

10 *A comment on Gedney's proposal for another series of voiced initials in Proto Tai*

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1 Introduction

In a paper entitled 'Evidence for another series of voiced initials in proto-Tai', Gedney (1989 [1979]) posited a second series of voiced initials for Proto Tai (PT) to account for roughly fifty-one forms with a pattern of initial and tonal correspondences otherwise unique within Tai. Although the anomalous nature of these forms must also have been apparent earlier to Li, in Li's *Handbook* (1977) the majority of these forms are simply reconstructed with voiceless aspirated stops for Southern Tai (that is, the Southwestern (SWT) and Central Tai (CT)), with Li frequently appending a note that, in Northern Tai (NT), the forms are reconstructed, not with a voiceless onset, but with a voiced onset.

Table 1 illustrates the patterns noticed both by Li and by Gedney. The first column lists the five tone classes reconstructed for Proto Tai (PT), which are indicated by A, B, C, DS, and DL. The final syllable in tone classes A, B, and C ends either in a vowel or a sonorant, constituting what Tai scholars term 'live' syllables. The final syllables in tone classes DS and DL end in a stop, constituting what Tai scholars term 'dead' syllables, with the DS occurring with short vowels and the DL with long vowels.

The primary focus of interest in Table 1 is the pattern of tonal variation for **B* forms. In the Southern Tai dialects, the tones of these forms pattern as if they had had PT voiceless obstruent initials; in the Northern Tai dialects, these forms pattern as if they had had PT voiced obstruent initials. Thus, in Siamese, a dialect of Southwestern Tai, and in Lungming, a dialect of Central Tai, tones of the **B* forms pattern tonally with the voiceless aspirated **ph*-series, while in Saek and Yay, both Northern Tai dialects, the **B* forms pattern tonally with the **b*-series. This tonal alternation was obvious to Li, who reconstructed the majority of these forms with voiceless aspirated stops in his *Handbook* (1977), but with an appended note that indicated that in NT these forms were reconstructed with voiced obstruents.

Table 1: Gedney forms: the tones and the initials

PTai tone	PTai Initial	Siamese (SWT)	LM (CT)	Saek (NT)	Yay (NT)
*A	* <i>ph-</i>	<i>ph- 5</i>	<i>ph- 1</i>	<i>ph- 2</i>	<i>p- 1</i>
	* <i>B-</i>	<i>ph- 5</i>	<i>ph- 1</i>	<i>ph- 4</i>	<i>p- 4</i>
	* <i>b-</i>	<i>ph- 1</i>	<i>p- 4</i>	<i>ph- 4</i>	<i>p- 4</i>
*B	* <i>ph-</i>	<i>ph- 2</i>	<i>ph- 2</i>	<i>ph- 6</i>	<i>p- 2</i>
	* <i>B-</i>	<i>ph- 2</i>	<i>ph- 2</i>	<i>ph- 5</i>	<i>p- 5</i>
	* <i>b-</i>	<i>ph- 3</i>	<i>p- 5</i>	<i>ph- 5</i>	<i>p- 5</i>
*C	* <i>ph-</i>	<i>ph- 3</i>	<i>ph- 3</i>	<i>ph- 3</i>	<i>p- 3</i>
	* <i>B-</i>	<i>ph- 3</i>	<i>ph- 3</i>	<i>ph- 6</i>	<i>p- 6</i>
	* <i>b-</i>	<i>ph- 4</i>	<i>p- 6</i>	<i>ph- 6</i>	<i>p- 6</i>
*DS	* <i>ph-</i>	<i>ph- 2</i>	<i>ph- 3</i>	<i>ph- 4</i>	<i>p- 2</i>
	* <i>B-</i>	<i>ph- 2</i>	<i>ph- 3</i>	<i>ph- 6</i>	<i>p- 1</i>
	* <i>b-</i>	<i>ph- 4</i>	<i>p- 4</i>	<i>ph- 6</i>	<i>p- 1</i>
*DL	* <i>ph-</i>	<i>ph- 2</i>	<i>ph- 2</i>	<i>ph- 6</i>	<i>p- 2</i>
	* <i>B-</i>				
	* <i>b-</i>	<i>ph- 3</i>	<i>p- 5</i>	<i>ph- 5</i>	<i>p- 5</i>

It remained for Gedney (1989a), however, to fully recognise the problem that these forms presented. He carefully documented the evidence, noting as Li had that the tones of the Southern Tai reflexes suggest earlier voiceless obstruents, while the initial and tonal patterns of the Northern Tai reflexes suggest earlier voiced obstruents. Then, he addressed the problem, which is, of course, that PT already has, for instance, a well-documented series of voiceless unaspirated stops, another series of voiceless aspirated stops, a series of voiced stops, and so on. If the assumption is made that the new series is inherited, the problem is how to account for the additional correspondence patterns. Gedney (1989a) tentatively suggested accounting for this new correspondence pattern by positing another set of PT voiced initials. As PT already has a rather rich array of obstruents, the phonetics of this new series are a problem, as Gedney acknowledges by using the phonetically indeterminate symbols **B*, **G*, **D*, **Z*, and so on to represent the various members.

In place of Gedney's internal account, this paper proposes that the fifty-one forms in question were borrowed. The evidence is complex but compelling. Within the Tai dialects, there is internal evidence that these forms are borrowed. Beyond Tai, there is evidence that many of these same forms occur in other language subgroups; in those related to Tai, the evidence often suggests that the corresponding forms are borrowed. At least two-thirds of the forms have counterparts outside of Tai-Kadai and in many cases the counterpart is not just present but reconstructs in the other language family; this is evidence that the corresponding forms are native to those language groups. Further, the fact that the

preponderance of forms occurs outside of the Tai-Kadai family is itself an indication that the Tai forms are borrowed into Tai.

