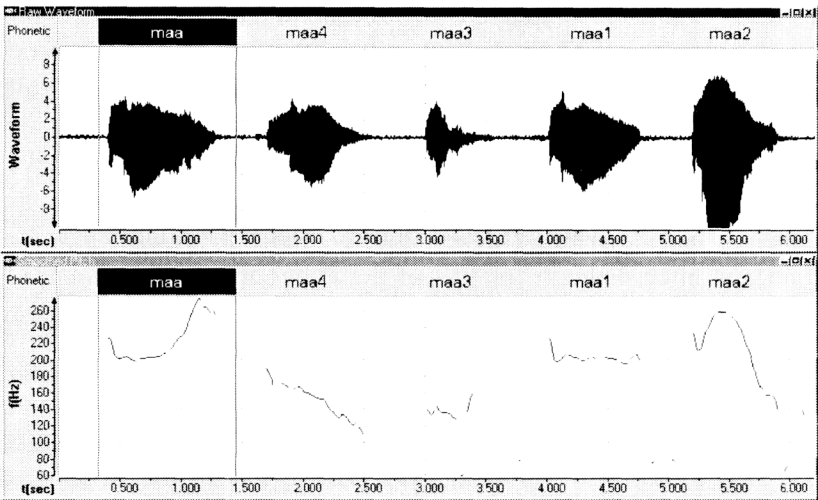


Table 8: Wave form and pitch diagram for five Phake tones.<sup>16</sup>

A different tonal system for Phake is recorded in Wilaiwan (1983). There are around one hundred Phake words exemplified in her article and all but two or three are marked for tone. By examining all of these, it has been possible to derive the following tone chart for her data:

Unfortunately, there are not enough tokens of each tone for us to be fully confident that Table 9 is correct. There are enough tokens of words with the A tone to be clear that for this variety A1 is the low level rising tone (Tone 1 in Wilaiwan’s system), A23 the mid level tone (Tone 2), and A4 the high tone (Tone 5). There are also a reasonable number of tokens for B4, suggesting that this is the mid tone (Tone 6).

<sup>16</sup> This table does not include a wave form for the B4 tone, because no word *maa*<sup>5</sup> was known to Ee Nyan Khet. This tone is low and level.

	A	B	C	DL	DS
1	1	4 (?)	3	4	
2	2				
3					
4	5	6	5 or 3?	6	

---

1	low level then rising
2	mid level
3	mid falling glottalised
4	high
5	high level then falling
6	mid

---

Table 9: Phake tone box, derived from data in Wilaiwan 1983:231

There are fewer tokens of the C tones, but all of those for C123 are the mid falling glottalised tone (Tone 3). There are quite a few tokens for C4, but some are marked tone 3 and some tone 5, perhaps suggesting that this is a high falling glottalised tone, such as is found in Khamyang for C4 (see below section 3.4). It is equally possible that C4 has merged with either C123 or with A4.

Finally, there are very few tokens for B123. Some of them are marked tone 4 by Wilaiwan, as *luu*<sup>4</sup> ‘to offer’ and *ʔuu*<sup>4</sup> ‘to be at’, and it was this that lead me to suggest tone 4 for that box. However a number of words which are B123 are not marked for tone 4, as *yaɪ*<sup>6</sup> ‘big’ and *maa*<sup>5</sup> ‘shoulder’. I do not know of any Tai language in which the tone of ‘shoulder’ and ‘to be at’ differ from each other, nor have I met any Tai Phake speakers who use a variety in which the tones are distributed as in Table 9.

The tonal system of Table 9 is quite different from that of the Phakes in Namphakey village whom I have interviewed. It does however show some similarity to Khamti as described below in section 3.3 and to Khamyang as described in section 3.4.

3.2     *Aiton*

The Aitons themselves believe that today they speak a language with three tones, but that at some time in the past there were more tones. For this reason, simply eliciting a short list of words following the methodology described above in section 2.1 was not possible for Aiton. To explore the Aiton tonal system, it was decided to first establish what the possible tones were, and then to establish what the contrasts were. In preliminary discussions with Bidya Thoumoung and other Aiton informants in November 1999, five tones were recognised and named by those informants. These are listed in Table 10.

Tone 1	မိင်လိုင်	siŋ <sup>1</sup> sur <sup>2</sup>	‘straight tone’	မ (တ)	baa <sup>1</sup>	‘shoulder’
Tone 2	မိင်လိုင်	siŋ <sup>1</sup> luŋ <sup>2</sup>	‘falling tone’	မ	maa <sup>2</sup>	‘to come’
Tone 3	မိင်လိုင်	siŋ <sup>1</sup> sau <sup>2</sup>	‘resting tone’	မ	maa <sup>3</sup>	‘horse’
Tone 4	မိင်ဟိုက်	siŋ <sup>1</sup> khum <sup>3</sup>	‘rising tone’	မ	maa <sup>4</sup>	‘dog’
Tone 5	မိင်တိုင်	siŋ <sup>1</sup> tuk <sup>3</sup>	‘stopped tone’	မ (တ)	baa <sup>5</sup>	‘mad’

Table 10: *Tones in Aiton*<sup>17</sup>

After putting together Table 10, a word list of about 2000 items was elicited from Bidya Thoumoung and recorded. Whilst the list was being collected, he was asked to indicate which tone each word had. While working through the word list, it became clear that Bidya Thoumoung only assigned Tone 5 to dead or checked syllables, and Tone 3 to syllables with final nasals or final vowels, and that therefore Tones 3 & 5 were probably allotones of the same toneme. Tone 4 was rarely assigned, and in particular was not

<sup>17</sup> The *Tai* script is employed in this and some other tables because of its importance to the *Tai* community. This script does not show tone and does not distinguish /m/ and /b/, although the use of Burmese character for /b/ is possible, as shown in parentheses. Morey (2005:179f) discusses this script in detail.

assigned to the word for ‘dog’ when that word was encountered in the word list. It therefore appeared that tone 4 was a sporadic allotone of Tone 1.

On the basis of this, the tone box in Table 11 is proposed for contemporary Aiton:

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

1

mid/high level

2

high level then falling

3

mid falling

*Table 11: Aiton Tone Box*

As mentioned above, there is an allotone of Tone 1 which is rising (Tone 4 in Table 10). This most often occurs in stressed positions or at the end of an intonation unit. The presence of this allotone is at least suggestive of a merge between an originally rising A1 and a level B123. When we compare Aiton with Phake, this merger is very clear, as indicated in Table 12:

Aiton	Phake	Gloss
khɪŋ <sup>1</sup>	khɪŋ <sup>6</sup>	‘ginger’
khɪŋ <sup>1</sup>	kheŋ <sup>1</sup>	‘shelf’

*Table 12: Merger of tones in Aiton*

In his brief survey of Aiton, Diller (1992:18) found two systems for Aiton, one the same as that presented Table 11 and a quite different system with six tones as in Table 13:

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

---

1 low

2 mid falling

3 high falling

4 low rising

5 mid falling glottalised

6 mid rising

---

Table 13: Aiton<sub>2</sub> Tone Box after Diller (1992)

The tone box in Table 13 was described by Diller (1992:19) as ‘undoubtedly more conservative’. Despite considerable effort in my research over several years, no Aiton speakers could be identified who used a tonal system of this type, though the tone box in Table 13 is quite similar both in distribution and in tone contours to the tonal systems found in Phake villages today.

