Word Families in Tai: A Preliminary Account

Yongxian Luo

Australian National University

1 Introduction

More than sixty years ago, in an important contribution to Chinese linguistics, the eminent Sinologist and orientalist Bernhard Karlgren made an insightful statement on research methodologies in this field, which is worth quoting:

> Before Sinitic comparative linguistics can be safely tackled there remains a great task to be solved in each of the language groups concerned. In Chinese the words must be sorted and grouped according to genetic affinity, and the same must be done in T'ai and in Tibeto-Burman. Then, but only then, we can start comparing the word groups of these three great branches and hope for reliable results.
>
> (Karlgren 1933: 9)

Four decades later, in 1978, James Matisoff called for an 'organic approach' to linguistic comparison. Focusing on body-part terms in Tibeto-Burman languages, Matisoff has successfully demonstrated that 'variational semantics', the task of which is to identify 'allofams' (i.e. word families), holds the key to the reconstruction of Tibeto-Burman and other SE Asian languages. In a recent article he has reemphasised the significance of this approach: 'Any given etymon is bound to show some morphophonemic variation, even at proto-level, thus *historical reconstruction in SEA must be done in terms of 'word families', rather than of monolithic invariant roots*' (1992: 46, emphasis added).

Word families are, in traditional historical linguistic terminology, etymologically related variants of the same proto-morpheme in a given language. Also referred to as doublets,[1] these are 'groups of forms which bear a non-fortuitous phonological and semantic relationship to each other' (Matisoff 1978: 18). In other words, word families are variant forms that are partially related to each other phonologically and semantically, very much like English spl- or sn-words.

If one looks at any good dictionary of a Sino-Tibetan language, one is struck by the large number of word families, which can somehow be sorted into certain *semantically definable groups. Especially intriguing is a morphological process*, i.e. the alternation of tones, which makes Sino-Tibetan languages distinct from Indo-European languages. To cite an example from Lahu: *là* 'to come', *la* 'cisative verb-particle', and *lâ* 'benefactive verb-particle' (Matisoff 1978: 22-23). Here we have a case of exact semantic/phonological parallelism of allofamy within a single language, an uncommon occurrence. More often, different initial consonants and finals are involved. The task becomes even more demanding if one compares such allofams across several related languages. A good example is the body-part term 'belly' in Sino-Tibetan, which exhibits a range of allofams, cf. Chinese **piôk*, Limbu *səpok* 'belly', Ao Naga *tepok*, Magari *mi-Tuk*, Garo *ok*, Lahu *ɔ-fɨ-qō*, Jingphaw *pù-hpam*, Tamlu *hwum*. What holds these into a family is the semantics

---

[1] As often in the Indo-European tradition. For a discussion of this topic, see Hoenigswald 1983:167-71.

and the labial element /p m f w/, which went missing in Garo (Matisoff 1978: 124-127).

The purpose of this paper is to present some evidence of word families in Tai. As this is an immense topic, we shall limit ourselves to only a few frequently-encountered word families within the semantic fields of 'stem/handle', 'to be wet/moist', 'to cover/conceal', 'to bend/crooked', 'to fall/topple/collapse', 'flat/sheet/board', 'to hold by hand', 'to detach/remove', 'sharp-pointed/pierce/stab', 'open/wide', 'to extinguish/dark', 'to make noise', 'to spread/enlarge/extend', 'to cut/slice/reap/break', 'to beat/hit/strike/punch', among others. The roots concerned have the initial consonants $*k$-, $*p$-, $*l$- and $*s$-, and finals $*i/e/a/o$, $*$-an/t, $*$-ak/ŋ, $*$-en, $*$-om/p, $*$-ok/ŋ, $*$-on/t and so on. The historical connections of these word families will be explored, and the recurrent patterns of such morphological alternations will be investigated. Much of the material set out below has been cited in reconstructed form in Li's (1977) *Handbook of Comparative Tai*, with data added from new sources, along with probable cognates which have recently been uncovered by the present writer. Reference is made to related languages when relevant. It is hoped that this preliminary discussion will stimulate further research on the topic and will furnish some useful data for both researchers in the Tai field and areal comparativists.

2 Some Word Families in Tai

Li (1977: 41) in discussing irregularities in tone correspondences in Tai has observed that there is some evidence that a morphological process was in force in Proto Tai which gives rise to tone doublets, as in the case of Siamese. Li further distinguishes two types: (i) those that have the same type of initials and vowels and (ii) those that have different types of initials. He cites a few examples from Siamese to illustrate his point. Some of his examples include $khaa^{B2}$ 'price' and $khaa^{C2}$ 'to trade'; $koŋ^{A1}$ 'circle' and $koŋ^{B1}$ 'to bend'; cum^{C1} 'to soak' and $chum^{B2}$ 'to be wet, most'; pan^{B1} 'to spin' and $phan^{A2}$ 'to wind around, coil'.

There is a further type of tone alternation, i.e. free alternation of tones in a single dialect for specified lexical items, which was not discussed in Li and which has been presented elsewhere (Luo 1994). This can be briefly summarized as follows:

A1—A2: Sanfang
A1—B1: Dehong, Saek
A1—C1: Saek
B1—B2: Sanfang
B1—C1: Dehong, Lungming, Wuming
B2—C2: Dehong, Saek
C1—C2: Dehong, Saek
C1—B2: Lungming, Saek

We do not look in detail at this free variation here but cite them to show their existence in Tai, whether they are reflexes of the proto language or are recent developments in a particular dialect. We would like to point out that these examples are instances of free alternations and should not be treated generally. Nor shall we devote our attention to the alternation of voiceless and voiced tones between the non-Northern and the Northern languages, an important feature in Tai which is the subject of another paper (Luo 1994).

2.1 The C-OM/UM Type

This is one of the most common types. There appear to be some variations in finals for certain groups, where -p or -n may occasionally occur.

2.1.1 Sibilant+um—'Wet, soak/immerse'

To begin with, Li's examples of 'wet, moist' cited above are in fact found across the Tai languages.[2] These mainly take sibilant initials.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to soak, dip	B1/C1	cum	cum	tsum	chum	chum	cam	chum	sum	çum
into'		B1	B1	B1	B1	B1	C1	C1	C1	B1
'wet,	B2/C2	chum	sum	yam	chum	chum	—	chom	sum	çum
moist'		B2	B2	A2	B2	B2		Ai/B1	C2	C2

There are tone fluctuations among dialects of the three branches. The first item, 'to soak, to dip into (sauces)', is represented with tone B1 in the SW and the Northern languages, with dialects in the Central area taking C1, including Yay. White Tai and Black Tai also have a form *cham* with tone C1, meaning 'to dip in sauce', distinguishing this from the form that takes tone B1, 'to soak'. Li notices that Siamese has a free variant with tone C1 (Li 1977: 166), which supplies a missing link with these languages.

The second item is not found in Lungming in our data. In Nung, it is glossed as an onomatopoeic word, 'the sound of an object being tossed into water' (Bé and Wilson 1982:43), which is probably a dialectal development. While most SW languages show B2 for this item, Dehong shows A2 and a final vowel /a/. The Northern languages stand alone in having tone C2.

The first item in this group appears to be related to the Chinese form (浸) *jìn*, which was reconstructed by Karlgren as *tsjəm* (1940: item 661m), and by Pulleyblank as *tsim^h* (1991: 158).

To this group we may add yet another item, 'damp, wet', for which there appear to be some variations in initials across the dialects cited.

Gloss	Tone	Lao	DH	WT	BT	LM	NG	Yay	FS
'damp'	A2	huɯm	yam	ham	tom	tom	tum	tum	tum
							B2		

Although the initials appear to present a bit of a problem, the tones are quite regular except in Nung, where tone B2 is found. Li proposes *d- for this item (1977: 105), commenting that the form is 'not found in the SW dialects' (1977: 107). It seems that an initial cluster of some sort is involved here, for which we propose *dr-.

Two words describing water-oriented situations may also be related to this group. These take a dental stop as their initials.

Gloss	Tone	Thai	DH	WT	BT	LM	NG	Yay	FS
'to boil, cook	C1/B1	tom	tom	tum	tum	tom	tom	tum	tum
in water'		C1	C1	C1	C1	C1	C1	B1	B1
'to flood over'	C1/B2	thua	thom	thôm	thôm	thuu	thum	tum	tum
		m C1	C1	C1	C1	m C1	C1	B2	B2

---

2 Abbreviations: DH—Dehong: WT—White Tai; BT—Black Tai; LM—Lungming; NG—Nung; FS—Fengshan.

If we consider /u/ to be the primary vowel for the whole group, we seem to have an u-o alternation between the Northern and the non-Northern languages. Also the tones for these two items separate the Northern languages from the non-Northern languages, which seem to lend support to the bipartite division.

For 'dip into water' we should include a variant form, also with a sibilant initial, but with a different final -up.

Gloss	Tone	Thai	DH	WT	BT	LM	NG	Yay	FS
'to dip, to wet'	D2S	chup	tsup	chup	chup	yop	yup	yup	yup

This word has a causative meaning across the dialects cited.

There is still another word in Tai with the meaning 'to soak, to immerse'. The principal vowel for this item is a front /e/, without the final bilabial nasal -m.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to soak'	B2	chɛɛ	sɛɛ	tse	chɛ	chɛ	cee	se	se	çe

This item may be related to Chinese (湿) *shī* 'wet'.

2.1.2 Sibilant+om/em—'Sharp-pointed/stab/wedge'

This group typically take sibilant initials s- and finals -om, -em, with some variants.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'sharp-pointed'	C1/	siam	siam	sem	sem	—	siim	θem	θam	θɔm
	A1	C1	C1	C1	C1		C1	C1	A1	A1
'to stab, spade'	A1/B	siam	sia:m	sam	sam	siem	som	cham	θam	θam
	1/C2	A1	A1	A2	B1	A1	C2	B1	C2	B1
'peak, top'	A1	cɔɔm	cɔɔm	tsɔm	chɔm	chɔm	coom	—	—	—
'splinter'	C1/2	sian	sian	sɛm	sêm	siên	sim	θeen	sen	çeen
		C1	C1	C1 sɛn	C1	C1	C1	C2	C2	C2
				B2						

It can be seen that there are some tone alternations in the dialects cited. For 'sharp-pointed', the non-Northern languages show tone C1, as contrasted with tone A1 in the Northern languages. Lungming has an alternating form, *som*[A2], which is close to that of the Northern languages. Li has reconstructed tone C1 for this item, commenting that this form 'is not found in the Northern dialects' (Li 1977: 153), which can now be corrected.

Four tones are represented among our data for the second item, 'to stab', which seem to overlap between the three branches. Basically the Southwestern languages show the A tone, with the exception of White Tai. The Dehong form has A2, indicating a voiced initial. Certain languages in the Central area take C2, such as Lungming and Yay; White Tai, Nung and Fengshan have B1. The White Tai form has the meaning 'to sew on decoration to a dress, to adorn dress with decoration'.

The form for 'peak, top (of a mountain)' is not found in the Northern languages. For 'splinter', a voiceless-voiced alternation occurs between the non-

Northern and the Northern languages, along with a fluctuation between final -m and -n among some dialects. Neither of the last two forms is included in Li (1977).