2 The data

It is important to note that no attempt has been made to be definitive. There is no doubt whatsoever that, for example, more Tibeto-Burman counterparts could be discovered with additional work. Similarly, it is likely that more Chinese counterparts could be discovered by searching with greater care. The paper would certainly have been improved in terms of clarity had the Karlgren forms been systematically replaced by the Baxter forms. Nonetheless, the evidence is overwhelming.

The data for this paper come from a multitude of sources. For the Tai languages, the base comes from Gedney (1989). Anyone who has read Gedney's work is familiar with the care and meticulousness that he assembles his data. That material is supplemented by other works by Gedney, specifically his dictionaries of Lungming (1991a), Yay (1991b), and Saek (1993). The reconstructions of PTai follow Strecker (1983), who first suggested combining Li's (1977) initials with Sarawit's (1973) vowels and then critiqued both analyses. For the Tai-Kadai, the reconstructions of the various subgroups are examined: for Proto Be, the basic sources are Hansell (1988) and my own notes; for Proto Kam-Sui (PKS), the basic source is Thurgood (1988), a work that incorporates Li (1965), supplemented by other forms that needed to be examined specifically for this paper; for the Proto Hlai, that is, the Li languages of Hainan, the basic source is Thurgood (1991), a work that owes a great deal to Matisoff (1988); for the Chinese component of Sino-Tibetan, the main source has been Karlgren (1923, 1957), but also examined were Baxter (1992) and Li (1976). And, for the Tibeto-Burman component of Sino-Tibetan, the major source was Benedict (1972), with various other sources used for subgroups: for Proto Lolo-Burmese (PLB) Burling (1967), Matisoff (1972), Bradley (1979), and Thurgood (1977) were used, for so-called Northern Naga French (1983) was used. For Proto Austronesian, Blust's files and reconstructions were used, sometimes supplemented by personal communication. For the Malayic subgroup, Adelaar (1992) was used and for Proto Chamic (PC), Thurgood (1999) was used. For the Mon-Khmer (MK) branch of Austroasiatic several reconstructions of subgroups were used: Proto South-Bahnaric (PSB: Blood 1967, 1968, 1974 [who reconstructs Proto Mnong, but uses a data base broad enough to make it equivalent to PSB most of the time]; Efimov 1987), Wa (Diffloth 1980), Proto North-Bahnaric (PNB: Smith 1972), and Proto Katuic (Thomas 1967; Peiros 1996).

Each of the sets has been assigned a number with the numbers in the text corresponding to the numbers in the tables.

3 The internal evidence

The most obvious internal evidence that these forms are borrowings is the very alternations in tones and initials to identify this particular set of forms. *Unless another series of obstruents can be reconstructed for PT*, these forms are irregular in PT: these forms do not fit with any of the series reconstructed thus far. That is, if they are reconstructed with voiceless initials, they are irregular in NT; if they are reconstructed with voiced initials, they are irregular in ST. It was because of this problem, of course, that Gedney proposed reconstructing a new series of obstruents for these forms in the first place.

At this point, it is imperative to emphasise that just the fact these fifty-one forms manifest a certain regularity in their correspondence patterns does not ensure that they are native forms. It is common for borrowings to exhibit regular correspondence patterns within the recipient language. To cite an obvious example (and ignoring other evidence that the more Latinate forms are borrowed), within Germanic the initials of the English borrowed forms *penta-*, *pater-*, *Pisces*, and *pecuniary* correspond as nicely as do the inherited *five*, *father*, *fish*, and *few*, at least upon first inspection. Thus, the existence of regular correspondence patterns within a subset of the vocabulary is interesting but by itself tells little about the ultimate origins of the forms, aside from indicating that, if the forms are borrowed, most of them must have been borrowed before the breakup of ST and NT.

Beyond the simple alternation in the tonal patterns that correlates with the split between ST and NT, there are numerous other pieces of evidence within Tai suggesting the forms are loans, some relatively weak, some much stronger. One weak indicator is the fact that the pattern involves only a small number of forms, some fifty-one or so. However, the small number by itself proves little. After all, the so-called third tone reconstructed for Lolo-Burmese is only manifested by some fifty or so forms and is an internal development within Tibeto-Burman.

More telling are the indications of irregularities within the examples themselves. Given that many of the forms manifesting these patterns are also found outside Tai and, for that matter, outside of the Tai-Kadai family, irregularities in the forms within Tai are what one might associate with borrowing, particularly late borrowing. It is simply a basic part of methodology to assume that, if a form occurs in more than one language family and corresponds regularly within one family but irregularly within the other, it was borrowed into the family in which it behaves irregularly. While in many cases it remains to be proven that these forms behave regularly outside of Tai-Kadai, it is evident that a number of these forms behave irregularly within Tai-Kadai.

