# Proto-Tai and Kra-Dai finals \*-l and \*-c พยัญชนะสะกด \*-l และ \*-c ในภาษาไทและข้า-ไท (ไท-กะได) ดั้งเดิม

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# **Abstract**

Two proto-endings \*-l and \*-c are reconstructed and added to the received system of Proto-Tai final consonants. These additional finals help solve some problems of the otherwise irregular correspondences among dialects, especially between Saek and other Tai varieties. Supporting evidence for these newly reconstructed sounds can be found not only in Tai but also in related language groups such as Kra, Hlai and Be. The proposed system is shown to be valid for Proto-Kra-Dai as well.

Keywords: Proto-Tai, Kra-Dai, final consonants, phonological reconstruction

## บทคัดย่อ

ในบทความนี้ ผู้เขียนได้สืบสร้างพยัญชนะสะกดเสียงข้างลิ้นและเสียงเพดานแข็ง \*-1 และ \*-c ในภาษาไทดั้งเดิม เสียงพยัญชนะสะกดทั้งสองเสียงนี้ไม่ปรากฏในระบบเสียงที่ สืบสร้างโดยผู้เชี่ยวชาญภาษาไทก่อนหน้านี้ แต่ผู้เขียนได้แสดงให้เห็นถึงหลักฐานสนับสนุน ในการสืบสร้างเสียงตั้งกล่าว ทั้งจากภาษาไทถิ่นและจากภาษาข้า-ไท (ไท-กะได) ที่สัมพันธ์ กัน การสืบสร้างเสียงทั้งสองนี้ให้เข้าอยู่ในระบบของภาษาไทดั้งเดิมยังช่วยอธิบายเสียง ปฏิภาคที่ไม่เข้าพวกระหว่างภาษาแสกและภาษาไทกลุ่มอื่นๆ ซึ่งคงค้างเป็นปัญหาใน การศึกษาต่างๆก่อนหน้านี้ได้อย่างมีเกณฑ์และเป็นระบบ ผู้เขียนได้สรุปให้เห็นด้วยว่าระบบ เสียงพยัญชนะท้ายภาษาไทดั้งเดิมที่นำเสนอใหม่ในบทความนี้ สืบเนื่องมาจากระบบที่มีมา ก่อนในภาษาบรรพบรุษของภาษาตระกูลข้า-ไท (ไท-กะได)

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## 1. Introduction

The well-known system of Proto-Tai (PT) final consonants is simple. It includes three stops and three nasals at labial, dental/alveolar and velar articulations. This system is still preserved in many modern Tai dialects. It is also the typical system we find in several languages of South China and Southeast Asian areas, namely, Cantonese. If the three high vowel endings, \*-u, \*-i and \*-uı are interpreted as the corresponding glides \*-w, \*-y and \*-uı respectively, we will have the inventory of PT finals as shown in Table 1.

Table 1. The system of PT final consonants

*-p	*-t	*-k
*-m	*-n	*-ŋ
*-W	*-y	*- <b>w</b>

In this paper, I will show that two additional finals need to be reconstructed for PT: a lateral \*-1 and a palatal \*-c.

## 2. PT final \*-l

Evidences for reconstructing PT \*-1 in general are quite robust and straightforward. PT \*-1 has reflexes of -1 in Saek and as -n in the other Tai dialects, contrasting with PT \*-n which gives -n in all dialects. Table 2 and Table 3 list examples of roots that point back respectively to PT \*-1 and \*-n.

Table 2. PT roots with final \*-1

	Saek	Po-ai	Siamese	Proto-tones
pangolin	lil	lin	lin	*B
stone	ri:l	hin	hin	*A
see	rel	han	hen	*A
solid, hard	ke:l	ce:n	ke:n	*B
body hair	pul	puin		*A
hot	ru:l		rɔ:n	*C
stump	kəl	kon		*B
teach	so:1	ło:n	so:n	*A
fly, v.	bwl	min	bin	*A

	Saek	Po-ai	Siamese	Proto-tones
slippery	mlw:1		lw:n	*B
crow, v.	hal	han	khan	*A
sweet	va:l	va:n	wa:n	*A
part	sual		saun	*B
earthworm	trual	nw:n	dwan	*A