Of the above items, 'sharp-pointed', and 'splinter' appear to have Sino-Tai correspondences. The Chinese counterparts are (尖) *jiān* and (签) *qiān* , both with final -n. The form for 'sharp-pointed' is also found in Maonan, a Kam-Sui language, and the Lin-gao (Be) and Hlai languages of Hainan Island, where it is represented as *sam¹*, *tsiam¹* and *tsɯm¹* respectively.

An s-l alternation is found for this word group, represented by the following items.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'sharp-pointed'	A1	lɛɛm	lɛɛm	lɛm	lɛm	lɛm	leem	lem	lem	—
'to cut, graze'	A2/ B1	lem A2	liam B1	lɛm A2	chim A1	chim A1	lim A2	lêm A2	liam A2	liam A2
'clf. for sharp items'	C1	lêm	lêm	lɛm	lim	—	leem C2	—	—	—
'angle, edge'	B1	liam	liam	lɛm C1	lem	liem B2	liim	—	—	—
'wedge'	B2/ C1	lim B2	lîm B1	lim C1	ʔdim C1	ʔdim C1	liim B1	—	lim C2	liam C2

The first item, 'sharp-pointed', appears to be closely related to the form cited above with the sibilant *s-. This form is not found in Fengshan, where the one with the sibilant initial is used. The second item exhibits some tone variations, with the majority of the dialects showing tone A2. Some semantic change can be observed in non-Southwestern languages. In Nung and the Northern languages, the meaning for this item is 'sickle'. In Lungming, it means '(sharp) edge (of a board or ruler)'.

As a classifier for sharp objects, the third example is typically a Southwestern word. No classifier meaning is present in Lungming, where the meaning is 'to trim even', which might not be related at all.

Closely related to the above form are the two items that follow, 'edge' and 'wedge'. These exhibit vowel alternations in Dehong and in Lao, where some tone fluctuations occur. The form for 'wedge' is a rare word in Yay, according to Gedney (1991a: 192). This word is represented with the dental /ʔd/ in White and Black Tai, indicating that we are dealing with a proto cluster *ʔdl-. Both these forms seem to be related to Chinese (棱) *léng*, which means 'edge, ridge'.

Except for the item for 'angle, edge', the above items are not included in Li (1977).

2.1.3 Liquid+om—'To fall, topple, collapse'

Two words with the meaning of 'to fall, collapse' occur across the Tai languages, for which Li has proposed two reconstructed proto forms, one with tone B1 and the other, C2. These take the liquid initial *l- and the final *-om.

Gloss	Tone	Lao	DH	WT	BT	LM	NG	Yay	FS
'to fall'	B1	lom	lom	lum	lum	lom	vam	lom	lɔm
'to topple'	C2	lom	lom	lum	lum	lom	lom	lam	lam

The meaning of the first item appears to be quite uniform across the Tai languages, which may be spelt out as 'to fall (into a place), to sink (into the mud)'.

For the second item, there are some variations. In the Southwestern languages, this item has the meaning 'to fall down/over (of a person, a tree), to collapse (of a building)'. In the Central and the Northern languages, it only means 'to fall over, to topple', without the sense of 'to collapse'. To express this idea, another form is used in these languages, with a dental initial *t-, showing tone B1. Cf. Lungming tom^2, Nung tom^1, Fengshan $tɔm^5$. Interestingly, Thai and Lao has $thalom^{B1}$ 'to fall down, to cave in', which may be related to the Central and the Northern form. The latter form is not included in Li (1977).

    There is a derivational form, $lɔɔm^{A1}$ in Thai and $lôm^{C1}$ in Lao, with the meaning 'to melt'. A similar form with tone C1 is found in Dehong and Lungming with some difference in meaning. In Dehong, this form appears to alternate with lom^{B1}, 'to fall', while in Lungming it means 'to sink from overloading (of a boat)'. Both tom^{B1} and lom^{C1} offer problems for subgrouping.

    In addition, two items taking final -n must be included here. These, too, have liquid initials.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'(of leaves) to fall'	B1	lon	lon	lon	lon	lôn	loon	—	lan	lɔn
'to collapse, landslide'	B1	—	lan	lan	lan	laŋ	loon	lan	len	lɛn

    The Black Tai form for 'collapse' shows a final -ŋ, which is different from the other dialects. This item is not included in Li (1977).

2.1.4 r/s/t+om—'To gather together, to collec'

    This group looks similar to the above 'fall-group' in phonetic shape except with some initial alternations. The following items illustrate.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to gather together, collect'	A1	rɔɔm A2	hɔɔm	hɔm	hɔm	hɔm	thoom	hom	rom	loom
'to gather, join'	B2	ruam	hɔɔm	hɔm	hom	hom	loom	hom	ram	lam
'to swarm, gather around'	A1/ C1	tɔɔm A1	tɔɔm A1	tum A1	tom A1	—	toom A1	thɔɔm A1	lum C1	lum C1
'cluster, thicket'	B1	—	—	lum A2	lɜm B1	lɯɜm B1	lomC1 luumA2	chum B1	rum B1	lum B1
'to repeat, same, together'	B2/ C2	sam B2	sam B2	sam C2	sam C2	sam C2	sam C2	sam B2	sam B2	çam B2
'to wrap up, packet'	B2	sum A1	sum B2	tsum A2	chum C1	chôm B2	coom A2	chum B2	sum B2	çum B2

    The first example in this group shows regular correspondences among the dialects cited except for the initial in Lungming, which has the aspirated dental stop /th/. The second item appears to be closely related to the first one. A tone alternation occurs between A1 and B2. The meaning for this item is 'to repeat oneself' in the Northern languages. Tone fluctuation also occurs with the item for

'to swarm, to gather around', where the Northern languages show C1, and the non-Northern languages, A1.

The item for 'cluster, thicket' means 'to meet' in Dehong, 'to overlap' in White and Black Tai. Regarding 'to repeat, the same, together', we have a tone alternation of C2 and B2 between languages of the Central area and other languages. The meaning of the last item, 'to wrap, packet' is 'group' in Dehong, 'a clan having the same ancestor' in White Tai, 'to celebrate' in Black Tai, and 'to congregate, assemble' in Lungming.

2.1.5 k+om—'To cover/conceal/obstruct from view'

Perhaps one of the most productive patterns is a group of words associated with the meaning of 'to cover, conceal'. These all involve velars/glottal stops and finals *-am/-om/-um.

Gloss	Tone	Lao	DH	WT	BT	LM	NG	Yay	FS
'to cover up'	B1	hom	hom	hum	hom	hom	hum	ham	hɔm
'cover with lid'	B1	kɔɔm	kɔm	kɔm	kɔm	khom	kɔm	kam	kɔm
'to fence in'	C2	lom	lɔm	lom	lom	loom	—	—	—
'to protect'	C2	khum	kum	kum	—	kom	hom	hum	hum
'to heal, healed	C1/	hɔɔm	hom	hom	hom	—	hom	—	—
(of a wound)'	B1	C1	C1	B1	B1		B1		
'to bury'	A1	—	—	—	—	ham	—	ham	ham
'upside down,	C1	khuam	xɔm	khuam	khuom	khom	khɔm	hom	hɔm
face down'									

The first item in this group seems to be the most stable. It shows a laryngeal fricative for all the dialects cited. The tone is also very regular.

The second item, quite regular as the forms may look, exhibits some semantic changes among the Southwestern languages. This item means 'to embrace, to lull (a child as in sleep)' in Lao; 'coffin, cup', in Dehong; 'to stop crying' in White Tai; and 'to lull' in Black Tai. It is in Dehong that the meaning of 'cover with a lid' is best preserved: coffins have lids, so do cups. Note that there is a derivational form in Dehong and in Lao, represented by *kom* and *kua:m* respectively with tone A1. In addition, Dehong, White Tai and Nung each have a related form with the fricative initial /ts/: Dehong *tsɔm^{B1}* 'to put (sth.) into a container (to as to hide it out of sight)'; White Tai *chɔm^{B1}* 'to put (an egg) in the nest of the brood in hatching'; Nung *chom^{A1}* 'to hide out of sight'. This form is not found in other dialects in our data.

The next two items, 'to fence' and 'to protect', display some semantic overlaps. If we take semantics as our priority for these two forms, we then should move the Nung, Yay and Fengshan forms for 'to protect' up to 'to fence', which is the right meaning. But the initials for these forms in these three languages do not correspond with other languages.

Except for 'to bury', which seems to be mainly a Northern word, all the other items have proto *-om or *-um. In non-Northern languages, there are further forms with very similar meanings. Consider the following:

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to cover up'	A2	khlum	kuam	xum	lôm	tôm	lom	lom	—	—
			A1							
'to cover (face)'	C1	hum	kom	hom	hum	khom	khom	—	—	—

For the first example, the Nung form means 'to gather dirt in a mount in planting'. The second item, 'to cover (the face)', exhibits variations of initials, with Thai, Dehong and White Tai taking the laryngeal fricative h- in contrast with velar stops k- and kh- in Lao and the Central languages respectively. These forms are not found in the Northern languages in our data.

If we insist in looking for more related forms of this kind, the Southwetern languages supply more words in this category. Cf. Thai $klɔɔm^{B1}$ 'to lull to sleep'; Lao $ŋum^{B1}$ 'cover', $ŋum^{C1}$ 'cover with the hand'; Dehong $kom^{A1/B2}$ 'to cover'; White Tai kom^{C2} 'to protect', $chum^{A2}$ 'to coddle children', to cite just a few examples.

Another allofam is found across the Tai dialects with some slight differences in meaning. All the forms cited show the velar nasal initial ŋ-.

Gloss	Tone	Lao	DH	WT	BT	LM	NG	Yay	FS
'to cover, shaded, cloud over'	A2	ŋam	ŋam	ŋam	ŋam A1	ŋuuum 'cave'	ŋam	ŋam	ŋam

In Lao and Dehong, the meaning of this form is 'to cloud over, to shade'; in White Tai and Nung, it means 'to cover with a lid', which is also present in Saek, where the form is $ŋam^{A2}$. The Lungming form is glossed as 'cave'. In Yay and Fengshan, the meaning is 'to lower the head (so as to avoid being seen)'.

The following set of items take glottal stops as their initials.

Gloss	Tone	Lao	DH	WT	BT	LM	NG	Yay	FS
'to keep in the mouth'	A1/ B1	ʔom	ʔom	ʔum	ʔom	ʔom	ʔum	ʔam B1	ʔɔm B1
'to put away (fruit) for ripening'	B1	ʔɔm	ʔɔm	ʔum	—	ʔom	ʔum	ʔam	ʔɔm
'to conceal, soak in a pot'	B1	ʔum	ʔɔm	ʔɔm	ʔɔm	ʔoom A1	—	ʔom	ʔoom A1
'to enclose, surround'	C1	ʔɔɔm	ʔɔm	ʔɔm, ʔum	ʔɔm	ʔoom	ʔam	—	—
'pot, jar'	A1	ʔɔɔm	ʔam	ʔɔm	ʔɔm	ʔoom	ʔom	—	ʔɔm

The first example in this group, 'to keep in the mouth', shows different tones between the non-Northern and the Northern languages, with the former taking tone A1 and the latter, tone B1. Li (1977: 244, 248) has reconstructed two proto-forms for this item, one glossed as 'to keep in the mouth' $ʔom^{A1}$ (item 28) and the other as 'mouthful' $ʔaam^{B1}$ (item 29), indicating that the two came from different sources.