Both Li and Gedney raised questions about the internal correspondences of a number of the forms. In Table 2, the forms within Tai itself show various irregularities, all of them serious enough to disqualify the form as an example of the pattern. (39) The form **Goin* A/B -t, in addition to minor problems, has a basic tonal discrepancy; it is tone A in Southern Tai, but tone B in NT. (40) The form **Fia* A, with the range of meanings including 'braid; harrow; part of loom' apparently has irregular initials, tones, and vowels in its various manifestations. The picture is complicated by both its unclear semantics and the fact that it is not widely attested. Gedney (1989a:247) suggested this etymon may actually be two etyma which have fallen together in some dialects. (41) The form **Giaw* B is too weakly attested to be considered a serious exemplar of the pattern. (42) On semantic grounds, the form **Zii* A is a likely borrowing but it is so marginally attested that, in any case, it is a very weak exemplar of the pattern. (43) The form **ZaY* A -it shows irregularities in the vowel length of its Siamese form (signified by -l), and in its initials (signified by -i), in its tones (signified by -t). Further, as Li (1977:151) noted, the 'NT forms seem to go back to PT **gw-* and may not be directly related'. (44) The form for 'line; row' has an irregular tone in Saek, as Gedney notes, but is otherwise okay. (45) The form **Zuam* C is not even attested in NT. It is only included by Gedney because it appears to have had an originally voiced initial in Kam-Sui. (46) In a similar way, the form **Piaa* B/C -t is tonally irregular, having tone B reflexes in ST but tone C reflexes in NT. (47) The form **Gooj* A is irregular in both its tones and its vowels. (48) Finally, the form **Zaaw* C -i for 'pole' has an irregular initial; the ST forms reconstruct with a **z-*, but the NT forms in part reflect PT **ʃ-*

and in part *z-. (49) The form *Gwaa A -t has, as Li (1977:238) noted, 'irregularity in the initial'; it also has, as indicated by my -t, irregularities in its tonal reflexes (The superscripted x indicates that, quite apart from this analysis, I had determined that the form was originally a loan into PT. (50) The form for 'ripe; cooked' has irregularities in its initial correspondences. (51) Aside from the word being marginally attested, the final of the form for 'pole; staff' is irregular.

Table 2: Internal problems within Tai

	PTai	Siamese (SWT)	Lungming (CT)	Saek (NT)	Yay (NT)	
39.	*Goin A/B -t	khɔɔn ⁵	—	—	kuan ⁵ -t	'log'
40.	*Fia A	fia ⁵	—	via ¹ -t / ⁴ ; phia ² -t; phwa ² -t	—	'to braid; loom, part of; to harrow'
41.	*Giaw B	—	—	—	—	'cross the arms'
42.	*Zii A	sii ⁵	—	—	si ⁴	'fifth earthly branch'
43.	*ZaY A -it	saay ⁵	saay ¹ -l	svɣ ⁴ 'time'	saay ⁶ -t 'afternoon'	'late; in the morning'
44.	*Deew A	thɛɛw ⁵	tweew ⁴	thɛɛw ² -t	—	'line; row'
45.	*Zuam C	suam ³	suum ³	—	—	'room; compartment'
46.	*Piaa B/C -t	phaa ³	—	phia ⁵	pwa ⁵	'cloth, clothing'
47.	*Goon A	(khraŋ ¹)	—	reeŋ ¹ -t	koŋ ⁴ -v	'to moan'
48.	*Zaaw C -i	saw ³	saaw ³	yaaw ⁶ -i	θaaw ⁶ -i	'pole'
49.	x*Gwaa A -t	khwaa ⁵	saa ¹	khwaa ⁴	kwa ⁴	'right [hand]'
50.	*Zuk D -i	suk ²	sok ³	suk ⁶	suk ¹	'ripe; cooked'
51.	xDij C -v	—	—	—	—	'pole; staff'

These purely internal considerations eliminate roughly a quarter of the proposed sets from consideration. Remembering that there were only fifty-one or so manifestations of the pattern, this reduction in the number of attested sets is of concern. It is also instructive that most of these irregularities were noted by Li, by Gedney, or by both.

4 The wider Tai-Kadai evidence

An examination of counterparts in other subgroups of Tai-Kadai (Proto Be, Proto Kam-Sui, and Proto Hlai) shows that many of the corresponding forms are, within one or more of these subgroups, demonstrably borrowed, as is evident either from tonal patterns, initial patterns, or both.

The evaluation of wider Tai-Kadai evidence depends heavily on the reconstructions which have already been done of the various subgroups. Although much remains to be done before the reconstructions of any of these languages can be said to be fully understood, the basic relationships are now understood. For a large number of the Gedney forms, wider Tai-Kadai shows evidence that the forms are borrowings. (5) The form 'to rake' has a reconstruction in KS that makes it evident that it is a loan. (14) The form for 'cooked rice' has an irregular initial, final, and tone, making it a loan. (15) The form 'sharpen; to grind' has an irregular

