

A NEW HIGH TONE IN SOUTHERN THAI

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0. INTRODUCTION

For some speakers of Southern Thai, lenition of final velar and glottal stops is beginning to distinguish a new class of open-syllable high-tone items. This 'new tone' arises in problematic circumstances which are discussed. Reference is made to more general contemporary theories of tonal development.

1. KIHT: TONOGENESIS-IN-PROGRESS

The Thai geographical metaphor for 'isthmus' is *khoo khôot* 'constricted neck'. For some Southern Thai speakers in the Kra Isthmus region 'constriction' is also more literal: it is an articulatory feature associated with the differentiation of a new phonological tone. This 'Kra-Isthmus High Tone', henceforth KIHT, is a rather limited case of tone development in progress and its evolution is along lines now familiar (cf. Haudricourt 1954; Jones 1960; Matisoff 1970); yet there are additional structural and sociolinguistic factors in the precarious survival of the tone which merit examination. Below we review the phonological setting for KIHT's appearance, its sociolinguistic 'protagonist', and some questions raised for general issues in tonal development.¹

Evidence for neolithic settlement in the Kra region is firm. For the first millennium A.D. Chinese records suggest several Indianised trading outposts, and these are confirmed by local archaeological evidence at Takuapa, Chaiya and Kanchanadit (Wheatley 1961). When the Kra region became substantially Tai-speaking is a matter of conjecture. Local historical legends (Wyatt 1975) and other testimony make it plausible that Tai varieties have been spoken in the area for some six or seven hundred years. Apart from a brief Burmese invasion in 1785

TABLE 1
TAI TONE CATEGORIES

	open, unmarked	open, weak	open, thoo	closed, long	closed, short	
High class	A1	B1	C1	D1-L	D1-S	yin
Mid class	A2	B2	C2	D2-L	D2-S	yin
Low class	A3	B3	C3	D3-L	D3-S	yang
	ping	qu	shang	ru	ru	

historical sources mention little population disruption; there also has been less contact with non-Tai speakers than would be the case further south.

2. KRA ISTHMUS TONAL SYSTEMS

The Southern Thai dialect group extends from somewhat north of the Kra Isthmus proper (perhaps from Bang Saphan Yai, 11°17'N, where isoglosses converge) to south of 7°N. Tone systems in the Kra area have been described in surveys by Jones (1965) and Brown (1965). These surveys were concerned with wider issues of comparative Tai reconstruction, and it is not strange that they gave no specific attention to the rather parochial facts discussed here. KIHT occurs on items in a limited correspondence category which is usually of little more than marginal interest in comparative Tai, and furthermore occurs mainly among uneducated rural speakers.

'Tai' here refers to the large language family of which varieties of Central Thai (or Siamese), Southern Thai, etc., are members. It is convenient to discuss tones by referring to Tai tonal categories as labelled by F.-K. Li (1977), slightly modified as shown in Table 1. Etymological correspondence is reflected moderately well by spelling conventions in the traditional Thai orthography; these are shown above and to the left in Table 1. Unaspirated stops are confined to the Mid orthographic class; other initial consonants are presently represented by letters in the High and Low classes. There is also enough regularity in relationships with traditional Chinese etymological classes to postulate normal borrowing patterns for early-stage Chinese loans into Proto-Tai; these are shown below and to the right in Table 1.

Table 2 summarises Southern Thai tonal systems common in the Kra Isthmus region. Local varieties are shown in a north-to-south sequence from Chumphon to Phanom, the latter an isolated inland settlement on an old trans-isthmus route. The nearby Kanchanadit dialect on Bandon

TABLE 2
KRA ISTHMUS TONAL SYSTEMS

Tai tone category	D1-L	C1	C2	D2-L	B3	D3-L	C3	A3	A2	B2	B1	A1
1. Chumphon	/ 55 /	33		/	24		/ 21 / 232		/		52	/
2. Ranong	/ " /	"		/	"		/ " / "				/ "	/
3. Langsuan	/ " /	"		/	"		/ " / "				/ "	/
4. Tha Chang	/ 54 /	"		/	"		/ " / 232 (343)				/ "	/
5. Phanom	/ 44 /	33		/	"		/ " / " / 343				/ 452	/
6. Kanchanadit	/ " /			/	"		/ " / 32 / 43				/ "	/

Bay is cited for comparison. Pitch and contour are indicated by the low-to-high 1-to-5 numbering system (see Bradley 1977:1 for more detail). For the closed D categories, short- and long-vowel items have rather similar characteristics, particularly in the High and Mid orthographic classes, and only long-vowel items are shown in Table 2.