Table 3. PT roots with final \*-n

	Saek	Po-ai	Siamese	Proto-tones
eat	kin	kwn	kin	*A
tongue	li:n	lin	lin	*C
silver	<u>ກ</u> εn	ŋan	ŋən	*A
arm	ke:n	ce:n	khe:n	*A
human being	hun	hwn	khon	*A
sleep	nu:n	nwn	nɔ:n	*A
smoke	γən	hon	khwan	*A
before	kə:n	ko:n	kɔ:n	*B
sky	bwn	mwn	bon	*A
swallow, v.	tlu:n	klwan (Wm)	klw:n	*A
day	van	ŋɔn	wan	*A
axe	va:n	va:n	khwa:n	*A
yesterday <sup>I</sup>	luan	lwan (Wm)	(sw:n)	*A
moon	blian	nw:n	dwan	*A

#### Note

It is clear from the tables that Saek finals -l and -n are contrastive; as minimal pairs /bul/ 'to fly' versus /bul/ 'sky' and /vaal/ 'sweet' versus /vaan/ 'axe' confirm. No conditioned variants can be assumed and we apparently have to conclude that finals \*-l and \*-n are distinctive at PT level.

It is in fact interesting to ask why this final \*-1 has never been granted PT status in previous reconstructions. This is perhaps partly due to the fact that Saek is the only Tai dialect reported to have this final -1; on the other hand, substantial Saek

<sup>&</sup>lt;sup>1</sup> The Siamese form means 'the day before yesterday' and may not be directly related. The form points to initial \*z- while Saek and NT forms indicate \*l-.

materials have not been available until recently. So, while Li (1977) has made use of Saek data published by Gedney (1970) to support a number of his proposed PT clusters, he did not have enough data at his disposal to feel confident in making judgement on this seemingly 'exotic-to-Tai' final. Gedney himself was reluctant to regard Saek -l as an archaism even when he later concluded that the evidence indicated that it was inherited from Proto-Tai. Gedney's main concerns can be seen in his following words:

...we will have to introduce \*-l into our Proto-Tai reconstructions on the basis of Saek evidence alone, implying that all other languages of the Tai family have merged -l and -n. And this implausible theory will have to be pushed even farther back, because other languages believed to be more remotely related to Tai, such as the Mak, Sui, Kam, and Then languages of Kweichow, agree with most Tai languages in having only -n, never -l. (1993: 921)

What concerns Gedney most then seems to be the assumption that, if Saek -1 was archaic and pointed back to PT \*-1, one would hope to find evidence of this \*-1 in such related language groups as Kam-Sui, (otherwise, Saek would be alone in preserving the evidence of this \*-1 even at the earlier stage beyond PT). However, we now have more knowledge on the Tai-related groups than before. The Hlai and Kra groups of languages, very poorly known decades ago, have been studied and the reconstructions of their parent languages have already been worked out (for recent studies, cf. Ostapirat 2000, 2004, 2005b, 2006, among others). In my study of the Kra language group (Ostapirat 2000), I have reconstructed final \*-1 for Proto-Kra (PK), and this PK \*-1 can be shown to appear in a number of words corresponding to Saek forms with final -1. Table 4 provides examples of such etyma.<sup>2</sup>

Table 4. Saek and Laha corresponding forms with final \*-1

	Saek	Laha	Kam	
body louse	mlel	mdal	nan	*A
husked rice	sa:l	sa:l	sa:n	*B
shake	sɛl	sal	(ton)	*A
fat, n <sup>II</sup>	mal	mal	man (S)	*A
spin, turn	pal	(leq)	pan (S)	*B
around				
yellow <sup>III</sup>	ŋi:l	ŋil		*C
heavy		khal C	chan	*A

Thus, while it is true that Kam-Sui languages do not have final-l, Saek is not anymore alone among Kra-Dai languages in having this feature.

Since we have to rely on Saek in distinguishing PT \*-1 from\*-n, we are not be able to determine whether certain roots have PT \*-1 or \*-n without the Saek related forms. We can also imagine that sometimes the more recent loans from Thai/Lao into Saek could have distorted the picture. The root 'grandchild', Saek /la:n/, Siamese /la:n/, may illustrate such a case. According to the correspondence, this word would be reconstructed as PT \*hla:n, with final \*-n. The related Laha form /kla:l/ 'grandchild', however, points to final \*-l, and we would expect Saek reflex to be /la:l/. In such a case, we may assume that the Saek form /la:n/ has been more recently borrowed from Thai/Lao which lacks final -l. Based only on Tai evidence, however, must we be content with reconstructing this word with final \*-n?

