

Proto-Tai Vowels Revisited: A Comparison and  
 Critique of the Work of Sarawit and Li\*

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Sarawit (1973) and Li (1977) have each proposed a reconstruction of the vowel system of Proto-Tai. Because Sarawit and Li worked independently of one another, their reconstructions differ in many ways. This paper has two purposes: (1) to show exactly which units in Li's reconstruction correspond to which units in Sarawit's, and (2) to show which parts of Li's and Sarawit's reconstructions are phonologically plausible and well documented, and which parts are either phonologically implausible or poorly documented and therefore amenable to alternative solutions.

In the course of this paper I shall sometimes pointedly criticize particular reconstructions of both Sarawit and Li. Therefore I wish to stress at the beginning that these criticisms apply only to the sort of mistakes in matters of detail which creep into any very long study no matter how well or carefully done. Both The Proto-Tai Vowel System and A Handbook of Comparative Tai are wonderful books which have taught me much and which I strongly recommend to anyone interested in Tai. In fact, it is precisely because Sarawit and Li present so much information in such a clear and well organized form that it is easy to spot the few mistakes they have made.

Many of the vowel correspondences among the Tai dialects can be neatly accounted for by positing the following rather simple vowel system for Proto-Tai:<sup>1</sup>

*i, *ii, *ia	*u, *uu, *ua	*u, *uu, *ua
*e, *ee	*a, *aa	*o, *oo

In many dialects, this system undergoes little change. In Siamese<sup>2</sup>, for example, only two major changes have taken place: (1) in certain environments, the long high vowels \*ii and \*uu shorten to i and u, for example Proto-Tai \*ʔiim<sup>B</sup> 'full (after eating)' > Siamese ʔim<sup>A</sup>, (2) the long non-high vowels \*ee and \*oo become open e and o, for example Proto-Tai \*geep<sup>D</sup> 'narrow' > Siamese khuɛp<sup>B</sup>, whereas the short non-high vowels \*e and \*o become close e and o, for example Proto-Tai \*cep<sup>D</sup> 'to hurt' > Siamese cep<sup>A</sup>.

(The additional vowels of Siamese, viz. long ee and oo, short ɛ and ɔ, and the mid unrounded back vowels ɐ and ɯ as in ɣɛn<sup>A</sup> 'silver' and dɛɯn<sup>A</sup> 'to walk' occur in loanwords and in native words which have undergone irregular or specially conditioned phonological developments.)

The above system, except for the transcription, is that of Sarawit. Li proposes a different system. He believes that Proto-Tai had no long vowels. In place of the contrast between short and long high vowels (\*i, \*u, \*u versus \*ii, \*uu, \*uu) he proposes a contrast between a series of monoph-

\*ee, \*aa, \*oo) he proposes a contrast between a series of close vowels, \*e, \*ə, \*o, and a series of open vowels, \*ɛ, \*a, \*ɔ. Thus Li has a system without vowel length but with three degrees of vowel height and two series of diphthongs (Li writes \*ie, etc. in place of Sarawit's \*ia, etc.):

*i, *ia, *ie	* <u>i</u> , * <u>iə</u> , * <u>iē</u>	*u, *uə, *ue
*e	*ə	*o
*ɛ	*a	*ɔ

Unfortunately, many of the vowel correspondences among the Tai dialects do not fit in to the simple system just outlined. In order to account for these recalcitrant correspondences, both Sarawit and Li set up a large number of additional Proto-Tai vowel nuclei, many of them diphthongs or triphthongs and many of them unlike anything found in modern Tai dialects. Sometimes Li's reconstruction is strikingly different in appearance from Sarawit's; for example Li's \*ui (= IPA [uɨ]) corresponds to Sarawit's \*wya: (= IPA [wja:]). In this paper, I argue that some of these problem correspondences are probably examples of ablaut or apophony, a suggestion made by Gedney (1972), and that Li and Sarawit are probably wrong in setting up special Proto-Tai nuclei to account for these alternations, which sometimes have persisted into modern dialects, for example in the Lao pair ʔaaj<sup>3</sup> 'older brother', ʔuaj<sup>3</sup> 'older sister'.

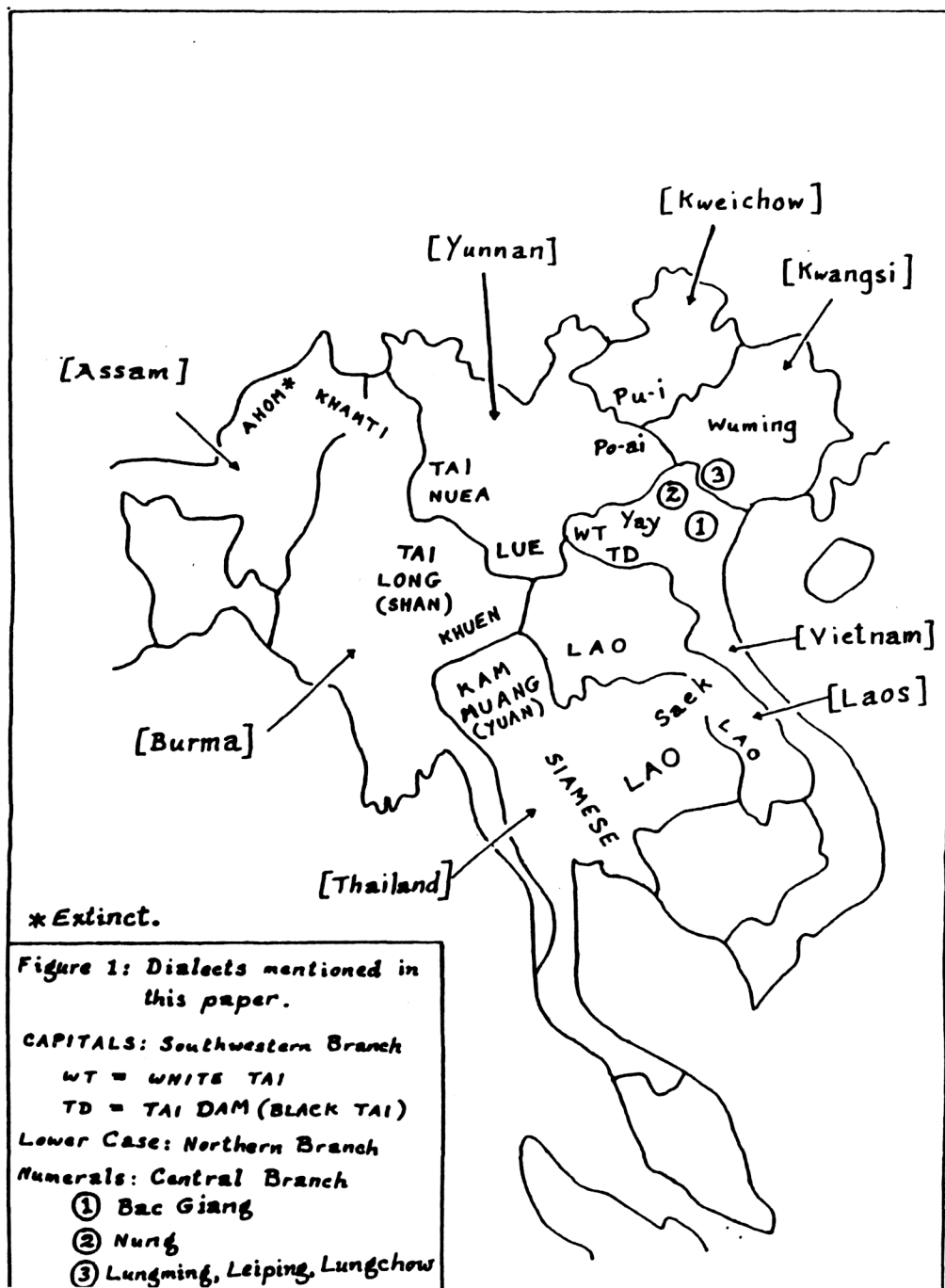
#### The Simple or Non-Problematical Vowel Correspondences

The non-problematical correspondences, in three representative Tai dialects, are summarized in the following tables. In accordance with Li's practice I here use Siamese to represent the Southwestern Branch of the Tai Family, Lungchow to represent the Central Branch, and Po-ai to represent the Northern Branch. The developments in dialects other than these three are described in Sarawit, and specific examples of each correspondence are given in Sarawit and Li. The locations of the three dialects and of other dialects mentioned later in this paper are shown in Figure 1.

Table A: Open syllables.

Vowel length is not contrastive in open syllables. In most modern dialects, monophthongs in open syllables are long except when the syllable is unstressed, in which case they shorten. For Proto-Tai Sarawit reconstructs long monophthongs \*i:, \*ī:, etc. and Li reconstructs short monophthongs \*i, \*ī, etc. which he says lengthen in the modern dialects.

Some dialects, here exemplified by Siamese, also have a set of diphthongs, ia, ua, and ua, which seem to go back to Proto-Tai. In other dialects these diphthongs become monophthongs, as seen, for example, in Lungchow and Po-ai in the table below. Sarawit reconstructs these diphthongs as \*ia, \*ia, and \*ua (or, sometimes, \*wia:) and Li reconstructs them as \*ie, \*iē, and \*ue.



Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
ia	ii	ii	*ia	*ie	15.2
ua	uu	{ ii (after palatals)	*ia	*ie	15.3
ua	uu		{ *ua *wia:	*ue	15.4
ii	ii	ii	*i:	*i	14.3.2
uu	uu	uu	*i:	*i	14.4.2
uu	uu	uu	*u:	*u	14.5.2
ee	ee	ee	*e:	*e	14.9
aa	aa	aa	*a:	*a	14.10
oo	oo	oo	*o:	*o	14.11

Notice that for the correspondence ua-uu-uu, Sarawit sometimes reconstructs \*wia: instead of \*ua. I believe that Sarawit is wrong — Proto-Tai had only \*ua — but the argument is too complex to present here. I hope to discuss this matter in a later paper.

Table B: Vowel plus semivowel.

Li writes these nuclei as sequences of two (or three) vowels whereas Sarawit and I write them as vowel (or diphthong) plus semivowel. This is a mere notational difference.

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
iaw	iiw	iiw	—	*ieu (or *ieu?)	17.2
iw	iiw	iiw	*i:w	*iu	16.16
iew	eeew	eeew	*e:w	*eu	16.15
aw	aw	aw	*aw	*au	16.10
aaw	aaw	aaw	*a:w	*au	16.14
aj,	ij	ij	*iay	*ii	16.17
uj	uwj	uwj	*uay	*uai	17.3
oaj	ooj	ooj	*o:y	*oi	16.6
aj	aj	aj	*ay	*ai	16.1
aaaj	aaaj	aaaj	*a:y	*ai	16.5
aj	ay	ay	*ay	*ai	16.7

In the case of the triphthongs I agree with Sarawit's reconstructions and disagree with Li's. For the correspondence iaw-iiw-iiw (which parallels the correspondence ia-ii-ii) I think Li ought to have \*ieu (paralleling his \*ie) not \*ieu. In fact Li himself suggests \*ieu as an alternative possibility. Sarawit missed this correspondence. She does have an \*iaw,



The Sinitic (Chinese and Bai) cognates of these TB dental-initial forms present numerous complexities of one kind or another, in part because the early history of some modern forms remains obscure. The vocalism reflects PST  $*-\hat{a}$  ( $> -o$ ; pinyin-uo~e) rather than  $*-a$  ( $> -u$ ; cf. STC: fn. 487), hence the correspondence is to WT  $-o$  ( $< *-\hat{a}$ ) rather than  $-a$ ; cf. AC/MC 馬 4h d'â/d'â 'carry on back; (Couv.) beast of burden carrying a load; load of id.;

𠂔 4h t'â/t'â- 'lay burden on' (note the PST morphology); WT do-po 'load for a beast of burden'; Jg. do 'bullock or pony-load' (prob. loan  $<$  Tib.);

PST  $*d\hat{a}$  ( $\sim *t\hat{a}$ ). The final  $-o$  forms of the modern language, however, have been largely replaced in the 'colloquial' by final  $-a$  forms, of uncertain origin. MC final  $*-\hat{a}i$  has yielded  $-a$  in the parallel (dental-initial) forms:

大 317a d'âd/d'âi- 'big' and 金大 317-l, id. 'foot shackle', both  $>$  (pinyin) dà, contrasting with 汰 317f d'âd/d'âi- 'wave'  $>$  (pinyin) dài, apparently as a reflex of original vocalic length:  $*/d\hat{a}-i$ , and it seems likely that the final  $-a$  forms noted above have a similar origin, especially since secondary vowel length tends to be associated with suffixation:  $*-i$  in this case (cf. the analysis of  $*da-n$ , below, involving  $*-n$ ). In the following table the Bai as well as Chinese (incl. Amoy (Min)) cognates are presented:

Table II

PST LEVEL	AC/MC	Mod. Chinese (pinyin)	Amoy	Bai	
				Dali	Jianchuan
$*t\hat{a}^A$ 𠂔 4c'	t'â/t'â 'another'	tuō '3rd'			
$*t\hat{a}-i(?)$		tā '3rd'			tá 'how many'
$*-t\hat{a}-n^A$ 𠂔 150c	tian/t'ân '3rd'				
$*[d]\hat{a}^B$				tō 'interr.'	a-tō 'who'
$*[d]\hat{a}-i(?)$				tō- 'this'	
$*[d]\hat{a}-i^B$					
$*-d\hat{a}^B$ 𠂔 4g	dja/la: 'emphatic'	yě 'also'			
$*a-d\hat{a}^B$ 𠂔 350a	?dâ/nâ: 'regarding' 'how/what'	nà 'that'		-nō 'GM' 'loc.'	-nō 'GM'
$*a-d\hat{a}-i(?)$		nǎ 'Interr.' nà 'that'		-nā 'who' 'where'	-nā 'where'
$*d\hat{a}-n^B$ 𠂔	d'ân/d'ân: '3rd.' (?)				
$*a-d\hat{a}-n^B$			nā 'Interr.'		

#### Notes to Table II:

$*t\hat{a}^A$ : the variant (pinyin) tuō '3rd', which probably should be considered the 'literary' form here, has the regular final  $-uo$  reflex; cf. 𠂔 cf. 4h tuō 'carry on back' (root cited above), from the same GSR-4 series.

$*t\hat{a}n-n^A$ : tian/, also a final particle, is from  $*-t\hat{a}n^A$  (prefixed by stop or  $*m-$ ); AC regularly has  $-an < *-\hat{a}n$ , contrasting with  $-ân < *-a \cdot n$  (STC: fn. 488).

$*[d]\hat{a}^B$ : the initial  $t-$  in both Amoy and Bai (DL and JC dial's) is ambiguous here as a reflex of earlier  $*d-$  or  $*t-$  because of tonal ( $*B$ ) merging of 'high' (yin) and 'low' (yang) series (Amoy forms pointed out in Yang 1982).