TABLE 3
URBAN CHUMPHON SOUTHERN THAI EXAMPLES

	Tai tone category		tonal pitch and contour
1. 'leg'	A1	khaa	high falling
2. 'crow'	A2	kaa	mid-low rising-falling
3. 'thatch grass'	A3	khaa	mid-low rising-falling
4. 'sp. rhizome'	B1	khaa	high falling (=1)
5. 'jungle'	B2	paa	high falling (=1)
6. 'value'	B3	khaa	low rising
7. 'to kill'	C1	khaa	mid level
8. 'aunt'	C2	paa	mid level
9. 'to do trading'	C3	khaa	low slightly falling
10. 'to lack'	D1-L	khaat	high level
11. 'mouth'	D2-L	paak	low rising
12. 'land leech'	D3-L	thaak	low rising
13. 'to polish'	D1-S	khat	high slightly rising
14. 'to bite'	D2-S	kat	mid slightly rising
15. 'to think'	D3-S	khit	low slightly rising

Table 3 illustrates the preceding issues for the case of Chumphon with data from an urban speaker. For comparison with Central Thai and also with a variety south of the Kra Isthmus, see Diller 1979:61-65.

As Tables 2 and 3 indicate, Kra Isthmus systems merge Tai tone categories into six or seven discrete tonal shapes. Several qualifications are necessary. Table 2 is based on citation-form pronunciation and questions of tonal sandhi are not considered. In fact in pretonic environments there is considerable levelling of contour in most varieties (see Thongkum 1978:27,47 for details). Also, Table 2 should be interpreted as a 'digitalisation' of what is really an areal continuum. Tonal shapes gradually shift to produce the systems reported, and there is a certain arbitrariness in deciding exactly where to report two discrete tonal shapes rather than one. This is particularly a problem in the case of the category A2 merging with A3. At the extreme north of the continuum the two are clearly identical; at the south, clearly separate. In the intermediate area a given speaker may show variation, sometimes - or for some items - making a distinction, but elsewhere not. Thongkum (1978:8) has recognised the difficulty for the Suratthani varieties she reviews and reports that speakers have a 'feeling' of separateness even when only slight register differences are discernible in sound spectrograms. It must be kept in mind that the consonant initials in A2 and A3 are in complementary distribution. In structuralist terms then we are confronted with an areally distributed separation of tonal allophones by a register distinction.

Another question of tonal allophone differentiation is directly relevant to the origin of KIHT. This concerns the tonal status of long-vowel closed-syllable items, particularly those with initial consonants associated with the High or -1 class, such as item 10 in Table 3.

In virtually all Tai varieties any long-vowel item terminating in -p, -t, -k will coincide tonally with other non-stop-final items, that is, D will merge suprasegmentally with either A, B or C, with only the final consonant, and not tonal features, distinguishing a given D item from similar open-syllable ones. A common pattern is for D to merge with B. This is the case for Central Thai, Northern Thai, Shan, Khamti and for most varieties of Zhuang. Mergers of D with A are unusual, e.g. White Tai D3-L = A3. D and C merge in most Lao varieties, although D2-L usually joins D1-L in merging with C1. Southern Thai south of the Kra Isthmus area under study here shows a mixed system, with D1-L and D2-L merging with respective C categories, while D3-L merges with B. The situation is similar to, but rather more tidy than, the shifting about of ru-class items in Chinese.


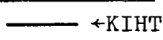




Now the Kra Isthmus systems show a rare exception to this tendency to merge. D2-L and D3-L indeed join tonally with B3. D1-L however resists the tendency, especially as one moves northward up the isthmus.

Starting from just north of Phanom - Kanchanadit, where D1-L = C1, the closed syllables (D1-L) begin to select a slightly higher allophone, the open ones (C1) a slightly lower one. At first the separation may be sporadic and in flux, but as one passes north of Chaiya to Tha Chang the difference is clearly systematic and becomes more pronounced farther north.

From a rather strict structuralist point of view this tonal separation still is of an allophonic nature as long as there remain final stops -p, -t, -k to stand in complimentary distribution with other finals in the C1 class. That is, we would still need to treat D1-L as a conditioned higher-register 'variant' of C1, with parallelism of contour - in this case level - plausibly constituting the basis for grouping. We simply recognise higher and lower allophones of the same tone, with stop-final items selecting the former one.

At this point we can remember that a similar allophonic differentiation process is occurring in the area with respect to A2 and A3, as mentioned above. Interestingly, the areal distributions are exactly opposite; this is shown schematically in Table 4.