Despite some difficulties just discussed, it is clear that we can be confident in reconstructing a number of PT roots with final \*-1. All etyma in Table 5 show a straightforward correspondence Saek -1: others -n. In native words, the

<sup>&</sup>lt;sup>II</sup> Gedney records Saek /man/, with final -n. The cited form is from Haudricourt (1963).

<sup>&</sup>lt;sup>III</sup> The word means 'turmeric' in Saek but the typical meaning in the Kra languages is 'yellow'. This perhaps is not a native Tai root but the correspondence with Laha follows the regular pattern.

Table 5. PT etyma reconstructed with final \*-1

·	Saek	Po-ai	Siamese	
1. pangolin	lil	lin	lin	*B
2. stone	ri:l	hin	hin	*A
3. notched	vi:1	bin (Y)	bin	*B
4. wasp	thi:1 A2	tin A2	te:n	*A
5. see <sup>IV</sup>	rel	han	hen	*A
6. shake	sel	łan	san	*B
7. line	sel	θan (Y)	sen	*C
8. civet cat	ຸກεl	jεn	hen	*A
9. housefly	<sub>ກ</sub> εl	nan (Y)		*A
10. prop	jεl		jan	*A
11. body louse	mlɛl	nan	len	*A
12. snore <sup>V</sup>	tlɛl	kwn (Y)	(kron)	*A
13. solid, hard	ke:l	ce:n	ke:n	*B
14. board	pe:l	pe:n	pε:n	*C
15. body hair	pul	pwn		*A
16. dusty <sup>VI</sup>	mul	mun (Lc)	mon	*A
17. hot	ru:l		rɔ:n	*C
18. stump	kəl	kon		*B
19. teach	so:1	ło:n	so:n	*A
20. scoop up	so:1		cho:n	*C
21. hide	jɔ:l		so:n	*B
22. worm	no:1	no:n	no:n	*A
23. dig out (ear)	ກວ:l		jɔ:n	*A
24. carry (on pole)	kho:l	kon (Y)	kho:n	*A
25. fell, fall off	kho:l		kho:n	*B
26. hammer	γο:1	hon (Y)	kho:n	*C
27. fly, v.	bwl	min	bin	*A
28. firewood	vul	fuin	fu::n	*A
29. slippery	mlw:1		lw:n	*B
30. clf. for cloth	phw:1 A2		phw:n	*A

31. spin	pal	pan	pan	*B
32. be, become	phal A2	pan A2	pen	*A
33. slash, chop	val	fan (Y)	fan	*A
34. twist (rope)	val		fan	*C
35. clf. for spoon.	khal		khan	*A
36. squeeze	khal	kan (Y)	khan	*C
37. field dike	γal	han	khan	*A
38. itch	γal	xan (Wm)	khan	*A
39. crow, v.	hal	han	khan	*A
40. clf. for things	?al	?an	?an	*A
41. dam up	pa:l		pa:n (Wt)	*C
42. sweet	va:l	va:n	wa:n	*A
43. sow	va:l	fa:n	wa:n	*B
44. deer	va:l	fa:n	fa:n	*A
45. husked rice	sa:1	ła:n	sa:n	*A
46. slack	ja:l		ja:n	*A
47. part	sual		suan	*B
48. earthworm	trual	nw:n	dwan	*A
49. wild, forest	thual B2	tw:n B2	thwan	*B
50. stretch out	jual	ji:n	jw:n	*B

From the preceding list, we may note the following important development before going on to discuss the PT final \*-c.

Normally PT \*-el and \*-al would give Saek -ɛl and -al respectively. These two rimes, however, merged when preceded by acute consonants (cf. item 6 'to

<sup>&</sup>lt;sup>IV</sup> Saek /rɛl/, with final -l, is recorded in Gedney (1993). In earlier papers on Saek, Gedney seemed to give only the form /rɛn/, with final -n.

V The Siamese form is irregular; the cluster kr- does not typically occur in native words. SWT forms in general indicate \*kl-, the expected proto sound that would render Saek tl-. Li (1977) seemed to be misled by Siamese form and put this root under his problematic PT \*kr-.