\*-dâ<sup>B</sup>: dia/ja, a final particle which flourished during the Classical period, has presented a challenge in analysis to generations of sinologists. Dobson (1959) describes it as a 'particle of accentuation' and in a long footnote (73) cites Karlgren in confirmation of his view that it had a 'prosodic' function, much as G. Kennedy (cit. ibid) once had called it 'the mark of emphatic pause'. In origin it is simply the palatalized close-juncture form of the above:

\*-dâ > \*-dâ (lacking in AC) > -dia, with an 'emphatic' feature very much like that seen in the TB cognates presented above: '...that (thing) it is!'. The Cantonese representative, yě (written 乜), means simply 'thing', e.g. following the interrogative māt:māt-yě 'what (thing)'. At the PST-level \*dâ (~\*da) is best set up as an emphatic with variable deixis, thus accounting for the 'that' ~ 'this' seen in the above forms (Table II) as well as in the TB cognates, including the \*-i derivative: PTB \*day (see above).

\*(d)â-i<sup>B</sup>: see above for initial; for the final, cf. DL k'ô 'open'; MC 𪛗 541a k'âi; ts'ò 'vegetables'; MC 𪛗 942c ts'âi-.

\*a-dâ<sup>B</sup>: for the Classical language<sup>8</sup> glossed as 'auprès de, in regard to' (Guoyu), with possible 'emphatic' role as topic-marker, as well as 'how, what' (Zuozhuan). The pinyin nè 'that' is a variant, paralleling tuō (above); note also the sentence-final interrogative 𪛗 cf. 563a ne (atonal).

\*a-dâ-i(?): the \*B tone is reflected in the interrogative nǎ (written 𪛗) while nà 'that' (written 𪛗) is the sandhi tone (qùshēng) derivative indicative of re-suffixation.

\*dâ-n<sup>B</sup>: see above (under \*-tâ-n) for vocalism; glossed as 'particle' but perhaps standing for '3rd pl.' (ils) in the Couv. cit. from Shi-jing; cf. C. Monpa dan '3rd' (above).

\*a-dâ-n<sup>B</sup>: The Amoy form is considered 'literary'; nasalization is a variable feature in Amoy and is perhaps secondary here.

As can be seen from the above, the Sinitic cognates reflect basic (PST) \*tâ<sup>A</sup> ~ \*(a)-dâ<sup>B</sup> types, with a mixture of deictic ('that' > '3rd') and interrogative roles, along with some evidence in the latter form of 'emphatic' and locative parameters (for Bai locative -nō 'in [the field]' cf. Meitei -da ~ -ta 'at', above). As compared with TB (above), the deixis is almost exclusively 'that' rather than 'that/this', the extension is locative rather than (mainly) temporal and, finally, there is rather less evidence for an 'emphatic' feature (mainly in dia/ja; perhaps also in 7dâ/nâ:). The deictic/interrogative mix, primarily involving the \*(a)-dâ<sup>B</sup> rather than \*tâ<sup>A</sup> type, is hardly in evidence for this root in TB, apart from Chp. doh 'what', from \*s-dâ. The factors underlying the apparent shift from deictic to interrogative remain to be determined; note that a similar mix obtains in other TB/ST roots (Benedict, Forthcoming bis).

The roles of prefixed \*a- and suffixed \*-i, as provisionally reconstructed above, are as vague in Sinitic as in TB, with reconstructions at the PST level particularly hard to come by. It would appear, however, that the \*a- was a nominalizer of sorts (cf. the PTB pronominal \*a-'3rd') and the \*-i a genitive of sorts (cf. the TB analysis, above), with both (alone or together) tending to transform a basic 'emphatic' PST \*dâ (~\*da) into a deictic, primarily 'that'. In the pair of basic deictics in WT, for example, de 'that' shows the (original) suffix (< \*da-i; see above) while 'di' 'this', with \*/di/ unable to accept the \*-i suffix (\*di-i > \*di), perforce exhibits the prefix (< \*a-di)! Chinese nà 'that', provided our analysis is correct, is the product of prefixation (\*a-d- > n-),

Gedney (1972:56) suggests a different solution for the correspondence in 'fire'. He suggests that there was some sort of ablaut alternation:  $*ii \sim *aj$  (in Gedney's transcription  $ii : ay$ ). I believe that Gedney's ablaut hypothesis is the most plausible explanation not only for the problem correspondences he discusses in his article but for at least some of the other problem correspondences as well, although in other cases the special diphthongs suggested by Sarawit and Li may be the correct solution. Some of the evidence in favor of the ablaut hypothesis will be sketched briefly below.

For many of the problem correspondences, the vowel in dialects of the Southwestern Branch of the Tai Family agrees with the vowel in dialects of the Central Branch and disagrees with the vowel in dialects of the Northern Branch, for example 'to know': Southwestern and Central  $*ruu^C$  versus Northern  $*roo^C$ . As Sarawit says, this supports the suggestion made by André Haudricourt and seconded by William Gedney that the Central and Southwestern Branches are more closely related to each other than either is to the Northern Branch. But there are also one or two cases of Northern and Central versus Southwestern and of Northern and Southwestern versus Central. Moreover, there are also cases, ignored by Sarawit and Li, of disagreement among different dialects of the same branch.

The problem correspondences can be divided into ten groups according to the putative ablaut processes involved: (1) Gedney's puzzle (Gedney 1972), (2) breaking, (3) raising, (4) change in lip rounding, (5) breaking plus change in lip rounding, (6) raising plus change in lip rounding, (7) fronting, (8) diphthongization of  $*oo$ , (9) monophthongization of  $*aa$ , (10) monophthongization of  $*aa$  plus change in lip rounding. For example, Gedney's puzzle comprises cases where some dialects have  $*aj$ ,  $*aw$ , or  $*aw$  and others have the corresponding high monophthongs  $*ii$ ,  $*uu$ ,  $*uu$ , and breaking comprises cases where some dialects have  $*ia$ ,  $*aa$ , or  $*ua$  and others have the corresponding non-high monophthongs  $*ee$ ,  $*aa$ , or  $*oo$  (this is reminiscent of breaking in Germanic languages).

I have begun collecting evidence that at least some of these processes are true examples of Proto-Tai ablaut. At present I have fairly good, though by no means overwhelming, evidence that this was so for Gedney's puzzle and breaking, relatively meager evidence that this was so for raising, change in lip rounding, fronting, and monophthongization of  $*aa$ , and, as yet, no evidence that this was so for breaking plus change in lip rounding, raising plus change in lip rounding, diphthongization of  $*oo$ , or monophthongization of  $*aa$  plus change in lip rounding. The evidence is mainly of two kinds:

(1) There are cases of disagreement among different dialects of the same branch. This is not supposed to happen according to Sarawit and Li. Take, for example, the pronoun 'I'. The Northern dialects have forms which seem to reflect Proto-Tai  $*kuu^A$ . The Central dialects and many Southwestern dialects (viz. the western ones: Tai Long [Shan], Tai Nuea, Khamti, Ahom, etc.) have forms which seem to reflect Proto-Tai  $*kaw^A$ . This correspondence — Northern  $*uu$  versus Southwestern and Central  $*aw$  — is reconstructed by Sarawit as  $*ə:w$  and by Li as  $*iəu$ . The problem is that the eastern Southwestern dialects — Khuen, Lue, Kam Muang (Tai Yuan, Northern Thai), Siamese, Lao, White Tai, Tai Dam (Black Tai), etc. — all have  $*kuu^A$ , agreeing with the

Northern Branch.<sup>3</sup> (Some dialects of Lue have both \*kuu<sup>A</sup> and \*kaw<sup>A</sup>; the latter might be a loan from Tai Nuea.) Sarawit and Li cannot account for this; an ablaut model can.

Another example, mentioned by Gedney (1972:56), is the verb 'to give'. In many dialects in both the Southwestern and Northern Branches 'to give' has a form suggesting Proto-Tai \*haŋ<sup>C</sup>, but in certain Southwestern dialects it has instead a form suggesting Proto-Tai \*hau<sup>C</sup>. This is an even better example than 'I', because the aberrant Northern-like forms for 'I' in the more easterly of the Southwestern dialects could, conceivably, be dialect borrowings from Northern (though this seems very unlikely considering how widespread these Southwestern \*kuu<sup>A</sup> forms are). But no such explanation will work for \*hau<sup>C</sup>, which is found only in a restricted geographic area within Southwestern.<sup>1</sup> Sarawit and Li cannot account for examples such as 'I' and 'to give'; an ablaut model can. [Statement modified; see footnote 1, page 74]

(2) There are cases of alternation within a single dialect. For example, Sarawit and Li each set up a special nucleus (Sarawit's \*a:, Li's \*ia) to account for Northern \*aa versus Southwestern and Central \*ua, and a second special nucleus (Sarawit's \*ia:, Li's \*ia) to account for the reverse: Northern \*ua versus Southwestern and Central \*aa. But \*aa and \*ua sometimes alternate within a single language, for example Lao ʔaa<sup>3</sup> 'older brother', ʔua<sup>3</sup> 'older sister', Kam Muang (Northern Thai) maal<sup>1</sup> 'to come', maal<sup>1</sup> 'to come back', or White Tai daat<sup>2</sup> 'hot', dɛt<sup>2</sup> (< \*daat<sup>2</sup>) 'to boil'. (The White Tai example was called to my attention by William Gedney.) Sarawit and Li cannot account for such pairs; an ablaut model can.

Fang Kuei Li has suggested to me that another source of evidence for Tai ablaut might be the Tai Long (Shan) phonetic couplets described by Cushing (1914, Introduction, pages 12-14 and Dictionary, *passim*): "...syllables having no meaning in themselves, which are joined to a word for the sake of the additional sound that they produce. ... Thus the vowel in the syllable kaa<sup>3</sup>, to be scarce, may be followed by the vowel ii, as kaa<sup>3</sup> kii<sup>3</sup>." (Cushing 1914, Introduction, page 12, transcription normalized.) On the other hand, both Cushing (Introduction, page 14) and F.K. Lehman (personal communication) think that the couplets are of recent origin and irrelevant for the reconstruction of Proto-Tai.

The most important counterargument to the ablaut model is that no one has yet proposed any semantic change regularly associated with an ablaut process.<sup>4</sup> Thus in Indo-European we find, for example, that certain ablaut grades are regularly associated with certain verb tenses, but no one has yet found anything of this sort in Tai. So before we can accept an ablaut hypothesis for Tai we must either find examples of a semantic change associated with ablaut, or, alternatively, find a believable explanation for the absence of such a semantic change. One intriguing example that I have noticed in the Southwestern dialects, but that may be pure coincidence, is two pairs of words in which the form with a high onset of the vowel nucleus refers to females and the form with a low onset of the vowel nucleus refers to males. One pair is \*ʔua<sup>C</sup> 'older sister', 'first born daughter', etc./

\*ʔaaj<sup>C</sup> 'older brother', 'first born son' etc. (in some languages it means 'father'). The other is \*ʔii<sup>B</sup>, a prefix used before names and kinship terms referring to women (in some languages it is derogatory, in others not)/\*ʔaj<sup>B</sup>, a prefix used before names and kinship terms referring to men (in some languages it is derogatory, in others not). Reflexes of these two pairs show up in various Southwestern dialects.

However, an important argument supporting certain of Li's reconstructions against both Sarawit's reconstructions and the ablaut hypothesis comes from Proto-Tai loanwords from Chinese. There are many words which show regular sound correspondences in most or all Tai dialects and which therefore can be reconstructed for Proto-Tai, but which are also close to the corresponding Chinese forms and which seem to be words which Proto-Tai borrowed from Chinese before Proto-Tai began to split into the modern dialects. In certain cases the reconstructed Middle Chinese form agrees rather nicely with Li's reconstruction of Proto-Tai and not at all with Sarawit's reconstruction or the ablaut hypothesis.

I am thinking particularly of the word for 'nine'. It is often pointed out that all of the Tai numerals from 'three' through 'ten' seem to be Proto-Tai loanwords from Chinese. Now the word for 'nine' is one of the words that has Southwestern and Central \*aw versus Northern \*uu. That is, in all of the Southwestern and Central dialects the word for 'nine' is kaw, with the appropriate tone, except in a few dialects, including Siamese, where it has become kaaw through secondary lengthening. But in the Northern dialects 'nine' is kuu, or kow, or whatever, depending on the treatment of \*uu in the particular dialect. In other words, in Southwestern and Central, 'nine' generally rhymes with 'to take' (ʔaw) but in Northern it rhymes with 'door' (tuu, tow, etc.).

For 'nine' Sarawit reconstructs Proto-Tai \*kə:wC2 and I would reconstruct Proto-Tai \*kaw<sup>C</sup> ~ \*kuu<sup>C</sup> but Li reconstructs Proto-Tai \*kjəu C1 (Sarawit, page 443; Li, sections 2.13.1; 10.1, #13; 16.13, #1). For Middle Chinese the material available to me at the moment gives 'nine' as \*kjəu (Bernhard Karlgren) or \*kjəu (Chou Fa-kao) with Rising Tone (which regularly corresponds to Tai tone C) (Karlgren 1923, #399; Chou et al. 1973, #60).

For Middle Chinese of course we have contemporary phonological descriptions in the Ch'ieh-yün and other sources. Now if, as I have been led to believe, there is excellent evidence that the Middle Chinese word for 'nine' had a palatal medial, then surely this is evidence that the Tai borrowing of this word might also have had a palatal medial, and that therefore Li is right in positing such a medial as the explanation of the uu/aw alternation seen in this word, and Sarawit and I are wrong. But if a palatal medial accounts for the alternation in 'nine', why should it not account equally well for the identical vowel correspondences in other Tai words which are not of Chinese origin?<sup>5</sup>

On the other hand, what about the word for 'I'? In all or most Northern dialects, all or most Central dialects, and many Southwestern dialects, 'I' is homophonous with 'nine' except for the tone — SW/C kaw, N kuu, kow, etc. — and should therefore presumably be reconstructed

with the same triphthong. But how are we to explain the numerous South-western dialects — Siamese, Lao, White Tai, etc. etc. — that have a Northern-like form kuu (with the appropriate tone) for this word?

Benedict (1975, 1979) and Haudricourt (1975), taking as their starting point Benedict's exciting but unproven hypothesis of a genetic connection between Tai and Austronesian, have suggested that some of the ablauts may really be something more akin to umlaut, that is, the alternations are conditioned by the presence or absence of an Austro-Thai syllable which has been lost in Tai but is retained in Austronesian. For example, Tai \*kuu<sup>A</sup> ~ \*kaw<sup>A</sup> 'I' is said to be cognate with the Austronesian form represented by, e.g., Malay aku 'I'. Benedict (1975:203, 206; 1979:233) derives both from a Proto-Austro-Thai form which he writes \*waku. In Proto-Tai this developed into a stressed form \*waku (or perhaps \*aku) and an unstressed form \*waku (or perhaps \*aku). In the unstressed form the first syllable simply dropped off:

\*ku > \*ku

This gives us our \*kuu<sup>A</sup> form.

