

Proto-Southwestern Tai: A New Reconstruction

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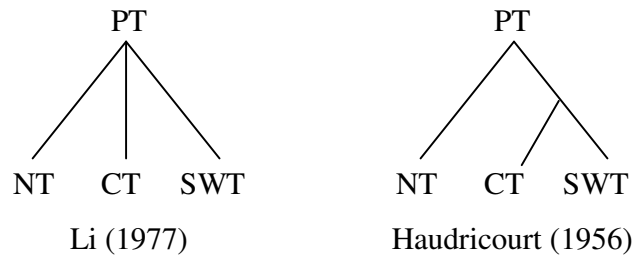
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1. Introduction

- 1.1 SWT are spoken in Mainland SEA covering Northern Vietnam, Southern China, Laos, Thailand, Malaysia, Northern Myanmar, and the extreme east of India.
- 1.2 SWT languages belong to the Tai branch of the Kra-Dai family, formerly known as Tai-Kadai (see Ostapirat (2000) for discussion of the new term).
- 1.3 It is generally viewed as one of the three primary branches of Tai.
- 1.4 Various reconstructions of PSWT (Brown 1965; Jonsson 1991; Li 1977; Sarawit 1973) have been proposed but they differ in many important respects.
- 1.5 Some researchers (Chamberlain 1975; Luo 1997; Luo 2001) have expressed doubts on the validity of the SWT subgroup.
- 1.6 This paper: 1) shows that SWT is a valid genetic subgroup,
 2) proposes a new reconstruction of PSWT, and
 3) discusses some notable features of the proposed PSWT.
- 1.7 Data from 28 SWT dialects (see Appendix A)

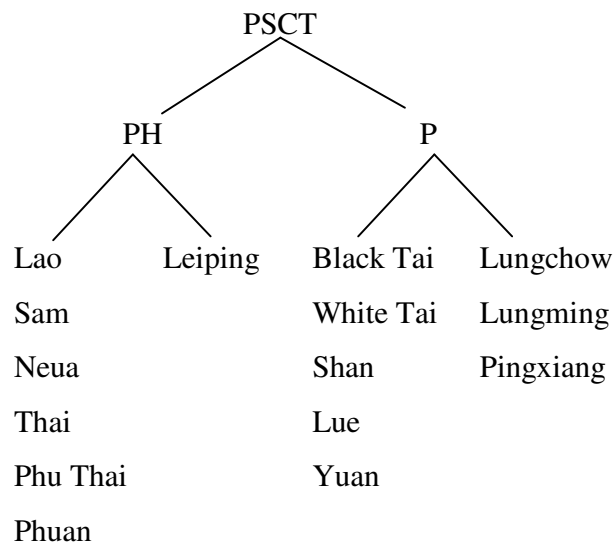
2. SWT as a valid subgroup

- 2.1 Traditional view: Li (1960; 1977) and Haudricourt (1956) differ with regards to the relationship between SWT and CT but agree that SWT is a sub-branch of Tai.

Figure 1 Tai subgroup structure according to Li (1960; 1977) and Haudricourt (1956)

2.2 Chamberlain (1975): P/PH distinction

- 2.2.1 Reflexes of PT voiced stops **b-*, **d-*, **ʃ*, and **g-* as criteria for grouping non-NT into two branches: P group (*p-*, *t-*, *c-*, and *k-*) and PH group (*ph-*, *th-*, *ch-*, and *kh-*).

Figure 2 Chamberlain's view of the SCT subgrouping (based on Chamberlain 1975: 62-63)

- 2.2.2 Gedney (1991) argues that Indic and Khmer loanwords in Thai were borrowed as voiced stops when the original **b-*, **d-*, **ʃ*, and **g-* were still voiced in Thai themselves.

- 2.2.3 L-Thongkum (1997) views CT languages that still retain the original voiced stops as unequivocal evidence that the devoicing did not happen early enough to split the common parent language of CT and SWT.
- 2.2.4 Feeding/bleeding relationships among sound changes in SWT dialects indicate that other changes had occurred before the devoicing.

Table 1 Development of **yw:n*^A ‘night’ in Black Tai

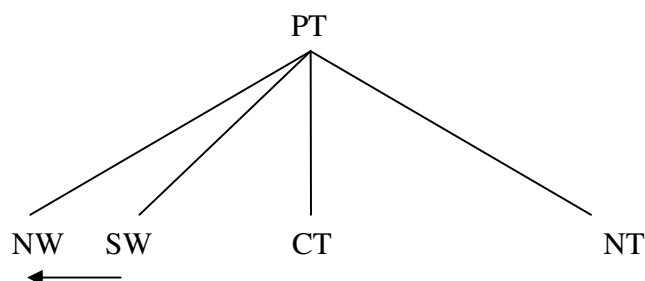
	* <i>yw:n</i> ^A		* <i>yw:n</i> ^A
Occlusivization (* <i>y-</i> > * <i>g-</i>)	* <i>gw:n</i> ^A	Devoicing	* <i>xw:n</i> ^{A2}
Devoicing	* <i>kw:n</i> ^{A2}	* <i>y-</i> > * <i>g-</i>	-
	<i>kw:n</i> ⁴		●* <i>xw:n</i> ⁴

The change from **y-* to **g-* in Black Tai preceded the devoicing of the voiced stops (Pittayaporn 2007).