Recordings made by Dr. Banchob Bandhumedha and a draft *Aiton-Thai-English Dictionary* have recently come to light.<sup>18</sup> In her manuscript dictionary, a work that was never completed, Banchob notated ten tones, but most of them are very infrequently used. Only tones 1,2,8,9 & 10 are used widely throughout the manuscript. It appears that Tones 1 and 8 refer to the same toneme, because

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<sup>18</sup> I am very grateful to Dr. Navavan Bandhumedha for making these available for me to study.

words like *kai*<sup>8</sup> ‘chicken’ and *kī*<sup>1</sup> ‘how many’ belong to the same tone box (B1) and have the same tone in other Tai varieties spoken in Assam.<sup>19</sup> Tone number 10 is usually reserved for dead or checked syllables. Table 14 compares Banchob’s tones 1, 8 and 10 with Phake:

Aiton – Banchob (Aiton–English–Thai Dictionary)	Phake – Banchob (1987)	Gloss
kī <sup>1</sup>	kī <sup>1</sup>	how many
ko <sup>8</sup>	kō <sup>1</sup>	heap
kāŋ <sup>1</sup>	kāŋ <sup>1</sup>	crossbow
kük <sup>10</sup>	kək <sup>1</sup>	to try
kōk <sup>10</sup>	kauk <sup>1</sup>	a glass
kōŋ <sup>8</sup>	kaŋ <sup>1</sup>	curve
kōt <sup>8</sup>	kōt <sup>1</sup>	to embrace

*Table 14: Comparison of Banchob’s tones 1, 8 & 10 from the Aiton–English–Thai Dictionary*

If we assume that Banchob’s tones 1, 8 & 10 all refer to the same phonemic tone, corresponding with the 1st tone as notated in this study, that Banchob’s tone 2 corresponds with the 2nd tone as notated in this study, and Banchob’s 9th tone corresponds with the 3rd tone in this study, a system which is basically a three tone system can be posited for the Aiton recorded in Banchob’s *Aiton-English-Thai Dictionary*. An analysis of Banchob’s recordings also confirms a three tone analysis for Aiton.

<sup>19</sup> I am grateful to an anonymous reviewer for pointing out that these two words take different tones in Northern Tai, B2 for ‘chicken’ and C2 for ‘how many’. They are not distinguished, however, in the speech of any Aiton speakers today, or in any other of the Tai varieties in Northeast India.

3.3 Khamti

Khamti has been studied by many scholars over the last two centuries, of whom only four have comprehensively marked tone. One of these, Robinson (1849), will be discussed in detail in section 4.1 below. More recently, Harris (1976), Weidert (1977) and Chau Khouk Manpoong (1993) have published information about Khamti tones, and each of these three sources describe a similar system.

Chau Khouk Manpoong is the creator of the revised Khamti alphabet, which uses nine tone marks. Only Tone marks 3 - 7 are used for the citation tones, or tonemes which we are discussing here. Tone marks 1 & 2 are reserved for unstressed tones, and 8 & 9 for certain prosodic emphasis.

	A	B	C	DL	DS
1	3		6	3	
2	4				
3					
4	7	4	5	4	

Tone (Harris 1976)	Description (Harris 1976)	Tone (Manpoong 1993)	Description of tone (Morey 2005)
4	high level	3	High
1	mid falling	4	mid, slight fall
2	low falling with glottal constriction	5	low, falling, creaky
5	mid rising with glottal constriction	6	mid, rising, glottal final
3	high falling	7	high falling

Table 15: Tones in Khamti (Arunachal Pradesh and Assam)  
after Harris (1976) and Chaw Khouk Manpoong (1993)

The tone box for Khamti, as reported by Harris (1976) and confirmed by Chau Khouk Manpoong (1993), appears in Table 15, which uses the numbers from Chau Khouk’s system.



Chau Khouk Manpoong's system of notating tones is demonstrated in (3):

- (3)
- |                  |                 |                 |                   |                 |                   |
|------------------|-----------------|-----------------|-------------------|-----------------|-------------------|
| ဟော <sup>3</sup> | ပီ <sup>4</sup> | ယာ <sup>3</sup> | လွှာ <sup>7</sup> | နမ <sup>5</sup> | တိုင <sup>7</sup> |
| head             | year            | don't           | swim              | water           | deep              |
- 
- |                  |                   |                  |                  |
|------------------|-------------------|------------------|------------------|
| နမ <sup>5</sup>  | ဇိုက <sup>4</sup> | မာ <sup>7</sup>  | ဆာ <sup>7</sup>  |
| cam <sup>5</sup> | ηuk <sup>4</sup>  | maa <sup>7</sup> | sau <sup>7</sup> |
| PRT              | crocodile         | come             | stay             |
- 'Do not swim in the first flood of the year for crocodiles may be in the river.'
- (from Grandfather teaches Grandchildren, Tai proverb, Chau Khouk Manpoong 1993 II:7)

Chau Khouk Manpoong's system of notating tones has not achieved widespread acceptance among the Khamti, most of whom prefer the more traditional script which does not mark tone and which is more similar to that used by the Phakes. The Phake version of this proverb is presented as (4):

- (4)
- |                  |                 |                 |                   |                 |
|------------------|-----------------|-----------------|-------------------|-----------------|
| ဟော <sup>6</sup> | ပီ <sup>2</sup> | ယာ <sup>1</sup> | လွှာ <sup>2</sup> | နမ <sup>4</sup> |
| head             | year            | forbid          | swim              | water           |
- 
- |                   |                 |                   |                 |                 |   |
|-------------------|-----------------|-------------------|-----------------|-----------------|---|
| တိုင <sup>2</sup> | နမ <sup>4</sup> | ဇိုက <sup>4</sup> | မာ <sup>2</sup> | ဆာ <sup>2</sup> | ။ |
| deep.water        | PRT             | crocodile         | come            | to stay         |   |
- 'Do not swim in the first flood of the year for crocodiles may be in the river.'

In March 2004 I was able to visit the Khamti village of Borkhamti at Narayanpur, Lakhimpur district on the north bank of the Brahmaputra. The tonal splits in the Khamti of Lakhimpur are

the same as those described in Table 15, but, as with Phake, it is the key features of each tone that need to be identified.

Table 16 presents wave form and pitch diagrams for the five Khamti tones, listed in (5), with the tone numbered the same as by Chaw Khoun Manpoong (1993):

- (5)      kaa<sup>3</sup>      'go'  
           kaa<sup>4</sup>      'crow'  
           kaa<sup>5</sup>      'business'  
           kaa<sup>6</sup>      'dance'  
           kaa<sup>7</sup>      'separate'

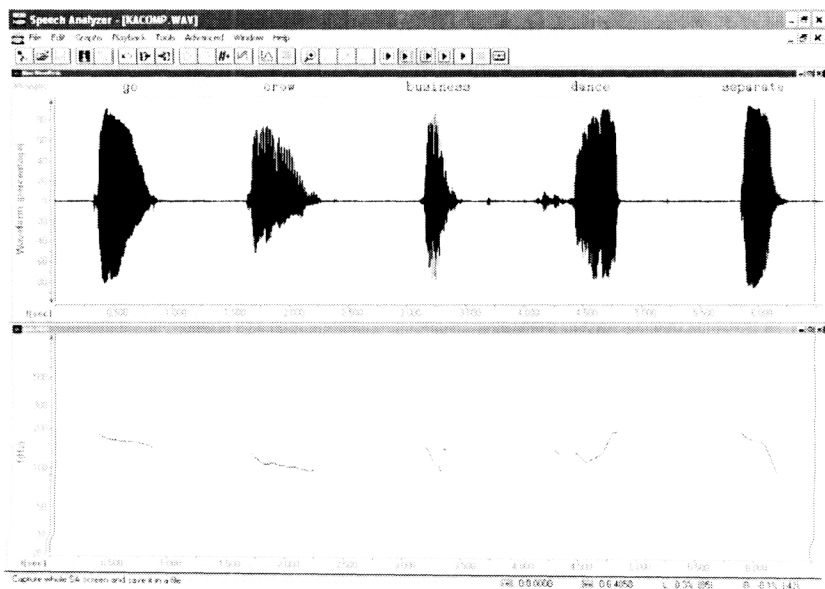


Table 16: Wave form and pitch diagram for Khamti tones on /kaa/

The C123 tone is a clearly rising tone, or even falling and then rising, with a final glottal closure. However, in connected speech, this final glottal is sometimes lost or considerably diminished in

prominence, so that perceptually the most salient feature of the tone is the rise. Rising tones are most often found with A1 tones, and so a rising tone with this trajectory in C123 is uncommon. In Khamti, because the A1 tone has merged with B123 and become level, the C123 tone is able to adopt rise as its key feature.