<sup>&</sup>lt;sup>VI</sup> The Siamese cited form is usually found in compound /mu:t mon/, where the first root /mu:t/ means 'dark'.

shake' and item 10 'to prop' where Saek has -ε- for PT \*-a-). On the other hand, PT \*-el has become Saek -al after labial initials (cf. item 32 'to be, become'). PT \*-il appears to have become Saek –ul under similar conditions, that is, following labial initials (cf. item 27 'to fly', contrasting with item 1 'pangolin' where \*-i- remains -i-).

Most Northern-Tai (NT) dialects show a merger of \*-el and \*-al into -an. Po-ai /ɛ/ in 'civet cat' (item 8) can be assumed to be fronted under the influence of the palatal initial /j/ (this kind of fronting is typical in Po-ai).

It is significant to further note that some NT dialects could have preserved contrast between PT \*-el and \*-en through distinctive vowel reflexes. For instance, Yay shows the typical NT reflex /-an/ for \*-el, as in /pan/ 'civet cat' (item 8) and /nan/ 'body louse' (item 11), but has /-en/ for \*-en, as in /jen/ 'cool' and /len/ 'play'. (Siamese has /-en/ for all these words: /hen/, /len/, /jen/ and /len/ respectively). If this is the case, then it would mean that PT final \*-l has been kept, at least after certain vowels, in NT dialects other than Saek. For the first time, additional evidence internal to Tai is discovered to substantiate the reconstruction of PT \*-l.

By using such evidence, we may also suggest that such words as 'great-grandchild' could have had final \*-1 because Yay has the reflex /-an/ corresponding to SWT \*-en (cf. Yay /lan/, BlackTai /len/). Even though we do not have Saek evidence with final -1 for this root, we may still suggest that the word goes back to PT \*hlel.<sup>4</sup>

## 3. PT final \*-c

The palatal final \*-c is reconstructed for the correspondence Saek -k: others \*-t. The contrastive reflexes of this final with respect to those of PT \*-t and \*-k are as follows:

Table 6. Contrastive correspondences of PT \*-t, \*-c and \*-k

PT	Saek	Other dialects
*-t	-t	-t
*-c	-k	-t
*-k	-k	-k

Examples of roots reconstructed with PT \*-c are provided in Table 7. Note that most etyma show Saek - $\epsilon$ -, indicating the merger of several early vowels before this proto-ending.

Table 7. PT etyma with final \*-c

	Saek	Po-ai	Siamese	
1. fish scale <sup>VII</sup>	tlɛk	cet	klet	*e
2. pluck (flower)	rek		det	*e
3. grain	mlεk	net	malet	*e
4. cut	tek	tat	tat	*a
5. dust off	pεk	pat	pat	*a
6. ant	mεk	mot	mot	*o
7. pour (water)	rek		rot	*o
8. light up	cuk	∫ut	cut	*u
9. mustard	kek	ka:t	ka:t	*a:

## Notes

The Saek -k reflex in the preceding list cannot be accounted for by assuming any kind of conditioned variants. This conjecture can be confirmed by contrasting the preceding roots with the following etyma reconstructed with PT final\*-t.

Table 8. PT etyma with final \*-t

	Saek	Po-ai	Siamese	
1. seven	cet	∫εt	cet	*e
2. flea	mat	mat	mat	*a
3. fart	ret	lot	tot	*0
4. dig	khut	kut (Y)	khut	*u
5. torn	ka:t	ka:t	kha:t	*a:

Note also that the vowel \*-a- is usually fronted to -\varepsilon- in Saek before alveolar endings, but only when the initials are acute. (Recall the case of \*-al

VII This word shows -p in some dialects, e.g. Wm klip, Y cip, cap. It remains to see whether this can be considered as a conditioned variant caused by the dissimilation of final \*-c > -p after \*-e in such dialects.

becoming Saek -ɛl under such condition). After grave initials, the vowel typically remains -a-, cf. /mat/ 'flea' (item 2, Table 8). Before final \*-c, however, it seems that \*-a- is fronted unconditionally, so for the word 'dust off' (item 5, Table 7) Saek has /pɛk/ instead of /pak/. If this is truly the case, such Saek vowel reflex will constitute another piece of supporting evidence for \*-c.