2.3 Luo (1997; 2001): the NWT group

- 2.3.1 Luo (2001) argues that the so-called NWT dialects share phonological and lexical features with CT and NT that are lacking in SWT.

Figure 3 Luo’s subgroup structure of Tai (from Luo 2001: 180)



2.3.2 Proposed phonological features are, in fact, recent local developments.

Table 2 Some of Luo's examples of the [x] ~ [s] alternation in DH (modified from Luo 2001: 179).

Gloss	Dehong
cast net	xe ¹ ~ se ¹
excrement	xi ⁴ ~ si ⁴
arm	xɛn ¹ ~ sɛn ¹
green	xew ¹ ~ sew ¹
tooth	xew ⁴ ~ sew ⁴
bad smell, putrid	xew ¹ ~ sɛw ¹

This [x] ~ [s] variation is case of palatalization conditioned by front vowels, e.g. /xi⁴/ is realized as [ɕi⁴] or [si⁴].

2.3.3 Dubious etymology

Table 3 Examples of forms cited by Luo (2001: 182) that cannot be reconstructed to PT

Gloss	PT	Tone	Thai	DH	LC	Fengshan
kind of bamboo	* [?] dr-	D1S	-	hok	-	dɔk
back basket	*j-	C2	-	jɔŋ B2/A1	jaŋ	jaŋ
to hit, strike	* [?] b-	C1	-	maŋ B2	-	bɔŋ
to mix, be mixed up	*dl-	C2	-	lo A2	riaw	liaw

Most sets of forms cited are too irregular to be reconstructible to PT or even to be considered connected.

2.3.4 Failure to distinguish between innovations and retentions.

Table 4 Forms cited by Luo (2001: 181) that show regular correspondences

Gloss	PT	Tone	Thai	Dehong	Lungchow	Fengshan
steep, abrupt	*hl-	*B1	-	liŋ	liŋ	liŋ
shuttle (of loom)	*pr-	*B1	-	taw	- ¹	taw
do not...yet	*b-	*B2	-	pa:	-	pa:
to stand	*z-	*A2	-	soŋ	-	soŋ

It is not clear how to decide whether these items should be considered shared retentions by Dehong and NT dialects, or whether they are shared innovations.

2.4 Evidence for the SWT subgroup

Table 5 Some phonological innovations shared by SWT varieties

	Gloss	Tone	Thai	WT	BT	TY	Lao	Yong
1 *tl-	full	A1	tem	tim	tem	tem	tem	tim
	fart	D1	tot	tot	tot	tot	tot	tot
	big leaf	A1	tɔ:ŋ	tɔŋ	tɔŋ	tɔŋ	tɔ:ŋ	tɔŋ
2 *pr-	to expose	A1	ta:k	ta:ʔ	ta:ʔ	ta:k	ta:k	ta:k
	wasp	A1	tɛ:n	ten	ten	ten	tɛ:n	ten
	bamboo strip	D1	tɔ:k	tɔʔ	tɔʔ	tɔk	tɔ:k	tɔ:k
3 *tr-	eye	A1	ta:	ta:	ta:	ta:	ta:	ta:
	to die	A1	ta:j	ta:j	ta:j	ta:j	ta:j	ta:j
	grasshopper	D1	tak	tak	tak	tak	tak	tak
4 *thr-	head louse	A1	haw	haw	haw	haw	haw	haw
	tail	A1	ha:ŋ	ha:ŋ	ha:ŋ	ha:ŋ	ha:ŋ	ha:ŋ
	to cook rice	A1	huŋ	huŋ	huŋ	huŋ	huŋ	huŋ

¹ The CT dialect of Tianbao has liŋ^{B1}.

	Gloss	Tone	Thai	WT	BT	TY	Lao	Yong
5 *xr-	six	D1	hok	hok	hok	hok	hok	hok
	ear	A1	hu:	hu	hu	hu	hu:	hu:
	to seek	A1	ha:	ha:	ha:	ha:	ha:	ha:
6 *vr-	machete	C2	p^hra:	pa:	pa:	p^ha:	p^ha:	p^ha:
	evening meal	A2	p^hraw					p^haw
	tomorrow	D2	p^hruk		pu?	p^huk		p^huk
7 *thl-	to wait	C1	t^ha:	t^ha:	t^ha:	t^ha:	t^ha:	t^ha:
	to plough	A1	t^haj	t^haj	t^haj	t^haj	t^haj	t^haj
	to ask	A1	t^ha:m	t^ha:m	t^ha:m	t^ha:m	t^ha:m	t^ha:m
8 *dl-	to steal	D2	lak	lak	lak	lak	lak	lak
	to lick	D2	liə	le	liə	le	liə	le:
	wind	A1	lom	lum	lom	lom	lom	lum
9 *dr-	root	D2	ra:k	ha:	ha:?	ha:k	ha:k	ha:k
	boat	A2	ruə	hɣ	huə	hɣ	huə	hɣ:
	bedbug	A2	ruət	hɣt	huət	hɣt	huət	hɣ:t
10 *nl/r-	water	C2	nam	nam	nam	nam	nam	nam
	bird	D2	nok	nok	nok	nok	nok	nok
	outside	D2	nɔ:k	nɔ	nɔ?	nɔk	nɔ:k	nɔ:k
11 *uɯ	heel	C1	son	sun	son	s^hon	son	sun
	above, sky	A1	bon			mon	bon	bun
	people	D2	k^hon	kun	kon	kon	k^hon	kun
12 *ua	house	A2	ruən	hɣn	huən	hɣn	huən	hɣn
	rope	D2	c^huək	cɣ	cuə?	sɣk	suək	cɣ:k
	hot	D1	duət			lɣt	duət	dɣ:t