The C4 tone, on the other hand, is very short and has creaky phonation throughout.<sup>20</sup> This is an interesting contrast to Phake where C123 has creaky phonation throughout and C4 is a falling tone where glottal constriction is no longer a contrastive feature. Perceptually, the creakiness of tone C4 in Khamti is a more salient feature than the contour of the tone.

The key features of the five Khamti tones are listed in Table 17, compared with Harris's (1976) description of them.

Tone number (Harris 1976)	Description (Harris 1976)	Tone number (Chau Khouk Manpoong (1993))	Description of tone (Morey)	Key feature
4	high level	3	high	Level
1	mid falling	4	mid, slight fall	Low
2	low falling with glottal constriction	5	low, falling, creaky	Creaky
5	mid rising with glottal constriction	6	mid, rising, glottal final	Rising
3	high falling	7	high falling	high falling

*Table 17: Key features of Khamti tones*

<sup>20</sup> Prof. Jerold Edmondson (p.c.), who has also investigated Khamti speakers, observed that he heard both tones as having final glottal constriction, with the constriction stronger in C4. The Khamti investigated by Edmondson is quite geographically distant from Narayanpur, which may explain the differences.

3.4 Khamyang

The Khamyang tonal system has six tones but with a different distribution from the six tones of the Phake. The tone box in Table 18 is based on an interview and some words recorded in April 2001.<sup>21</sup> The informant was Chaw Deben Chowlik. This tone box differs from that of Phake, where A23 is merged with A4, and B4 is a separate tone. It also differs from Khamti, where A1 is merged with B123.

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

- 
- 1 mid level with slight fall
  - 2 high level then falling
  - 3 low, falling and creaky
  - 4 high level then falling with final glottal ending
  - 5 low falling
  - 6 level, with possible rise at the end
- 

Table 18: Tones in Khamyang

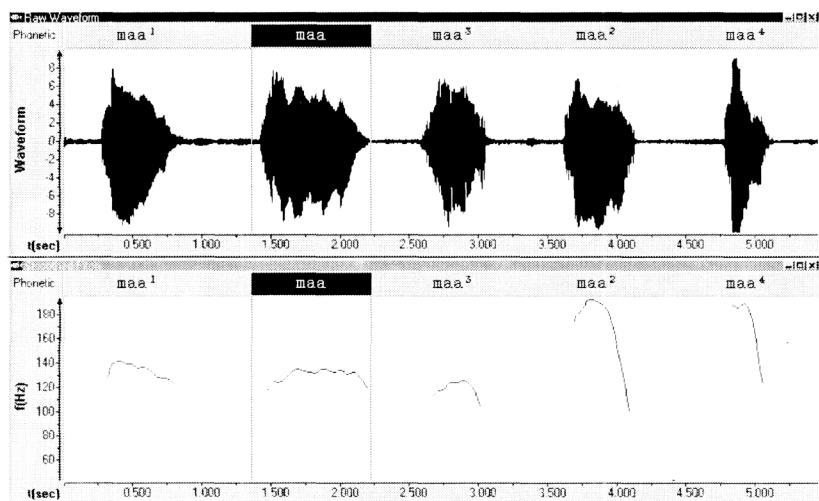
The numbering of the Khamyang tones in this study follows the Phake numbering as closely as possible. Because of the different distribution of the tones, A23, which is tone 2 in Phake, is numbered as tone 5 in Khamyang. All other boxes have the same tone number as Phake, although the contour and quality of the tones differs.

---

<sup>21</sup> I am very grateful to Jerold Edmondson for discussing these tones with me.

Table 19 presents a wave form and pitch diagram for five of the Khamyang tones as pronounced by Deben Chowlik, for the words listed in (6):

- (6)      maa<sup>1</sup>    ‘shoulder’  
           maa<sup>6</sup>    ‘dog’  
           maa<sup>3</sup>    ‘crazy’  
           maa<sup>2</sup>    ‘come’  
           maa<sup>4</sup>    ‘horse’



*Table 19: Wave form and pitch diagram for five Khamyang tones.*

The first two tones Table 19, the 1st tone and the 6th tone, have similar contours. For some Khamyang speakers they are difficult to contrast, but in Deben Chowlik's speech, the 1st tone is clearly falling whereas the 6th tone is level.

The contour of the 2nd tone and 4th tone are almost exactly the same. Both are high level and falling, but the 4th tone has an abrupt glottal coda. The contour of these two tones differs significantly

from the 5th tone, which is low falling. Table 20 presents a wave form and pitch diagram for the following three words:

- (7)
- kaa<sup>1</sup>

‘go’
- kaa<sup>5</sup>

‘crow’
- kaa<sup>4</sup>

‘business’

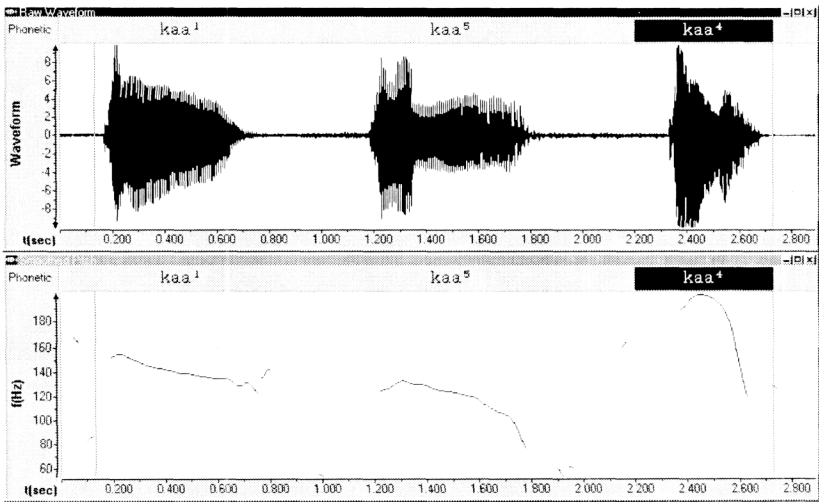


Table 20: Wave file and pitch diagram for three Khamyang tones.

4. DESCRIPTIONS OF THE TAI LANGUAGES IN NORTHEAST INDIA FROM THE 19<sup>TH</sup> CENTURY

The phonetic and phonological details about the Tai tones in section 3 were all recorded in the last 40 years, and whilst it provides some time-depth in the study of Tai tones, ideally we would want to compare these tones with recordings from an earlier era. Although the Tai languages of Northeast India have been studied since Buchanan (1799), most of 19<sup>th</sup> and early 20<sup>th</sup> century recorders were

untrained in linguistics, and whilst they may have realised that tones were present in the language, they were unable to fully understand and notate them.

For example, the most comprehensive work on Khamti remains Needham (1894), a grammar with several texts and a sixty page English to Khamti vocabulary. Needham was aware of the tones, and in his introduction admitted that "... the various tones met with in the language are very puzzling." (1894:ii).