The list of words showing this PT \*-c is not lengthy, but includes undisputed PT roots as exemplified above. Moreover, some of these etyma appear also in the other branches of Kra-Dai; this indicates that PT \*-c is a retention rather than an innovation. I have shown elsewhere (Ostapirat 2005:119) that Be and Hlai have distinctive reflexes, -? and -c, respectively in words reconstructible with this PT \*-c.

Table 9. Reflexes of final \*-c in Be and Hlai languages

	Saek	Siamese	Be	Hlai (Bd)
ant	тεk	mot	mu?	puc
fish scale	tlɛk	klet	li?	
mustard	kek	ka:t	ka?	

These are contrastive to the roots having final \*-t such as 'to fart': Saek /rɛt/, Siamese /tot/, Be /ɗut/, Hlai /thu:t/, all with final -t.

Additional etyma with early Kra-Dai final \*-c may be reconstructed based on such distinctive reflexes in Be and Hlai (Table 10). Certain words may be reconstructed with PT \*-c even though Saek forms are lacking, e.g. 'sprout' Be /ŋa?/ Yay /ŋa:t/. For some roots, however, Saek related forms can be found but show final -t (e.g. 'blood' and 'wart'), indicating PT \*-t. In such cases, we may hypothesize that the merger of early \*-c into -t in Saek could have been conditioned by the preceding vowels. For instance, while \*uc (e.g. Saek /cuk/ 'to light fire', item 8, Table 7) is kept distinct from \*ut (e.g. Saek /khut/, item 4, Table 8) early \*u:c may have already merged into \*-u:t at PT level. (Note that most etyma we have reconstructed with PT \*-c in Table 7 have short vowels, with the exception of \*-a:-).

Table 10. Additional etyma with Kra-Dai final \*-c

	Saek	Siamese	Be	Hlai
1. blood <sup>VIII</sup>	luat	lwat	6a?	ła:c
2. wart	tru:t	hu:t	(tsot)	tu:c
3. suck	(du:t)	du:t		ru:c
4. sprout	ŋa:t (Y)		ŋa?	
5. tail <sup>IX</sup>			tu?	tshuc
6. paddy			mo?	(mut) Ts

## 4. The new inventory of PT finals

PT inventory of finals thus may be rewritten as follows:

Table 11: The proposed system of PT final consonants

-p	-t	-с	-k
-m	-n		-ŋ
-W	-1	-y	-w

What we have here is a system with four places of articulations instead of three as in Table 1. The reconstruction of \*-1 and \*-c as we have discussed in this paper is based primarily on Saek evidences. It should be noted that no Tai dialects keep the whole system intact. No language has -c in its modern inventory of finals, and Saek alone has -l. The lacunae of the palatal nasal slot tempts us to expect a PT \*-p, but so far no solid evidence has been found to support it. Among Kra-Dai languages, Hlai is the only group having final \*-p in its system, but etyma with this final are few and seem to be limited in distribution. No Tai cognates relatable to Hlai etyma reconstructed with \*-p are found.

I will conclude here by giving a summary of these PT finals in a pan-Kra-Dai perspective (Table 12). Examples are given in Table 13.

VIII For evidence of the labial initial that gives rise to Be /6-/, see Laha /pla:t/, Kam /pha:t/.

<sup>&</sup>lt;sup>IX</sup> No Tai cognates for this root, but related forms in other Kra-Dai branches are well attested, e.g. Laha /cot/, Kam /sət/.

Table 12. Correspondences of Kra-Dai finals

	Tai	Hlai	Kra	Kam-Sui
*-p	*-p	*-p	*-p	*-p
*-t	*-t	*-t	*-t	*-t
*-c	<u>*-c</u>	<u>*-c</u>	*-t	*-t
*-k	*-k	*-k	*-k	*-k
*-m	*-m	*-m	*-m	*-m
*-n	*-n	*-n	*-n	*-n
*-1	<u>*-1</u>	*-n	<u>*-1</u>	*-n
*-ŋ	*-ŋ	*-ŋ	*-ŋ	*-ŋ
*-W	*-W	*-W	*-W	*-W
*-y	*-y	*-y	*-y	*-y
*-1	*- <b>w</b>	*-1	*-ø	*-y
			(zero)	