The stressed form was subject to a process which Benedict calls vocalic transfer (Benedict 1975:183-184 and see also 15; Benedict 1979), which, if I understand it correctly, is metathesis plus some added complications which do not concern us here. Thus in \*aku the \*a metathesized around the \*k:

\*aku > \*kau

which gives us our \*kaw<sup>A</sup> form. On the other hand, Haudricourt (1975), if I understand him correctly, posits not metathesis but umlaut. In this view we would say that the vowel of the first syllable of \*aku caused an assimilative lowering of the onset of the vowel of the second syllable, and then the first syllable disappeared:

\*aku > \*akau > \*kau

Either view works for \*kuu<sup>A</sup> ~ \*kaw<sup>A</sup>, and umlaut seems like a more likely sound change than metathesis, but Benedict presents some other examples which — if they are valid — seem to require metathesis. For example in Benedict (1979:230) he says that in certain languages of the Formosan branch of Austronesian there is a word for 'foot' which can be reconstructed as Proto-Formosan \*til-til. Benedict thinks this is cognate to the Tai form represented by, for example, Siamese tiin<sup>1</sup> and Saek tiin<sup>1</sup>, which we can reconstruct as Proto-Tai \*tiin<sup>A</sup> (cf. Li, section 6.1, #25; 14.3.4, #2; the Saek form is from William Gedney's fieldnotes). Benedict derives both forms from Proto-Austro-Thai \*til-til. In Tai, the \*i of the first syllable metathesizes into the second syllable and the rest of the first syllable is lost:

\*til-til > \*t(i)l-t il > \*tiil > \*tiin

The two i's which are now together in the second syllable are pronounced as long-i. Short-i would reflect a single i. If Proto-Tai \*tiin<sup>A</sup> 'foot' really does go back to \*til-til, I do not see how it could be a case of

umlaut — i.e. assimilation — because the vowel of the second syllable is already identical to the vowel of the first. The lengthening of the vowel would have to be a case of metathesis if it has anything to do with the vowel of the other syllable at all.

Most Tai specialists accept neither Benedict's metathesis nor Haudricourt's umlaut. But if either of these ideas were correct it would offer a satisfying explanation for many facts about Proto-Tai and for this reason both suggestions deserve further investigation.

The evidence for Proto-Tai ablaut is not yet compelling. For some alternations, such as the \*oo~\*aw alternation seen for example in Po-ai (Northern Branch) poo<sup>5</sup> versus Siamese (Southwestern Branch) paw<sup>2</sup> 'to blow' or Po-ai hoo<sup>5</sup> versus Siamese khaw<sup>2</sup> 'knee', I have found no evidence at all that we are dealing with ablaut. At worst, the ablaut hypothesis merely provides a convenient classification schema for the problem correspondences.

Most likely, the truth is some mixture of the various models: some ablaut processes, some special vowels not preserved as such in the modern dialects, and also many cases of analogical change or of borrowing from other Tai dialects rather than regular phonological correspondence.

The following tables set forth Sarawit and Li's problem correspondences arranged by putative ablaut processes. As in the last section of this paper I will follow Li's practice and use Siamese to represent the Southwestern Branch of the Tai Family, Lungchow to represent the Central Branch, and Po-ai to represent the Northern Branch. Specific examples of these correspondences can be found in Sarawit and Li.

Before presenting the tables, I would like to call attention to a couple of characteristics of Sarawit's and Li's reconstructions that may cause confusion if not attended to carefully:

(1) Sarawit posits length distinctions not only for monophthongs but also for diphthongs. Thus in her reconstruction not only are \*i and \*i:, \*e and \*e:, etc. different vowels, but also \*ia and \*ia: are different diphthongs, \*oi and \*oi: are different diphthongs, and so forth.

(2) Li posits a distinction between syllabic vowels and non-syllabic vowels, the latter marked with a subscript crescent. For example in his reconstruction, \*uo, \*uọ, \*uọ̣, and \*uọ̣̣ are four different diphthongs.

Section 1: Gedney's Puzzle: ii~aj, uu~aw, uu~aw

Table 1a: ii~aj

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
ii	ii	aj	*əy	*ei	16.2
aj	aj	ii	*ia:y	*ei	16.3
uaj < *waj	uuj < *uaj < *waj	vii, ii < *wii	*wia:y	*uoi	17.3.1
ii	aj	ii	*iay	"uncertain"	16.4

The correspondence Siamese ɔj, Po-ai ii (Table 6b) and the correspondence Siamese ii, Lungchow ii, wii, Po-ai uu, uu (Table 9) may belong here too: see the discussion under Tables 6b and 9.

Sarawit's example of the third correspondence in Table 1a, Siamese uaj, Lungchow uu, Po-ai vii, ii, is 'mountain stream': Siamese huaj<sup>3</sup>, Lungchow huu<sup>5</sup>, vu<sup>5</sup>, Po-ai vii<sup>3</sup>, Sarawit's Proto-Tai \*xrwia:y Cl, Li's Proto-Tai \*xruai Cl. Li gives two other examples of this correspondence as well. The hypothetical development of 'mountain stream' in terms of the ablaut hypothesis (which is proposed for 'mountain stream' by Gedney 1972) is more or less as follows:

Proto-Tai \*xrwaj<sup>C</sup> ~ \*xrwii<sup>C</sup> 'mountain stream'

Siamese	Lungchow (1)	Lungchow (2)	Po-ai
<u>*xrwaj<sup>C</sup></u>	<u>*xrwaj<sup>C</sup></u>	<u>*xrwaj<sup>C</sup></u>	<u>*xrwii<sup>C</sup></u>
<u>*xruaj<sup>C</sup></u>	<u>*xruaj<sup>C</sup></u>	<u>*xruaj<sup>C</sup></u>	<u>*xwii<sup>C</sup></u>
<u>*hruj<sup>C</sup></u>	<u>*hruj<sup>C</sup></u>	<u>*hruj<sup>C</sup></u>	<u>*hwii<sup>C</sup></u>
<u>huaj</u> <sup>3</sup>	<u>huu</u> <sup>5</sup>	<u>vu</u> <sup>5</sup>	<u>vii</u> <sup>3</sup>

A problem related to Sarawit's reconstruction of 'mountain stream' as \*xrwia:y Cl is presented by the word for 'chicken louse'. This word is, for the most part, an example of the second correspondence in Table 1a, South-western and Central \*aj versus Northern \*ii, which Sarawit reconstructs as \*ia:y and Li as \*ei, as shown below:

	Siamese (SW)	Lungchow (C)	Po-ai (N)
chicken louse	<u>raj</u> <sup>1</sup>	<u>aj</u> <sup>2</sup>	<u>lii</u> <sup>2</sup>

And, indeed, Li reconstructs 'chicken louse' as Proto-Tai \*rɛi A2. But in some Northern dialects, this word has a medial w, for example Hsi-lin \*wii (Li, page 142). In order to account for this w Sarawit reconstructs 'chicken louse' not as \*ria:y A4 but rather as \*rwia:y A4 (Sarawit, page 417) with a Proto-Tai medial \*w which is retained in a few dialects such as Hsi-lin and lost elsewhere. But if 'chicken louse' was \*rwia:y A4, why did it not develop in parallel fashion to \*xrwia:y Cl 'mountain stream' so as to give Siamese \*ruaj<sup>1</sup> and Lungchow \*wu<sup>2</sup>?

Several other of Sarawit's reconstructions are like 'chicken louse': she posits a Proto-Tai medial \*w to account for a medial w occurring in a few modern dialects but then this medial \*w fails to have the effect on the vowel that Sarawit says it should have. In such cases I think it would be better to assume that the medial w does not go back to Proto-Tai but rather arose independently as an irregular development in the dialects which have it.



Table 1b:  $uu \sim au$ 

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
aj < *au	au	uu	*ia:y	*ei/*ei	16.8
aj < *au	uu	uu	—	—	—

The correspondence Southwestern \*au versus Central and Northern \*uu is noted by Gedney (1972) but neither Li nor Sarawit provides a special reconstruction for it. It occurs in 'correct': Siamese chaj<sup>3</sup> < \*chaj<sup>3</sup>, Lungchow cuu<sup>4</sup>, Po-ai cuu<sup>6</sup>. Li simply includes this word under his Proto-Tai \*ei/\*ei, marking the Lungchow form with a question mark because it has the wrong vowel. But other Central dialects also have a vowel reflecting \*uu rather than \*au (see Gedney 1972). It is also significant that one Southwestern dialect, Tai Long (Southern Shan), actually seems to preserve an ablaut alternation in this word: Cushing (1914) gives the expression

ʔam<sup>2</sup> tsuu<sup>3</sup>    ʔam<sup>2</sup> tsau<sup>3</sup>    'wrong, not right'  
not    correct not    correct

Table 1c:  $uu \sim aw$ 

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
uu	uu	aw	*ɔw	*eu	16.11
aw	aw	uu	*ɔ:w	*iau	16.13

Section 2: Breaking:  $ee \sim ia$ ,  $aa \sim ua$ ,  $oo \sim ua$

Table 2a:  $ee \sim ia$ 

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
ee	—	ii < *ia	*ia:	*ie	14.9.2
iaw	eeu	eeu	*iaw	*iau	17.1
iaw	iiw < *iaw	eeu	—	—	—

Sarawit's \*ia: corresponds not only to Li's \*ie, as in the first correspondence above, but also to Li's \*ie (Table 3a) and \*ie (Table 3c): Sarawit has lumped together three correspondences which Li has separated.

The third correspondence in the above table, iaw-iiw-eeu occurs in Siamese kiaw<sup>3</sup> 'to wind around, twist', Lungchow kiuw<sup>5</sup> 'to surround', Po-ai kweew<sup>3</sup> (note the excrescent medial w!) 'to twist': see Li 10.1, #28; 11.1, #12; 17.1, #5, 6; 17.2, #5 for these forms as well as other forms which may be related to them.<sup>6</sup>

Table 2b: aa ~ ua

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
aa	aa	ua, ii < *ua	*ia:	*ia	14.10.1
aaɟ	aaɟ	uaɟ < *uaɟ	*ia:y	*iaɟ	16.5.1
ua	ua < *ua	aa	*ə:	*a	15.3.1
uaɟ	—	—	*ə:y	—	—

For the first correspondence Po-ai has ii after palatals and uu elsewhere.

Sarawit's \*ə:y, listed as the fourth correspondence in the table above, is problematic, but probably belongs here. Sarawit gives only one example, 'cockspur': Siamese ɗaɟ < Proto-Tai \*ɗɗə:y A3 (Sarawit, pages 413 and 443). The word is not recorded for Lungchow or Po-ai, but it is found in other Central and Northern dialects and shows an \*ua ~ \*aa alternation. Li (page 129) lists 'cockspur' as an example of his Proto-Tai initial cluster \*ɗɗl-/\*ɗɗr- but he makes no attempt to reconstruct a vowel for it. In note 12 on page 130 he says (I have converted his transcription to IPA): "For the SW [Southwestern] dialects, see [Guignard's] Lao ɗa, Lǎi ɗɗ, White Tai ɗɗ, but Ahom ɗɗ, Shan loɟ. For the CT [Central Tai] dialects, see [Savina's] Nung ɗɗ; for the NT [Northern Tai] dialects, see Saek praa; ..." This seems to be an example of the correspondence reconstructed \*ə: by Sarawit and \*a by Li, giving Northern \*aa (Saek praa) versus Southwestern and Central \*ua (Savina's Nung ɗɗ, White Tai ɗɗ, Lue ɗɗ, Guignard's Lao ɗa; the monophthongizations in Nung, White Tai, and Lue are regular). The only problem is that the more westerly of the Southwestern dialects have tacked on a puzzling final -j, as if from Proto-Tai \*ɗɗɗɗɗ (Siamese ɗaɟ, Tai Long [Shan] loɟ, Ahom ɗɗ; the change from \*uaɟ to oɟ is regular in Tai Long and, I suspect, in Ahom).

Table 2c: oo ~ ua

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
oo	oo	uu < *ua	—	*uɔ	14.11.1
ua	uu < *ua	oo	*ua	*ua	15.4.1
uaɟ	uuɟ < *uaɟ	ooɟ	—	*uai	17.3

Sarawit seems to have missed the first and third correspondence, and the second correspondence receives inadequate treatment from her. She fails to distinguish it from the simple or straightforward correspondence represented by Siamese ua, Lungchow uu (< \*ua), Po-ai uu (< \*ua). She reconstructs \*ua for both. Li reconstructs \*ua for the former versus \*ue for the latter.

A disturbing thing about the third correspondence, which may require a revision of my ablaut hypothesis, is that, according to Li, this supposedly aberrant or ablaut correspondence with Southwestern and Central \*uaɟ corresponding to Northern \*ooɟ occurs in more lexical items than the supposedly regular or straightforward correspondence with \*uaɟ in all three branches (Sarawit's \*uay; see Table B in the last section of this paper). Li lists three examples (not mentioned by Sarawit) in which Siamese uaɟ corresponds to Po-ai ooɟ and only one example (which is also Sarawit's only example of \*uay) in which Siamese uaɟ corresponds to Po-ai uuɟ (< \*uaɟ). Indeed Li

regards the latter correspondence as simply an irregular case of the former and lists it under \*uai.

One of Li's examples of \*uai is the word for 'to help': Siamese chuaɰ<sup>3</sup>, Lungchow cooɰ<sup>4</sup> (sic, not \*cuuɰ<sup>4</sup>), Po-ai sooɰ<sup>6</sup> 'to repair', Li's Proto-Tai \*uai B2. This word supports the ablaut hypothesis: we have just seen that Lungchow in the Central Branch has not the expected form but rather a form agreeing with Po-ai and, moreover, so do many Southwestern dialects. Thus this word does not fit Li's model of a Proto-Tai \*uai going to Proto-Southwestern \*uai, Proto-Central \*uai, and Proto-Northern \*ooi, but suggests rather an \*uaj ~ \*ooj alternation with the \*uaj form surviving in some dialects and the \*ooj form surviving in others in a manner not neatly correlated with the three branches of the Tai Family. On the other hand, it is conceivable that some of the forms which do not fit into Li's model might be cases of dialect borrowing. The question needs further investigation.

Section 3: Raising: ee ~ ii, oo ~ uu; e ~ i, a ~ u, o ~ u

Table 3a: ee ~ ii

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
ee	ee	i < *ii	*ia:	*iɛ	14.9.1

Sarawit's \*ia: corresponds not only to Li's \*iɛ, but also to Li's \*iɛ (Table 2a) and \*iɛ (Table 3c): Sarawit has lumped together three correspondences which Li has separated.