He goes on to explain what he understands by these tones, and to give examples for the graph 𑜀𑜂𑜆𑜇 (khai). This is reproduced in Table 21, with the addition of a phonemicisation of the modern Khamti forms, using the tonal number of Chaw Khouk Manpoong (1993). As can be seen, there is variation both of vowel length and tone between the six words given by Needham.

By finely modulated intonation sounds organically the same are often made to express totally different ideas; thus ... there are no less than six words written 𑜀𑜂𑜆𑜇 (khai), but each one expresses a different meaning according to the tone in which it is uttered, namely, –

𑜀𑜂𑜆𑜇 = ill	(modern Khamti <i>khai</i> <sup>6</sup> )
𑜀𑜂𑜆𑜇 = sell	(modern Khamti <i>khaai</i> <sup>3</sup> )
𑜀𑜂𑜆𑜇 = buffalo	(modern Khamti <i>khaai</i> <sup>7</sup> )
𑜀𑜂𑜆𑜇 = egg	(modern Khamti <i>khai</i> <sup>3</sup> )
𑜀𑜂𑜆𑜇 = go, depart	(modern Khamti <i>khaai</i> <sup>5</sup> )
𑜀𑜂𑜆𑜇 = tell, inform	(modern Khamti <i>khai</i> <sup>4</sup> )

*Table 21: Khamti tones in Needham (1894:iii)*

Needham goes on to mention that "I may add that three of the tones commonly heard are very marked and not difficult to acquire" (1894:8). He then lists these three tones, here presented as Table 22:

- (i) the natural pitch of the voice with a rising inflection at the end, as 𑜀𑜂𑜆𑜨 (mâ) dog; 𑜀𑜂𑜆𑜨 = (mû) pig;
- (ii) the falling tone as 𑜀𑜂𑜆𑜨 (mâ) come; and
- (iii) the abrupt termination of the voice, or a sudden cessation of it at the end of a word, as 𑜀𑜂𑜆𑜨 (mâ) a horse.

*Table 22: Khamti tones as explained in Needham (1894:8)*

Needham's explanation of the tones in Table 22 is clearly based on Robinson (1849), discussed below.

#### **4.1 Robinson (1849)**

In William Robinson's short paper (1849) all Tai words are marked for tone. His is the only work relating to the Tai languages of Assam written before the 1960s in which there was comprehensive marking of tone.

It is not clear whether the work on tones was done by Robinson himself or by Rev. Nathan Brown. Robinson stated that Brown provided him with the list of 282 Khamti words (1849:342–349). Since these are marked for tone, it may have been Brown who did the original work and was thus the first researcher able to notate tones in the Tai language. There is no evidence of tonal marking in Brown's own 1837 papers, however.

In his article, Robinson identified and notated four tones for Khamti. As he says:

“By its finely modulated intonations, sounds organically the same are often made to express different ideas. Thus *má*, for instance (with the rising tone) signifies a *dog*; *má* (the Italic *m* denoting the falling tone) signifies *to come*; while the same syllable, with an abrupt termination, or a sudden cessation of the voice at the end of it, *má*, denotes a *horse*.” (1849:312)



Elsewhere in the text Robinson notates another tone where italics are used for the vowel rather than consonant, as in <Po> ‘father’ (1849:344). Robinson does not describe this tone, but Grierson (1904:144) later described it as a ‘straightforward tone, of an even pitch’.

Before proceeding to reconstruct the tonal system of Robinson’s Khamti, we need to examine the data to establish whether the language recorded in the 1849 paper can be regarded as Khamti.

Apart from the word list, Robinson gave several examples of the grammar of the language, here listed in Table 23.

2	3	1		1	2	3
Hang	man	haü	da.	Give	(it)	to him.
3	1	2		1	2	3
Hang	man	maü	po.	You	beat	him.

Table 23: Sentence examples from Robinson (1849:313)  
showing the use of *han*<sup>2</sup> ‘to’

These and other examples in Robinson’s paper was discussed with the Khamti scholar, Rajat Namsom of Borkhamti village, Lakhimpur district, who said that he regarded these two sentences as being Phake, for two reasons. In the case of the first sentence in Table 23, the word <da> was a Phake sentence particle expressing command (actually *ta*<sup>4</sup>), and that in Khamti a particle *laa*<sup>7</sup> would be employed, as in (8):

- (8)      မာၣ်      မိ      ဟံ      လာ      ။  
man<sup>7</sup>    mai<sup>6</sup>    hau<sup>6</sup>    laa<sup>7</sup>  
3Sg    POST    give    IMP  
‘Give it to him!’

Stronger evidence that the sentences in Table 23 were Phake rather than Khamti comes from the use of the very common Phake preposition *haŋ*<sup>2</sup>, which marks the anti-agentive (animate arguments that are not agents). In Khamti, the anti-agentive roles are usually marked by a postposition, *mai*<sup>6</sup>, as in (8) and also in (9), which is Rajat Namsom's translation into Khamti of the second sentence in Table 23:

- (9)    မာ်            မိ            တုပ်            ။  
          man<sup>7</sup>    mai<sup>6</sup>    tup<sup>3</sup>  
          3Sg    POST    hit  
          '(You) hit him!'

A small amount of Khamti narrative text was collected and analysed in Lakhimpur. In this sample, the Khamti preposition *haŋ*<sup>7</sup> is found only rarely, and only ever to mark the beneficiary of a verb of transfer, as in (10):

- (10)    ဝုပ်            မေ            ဟုယွ            ဇာ            မိုခ်း  
          po<sup>3</sup>            me<sup>3</sup>            pa<sup>3</sup> saau<sup>3</sup>            ne<sup>5</sup>            mɣ<sup>4</sup> nai<sup>5</sup>  
          father    mother    girl                    DEF            then
- တီ    မာ်            မွ            က္ခ            က္ခ            ဟုခ်            မာ် ။  
          tii<sup>4</sup> man<sup>7</sup>    mau<sup>3</sup>    khaui<sup>6</sup>    hau<sup>6</sup>    haŋ<sup>7</sup>    man<sup>7</sup>  
          at 3Sg    NEG    want    give    to    3Sg  
          'The parents of that girl did not want to give her to him'

There is no example in Khamti of *haŋ*<sup>7</sup> being used to mark the patient, unlike in Phake. In the Khamti corpus, the patient is always marked with *mai*<sup>6</sup>.

From this we might conclude that Robinson was actually recording a form of Phake rather than Khamti. However there are

certain other features of Robinson's Khamti that are not found in modern Phake. Some of these are listed in (11).

- (11)
- a. The emphatic pronouns given are not found in Phake, as for example <Kau eng> 'I myself'.
  - b. The classifiers (called 'numeral affixes' by Robinson) include <Bai> 'applied to such nouns as leaf, paper, umbrella.' This word appears to be Robinson's way of notating the Phake word *maũ*<sup>2</sup>. Initial /b/ is not found in Phake or Khamti, but it is found in Aiton, where this word is realised as *bau*<sup>2</sup>.
  - c. In the body of the text, Robinson mentions the word <Bán> 'villages', which is akin to the Aiton form *baan*<sup>3</sup> rather than Phake *mān*<sup>3</sup> or Khamti *maan*<sup>6</sup>. In the word list attached to the article, the form is given as <Mán>.
  - d. Use of the question particle <Gai> or <Kai> (1849:317). This form is unknown in Phake.

In light of the findings of the tonal analysis in section 4.2 below, it may be that the data in Robinson's article do not represent an earlier stage of what is accepted as Khamti today, and that Robinson and Brown collected their material from Phakes or other Tai speakers who were all living in the same districts of Upper Assam in the first half of the nineteenth century, using the name Khamti to cover all the Tai speaking groups.