There are indications that the two are allomorphs of a single proto root, which split in the modern dialects where tone and semantic fluctuations occurred. It appears that the non-Northern languages developed a different tone and final for this item. Li in a note (1977: 248) says that the Ahom form for this item means 'to take a mouthful'. So this form seems to be related to 'mouthful', which has tone B1 and final *-aam in non-Southwestern languages. For the latter concept, the Southwestern languages have $*gam^{A2}$ (Li 1977: 198, 200). The Northern languages have yet another form for 'to hold in between the jaws', $kaam^{A2}$, which seems to be related to the Southwestern form $*gam^{A2}$.

As we can see, the Northern languages have the same form for both 'to hold in the mouth' and 'to put away for ripening', which are clearly two different ideas.

It becomes clear that the Northern languages use the same word to express these two concepts. From our discussion, three allofams are involved here:

Gloss	Proto Form	SW	CT	NT
'to hold in the mouth'	*gaam A2	ʔom A1	ʔom A1	ʔomB1, kaam A2
'mouthful'	*ʔaam B1	kam A2	ʔaam B1	ʔaam B1
'to put away for ripening'	*ʔom B1	ʔom B1	ʔom B1	ʔom B1

The next three items are no less intriguing. For 'to conceal, to soak in a pot', we have a B1-A1 alternation between the Southwestern and the non-Southwestern languages. In the Northern languages, the meaning is 'to stew'. The forms for 'to enclose, surround' are found to be represented only in the non-Northern languages in our data. For 'pot, jar', the meaning for the Dehong and Fengshan forms is 'stuffy', which may bear some relationship with the item for 'to conceal, soak in a pot' above.

Several related items with the final stop -p are also found for Tai. These, too, take velar initials.

Gloss	Tone	Thai	DH	WT	BT	LM	NG	Yay	FS
'rice husk'	D1L	klɛɛp	kɛp	kep	kep	keep	chep	kaap	leep D2
'bamboo hat'	D1S	Laokup	kup	kup	kup	kip	—	cap	tɕɔp
'to cover (a hole)'	D1S	klop	kɔp	kap	kap	—	kop	—	—
'to cover (lid)'	D2L/S	khrɔɔp	kɔp	khop	khop	—	khoop	—	kɔp
'box'	D2L	ʔap D1S	—	ʔɛp D1S	kap D2S	hoop	hoop	haap	haap

Of the above examples, 'rice husk', 'bamboo or staw hat' and 'box' are included in this family since they are seen as certain types of 'coverings'. The forms for 'box' appears to be related to the Chinese form *hé* (盒), which has been reconstructed by Pulleyblank as ɣəp/ɣap (1991: 123).

In some Southwestern dialects, further related forms are found. E.g. Dehong *kap*^{D1} 'bamboo tube (with lid)', *kɔp*^{D1} 'horse saddle (lit. cover of horseback)', *kɔp*^{D2} 'to bandage'; White Tai *khop*^{D1} 'sill'; Black Tai *khop*^{D1} 'window frame'; Nung *kop*^{D1} 'to sew a blanket or quilt'; Fengshan *koop*^{D1} 'to sew up (quilts, etc.)', to name only a few.

Two variants in this set are the words for 'hidden, secret' and 'cage, pen'. These take liquid initials l- and r-.

Gloss	Tone	Thai	DH	WT	BT	LM	NG	Yay	FS
'to hide, conceal'	D2S	lap	lap	lap	lap	lap	lap	lap	lap
'cage, pen'	D1S	—	—	lop D2	lop D2	lop	lap	rap	lap

To this -ap subgroup we may add still another series of forms which have the meaning 'to shut (the door), to close (the eyes), to extinguish (a fire)'. These involve the alternations of /ʔd/~/l/~/h/. All dialects cited show voiceless initials.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to extinguish (fire)'	D1S	?dap	?dap	lap	?dap	?dap	nap	?dap	?dap	?dap
'to close (one's eyes)'	D1S	lap	lap	lap	lap	lap	lap	lap	lap	lap
'to close (doors)'	D1S	hap	hap	hap	hap	hap	hap	hap	hap	hap

Li (1977: 108, 137, 250) has reconstructed *?d-, *hl-, and *h- respectively for the above three items, which exhibit regular phonological and semantic patterns.

For the item 'to close (one's eyes)', some Southwestern languages such as Aiton, Phake and Dehong along with the Northern languages have the meaning 'dark, darkness', which supplies a connection between the above three items: when one closes one's eyes or when a fire goes out, there will be darkness.

This word family is also represented in other related languages of the Kadai languages such as Kam, Sui, Mulao, Maonan, Be and Hlai, indicating a wider genetic link.

Gloss	Tone	Kam	Sui	ML	MN	Be	Hlai
'to extinguish (fire)'	D1S	—	?dap	dap D2	lap	jap	zap
'to close (one's eyes)'	D1S	ɲap	—	ŋjap	khap	—	kɯp
'to shut (the door)'	D1/2	—	hap D1 ŋəp D2	ŋap ɲap D2	ŋap D2	hɔp	tshop

Several Tai dialects have alternating forms for the last item, 'to shut, close (the door)', cf. Dehong *hup/?up^D1*, White Tai *ŋap^D1*, Black Tai *ŋuop^D2*, Lungming *?ap^D2*, Yay *?up^D1*, Fengshan *?up^D1*. Particularly interesting are the White and Black Tai forms, which show similarities with Sui and Mulao.

Bauer (1994) has observed that the forms in the semantic field of 'to cover, to conceal' occur in many SE Asian languages with similar phonetic shapes, which appears to be an areal feature. But no other SE languages studied so far surpass Tai in possessing such a rich array of variant forms.

2.1.6 k+am—'To hold with the hands/capture/feel/touch'
Similar to the 'cover' family is a group of words that describe actions involving the use of the hands. These also take velar initials and final -am/om/um.

Gloss	Tone	Lao	DH	WT	BT	LM	NG	Yay	FS
'hold with hands'	A1	kam	kam	kam	kam	kam	kam	kam	kam
'to capture'	A2	kum A1	—	kom	kom	kom	kam	kam	kam
'to feel, grope for'	A2/ B2	kham A2	sam B2	xum B2	ŋom A2	ŋom A2	—	WM tɕumB2	tɕum B2

The first item in this group is fairly regular among the Tai languages, which also has the meaning of 'a handful' and which is thus often used as a classifier for measures. The second item shows some variation in tone and in finals, with Lao showing a voiceless tone. In non-Northern languages except Nung, the finals for this item appear to be *-om, whereas in the Northern languages, it is -am. Fengshan also has an alternating form, *kɔm^A2*, like the non- Northern languages. The pattern reverses for 'to feel, to grope for', for which the Northern languages show -um in contrast with Southwestern -am. Interestingly Dehong joins the

Northern languages in taking tone B2, unlike the other Southwestern languages. For the last item, some dialects have related forms with very similar meanings but with different initials. Cf. Lue *lum^B2* 'to feel', Lungming *lum^B2* 'to touch to feel', Yay *lum^B2/rum^B2* 'to feel', *θum^B2* 'a woman who serves as a go-between in a marriage proposal (i.e. to 'grope for' the possibilities)'; Fengshan *lum^B2* 'to touch to feel', *θum^B2* 'to grope for'. Of the three items, 'to capture' seems to be related to the Chinese (擒) *qín*.

Three common words cited below should belong to this family. These also take velar initials, with the final -p.

Gloss	Tone	Lao	DH	WT	BT	LM	NG	Yay	FS
'to catch, seize, grab'	D2S	kap	kap	kap	kap	kap	kap	kap	kap
'to take up with two hands cupped'	D1L	kɔɔp	kɔp	kɔp	kɔp	koop	koop	kop	koop
'to hold around with two hands'	D1L	hɔɔp	hɔp	hɔp	hɔp	hop	hoop	hop	hoop

Li notices that for the Southwestern languages, the general meaning for the first item 'to catch, seize' is 'to be tight, to join' (1977: 200). The remaining two examples exhibit regular correspondences among the dialects cited. The last example is not cited in Li (1977).

2.1.7 k+an—'Stem/handle/pole'

Li (1977: 186) has identified a cognate form for Tai with the meaning of 'stem, stalk, petoile'. He notices that for this form there is an alternation of long /aa/ and short /a/ among the Southwestern languages. He also notices that for the Northern languages, there appears to be an alternation between B1 and A2, the former meaning 'handle', and the latter, 'petiole of a fruit'. It seems that we are dealing with three allofams of a word family, as shown below:

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'stem, stalk'	C1	kaan	kaan	kaan	kaan	kaan	kan	kan C1 / koŋ B1	—	kooŋ B1
'stem, petoile'	B1	—	—	ŋɛn	kwin	kwin	—	—	kan B1	kan B1
'handle'	A2	khan	khan	kan	kan	—	kan C1	kan	kan	kan

There appears to be a close relationship between the first two items, which Li has grouped together. As we can see, many Tai languages have two separate forms for them, although it seems that non-Northern languages do not distinguish between the two. For 'stalk', the alternating Nung form *koŋ^B1* and the Fengshan form *kooŋ^B1* may have come from a different source, but the semantics fits, together with the initials. The forms cited from Dehong, White and Black Tai for 'stem, petoile' have undergone some semantic change. The meaning of the Dehong form is 'the tip (of a fruit, melon)'. Both White and Black Tai forms mean 'nipple'. The last item, 'handle', is not found in Black Tai or Lungming. In other languages this form shows regular correspondences.

To this we may add 'shoulder pole' and 'to carry on one end of a stick or pole':

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'shoulder pole'	A2	khaan	khaan	kaan	kaan	kaan	kaan	kaan	haan	haan
'to carry on one end of a pole'	A2	khɔɔn	khɔɔn	kɔn	kon	kon	koon	kon	kon	koon

Except for 'to carry on one end of a pole', which appears to be a native Tai word, the other forms may be related to the Chinese form *gǎn* (杆) 'stem, handle' or *gān* (竿) 'pole'.

2.2 The C-ŋ Group

2.2.1 k+aaŋ—'Wide/broad/extend/crosswise'

This group shares velar initials and final -a:ŋ.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'wide, vast, broad, spacious'	C1/ B1	kwaaŋ C1	kwaaŋ C1	kaaŋ C1	kwaaŋ. C1	kwaaŋ C1	kwaaŋ B1/C1	khaaŋ B1	kwaaŋ B1	kwaaŋ B1
'to lie athwart'	A1	khwaaŋ	kwaaŋ	xaaŋ	xwaaŋ	khwaaŋ	vaaŋ B2	vaaŋ A1/B1	vaaŋ	vaaŋ
'to lie crosswise'	B2	—	—	vaaŋ	xwaaŋ	khwaaŋ	vaaŋ A1	vaaŋ B2	vaaŋ A1/B1	vaaŋ
'to open, extend'	A1	kaaŋ	kaaŋ	kaŋ C1	khaaŋ	kaaŋ	khaaŋ	khaaŋ	kaaŋ	kaaŋ

Li has reconstructed two separate items for 'wide, broad, vast' for Tai, one with an unaspirated velar stop *kw-, for which the gloss is 'wide' (1977: 236), and the other with the aspirated *kh-, for which the gloss is 'vast, broad' (ibid.: 238). He notices that for the former form, the first item in the above table, there is a tone fluctuation between non-Northern and the Northern languages, the former taking tone C1, and the latter B1.

Our second example, 'to lie athwart', corresponds to Li's 'vast, broad'. For this item, Li's Po-ai form is the same as that for 'wide'. As we can see, this item is represented in the Central and the Northern languages with a labial fricative /v/.