Table 3b: oo ~ uu

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
oo	oo	u < *uu	*oi:	*uo	14.11.2
u, uu < *uu	u, uu < *uu	oo	*eu:	*uo	14.5.4

Sarawit uses \*oi: both for the correspondence represented by Siamese oo, Lungchow oo, Po-ai u, which Li reconstructs \*uo (as shown in the table above), and for the correspondence represented by Siamese oo, Lungchow oo (sometimes u), Po-ai u, which Li reconstructs as \*iɔ/\*iɔ̃ (see Table 6b), for example:

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT
stomach	thooɰ <sup>4</sup>	toon <sup>6</sup>	tun <sup>4</sup>	*doi:ɰ C4	*duɰ C2
soft	ʔoon <sup>2</sup>	ʔoon <sup>3</sup>	ʔun <sup>5</sup>	*ʔoi:n B3	*ʔun B1
to lie down	nɔɰn <sup>1</sup>	noon <sup>2</sup>	run <sup>2</sup>	*myoi:n A4	*niɰn A2/*niɰn A2

(Sarawit, pages 422, 423, 430, 450; Li, section 6.3 (page 105), section 6.5 (page 111), section 13.1 (page 244), section 14.11.2 (page 278), section 14.11.3 (pages 278-279).) See also the discussion under Table 6b, and compare Sarawit's similar dual use of \*oi discussed under Tables 3e and 6c.

Table 3c: e ~ i

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
e	i	i	*ia:	* <u>i</u> e	14.6.1

The Lungchow form is equivocal here since Lungchow i reflects both Proto-Tai \*e, as in Lungchow cit<sup>3</sup> 'seven', Siamese oet<sup>2</sup>, Po-ai oet<sup>2</sup>, and Proto-Tai \*i, as in Lungchow dip<sup>3</sup> 'raw, unripe', Siamese dip<sup>2</sup>, Po-ai nip<sup>3</sup>. But, as Sarawit points out, those Central dialects which maintain the \*i/e distinction have \*e, agreeing with Southwestern, for example Bac Giang (Freiberger and Bé 1976):

	Siamese (SW)	Bac Giang (C)	Po-ai (N)
tongue	lin <sup>4</sup>	lin <sup>2</sup>	lin <sup>4</sup>
duck	pet <sup>2</sup>	pēt <sup>1</sup>	pit <sup>2</sup>
seven	oet <sup>2</sup>	cēt <sup>1</sup>	oet <sup>2</sup>

In Bac Giang, 'duck' rhymes with 'seven', agreeing with Siamese and disagreeing with Po-ai, where 'duck' has the same vowel as 'tongue'.

Sarawit's \*ia: corresponds not only to Li's \*ie, as shown in the table above, but also to Li's \*i (Table 2a) and \*i (Table 3a): Sarawit has lumped together three correspondences which Li has separated.

Table 3d: a ~ u

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
ɣ < *u(?)	ɣ < *u	a	*ə	—	—

Po-ai a regularly corresponds to Siamese u, Lungchow ɣ before velars, as in Po-ai taŋ<sup>2</sup> 'arrive', Siamese thaŋ<sup>5</sup>, Lungchow thvŋ<sup>1</sup>; Po-ai tak<sup>3</sup> 'young male animal', Siamese thuk<sup>2</sup>, Lungchow tvk<sup>2</sup>; and so forth. (See Li, section 14.4.1.) In such cases Li reconstructs \*i (=IPA [u]), but Sarawit reconstructs \*a. In at least one word, however, Po-ai a corresponds to Siamese ɣ, Lungchow ɣ before a non-velar, suggesting an a/u alternation.

The word is 'silver': Siamese ŋɿn<sup>1</sup>, Lungchow ŋɿn<sup>2</sup>, Po-ai ŋan<sup>2</sup>. Li (page 204) lists 'silver' among his examples of Proto-Tai initial \*ŋ- but he makes no attempt to reconstruct a vowel for it. Sarawit reconstructs 'silver' as Proto-Tai \*ŋən A4. Normally her \*a before dentals becomes Siamese e, Lungchow i, as in \*pən A2 ~ \*bən A4 'to be, to become': Siamese pen<sup>1</sup>, Lungchow pin<sup>2</sup> < \*pen<sup>2</sup>, Po-ai pan<sup>2</sup>. (I classify this correspondence under fronting ablaut: see Table 7b.) So with Sarawit's reconstruction we would expect 'silver' to be Siamese \*ŋen<sup>1</sup>, Lungchow \*ŋin<sup>2</sup>. Perhaps, however, the Siamese and Lungchow vowels are due to the influence of the velar nasal initial: in other words the original Southwestern and Central form might have been \*ŋen<sup>A</sup> which then became ŋɿn (with the appropriate tone) because of the assimilation of the vowel to the velar quality of the initial ŋ. This would then contrast with the Northern form \*ŋan<sup>A</sup> (as seen, for example, in Po-ai gan<sup>2</sup>) and 'silver' would be, just as Sarawit suggests, an example of the e/a alternation before dentals (Table 7b) for which Sarawit reconstructs \*a.

The Siamese vowel supports Sarawit's analysis. Short  $\text{ɤ}$  is an extremely rare vowel in Siamese. (Long  $\text{ɤː}$  is fairly common, but occurs, if I am not mistaken, almost exclusively in loanwords from Cambodian or from English.) Normally Proto-Tai  $\text{*u}$  becomes Siamese  $\text{u}$ , so that with my ablaut analysis we would expect the Siamese word for 'silver' to be  $\text{*ɲan}^1$ . So we must posit either  $\text{u}$  lowering to  $\text{ɤ}$  after  $\text{ɲ}$  (ablaut analysis) or  $\text{e}$  backing to  $\text{u}$  after  $\text{ɲ}$  (Sarawit's analysis). Both analyses, I think, fit the facts since neither  $\text{*ɲa-}$  nor  $\text{*ɲe-}$  occurs in Siamese except in onomatopoeics and the like (Patcharin Peyasantiwong, personal communication; William Gedney, personal communication), but Sarawit's analysis makes more sense to me phonetically. Many Southwestern and Central dialects do have  $\text{ɲan}$  (with the appropriate tone) for 'silver' (William Gedney, personal communication) but this may be no problem for Sarawit's analysis since in most cases we can probably posit  $\text{*ɲen} > \text{*ɲɛn}$ , and then the unusual vowel  $\text{ɤ}$  simply merging with the common vowel  $\text{u}$  giving  $\text{ɲan}$ .

But additional evidence for an  $\text{a/u}$  alternation comes from within the Southwestern Branch. For example for 'all', some Southwestern dialects have forms suggesting Proto-Tai  $\text{*daŋ}^A$  (or, in the case of Siamese,  $\text{*daŋ}^C$ ) while others have forms suggesting Proto-Tai  $\text{*daŋ}^A$ , a fact noted by Sarawit (see page 411) but not recognized by her as posing the problem for her model which it does.

Table 3e:  $\text{o} \sim \text{u}$ 

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
o	u	u	$\text{*oi}$	$\text{*ɤo}$	14.8.2
u	u	ɔ	$\text{*eu}$	$\text{*io}$	14.5.7

The Lungchow form is equivocal here since Lungchow  $\text{u}$  reflects both Proto-Tai  $\text{*o}$ , as in Lungchow  $\text{nuk}^2$  'bird', Siamese  $\text{nok}^4$ , Po-ai  $\text{lɔk}^3$ , and Proto-Tai  $\text{*u}$ , as in Lungchow  $\text{kut}^2$  'to dig', Siamese  $\text{khut}^2$ , Po-ai  $\text{hut}^3$ . Sarawit claims that those Central dialects which maintain the  $\text{*u/*o}$  distinction show a vowel agreeing with the Southwestern dialects, as is true, for example, with the word for 'wind' (noun) in Bac Giang (Freiberger and Be, 1976) exemplifying Sarawit's  $\text{*oi}$ , Li's  $\text{*ɤo}$ .

	Siamese (SW)	Bac Giang (C)	Po-ai (N)	Sarawit's PT	Li's PT
wind	$\text{lɔm}^1$	$\text{lɔm}^3$	$\text{lum}^2$	$\text{*dloim A4}$	$\text{*dluɔm A2}$

But, contrary to Sarawit, this is not always the case, as for example, with the Bac Giang word for 'to wake someone up', an example of Sarawit's  $\text{*eu}$ , Li's  $\text{*io}$ , where the Bac Giang form agrees with the Northern forms:

	Siamese (SW)	Bac Giang (C)	Po-ai (N)	Sarawit's PT	Li's PT
to wake someone up	$\text{pluk}^2$	$\text{pɔk}^1$	$\text{pjɔk}^2$	$\text{*pleuk DS2}$	$\text{*pliɔk DLS}$

Perhaps the Bac Giang form is a loanword from a Northern dialect.

Sarawit uses *\*oi* both for the correspondence represented by Siamese *o*, Lungchow *u*, Po-ai *u*, which Li reconstructs *uo*, and for the correspondence represented by Siamese *o*, Lungchow *ɤ*, Po-ai *u*, which Li reconstructs *\*u* (see Table 6c), for example:

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT
'wind' (noun)	lom <sup>1</sup>	lum <sup>2</sup>	lum <sup>2</sup>	*dloim A4	*dlyom A2
'to shrink'	hot <sup>2</sup>	—	lut <sup>2</sup>	*roit DS1	*hryot D1S
'rain'	fon <sup>5</sup>	phɤn <sup>1</sup>	hɤn <sup>1</sup>	*foin A1	*fyɤn A1

(Sarawit, pages 54, 421, 422, 427, 430, 433, 450; Li, pages 78, 125, 149, 272, 273; Sarawit is uncertain about the initial consonant of 'rain'.) See also the discussion under Table 6c, and compare Sarawit's similar dual use of *\*oi*: discussed under Tables 3b and 6b.

Section 4: Change in lip rounding: *ua ~ wa*, *uu ~ wuu*, *a ~ o*

Table 4a: *ua ~ wa*

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
ua	uu < *ua	wuu < *wa	*wya:	*uɤ	15.4.2
wa	wu, ɤɤ < *wa	uu < *ua	*wia	*io	15.3.2

In the second correspondence, Lungchow has *wu* in open syllables and *ɤɤ* in closed syllables.

Table 4b: *uu ~ wuu*

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
uu	u	w	*wa	*ɤu	14.5.5
wuu	u	u	*i:	*iu	14.4.4

The first correspondence (Siamese *uu*, Lungchow *u*, Po-ai *w*) seems to involve not only a difference in rounding but also a difference in length — Proto-Southwestern long *\*uu* versus Proto-Northern short *\*w* — but there is not space to present the evidence for this here. This correspondence occurs only in closed syllables, for example Siamese *luuk*<sup>3</sup>, Lungchow *luk*<sup>2</sup>, Po-ai *lɤk*<sup>3</sup> 'child' (in the sense of 'offspring', 'son or daughter'), Sarawit's Proto-Tai *\*lwak* DS4/DL4 (page 435), Li's Proto-Tai *\*lɤk* D2L (pages 134, 268). Li also reconstructs *\*iu* in open syllables for the seemingly parallel correspondence Siamese *uu*, Lungchow *uu*, Po-ai *wuu* (in Tai languages vowels in open syllables are normally long, hence Lungchow *uu* rather than *u*, Po-ai *wuu* rather than *w*). But if we consider the forms from Northern dialects other than Po-ai we find that there is a problem:

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Yay (N)	Saek (N)	Li's PT
child	luuk <sup>3</sup>	luk <sup>2</sup>	lɤk <sup>3</sup>	lɤk <sup>1</sup>	lɤk <sup>6</sup>	*lɤk D2L
to hit	thuuk <sup>2</sup>	thuk <sup>3</sup>	tɤk <sup>3</sup>	tɤk <sup>1</sup>	thuk <sup>6</sup>	*thɤk D1L/*dɤk D2L
the mark, cheap						

(Table continued from previous page:)

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Yay (N)	Saek (N)	Li's PT
snake	ɲuul <sup>1</sup>	ɲuu <sup>2</sup>	ɲuu <sup>2</sup>	ɲua <sup>4</sup>	ɲua <sup>4</sup>	*ɲi̯u A2
ear	huu <sup>5</sup>	huu <sup>1</sup>	luu <sup>2</sup>	rua <sup>4</sup>	rua <sup>4</sup>	*xɾi̯u A1/*ɣɾi̯u A2

(Li, pages 102, 134, 204, 233, 268; Yay and Saek from William Gedney, fieldnotes and personal communication.)

The Yay and Saek forms show that the Northern vowel in 'snake' and 'ear' was originally a diphthong *\*ua*. This diphthong is regularly preserved in Yay and regularly goes to *ua* in Saek (except after labials where it goes to *ia* in Saek). In Po-ai this diphthong regularly merges with the corresponding monophthong *uu*, but the Yay and Saek forms show that in open syllables, Li's *\*i̯u* represents not *uu* ~ *u* but rather *uu* ~ *ua*, which I treat in Table 10. Li recognizes that the Northern development in open syllables is different from that in closed syllables, nonetheless he reconstructs *\*i̯u* for both environments.

The second correspondence in Table 4b, Siamese *uum*, Lungchow and Po-ai *u*, occurs in two words:

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT
to forget	lum <sup>1</sup>	lum <sup>2</sup>	lum <sup>2</sup>	*lɛ:m A4	*li̯um A2
insipid, tasteless	cum <sup>2</sup>	—	cut <sup>2</sup>	—	*či̯ut D1L/D1S

(Sarawit, page 440; Li, pages 134, 165, 265.)

For 'to forget' Sarawit (page 440) reconstructs Proto-Tai *\*ɛ:* which normally would give Siamese *uum*, Lungchow *ɯ*, Po-ai *uu*. But since there are, apparently, no examples of Lungchow *ɯ* or Po-ai *uu* before labials, Sarawit says that in Lungchow (and other Central dialects) and in Po-ai (and most but not all other Northern dialects) *\*ɛ:* becomes rounded before labials. This is perfectly plausible, but what about 'insipid'? Lungchow and Po-ai do have *ɯ* or *uu* before dentals, as in 'to go up', Siamese *khun<sup>3</sup>*, Lungchow *khun<sup>5</sup>*, Po-ai *fun<sup>3</sup>* (Li, pages 209, 264), or 'other', Siamese *ɲum<sup>2</sup>*, Lungchow *ɲun<sup>3</sup>* (Li, pages 245, 265). Sarawit offers no explanation for 'insipid'. Thus we may list 'insipid' as an apparent example of Southwestern *\*uum* versus Northern *\*u*, but in 'to forget' we do not know whether the *uum*-*u* correspondence is an example of the same correspondence as in 'insipid' or whether it is due to the effect of the following labial.