Both Needham's description of Khamti and Robinson's article were used as the basis for the notes about Khamti in *The Linguistic Survey of India* (Grierson 1904). Grierson did not notate any tones, save those that were notated originally in Robinson, although he did add the information about the fourth tone not mentioned by Robinson, the straightforward tone of even pitch.

Following Robinson, Grierson (1904:144) used "special type" to notate tones. Confusingly, Grierson used italics for all his

examples, meaning that italics are used where normal fonts would be used by Robinson and vice versa, as shown below in Table 24.

It is necessary to take great care when notating the forms recorded by either Robinson or Grierson; the potential for mis-transcription and typographical error is great. This is not to take away from the considerable achievement that Robinson’s article represents, particularly when it is remembered that marking of tones did not reappear for over 100 years and is still not found in many works on the Tai languages published in Assam itself.

Meaning	Form in Robinson (1849)	Form in Grierson (1904)
‘dog’	Má	<i>mā</i>
‘horse’	mạ	<i>mā</i>
‘come’	mả	<i>Mā</i>
‘father’	po	<i>Po</i>

*Table 24: Notation of tone in Robinson (1849) compared with Grierson (1904)*

**4.2      *Reconstruction of a tone box for Khamti as reported by Robinson (1849).***

As mentioned above in section 2.1, all the words that are in a particular box in Gedney’s system usually fall under the same tone category in any given Tai dialect. Since the 282 words listed by Robinson (1849) are marked for tone, and since we know the Proto-Tai tones corresponding to them, we can compare his notations and reconstruct a tone box for the Khamti he described.

Table 25 details the four tones described by Robinson and shows how they were notated with examples. For the purpose of this study, these tones will be numbered from 1 to 4.

Tone No.	Description (Robinson 1849:312 & Grierson 1904:144)	Notation (in Robinson 1849)	Example	
1	Rising	Normal font	má	“dog”
2	Falling	Initial Consonant in italics	<i>má</i>	“to come”
3	Abrupt Termination	Dot under vowel	mạ	“horse”
4	Straightforward, even pitch	Vowel in Italics	sí	“four”

*Table 25: Tones and notation of tones in Robinson (1849)*

The first task in the analysis of Robinson’s word list was to assign each of the words to the various tones boxes, following the methodology established by Gedney (1972), described above in section 2.1. This was done by establishing cognates in other Tai languages or comparing the word list with reconstructions of Proto-Southwestern Tai. The number of tokens for each box are presented in Table 26:

	A	B	C	DL	DS
1	35	7	13	6	6
2	14	3	6	4	4
3	10	1	2	4	-
4	36	10	10	3	6

*Table 26: Number of tokens of each tone box in the word list in Robinson (1849) – following the methodology of Gedney (1972)*

Table 27 exemplifies all 13 words given by Robinson that are reflexes of tone C1, with their cognates in the various other Khamti sources. It can be observed that all the words in Table 27 have the same tone in each of the modern Khamti sources, and also in Standard Thai. In this Table, the tones in Harris (1976) and Chau Khok Manpoong (1993) are marked by superscript numbers, those

in Weidert (1977) by an accent that precedes the word and those in standard Thai by a diacritic.

As can be seen in Table 27, the marking in Robinson is not always consistent. The C1 words are marked in three different ways: with a dot under the vowel, as in <Hại> ‘cry’, <Nặ> ‘face’, <Hặ> ‘five’, <Mại> ‘hot’, <Thạ> ‘old’, <Khạ> ‘rice’ and <Khiụ> ‘tooth’, with a final italic consonant, as in <Sóm> ‘sour’, and with no marking, as in the case of the other words.

Robinson (1849)			Harris (1976)		Weidert (1977)		Chau Khouk Manpoong (1993)		Standard Thai Cognate
Bee	Phũng	phun <sup>5</sup>	Bee	phlũŋ	bee	ꨀꨣꨳ	phun <sup>6</sup>	C1	phũn
Cloth	Phá	phaa <sup>5</sup>	cloth	pha	cloth			C1	phâa
Cry	Hại	hay <sup>5</sup>	To weep	hAI <sub>v</sub>	to cry, weep			C1	hây
Dry ( <i>adj</i> )	Heng	heŋ <sup>5</sup>	dried up	heŋ	to be dry			C1	hêeŋ
Face	Nặ	naa <sup>5</sup>	face	na	the face	ꨀꨳ	naa <sup>6</sup>	C1	nâa
Five	Hặ	haa <sup>5</sup>	Five	ha	5	ꨀꨳ	haa <sup>6</sup>	C1	hâa
Give	Haũ	hay <sup>5</sup>	to give	hAU <sub>v</sub>	to give, offer	ꨀꨳꨳ	hau <sup>6</sup>	C1	hây
Hot	Mại	may <sup>5</sup>	to burn (intr.)	mAI <sub>v</sub>	to burn	ꨀꨳ	mai <sup>6</sup>	C1	mâi
Kill	Khá	khaa <sup>5</sup>	to kill					C1	khâa
Old	Thạ	thaw <sup>5</sup>	old	thAU <sub>v</sub>	to be old			C1	thâw
Rice	Khạ sán	khaw <sup>5</sup>	rice	khAU <sub>v</sub>	rice	ꨀꨳ	khaw <sup>6</sup>	C1	khâaw
Sour	Sóm	som <sup>5</sup>	sour	su <sub>v</sub> m	to be sour			C1	sôm
Tooth	Khiụ	khew <sup>5</sup>	tooth	khi <sub>v</sub> U <sub>v</sub>	tooth			C1	khîaw

Table 27: Tokens from box C1 compared with other Khamti sources.

This inconsistency is found for many of the boxes. Table 28 details the findings for each of the 20 tone boxes.

As can be seen in Table 28, when the words known to be A1 were compared, all 35 words were notated in the normal font (Tone 1, rising tone, in Table 25), and consequently we can reconstruct a rising tone for box A1. Many of the Southwestern Tai varieties have a rising tone for A1, such as for example Phake (see section 3.1 above) and Khamyang (see section 3.4 above), but modern Khamti does not have rising tone for A1 (see section 3.3 above).

A1 No mark 35	B1 Ital. vowel 2 No mark 5	C1 Dot 7 No mark 5 Ital final C 1	DL1 No mark 6	DS1 No mark 6
A2 Ital. cons. 8 No mark 6	B2 Ital. vowel 1 No mark 2	C2 Dot 1 No mark 5	DL2 No mark 4	DS2 No mark 4
A3 Ital. cons. 7 No mark 3	B3 Ital. vowel - No mark 1	C3 Dot - No mark 2	DL3 No mark 4	DS3 -
A4 Ital. cons. 21 No mark 15	B4 Ital. vowel 4 No mark 6	C4 Dot 7 No mark 5 Ital. cons 5 Dot + ital. cons 1	DL1 Ital cons. 1 No mark 2	DS1 Ital cons. 3 No mark 3

*Table 28: Findings for each of the 20 tone boxes.*

However, for most of the tone boxes in Table 28, there were words marked in more than one way. Of the 14 words that are A2, 8, for example <pí> ‘year’, were marked with an italic initial consonant (Tone 2, falling tone, in Table 25 above). but 6, for example <pá> ‘fish’, were in normal font. If we were to assume that the word <pí> was indeed a falling tone and <pá> was a rising tone, as the notation suggests, then there would be a mixing of tones

within the A2 box, a mixing that is not found in other Tai varieties in the Southwestern branch of the Tai family.