The set of shared phonological innovations are so large that they are extremely unlikely to be later areal developments.

In agreement with the standard view, the so-called SWT languages form a valid sub-group within Tai. The question of the position of this SWT branch within the Tai family is still open.

3. Proposed PSWT phonology

3.1 Earlier PSWT reconstruction

- 3.1.1 All earlier PSWT reconstructions agree that PSWT had five places of articulation: labial, alveolar, palatal, velar, and glottal.
- 3.1.2 All earlier PSWT reconstructions include 4 contrastive phonation-types: aspirated voiceless, unaspirated voiceless, glottalized voiced, and plain voiced.
- 3.1.3 All earlier PSWT reconstructions agree that the three-way tonal contrast of PT was still retained and that tonal splits had not occurred.
- 3.1.4 Although they have different views on PT vowel system, Sarawit (1973) and Li (1977) are almost identical.
- 3.1.5 Brown (1965)'s Ancient Thai does not include SWT varieties outside of Thailand Brown (1965) reconstructs a system with length contrast in high vowels as well as in mid and low vowels.
- 3.1.6 Jonsson (1991)'s PSWT phoneme inventory is almost identical to Li's but she does not reconstruct contrastive vowels lengths.

3.2 Claims

- 3.2.1 There was a distinct series of uvular consonants in PSWT.
- 3.2.2 There is no evidence for clusters **p^hr/l-*, **k^hl-*, *ʔbr-* and **mr-* at the PSWT level.
- 3.2.3 Mid back unrounded vowel **ɤ* must be reconstructed for PSWT.
- 3.2.4 Vowel length was contrastive in PSWT.

3.3 Uvular consonants

Table 6 PSWT simple consonants

	labial	alveolar	palatal	velar	uvular	glottal
stops	*p ^h - *p- *ʔb- *b-	*t ^h - *t- *ʔd- *d-	*c- *j-	*k ^h - *k- *g-	*q-	*ʔ-
fricatives	*f- *v-	*s- *z-		*x- *ɣ-	*χ-	*h-
nasals	* ^h m- *m-	* ^h n- *n-	* ^h ɲ- *ɲ-	* ^h ŋ- *ŋ-		
liquids		* ^h r- *r- * ^h l- *l-				
glides	* ^h w- *w-		*ʔj- *j-			

- 3.3.1 Li (1977: 192-193 and 207-208) discusses that PT *k^h- and *x- had merged by the time of SWT but the resulting sound may have two different reflexes in WT and some dialects of Lue; k^h- or x-.
- 3.3.2 Li (1977; 1989) and Diller (1988) claim a strong correlation between WT k^h- and forms without “voicing alternation.”
- 3.3.3 Jonsson (1991: 74) proposes that WT x- is reflex of PSWT *x- that contrasted with *k^h- whose reflex is k^h-.

3.3.4 Data from Phuan and Phu Thai (Kapong) indicates that a distinct series of uvular consonants must be reconstructed.

Table 7 Reflexes of PSWT velar and uvular consonants

	BT	WT	TL	Thai	PhT	Phuan	Saek
*k-	k-	k-	k-	k-	k-	k-	k-
*k ^h -	k ^h -	k ^h -	k ^h -	k ^h -	k ^h -	k ^h -	ɣ-
*x-	k ^h -	x-	k ^h -	k ^h -	k ^h -	k ^h -	h-
*q-	k ^h -	x-	k ^h -	k ^h -	h-	k ^h -	k-
*χ-	k ^h -	x-	k ^h -	k ^h -	h-	h-	h-

- Phu Thai (Kapong) *h*- goes back to PSWT uvular consonants while *k^h*- points to their velar counterparts.
- PSWT *χ- merged with *h- in Phuan (except for the Nongkhai dialect).
- White Thai preserves the distinction between PSWT *k^h- and *x-.