The third item is closely related to the second item, as the glosses have shown. Indeed so similar are their semantic structures that Lungming, Black Tai as well as Nung have the same form for the two items. Except for White Tai and Black Tai, all languages have the bilabial /v/ (w) for this item, including Dehong.

Except for Dehong, the last item in this group is represented with tone A1 in all the dialects cited, with k-kh alternation between the non-Central languages and the Central languages including White Tai.

Each of the above forms may be related to their Chinese counterparts (廣) *guǎng*, (横) *héng* and (張) *zhāng* respectively, all having been reconstructed by Karlgren (1940: 707h, 707m, 721h). For the last form, Chinese has yet another allophone, (敞) *chǎng*. But the form *zhāng* appears somewhat closer in terms of tone correspondence.

2.2.2 K+oŋ—'To bend/crooked/bow'

In his note to the form for 'arched, bent' (1977: 203), Li points out that 'there are several related words with different initials and different tones in Proto-Tai'.

Indeed there are quite a significant number of forms in Tai associated with this meaning and it seems useful to discuss this word family in some detail. The main type of this 'bend-group' takes velar initials and final -ŋ. The principal vowel in this group is the back rounded /o/. Li has reconstructed two forms for this group, $koŋ^{A1}$ 'bow' (1977:188) and $*goŋ^{C2}$ 'bent, winding' (1977: 199). He has also noticed the Siamese form $koŋ^{B1}$ 'bent', but offers no reconstruction in his inventory. As we shall see, these three forms are found across the Tai languages.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'bow'	A1	koŋ	koŋ	koŋ	kuŋ	—	koŋ	koŋ	koŋ	kɔŋ
'to bend, arch'	B1	koŋ	koŋ	kɔŋ	koŋ	koŋ	koŋ	koŋ	koŋ	kɔŋ
'bent, crooked'	C1	khooŋ	koŋ	kɔŋ	kuŋ	—	koŋ	koŋ	koŋ	kɔŋ
		C2	C1	A1	C1					

As Li observes, the first item also means 'circle, wheel' in Thai and the same is true of Lao. In Dehong, three more forms are found for this item, $kuŋ^{A1}$, $kɔŋ^{A1}$ and $koŋ^{A2}$. Of these the first two are free variations for the word for 'to stoop' and the last means 'wheel for weaving'. In White Tai there is a separate item for 'circle', $kwaŋ^{A1}$. Nung has a form with tone A2, $kooŋ$, with the meaning of 'to stoop, bend forward, hunchbacked'. The second item shows regular correspondences.

The third item displays some tonal fluctuations between certain Southwestern and the non-Southwestern languages. Note that in some Southwestern and the Northern languages, there is another form which takes tone C2, with the meaning 'winding, circuitous'.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'bent, winding'	C2	khooŋ	khooŋ	koŋ	kuŋ	—	—	—	kuŋ	kuŋ

The meaning of this item in the Northern languages is 'behind the door'.

Closely related to 'bent, crooked' is a form which has been reconstructed as $*go^{A2}$ by Li (1977: 199). This form is typically found in non-Southwestern languages. Cf. Lungming koo^{A2}, Nung koo^{A2}, Yay ko^{A2}, Fengshan koo^{A2}.

The above forms appear to be related to Chinese (弓) *gōng* 'bow', *gōng* (躬) '(bent) body' and (拱) *gǒng* 'arch' respectively. The tones also show regular correspondences between Chinese and Tai.

There are two subsets of variant forms in this group that express very similar meaning. The first subset takes final -m. Only one form is found across the Tai dialects but more items can be observed in individual dialects.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to bend, bow (the head)'	C1	kɔɔm	kɔɔm	kɔm	kum	kom	kom	kom	kum	kum

This form exhibits regular correspondences in initial and tone. Except for White Tai, there is an alternation of /o/ and /u/ between non-Northern and the Northern languages. White Tai joins the latter in showing /u/. This item exhibits a

wider genetic link. It occurs in the Kam-Sui languages and in Be as well as in Hlai of Hainan Island.

Gloss	Kam	Maonan	Be	Hlai
'to bend'	kom^3	$\eta g\mathfrak{o}{:}m^3$	$\mathfrak{?}om^3$	hom^2

Dehong, White Tai and Wuming supply more examples for this group. Cf. Dehong $k\mathfrak{o}m^{C2}$ 'to be bent (down), to hang down', $k\mathfrak{o}m^{A2}$ 'to bow, bend (the body)'; White Tai kom^{A1} 'curved'; Wuming kom^{A2} 'to bend'. The second subset takes final -t. Two examples are found.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to coil, coil up'	D1S	khot	khot	xot	xut	—	kot	kot	kut	kut
'bent, winding'	D2S	khot	khot	kot	kot	—	—	kot	—	kut

An alternation of voiceless and voiced initials can be observed for 'to coil, coil up' and 'bent, winding'. The former shows a voiceless initial and the latter, a voiced one.

A more speculative possibility is a link between these two forms and the word for 'fern', for which Li proposed $*kut^{D1S}$(1977: 188). The tip of a fern is shaped like a coil.

A connection can be made between these two items and the Chinese words, $q\bar{u}/q\check{u}$ (曲) 'curved, crooked, winding' and $q\bar{u}$ (屈) 'bend'. Both Chinese words have been reconstructed by Karlgren and Pulleyblank with the Ru tone (Pulleyblank 1991: 260-261).

2.2.3 k/h+a/oŋ—'To make noise/to echo'

Several forms describing noise and noise-making constitute a word family in Tai. These have velar stops or laryngeals as their initials, with finals -aŋ, or -oŋ.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to echo'	C1	kɔɔŋ	kɔɔŋ	kɔŋ	kɔŋ C2	kɔŋ C2	sooŋ	heŋ	hɯaŋ	hɯaŋ
'to cry (of animals)'	C2	rɔɔŋ	hɔɔŋ	hɔŋ	hɔŋ	hɔŋ	looŋ	hoŋ	roŋ	loŋ
'drum'	A1	klɔɔŋ	kɔɔŋ	kɔŋ	kɔŋ	kɔŋ	kooŋ	dhooŋ	coŋ	tɕooŋ
'to sound, loud (noise)'	A1/2	—	—	hoŋ A1	daŋ A1	daŋ A1	hoŋ A1	hoŋ B1	—	hooŋ A2
'to groan, moan'	A2	khraaŋ	khaaŋ	xaŋ	chaaŋ	chaaŋ	laaŋ	haaŋ	—	çaaŋ

The first three items have been reconstructed by Li for Proto-Tai (1977: 143, 187, 221). Some irregular consonant alternations can be observed between the Southwestern and the non-Southwestern languages for 'to echo'. In the latter languages, Lungming shows a sibilant. Nung, Yay and Fengshan have the laryngeal fricative /h/. White Tai and Black Tai stand out in showing tone C2, indicating a voiced initial. The remaining two forms, 'to cry' and 'drum', exhibit regular correspondences among all the dialects.

The form for 'to sound, loud (noise)' appears to be related to 'to echo'. Li has reconstructed *ʔd- for this item (1977: 108). Yet Dehong, Nung and Fengshan indicate that a cluster was involved. The last two items are not included in Li. For 'to groan, moan', all dialects cited show good correspondences for tones and finals. The proto form for this item may involve a velar cluster of some sort, as reflected in Thai, White Tai, Black Tai and Fengshan, for which *gr- may be proposed. In Lao and Dehong, the liquid element was dropped; in Lungming and Nung, this element was retained, but the velar element was lost.

Of the above, the form for 'to echo' seems to be related to Chinese (響) *xiǎng* (the Shang tone, corresponding to C in Tai), and (哼) *hēng* 'to moan' (the Ping tone, corresponding to A in Tai)

The following form for 'to speak' is not found in the Southwestern languages in our data, but is found in some Kam-Sui languages and in Be.

Gloss	Tone	LM	NG	Yay	FS	Kam	Mulao	Mao-nan	Be
'to speak, talk'	C1	kaaŋ	kaaŋ	kaaŋ	kaaŋ	qaaŋ	caaŋ	caaŋ	kaŋ

This form appears to be related to Chinese (講) *jiǎng*, which also takes the Shang tone.

Also worth noting is the item for 'voice, sound', which has the fricative initials s- or h-.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'sound, voice'	A1	siaŋ	siaŋ	siŋ	seŋ	sieŋ	hiŋ	hiŋ	hiŋ	hiŋ

This form, too, seems to be related to the Chinese word (聲) *shēng*, which takes the Ping tone (corresponding tó A in Tai) and which has exactly the same meaning.

2.3 'To Hit/strike/pound/collide'

This is quite a productive family. This group of words typically take dental stops as their initials. Three subtypes can be classified: (i) those taking no final consonants; (ii) those ending in labials (-m or -p); and (iii) those ending in velars (-k or -ŋ).

2.3.1 Dental stops+V

Five items are found for this subgroup.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to hit, strike'	A1/2	tii A1	tii A1	—	tii A1	tii A1	—	—	ti A2	ti A2
'to challange'	C2	thaa	thaa	taa	taa	taa	—	taa	taa	—
'to butt against'	A2	thɔɔ	thɔɔ	to	tɔ	tɔ	too	to A1	—	taa C1
'to fight'	B1	dɔɔi A1	dɔɔi	lɔi	—	—	—	—	doy	doi

'to knock, crack open' B1   tɔɔi tɔɔi tɔi tɔi tɔi — toi toy toi

The first item exhibits a voiceless-voiced tone alternation between the non-Northern and the Northern languages. This form is not found in Dehong nor in the Central languages in our data.

The second item appears to be mainly a Southwestern word. The Yay form means 'to estimate' and may not be related at all.

For 'to butt against', all non-Northern languages show tone A. The Fengshan form seems to be better grouped with 'to challenge' with regard to tones. But the semantics compels us to keep it here.

'To fight' seems to have a limited distribution. It is found in Thai, Lao, Dehong and the Northern languages in our data, not found in other dialects. The meaning of the Lao form is 'to decline, to become lower on one side'; and the Dehong form, 'to slip off, to come off'. Both the Lao and the Dehong forms may come from a different source.

The last example show regular correspondences.

A link may be established between Tai and Chinese for 'to challange', 'to butt against' and 'to fight'. Cf. Chinese (賭) dǔ 'to challenge, to gamble', (牴) dǐ 'to butt against' and (鬥) dòu 'to fight'.

2.3.2 t+V+k/ŋ

This group of words describe an act of hitting or pounding envoling a violent and quick motion. An element of onomatopoeia or sound symbolism may have been the motivation of these forms.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to hit the mark'	D1/2	thuuk	thuuuk	thuk	thuk	thuk	tʋk	tək	tɯɯk	tɯɯk
		DIL	DIL	D2	D2	D1	D1S	D1S	D2S	D2S
'to hit, to hunt (game)'	D1S	—	tɯɯk	tək	—	—	tʋk	tək	tɯɯk	tɯɯk
'to hammer in'	D1L	tɔɔk	tɔɔk	tɔk	tɔk	tɔk	took	tok	tok	took
'to hit with the fist'	D2L	—	thuak	tɔk	—	thək	tok	tok	tok	took
			'oppose'			D1	D2S			
'to beat, strike'	A1/2	—	theŋ	teŋ	teŋ	—	teŋ	teŋ	teeŋ	teeŋ
			A2	A2	A2		A2	A2	A1	A1
'to punch, stab'	C2	—	theeŋ	teŋ	tɛŋ	tɛŋ	theeŋ	tiŋ	tiŋ	tiŋ
							C1	C1	C1	C1
'to poke (with a stick), hit'	B2	—	thaŋ	thaŋ	taŋ	taŋ	—	taŋ	taŋ	taŋ
				B1					B1	
'to pound (rice) in a mortar'	B1	—	dɯaŋ	—	dəŋ	—	—	dəŋ	dɯaŋ	dɯaŋ

The first two items have become more or less grammaticalised among the Tai dialects. As Li has glossed (1977: 101), the first item also has the meaning 'to be cheap, inexpesensive', which may have derived from the concept of 'hitting the mark'.