This inconsistency might be explicable if we account for some of tokens of Tone 1 – the unmarked tone – as being errors. The easiest typographical error with a system of notation such as that devised by Robinson would be to accidentally leave a word unmarked. The typesetting of Robinson's article was done in far-away Calcutta, by people who would not have had any concept of the importance of tonal marking.

For each of the three boxes making up A234, a majority of words were notated with an italic initial consonant (Tone 2, a falling tone) and a minority as normal type (Tone 1). Assuming that the notation of normal type is an error, we can reconstruct the tone of A234 as Tone 2, a falling tone. This is exactly what is found in both Phake (see section 3.1 above) and Aiton (see section 3.2 above).

By following similar processes for all the other boxes, a reconstruction of the whole tonal system can be derived, and is here presented as Table 29.

With the B tones, there is variation between marking with italic vowels (Tone 4, the straightforward tone) and normal type (Tone 1), whereas with A234 the only variation was between italic initial **consonants** (Tone 2) and normal type. The italic vowel is marked in only about a third of the cases of B tones, whereas most of the tokens are unmarked.

This might suggest that the tonal analysis by Robinson was weaker in the case of B tones, but the explanation for the inconsistency is probably simpler: an italic vowel would be even easier to mistake in typesetting than an initial italic consonant. Thus we surmise that B1234 words were realised with the straightforward (level) tone.



	A	B	C	DL	DS
1	1 (rising)	4 (level)	3 (glottal)	1	
2	2 (falling)				
3					
4			?? falling, glottalised	2	

Table 29: Reconstructed Tone Box for Khamti, after Robinson (1849)

With the C tones, there is marking with an under dot, described by Robinson as indicating “abrupt termination” (tone 3 in Table 25). This surely refers to some kind of glottalisation, a feature commonly associated with C tones in the Tai varieties of Assam today. That Robinson is clearly on the right track is indicated by the fact that the dot, used to mark “abrupt termination”, is never found with any of the tones apart from the C tones.

With box C4, we see the widest variety of marking, including one case of a dot and an initial italic consonant. This may suggest that C4 was a glottal tone with a different contour from C123, perhaps a clearly falling one.

Finally, we must consider the D tones. There is never any marking of the words for DL123 or DS123, and this suggests a merger and a tone that was possibly similar to the tone of A1. Both DL4 and DS4 mix unmarked words (Tone 1) with initial italic consonants (Tone 2). This suggests the split between rows 123 and row 4 for the dead tones as shown in Table 29. Exactly this split is found in all the Tai varieties in Northeast India today.

4.3 Comparing Robinson’s data with present day Khamti

The tonal system that emerges in our reconstruction of Robinson’s Khamti is quite different from that in modern Khamti. For example,

in modern Khamti tone A4 is distinguished from A23, whilst A23 are merged with the tone B4. The Robinson data does not reflect this, but shows a clear difference between A23 and B4.

Furthermore, the merger of B123 with B4 is not found in any other Tai languages in northern Burma and northeastern India, although it is a feature of Lao varieties, where the tone is often a level tone, as is Robinson's Tone 4 according to Grierson (1904:144).

With the C tones, on the other hand, the reconstruction in Table 29 is closer to modern Khamti. As discussed above in section 3.3, all reflexes of C tones in modern Khamti have some glottalisation, with modern Khamti C123 tone being rising with a final glottal constriction, and modern Khamti C4 tones being creaky voice throughout.

If the reconstructed tone box in Table 29 represents an earlier form of the tonal system of modern Khamti, then certain questions have to be answered. Firstly, how did A23 words split from A4 and merge with B4? Secondly, how did B4 split from B123? Before discussing these issues, we will need to consider the reflexes of the proto consonants in modern Khamti. These are listed in Table 30.

Where tonal splits have occurred in the past, they seem to be possible only where the initial consonants of a particular box differ from those in another box from which they are splitting. In the most of the varieties spoken in Thailand, for example, tone splits between A3 and A4 would be possible, because the reflex of the proto glottal consonants (row 3) in these varieties are /b/ and /d/, sounds not represented by any of the reflexes of the proto-voiced consonants (row 4).

Row	Type of Consonant	Examples:	Reflexes in Modern Khamti
1	voiceless nasals	*hm, *hn, *hŋ	/m/, /n/, /ŋ/
1	voiceless aspirated stops	*kh, *th, *ph &c	/kh/, /th/, /ph/
1	other voiceless sounds	*s, *h	/s/, /h/
2	voiceless unaspirated stops	*k, *t, *p	/k/, /t/, /p/
3	glottal	*ʔb, *ʔd, &c	/m/, /n/
4	voiced nasals	*m, *n, *ŋ	/m/, /n/, /ŋ/
4	voiced stops	*g, *d, *b &c	/k/, /t/, /p/
4	other voiced sounds	*z	/s/

Table 30: Reflexes of Proto-Tai consonants in Modern Khamti

But in order to derive modern Khamti from Robinson's 1849 data, an A3 split from A4 would be required. Yet in both A3 and A4 words recorded by Robinson, there has been a merger of \*ʔb with \*m (to /m/) and \*ʔd with \*n (to /n/). Such a tone split would only be possible if Khamti speakers knew somehow that words like 'good' written by Robinson (from \*ʔdiiA3) and 'sleep' written by Robinson (from \*nɔnA4), came from different tone boxes, which clearly they could not have. In modern Khamti, these words are realised with different tones (nii<sup>4</sup> and nɔn<sup>7</sup>), but in Robinson's data, they are marked for the same tone.

The tone box presented by Robinson for Khamti has more similarity with the modern Phake tone box, at least in so far as there is a merger between A234 and a split between A1 and B123. Given the information about the syntactic differences between Robinson's Khamti and modern Khamti as discussed above in section 4.1, it may indeed be that Robinson's 'Khamti' represents a form of Phake rather than an earlier stage of modern Khamti.

5. TONE CHANGE IN THE TAI LANGUAGES OF ASSAM

5.1 *Proposing a history of tone change for the varieties still spoken in Assam*

A possible reconstruction of proto-Tai tones, or perhaps proto-Southwestern Tai tones, is presented in Table 31. This reconstruction lacks phonetic detail as regards A and B tones, because, as discussed above in Section 2.4, the status of the original Tai tones is uncertain, except that it is generally agreed that the C tone had some kind of glottal constriction, perhaps creaky voice and D tone had final oral stops. The information presented in Table 31 draws on Brown (1985) and Sagart (1989), but is in general somewhat more cautious.

	A	B	C	DL	DS
1	'A'	'B'	creaky voice	normal voice with final stop	
2					
3					
4					

Table 31: *Tones in Proto-Tai (1<sup>st</sup> millennium AD)*

The stage described in Table 31 equates to that called Ancient Tai by Brown (1985), and represents the situation of the Tai languages at or before the split into Northern, Central and Southwestern. Chamberlain (1975:62) dated this to around 250 BC. The process of splitting these tones, and the related process of the merger of the proto voiced series (row 4) with either the proto voiceless aspirated (row 1) or proto voiceless unaspirated (row 2) series was dated by Chamberlain (1975:62) to the 8<sup>th</sup> century, roughly the same time that a similar change occurred in Chinese.<sup>22</sup>

<sup>22</sup> I am grateful to Randy LaPolla for pointing this out.

As discussed above in section 2.4, it is possible that *-h* could lead to either low or high tones, and therefore acceptance of Brown's reconstruction of the A tone as 'whisper' (breathy voice) provides a motivation for the development of contour tones in the A tones that we reconstruct for Proto-Shan in Table 32. Similarly, reconstructing the B tone as 'plain' (normal phonation) provides a motivation for the level tones that we posit in Table 32, which is a reconstruction for Proto-Shan, the language that would have been spoken in the Mau Lung Kingdom around one thousand years ago.