tone and initial in PBe. (19) The form for ‘sugar’ is unreconstructable in PHLai, due to its irregularities. In Hlai, it has an irregular final and tone; in fact, the final is a final that is restricted to loans. (22) The form for ‘ten’ has an initial in PKS that is restricted to loans. (23) The form for ‘thick; dense’ has an irregular final and is not reconstructable in KS. (26) The form for ‘carry; hold’ occurs in KS, but the irregular vowel correspondences suggest that it was borrowed into KS. (27) For ‘arrive, reach’, aside from the vowel of the PBe form, the forms in the individual languages look fine, but any cross-language examination will run into serious problems, that is, the initials vary across languages in a way that it is unlikely to be reconstructable at a higher level. (28) The form for ‘bean’ is a borrowing in KS. (29) The form for ‘bowl; cup’ has an irregular final in PBe. (30) The second form for ‘bundle’ has an initial in KS that appears to be restricted to borrowed words. (31) The form for ‘chopsticks’ within both PBe and PHLai has as of yet no obvious internal problems, but the problem will come in attempting to fit these forms into a reconstruction of Proto Tai-Kadai. (32) The form for ‘eggplant’ is a borrowing into KS and Hlai. (33) The KS reflexes of the form **Duaŋ* B ‘weigh’, **daŋ⁵*, indicate a voiced onset while the tonal reflexes indicate a voiceless onset. Thus, the form was borrowed into KS. (34) The form for ‘bank (paddy)’ has variant tones in PBe, but otherwise has no problems. (35) For the form **Gut* D -t ‘dig, hollow out’, the PKS form is a borrowing and the final of the PHLai suggests it is a borrowing. Gedney speculated that this word would sometimes fall together with a distinct word meaning **khuut* D ‘scrape, grate’ and that two words are involved. Gedney is clearly right, with both words showing up in PHLai and in Sino-Tibetan as distinct etymon. (36) The Kam-Sui (KS) reflexes of the form **χəy* C ‘excrement’, **ke⁴* -ti, indicate a voiced initial but the tonal reflexes indicate a voiceless initial. (37) The KS reflexes of the form ***Giaay* B, **ki^{2/6}* -tif, indicate a voiceless initial but the tonal reflexes indicate a voiced initial. Thus, the word is borrowed. The form ‘ride on horseback’ is irregular throughout Tai-Kadai. (38) The word for ‘ear’ is unique, both in PTai and elsewhere. Thus, it has no value in establishing these patterns. In fact, its only potential value is as an exemplar of an already established pattern. That is, if the analysis is established, the analysis might be used to explicate ‘ear’, but not the other way around. (47) The form for ‘to moan’ is quite irregular in PHLai. (51) The form for ‘pole’ is very irregular in KS. (50) The form ‘ripe; cooked, done’ has a PKS initial that is only found with loanwords.

Table 3: Tai-Kadai counterparts

	PTai	PBe	PKS	PHlai	
2.	<i>*Gum</i> A	<i>*xɔm²</i>	—	—	‘pit; ditch’
3.	<i>*həəŋ</i> B	—	<i>*hŋla:ŋ⁵</i>	—	‘young [chicken]’
5.	<i>*Graay</i> B	—	<i>**khra:i⁵</i>	—	‘to rake’
8.	<i>**Gun</i> -t	—	—	<i>*kho:n³</i>	‘to bundle’
12.	<i>*Dək</i> D t?	<i>*hɔk⁸</i>	<i>*dak⁸</i>	—	‘male [animal]’
14.	<i>*χaw</i> C	—	<i>*hau⁴</i> -fit	—	‘cooked rice’
15.	<i>*Fan</i> A	<i>*vɔn^{1/3}</i> -it	<i>*gwan²</i>	<i>*ka:n²</i>	‘sharpen, to; grind’
19.	<i>*Diaŋ</i> A	<i>*l/han²</i>	<i>*da:ŋ²</i>	<i>*tha:ŋ³</i> -tf	‘sugar’
20.	<i>*χəm</i> A -t	<i>*kam²</i>	<i>*kam¹</i>	<i>*xuam¹</i>	‘bitter’
21.	<i>*Fon</i> B	<i>*pfoŋ⁴</i> f?	—	<i>*pu:ŋ³</i>	‘dust; dusty’

22.	*Zip D -i	*tvp ⁸ v?	*zup ⁸	—	'ten'
23.	*Dii B	—	^x dai ⁴ -f	—	'thick, dense'
24.	*Dəm A	*həm ²	*thlam ¹	*thuam ³	'pond, pool; dam'
25.	*χəp D	*kap ⁷	—	—	'bite; chew'
26.	*D# A -i	—	^x day ² -v	—	'carry; hold'
27.	*Dəŋ A	*ɕəŋ ¹	*taŋ ¹	*ɕa:n ³	'arrive, reach'
28.	*Dia B	*həu ⁴	^x dau ⁶ -f	*hñ ² au ¹	'bean'
29.	*Duay C	*ɕəu ¹ -f	*du:i ⁴	—	'bowl, cup'
30.	*Zuk D -i	—	*dzuk ⁸	—	'to bundle'
31.	*D# A	*sú ⁴	—	*thi:p ⁷	'chopsticks'
32.	*Gia A	*kio ⁴	^x gia -fit	*ku- -it	'eggplant'
33.	*Duaŋ B	*səŋ ³	^x daŋ ⁵	—	'weigh'
34.	*Faŋ B	*pwiaŋ ^{1/4}	*pwaŋ ⁵	—	'bank [paddy]'
35.	*Gut D -t	*ku ⁸	^x kwət ⁷	*hn ² ut ⁷ ?	'dig, hollow out'
36.	*χəy C	*kai ⁴	^x ke ⁴ -ti	*xa:i ³	'excrement'
37.	*Giaay B	*xi ⁴ -ft	^x ki ^{2/6} -tif	—	'ride on horseback'
38.	*h̄rwa A	*sa ¹	*khra ¹	*ly ² ai ¹	'ear'
41.	*Giaw B	*khiew ⁴	—	—	'cross the arms'
44.	*Deew A	—	—	*ɕ ² o:i ²	'line, row'
46.	*Piaa B/C -t	*pfa ³	—	—	'cloth, clothing'
47.	*Gooŋ A	*tsaŋ ²	—	^x kaŋ ¹ -iv	'to moan'
48.	*Zaaw C -i	*həu ¹	—	—	'pole; pillar'
49.	*Gwaa A -t	—	*hwa ¹	—	'right [hand]'
50.	*Zuk D -i	—	*zuk ⁸	—	'ripe; done; cooked'
51.	^x D# C -v	*həŋ ³	^x gjuŋ ⁴ -iv	—	'pole; staff'

5 Counterparts in other language families

Finally, when one looks beyond Tai-Kadai, an inordinate number of the fifty-one or so forms are found in Chinese (and, often, in Tibeto-Burman as well), in Austronesian, or in Mon-Khmer languages. In fact, around two-thirds of the suggested forms displaying the critical correspondence patterns in Tai have counterparts in such non-Tai-Kadai languages.