Table 13. Reflexes of Kra-Dai finals in different Kra-Dai branches

		Siamese	Saek	Hlai (Bd)	Kra (Lh)	Kam
raw	*D	dip	rip	vi:p	?dip (By)	?djup (S)
flea	*D	mat	mat	po:t	mat	hmat
ant	*D	mot	mεk	puc	mot	mət
fall	*D	tok	tok	thok	tok	tok
bitter	*A	khom	yam	ho:m	kam	am
before	*B	kə:n	kə:n	khu:n	kun	un
body louse	*A	len	mlɛl	than	mdal	nan
drum	*A	klɔ:ŋ	tlə:ŋ	laŋ	loon (By)	kuŋ
green <sup>X</sup>	*A	Khiau	he:u	khi:u		həu (Ml)
$shell fish^{XI} \\$	*A	ho:i	θai (Y)	tshei	ci	khui (S)
near <sup>XII</sup>	*C	klai	tlə:	plaw	kla:	phjai

<sup>&</sup>lt;sup>X</sup> For an example of \*-w in Kra, cf. Gelao /tṣau/ 'young female', Siamese /sa:u/.

XI For \*-y in Kra, cf. also Pubiao /qa:i/ 'buffalo', Siamese /khwa:i/.

<sup>&</sup>lt;sup>XII</sup> Many Tai dialects keep PT \*-ul, cf. Wm /klau/, Po-ai /cau/. A Baisha dialect of Hlai (Wang and Qian 1951) has the reflex -l (e.g. /pla:l/ 'near'), which suggests

the phonetic approximation of this proto-final as \*-1. The typical reflex of this final in Hlai dialects is otherwise -ut.

The Kam-Sui group simplified the system the most, merging \*-c with \*-t, \*-1 with \*-n, and \*-u with \*-y. The Kra group has kept final \*-1 but merged \*-c with \*-t. It has also lost final \*-† (> zero). On the other hand, the Hlai group has kept final \*-c but merged \*-1 with \*-n. The system of early Be language, not presented in the Table, is similar to that of Hlai, with the following development: \*- c became -? (which further lost in some Be dialects) and \*-† (>\*-u) usually assimilated with the preceding vowel to become early Be \*-ə, then -e or -o depending on dialects.

#### **Endnotes**

- 1. For each etymon in this paper I generally give the proto-tonal categories (\*A, \*B, \*C, \*D) without indicating modern tones in detail. Readers will be able to find the tonal description of each modern dialect in the published sources provided in the References. (For Saek, see Gedney 1993; for Po-ai, see Li 1997) If any modern dialect forms are irregular with respect to the proto-tones, I will remark them accordingly.
- 2. In the Table, Laha and Kam represent respectively the Kra and Kam-Sui language groups. When attested, the Hlai reflex of these words is usually -n; for instance, /khun/ 'heavy', /than/ 'body louse'.
- 3. If we, on the other hand, assume that the Saek form /la:n/ is original, would that mean we need to set up two different early finals for the parent language of Tai and Kra, that is, one for the correspondence Saek -l: Laha -l and another for Saek -n: Laha -l? In my earlier study on the link between Saek -l and Laha -l (Ostapirat 1995), I entertained such an assumption and temporarily set up two distinct finals \*-l and \*-L respectively. If we consider the Saek form as loaned, this may now turn out to be unnecessary.
- 4. For this root, Saek has /le:n/, an apparent borrowing from Thai/Lao, cf. Siamese /le:n/ 'great-grandchild'. The long vowel -e:- in the Siamese form is due to the secondary lengthening and is unique even among the Southwestern-Tai (SWT) languages. This word regularly has in all SWT dialects the reflexes of the short vowel \*-e-. The Saek form /la:n/ 'grandchild', as we suggested earlier, could have

been borrowed together, though we do not have similar clue to sound change as we have here for 'great-grandchild'.

# **Abbreviations**

PH Proto-Hlai
PK Proto-Kra
PKS Proto-Kam-Sui
PT Proto-Tai

PT Proto-Tai
NT Northern-Tai
CT Central-Tai

SWT Southwestern-Tai
Bd Baoding (Hlai dialect)

By Buyang

Ht Heitu (Hlai dialect)
Lc Lungchow (Tai dialect)

Lh Laha Ml Mulam S Sui

Ts Tongshi (Hlai dialect)

Wt White Tai

Wm Wuming (Tai dialect)

Y Yay clf. classifier

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