Sarawit (pages 330-333, 336-339) does cite four Northern dialects (Pu-i dialect points number 13, 14, 27, and 28; Sarawit's source is Chinese Academy of Sciences 1959) which maintain a distinction between the vowel in 'to forget', Sarawit's Proto-Northern *\*lɛm* A4, and the vowel in 'whiskers', Sarawit's Proto-Northern *\*lum* B4. In these four dialects 'forget' has *uu* and 'whiskers' has *u*. In most other Northern dialects, according to Sarawit, 'forget' and 'whiskers' rhyme: both have *u*, as in Po-ai, or both have *uu*, or both have *ɯ*. The forms in Pu-i dialect points 13, 14, 27, and 28 suggest,

however, that Sarawit is right in arguing that the merger of the vowels in 'forget' and 'whiskers' is due to the effect of the final labial so that in Proto-Northern 'forget' had \*u not \*u. Therefore, contrary to Li, 'forget' may not be an example of Southwestern \*u versus Northern \*u (Li's Proto-Tai \*i). Nonetheless it will be advisable to investigate these four Pu-i dialects thoroughly before reaching any firm conclusions on this. Two other Pu-i dialects cited by Sarawit (points 36 and 37) also distinguish between the vowels of 'forget' and 'whiskers', but in odd ways: 36 (the dialect of T'ien-pa, in the northwestern corner of the Pu-i area) has len<sup>2</sup> 'to forget' and maan<sup>6</sup> 'whiskers' (Chinese Academy of Sciences 1959:275, #0610; 208, #0112; Sarawit, pages 334, 340; Sarawit incorrectly cites the word for 'forget' as len = IPA lɛŋ; for 'whiskers' both Chinese Academy of Sciences and Sarawit write man, since the length of the vowel is predictable [Chinese Academy of Sciences, page 7; Sarawit, pages 173-174]). Point 37, the dialect of Weng-ang, in the southeastern corner of the Pu-i area, is still odder because it seems to have a flip-flop: it has lum<sup>2</sup> 'to forget' and mun<sup>6</sup> 'whiskers'. (Note by the way that in the first dialect, T'ien-pa, the change from final m to final ŋ is regular.)

If we plot the Pu-i forms for 'forget' and 'whiskers' on a map we see a possible explanation for the apparent flip-flop in Weng-ang. Weng-ang lies within an area in which both 'forget' and 'whiskers' have u (lum, mun). Next to this area is an area in which both 'forget' and 'whiskers' have i (lum, mum). I suspect therefore that Weng-ang is basically a lum/mum dialect, and that the aberrant Weng-ang form lum<sup>2</sup> for 'forget' is simply a loanword from one of the lum/mum dialects. Perhaps the town of Weng-ang was settled by immigrants from different localities. It might be possible to document this from historical records. So Weng-ang may be no counterexample to Sarawit's Proto-Northern \*lim A4 'forget'.

As for T'ien-pa len<sup>2</sup> 'to forget' and maan<sup>6</sup> 'whiskers', I do not know if they are a counterexample to Sarawit or not. The development of the vowels in T'ien-pa is complex and I have not yet made myself sufficiently familiar with it.<sup>7</sup>

Nonetheless, even if Sarawit's Proto-Northern \*lim A4 'to forget' stands so that 'to forget' is not an example of Southwestern \*u versus Northern \*u, we still have 'insipid, tasteless', Siamese cwat<sup>2</sup>, Po-ai gut<sup>2</sup>, which Sarawit does not account for.

Table 4c: a ~ o

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
o	u < *o	a	*a	*e	14.6
a	a	ɔ ~ a	—	*uə	14.7.1

These two correspondences occur only before labials. The following table shows the various correspondences involving Siamese e, a, and o and how Li and Sarawit handle them (omitting the raising correspondences discussed in section 3):



	Siamese	Lungchow	Po-ai	Sarawit	Li	Section in Li
Before labials	e	i	ɛɛ (?)	*e	—	— (see footnote 8)
	a	a	a	*a	*ə	14.7
	a	a	ɔ~a	—	*uə	14.7.1
	o	u	a	*ə	*e	14.6
	o	u	ɔ	*o	*o	14.8
Before dentals	e	i	ɛ	*e	*e	14.6
	e	i	a	*ə	*e	14.6
	a	a	a	*a	*ə	14.7
	o	ɯ	ɔ	*o	*ui	14.8.1 (see footnote 9)
Before velars	e	i	ɛ	*e	*e	14.6
	a	a	a	*a	*ə	14.7
	o	u	ɔ	*o	*o	14.8

I will say more about these correspondences under Table 7b.

Section 5: Breaking plus change in lip rounding: aa~ ua, oo~ua

Table 5a: aa~ ua

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
aa	aa	uu < *ua	*ua:, *wɛa:	*ua	14.10.2

This correspondence occurs only in closed syllables. Sarawit's distinction between \*ua: and \*wɛa: is based on a distinction made in certain dialects of the Northern Branch though not in Po-ai. This distinction is conditioned and Sarawit is therefore unwarranted in setting up two separate vowels for Proto-Tai, but I do not have space to describe the conditioning factors here. Also, Sarawit uses \*wɛa: for two distinct correspondences: (1) Siamese ua, Lungchow uu, Po-ai uu, Li's Proto-Tai \*ue (one of the simple or straightforward correspondences discussed in the first part of this paper), (2) Siamese aa, Lungchow aa, Po-ai uu, Li's Proto-Tai \*ua, as shown above. Neither use of \*wɛa: is warranted.

Table 5b: oo~ua

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
ua	uuu < *ua	oo	*ua:	*io (?)	15.3.2

Sarawit and Li give only one example of this correspondence, 'meat': Siamese *nuaa*<sup>4</sup>, Lungchow *nuaa*<sup>6</sup> (< \**nuaa*<sup>6</sup>), Po-ai *noo*<sup>6</sup>. Sarawit (pages 420, 426, 432, 449) reconstructs Proto-Tai \**mlua*: C4. (The *ml*-cluster is attested in Saek.) Thus Sarawit is claiming that \*ua: in closed syllables becomes Siamese and Lungchow aa, Po-ai uu (as we saw in Table 5a), whereas \*ua: in open syllables becomes Siamese aa, Lungchow uu, Po-ai oo. This seems implausible to me.

Li includes 'meat' among his examples of Proto-Tai \*io but he marks the Po-ai form with a question mark since normally his \*io becomes Po-ai uu (< \*ua) rather than oo (see Table 4a). Note also that the word for 'meat' in Po-ai and other Northern dialects disagrees with the word in the Southwes-

tern and Central dialects not only in vowel but also in tone: the Southwestern and Central dialects have tones reflecting Proto-Tai tone C whereas the Northern dialects have tones reflecting Proto-Tai tone B. Is it possible that the words are not really cognate?

Section 6: Raising plus change in lip rounding: aa ~ uu, oo ~ ~~uu~~, o ~ ~~uu~~

Table 6a: aa ~ uu

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
uu	u < *uu	aa	*wa:	—	—

Sarawit (page 435) gives one example, 'tall': Siamese *suŋ<sup>5</sup>*, Lungchow *ɬuŋ<sup>1</sup>*, Po-ai *ɬaan<sup>1</sup>*, Sarawit's Proto-Tai \**swa:ŋ* Al. In this example, Sarawit's \**wa:* is in a closed syllable. Sarawit also reconstructs \**wa:* in open syllables (see Table 10) and in this case the development in the Northern dialects is different:

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Li's PT
Sarawit's * <i>wa:</i> in closed syllables	uu	u < *uu	aa	—
Sarawit's * <i>wa:</i> in open syllables	uu	u < *uu	<del>uu</del> < * <i>ua</i>	* <i>i</i> u

Li (page 154) lists 'tall' among his examples of Proto-Tai \**s*-, but he makes no attempt to reconstruct a vowel for it.

Table 6b: oo ~ ~~uu~~

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
ɔɔ	oo	uu < * <i>uu</i>	*oi:	* <i>ɔ</i> / <i>*i</i> ɔ	14.11.3
ɔɔj	(ooj)	ii < * <i>uu</i> j	*wi:	* <i>u</i> ai	16.6.1
<del>uu</del>	<del>uu</del>	oo	*wo:	—	—
ii < * <i>uu</i> j	ii < * <i>uu</i> j	(ooj)	*wi:	—	—

The first correspondence occurs only before dentals. Sarawit reconstructs \**oi:* not only for this correspondence but also for the raising correspondence represented by Siamese ɔɔ, Lungchow oo, versus Po-ai u (Table 3b), for which Li reconstructs \**u*ɔ, for example:

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT
to lie down	nɔɔn <sup>1</sup>	noon <sup>2</sup>	nwan <sup>2</sup>	*nyoi:n A4	*niɔ:n A2/*niɔ:n A2
lungs	pɔɔt <sup>2</sup>	pɔt <sup>3</sup> (sic!)	pwt <sup>2</sup>	*poi:t DL2	*piɔ:t DLL/*pɔt DLL
soft	ɔɔn <sup>2</sup>	ɔoon <sup>3</sup>	ɔun <sup>5</sup>	*ɔoi:n B3	*ɔuɔ:n B1
spool	lɔɔt <sup>2</sup>	loot <sup>3</sup>	lut <sup>2</sup>	*loi:t DL1	*hluɔ:t DLL

(Sarawit, pages 422, 423, 427, 433, 430, 450; Li, pages 62, 111, 138, 244, 278, 279.) Compare Sarawit's similar dual use of \**oi* discussed under Tables 3e and 6c. Notice, by the way, that the vowel in the Lungchow form for 'lungs' agrees with Po-ai rather than with Siamese. This is a counterexample

to Li and Sarawit which can be explained either by saying that the Lungchow form was borrowed from a Northern dialect or by the ablaut hypothesis.

The second correspondence in Table 6b is not attested for Lungchow, but other Central dialects have forms which seem to reflect Proto-Tai \*ooj, agreeing with the Southwestern dialects. Li, Sarawit, and Gedney (1972) give two examples of this correspondence (Gedney gives only the second example):

	'pubic hair'	'trace, vestige, mark, track, footprint'
Siamese (SW)	mɔɔj <sup>5</sup>	rɔɔj <sup>1</sup>
White Tai (SW)	—	hɔɔj <sup>4</sup>
Lei Ping (C)	—	*ooj <sup>4</sup>
Lung Ming (C)	—	looɔj <sup>4</sup>
Yay (N)	—	rii <sup>4</sup>
Po-ai (N)	miil	lii <sup>2</sup> , lwii <sup>2</sup>
Saek (N)	—	rii <sup>4</sup>
Sarawit's PT	*mwi: A1	*rwi: A4
Li's PT	*hmui A1	*ryui A2

(Sarawit, page 436; Li, pages 75, 143, 288.)

If this correspondence is indeed an example of an oo/ooɔ alternation, then the Northern pronunciation ii would go back to an earlier \*ooɔj by assimilation of the vowel \*ooɔ to the final semivowel \*-j:

Southwestern/Central	Northern
*ooj	* <u>ooɔ</u> j
*ooɔj	*iiɔj
*ooj	*ii

This makes sense because Tai dialects generally do not have ooɔj or ooj (except as a reflex of \*ooaj in those dialects in which \*ooa becomes ooɔ) so that if there were any examples of \*ooɔj in Proto-Tai or pre-Proto-Tai they must have changed to something else, such as ii.

Gedney, however, suggests an alternative interpretation. He suggests that the ooɔj/ii alternation may, perhaps, be a special case of the aj/ii alternation (Table 1a) in which some of the reflexes "have been distorted by an original post-initial semivowel preceding the original diphthong ay" (in Gedney's transcription ay = IPA [aj]).

In other words, the Proto-Tai forms may have been something along the lines of \*hmui<sup>A</sup> ~ \*hmui<sup>A</sup> 'pubic hair' and \*rwii<sup>A</sup> ~ \*rwai<sup>A</sup> 'trace, etc.'. The Northern dialects have the monophthongal forms \*hmui<sup>A</sup> and \*rwii<sup>A</sup>, generally losing the medial w (\*hmui<sup>A</sup>, \*rii<sup>A</sup>), although the w is optionally preserved in Po-ai lii<sup>2</sup> ~ lwii<sup>2</sup> 'trace'. The Southwestern and Central dialects have the diphthongal forms \*hmui<sup>A</sup> and \*rwai<sup>A</sup>. In this particular environment the sequence wa coalesces to a monophthong oo, giving \*hmooj<sup>A</sup> 'pubic hair' and \*rooj<sup>A</sup> 'trace, etc.', which then give the modern dialect forms by regular sound change:

Southwestern/Central	Northern
*hmui <sup>A</sup> , *rwai <sup>A</sup>	*hmui <sup>A</sup> , *rwii <sup>A</sup>
*hmooj <sup>A</sup> , *rooj <sup>A</sup>	*hmui <sup>A</sup> , *r(w)ii <sup>A</sup>

A problem for Gedney's analysis is that, as Gedney himself points out, we also have the correspondence Southwestern and Central \*uaj versus Northern \*ii (see Table 1a). Compare 'trace, etc.' with 'mountain stream', 'with', and 'tax' (the first two words cited by Gedney, Sarawit, and Li, the last two cited only by Li):

	'trace'	'mountain stream'	'with'	'tax'
Siamese (SW)	rəɔj <sup>1</sup>	hɯaj <sup>3</sup>	duaj <sup>3</sup>	sɯaj <sup>2</sup>
White Tai (SW)	həj <sup>4</sup>	hoj <sup>3</sup> < *hɯaj <sup>C</sup>	—	—
Lungchow (C)	—	huuj <sup>5</sup> , vuuj <sup>5</sup> < *hɯaj <sup>C</sup> , *hwuaj <sup>C</sup>	duuj <sup>5</sup> < *ʔduaj <sup>C</sup>	—
Lei Ping (C)	ɬooj <sup>4</sup>	khooj <sup>3</sup>	—	—
Lung Ming (C)	looɰ <sup>4</sup>	luj <sup>3</sup>	—	—
Yay (N)	rii <sup>4</sup>	vii <sup>3</sup>	—	—
Po-ai (N)	lii <sup>2</sup> lwii <sup>2</sup>	vii <sup>3</sup>	nii <sup>3</sup>	ɬii <sup>5</sup>
Saek (N)	rii <sup>4</sup>	rii <sup>3</sup>	—	—
Sarawit's PT	*rwi: A4	*xhwia:y C1	—	—
Li's PT	*ryɰi A2	*xruɰi C1	*ʔduɰi C1	*suɰi B1
Gedney's PT	*rɰii <sup>A</sup> ~ *rɰay <sup>A</sup>	*xɰvii <sup>C</sup> ~ *xɰvay <sup>C</sup>	—	—

(Sarawit, pages 417, 436; Li, pages 109, 143, 233, 288, 296; Li omits 'tax', which he says is probably a Chinese loan, from his chapters on consonants, but on the basis of the Siamese and Po-ai forms the initial is presumably to be reconstructed as \*s-.)

In the transcription which I have taken the liberty of labelling "Gedney's Proto-Tai" — Gedney himself writes no Proto-Tai forms but he makes suggestions as to what they might have been like — the symbol  $\gamma$  denotes a post-initial semivowel of unspecified character. The vowel in 'trace' develops differently from the vowel in the other three words and, therefore, if we accept Gedney's reconstruction we seemingly must account for this difference either by supposing that the semivowel in 'trace' was different from the semivowel in the other words, or by supposing that the different initials or the different tones of the various words somehow conditioned the vocalic difference. If the semivowels were different what could they have been? Both 'trace' and the other three words show evidence of rounding. Shall we therefore posit \*w (back rounded semivowel) versus \*ɥ (front rounded semivowel, as in French *huît*) for Proto-Tai? Or could the initial \*r- of 'trace' have somehow caused wa to become oo in that word while it became ua elsewhere? Or is the difference in vowel between 'trace' and the other words not due to phonetic factors at all, but rather to analogy, or verbal taboo (certainly a possibility in the case of 'pubic hair' which rhymes with 'trace' and which is a taboo word in at least some Tai languages), or the need to disambiguate homophones, or something of that sort?