The Old Chinese forms are of particular significance. The preponderance of forms from Chinese indicates that Chinese was a major donor to the Tai languages, a finding that is certainly not new. It is significant that, of the fifty-one forms being considered, thirty-four have Chinese counterparts. Notice that the direction of borrowing must overwhelmingly, although not necessarily exclusively, be from Chinese into Tai. The possibility, of course, exists that some forms were borrowed in the other direction, that is, from Tai into Chinese.

Table 4: Old Chinese (OC) forms

	PTai (GWT)	GSR	Karlgren OC	Baxter OC	Mandarin	
2.	* <i>Gum</i> A	AD 378	* <i>k'âm</i>	—	—	‘pit; ditch’
8.	* <i>Gun</i> -t	231j	* <i>d'ïwan</i>	—	<i>kǔn</i>	‘to bundle’
9.	* <i>Zək</i> D	851a; 877q	* <i>djĕk</i> ; * <i>d'iek</i>	—	—	‘enemy; war’
10.	* <i>Dwak</i> D	—	—	Li (1976) * <i>thjuk</i> ‘to butt’	<i>jǐzhòng</i>	‘hit target; correct; cheap’
11.	* <i>DII</i> A -i	315a	* <i>tâd</i>	* <i>tats</i>	<i>dài</i>	‘hold; carry’
12.	* <i>Dək</i> D t?	961h’	* <i>d'ək</i>	* <i>dIk</i>	<i>gōngde</i> ; <i>tè</i>	‘male, young [animal]’
13.	* <i>Puu</i> C	101a; 102a	* <i>pĭwo</i> , * <i>b'ïwo</i> ‘father’	—	<i>gōng[jǐ]</i>	‘person; male’
14.	* <i>χaw</i> C	AD 601	* <i>χâu</i> ‘a kind of rice’	—	<i>mǐ</i>	‘rice’
17.	* <i>Paa</i> B	25o	* <i>p'wâ</i> ‘break’	* <i>phajs</i>	<i>pò</i>	‘split, hew’
18.	* <i>Duam</i> B -l	614c; 643g	* <i>g'əm</i> ‘submerge; flood’	—	<i>zhǎngcháo</i>	‘flood; submerge; soak’
19.	* <i>Diaŋ</i> A	AD 973	* <i>d'âng</i>	—	<i>táng</i>	‘sugar’
20.	* <i>χəm</i> A -t	49u	* <i>k'o</i>	* <i>kha?</i> ‘bitter’	<i>kǔ</i> ; <i>suān</i>	‘bitter’
21.	* <i>Fon</i> B	374a	* <i>d'jĕn</i>	* <i>drjĭn</i>	<i>chén</i>	‘dust; dusty’
22.	* <i>Zip</i> D -i	686a	* <i>d'əp</i>	—	<i>shǐ</i>	‘ten’
23.	* <i>Dii</i> B	10831	* <i>d'jōg</i>	—	<i>chóumǐ</i>	‘thick, dense’
24.	* <i>Dəm</i> A	AD 969	* <i>d'âm</i>	—	<i>tán</i>	‘pond; pool’
25.	* <i>χəp</i> D	660f	* <i>tsəp</i> ‘bite’	—	<i>yǎo</i> ; <i>jiáo</i> ; <i>dīng</i>	‘bite; chew’ cf. ‘hold in jaws’
28.	* <i>DIIa</i> B	118ac	* <i>d'u</i>	* <i>dos</i>	<i>dòu</i>	‘bean’
29.	* <i>Duay</i> C	116a	* <i>tu</i>	* <i>to?</i>	<i>dǒu</i>	‘bowl, cup’
30.	* <i>Zuk</i> D -i	AD 900	* <i>sĭwok</i>	—	<i>kǔn</i>	‘to bundle’
31.	* <i>Dii</i> A	45j	* <i>d'jō</i>	—	<i>zhù</i> ; <i>kuàizi?</i>	‘chopsticks’
32.	* <i>GIIa</i> A	AD 342	* <i>g'ia</i>	—	<i>qiézi?</i>	‘eggplant’
33.	* <i>Duaŋ</i> B; * <i>jəŋ</i> B	894g	* <i>t'jəŋ</i>	Li (1976) * <i>thjəŋ</i> ; * <i>thjəŋh</i>	—	‘weight; weigh down’