TABLE 4
AREAL PATTERNING OF KRA ISTHMUS REGISTER SEPARATIONS

north ↑ ↓ south	A2, A3	D1-L, C1
		 +KIHT
		
		
	progressive conditioning →	regressive conditioning ←

It is tempting to see more than a chance relationship in Table 4. Could the systems in the Kra Isthmus be 'seeking' a six-tone equilibrium, with register differentiation controlled by more general pressures from systematic phonology? If this is so, then it is of interest that the register differentiation called for by such a programme is achieved through two very different mechanisms. On the one hand, the A2/A3 separation is a matter of **progressive** conditioning on the basis of **initial** unaspirated stops (vs. aspirated stops, nasals and sonorants); on the other hand, the D1-L/C1 separation is a matter of **regressive**

occur:

ITEM		TONAL PITCH- CONTOUR	TONE CATEGORY
'mist'	moo	high level	KIHT, i.e. D1-L with application of Rules 2 and 3 (< *mook)
'doctor'	moo	high falling	A1
'pot'	moo	mid level	C1
'full'	moo	mid-low rising-falling	A3
'father'			B3
'stomach' }	phoo	low rising	D3-L with application of Rule 3 (< *phoo?)
'sp. small palm'	phoo	low slightly falling	C3

Clearly, for these speakers there can be no question of phonological reduction; they operate with a six-tone system. It must quickly be added however that KIHT, the high level tone, is presently very restricted as to permissible finals: it requires -p, -t, or -Ø. It is perhaps a 'minor' tone.

The preceding list reveals another diachronic process relevant to the origin of KIHT. The fact that 'father' and 'stomach' have merged on the low rising tone shows another potential source for KIHT items. A slight excursus into tone-conditioned vowel lengthening is necessary before taking up this matter.

Egerod (1961), Hartmann (1976:147) and Gandour (1977:58) have called attention to Southern Thai lengthening of *-aw, *-ay in C tones, and occasionally in B. This lengthening is probably of long standing, since Wyatt (1975:15) has described an early Southern Thai spelling convention that seems to have represented it. Gandour (1977) has called attention to a Phuket variety in which tone-conditioned length distinctions apply for all non-low vowels; again C along with B3 is associated with long vowels.³

Southern Thai south of the Kra Isthmus differs from most other Tai varieties in allowing two types of glottal-stop-final syllables; e.g. for Ranot in Songkhla Province:

(emphatic particle)	naʔ	high rising
'to cough up'	naaʔ	high level
(derogatory particle)	waʔ	high rising
'to divide proceeds'	waaʔ	high level
(connective adverb)	kaʔ	mid rising
'to estimate'	kaaʔ	mid level

The sequence short vowel plus glottal stop is mainly restricted to particles and adverbs; long vowel plus glottal stop, to nouns and verbs. Unlike Kra Isthmus items which owe their glottal stops (and where KIHT occurs, the proximate source of their open finals) to Rule 2, the long-vowel glottal-stop items above show no evidence of once having ended in *-k*. On the contrary, many of these items have cognates in Central Thai and other dialects in short vowel plus glottal stop. It appears likely that a pre-glottal-stop lengthening rule has applied in these cases. For Songkhla varieties, this results in *-vv*, *-vv?*, and *-vvk* as possible syllable types (with *vv* representing a long vowel).

As one moves north of Songkhla this liberality in the final component of the syllable is not tolerated and mergers in syllable type involving Rules 2 and 3 occur as follows:

Phatthalung Nakhon Srithammarat	Songkhla Kanchanadit	Phukét Lower Kra Isthmus	KIHT areas
-vv	-vv	-vv	-vv
	-vv?	-vv?	
-vvk	-vvk		

We are now in a position to understand, e.g. how '*father*' and '*stomach*' have fallen together in Langsuan as phoo_{24} : the former is an unmodified item in *-vv*; the latter is cognate with Central Tai $\text{krapp}^?_5$ and with Songkhla $\text{phoo}^?_{23}$ (showing typical Southern Thai prefixal deletion and pre-glottal-stop lengthening) and Rule 3 has applied to give *-vv?* + *-vv*.⁴

When the process above occurs with High-class or -1 tone-category items, then for the relevant speakers they fall into KIHT *-vv* items along with those originally in *-vvk*. Thus there are two etymological sources for KIHT open syllables.

Table 5 illustrates in an areal way the diachronic processes involved in KIHT's origin. Kanchanadit forms are cited for their presumed conservatism. Tha Chang represents the Lower-Kra-Isthmus varieties which have undergone Rule 2 but not Rule 3. Finally, the rural Langsuan variety cited has undergone full lenition (save after diphthongs) and the items in Table 5 are evidence for recognising KIHT as a phonologically independent tone. Items 1-40 are derived from **-vvk*; the remaining ones, from glottal-stop finals, although in some cases there are no apparent Central Thai cognates.