Table 8 Some etyma reconstructed uvular consonants *q- and *χ-

*q-		BT	WT	TL	Thai	PhT	Phuan	Saek
1. to kill	C1	k ^h a:	xa:	k ^h a:	k ^h a:	ha:	k ^h a:	ka:
2. knee	B1	k ^h aw	xaw	k ^h aw	k ^h aw	haw	k ^h aw	kɔ:
3. torn	D1	k ^h a:t	xa:t	k ^h a:t	k ^h a:t	ha:t	k ^h a:t	ka:t
4. needle	A1	k ^h em	xim	k ^h em	k ^h em	k ^h em	hem	kim
5. leg	A1	k ^h a:	xa:	k ^h a:	k ^h a:	k ^h a:	ha:~k ^h a:	kwa:
*χ-		BT	WT	TL	Thai	PhT	Phuan	Saek
1. horn	C1	k ^h aw	xaw	k ^h aw	k ^h aw	haw	haw	haw
2. tooth	A1	k ^h ew	xew	k ^h ew	k ^h iəw	hɛ:w	hɛ:w	-
3. to cross	C1	k ^h a:m	xa:m	k ^h a:m	k ^h a:m	ha:m	ha:m	ha:m
4. to ascend	C1	k ^h u:n	xu:n	k ^h u:n	k ^h u:n	hu:n	hu:n	hu:n

3.3.5 Evidence for PSWT **ǵ*- is not robust.

3.3.6 Voicing alternation is associated with PSWT **k^h*- as shown by the fact that Saek forms corresponding to PSWT **k^h*- show tones associated with earlier voiced initials.

3.4 Elimination of certain clusters

3.4.1 Li (1977:87-88) and Jonsson (1991:62) reconstructed **p^h/r-*, **k^h*-, and **k^hr-* for PSWT.

3.4.2 Li (REF) reconstructs **ml/r-* noting that each one might go back to two different clusters.

3.4.3 **k^hr-* was the only aspirated cluster with a liquid in PSWT.

Table 9 PSWT initial clusters

	labial	alveolar	palatal	velar	uvular	glottal
C+l	*p1- *ʔb1- *b1- *m1-			*k1- *g1-		
C+r				*k ^h r *gr-		
C+w				*k ^h w- *kw- *gw- *yw- *ŋw-	*qw-	

- 3.4.4 Elimination of *p^hl/r-
- 3.4.4.1 Li (1977: 87-88) claims that Ahom is the only variety that preserved the *p^hl/r- cluster but “not consistently either in the spelling or in pronunciation.”
- 3.4.4.2 I argue that the Ahom symbol <-r-> should be viewed as a graphic marker of aspiration rather than indicating a medial /-r-/.
3.4.4.3 <-r-> is sometimes absent in words etymologically derived from *p^hr-, i.e. <phum> or <phrum> for *p^hom^A ‘hair’ (from Barua and Phukan (1964) cited in Li (1977)).
3.4.4.4 <p^hr-> is sometimes used in words that come from PT *p^h-, *br-, *f-, and *v- i.e. <p^hra:> for *p^ha:^C ‘to split’ and *va:^C ‘sky’ (see (Wichasin 1986)).
3.4.4.5 I claim that <p^hr-> was pronounced as plain <p^h-> in Ahom.
- 3.4.5 Elimination of *k^hl-
- 3.4.5.1 Li (1977: 256) assumes without explaining that PT *k^hl- and *k^hr- were kept distinct in PSWT.
3.4.5.2 Following Jonsson (1991:77-78), I argue that PT *k^hl- and *k^hr- had merged.
3.4.5.3 The two PT clusters have identical reflexes in all SWT dialects, i.e. k^h-, x-, s-, or c^h-.
3.4.5.4 Etyma that Li reconstructed with initial *k^hl- is rendered as k^hr-, in Palaung, e.g. k^hrɔŋ ‘to capture’ < PSWT *k^hraŋA (Pittayaporn n.d.).
- 3.4.6 Absence of *mr- in PSWT
3.4.6.1 Li (1977: 93 and 255) and Jonsson (1991: 64) noted that a *mr- cluster might have existed in PT and PSWT but merged with *ml- in some modern varieties.
3.4.6.2 The contrast between mr- and ml- in Southern Thai has been shown to be a result of syllable reduction, e.g. samrap in Thai corresponding to mrap in Southern Thai (Diller 1976).

3.4.6.3 The alleged split in reflex in Laos and Thai is actually a result of dialect mixing and/or spelling-pronunciation.

Table 10 Etyma reconstructed with *ml-

Gloss		BT	WT	TL	Yong	Lao	Thai	Saek
1. to destroy	C2	ma:ŋ	ma:ŋ	-	ma:ŋ	maŋ	la:ŋ	-
2. to open (the eyes)	A2	mun	mun	mun	mun	mun	lu:m ²	mlɔ:n
3. slippery	B2	mun	mun	mun	mun	mun	lu:n	mlu:l
4. seed	D2	mit	mit	met	met	met	met (let)	mlɛk
5. insect	A2	mɛŋ	mɛŋ	mɛŋ	mɛŋ	mɛ:ŋ	mɛ:ŋ (lɛ:ŋ)	mɛ:ŋ ³
6. body louse	A2	men	-	men	min	len	len	mlɛl

3.4.6.4 Cases of Thai *mal-* are instances of orthographic borrowing from archaic or poetic language, while cases of Thai *m-* may be dialect borrowings from either Lao or Yuan (Northern Thai).