34.	* <i>Faŋ</i> B	181k; 389j; 390a	* <i>b'wân</i> ; * <i>piě̃n</i> ; * <i>b'ïě̃n</i>	—; * <i>pjin</i> ; * <i>bjin</i>	<i>bîn</i> ; <i>pîn</i>	'bank of paddy; shore'
35.	* <i>Gut</i> D -t	496p	* <i>k'wət</i>	* <i>khut</i>	<i>jé</i> ; <i>wā</i>	'dig, hollow out'
36.	* <i>χəy</i> C	561d	* <i>χiər</i>	* <i>xJi</i> [?]		'excrement'
37.	* <i>Giaay</i> B	1u	* <i>g'ia</i> ; * <i>g'jię</i>		<i>qí</i>	'ride on horseback'
38.	* <i>Hrwa</i> A	981a	* <i>niə̃g</i>	* <i>nj?</i>	<i>ěr</i> ; <i>èrduo</i>	'ear'
46.	* <i>Piaa</i> B/C -t	102j	* <i>pwo</i>	—	<i>jǐn</i> ; <i>bù</i>	'cloth; clothing'
47.	* <i>Gooŋ</i> A	AD 69	* <i>ng</i>	—	<i>shēnyín</i>	'to moan'
48.	* <i>Zaaw</i> C -i	129h	* <i>d'iu</i>	—	<i>zhùzǐ</i>	'pole'
49.	* <i>Gwaa</i> A -t	995i	* <i>giüg</i>	—	<i>you</i>	'right [hand]'
50.	* <i>Zuk</i> D -i	1026a	* <i>dìòk</i>	—	<i>shú</i>	'ripe; cooked'
51.	* <i>Dij</i> C -v	722b	* <i>d'iang</i>	—	<i>dòng</i>	'pole, staff'

Several of the forms in Table 4 merit further comment. (18) The form for 'flood; submerge; soak' is apparently a member of a word family. In any case, it looks to be borrowed. (20) The form for 'bitter' is intriguing because of the final *-m*. As Table 4 and Table 5 (Tibeto-Burman counterparts) both show, the Sino-Tibetan form for 'bitter' ends in a vowel, not with a final *-m*. Precisely where the final came from is not clear. (25) The forms for 'bite; chew' and various other related etyma are probably not, despite their presence in Chinese, Tibeto-Burman, and Tai, original to any of these groups, but rather, as Table 6 (Mon-Khmer counterparts) shows, are probably ultimately Mon-Khmer borrowings. This should not be too surprising as Austroasiatic speakers (Mon-Khmer) inhabited much of mainland Southeast Asia before the arrival of the Sino-Tibetan or Tai speakers. Various other forms in the table might also be originally Mon-Khmer, rather than Chinese, but in most cases it was probably from Chinese that the Tai speakers borrowed the forms. (24) The form for 'pool; pond' has a Chinese counterpart, but it also seems to have a Malay counterpart in *kolam*, which apparently has a Tamil origin.

Just from the forms in Table 4, it is evident that although some of the borrowing might have gone the other way, the bulk of the borrowings went from Chinese to Tai. The argument that a form went from Chinese to Tai is particularly strong when a form is also reconstructed for Tibeto-Burman subgroups. (25) For the forms for 'bite; gnaw', it is possible that these are ultimately of MK origin. (35) For the form for 'dig; hollow out' there is a good PTB cognate, and, as Gedney suspected, a separate form for 'scrape; grate' with the shape **khut*?

A caveat is in order: only a handful of the Tibeto-Burman forms were examined here. Thus, no particular significance should be attached to gaps in the Tibeto-Burman data. If the direction of potential borrowing were more of a question, more time and energy would have gone into identifying TB counterparts.

The oldest layer of borrowings should be MK as Austroasiatic speakers are the oldest speakers found in the region (Table 6). (5) The form for 'to rake', if it is related, has undergone some changes in Tai. (19) The form for 'sugar' is also found in Chinese. Thus, it is not clear what the donor language for the Tai form was. What is clear is that 'sugar' was borrowed into Tai-Kadai. (25) MK is the apparent source for 'to bite'. It reconstructs with

basically the same form in four subgroups of MK. (28) The form for ‘bean’, which also occurs in Chinese, appears to be ultimately of MK origin. (31) The form for ‘chopsticks’ appears in MK, although it is quite possible that this reflects an ultimately Chinese origin.

Table 5: Tibeto-Burman counterparts

	PTai	PNN (French)	WT	PLB	PTB (PKB)	OC (Karlgrén)	
7.	* <i>Gɿay</i> A	—	—	—	* <i>krwiy</i>	—	‘son-in-law’
20.	* <i>χəm</i> A -t	* <i>C-kha</i>	<i>kha</i>	* <i>ka</i> ²	* <i>ka</i>	* <i>k'o</i>	‘bitter’
21.	* <i>Fon</i> B	<i>pan</i> ¹ (Konyak)	—	—	—	—	‘dust, dusty’
22.	* <i>Zip</i> D -i	—	—	—	* <i>gip</i>	* <i>d':əp</i>	‘ten’
23.	* <i>Dü</i> B	—	<i>mothug</i>	* <i>tu</i> ¹	* <i>tow</i>	* <i>d':iôg</i>	‘thick’
24.	* <i>Dəm</i> A	—	—	* <i>tum</i> ²	—	* <i>d':âm</i>	‘pond; pool’
25.	* <i>χəp</i> D	* <i>gək</i> -f	—	* <i>m-gwap</i> ; * <i>C-kwap</i>	<i>hap</i>	* <i>tsəp</i>	‘bite; gnaw’
35.	* <i>Gut</i> D -t	—	—	—	* <i>r-ko-t</i>	* <i>k:wət</i>	‘dig, hollow out’
36.	* <i>χəy</i> C	—	—	* <i>kyiy</i> ²	* <i>kliy</i>	* <i>χiər</i>	‘excrement’
37.	* <i>Gɿay</i> B	—	—	* <i>dzi</i> ²	—	* <i>g':ia</i> ; * <i>g':jię</i>	‘ride [horse]’
38.	* <i>ɦrwa</i> A	* <i>na</i>	<i>rna</i>	* <i>s-na</i> ² -	* <i>g-na</i>	* <i>ɦiəg</i>	‘ear’
51.	* <i>Dij</i> C -v	* <i>thuŋ</i>	—	—	—	* <i>d:iang</i>	‘post; house’