Not shown in Table 5 is possible laryngeal constriction which can mark transition from *-vv?* to *-vv*. For items derived from *-k* and *-?* a few speakers in the KIHT area produce such constriction regularly.

TABLE 5
LENITION OF KRA ISTHMUS HIGH-TONE FINALS

	tone	Kanchanadit	Tha Chang	Langsuan
1. 'dried up'	D1-L	phaak	phaaʔ	phaa
2. 'to tie'	"	phuuk	phooʔ	phoo
3. 'albino'	"	phwək	phwəʔ	phwəʔ
4. 'to hew'	"	thaak	thaaʔ	thaa
5. 'to shove'	"	thēek	thēeʔ	thēe
6. 'to be afflicted'	"	thuuk	thooʔ	thoo
7. 'to pull back'	"	thoək	thooʔ	thoo
8. 'screen'	"	chaak	chaaʔ	chaa
9. 'to tear'	"	cheek	cheeʔ	chee
10. 'to cough up'	"	khaak	khaaʔ	khaa
11. 'to rap'	"	kheek	kheeʔ	khee
12. 'guest; Malay'	"	khēek	khēeʔ	khēe
13. 'small unit'	"	khook	khooʔ	x
14. 'to entrust'	"	khwaak	khwaaʔ	faa
15. 'elephant grass'	"	khwēek	khwēeʔ	fēe
16. 'splint'	"	khwək	khwəʔ	fwaʔ
17. 'teak; pestle'	"	saak	saaʔ	saa
18. 'to pour holy water'	"	seek	seeʔ	see
19. 'tp. suspended basket'	"	sēek	sēeʔ	sēe
20. 'sadness'	"	sook	sooʔ	soo
21. 'lower arm'	"	soək	sooʔ	soo
22. 'separate'	"	haak	haaʔ	haa
23. 'to break apart'	"	hēek	hēeʔ	hēe
24. 'grey hair'	"	hoək	hooʔ	hoo
25. 'spear'	"	hoək	hooʔ	hoo
26. 'loom'	"	huuk	hooʔ	huu
27. 'gill'	"	hwək	hwəʔ	hwəʔ
28. 'areca'	"	maak	maaʔ	maa
29. 'mist'	"	mōək	mooʔ	moo
30. 'nose'	"	muuk	muuʔ	muu
31. 'hat'	"	muək	muəʔ	muəʔ
32. 'ox hump'	"	nook	nooʔ	noo
33. 'strange'	"	laak	x	laa
34. 'to avoid'	"	leek	leeʔ	lee
35. 'to frighten'	"	loək	looʔ	loo
36. 'to raise the eyes'	"	lwək	lwəʔ	lwəʔ
37. 'sugar-palm beer'	"	waak	waaʔ	waa

Table 5 cont'd

	tone	Kanchanadit	Tha Chang	Langsuan
38. 'to push apart'	DL-L	week	wɛɛʔ	wɛɛ
39. 'to want'	"	yaak	yaaʔ	yaa
40. 'to tease'	"	yɔɔk	yɔɔʔ	yɔɔ
41. 'wit of thatch'	"	phlaaʔ	x	phlaa
42. 'rotten'	"	phuuʔ	phooʔ	phoo
43. 'wet'	"	cheɛʔ	cheɛʔ	cheɛ
44. 'to take advantage'	"	kheɛʔ	kheɛʔ	kheɛ
45. 'mixed up'	"	khlaəʔ	khlaəʔ	khlaə
46. 'indistinct'	"	khruəʔ	khruəʔ	khruəʔ
47. 'pond'	"	saaʔ	saaʔ	saa
48. 'tp. fishtrap; nearly ripe'	"	sooʔ	sooʔ	soo
49. 'backwash'	"	sɔɔʔ	sɔɔʔ	sɔɔ
50. 'falling apart'	"	hooʔ	x	hoo
51. 'to carve'	"	lɛɛʔ	mlɛɛʔ	mlɛɛ
52. 'ugly'	"	mrooʔ	mrooʔ	mlɔo
53. 'tp. skin disease'	"	laaʔ	laaʔ	laa
54. 'to lure with light'	"	looʔ	looʔ	loo
55. 'tp. wood worm'	"	raaʔ	raaʔ	raa
56. 'tightening stick'	"	reɛʔ	reɛʔ	reɛ
57. 'rubbish'	"	yaaʔ	yaaʔ	yaa

For such speakers items such as phɔɔ 'father' (B3) are rather tenuously distinguished from others such as phɔɔ [+constriction] 'stomach' (< *D3, coinciding with B3). The constriction feature would also apply to relevant KIHT items. The feature appears more frequently as a sporadic item-by-item adjunct and in any event tends to be lost in connected speech.