- Disyllabic form *malɛ:ŋ*^{A2} written as <mle:ŋ> is a spelling-pronunciation of the archaic spelling.
- The *m-* initial form *mɛ:ŋ*^{A2} is a case of dialect borrowing.
- The *l-* initial form *lɛ:ŋ*^{A2}, which is included in the Royal Institute Dictionary, is the expected outcome.

3.4.6.5 Lao form for ‘body louse’ is probably a case of dialect mixing, cf. Thai *len*^{A2}.

² The final *-m* is likely to be a result of assimilation to the **m-* in **ml-*, i.e. **mlum* > **mlum* > *lu:m*.

³ This is probably a Lao loan.

3.5 PSWT *ɣ

- 3.5.1 Only a few of modern SWT varieties have γ in the inherited portion of their vocabulary, i.e. BT and Lao.
- 3.5.2 In BT and Lao, γ occurs only before $-k$ and $-\eta$.
- 3.5.3 BT and Lao data indicates that there was a contrast between high * u and * γ before velar consonants.

Table 11 Reflexes of PSWT mid back unrounded * γ

	BT	WT	TL	Yong	Lao	Thai
* uk	uk	uk	uk	uk	uk	uk
* $u\eta$	$u\eta$	$u\eta$	$u\eta$	$u\eta$	$u\eta$	$u\eta$
* γk	γk	γk	uk	uk	$\gamma k \sim uk$	uk
* $\gamma \eta$	$\gamma \eta$	$u\eta$	$u\eta$	$u\eta$	$\gamma \eta \sim u\eta$	$u\eta$

- Black Tai keeps the contrast between * u and * γ before velar consonants intact.
- White Tai shows a regular raising of mid vowel to high vowel before nasals, thus, PSWT * $\gamma \eta$ > WT $\gamma \eta$, cf. * gon^A > kun^{A2} ‘person’.
- Lao shows alternation between $\gamma \sim u$ only in etyma showing γ in Black Tai.
- Shan, Yong, and Thai completely merged γ and u .

Table 12 Etyma reconstructed with * u and * γ before velar consonants

* uk		BT	WT	Shan	Yong	Lao	Thai
1. late at night	D1	duk	$d\gamma k$	duk	duk	duk	duk
2. ink	D1	$muuk$	$muuk$	$muuk$ $m\gamma k$	$muuk$	$muuk$	$muuk$

*uŋ		BT	WT	Shan	Yong	Lao	Thai
3. one	B1	nuŋ	nuŋ	nuŋ	nuŋ	nu:ŋ ⁴	nuŋ
4. to steam	B2	nuŋ	nuŋ	nuŋ	nuŋ	nuŋ	nuŋ
*ɣk		BT	WT	Shan	Yong	Lao	Thai
5. young male animal	D1	thɣk	thɣk	thuk	thuk	thɣk thuk	thuk
6. enemy, war	D1	sɣk	sɣk	suuk	suuk sɣk	sɣk	suuk
8. deep	D2	lɣk luuk	lɣk	luuk	luuk	lɣk luuk	luuk
9. chest	D2	ʔɣk	ʔɣk	ʔɣk	ʔuuk ʔok	ʔɣk ʔok	ʔok
*ɣŋ		BT	WT	Shan	Yong	Lao	Thai
10. long (of time)	A1	hɣŋ	huŋ	huŋ	huŋ	hɣ:ŋ	huŋ
11. to sift	A2	sɣŋ	chuŋ	khɣŋ	khɣŋ	khɣŋ	khɣŋ
12. to arrive	A1	thɣŋ	thuŋ	thuŋ	thuŋ	thɣŋ thuŋ	thuŋ
13. half	B1	cɣŋ	cɣŋ	khɣŋ	khɣŋ	khɣŋ	khruŋ

- Thai has $ʔok^{DSI}$ for PSWT $*ʔɣk^D$ ‘chest’ but show the expected $ʔuuk^{DSI}$ in the compound $saʔuuk^{DSI}$ ‘hiccups’ (see (Kullavanijaya 1992)).
- The $ʔok^{DSI}$ forms in Lao and Yong for ‘chest’ may be dialect loans from Thai.

3.6 Vowel-length contrast

3.6.1 Li (1977) and Sarawit (1973) reconstruct quantity contrast in PSWT.

⁴ That this Phu Thai form has a long vowel may indicate $*u:$ in PSWT.

- 3.6.2 Jonsson (1991) and Luo (1997) present different arguments but both treat vowel-length as secondary.
- 3.6.3 I propose that all vowels were long in open syllables but vowel-length was contrastive in closed syllables.