Table 6: Mon-Khmer counterparts

	PTai	PNB (Smith)	PSB (Efimov)	Wa (Diffloth)	PKatuic (Peiros)	PKatuic (Thomas)	
5.	* <i>Graay</i> B	* <i>kuč</i>	—	—	—	—	‘to rake’
19.	* <i>Diaŋ</i> A	—	* <i>srəda:ŋ</i>	—	—	—	‘sugar’
25.	* <i>χəp</i> D	* <i>kăp</i> ‘eat’	* <i>kap</i>	* <i>kăp</i>	* <i>kăp</i>	* <i>kap</i>	‘bite’
28.	* <i>Dia</i> B	* <i>tòh</i>	* <i>tu:h</i>	* <i>tuh</i>	—	—	‘bean; pea’
31.	* <i>D#</i> A	—	* <i>duə</i> ¹ <i>h</i>	—	—	—	‘chopsticks’
34.	* <i>Faŋ</i> B	—	—	* <i>plak</i>	—	—	‘bank [river, paddy]; shore’

Several of the forms in the Gedney list have apparent Austronesian counterparts (Table 7). Bear in mind that Austronesian speakers were located south of the Yangtze roughly 8,000 years ago and that a number of the loans that they left behind have already been identified (Thurgood 1994). (6) The form for ‘house; hut; tent’ is reconstructed for PChamic (PC), but it is undoubtedly borrowed from the neighbouring MK languages. (18) The forms for ‘soak’ are found throughout Austronesian, but are, as mentioned already, part of a word

family, which I suspect to ultimately be MK in origin. (24) The form for 'pond; pool' is found in Malay, where it is a borrowing from Tamil. (25) The form for 'bite', despite being found in PC, is ultimately a MK borrowing. (34) The form for 'bank; shore' is found in Austronesian as well as in MK.

Table 7: Austronesian counterparts

	PTai	PChamic	Malay	PMalayic	PMP	PAn	
4.	* <i>Dian</i> B	* <i>huta:n</i>	<i>hutan</i>	* <i>hutan</i>	* <i>qutan</i>	* <i>quCaN</i>	'forest; jungle'
6.	* <i>Dian</i> C-t	* <i>sa:ŋ</i>	—	—	—	—	'house; hut; tent'
18.	* <i>Duam</i> B-1 'to flood'	* <i>tram</i>	<i>rëndam</i>	—	—	* <i>edem</i> ; * <i>Redem</i>	'soak'
24.	* <i>Dəm</i> A	—	<i>kolam</i>	—	—	—	'pond, pool'
25.	* <i>χəp</i> D	* <i>kăp</i>	—	—	—	—	'bite'
27.	* <i>Dəŋ</i> A	—	<i>datang</i>	* <i>datŋ</i>	* <i>dateŋ</i>	—	'come; arrive'
34.	* <i>Faŋ</i> B	—	<i>těbing</i>	—	* <i>te[m]biŋ</i>	—	'bank; shore'
45.	* <i>Zuam</i> C	* <i>rumah</i>	<i>rumah</i>	* <i>rumah</i>	* <i>Rumaq</i>	* <i>Rumaq</i>	'house'
51.	* <i>Dij</i> C-v	—	<i>tiaŋ</i>	—	* <i>tiaŋ</i>	—	'pole; post'

5 Conclusions

The obvious conclusion one reaches in evaluating the set of forms pulled together by Gedney is that, as a whole, the forms are overwhelmingly, if not exclusively, borrowed into Tai. An examination of Table 8 makes the case rather convincingly. It summarises the discussions of data in this paper, with the forms listed by the same numbers used earlier in this work. Each of the fifty-one forms is listed, along with two types of information: whether there is a problem with the reconstruction either within the Tai subgroup (Tai problem) or within Tai-Kadai (TK) and whether an apparent counterpart turns up outside of Tai-Kadai, that is, in Old Chinese (OC), in Tibeto-Burman (TB), in Mon-Khmer, or in Proto Austronesian (PAn).

The significance of the irregularities of the reconstructions within Tai-Kadai is that such irregularities are a potential indication that the forms were borrowed. It is worth pointing out that the converse proves little, that is, the fact that a form behaves regularly does not make it a native form, although it may indicate that it was borrowed into the proto-language, as forms borrowed into a proto-language before it breaks up into dialects behave just as regularly as do the native forms. Note that 13 forms show significant irregularities in their Tai correspondences and 12 show irregularities in their wider Tai-Kadai correspondences. The fact that a large number of the Tai forms do not show up at all in wider Tai-Kadai also raises some questions. Of the 51 forms in Gedney's list, 25 or roughly half have reconstruction problems in either Tai or in Tai-Kadai.

The second question summarised in the table is whether an apparent counterpart shows up outside of Tai-Kadai. Aside from Old Chinese, with a handful of exceptions, a form was only considered a counterpart if it is reconstructed in another family. Note that 34 forms occur in OC, with several more occurring in modern Mandarin, that is, roughly two-thirds of the forms show up in OC. It is unlikely that OC has borrowed two-thirds of the Tai

vocabulary. Another dozen show up in Tibeto-Burman, 6 more in Mon-Khmer, and 8 more in PAn, although 2 of the PChamic forms are obviously borrowed from MK. In total, roughly 40 of the 51 forms show up in other language families.