The second item is used as a very common word in some dialects translatable as 'to do, to engage in (some activities)'. The original meaning of this item may have been 'to hunt for (game)', which is particularly salient in languages of the Northern branch as well as in Lao (Li 1977: 102).

For 'to hammer in', all the dialects cited exhibit regular correspondences both in form and in meaning. The next item, 'to hit or pound with the fist', may have been a derivation of 'to hammer in'. The meaning of the Lao form is 'to oppose'. The Lungming form is an element in the compound $tok^4 sook^2$ 'elbow'. The Yay form means 'to hop on foot' and the Fengshan form 'to pound or hit against'.

The item 'to beat, strike' exhibit variations in tones among the dialects cited. This item is not found in Thai or Lao in our data. The form in the Northern languages generally means 'to hit (the mark)'.

The general meaning of 'to poke (with a stick)' is 'to thrust forcefully into, to strike against' in the Northern languages. This item is also found in Saek as $tha\eta^{B2}$. The Dehong form means 'to dash (against)', and White Tai 'to speak angrily'.

The item 'to pound rice (in a mortar)' occurs sporadically across the three branches. The correspondeces are regular, however.

2.3.3 t+m/p

Four items have been found for this group, two with final -m and two with final -p. These are common everyday words.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to hit, strike'	D2S	thup	thup	thup	tap	tap	top	tup	tup	tup
'to slap, clap'	D1S	top	top	tɔp	tɔp	tɔp	tap	taap	taap	tɔp
'to pound rice'	A1	tam	tam	tam	tam	tam	tam	tam	tam	tam
'to collide'	C1/ B1	thum C1	tam C1	tum C2	tum B1	tum B1	tam C1	tam B1	tam C1	tam C1

For the first item, the meaning of the Dehong form is 'messy, disorganised'. With the exception of languages in the Central area—White Tai, Black Tai and Lungming, all the dialects show final -up.

'To slap, clap' is represented with -op in the majority of dialects except those in the Central area, where the vowel is /aa/.

The item for 'to pound rice' show regular correspondences in form across the Tai dialects, with some variations in meaning in the Northern languages. The Yay form means 'to collide, to bump against', and the Fengshan form 'to thrust into'.

The final example shows some variations both in initial and in tone. It is represented in Thai with the aspirated initial /th/, although the tone corresponds. Dehong shows a voiced initial. White Tai, Black Tai and Nung take tone B1. The rest of the dialects have tone C1. The meaning of the Yay form is 'to butt against (as buffaloes)'.

For 'to pound (rice)', there is a related form across the Tai dialects with a sibilant initial, as follows:

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to pound (rice)'	C2	sɔɔm	sɔɔm	sɔm	sɔm	sɔm	soom	θom	θum	θum

There is an o-u alternation between the non-Northern and the Northern languages for this item.

2.4 The k/t+on/t Type

A group of words associated with the concepts of 'to cut, slice', 'to separate' and 'piece, chunk, section' form a common word family in Tai. These are typically represented with velar and liquid initials and final -on/an.

2.4.1 k+on/t—'To cut, reap, slice, prevent'

This pattern is found to be quite productive. Examples:

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to cut crosswise'	B1	—	—	xan	xan	—	—	—	—	kan
'to harvest, to reap'	A2 B1	kon B1	kon B1	kɔn B1	—	kan	kon	kon	—	kɔn
'to separate from'	A1/C1	khan C1	khan C1	xan C1	xan C1	khan C1	khee nA1	khee nA1	hen A1	heen A1
'to cut, uproot'	B2/1	khɔɔn B2	khoo nB2	kon B2	kun B1/2	kon B1	—	kon C2	—	kɔn B1
'edge, boundary'	A2	khɛɛm	khɛɛm	him	xɛm/ him	him	heen	hen	hen	heen
'dike'	A2	khan	khan	xan	khan	khan	han	han	han	han
'latch, bolt'	A1	klɔɔn	kɔɔn	kɔn	kɔn, tsɔn	kɔn	—	kon	—	tɕoon
'to choke, get stuck'	C2	khɛɛn	khɛɛn	kɛn	kɛn	kɛn	keen	keen	cen	tɕen

Although there appear to be some overlaps in meaning for certain items, the relationships between these words are self-evident.

The first item, 'to cut crosswise', seems to have a limited distribution. It is found in only three languages in our data.

For 'to cut, to reap', Li (1977: 187) has proposed a proto voiceless *k-. But our data seem to indicate that we are dealing with voiced *g-, as non-Southwestern languages including Black Tai show tone A2.

'To separate' reveals a pattern of tone alternation between the Southwestern and non-Southwestern languages, with the former taking tone C1 and the latter A1. Also a parallel vowel alternation is in force, separating the Southwestern languages from the rest.

The item for 'to cut, uproot' shows some semantic variations. In the Southwestern languages such as Thai and Lao, it means 'to cut down, to fell'. In Dehong, White Tai, and Black Tai, it means 'to uproot'. In Nung, it means 'to pull up'. In the Northern languages, the general meaning is 'to be cut off'.

For 'edge, boundary', Li notices that the Southwestern languages show a final -m as contrasted with non-Southwestern -n (1977: 215, 218). However, the tones and the initials correspond among all dialects.

The next three items, 'dike', 'latch' and 'to choke', exhibit regular semantic and sound correspondences. Yay and Fengshan have palatal initials for 'choke', which is a regular sound change in the Northern dialects. Fengshan also has an alternating tone (B2) for this item.

More related forms for this group can be found if one insists on examining more data. E.g. Lao kan^{A1} 'bar, obstruct, prevent", $kaan^{A1}$ 'to cut, trim', $koon^{A1}$ 'to shave', $kia{:}n^{A1}$ 'to cut around, shorten, cut out', $khan^{A1}$ 'partition, separate', $khia{:}n^{C1}$ 'dam, dike', $khoon^{B2}$ 'to cut down; Dehong $k\partial n^{B1}$ 'partition, fence', $kaan^{C2}$ 'to break off (as of ears of sweet corns from their stalks)', $k\partial n^{B2/A1}$ 'territory', $xaan^{B1}$ 'to be cut or scratched', xen^{A2} 'limit', $x\partial n^{A2}$ 'to cut', xin^{A1} 'to obstruct'. For lack of space we do not elaborate on this particular point here.

The above words remind us of a common word, 'axe', in Tai, which is prototypically associated with the act of cutting.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'axe'	A1	khwaan	khwaan	xaan	xoan	khoan	khwaan	khaan	vaan	vaan

A variant form with the bilabial fricative /f/ is found for this group, as follows:

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to chop, slash'	A2	fan	fan	fan	fan	—	fan	fan	fan	fan

This example is represented with tone A2 in all the three branches.

Several items with final -t are found for this group, as follows:

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to cut, slice'	D1S	—	kat	kət D2	kət	kut	—	kat	kat	kat
'to separate, divorce'	D2L	—	hɯat D1	haat	haat	kət	—	haat D1/2	haat D2	haat D2
'to stop'	D2S	—	hɯat D1	het	hot	kot	hoot	het	het	heet
'to separate, set a limit on'	D1L	—	kheet	xet D2	xit	khit	khat	het	—	heet
'to obstruct, hinder'	D1S	kiit	kiit	kit	kit	kit	kit	kit	cit	tɕit
'to scrape off'	D1S	khɔɔt	khɔɔt	xutD1 xɔtD2	xut	khɯt D1 kɯt D2	—	hot	hot	hoot
'torn, ragged'	D1L	khaat	khaat	xaat	xaat	khaat	khaat	khaat	kaat	—

The meaning of the Dehong form for 'to cut, slice' is 'to obstruct' and the White Tai form 'evil spirit (which cuts short the life of a person)'. In Lao there are two related forms, $khat^{D1}$ 'to be deprived off' and $khat^{D2}$ 'to separate'.

For 'to separate, divorce', the Lao form means 'to dry up, disappear' and the Dehong form 'to flee (in a forced marriage)'. White Tai has an alternating form, $xaat^{D1}$, with a voiceless initial. There is a further related form in White Tai, $kaat^{D2}$, which means 'to cut down'. The general meaning of this term in the Northern languages is 'to dam a shallow part of a river or stream (in order to catch fish)'.

For 'to stop', the Lungming form means 'to be worn down (of soles of shoes), and so does the Nung form. The general meaning of the forms in the Northern languages is 'to dry up (of a river)'. These forms may not be related to the Southwestern item which means 'to stop'. This item appears to be closely related to 'separate, divorce' above. They are cited here as a problem to be solved.

There are some semantic fluctuations for the item 'to separate, set a limit on' among the dialects cited, and the above forms are tentatively proposed. The meaning in Lao is 'area, district, region', in Dehong 'to cut off (relations), to dam up (water)', and in White Tai 'to disturb (sb.)'. In Black Tai it means 'to draw (a line), cross out', and this meaning is also present in Fengshan. The Nung form is glossed as 'to put out last of money, grain, etc.' (Bé, Soul and Wilson 1982: 96).

The last three examples show regular correspondences among the dialects cited.

Further related forms can be observed for certain Southwestern dialects, e.g. Lao $khat^{D2}$ 'to separate', $khaat^{D2}$ 'to murder', $kwat^{D1}$ 'to obstruct, prevent, $khat^{D1}$ 'to hinder, be deprived off'; Dehong xat^{D1} 'to block, obstruct, get stuck', $k\varepsilon t^{D1}$ 'to separate, distinguish', kwt^{D1} 'to stop'. More empirical work needs to be done to sort these out.

2.4.2 t/r/l+on/t—'Section/Piece/Chunk' and 'Detatched, come off'
A considerable number of words with dental or liquid initials and finals -on or -ot form a word family in Tai. These typically have the meanings 'section, piece', and 'to come off, to be detached'. Of these, words with final -on are associated with 'part, piece, cut into pieces/sections' and those with final -ot are associated with the act of detaching or separating. Some examples follow.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to castrate, prune'	A1	tɔɔn	tɔɔn	tɔn	tɔn	tɔn	toon	tɔɔn	ton	toon
'to go to meet someone, round up'	C1	tɔɔn	tɔɔn	tɔn A2	tɔn	tɔn	—	tɔɔn	ton	toon
'to extract, pull out'	A1/ B1	thɔɔn	thɔɔn	thɔn	thɔn	thɔn B1	thoon B1	tɔn A1	ton B1	toon B1
'section, piece'	B2	thɔɔn	thɔɔn	tɔn	tɔn	tɔn B1	toon	ton	ton	toon
'to cut, slice'	A1/2 B1	raan A1	haan A1	hɔn A2	hɔn A2	hɔn A2	—	—	ron B1	loon B1

The first and the second items show regular correspondences except Dehong, which has tone A2 for the second item. The third item exhibits some tonal irregularities among the dialects cited. All the Southwestern dialects show tone A1 for this item, while non-Southwestern languages except Nung have B1. For 'section, piece', Black Tai shows tone B1.