Table 13 PSWT vowels

	front	Back	
	unrounded	unrounded	rounded
high	*i, *i:	*ɯ, *ɯ:	*u, *u:
mid	*e	*ɤ	*o
low	*ɛ:	*a, *a:	*ɔ:

Diphthongs			
decreasing	*iə	*ɯə	*uə
increasing		*aɯ	

- 3.6.4 Short and long vowels in cognates in modern dialects that have quantity distinction are almost in complementary distribution but the unpredictability of the reflexes favors a reconstruction of PSWT with contrastive vowel length.
- 3.6.5 Languages that have vowel length agree in most cases. When they do not, syllable structure or tone can be identified as the conditioning environments.
- 3.6.6 In Black Tai and White Tai, although phonemic length is limited to *a*, final **-k* has become *-ʔ* in etyma that have long vowels in Yong, Lao, and Thai, e.g. Black Tai *suk^{D1}* ‘cooked, ripe’ but *hu^{D1}* ‘loom’.

Table 14 Etyma illustrating contrast vowel length contrast among high vowels

*-i- and *i:		BT	WT	Shan	Yong	Lao	Thai
1. raw, not ripe	D1	dip	dip	lip	lip	dip	dip
2. ten	D1	sip	sip	ship	sip	sip	sip
3. to fly	A1	bin	bin	min	bin	bin	bin
4. knife	D1	mit	mit	mit	mi:t	mi:t	mi:t
5. to pinch	D1	nip	nip	nip	ni:p	ni:p	ni:p
6. foot	A1	tin	tin	tin	tin	ti:n	ti:n
*-u- and *-u:-		BT	WT	Shan	Yong	Lao	Thai
7. cooked, ripe	D1	suk	suk	suk	suk	suk	suk
8. to dig	D1	k ^h ut	k ^h ut	k ^h ut	k ^h ut	k ^h ut	k ^h ut
9. mosquito	A2	ɟuŋ	ɟuŋ	juŋ	juŋ	ɟuŋ	juŋ
10. loom	D1	huʔ	hu:ʔ	huk	hu:k	hu:k	hu:k
11. to stroke	D2	lup	lup	lup	lu:p	lu:p	lu:p
12. tall	A1	suŋ	suŋ	s ^h uŋ	suŋ	su:ŋ	su:ŋ
*u and *u:		BT	WT	Shan	Yong	Lao	Thai
13. to ascend	C1	k ^h uun	xuun	k ^h uun	k ^h uun	k ^h uun	k ^h uun
14. to go hungry	D1	ʔut	ʔut	-	ʔu:p ʔot	ʔut	ʔot
15. night	A2	kun	xuun	k ^h uun	k ^h uun	k ^h u:n	k ^h u:n
16. dark	D2	mut	mut	mut	mu:t	mu:t	mu:t
17. measure from thumb to fingertip	D2	kup	xup	k ^h up	k ^h u:p	k ^h u:p	k ^h u:p

3.6.7 In Shan dialect, checked syllables that are reflected with long vowels in Thai and Lao show different tonal reflexes from those that correspond to short syllables.

Figure 4 Tonal development of the Shan dialect of Muong Khawn (modified from Chamberlain 1975)

	*A	*B	*C	*DS	*DL
vcl. aspirated	5	2	3	5	2
vcl. unaspirated	1				
glottalized vd.					
Plain voiced	4	1	3	3	1

1. The place contrasts among consonants were rich but relatively few initial clusters are reconstructible.
2. The vowel inventory does not have a gap as far as vowel qualities are concerned.

4. Notable features of PSWT

4.1 Redundancy of length contrast among non-high vowels.

- 4.1.1 PSWT mid vowels *e, *ɤ; and *o are always short and cannot occur in open syllables.
- 4.1.2 PSWT low vowels *ɛ: and *ɔ: are always long and can occur in open syllables.

Table 15 Distribution of PSWT non-high vowels

	open syllables		closed syllables	
	long	Short	long	short
mid				*-ok
low	*-ɔ:		*-ɔ:k	

- 4.1.3 Li (1977: 297) assumes that length was not contrastive in PT but developed secondarily in low vowels and in all open syllables.
- 4.1.4 Sarawit (1973) accounts for this complimentary distribution by positing a lowering of PT long mid vowels *e:, and *o: to PSWT *ɛ: and *ɔ:.
- 4.1.5 Li's proposal cannot account for why mid vowel *e, and *o did not occur in open syllables, strongly supporting Sarawit's position that PT did not have contrast between mid and low vowels, e.g. lowering of PT long mid vowels.

4.2 Gaps within the sub-system of initial clusters

- 4.2.1 PSWT voiceless unaspirated stops can combine with *-l- but not with *-r-.
- 4.2.2 As the only PSWT aspirated cluster is *k^hr-, there is a total absence of aspirated cluster with *-l-.

Table 16 Clusters consisting of a stop plus a liquid in PSWT

		labial	velar
*C ^h -	*-l-		
*C-		*pl-	*kl-
*C̣-		*bl-	*gl-
*C ^h -	*-r-		
*C-			
*C̣-		*br-	*gr-

4.2.3 Two possible interpretations

4.2.3.1 PSWT aspirated cluster is secondary, i.e. PT **kr-* > PSWT *k^hr-*.4.2.3.2 PSWT unaspirated cluster is secondary, i.e. PT **k^hl-* > PSWT *kl-*.