The third correspondence in Table 6b, Siamese and Lungchow ~~uu~~, Po-ai oo, occurs only in open syllables. Sarawit (page 436) gives two examples:

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT
straight	swuu 3	lunuu 4	poou 6	*zwo: B4
name	chuuu 3	---	puuu 6	*jwo: B4

The Po-ai form for 'name' agrees in vowel with the Siamese form, but other Northern dialects have forms with vowels seeming to reflect Proto-Tai \*oo. Li (section 9.5) cites, for example, Wuning *ooŋ* (< \*ʔoo) and Hsi-lin *oo*. This is an example of a vowel disagreement within a single branch, seemingly contradicting Li and Sarawit: the explanation could be ablaut, but it is also conceivable that the Po-ai form was borrowed from a non-Northern dialect and is therefore not a true counterexample to Li and Sarawit.

Li has no special explanation for the *uuu/oo* correspondence seen in 'straight' and 'name'. He lists the word for 'straight' among his examples of Proto-Tai initial \*z- (section 9.2) but he makes no attempt to reconstruct a vowel for it. As for 'name', here he is misled by the Po-ai form into including this word among his examples of Proto-Tai \*i (section 14.4.2, i.e. the simple or straightforward correspondence giving Siamese *uuu*, Lungchow *uuu*, Po-ai *uuu*), ignoring the presence of vowels reflecting \*oo in other Northern dialects, even though he himself cites several of those dialects in section 9.5.

Finally, the fourth correspondence in Table 6b is not attested for Po-ai, but according to Sarawit other Northern dialects have forms which seem to reflect Proto-Tai \*ooj. This correspondence is thus the same as that in 'pubic hair' and 'trace, etc.' viz. \*ii versus \*ooj, except that this time it is the Southwestern and Central dialects which have \*ii and the Northern dialects which have \*ooj instead of the other way around.

Sarawit gives only one example of this correspondence, the word 'comb', for which we have Siamese *wii*<sup>5</sup>, Lungchow *vii*<sup>1</sup>, and certain Northern dialect forms on the basis of which Sarawit (page 436) reconstructs a Proto-Northern \*ʔo:y A1, for example Yay *roj*<sup>1</sup>, Pu-i dialect point #1 *ooj*<sup>1</sup> (Sarawit does not cite the actual forms: the Yay is from William Gedney's fieldnotes, the Pu-i from Chinese Academy of Sciences, page 237, #0328).

Sarawit reconstructs 'comb' as Proto-Tai \*rwi: A1, identical with her reconstruction of 'trace, etc.' (\*rwi: A4), except that 'comb' has a voiceless initial consonant and 'trace, etc.' has a voiced one. (The tone in both cases is Proto-Tai tone A. Sarawit's use of the numerals 1 and 4 after the A is merely a redundant restatement of the phonation type of the initial consonant, which affects the development of the tone in the modern dialects.) But in 'comb' we have Southwestern and Central \*ii versus Northern \*ooj, whereas in 'trace, etc.' we have the reverse. Sarawit says, "This is possibly due to the difference in voicing of the initial.", which seems phonetically implausible to me. Perhaps this is another case in which the ablaut hypothesis is more plausible than Sarawit's reconstruction.

Li also treats the word for 'comb' in his chapters on vowels (section 16.2) but the Po-ai cognate he adduces for Siamese *wii*<sup>5</sup> and Lungchow *vii*<sup>1</sup> is not an example of Sarawit's Proto-Northern \*ʔo:y A1 (which would become Po-ai \*loo<sup>1</sup>), but rather a different word, Po-ai *pa*<sup>6</sup>. For Li, therefore,

'comb' is simply an example of the Southwestern and Central \*ii versus Northern \*aj correspondence listed in Table 1a and he accordingly reconstructs the vowel as \*ei (see Table 1a). And in section 4.10, Li suggests that the Po-ai word for 'comb' may be a loanword from Chinese and not cognate with the Siamese and Lungchow forms at all (both the initial and the tone of the Po-ai form disagree with Siamese and Lungchow). The ii/ooj correspondence which Sarawit has found in 'comb' was simply missed by Li.

Table 6c: o ~ u

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
o	y	u	*oi	*yü	14.8.1

This correspondence occurs only before dentals. The Lungchow form is equivocal here since Lungchow y reflects both Proto-Tai \*o before dentals as in Lungchow mɿt<sup>2</sup> 'ant', Siamese mot<sup>4</sup>, Po-ai mɿt<sup>3</sup>, and Proto-Tai \*u as in Lungchow khɿn<sup>5</sup> 'to go up', Siamese khun<sup>3</sup>, Po-ai hun<sup>3</sup>. (Sarawit, pages 440, 444; Li, pages 72, 209, 264, 272.) Central dialects such as Bac Giang (Freiberger and Bé 1976) which preserve the distinction between \*o and \*u before dentals sometimes agree with Southwestern in showing \*o for this correspondence, e.g.:

	Siamese (SW)	Bac Giang (C)	Po-ai (N)	Sarawit's PT	Li's PT
'rain'	fon <sup>5</sup>	phɿn <sup>4</sup>	hun <sup>1</sup>	*foin A1	*fyün A1
'heel' (Po-ai 'rump')	son <sup>3</sup>	ʈɿn <sup>5</sup>	ʈɿn <sup>3</sup>	*son C1	*syün C1

(Sarawit, page 54, 422, 444; Li, pages 78, 153, 272: Sarawit is uncertain about the initial consonant in 'rain'. On Li's reconstruction of the vowel in 'heel' see below.) Bac Giang 'rain' rhymes with 'heel', agreeing with Siamese. But sometimes Bac Giang and other Central dialects agree with Northern, e.g.:

	Siamese (SW)	Bac Giang (C)	Po-ai (N)	Sarawit's PT	Li's PT
'person'	khon <sup>1</sup>	kun <sup>3</sup>	hun <sup>2</sup>	*goin A4/ *yoin A4	*gyün A2/ *yüün A2
'to go up'	khun <sup>3</sup>	khun <sup>5</sup>	hun <sup>3</sup>	*xhin C1	*xün C1

(Sarawit, pages 422, 433, 440; Li, pages 209, 215, 264, 272.) Bac Giang 'person' rhymes with 'to go up', agreeing with Po-ai.

Sarawit reconstructs \*oi not only for the correspondence in Table 6c, but also for the raising correspondence represented by Siamese o versus Po-ai u (Table 3e) for which Li reconstructs \*uo, for example:

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT
'rain'	fon <sup>5</sup>	phɿn <sup>1</sup>	hun <sup>1</sup>	*foin A1	*fyün A1
'to shrink'	hot <sup>2</sup>	—	lut <sup>2</sup>	*roit DS1	*hryot DS1

(Sarawit, pages 54, 422, 427, 450; Li, pages 78, 149, 272, 273; Sarawit is uncertain about the initial consonant of 'rain'.) Compare Sarawit's similar

dual use of \*oi: discussed under Tables 3b and 6b.

To add to the confusion, Li is as bad as Sarawit but in a different direction. He reconstructs \*yī not only for the correspondence in Table 6c, but also for the simple or straightforward correspondence represented by Siamese o, Lungchow ɿ, Po-ai ɔ (where Lungchow has ɿ rather than u because of the influence of the following dental), for which Sarawit reconstructs \*o, for example:

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT
'rain'	fon <sup>5</sup>	phɿ n <sup>1</sup>	hɯ n <sup>1</sup>	*foin A1	*fūin A1
'heel' (Po-ai 'rump')	son <sup>3</sup>	ʈɿ n <sup>5</sup>	ʈɔ n <sup>3</sup>	*son C1	*suin C1

(Sarawit, pages 54, 422, 444; Li, pages 78, 153, 272; Sarawit is uncertain about the initial consonant in 'rain'.)

Thus before dentals we have:

Siamese	Lungchow	Po-ai	Sarawit	Li
o	ɿ	ɔ	*o	*yī
o	ɿ	u	*oi	*yī
o	—	u	*oi	*uo

(Before non-dentals there is no problem; before labials we simply have

Siamese	Lungchow	Po-ai	Sarawit	Li
o	u	ɔ	*o	*o
o	u	u	*oi	*uo

and before velars only

Siamese	Lungchow	Po-ai	Sarawit	Li
o	u	ɔ	*o	*o

aside from certain irregularities not accounted for by Li and Sarawit which space does not permit me to discuss.)

Finally, on page 433 Sarawit also lists 'to lie down', Siamese nɔɔn<sup>1</sup>, Lungchow noon<sup>2</sup>, Po-ai nɯn<sup>2</sup>, as an example of \*oi, reconstructing Proto-Tai \*nyoin A4 instead of, as we would expect from the first correspondence in Table 6b, Proto-Tai \*nyoi:n A4. But this may be merely a typographic error, for on page 423 she writes Proto-Tai \*nyoi:n A4 as would expect.<sup>10</sup>

Section 7: Fronting: ɯ ~ i, a ~ e

Table 7a: ɯ ~ i

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
i	i	ɯ	*ya	*iī	14.3.1

Sarawit (page 437) gives only one example of this correspondence, 'to eat': Siamese kin<sup>1</sup>, Lungchow kin<sup>1</sup>, Po-ai kɯn<sup>1</sup>, Sarawit's Proto-Tai \*kyan A2.

Li (page 187) lists 'to eat' among his examples of Proto-Tai \*k-, and in section 14.3.1 (page 262) he says

The correspondences of SW and CT dialect word kin Al 'to eat' to NT dialect word k'i n (or kə n) may be due to an original diphthong \*ki, but the reconstruction is doubtful.

In a class lecture in his course in Comparative Tai at the 1977 Linguistic Society of America Summer Institute, Professor Li said that this passage contains a typographic error: \*ki should read \*ii.

Table 7b: a ~ e

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
e	i < *e	a	*ə	*e	14.6

This correspondence occurs only before dentals (see the discussion under Table 4c), but Li (page 98) also gives an example of an a/e alternation within Po-ai which occurs before a labial:

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT
low, short	tam <sup>2</sup>	tam <sup>3</sup>	tam <sup>5</sup> , tɛm <sup>5</sup>	*tam B2	---

As you see, Sarawit simply treats this word as an example of Siamese a, Lungchow a, Po-ai a, Proto-Tai \*a, and does not attempt to account for the alternate Po-ai pronunciation with ɛ (which she may not have known about, since Li's book had not yet been published when Sarawit was writing her dissertation). Li lists this word as an example of Proto-Tai \*t- but omits it from his chapters on vowels.

Two more possible examples of an a/e alternation before labials are discussed at the very end of this section of the paper.

Concerning Northern \*a versus Southwestern and Central \*e before dentals, John Grima (personal communication) says that he has been told that there is acoustic phonetic motivation for a changing to e before dentals (or, rather, alveolars: following Li and Sarawit, I have been calling t and n "dentals", but actually, as Grima pointed out to me, in Tai languages they are dental syllable initially and alveolar syllable finally), and that he has read of parallel developments in certain Tibeto-Burman languages. Moreover, Grima (1981) shows that Southern and Central Vietnamese -- and also Thai (Siamese) child language -- have related developments involving consonant changes rather than vowel changes but which again exhibit some sort of natural connection between front vowels and alveolar final consonants.

Thus final labials and final "dentals" (sc. alveolars) are both phonologically natural conditioning environments which have affected the development of mid vowels in Tai dialects: corresponding to Northern \*a (please look once more at the discussion under Table 4c) we sometimes have Southwestern and Central \*o before labials and \*e before dentals. In these cases, Sarawit reconstructs Proto-Tai \*ə and Li reconstructs Proto-Tai \*e. We also



have cases where all three branches have \*e, or all three branches have \*a, or all three branches have \*o. In these cases Sarawit reconstructs \*e, \*ā, or \*o as the case may be, and Li reconstructs \*e, \*ə, \*o. (Recall that Li posits that Tai short vowels were originally close vowels, which is why he writes \*ə rather than \*a for the cases where all or almost all modern dialects have short a.) Li's \*e is therefore overburdened, for it corresponds both to Sarawit's \*ə (for the e/a and o/a alternations) and to Sarawit's \*e (for \*e in all three branches).

Sarawit's use of \*ə to account for the e/a and o/a alternations is very plausible phonetically. My only objection to it — and this objection may turn out to be answerable — is that it fails to account for the occasional examples of these alternations within a single branch, for example 'to see', for which some Southwestern dialects have han and others have hen (with, in each case, the tone which developed from Proto-Tai tone A on syllables beginning with voiceless aspirate consonants). There are even alternations within a single language, for example the two forms for 'low, short' that Li cites for Po-ai: taṃ<sup>5</sup> and tɛ m<sup>5</sup>.

#### Section 8: Diphthongization of oo: oo ~ aw, oo ~ au

Table 8a: oo ~ aw

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
aw	aw	oo	*ia:w	*ou	16.12

Table 8b: oo ~ au

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
aj < *au	au	oo	*ua:y	*oi	16.9

#### Section 9: Monophthongization of ua: ua ~ uua

Table 9: ua ~ uua

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
uua	(uua)	uua < *ua	*ywa:, *lwa: *wia:y	---	---
ii < *uij	{ ii < *uij { wii < *wuij }	{ uuj < *uaj { uuj < *waj }		*ui	14.3.2

Sarawit gives only one example of the first correspondence:

	Siamese (SW)	Yay (N)	Po-ai (N)	Pa-chieh (N)	Sarawit's PT
navel	sa <sup>2</sup> d <sup>u</sup> u <sup>1</sup>	d <sup>u</sup> a <sup>1</sup>	n <sup>u</sup> u <sup>6</sup>	ʔd <sup>u</sup> u <sup>1</sup>	*ʔblwa: A3, *ʔbywa: A3

(Po-ai from Li, page 91; Yay from William Gedney, fieldnotes; Pa-chieh from Chinese Academy of Sciences 1959, item number 0524, dialect point number 1.) The Siamese form is probably a contraction of some such compound as saaj<sup>5</sup>d<sup>u</sup>u<sup>1</sup> 'cord of the navel' (saaj<sup>5</sup> 'cord'), so it is only the second syllable of the Siamese form that we are concerned with here. The Po-ai vowel

could reflect either Proto-Tai \*ma, agreeing with Siamese, or Proto-Tai \*maa, but the other Northern dialects clearly show \*maa. The word is not recorded for Lungchow, but according to Sarawit, other Central dialects have vowels reflecting \*ma, agreeing with Southwestern.