	A	B	C	DL	DS
1	rising	non-low level	creaky	high long	high short
2					
3					
4	falling	low level	creaky low/falling	low long	low short

*Table 32: Tones in Proto-Shan (c1000AD)*

Table 32 has been reconstructed taking account the various tone boxes for Shan, discussed above in Section 2.3, and also as an intermediate stage between Table 31 and Table 33. we propose an original bipartite split, following Haudricourt (1954) and others who posited that the first tonal split was a bipartite split between 123 and 4, where 123 are high and 4 is low. Brown, on the other hand (1985:151) posited a stage that he called Yunnan, dated to c950, in which for all tones, row 1 would become low pitch, row 23 mid and row 4 high, in other words a tripartite division.

In his reconstruction for Chiang Saen in 1150AD, the ancestor of the languages in his study of Northern Thailand, Central Thailand and Shan, Brown (1985:152) posited the retention of the A1-A23-A4 split that he reconstructed for Yunnan 950AD, accompanied by mergers between row 1 and rows 23 in the other tones. Brown then suggested a merger of A1 and A23 for modern Shan of Chiang Rai (1985:153). In the present reconstruction, however, I posit retaining

the A123 merger at this stage, followed by a split that will be seen in Table 33. This would allow for bipartite Southern Shan tonal systems to evolve from Table 32, and both Northern Shan tones and the tonal systems of Assam to evolve from Table 33.

	A	B	C	DL	DS
1	rising	level	creaky	high	high short
2	?falling				
3					
4	high falling	low level	creaky falling	low	low short

*Table 33: Tones in Proto-Assam/Dehong/Northern Burma Tai (13<sup>th</sup> Century)*

The tone box in Table 33 has been tentatively dated to the 13<sup>th</sup> century, and may represent the tones of the northern and western Shan languages at the time that Sukapha entered Assam (see above Section 1.1). The next stage is the division of this proto tonal system into several systems, one being the ancestor of the northern Shan as described in Table 3 above by Edmondson and Solnit (1997) and two others, what will here be termed ‘Assam Tai A’, the language from which Phake, and the Khamti as described by Robinson descend, and ‘Assam Tai B’, the language from which modern Khamti and Khamyang are derived.

	A	B	C	DL	DS
1	rising	level	creaky	high	
2					
3	high falling				
4		low level	final glottal	low	

*Table 34: Tones in ‘Assam Tai A’ (c1600AD)*

	A	B	C	DL	DS
1	rising	level	creaky	high	
2	mid-low				
3	falling				
4	high falling	mid-low falling	creaky falling	low	

*Table 35: Tones in 'Assam Tai B' (c1600AD)*

The dates for 'Assam Tai A' and 'Assam Tai B', have been given at around 1600AD, a time when the Ahom kingdom in Assam was still strong, and before the various migrations and troubles at the end of the Ahom kingdom which led to the current linguistic situation.

### ***5.1.1 Changes from Proto-Shan to Proto-Assam/Dehong/Northern Burma Tai***

Both the Southern group of Shan languages, as described by Edmondson and Solnit (1997) in Table 4 above and what I have termed Proto-Assam/Dehong/Northern Burma Tai can be regarded as daughter language groups of the Proto-Shan stage reconstructed in Table 32. The major changes from Proto-Shan to the Proto-Assam/Dehong/Northern Burma stage is the splitting of A1 from A23. This split can only be motivated if the initial consonants of A1 and A23 are separate, and form salient groups. Since we posit this stage as occurring after the merge of voiced and voiceless unaspirated consonants within the P group of Tai languages, we may also assume that the proto voiceless nasals that belong in row 1 have merged to voiced. If this were so, then the merger of the proto preglottalised stop/nasals of row 3 to nasals cannot yet have happened at this stage. If the row 3 initial consonants were all still glottal at this stage, then the unaspirated and pre-glottalised

consonants must have formed a class that promoted a change from rising to falling tones.

In reconstructing this Proto-Assam/Dehong/Northern Burma stage, we have taken into consideration some of the features common to all the living varieties of Tai, and the various varieties included by Edmondson and Solnit in their northern Shan.

- (12) a. All the Assamese varieties have a high falling, or high rising then steep falling tone for A4. This is also shared by Mangshi in Dehong district (Edmondson and Solnit 1997:348).
- b. All varieties except for Aiton have some remnant of the creaky tone in C – although even in Aiton it is found non-contrastively
- c. In Phake and Khamyang, the C4 tone retains the creaky tone only as a final glottal stop, whereas the C123 tone retains creaky voice as its key feature. The opposite is found in Khamti, where C123 retains only a final glottal closure, but the C4 tone retains creaky voice throughout. According to Edmondson and Solnit (1997), all the northern Shan varieties have some glottalisation in their C tones.
- d. All varieties in Assam have a level tone for B123, and many northern Shan varieties retain a level tone for B4.

The changes between the Proto-Shan stage and this Proto-Assam/Dehong/Northern Burma Tai are as follows:

- (13) a. \*A23 splits from \*A1 and acquires a falling contour
- b. To maintain a distinction between \*A23 and \*A4, \*A4 becomes high falling



**5.1.2 *Changes from Proto-Assam/Dehong/Northern Burma Tai to 'Assam Tai A' and its daughter languages***

One of the major features that distinguishes the northern Shan languages of Dehong and nearby as described by Edmondson and Solnit from the Tai languages of Assam is the different tones found in DL and DS in northern Shan, as distinct from Assam, where DL and DS merge. We might, therefore, want to propose an intermediate change between Proto-Assam/Dehong/Northern Burma Tai and the two groups called 'Assam Tai A' and 'Assam Tai B', in which DS and DL tones merge.

The main distinctions between the four surviving varieties in Assam are given in (14). It will be argued that these can be explained by later innovations that occurred after the stage of proto Assam/Dehong/Northern Burma Tai.

- (14) a. A1 and B123 merge in Aiton and Khamti but not in Phake and Khamyang.
- b. A23 and A4 merge in Aiton and Phake but not in Khamyang and Khamti
- c. C123 and C4 merge in Aiton, although this may be a late development.

The first stage was a split into two, 'Assam Tai A', the ancestor of Phake, Aiton and the Khamti reported by Robinson (1849), and 'Assam Tai B', the ancestor of modern Khamti, Khamyang and possibly the Phake reported by Wilaiwan (1983).

The changes from Proto-Assam/Dehong/Northern Burma Tai to 'Assam Tai A' were as follows:

- (15) a. The falling tones \*A23 and \*A4 merge as the high rising then falling tone
- b. Creaky voice in \*C4 is reduced to final glottal stop

- c. \*DL and \*DS merge (a common innovation in both Assam Tai groups)

The major changes from Assam Tai A to the modern varieties are:

#### Phake

- (16) \*C4 becomes a falling tone and the final glottal stop drops as a contrastive feature.

#### Aiton

- (17) a. \*A1 and \*B123 merge, with an echo of sporadic, probably unmotivated allophonic variation
- b. \*C re-merges into a single tone and loses its contrastive glottal/creaky features.
- c. \*A234 and \*B4 merge. Aiton may have re-analysed B4 as a low falling tone and then merged it with the other falling tones

As mentioned above, the tone box reconstructed for Robinson's Khamti in Table 29 is also similar to this. If this reconstruction is correct, then the major change from 'Assam Tai A' to Robinson's Khamti is as follows:

- (18) \*B tones merge as a single level tone.