Also, a remark on the change -vvk → -vvʔ of Rule 2 is in order. For Southern Thai varieties preserving finals -p, -t, -k, it is often possible to detect along with final oral stop terminus a coarticulated glottal stop. One might symbolise this by -ʔp, -ʔt, -ʔk. This suggests a plausible articulatory clarification of Rule 2: what occurs is perhaps more a gradual weakening of dorso-velar contact rather than an abrupt 'jump' of point of closure.

4. RETENTION AND LOSS OF FINAL STOPS IN TAI

The history proposed for the origin of KIHT is a matter of rather general phonetic processes which have applied at one time or another in numerous languages in the area. We might expect that the case at hand in Southern Thai is but one of many among languages of the Tai family. This question is examined briefly in the present section.

The general Tai pattern is one of conservatism with respect to final stops -p, -t, -k. Only on the extreme northern fringe of the Tai area in Guizhou Province has the Bu-i dialect of Shuicheng reportedly lost final stops completely. In other Bu-i dialects loss is not complete and one finds various stages of attrition related to syllabic conditions, particularly to vowel length and height. These changes have been discussed in some detail by Li (1971, 1977:53-55), Dell (1969) and Sarawit (1975).⁵

White Tai and so-called 'Phu-thai' varieties, including many of Black Tai, regularly retain -p and -t, but there is loss of -k after vowels which were once (at least) long. Homophony has not been avoided, as we see in these examples from Donaldson and Dieu (1970):

'field'	nā	(< *naa (A3))
'otter'	nā	(< *naak (D3-L))
'heavy'	nāk	(< *gak (D1-S))

and similarly tā 'to paint' (A3), 'land leech' (< D3-L), but tāk 'to greet' (D3-S). This White Tai situation is aberrant in two respects: it involves the merger, unusual as noted above, of a D-L category with an A one, and also the resulting 'shared' tone is glottalised, quite abnormal and diachronically puzzling for an A tone. (Tai comparativists would rather find glottalisation on C or possibly on B tones; Lao provides good examples.) Perhaps a laryngeal contagion - the traces of -k lenition - has spread as the tone D3-L merged with A3.

Cases of potential and real homophony like those above set the White Tai situation off from that of KIHT. Clearly in White Tai there has been suprasegmental merger and then final -k lenition after long vowels; at the Kra Isthmus there has been suprasegmental split with subsequent lenition. In the first case the result is by no means a 'new tone' but rather total merger and homophony; in the latter case prior register separation assures new open-final items an 'independent' status.

On the other hand, the Bu-i dialect of Tushan described by Li (1977: 55) seems to have acquired a 'new' low falling-rising tone through a set of changes very much like what happened to produce KIHT. In Tushan

both D1-L and D1-S are combined in the new tone (with other categories of formerly closed syllables merging with open categories). The forms ɾɔɔ 'six', paa 'mouth', and ʔɔɔ 'to go out' are examples. The latter two would be D2-L in the terminology used here; in KIHT dialects they would merge suprasegmentally with B3. As with KIHT, the Tushan D1-derived low falling-rising tone is 'new' in the sense that it accommodates open syllables but cannot be accounted for by the normal Tai open-syllable categories A, B, or C.

Before leaving the question of final stops and their lenition, we should call attention to a reverse case. In some Southern Thai communities well south of the Kra Isthmus the final glottal stop is replaced by -k:

RULE 4 ʔ → k / [+ long] ____
 [- high]

The following forms from Ban Nam Phrai in Trang Province illustrate the phenomenon. Songkhla forms, which are conservative on comparative grounds, are cited to the left.

	Songkhla	Ban Nam Phrai
'to divide'	waaʔ ₄₄	waak ₄₄ }
'sugar-palm beer'	waak ₄₄	waak ₄₄ }
'falling apart'	hooʔ ₄₄	hook ₄₄
'to lure with light'	looʔ ₄₄	look ₄₄
'table'	tooʔ ₃₃	took ₃₃

Clearly we must guard against proposing hard-and-fast Tai-wide rules of the sort which have produced KIHT and the Tushan low falling-rising tone. Although Rule 4 has apparently not been reported elsewhere among Tai speakers, when more local rural data become available it may well appear.

5. SOCIOLINGUISTIC CONFRONTATION

KIHT's survival as a phonologically discrete tone is presently rather problematic. It is threatened by sociolinguistic pressures described in this section.