Table 8: An overall evaluation of Gedney's forms

	PTai	Tai problem	TK	OC	TB	MK	PAn	
1.	*Fəy A	—	—	—	—	—	—	'boil; ulcer'
2.	*Gum A	—	—	—	—	—	—	'pit; ditch'
3.	*həəŋ B	—	—	—	—	—	—	'young [chicken]'
4.	*Dian B	—	—	—	—	—	x	'forest; wild'
5.	*Grai B	—	—	—	—	x	—	'rake, to'
6.	*Diaŋ C -t	—	—	—	—	x	x MK	'hut, field'
7.	*Giay A	—	—	—	x	—	—	'son-in-law'
8.	*Gun -t	—	—	x	—	—	—	'to bundle'
9.	*Zək D	—	—	x	—	—	—	'enemy; war'
10.	*Dwak D	—	—	x	—	—	—	'hit target; correct'
11.	*Dɨ A -i	—	—	x	—	—	—	'hold; carry'
12.	*Dək D t?	—	—	x	—	—	—	'male, young [animal]'
13.	*Puu C	—	—	x	—	—	—	'person; male'
14.	*χaw C	—	—	x	—	—	—	'rice'
15.	*Fan A	—	—	x	—	—	—	'sharpen; grind'
16.	*Faay B	—	—	x	—	—	—	'side, part'
17.	*Paa B	—	—	x	—	—	—	'split; hew'
18.	*Duam B -l	—	—	x	—	—	x	'flood, to'
19.	*Diaŋ A	—	—	x	—	x	—	'sugar'
20.	*χəm A -t	—	—	x	x	—	—	'bitter'
21.	*Fon B	—	—	x	x	—	—	'dust; dusty'
22.	*Zip D -i	—	—	x	x	—	—	'ten'
23.	*Dii B	—	—	x	x	—	—	'thick, dense'
24.	*Dəm A	—	—	x	x	—	x	'pond; pool'
25.	*χəp D	—	—	x	x	x	x MK	'bite'
26.	*Dɨ A -i	—	x	—	—	—	—	'carry; hold'
27.	*Dəŋ A	—	x	—	—	—	x	'arrive, reach'
28.	*Dia B	—	x	x	—	—	—	'bean'
29.	*Duay C	—	x	x	—	—	—	'bowl, cup'
30.	*Zuk D -i	—	x	x	—	—	—	'to bundle'
31.	*Dɨ A	—	x	x	—	—	—	'chopsticks'
32.	*Gia A	—	x	x	—	—	—	'eggplant'
33.	*Duaŋ B	—	—	x	—	—	—	'weight; weigh down'
34.	*Faŋ B	—	x	x	—	x	x	'bank (paddy); shore'

35.	*Gut D -t	—	x	x	x	—	—	'dig, hollow out'
36.	*χəy C	—	x	x	x	—	—	'excrement'
37.	**Giay B	—	x	x	x	—	—	'ride on horseback'
38.	*ɦrwa A	unique	—	—	x	—	—	'ear'
39.	*Goin A/B -t	x	—	—	—	—	—	'log'
40.	*Fia A	x	—	—	—	—	—	'braid; harrow; loom'
41.	*Giaw B	x	—	—	—	—	—	'cross the arms'
42.	*Zii A	x	—	—	—	—	—	'fifth earthly branch'
43.	*ZaY A -it	x	—	—	—	—	—	'late; in the morning'
44.	*Deew A	x	—	—	—	—	—	'line, row'
45.	*Zuam C	x	—	—	—	—	x	'room; compartment'
46.	*Piaa B/C -t	x	—	x	—	—	—	'cloth; clothing'
47.	*Gooŋ A	x	—	x	—	—	—	'to moan'
48.	*Zaaw C -i	x	—	x	—	—	—	'pole'
49.	**Gwaa A -t	x	—	x	—	—	—	'right [hand]'
50.	*Zuk D -i	x	—	x	—	—	—	'ripe; cooked'
51.	*Diŋ C -v	x	—	x	x	x	—	'pole; post'

Only 3 forms — the first three on the table — emerge untarnished. The remaining 48 show either internal problems within Tai-Kadai or have a counterpart in another language family. Thus, while there may be room for argument about details of individual forms, the overall conclusion seems irrefutable: these forms were borrowed into Tai after the breakup of PT. It is important to note that this conclusion is not so much a refutation of Gedney's paper as an extension and clarification of it. It was Gedney who assembled the forms and it was Gedney who pointed out that they posed a problem for the reconstruction of PT. He then examined several potential internal solutions but he clearly found fault with each of them. The contribution of this paper is to account for the problem through an external solution — borrowing.

The conclusion opens up three obvious areas for future work. First, as Gedney noted in his paper (1989a:254), Li (1977:193) observed that White Tai has *kh-* 'chiefly for words with tone alternations and *x-* for words with no tone alternations'. The forms with the tone alternations are borrowed, with the *kh-* reflex simply a further indication of this fact. The question is to what degree does the White Tai *kh-* versus *x-* distinction correlate with a borrowed versus native distinction? Second, to what degree will the recognition of these words as borrowings help simplify the reconstruction of PT, particularly the vowels. Third, and far more speculatively, will Gedney's puzzle (1989b[1971]), which lays out irregularities in the vowel correspondences of Tai also turn out to be the result of borrowing? If, as I suspect, the answer is yes, then it should be possible to reconstruct a much less esoteric vowel inventory for Tai, while at the same time clarifying not only that a large number of the forms that exist in both Chinese and Tai are borrowed, not inherited, but also documenting the directionality of the borrowing.

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