The final example in this group, 'to cut, slice', means 'to cut off the top of a tree' in Thai and 'to divide, share' in Lao. In Dehong, White Tai and Black Tai, the meaning is 'to cut into shorter pieces', and in the Northern languages, 'to slice (meat)'. There is a related word in the Northern languages, ron^{C2} in Yay and $loon^{C2}$ in Fengshan, which describes the cutting of tree branches and which looks a lot closer to the Thai form in meaning. Note that there is an alternation of A and B

tones between non-Northern and the Northern languages, with Thai and Lao showing a voiceless initial in contrast with a voiced initial in Dehong, White and Black Tai. Also Thai and Lao have a long /aa/ for this item, while other dialects have the back vowel *o.

Some Southwestern languages have further related forms with similar phonetic shapes. Some examples follow.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'tree chunk'	C1	ton	ton	ton/lon	ton	ton	—	—	—	—
'piece'	B1	tɔɔn	tɔɔn	tɔn	tɔn	tɔn	—	—	—	—
'to cut off, shorten'	A2	thɔɔn	thɔɔn	tɔn	tun	tun 'to end'	'to end'	—	—	—	—
'single item (of a pair'	A2	thoon	thoon	ton A1	—	—	—	—	—	—
'lance, (cut) objects'	A2	thuan	thuan	tɯn	ton	—	—	—	—	—
'fragment'	A1	tɔɔn	tɔɔn	tɔn	—	—	—	—	—	—

The glosses for the above items, which represent the meaning of each term in Thai and Lao, are for references only. These are generally not found in the Central or the Northern languages in our data. Among the Southwestern languages, some semantic differences can be observed for specific items. For example, the form for 'to cut off, shorten' means 'to end' in both White and Black Tai. For 'single item (of a pair)', the Dehong form is used as an honorific classifier for human beings. The meaning of the item for 'lance' in Dehong is 'clan', and 'torch' in White Tai. Further work may reveal some internal subgroup traits.

Finally, if meals are regarded as something that punctuate a day into sections, we may have still another form in this group.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'meal, clf. for meals'	B1	toon A1	toon A1	—	—	—	toon	toon	—	toon

The meaning of the Thai and Lao forms is 'period of a day'. The meaning of 'meal, clf. for a meal' is present only in the Central and the Northern languages in our data.

The forms for 'section, piece' and 'meals' appear to be related to Chinese (段) *duàn* 'section, chunk' and (頓) *dùn* 'pause' respectively, both with the Qu tone. For other related forms, some connections may be sought with the Chinese (斷) *duàn* 'cut off' and (短) *duǎn* 'short'.

This above-discussed C+on group clearly has some semantic link with the k/kh+on group discussed earlier in §2.4.1.

Closely related is a group of words with liquid initials l- or r- and finals -ot or -ut. An onomatopoeic element seems to be involved here which is appropriate for describing the act of detaching or sliding.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to detach from, strip off'	D2L	ruut	huut	hut	hut	hut	luut	hut	rot	loot

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to strip off, to come loose'	D1S / D2S	lut	lut	lut	lot	lot	lʏt	lot	lot	lut
'to slide down, slip through'	D2L	lɔɔt	lɔɔt	lɔt	lɔt	lɔt	loot	hot	rot	loot
'to slide off, be loosened'	D1L	lɔɔt	lɔɔt	lɔt	lɔt	lɔt	loot	loot	rot	loot
'to be late, retard'	D1L / D2	—	luut	lut	lut	—	lut	lot	lot	loot

The first item appears to be the most common among this group, which Li (1977: 143) has glossed as 'to pull, detached or stip off grains from the stork'. This item is closely related to the next item below, 'to strip off, to come loose', differentiated by initials and vowel length. These two items describe a situation when an object is moving or is being removed away from its base.

For 'slide down, slip through', all the Southwestern languages show *l-, while non-Southwestern languages seem to have *r-.

The general meaning of the form for 'to slide off, be loosened' in the Southwestern languages is 'to have a miscarriage (of animals)'. Li (1977: 138, item 32) groups this item under 'slip off', with the Southwestern languages taking the short final -ut and the Northern languages the long -oot. Our data indicates that we are dealing with two forms here. The item cited by Li corresponds to our 'strip off, to come off' above, to which we supply data from the Northern languages.

A related item is found sporadically in dialects of the three branches. This shows l- in the Southwestern languages and n- in non-Southwestern languages, indicating that we are dealing with a cluster nl/r-.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to escape, get away'	D2L / D1L	—	lot	lɔt	—	—	noot	—	—	noot

The meaning of the Lao form is 'to remove, diminish'.

For 'to be late, retard', an u-o alternation exists between the Southwestern and the Northern languages, with the Central languages divided. This item appears to be a semantic extension of 'slip, slide'.

Also related to this group is a form with the dental initial th- which specifies the action of taking off (one's clothes).

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to take off (one's clothes)'	D1L	thɔɔt	thɔɔt	thot	thɔt	thɔt	thoot	thoot	tot	toot

This item is a very common everyday word which occurs in every Tai dialect studied so far and which shows regular correspondences. This word is generally believed to be related to Chinese (脱) *tuō*. But the Chinese form has a wider range of meanings—both transtive and intranstive—'to take off, to shed off, to peel off, to cast off, to escape', of which 'to take off (one's clothes) is only one.

2.5 The p/b-en Type—'Board, plank/flat/sheet/plate'
This group of words have quite a uniform system of initials and finals across the Tai languages. The main initial for this group is the unaspirated labial stop p-, with its variant ph-. The principal vowel is the front /e/, plus the alveolar nasal -n.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'plank,	C1/	pɛɛn	pɛɛn	pen	pɛn	pɛn	peen	peen	pen	pen
board'	B2	C1	C1	C1,	C1	C1	C1	C1	C1	B2
				B2						
'flat'	C1	pɛɛn	pɛɛn	pen	pɛn	pɛn	peen	paan	—	pɛɛn
										paan
'sheet, clf.	B1	phɛɛn	phɛɛn	phen	phɛn	phɛn	phiin	phen	—	peen
for flat							C1/B1			
objects'										
'plate, flat	A2/	phaan	—	phaan	phaan	—	—	phen	paan	paan
dish'	C2	A2		C2	C2			A2	A2	A2
'clf. for	A1	phɯɯn	phɯɯn	phɯn	phɯn	phɯn	phɤn	pin	—	—
thin, flat										
objects'										

The first item in this group is found across the Tai dialects, with the majority showing tone C1. Fengshan shows B2 for this item, indicating a voiced initial. Dehong has an alternating item with tone B2 which has the meaning of 'flat cover' and which corresponds to the Fengshan form in tone.
For 'flat', most languages use the same form as that for 'board, plank'. This has led Li to the reconstruction of a single form for both items. But data from Nung and Fengshan suggest that they are sparate forms.
The form for 'sheet, classifier for flat items' shows regular correspondences among the dialects cited. In Lungming, there are two alternating forms for this item, which appear to be free variations of the same form.
For 'flat dish, plate', we have an alternation between C2 and A2 that cuts across dialect boundaries. Thai, Nung, and the Northern languages show A2, while Dehong and White Tai show C2.
The last example in this group is not found in the Northern languages. This item appears to be related to the item for 'sheet, classifier for flat objects' above. The general meaning for this item in the dialects cited is 'classifier for thin, flat articles of clothing', which is semantically more restricted than the other.
Except for the last item, all the above forms have corresponding Chinese counterparts. The Chinese forms are:

Chinese	Tone	Gloss
(板) bǎn	Shang	'plank, board'
(扁) biǎn	Shang	'flat'
(片) piàn	Qù	'sheet, clf. for flat objects'
(盘) pán	Yang Ping	'flat dish, plate'

The tone in the Northern languages for 'plank, board' does not correspond with Chinese, while that of the non-Northern languages does. 'Flat' and 'sheet' show regular tone correspondences between Chinese and Tai, indicating the possibility of loans. For the last item, tone A2 indicates an early borrowing while C2 is a late borrowing.

Of these, the forms for 'plank, board' and 'flat' are also found in Kam-Sui, Be (Lin-gao) and Hlai, indicating a wider genetic connection. The forms in these languages are as follows:

Gloss	Kam	Sui	Mulao	Maonan	Be	Hlai
'board, plank'	phjin B1	ʔmen B1	pjen B1	—	ben C1	be:n^2
'flat'	pje C1	pjen C1	pjen/pjaan C1	paan C1	fen C1	be:n^2

While Kam-Sui and Be seem to agree with the Northern languages in having two separate forms for 'board' and 'flat', Hlai is like the non-Northern languages in having the same form for these two concepts. It is possible that the two concepts were not separate in the proto language, from which the present forms developed.

2.6 'Split/divide/separate'~'Spread/unfold/multiply'

A significant number of words in the semantic fields of 'split/divide/separate', 'spread/ unfold/multiply' have bilabial sounds as their initials, as will be discussed below.

2.6.1 Labials+VOWELS—'Spread/enlarge/separate'

This is a highly productive group. The most recurrent initials are bilabial stops p-, ph-, and b-, together with the labial nasal m- and the labial-dental w-. The rhymes include front, central and back vowels. Words in this group typically have the meaning 'to spread, to enlarge, to extend'. The following items have been reconstructed by Li (1977: 62-87).

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to spread out (a mat)'	A1 B1	puu	puu	pi B1	pu	pu	pow	pu	pi B1	pii B1
'to enlarge, open wider'	B1	phɛɛ	phɛɛ	phe	phɛ	phɛ	pee B2	—	—	—
'to extend, spread out'	A1	bɛɛ	bɛɛ	me B1	bɛ	bɛ	—	be	be	bee
'to spill over, overflow'	B1	baa	baa	ma	ba	ba	maa	—	—	—
'fat, stout'	A2	phi	phi	pi	pi	pi	pey	pi	pi	pi
'banana blossom'	A1	plii	pi	pi	pi	—	pey	pi	pi	pi
'to release, set free'	B1	plooi	pɔɔi	pɔi	pɔi	pɔi	pyuuy	poi	—	—
'armspread'	A2	waa	waa	wa	wa	wa	—	wa	—	—
'to rise, to grow, to develop'	C1	maa	maa	—	ma	ma	maa	ma	ma	maa

The first three items belong to one subset, which share the meaning of 'to spread (out)'. For 'to spread out (a mat)', there is an alternation of A1 and B1 between non-Northern and the Northern languages, along with an /u/-/i/ contrast except Dehong, which sides with the Northern languages. The non-Northern form appears to be related to the Chinese (铺) pū. The tone in the Northern languages for this item seems to correspond to the next item, 'to enlarge, open wider', but the

semantic content does not. The item for 'to extend, spread' exhibits regular correspondeces across the dialects.

'Fat, stout' and 'banana blossom', too, are fairly regular both in initial and in tone as well as in meaning among the languages cited. The next two items are not found in the Northern languages, where different forms are used.

The last item in this group is attested in all three branches, although it is not recorded in Dehong.

The following items, which are clearly related to the above, are a supplement to Li (1977).