To see why KIHT may soon be a matter of past history, some consideration of socially constrained dialect mixing and switching among Tai varieties is in order (for a more detailed account, see Diller 1979).

Prince Damrong, pre-eminent among Thai scholars in the early decades of the present century, wrote the following in the essay 'An Explanation of Tones':

These days there are government schools being established and spreading more and more. Wherever the schools reach, the Bangkok sound system is transmitted. New generations of citizens will increasingly use the Bangkok sound system, and former systems in local use will probably deteriorate in stages. In another fifty years or so the tone marks in the writing system will probably be realised in the same way by everyone⁶

By now compulsory Central Thai education is nearly universal in Thailand, and the mass media and increased areal mobility among the rural working class have further strengthened the position of the standard language. However the 'stages of deterioration' of local varieties predicted by Prince Damrong have proved to be somewhat longer-term and more complex than was supposed. KIHT's fate is wrapped up in these issues.

The dynamics of Central Thai spreading is somewhat different among the various non-Central communities in Thailand. The North for example appears more recalcitrant than the South in admitting Central Thai replacements, a condition perhaps connected to somewhat different political histories.

Of particular importance are intermediate stages of Central-local hybridisation, that is, of Central influence on local varieties that stops short of complete supplanting. One particularly common and systematic form of such dialect mixing consists in preservation of a local tonal system but with segmental and lexico-semantic replacements from Central Thai. There may be a graduated scale of such replacements, depending on social backgrounds of speakers or on contextual factors relating to speech acts or conditions of social interaction. Shifts up the scale toward total Central segmental and lexico-semantic replacement may signal decreasing intimacy and increasing formality and officiousness. Eventually Central replacements may become more-or-less 'standard' in the local variety and the more authentic local segmentals and lexemes may become archaic and disappear, all without any necessary modification in the tonal system. The final result would be two varieties differentiated entirely by tone, and probably used by bidialectal speakers mainly as a social resource for purposes of stylistic switching and related social manoeuvring. It might be that in speech communities where this had happened the social utility of such tonal switching might contribute to the preservation of a 'segmentally subjugated' local variety well beyond the time span envisaged by Prince Damrong.

In any event the process sketched above is underway in many regional urban areas and it reaches into village speech as well. A particularly

relevant case concerns the replacement of -ʔ by -k in a Northeastern Phu-thai variety described by Khanitthanan (1977:44), which is undoubtedly influenced by surrounding Northeastern Thai (Lao) as well as by Central Thai.

	Central Thai	'Authentic' Phu-thai	Hybrid Phu-thai
'bark, peeling'	plwək ₂₁	pəʔ ₃₁	+ pək ₃₁ ~ pwək ₃₁
'to select'	lwək ₅₂	ləʔ	+ lək ₃₁ ~ lwək ₃₁
'mouth'	paak ₂₁	paʔ ₃₁	+ paak ₃₁
'offsprings'	luuk ₅₂	luʔ ₃₁	+ luuk ₃₁
'to expose'	taak ₂₁	taʔ ₃₁	+ taak ₃₁
'wing'	piik ₂₁	piʔ ₃₁	+ piik ₃₁

It is important to draw a distinction between this sociolinguistic hybridisation process and -ʔ → -k described for Ban Nam Phrai, Trang, in the preceding section. In the latter case Central Thai applies no pressure for (or indeed applies negative pressure against) the change.

The Chumphon variety cited in Table 3 has gone through the same replacement process as Phu-thai above in the case of items 11 and 12, paak₂₄ 'mouth' and thaak₂₄ 'land leech'. Rural Kra Isthmus varieties would show either -ʔ or, in KIHT areas, -Ø. Although not directly relevant to tonal questions, lexico-semantic differences can also be illustrated at this point to place the segmental substitutions in their wider systematic context.

	Central Thai	'Authentic' Kra Isthmus	Hybrid Kra Isthmus
'mouth'	paak ₂₁	paaʔ ₂₄ ~ paa ₂₄	+ paak ₂₄
'land leech'	thaak ₅₂	thaaʔ ₂₄ ~ thaa ₂₄	+ thaak ₂₄
'seal'	traa ₃₃	kraa ₂₃₂	+ tra ₂₃₂
'muddy'	mwək ₅₂	mlwəʔ ₂₄	+ mwək ₂₄
'to ache'	mwəy ₅₂	mlwəy ₂₄ ~ lwəy ₂₄	+ mwəy ₂₄
<hr/>			
'to throw'	paa ₃₃	liw ₂₃₂	+ paa ₂₃₂
'fast'	riip ₅₂	kheep ₅₅	+ riip ₂₄
'thick (of liquids)'	khon ₅₂	kheen ₃₃	+ khon ₃₃
'basin'	kalaman ₃₃	khoom ₂₃₂	+ kalaman ₂₃₂

As for KIHT, two Central Thai pressures are set against it, corresponding to the two Central Thai syllable types:

(1) C(C)vvk

(2) C(C)v?