Sarawit says that her reconstruction of 'navel' is based in large part on the forms in languages of the Mak-Sui-Kam Family, a group of languages spoken in south central China (mostly just to the east of the Pu-i dialects: see figure 1) which are believed to be related to Tai although the sound correspondences between Mak-Sui-Kam and Tai have only begun to be worked out. Sarawit cites a Mak form for 'navel' which she writes ?dwa: (she omits the tone) and a T'en form which she writes lya: (= IPA [lja:]; she omits the tone).

Li lists 'navel' among his examples of the Proto-Tai cluster \*?bl/\*?br (section 5.6) but he makes no attempt to reconstruct a vowel for it.

The second correspondence in Table 9, Siamese ii, Lungchow ii, wii, Po-ai uuj, uuj, is complicated because there also seems to be an alternation between presence and absence of medial w. Sarawit, Li, and Gedney (1972) give two examples:

	'bear'	'to ride'
	(noun)	
Siamese (SW)	mii <sup>5</sup>	khii <sup>2</sup>
White Tai (SW)	mii <sup>1</sup>	khii <sup>2</sup>
Lei Ping (C)	mii <sup>1</sup>	khwi <sup>2</sup>
Lung Ming (C)	mej <sup>1</sup>	khwej <sup>2</sup>
Lungchow (C)	mii <sup>1</sup>	khwi <sup>3</sup>
Yay (N)	muaj <sup>1</sup>	kuaj <sup>5</sup>
Po-ai (N)	muuj <sup>1</sup>	kuuj <sup>6</sup>
Saek (N)11	mii <sup>2</sup>	khøj <sup>5</sup>
Sarawit's PT	* <u>hwa</u> :y A1	* <u>khwa</u> :y B1 ~ * <u>gia</u> :y B4
Li's PT	* <u>hmi</u> A1	* <u>khui</u> B1 ~ * <u>gui</u> B2

For 'bear' I would reconstruct \*hmwaj<sup>A</sup> ~ \*hmwaaj<sup>A</sup> ~ \*hmwaaj<sup>A</sup>. The first form, \*hmwaj<sup>A</sup>, is found in Southwestern and Central and in Saek: \*hmwaj<sup>A</sup> goes to \*hmii<sup>A</sup> by assimilation of the vowel to the final semivowel, a change we have already posited in Table 6b, q.v. The subsequent development of \*hmii<sup>A</sup> is perfectly regular (\*ii > ej is a regular sound change in Lung Ming).

The second form, \*hmwaaj<sup>A</sup>, is found in Yay. Its development is regular.

The third form, \*hmwaaj<sup>A</sup>, is found in Po-ai. The w coalesces with the u giving \*hmuaj<sup>A</sup>, which then becomes Po-ai muuj<sup>1</sup> (\*ua > uu is a regular sound change in Po-ai).

For 'to ride' I would reconstruct \*khwaj<sup>B</sup> ~ \*khwaaj<sup>B</sup> ~ \*gwaaj<sup>B</sup>. The first form, \*khwaj<sup>B</sup>, is found in the two Southwestern dialects. It goes to \*khii<sup>B</sup> by assimilation of the vowel to the final semivowel and then develops regularly.

The second form,  $*khwuuj^B$ , is found in the three Central dialects. It goes to  $*khwii^B$  by assimilation of the vowel to the final semivowel and then develops regularly ( $*ii > ej$  is a regular sound change in Lung Ming).

The third form,  $*gwaaj^B$ , is found in Yay and Po-ai. Its development is regular ( $*ua > uu$  is a regular sound change in Po-ai). The tone of the Yay and Po-ai forms shows that the initial was voiced rather than voiceless aspirated. Many Tai words have tones which suggest an original voiceless stop or fricative in the Southwestern and Central dialects as opposed to an original voiced stop or fricative in the Northern dialects. This is one of the ways in which the Southwestern and Central Branches appear to be more closely related to each other than either is to the Northern Branch. Gedney (1979) has recently suggested that these cases of disagreement in voicing might go back to a special series of Proto-Tai initial consonants, possibly voiced aspirates, such as are well known today from languages of India (they occur in other languages as well) and which Bernhard Karlgren and others have proposed for Middle Chinese. (Others, such as Fang Kuei Li, disagree with Karlgren on this.)

The fourth form,  $*gwuaaj^B$ , would seem to account for the Saek form: first the  $w$  coalesces with the  $u$  giving  $*guaaj^B$ , which then becomes Saek  $khoj^5$ . But I need to do more research to check whether  $*uaj > oj$  is a regular sound change in Saek. In Saek, as in Yay and Po-ai, the tone shows that the initial consonant was originally voiced.

An alternative interpretation, suggested by Gedney (1972), is that 'bear' and 'to ride' represent a special case of the  $ii/aj$  alternation (see Table 1a), involving some sort of medial semivowel (which Gedney makes no attempt to specify phonetically) which becomes  $w$  in some dialects, becomes  $u$  in others, and disappears in still others. If we imagine that this semivowel was, say,  $y$ , we can posit the following developments:

$*hmyii^A \sim *hmyaj^A$  'bear'  
 Southwestern, Central, and Saek:  $*hmyii^A > *hmii^A$   
 Yay:  $*hmyaj^A > *hmwaaj^A$   
 Po-ai:  $*hmyaj^A > *hmwaaj^A > *hmuaaj^A$

$*khyii^B \sim *gyaj^B$  'to ride'  
 Southwestern:  $*khyii^B > *khii^B$   
 Central:  $*khyii^B > *khwii^B$   
 Po-ai, Yay:  $*gyaj^B > *gwaaj^B$   
 Saek:  $*gyaj^B > *gwaj^B > *guaj^B$

Section 10: Monophthongization of  $ua$  plus change in lip rounding:  $ua \sim uu$

Table 10:  $ua \sim uu$

Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
uu	uu	$uu < *ua$	$*wa:$	$*u$	14.5.5

The correspondence occurs only in open syllables (for the development of Sarawit's  $*wa:$  in closed syllables see Table 6a). Po-ai has  $uu$  which could come from either  $*ua$  or  $*uu$  but other Northern dialects show that the Proto-Northern form was in fact  $*ua$  as shown in the discussion under

Table 4b. Notice that Sarawit uses \*wa: for the above correspondence in open syllables and for a different correspondence (see Table 6a) in closed syllables, and Li uses \*ɿu for the above correspondence in open syllables and for yet a third correspondence (see Table 4b) in closed syllables:

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
Closed syllables	uu	u	uu	*wa	*ɿu	14.5.5
Open syllables	uu	uu	uu < *ua	*wa:	*ɿu	14.5.5
Closed syllables	uu	u < *uu	aa	*wa:	---	---

N.B.: Sarawit's \*wa (first row above) is short; her \*wa: (second and third rows) is long.

Sarawit's reconstruction of the correspondence in Table 10 is problematic, for reasons which she herself points out on page 435. Consider the words for 'snake' and 'yesterday':

	Siamese (SW)	Lungchow (C)	Po-ai (N)
snake	ɲuu <sup>1</sup>	ɲuu <sup>2</sup>	ɲuuu <sup>2</sup> < *ɲua <sup>2</sup>
yesterday	waan <sup>1</sup>	vaa <sup>2</sup>	(Not found in the Northern dialects.)

(Sarawit, page 435; Li, pages 204, 239, 268.)

The earlier form of the Siamese word for 'yesterday' was probably \*waa<sup>1</sup>. The final -n, as Li (1956) suggests, is probably due to false division in the expression

\*mua<sup>3</sup> waa<sup>1</sup>      nii<sup>4</sup> >    mua<sup>3</sup> waan<sup>1</sup>    nii<sup>4</sup> 'yesterday'  
time    yesterday    this

The n of nii<sup>4</sup> has spread onto \*waa<sup>1</sup> giving waan<sup>1</sup>.

Thus 'snake' is an example of Sarawit's \*wa:, giving Southwestern and Central \*uu versus Northern \*ua, and 'yesterday' seems to show one of our simple or straightforward vowel correspondences, aa in most dialects (although we cannot be sure, since we lack the crucial Northern dialects), for which Sarawit reconstructs \*a:.

Now in some dialects, the word for 'yesterday' begins with ɲw. Li (page 240) cites, for example, the form ɲwaa from Guignard's so-called Lao dictionary. The correspondence is fairly regular and both Sarawit and Li reconstruct an initial \*ɲw for 'yesterday'. But notice what this does to Sarawit's reconstruction: she has Proto-Tai \*ɲwa: for both 'snake' and 'yesterday'. In the case of 'snake' we have \*ɲ for the initial correspondence plus \*wa: for the vowel correspondence whereas in the case of 'yesterday' we have, rather, \*ɲw for the initial correspondence plus \*a: for the vowel correspondence. But the result in either case is the same: Proto-Tai \*ɲwa: (Sarawit accidentally omitted the tone; it should be A4 in her notation). So 'snake' and 'yesterday' ought to be homophonous in modern dialects, but they are not. Sarawit calls attention to this as a problem for her reconstruction.

The problem here is similar to the problem with 'mountain stream' and

'chicken louse' discussed under Table 1a, where you will recall that I suggested that Sarawit had created the problem by reconstructing for Proto-Tai medial w's which were better regarded as later developments in individual dialects. But in 'yesterday', the w (which in some cases becomes v by regular sound change) occurs in most or all dialects that have the word and must be reconstructed for Proto-Tai. It is, rather, Sarawit's reconstruction of 'snake' which is doubtful.

One solution which would save Sarawit's reconstruction of 'snake' is to suppose that \*ɣwaa<sup>A</sup> 'yesterday' does not go back to Proto-Tai but came into the Southwestern and Central Branches (but not the Northern Branch) through borrowing or through word-coinage at a time when the change Proto-Tai \*wa: to Southwestern and Central \*uu had already gone through. Therefore 'yesterday' was too late to participate in this change and did not become homophonous with 'snake'. This is plausible insofar as, according to Li, \*ɣwaa<sup>A</sup> 'yesterday' is not found in the Northern Branch, which suggests that it may be a Southwestern and Central innovation.

Another possibility is to assign 'yesterday' not to the straightforward correspondence Siamese aa, Lungchow aa, Po-ai aa = Sarawit's Proto-Tai \*a:, but rather to the correspondence Siamese aa, Lungchow aa, Po-ai uu (< \*ua) = Sarawit's Proto-Tai \*ua: (Table 5a). Since 'yesterday' is attested only in the Southwestern and Central dialects, either reconstruction will do equally well: it is only in the Northern dialects that \*a: and \*ua: are differentiated (as \*aa versus \*ua). This would make 'yesterday' Proto-Tai \*ɣwaa: A4 in Sarawit's reconstruction, which would account for the attested forms and not conflict with 'snake', which could remain Proto-Tai \*ɣwa: A4. (I did say under Table 5a, to be sure, that all of Sarawit's and Li's examples of the correspondence Siamese aa, Lungchow aa, Po-ai uu are in closed syllables, but this might be purely fortuitous and I see no obstacle to adding 'yesterday' to the list.)

Finally, I will mention two curious examples cited but not satisfactorily explained by Sarawit and Li:

	Siamese (SW)	Lungchow (C)	Po-ai (N)	Sarawit's PT	Li's PT	Section in Li
hail	hep <sup>2</sup>	hat <sup>3</sup>	lit <sup>2</sup>	*thria:t DS1	*thrijet D1S, *xrijet D1S, *thriep D1S, *xriep D1S	14.6.1
to sew	jep <sup>4</sup>	jap <sup>2</sup>	jip <sup>3</sup>	—	*ñiep D2S	14.6.1

On the basis of Sarawit's and Li's reconstructions we would expect the Lungchow forms to have i rather than a (see Table 3c). There are many possible non-phonetic explanations for the irregular Lungchow forms, for example dialect borrowing. These possibilities need to be investigated by looking at other forms and other dialects.

If it turns out that no non-phonetic explanation works and that 'hail' and 'to sew' are examples of ablaut, then did Proto-Tai have three ablaut alternates in these words: \*i ~ \*e ~ \*a? Another possibility is as follows: Proto-Tai had \*i ~ \*e (cf. Table 3c). Proto-Northern retained the \*i-forms

and Proto-Southwestern/Central (assuming Haudricourt's and Gedney's hypothesis of a closer relationship between Southwestern and Central) retained the \*e-forms. Then an \*e ~ \*a ablaut (cf. Table 7b) came to apply in Proto-Southwestern/Central. This is all pure speculation of course but it can be substantiated or disproved by looking at more data.

Whatever is going on, it seems very likely that it is somehow related to the puzzling alternation between final -p and final -t in 'hail'. Normally either all three dialects have p or all three have t. As William Gedney recently pointed out to me, such sporadic alternations of final consonants are not uncommon in Tai and are very likely somehow related to the problem vowel correspondences.

This concludes my survey of the problem correspondences treated by Sarawit and Li. No doubt a few lexical items show still other correspondences but surely Sarawit and Li have captured all the common correspondences as well as most of the rare ones.

#### The Problem Correspondences and the Internal Classification of the Tai Language Family

I will now return to an issue which I broached at the beginning of the last section of this paper: What do the problem correspondences tell us about the relationship among the three branches of the Tai family?