4.3 Scarcity of uvular consonants

4.3.1 Although four different phonation-types are reconstructed for PSWT, only two uvular consonants have been proposed: **q-* and **χ-*.4.3.2 There is no evidence that **q-* also occurred syllable-finally.4.3.3 Unless etyma with initial **q-* and **χ-* turned out to be post-PT loans, uvular consonants must also be projected back to PT.

4.3.4 The etyma reconstructed with uvular initials largely match up with those proposed by Haudricourt (1952) and Ostapirat (2007) who concluded that PT had uvular consonants.

4.3.5 The observed scarcity of uvular consonants must be explained as;

4.3.5.1 Systematic gaps in the phonology of PT and PSWT, i.e. fewer contrasts in post-velar places of articulation.

4.3.5.2 Accidental gaps due to mergers that eliminate certain PT uvular consonants, e.g. **q^h = *h-*.

4.3.5.3 Result of post-PT changes that caused splits in other places of articulation but left the uvular series intact.

4.4 Defective nature of the vowel **ɤ*4.4.1 Neither Li (1977) or Sarawit (1973) reconstructs **ɤ* for PT and PSWT.4.4.2 PSWT **ɤ* occurred only before velar consonants **-k*, and **-ŋ*.4.4.3 There are only three examples of PSWT **e* before velars, all of which are not found in the so-called NT languages: **^Bbeŋ* ‘to strain’, **^Dleŋ* ‘iron’, and **^Ddek* ‘child’.4.4.4 Two possible interpretations of the defective nature of **ɤ*.

- 4.4.4.1 PT *-ek and *-eŋ became PSWT *-ɣk and *-ɣŋ contrasting with *-ek and *-eŋ which were later introduced in etyma like ‘to strain’, ‘iron’, and ‘child’.
- 4.4.4.2 PT *ɣ was not defective but later sound changes transformed *ɣ before non-velar consonants into some other vowels.