### 5.1.3 *Changes from Proto-Assam/Dehong/Northern Burma Tai to 'Assam Tai B' and its daughter languages*

The major changes from Proto-Assam Tai to Assam Tai B (Table 35) are as follows:

- (19) \*A23 becomes a mid-low falling tone and merges with the \*B4

For convenience, a comparison of modern Khamyang and Khamti tones is listed in Table 36:

Current tones	Khamyang	Khamti
A1	Level with possible rise at the end	High level
B123	Mid level with slight fall	High level
A23, B4	Low falling	Mid falling
A4	High rising then steep fall	High falling
C123	Low falling and creaky	Rising with glottal final
C4	High rising then steep fall with final glottal stop	Low falling with creaky voicing

*Table 36: Comparison of Modern Khamyang and Khamti*

A summary of the changes from ‘Assam Tai B’ to the present day languages is given below:

#### Khamti

- (20) a. \*A1 and \*B123 merge, taking on the features of the \*B123 tone, namely level  
b. Creakiness is reduced to a final glottal catch in \*C123, and the whole tone becomes rising. This change may have been subsequent to the \*A1=\*B123 merge, which had led to the loss of a distinctive rising tone in Khamti for A1.

#### Khamyang

- (21) \*C4 loses its creaky phonation and adopts a different tone contour, while retaining the final glottal.

#### Wilaiwan’s Phake

- (22) a. \*A23 mid-low falling becomes mid level  
b. \*B123 level becomes high (presumably level)  
c. \*B4 mid low level becomes mid (presumably level)

d. \* C123 creaky becomes mid-falling glottalised

Because the data on C4 from Wilaiwan is inconsistent, it is not possible to be more explicit about what changes may have occurred there.

6. A NOTE ON INITIAL CONSONANTS IN THE TAI LANGUAGES OF ASSAM

The subgrouping of these languages has taken account mostly of the merger of row 4 initial consonants with row 2 – the formation of the P group (see Chamberlain 1975) and the tonal changes. However, there are other changes that have occurred to several initial consonants. These are summarised in Table 37:

Proto-Tai consonant	Aiton	Phake	Khamyang	Khamti	Southern Shan	Standard Thai
*m, *hm	/m/	/m/	/m/	/m/	/m/	/m/
*ʔb	/b/~/m/	/m/	/m/	/m/	/w/	/b/
*n, *hn	/n/	/n/	/n/~/l/	/n/	/n/	/n/
*ʔd	/d/~/n/	/n/	/n/~/l/	/n/~/l/	/l/	/d/
*r	/r/~/h/	/h/	/h/	/h/	/h/	/r/
*Cr clusters	YES	NO	NO	NO	NO	YES

Table 37: Summary of difference between initial consonants in modern varieties of Tai spoken in Assam, compared with (southern) Shan and Standard Thai

In Table 37 it will be noticed that Aiton retains the distinction between the reflexes of proto \*ʔb and those of proto \*m and \*hm, a distinction which is otherwise only maintained in Standard Thai and other PH languages. All words with initial /b/ in Aiton are also realised with initial /m/, possibly as a result of the influence of the writing system, which uses the character for <m> to express these

words, or possibly induced by contact with the other spoken Tai varieties.

An analogous situation arises with the coronal series, where Aiton also retains the distinction between the reflexes of proto *\*ʔd* and those of proto *\*n* and *\*hn*, a distinction also maintained in Standard Thai. In the Khamti speech of Rajat Namsom, the reflex of *\*ʔd* is usually /n/, but there are some words such as *nxt*<sup>3</sup> ‘hot’ which have a variant with initial [l] and still other words such as *hn*<sup>4</sup> ‘moon’ which he always pronounces with initial [l].

Perhaps as a result of language decline, many words that have initials which are reflexes of *\*ʔd*, *\*n* and *\*hn* are pronounced with initial [l] in Khamyang. This appears to be a hypercorrection based on a feeling that ‘true Khamyang’ uses initial [l] where Phake uses [n].

Another feature where Aiton resembles Standard Thai, but differs from the other languages of Assam, is the presence of /r/ as a full phoneme – both as an initial consonant and as the second member in clusters. This phenomenon is also found in Ahom, whose script has a letter for <r> and a subscript consonant for writing clusters. No comprehensive study of the consonant clusters in Ahom manuscripts has ever been undertaken, and the Ahom dictionaries (G.C. Barua 1920 and B.K. Barua and N.N. Deodhai Phukan 1964) cannot be relied on when they notate clusters in the English or Assamese transcriptions of the Ahom script (see Morey 2005:50).

The similarity between Aiton, Ahom and Standard Thai suggests that some consonant changes, notably the merging of the proto preglottalised stops with nasals or other continuants in most of the Shan languages, must have been later developments in most of the Shan languages, developments that did but not occur in Aiton and Ahom. This was earlier suggested in explaining the possible motivation behind the A1-A23 split between Proto-Shan and the

later Proto-Assam/Dehong/Northern Burma Tai, as discussed above in section 5.2.2.

## 7. A NOTE ON THE TONES OF TAI AHOM

Almost nothing is known of the original tonal system of the Ahoms. Grierson, having indicated that there should be tones in Ahom, and that tradition is silent on the matter, stated:

“Moreover, in the one word, the tones of which I have been able to ascertain, they differ from those of the Khāmtī and Shān. This is the word *mā̃*, which, when it means ‘a horse’, has in Āhom a long tone, and in Khāmtī an abrupt tone, while *mā̃*, ‘a dog’, has in Āhom an abrupt tone, but in Khāmtī and Shān a rising inflection.” (1904:90)

It would be most curious if this statement reflected the true situation. The abrupt tone referred to is presumably a glottalised or creaky tone, a feature of C tones that sometimes spreads into B tones by merger, but as far as I know is rarely if ever found with A tones. Grierson gives no information about his source for this claim, and it must be treated with some caution.

The only attempt to reconstruct Ahom tones has been Weidert (1979), who compared the Shan, Standard Thai and Khamti tonal systems in order to make a reconstruction of the Ahom tonal system. I do not believe that his methodology was valid. First of all it failed to take into account the tonal systems of the other Tai languages remaining in Assam, the Aiton, Khamyang and Phake. Secondly, Weidert’s methodology gave equal weight to each of the three languages, even although Standard Thai is not part of the Shan group and on linguistic grounds appears to have been separated from Ahom for a long time.

An alternative for reconstructing the tones of Ahom, for at least one period, is to reconstruct to the historical stages of the

development of tones within the Shan group. Table 33 represents a tentative reconstruction for the proto ancestor of the various Tai varieties spoken north and west of Shan state, and may therefore represent the tonal system that was found when Sukapha led the Ahoms into Assam.

A further alternative direction for research would be to look for Chinese archives. It is likely that Chinese missions visited Assam over the centuries, and if they did, they may have collected some linguistic information about Ahom. Given that Chinese is a tonal language, it is likely that any recording of the Ahom language in Chinese would encode some reconstructable information about the Ahom tones.

## 8. CONCLUSION

The historical record presented in section 1.1 above gives an overview the interactions between several groups of Tai over a long period. Both on the grounds of their historical contacts, and their linguistic features (of which only tone has been discussed in detail here) these languages can be regarded as forming a subgroup within Southwestern Tai.

The detailed notes on the tonal systems of Phake, Aiton, Khamti and Khamyang presented in section 3, when compared with other Tai languages and with previous work done on the reconstruction of Tai, have led to a stage-by-stage reconstruction of changes in the tonal systems of these languages since the Proto-Tai stage (section 5). This reconstruction has been informed at least in part by the re-examination of early records of one of the Tai varieties published by Robinson in 1849 (section 4).

It is hoped that this paper will add to the endeavour of establishing carefully argued subgroups within the Tai family, as well as add to the information about lesser known Tai varieties available in print.

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