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to scatter'	B1	—	phiu A2	phaau	phiu	phiu	phyaaw	phaau	pyaaw	pjaau
'to smear on abundantly'	C1	—	paay	—	—	—	paay	paai	—	paai
'to spray'	B1	phuʔ D2S	phuu	phu	phu	—	phuu A2	phu	pyo	pjo
'to open slightly with the hand'	B1	bi	bi	mi	bi	bi	mey	bi	bi	bi
'to be exposed, naked'	A1	pluɯay	puɯay	poi B1	pəi	puɯəi	—	pəi, poi	—	pjoi

These appear to be native Tai words. For the first item, Lao, White Tai, and Black Tai show the /iu/ rhyme, in contrast with the other dialects, where the rhyme is /aau/. Also Lao has tone A2, which is exceptional. 'To smear on' has a limited distribution in the Southwestern languages. It is found only in Lao in our data. The final two items are very regular across the three branches.

If dialectal words are taken into account, the Southwestern languages supply more items. The following are just a sample.

Gloss	Tone	Thai	Lao	DH	WT	BT
'to expand'	A2	phaa	phaa	paa	paa 'disperse'	—
'to spread'	A1	poo	poo	pə	pə A2	pə A2
'spread out'	B1	pree	phɛɛ	phɛ	phe	phe
'to appear'	B1	phloo	phoo	po	—	—
'abundant, sufficient'	A2	phɔɔ	phɔɔ	po	pɔ	pɔ
'spread out'	A1	baa	bee	—	bo 'expose'	bo 'expose'

These examples are not found in the non-Southwestern languages in our data.

Words of this kind abound in certain dialects such as Lao, where a more comprehensive search will uncover additional forms.

2.6.2 Labials+Vowels+k/ŋ

This group shares similar semantic structures with the above. Items with final -k are more often associated with the concepts of 'to separate, tear apart' and 'to add on, to develop'. Those taking final -ŋ typically have the meaning 'to swell, spread, expand'.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to split open'	D1L	phɛɛk	phɛɛk	phɛk	phɛk	phɛk	pheek	—	peek	peek
'to be separated'	D2L	phraak	phaak	phaak	paak	paak	pyaak	paak	pyaak	pyaak
'to peel, to skin'	D1L	pɔɔk	pɔɔk	pɔk	pək	pɯək	pook	pɔɔk	pok	pook
'rind, skin'	D1L	plɯak	pɯak	pək	pək	pɯək	pɯɯk	pɯk	pyaak	pjaak
'to split, chip off the side'	D1L	baak	baak	maak	baak	—	maak	baak	baak	baak
'tube, cylinder, section'	D1L	bɔɔk	book	mɔk	bɔɔk	bɔɔk	mook	book	bok	book
'side, bank'	D2L	faak	faak	faak	faak	phaak	phaak	faak	faak	—

'To split open' and 'to be separated' are quite regular among the dialects cited. For 'to peel, to skin', White Tai and Black Tai show central vowels, in contrast with back vowels in the other dialects. The item for 'rind, skin' shows a contrast of -ɯak and -aak between non-Northern and the Northern languages. These four items seem to be related to Chinese (劈) *pī* 'to split open', (別) *bié* 'to depart, separate', (剝) *bō* 'to peel' and (肤) *fū* 'bark, skin' respectively.

The rest three items appear to be native words, attested in all the three branches in our data with regular correspondences.

More items of this kind are found in the Southwetern dialects. Some examples are given below.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'group, unit, fraction, side'	D2	puuk D2	phuak D2	pok D2	pok D2	pok D2	—	—	—	—
'to divide, expose'	D1	bɛɛk D2	bəək B1	mok	bɛ	—	—	—	—	—

These are mainly Southwestern words, not found in other branches in our data.

Similarly, a few items associated with the concepts of expansion, enlargement or development are found.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to put on, apply on'	D2L	phɔɔk	phɔɔk	pɔk	pɔk	pɔk	pook	pɔɔk	pok	pook
'to distribute, send out'	D1L	faak	faak	faak	faak	phaak	phaak	faak	faak	faat
'to hatch'	D2S	fak	fak	fak	fak	fak	fak	fak	fak	fak
'flower, to develop'	D1	dɔɔk	dɔɔk	mɔk	bɔk	bɔk	—	bɔɔk	—	—

Except for 'flower', which appears to be mainly a non-Northern word, a connection can be made between Tai and Chinese for each of the above items. Cf.

Chinese (敷) *fū* 'to apply on', (发) *fā* 'to distribute, to send', and (孵) *fū* 'to hatch'. The Fengshan form for 'to distribute' is closer to Chinese in rhyme, with final -t. Other dialects have -k.

In Dehong and the Northern languages, there is an item which expresses the idea of 'plump, well-filled grain'.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'plump, well-filled'	D2L	—	—	maak	—	—	—	—	faak	faak

Dehong has the bilabial nasal /m/ for this item, in contrast with the labial-dental fricative /f/ in the Northern languages. A simlar item, 'much, abundant', is represented in the Southwestern languages.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'much, abundant'	D2L	maak	maak	maak	mak	mak	—	—	—	—

The forms in White and Black Tai mean 'frequent(ly)', with short /a/, which may not be related.

If 'abundance' is an important semantic component in this group, the word for 'hundred' naturally belongs here.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'hundred'	D1L	paak	paak	paak	paak	paak	paak	paak	paak	paak

This word is generally considered to have been borrowed from Chinese *băi* (佰), which is preserved in Cantonese with the final -k as *paak*.

The idea of 'swell up, enlargement' is also embodied in a subgroup of words similar to those just discussed. These take labial initials and the final velar nasal -ŋ.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to swell up'	A2	phɔɔŋ	phɔɔŋ	pɔŋ	pɔŋ	pɔŋ	pooŋ B1	pɔɔŋ	pɔŋ	pooŋ
'to bud, bloom, swollen'	B1	poŋ	poŋ	poŋ	poŋ	—	pooŋ	pɔŋ C2	poŋ	pooŋ
'bunch, bundle'	A2	phuaŋ	phuaŋ	poŋ	poŋ	puoŋ	puuŋ	poŋ	—	—
'group'	C2/ A2	phooŋ A2	phɔŋ C2	pɔŋ A2	pɯŋ A2	pua C2	puuŋ B2	poŋ A2	poŋ C2	poŋ C2
'to cause to diffuse'	B1	pleŋ	peeŋ	—	piŋ	peŋ A1	—	peŋ	peŋ	peeŋ
'to leave open, to let go'	B1	pɯɯŋ	pɯɯŋ	poŋ	pɯŋ	pɯəŋ	puuŋ	puŋ	pɯaŋ	pɯaŋ

The above examples can further be divided into three subsets, each consisting of two items. The first of these, 'to swell up' and 'to bud, bloom, swollen', exhibit a voiced-voiceless alternation. The item with a voiceless initial is not included in Li (1977).

Li has identified 'bunch, bundle' for the second subset (1977: 66), but our data indicate that we are dealing with two allofams here, as several Southwestern

languages make a distinction between 'bunch' and 'group'. No corresponding forms are found in the Northern languages for 'bunch', where another word is used. For 'group', some dialects have alternating forms. Cf. White Tai $poŋ^{A1}$, Dehong $paaŋ^{A1}$, Yay $paaŋ^{A1}$, Fengshan $paaŋ^{A1}$. This latter form may be related to the Chinese $bāŋ$ 'group', with the Yin Ping tone.

For 'to cause to diffuse' and 'to leave open, to let go', some semantic fluctuations can be discerned among the dialects cited. In the Northern languages, the form for 'to diffuse' means 'to tighten something by pulling it in all directions, such as animal hide'. In the Southwestern languages, the form for 'to leave open, to let go' means 'to wander in Dehong and Black Tai, '(to go) barefoot' in Dehong and 'to abort' in Yay. The last two items are also a supplement to Li (1977).

Of the above items, the first and the last appears to be related to Chinese (澎) *péng* 'to expand, to swell up' and (放) *fàng* 'to set free, to liberate' respectively.

To this group we should add the item 'to puff up, to be fluffy', which is included in Li (1977: 69).

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to puff up, be fluffy'	A1	—	—	moŋ	—	—	moŋ	—	boŋ	bɔŋ

This form is not found in Thai or Lao, nor in White or Black Tai or in Nung. But it is represented in the Nothern languages and sporadically in dialects of the Southwestern and the Central branches.

More words of this type can be found in the Southwestern dialects such as Thai and Lao. For lack of space we only cite a few examples. Thai $plaaŋ^{A1}$ 'to manifest, evince', $pɯɯŋ^{A1}$ 'to spread out', $boŋ^{B1}$ 'to liberate', $baaŋ^{B1}$ 'to divide, separate'; Lao $beŋ^{B1}$ 'to swell up', $pooŋ^{A1}$ 'large', $phɛɛŋ^{A1}$ 'to show, display'.

2.6.3 Labials+Vowels+n/t

Equally significant, though less productive, are a group of words that take final -n or -t. These also have the general meaning of 'to split, divide, separate' as well as 'to enlarge, develop', very much like those in §2.6.2.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to divide'	A1	pan	pan	pan	pan	pan	pan	pan	pan	pan
'generation, time'	A1	paan	paan	paan	paan	paan	paan B2	paan	paan	paan
'to ear (of crops), to be with child'	A2	maan	maan	maan	maan	maan	—	maan	maan	faan
'to gush out (of water)'	C1	—	bɔɔn	—	—	—	mɯn	bɯn	bɯn	bɯn
'to pout one's lips'	A1/ C1	—	bɯan A1	mən A1	bun A1	bun A1	mɯn C2	bun C1	bɯn C1	bɯn C1
'sky, above'	A1	bon	bon	—	bən	bɯən	mɯɯn	bən	bɯn	bɯn

Of the above examples, 'to divide', 'generation, time' and 'to gush out' appear to be related to Chinese (分) *fēn* 'to divide, to share', (班) *bān* 'class,

divide' and (喷) *pēn/pèn* 'to spray, to splash' respectively. For 'sky', the meaning of the White Tai, Black Tai, Lungming and Nung forms is 'moon', which has come from a different Proto initial *ʔbl/r- (Li 1977: 91).

Dialect words supply additional materials for this subgroup. E.g. Yay *pɯanᴬ²* 'to unravel', *pɯanᴮ²* 'to save up, set aside'; Fengshan *pɯanᴬ²* 'to heap up (dirt, soil)', *pɯanᴮ²* 'to save up'. Thai *baanᴬ¹* 'to unfold', *phoonᴬ²* 'to heap up', *phaanᴬ²* 'to expand', *mɯɯnᴬ²* 'to open (the eyes); Lao *moonᴬ²* 'big', *phuunᴮ²* 'abundant', *mɯɯnᴬ²* 'to open (the eyes)'. The item 'to open (the eyes)' is also found in other non-Northern languages. C.f. White Tai *mɯnᴬ²*, Black Tai *mɯnᴬ²*, Lungming *mʋnᶜ¹* and Nung *mɯnᴬ²*.