That is, for a given KIHT item (e.g. in the right-hand column of Table 5) the hybrid tendency is to add -k if there is a Central Thai cognate in (1), or to treat the KIHT item as D1-S with -? if there is a cognate in (2). Homophony may be disambiguated in this way.⁷

	Central Thai	'Authentic' Kra Isthmus (KIHT areas)	Hybrid Kra Isthmus
'pestle'	saak ₂₁	saa ₅₅	+ saak ₅₅
'pond'	sa?	saa ₅₅	+ sa? ₄₅
'mist'	mook ₂₁	moo ₅₅	+ mook ₅₅
'suitable'	moo? ₂₁	moo ₅₅	+ moo? ₄₅

Where there is no clear Central Thai cognate, lexical replacement tends to occur instead:

'ugly' naa₅₂kliat₂₁ mloo₅₅ + naa₃₃kliat₂₄

In this way the KIHT situation is reduced to complementary distribution with the tone C1 (33) as described in 2, and KIHT can no longer claim status as an independent new tone. It remains however as a register-differentiated allophone.

What we find in the case of KIHT then is a 'conflict of interest': in terms of purely internal-systematic factors, Rules 2 and 3 - lenition of final velar and glottal stops after long vowels - seem to present a phonologically reasonable simplification of the syllable-final component with resulting albeit rather marginal new-tone independence in the D1-L case; on the other hand, competing Rule 4, fostered by external factors along with the Central Thai syllabic target -v?, tends to undermine KIHT and return it to merely allophonic status. One expects that the indomitable superimposition of Central Thai predicted by Prince Damrong may do away with this fledgling tone in the near future.

6. TAI TONES AND TONOGENETIC THEORY

Several issues above have some relevance for wider concerns and theories in the development of tones (see Bradley 1977:1-4 for a concise summary of recent discussions). It is perhaps more useful to represent these issues somewhat negatively in the form of caveats to

oversimplified theory construction, although of course many aspects of the Tai data discussed above fit comfortably into the wider framework now generally accepted.

1. It is not generally true for Tai that tones and segmentals rearrange themselves in such a way as to maximise distinctive phonological space and thus avoid homophony. Cases of homophony abound in Tai and the need to use tones and segments distinctively must be balanced against other opposite pressures, some perhaps from larger phonological 'conspiracies' or from other abstract diachronic trends. Tais are not afraid of manageable lexical ambiguity.

2. One might set up a 'standard theory of tonogenesis' (with admittedly straw-man characteristics):

Tones develop in two ways, progressively (with conditioning from initial consonants) and regressively (linked to finals). Progressive tonal development is a matter of register separation caused by voicing, which lowers pitch, or other initial features such as preglottalisation or aspiration. Regressive tonal development is clearest in the case of final laryngeal components: final glottal constriction or glottal (and perhaps oral) stops cause rising contour; final -h (and perhaps -s, -x) cause falling contour.

Whatever merit this 'standard theory' may have as a point of theoretical departure, the Tai languages are difficult to force into such a diachronic schema. Brown (1975) and others have shown the complexity of apparent progressive tonal development in Tai, and although Southern Thai in general may provide some support for the progressive half of the 'standard theory', many other varieties in the Tai family do not. Note that the A2/A3 register difference discussed above for lower Kra Isthmus varieties (see Tables 2, 4) provides a counter-example: in this case voiced initial stops are not causing a lower register but, along with other Mid or -2 class items, are actually selecting a higher pitch level. Kra Isthmus data calls into question the 'standard theory's' regressive development programme as well. There is no significant contour difference in the final-stop-associated separation of D1-L and C1; instead contours are even and the difference is one of pitch register alone. Nor can we even conclude that final stops raise pitch: they do for D1-L but they do not for D2-L or for D3-L.⁸

3. Related to matters raised above is an unspoken assumption that final laryngeal constriction, final glottal stops and especially final oral stops are by nature conservative clues to the arising of tonal phenomena from an earlier tone-free state. Above we noted that White

Tai A3 items have now become laryngealised, perhaps through 'contagion' as formerly stopped items merged with them suprasegmentally, and in the case of -vvk items, completely. The Southern Thai examples of -vv? + -vvk show even more clearly the danger of taking an uncritical attitude toward laryngeal and oral finals.⁹