In the last section we saw thirty-seven cases in which the Southwestern and Central Branches appear to agree with each other and to disagree with the Northern Branch:

- |                         |             |  |
|-------------------------|-------------|--|
| 1. SW/C *ii             | vs N *aj    | Table 1a (Li 16.2: 3 examples <sup>12</sup> )  |
| 2. SW/C *aj             | vs N *ii    | Table 1a (Li 16.3: 4 examples)   |
| 3. SW/C *uaj            | vs N *(w)ii | Table 1a (Li 17.3.1: 3 examples)   |
| 4. SW/C *aɰ             | vs N *uɰ    | Table 1b (Li 16.8: 3 examples)   |
| 5. SW/C *uu             | vs N *aw    | Table 1c (Li 16.11: 2 examples)  |
| 6. SW/C *aw             | vs N *uu    | Table 1c (Li 16.13: 3 examples)  |
| 7. SW/C *iaw            | vs N *eew   | Table 2a (Li 17.1: 1 example <sup>13</sup> )   |
| 8. SW/C *aa             | vs N *ua    | Table 2b (Li 14.10.1: 12 examples)   |
| 9. SW/C *aaj            | vs N *uaj   | Table 2b (Li 16.5.1: 2 examples)   |
| 10. SW/C *ua            | vs N *aa    | Table 2b (Li 15.3.1: 5 examples)   |
| 11. SW *uaj, *ua, C *ua | vs N *aa    | Table 2b (see 'cockspur',<br>Siamese <i>duaj</i> <sup>1</sup> )  |
| 12. SW/C *oo            | vs N *ua    | Table 2c (Li 14.11.1: 2 examples)  |
| 13. SW/C *ua            | vs N *oo    | Table 2c (Li 15.4.1: 2 examples)   |
| 14. SW/C *ee            | vs N *ii    | Table 3a (Li 14.9.1: 4 examples)   |
| 15. SW/C *oo            | vs N *uu    | Table 3b (Li 14.11.2: 6 examples)  |
| 16. SW/C *uu            | vs N *oo    | Table 3b (Li 14.5.4: 7 examples)   |
| 17. SW/C *e             | vs N *i     | Table 3c (Li 14.6.1: 8 examples; Li's Lungchow<br>is equivocal here but see the Bac<br>Giang form cited under Table 3c.) |
| 18. SW/C *ɰ, u          | vs N *a     | Table 3d (see 'silver', Siamese <i>ɰn</i> <sup>1</sup> )   |
| 19. SW/C *o             | vs N *u     | Table 3e (Li 14.8.2: 5 examples; Li's Lungchow<br>is equivocal here but see the Bac                                      |

			Giang form cited under Table 3e.)
20. SW/C	*ua	vs N *ua	Table 4a (Li 15.4.2: 2 examples)
21. SW/C	*ua	vs N *ua	Table 4a (Li 15.3.2: 4 examples)
22. SW/C	*u(u)	vs N *u	Table 4b (Li 14.5.5: 2 examples)
23. SW/C	*o	vs N *a	Table 4c (Li 14.6: 6 examples)
24. SW/C	*a	vs N *o ~ *a	Table 4c (Li 14.7.1: 1 example)
25. SW/C	*aa	vs N *ua	Table 5a (Li 14.10.2: 5 examples)
26. SW/C	*ua	vs N *oo	Table 5b (Li 15.3.2; only in 'meat', Siamese <u>nua</u> <sup>4</sup> )
27. SW/C	*uu	vs N *aa	Table 6a (see 'tall', Siamese <u>suu</u> <sup>5</sup> )
28. SW/C	*ooj	vs N *(w)ii	Table 6b (Li 16.6.1: 2 examples)
29. SW/C	*uuu	vs N *oo	Table 6b (see 'straight', Siamese <u>suu</u> <sup>3</sup> ; 'name', Siamese <u>chuu</u> <sup>3</sup> )
30. SW/C	*wii	vs N *ooj	Table 6b (see 'comb', Siamese <u>wii</u> <sup>5</sup> , Northern *hrooj <sup>A</sup> )
31. SW/C	*i	vs N *u	Table 7a (see 'to eat', Siamese <u>kin</u> <sup>1</sup> )
32. SW/C	*e	vs N *a	Table 7b (Li 14.6: 5 examples)
33. SW/C	*aw	vs N *oo	Table 8a (Li 16.12: 2 examples)
34. SW/C	*aw	vs N *oo	Table 8b (Li 16.9: 2 examples)
35. SW/C	*uuu	vs N *ua	Table 9 (see 'navel', Siamese <u>sa<sup>2</sup>duu</u> <sup>1</sup> )
36. SW/C	*(w)ii	vs N *uaj, *ua	Table 9 (Li 14.3.2: 2 examples)
37. SW/C	*uu	vs N *ua	Table 10 (Li 14.5.5: 2 examples)

We also saw four cases in which the Central and Northern Branches appear to agree with each other and to disagree with the Southwestern Branch:

1. C/N	*uuu	vs SW *aw	Table 1b (Li 16.8: 1 example)
2. C/N	*eeu	vs SW *iaw	Table 2a (Li 17.1: 6 examples <sup>14</sup> )
3. C/N	*o	vs SW *u	Table 3e (Li 14.5.7: 3 examples; Li's Lungchow is equivocal here but see the Bac Giang form cited under Table 3e.)
4. C/N	*u	vs SW *uuu	Table 4b (Li 14.4.4: 2 examples, but one of them — 'to forget', Siamese <u>luu</u> <sup>1</sup> — is doubtful, as explained under Table 4b.)

We even saw one case in which the Southwestern and Northern Branches appear to agree with each other and to disagree with the Central Branch, forming a discontinuous geographical pattern, since for the most part the area in which Central dialects are spoken lies between the area in which Southwestern dialects are spoken and the area in which Northern dialects are spoken:

1. SW/N	*ii	vs C *aj	Table 1a (Li 16.4: 2 examples)
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Finally we saw three cases in which the Central dialects appear to be transitional, having a Southwestern-like vowel in some words and a Northern-like vowel in others:

1. SW	*uaj	C *uaj, *ooj	N *ooj	Table 2c (Li 17.3: 4 examples)
2. SW	*oo	C *oo, *u	N *u	Table 6b (Li 14.11.3: 3 examples)
3. SW	*o	C *o, *u	N *u	Table 6c (Li 14.8.1: 3 examples)

(For the third case, Li's Lungchow is equivocal but see the Bac Giang forms cited under Table 6c.) I suspect that further research will show that some of the cases listed under other categories above actually belong under this Central-transitional category.

There is also one case which I have to leave out of my schema for the time being because the Central reflex is, unless I am mistaken, not attested, at least not in the material cited by Li and Sarawit. This is the correspondence Southwestern \*ee versus Northern \*ia (Table 2a, Li 14.9.2) which occurs in the word for 'cucumber', Siamese (SW) tɛɛŋ<sup>1</sup>, Po-ai (N) tiŋ<sup>1</sup>, Saek (N) priŋ<sup>1</sup> (Saek from William Gedney, fieldnotes) and also, according to Li, in a word meaning 'small knife used to cut glutinous rice' (Po-ai liip<sup>5</sup>) (\*ia > ii is a regular sound change in Po-ai). (I need to recheck Sarawit and Li and also check other sources to see whether either of these words occurs in any Central dialect.)

There are also, as we have seen, alternations within a single branch or even within a single dialect, facts which both Sarawit and Li ignore. Nonetheless we do not find a totally patchwork distribution of the alternants as might occur if ablaut were the only factor in the history of these vowels; rather we find extensive, even though not complete, match-up of the distribution of vowels with the divisions among the branches of the Tai Family, and often, although not always, a match-up with the division Southwestern/Central versus Northern. But the match-up is not complete, contrary to what Sarawit's and Li's models of stammbaum and regular sound change predict. It appears that several different processes — ablaut, stammbaum-type splitting, areal spreading, dialect borrowing, migration — were all going on at the same time. Careful and extensive research will be necessary to sort everything out.

Until we really understand what is going on, I wonder whether it would not be safer to reconstruct, say, 'fire' as \*vii<sup>A</sup>/\*vaj<sup>A</sup>, with an accompanying note indicating the distribution of the alternants (in this case Northern \*vii<sup>A</sup>, Southwestern and Central \*vaj<sup>A</sup>), rather than attempting a single reconstruction such as Sarawit's \*via:y A4 or Li's \*vɛ i A2.

Keep in mind, moreover, that these correspondences are not all of equal weight. Some occur in several words, others only in one or two. At this point, therefore, the reader may wish to turn to the indicated sections in Li and look at the actual examples.

This completes my comparison and critique of the work of Sarawit and Li. I have had occasion to disagree with both of them in matters of detail but overall I have found, as I expected, that both Li's Handbook and Sarawit's Proto-Tai Vowels provide a complete (or very nearly complete), clearly organized, and accurate list of the vowel correspondences among the Tai languages. Both books are enjoyable to use because so much work and thought has gone into them. This praise will come as no surprise to anyone in the case of Li's Handbook, which has become a standard reference work for scholars working on, or making reference to, Tai. Sarawit's dissertation is, I think, not quite as well known, but I find it to be comparable in scope and quality to Li's Handbook and I hope that this paper will make more scholars aware of this second major source-book for Tai linguistics. Li gives more examples of each



correspondence than Sarawit does, but Sarawit gives the reflexes of each correspondence in more dialects than Li does. Used together, Sarawit and Li provide a detailed picture of Tai phonology.

## NOTES

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<sup>1</sup>Throughout this paper I will use the International Phonetic Alphabet (IPA) for the transcription of modern dialects and for my own reconstructions of Proto-Tai. In citing Sarawit's and Li's reconstructions of Proto-Tai I will retain their original transcriptions. The chief differences between their usage and IPA are as follows:

- (1) Sarawit's  $\dot{\text{z}}$  = Li's  $\ddot{\text{i}}$  = IPA  $\text{u}$  (high back unrounded vowel)
- (2) Sarawit's  $\text{y}$  = Li's  $\text{j}$  = IPA  $\text{j}$  (palatal semivowel)

To represent long vowels, Li and I double the vowel symbol (ii, ee, etc.) and Sarawit uses a colon (i:, e:, etc.).

Note also that I use the recently introduced IPA symbol  $\text{y}$ , which represents the semivowel corresponding to  $\text{u}$ . Sarawit, following William Gedney, writes this semivowel as  $\text{y}$ .

In my transcription of modern dialects, superscript numerals denote tones. (The phonetic values of these numerals are different for each dialect and are given in the various sources cited.) The reconstructed tones of Proto-Tai appear in my transcription as superscript letters A, B, C, and D and in Sarawit's and Li's transcriptions as the letters A, B, C, and D followed by numerals: A1, A2, etc. These numerals are a redundant indication of the phonation type of the initial consonant, inserted because the phonation type of the initial affects the development of the tone in modern dialects and might (although this is not certain and there are, indeed, reasons for suspecting otherwise) already have conditioned allotones in Proto-Tai. Thus, for example, in Li's transcription Proto-Tai  $\text{*ywan A2}$  'smoke', A denotes the tone, and 2 reminds us that the initial consonant  $\text{y}$  was voiced.

<sup>2</sup>Normally I prefer to use the name Central Thai rather than Siamese, since Central Thai ( $\text{thaj}^1 \text{klaaŋ}^1$ ) is the name which speakers of the language use themselves. However, since I will frequently refer to the Central Branch of the Tai Family, and since Central Thai or Siamese does not belong to the Central Branch but rather to the Southwestern Branch, I fear it would cause disastrous confusion were I to use the name Central Thai for Siamese. Therefore I will follow the practice of most writers on comparative Tai, including both Sarawit and Li, and use the name Siamese.

<sup>3</sup>The Kam Muang form, and one alternate form in certain varieties of Lue, do not have the etymologically corresponding tone. This is a separate, though very likely related, problem.

<sup>4</sup>When I presented this paper at the Sino-Tibetan Conference, William Gedney said that for this reason he would now prefer to replace his term Ablaut by some more neutral term.

<sup>5</sup>In a few poorly known Northern dialects the word for 'nine' seems to be something like *kjuu* or *khjuu* (Li 1977:189, note 13; Ting 1929:62). The medial -j- might go back to Li's Proto-Tai medial but I suspect rather that these dialects have simply reborrowed the word from modern Chinese dialects.

<sup>6</sup>Confer in particular Lungchow *keew*<sup>6</sup> 'to twist' with tone and vowel corresponding regularly to Po-ai *kweew*<sup>4</sup> 'eddy'. If, as Li thinks, these words are related to Lungchow *kiiw*<sup>5</sup> 'surround' and Po-ai *kweew*<sup>3</sup> 'to twist', then the Lungchow forms exemplify an *\*iaw ~ \*eew* alternation within Lungchow (reflected in modern Lungchow as *iiw ~ eew*) and we also have a tonal alternation in both Lungchow and Po-ai (the tonal alternation would reflect a Proto-Tai alternation not in tone but rather in voiced versus voiceless initial consonant).

All this may be summarized in the following table:

		Tone	
		C-voiceless	C-voiced
Vowel {	*iaw	Si <i>kiaw</i> <sup>3</sup> 'twist' LC <i>kiiw</i> <sup>5</sup> 'surround' PA —	Not attested.
	*eew	Si — LC — PA <i>kweew</i> <sup>3</sup> 'twist'	Si — LC <i>keew</i> <sup>6</sup> 'twist' PA <i>kweew</i> <sup>4</sup> 'eddy'

<sup>7</sup>The town of T'ien-pa is in Shui-ch'eng County in northwestern Kweichow Province. Li (page 55) refers to this dialect as Shuich'eng. Moskalev (1970) discusses the synchronic phonology of T'ien-pa.

<sup>8</sup>Sarawit's example of Proto-Tai \*e before a labial is *\*gem A4* 'salty' (pages 430, 441). (Another example, *\*cep DS2* 'hurt', page 442, is [according to Sarawit, and according to Li, page 165, note 7] not found in the Northern dialects and therefore may not go back to Proto-Tai.) In Po-ai, 'salty' is *csɛm*<sup>2</sup> (Li, section 10.3, #13 [page 199]), which is puzzling because the Po-ai reflexes of \*e and other short vowels are normally short. For more on the reflexes of Proto-Tai \*e (> Sarawit's Proto-Northern-Tai \*ɛ) in Northern dialects see Sarawit, pages 335-340, 402, 430.

<sup>9</sup>See the second comment to Table C in the first part of this paper.

<sup>10</sup>I will also need to reread Sarawit more carefully to see if she explains why she posits initial *\*ny-*, rather than simply *\*n-*, in this word.

<sup>11</sup>For 'bear' Saek also has *muaj*<sup>2</sup> and *mvj*<sup>2</sup>. These forms are not given in Gedney (1972) but they are recorded in Gedney's fieldnotes. These forms suggest that the treatment of the Saek word for 'bear' in Gedney (1972) and in this paper is oversimplified and that this topic deserves further research.

<sup>12</sup>I am indebted to André Haudricourt for the suggestion that I add the number

of examples which Li lists for each correspondence. Li actually lists four examples of SW/C \*ii vs N \*aj, but his fourth example, 'comb', is probably invalid: see the discussion of the fourth correspondence in Table 6b.

<sup>13</sup>Compare 17.1, #6 (page 294) with 10.1, #28 (pages 187 and 190): Siamese kiaw<sup>3</sup> 'to wind around, twist', Lungchow kiiw<sup>5</sup> (< \*kiaw<sup>5</sup>) 'to surround', vs Po-ai kweew<sup>3</sup> 'to wind around, twist'. See footnote 6.

<sup>14</sup>Li lists seven examples, but I am not counting his sixth, 'to wind around, twist', because the Lungchow form, keew<sup>6</sup>, has the wrong tone. The Lungchow cognate may be, rather, kiiw<sup>5</sup> 'to surround' (Li, section 10.1, #28, pages 187 and 190) which is an example of SW/C \*iaw vs N \*eew. See footnotes 6 and 13.

Footnote 1:

This last sentence should read:                   some Central Tai dialects  
also have \*huuw<sup>C</sup>, for example  
Bac Giang huuw<sup>5</sup> 'permit', 'give' (in compounds meaning  
    'lend', 'entrust', 'repay'), rhyming with ɬuuw<sup>2</sup>  
    'to buy' and not with baɯ<sup>1</sup> 'leaf' (Freiberger and  
    Bé 1976:174, 233, 138).  
Lungchow huuw<sup>5</sup> 'to give', rhyming with ɬuuw<sup>6</sup> 'to buy' and  
    not with baɯ<sup>1</sup> 'leaf' (Li 1977:250, 289, 265).  
Nonetheless, since the Southwestern dialects which have \*huuw<sup>C</sup>  
are geographically separated from the Central Tai dialects  
which have \*huuw<sup>C</sup>, and since (as far as I know) there is no  
particular reason to believe that there was ever any special  
contact between these two groups of dialects, I think we can  
still use 'give' as an example of vocalic variation within  
a single branch.

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