For words ending in final -t, the following examples are illustrative.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to slice, cut'	D1L	paat	paat	paat	paat	paat	paat	paat	paat	paat
'time, period'	D1L	baat	baat	maat	baat	baat	maat	baat	baat	baat
'wound, scar'	D1L	baat	baat	maat	baat	baat	maat	baat	baat	—
'to sweep, brush off'	D1S	pat	pat	pat	pat	pat	pat	pat	pat	pat
'to sift, separate grain from husk'	D1S	fat	fat	fat	fat	phat	phat	fat	fat	fat
'to be blind'	D1L	bɔɔt	bɔɔt	mɔt	bɔt	bɔt	moot	bot	bot	—
'to pluck, pinch off'	D1S	bit	bit	mit	bit	bit	mit	bit	bɯt	bɯt
'to spill'	D2L	fɔɔt	fɯat	fot	fət	phɯət	—	—	—	fɯat
'to wipe off'	D1/2	—	—	pɔt D2L	—	—	maat D2	maat D2	ʔwuat	bɯat

The first three items are very regular across the dialects cited, with bilabial stops and final -aat. So do the following two items with final -at, together with 'to be blind'. For 'to pluck, pinch off', the Northern languages show the central unrounded /ɯ/, while other dialects have the front high /i/. There is an alternation of -ɯat and -ot for 'to spill', with Thai and Dehong showing -ot. The initials for 'to wipe off' are variable among the dialects cited, /p/ in Dehong, /m/ in the Central languages, /ʔw/ in Yay and /ʔb/ in the Fengshan. This final example appears to be related to Chinese (抹) *mǒ* 'to wipe'.

Less frequently, words with labialised initials also participate in this process.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to sweep up'	D1L	kwaat	kwaat	kaat	—	kuat	kweet	—	kwaat	kwaat
'month, time'	D2L	ŋuat	ŋuat	—	—	—	ŋuut	—	ŋuat	ŋwat

For 'month, time', a correspondence may be sought with Chinese (月) yuè 'month', which has been reconstructed by Kalgren as ngiwăt (1940: 204 , item 306a) and by Pulleyblank as ŋuat (1991: 388).

More intriguing still are a subset of words with labial cluster initials. Two examples are found across the Tai languages.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to slip and fall'	D2L	phlaat	pha-laat	paat	phaat	pha-laat	pyaat	paat	pyaat	pyaat
'to remove, disjointed'	D1L	plɔɔt	poot	pɔt	put	pot	—	pot D1S	pot D2	pjeet

Words of this type are obviously associated with those of the 'slip/detached' group discussed in §2.4.2 above. The meaning of separating or detaching is blended with an element of 'slip/slide' in both these examples.

2.7 The k-V Type
2.7.1 'To Call/shout/utter'

Utterance-making is the most basic and fundamental means of human communication. A group of words in Tai concern with this aspect of human activities. These mainly have initials involving the glottal or laryngeal sounds, with rhymes taking vowel glides -eu, -au, -aau.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to shout, yell'	B1/ A1	ʔɛɛw	ʔɛɛw	ʔiw A1	ʔɛo B2	ʔɛo	ʔeew	ʔeu	ʔew	ʔɛɛu A1
'to call, invite'	B2/ A1	—	hiw B2	yiu B2	thiu A1	thiu A1	viiw A1	heu C2	hew B2	heu B2
'news, message'	B1	—	khaaw	xaau	khaau	—	khaaw	—	haaw	—

None of the above forms are included in Li (1977). As we can see, they are found across the Tai languages, which indicates their status as proto forms.

The first two items exhibit tone variations among different dialects. Most languages have tone B1 for 'to shout, yell', with the exception of Dehong and Fengshan, where the tone is A1. White Tai shows B2, which is probably a dialect development. The form for 'to call, invite' displays some semantic variations among the dialects cited. In Lao, it means 'a happy sound'. In Dehong, it is used as a suffixing element to describe loud noise. In White and Black Tai, it mean 'to whistle' and so does the Lungming form. In Nung it means 'to signal'. It is in the Northern languages that the meaning of 'to call, to invite' is represented. These three forms may have come from different sources in view of their initials, but their finals fit well.

There is a variant form in this group which shows a liquid initial in some dialects and an alveolar nasal in others, as illustrated below.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to tell, say, inform'	B2/ A2	law A2	law B2	lau B2	lau B2	lau B2	naw A2	lau A1	naw A2	nau A2

Of the above-cited examples in this group, 'news, message and 'to tell, to inform' may be related to Chinese (告) gào and (閙) nào respectively, both taking

the Ru (entering) tone, and final long -aːu. The latter form is represented with the short -au in Tai, with alternation between l- and n-, indicating a Proto cluster of some sort. The general meaning for this form is 'noisy, to make noise, to disturb' in Chinese, which is not included in Karlgren.

Vocal communication is not the monopoly of mankind. In Tai there is a common word describing the barking of a dog, which is quite similar in phonetic shape to the above-discussed items.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to bark (of a dog)'	B1	haw	haw	hau	hau	hau	law	hau	raw	lau

This form exhibit regular sound correspondences across the Tai languages, with a possible connection with the Chinese form (吼) *hǒu*. But the Chinese form has a wider range of meaning, 'to roar, bellow', which can apply to humans as well as non-humans.

2.7.2 'Twist/entwine/wind around'

This group, too, takes velar/laryngeal sounds as their initials. Their finals are similar to those discussed in §2.7.1.

Gloss	Tone	Thai	Lao	DH	WT	BT	LM	NG	Yay	FS
'to wind around, twist'	C1	kiau	kiau	keu	kiu B1	kieu B1	keew	keeu	hew C2	heeu C2
'to twist string'	A1	kliau	kiau	kiu	kiu	—	keew	keeu	cew	tɕiu C1
'scissors'	A2	khiau	khiaw	xeu	keu	kieu B1	keew B1	keeu	ciaw	tɕiau
'to break by twisting'	C1	ʔiau	ʔiau	—	ʔɛu	ʔɛu 'to turn'	ʔeew B1	ʔeeu	ʔew	ʔeew

The first two items appear to be closely related. There appear to be some fluctuations of tones with these two forms among the dialects cited. For 'to wind around, twist', the Northern languages have tone C2; White and Black Tai show tone B1, while other dialects have C1. For the second item, Fengshan has C1, while others have A1.

The general meaning for the form for 'scissors' is 'sickle' among the Southwestern languages.

All the above forms are included in Li (1977). For 'to wind around, to twist', a link can be established with Chinese (絞) *jiǎo* 'to twist, wind', and (绕) *rǎo* 'to wind around', both with the Shang tone.

3. Summary of Results

In this study we have demonstrated that morphological alternations play a key role in the development of the Tai language family. They are an important characteristic of the Tai languages.

Morphological derivations provide indispensable information for the reconstruction of Proto-Tai. They enable us to have a better understanding of the

mechanisms of diachronic change in Tai. They shed new light on the internal divisions within the Tai family by offering criterial subgroup evidence. Word families in Tai also supply invaluable data for areal comparativists. Their typological features will prove crucial to our understanding of the language situation in East and Southeast Asia, and to a higer level of reconstruction.

Although the present study is only the beginining of a beginning, the following generalizations can be tentatively drawn on the basis of the above data.

(i)   A number of distinct morphological features point to a bipartite division of Tai, with the Southwestern languages branching off to form a subgroup of their own;

(ii)   Certain overlaps can be observed in several word families, where the boundaries appear to be somewhat fuzzy;

(iii)   Multiple sets are characteristic of some word families in Tai. The sources of such sets may provide important clues to our understanding of the cultural values of the Tai peoples at various stages in history;

(iv)   While word families in Tai exhibit certain characteristics of their own, a significant number of parellel typological features are found between Tai and Chinese, along with other distantly related Kadai languages. This may rekindle the debate upon the genetic relationships between these languages.

References

Bauer, Robert. 1994. 'To cover, conceal', their secrets revealed. Paper presented at the 27th International Conference on Sino-Tibetan Languages and Linguistics, 12-16 October, Paris.

Bé, Vy Thi, Saul, Janice E. and Wilson, Nancy Freiberger. 1982. Nung Fan Slihng-English Dictionary. Manila: Summer Institute of Linguistics.

Don, B., Faluang, B., Hung, B. and Fippinger, Dorothy. 1989. Tai Dam-English English-Tai Dam Vocabulary Book. Summer Institute of Linguistics.

Donaldson, Jean. 1970. Tai-Vietnamese-English Vocabulary. Saigon: Bô Giáo-Duc Xuât Ban.

Fifth Research Group, Minority Language Research Centre, Central Institute of Nationalities. (ed.) 1985. Zhuàng dòng yǔ zú yǔ yán cíhuì jí [Comparative Vocabulary of the Zhuang-Dong Languages]. Beijing: Central Institute of Nationality Press.

Gedney, William J. 1991a. William Gedney's the Yay Language. Ed. by Thomas John Hudak. (Michigan Papers on South and Southeast Asia No. 38). Center for South and Southeast Asia Studies, The University of Michigan.

Gedney, William J. 1991b. William Gedney's the Tai Dialect of Lungming. Ed. by Thomas John Hudak. (Michigan Papers on South and Southeast Asia No. 39). Center for South and Southeast Asia Studies, The University of Michigan.

Hoenigswald, Henry M. 1983. Doublets, pp. 167-171 in Frederick B.Agard, Gerald Kelley, Adam Makkai and Valerie Becker Makkai (eds.) Essays in Honor of Charles F. Hockett. Leiden: E.J. Brill.

Karlgren, Bernhard. 1933. Word Families in Chinese. Bulletin of the Museum of Far Eastern Antiquities 5: 5-120.

Karlgren, Bernhard. 1940. Grammata Serica. (Bulletin of the Museum of Far Eastern Antiquities 12).

Downer, G.B. 1959. Derivation by tone-change in Classical Chinese. Bulletin of the School of Oriental and African Studies 22: 258-90.

Kerr, Allen D. 1972. Lao-English Dictionary. Washington D.C.: The Catholic University of America Press.

Li, Fang-Kuei. 1977. A Handbook of Comparative Tai. Oceanic Linguistics
    Special Publication No. 15. The University Press of Hawaii.
Luo, Yongxian. 1994. Tonal irregularities in Tai revisited. Paper presented at the
    27th International Conference on Sino-Tibetan Languages and Linguistics,
    12-16 October, Paris.
Luo, Yongxian. Forthcoming. A Dehong Tai Dictionary.
Matisoff, James A. 1978. Variational Semantics in Tibeto-Burman. (Occasional
    Papers of the Wolfenden Society on Tibeto-Burman Linguistics Vol VI)
    Philadelphia: Institute for the Study of Human Issues.
Matisoff, James A. 1992. Southeast Asian Languages. Article in The International
    Encyclopedia of Linguistics Vol 4: 46-49. Oxford: Oxford University Press.
McFarland, George Bradley. 1972. Thai-English Dictionary. Stanford: Stanford
    University Press. (Reprint of 1944 edition).
Pulleyblank, Edwin G. 1991. Lexicon of Reconstructed Pronouncation in Early
    Middle Chinese, Late Middle Chinese and Early Mandarin. Vancouver: UBC
    Press.
Ts'ou, Benjamin. 1979. Homoganic nasal/stop alternations in Cantonese, pp.
    290-312 in Thongkum, Theraphan L et al. (eds.) Studies in Mon-Khmer
    Phonetics and Phonology in Honour of Eugénie J. A. Henderson. Bangkok:
    Chulalongkorn University Press.
Wolfenden, Stuart N. 1936. On certain alternations between dental finals in
    Tibetan and Chinese. JRAS (July): 401-416.
Wolfenden, Stuart N. 1937. Concerning the variation of final consonants in the
    word families of Tibetan, Kachin, and Chinese. JRAS (October): 625-655.
Xing, Gongwan. 1993. Hàn tái yǔ bǐjiǎo zhōng de shēnchéng duìyìng [Evidence
    of deep correspondences between Chinese and Tai]. Minzu Yuwen 1993.5:
    4-9.