4. Sociolinguistic factors in tonal development may not always be negligible. Very few Tai varieties (Ahom being an example that comes to mind) have developed in relative isolation. For a millennium Tai groups have interacted among themselves and their neighbours in varying configurations of political alliance, domination and subjugation. Probably significant groups of speakers have been partially bidialectal, and tones and other phonological features have probably been caught up in wider patterns of socioeconomic absorption and integration. On the one hand Tai as a whole provides a near paradigmatic example of the 'Neogrammarian Hypothesis', with quite regular sound changes and a plausibly reconstructable proto-language; on the other hand, wherever one turns attention to lexical or phonological detail, inconsistencies and peculiarities arise which can only be elucidated by examining inter-dialectal processes and in some cases contact with non-Tai neighbours. Discussion of the suppression of KIHT open syllables by phonological targets in the locally prestigious Southern-Central hybrid has suggested one way sociolinguistic constraints on tonal development can operate.

5. Methodologically, the KIHT situation raises two important issues. One is the need to consider phonological systems in their entirety and to be aware of problems in segmental-suprasegmental distribution, particularly when complementarity is involved. There have been recent attempts to systematise and compare 'tonal systems' across many languages with a view to arriving at structural generalities. But we may be comparing oranges with bananas if we are oblivious to how specific phonetic tonal contours function within phonologies as a whole. KIHT, for example, shows that whether or not to 'count' an extra new tone should be taken as a problematic issue, partly a matter of structural theoretical interpretation, partly a matter of fact in the field, and partly a recognition of conflicting psycho-articulatory pressures.

Finally, discussion of hybridised varieties above suggests a caution in organising field research in Tai dialectology and elsewhere. If one relies, for example, on university students as (very convenient) informants, one will almost certainly be up against an issue of hybridisation plus, perhaps, 'educated' stereotyping of 'uneducated' rural

speech. Although data acquired in such a way is of undoubted value and may show structural consistency in its own way, urbanised and educated speakers of local Tai varieties are almost certain to be 'lames' in Labov's sense, and their hybrids may be concealing interesting differences in local rural speech. KIHT is one such difference.

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2. Mr Manun Phayakamas and family provided kind hospitality at Langsuan and invaluable assistance in rural explorations to locate 'missing' glottal stops.

3. Tone A is associated with lengthening for some items in East-coast Southern varieties, e.g. prenasally with -ii-:

	Central Thai	Songkhla
'ginger'	khin ₂₄	khiin ₄₅
'stone'	hin ₂₄	hiin ₄₅
'sea leech'	plin ₃₃	pliin ₃₄ , etc.

Although superficially an exception to Gandour's observation, the above examples actually confirm it: length is again associated with rising contour (irrespective of etymological tone category).

4. In fact the items '*father*' and '*stomach*' tend to be kept apart by speakers who otherwise make similar mergers. In the course of field-work an elderly farmer and his (totally merging) wife fell into a heated argument on the point. It should be noted that throughout the South varieties preserving -ʔ in careful isolated pronunciation tend to lose it in connected speech.

5. Bee (1965) has noted the lenition process in Central Thai items like càʔ (< càk) '*incompletive marker*', kàʔ (< kàp) '*with*' and ma- (< màak) '*prefixal syllable in names of fruits*'.

6. The Thai text is reproduced without note of provenance in Na-Nakhon (1973:49-57); translation provided.

7. This is not to suggest that disambiguating homophony is in any way an impetus for hybridisation. In other cases the hybrid forms create homophony not present in conservative rural speech (Diller 1979:68-69). One sporadic exception to regular correspondence is '*Year of the Rabbit*', thoɔʔ₄₄ in varieties south of the Kra Isthmus with regular cognates in other Tai languages, but thoɔ₅₂ ~ thoŋ₅₂ in Kra Isthmus varieties. The source of this form is unknown, but it conveniently avoids confusion with a mild taboo form thoɔʔ₅₅ (or thoɔk₄₄ to the south) '*to draw back the foreskin*'. In other vocabulary homophony is widely tolerated.

8. Empirical evidence for a direction-of-contour difference based on type of final consonant is fickle. Note, for example, -h in Jeh, which has raised rather than lowered pitch (Gradin 1966).

9. For example, final -ʔ in Khmuʔ has led Haudricourt (1954) to postulate a process for Vietnamese which has become influential in Sino-Tibetan tonogenetic theorising. Haudricourt's model may be correct, but Khmuʔ phonology taken as a whole leads one to suspect that at least some Khmuʔ final glottal stops are a consequence of a syllable structure condition which dislikes open-vowel finals (see Smalley 1961). For other tonal effects on consonants, see Maddieson (1977).

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