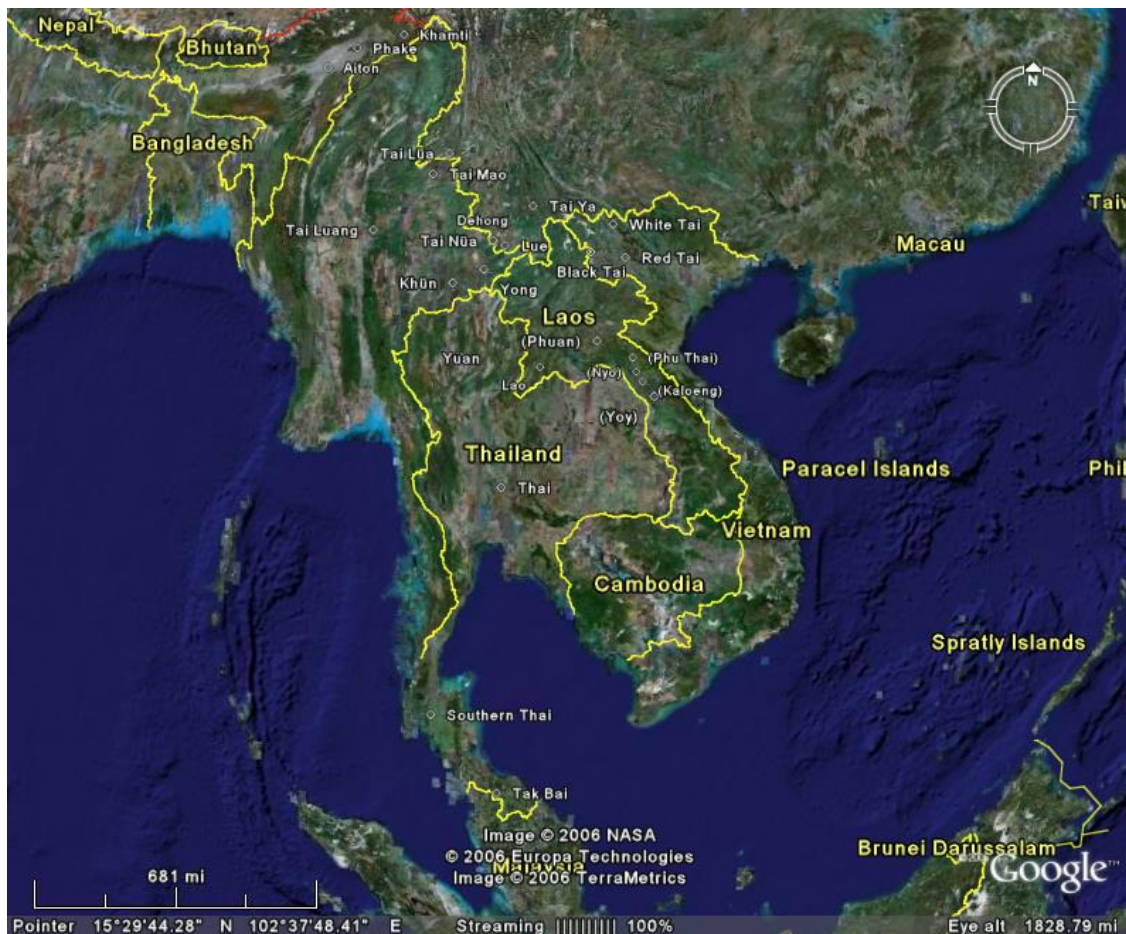
5. Conclusion

- 5.1 The homogeneity among SWT varieties with respect to phonological innovations indicates that they share a common immediate ancestor language and form a valid subgroup within Tai.
- 5.2 This new reconstruction
 - 5.2.1 Synthesizes earlier works which differ in crucial aspects,
 - 5.2.2 Incorporates data from a wide-range of SWT varieties, including newly-available data from Phuan, and Phu Thai,
 - 5.2.3 Accounts for previously-unrecognized correspondence sets,
 - 5.2.4 Evaluates philological, and loanword evidence critically, and
 - 5.2.5 Considers very carefully development of individual languages.
- 5.3 The PSWT phonology has a number of intriguing characteristics, especially gaps, which have implications for the reconstruction of PT.

Appendix A
Languages

	Code	Language	Source
1	KT	Tai Khamti	Harris (1976)
2	PK	Tai Phake	Morey (2005)
3	AT	Tai Aiton	Morey (2005)
4	LU	Tai Lüa	Harris (1975)
5	MA	Tai Mao	Harris (1975)
6	NU	Tai Nüa	Harris (1975)
7	DH	Dehong Tai	Luo (1999)
8	TY	Tai Ya	Xing (2000)
9	LE	Lue	Hudak (1996)
10	YG	Yong	Gedney (n.d.) and Hudak (1996)
11	TL	Tai Long	Gedney (n.d.)
12	BT	Black Tai	Gedney (n.d.)
13	RT	Red Tai	Gedney (n.d.)
14	WT	White Tai	Gedney (n.d.)
15	YU	Tai Yuan	Rungruengsri (1991)
16	KH	Tai Khün	Petsuk (1978)
17	LA	Lao	Gedney (n.d.)
18	PH(1)	Sukhothai Phuan	Trongrat (1998)
19	PH(2)	Suphanburi Phuan	Trongrat (1998)
20	PH(3)	Nongkhai Phuan	Trongdi and Thananan (1998)
21	PT(1)	Phu Thai Wang	Trongdi and Thananan (1998)
22	PT(2)	Phu Thai Kapong	Pittayaporn (2005)
23	YO	Yooy	Boonsner (1984)
24	NY	Nyo	Boonsner (1984)
25	KL	Kaloeng	Arilak (1985)

	Code	Language	Source
26	TB	Tak Bai Thai	Trongdi and Thananan (1998)
27	TH	Thai (Siamese)	Gedney (n.d.)
28	ST	Southern Thai	Trongdi and Thananan (1998) and Umar (2003)



(X) = The particular variety or varieties used in this study is spoken in Thailand but the concentration of this language is in the indicated area. The varieties found in Thailand are scattered around the country as results of forced or voluntary migrations.

Appendix B
Proposed SWT compared with other reconstructions

Pittayaporn	Li	Jonsson	Sarawit	Brown
*p-	*p-	*p-	*p-	*p-
*p ^h -	*p ^h	*p ^h	*p ^h	*p ^h -
	*p ^h l/r-	*p ^h l/r-	*p ^h r-	
				*p ^h l-
*b-	*b-	*b-	*b-	*b-
* ^ʔ b-	* ^ʔ b-	* ^ʔ b-	* ^ʔ b-	* ^ʔ m-
m-	m-	m-	m-	m-
* ^h m-	* ^h m-	* ^h m-	* ^h m-	* ^h m-
*f-	*f-	*f-	*f-	*f-
*v-	*v-	*v-	*v-	*v-
*w-	*w-	*w-	*w-	*w-
* ^h w-	* ^h w-	* ^h w-	* ^h w-	* ^h w-
				*pr-
*pl-	*pl-	*pl-	*pl-	*pl-
*bl-	*bl-	*bl-	*bl-	*bl-
*br-	*br-	*br-	*br-	*br-
* ^ʔ bl	* ^ʔ bl/r-	* ^ʔ bl-	* ^ʔ bl-	
*ml	*ml/r-	*ml/r-	*ml-	
*t-	*t-	*t-	*t-	*t-
*t ^h -	*t ^h -	*t ^h -	*t ^h -	*t ^h -
*d-	*d-	*d-	*d-	*d-
* ^ʔ d-	* ^ʔ d-	* ^ʔ d-	* ^ʔ d-	* ^ʔ n-
*n-	*n-	*n-	*n-	*n-
* ^h n-	* ^h n-	* ^h n-	* ^h n-	* ^h n-
* ^h r-	* ^h r-	* ^h r-	* ^h r-	
*xr-	*xr-	*xr-	*xr-	
				* ^h r-
*r-	*r-	*r-	*r-	*r-
*l-	*l-	*l-	*l-	*l-

Pittayaporn	Li	Jonsson	Sarawit	Brown
*h _l -	*h _l -	*h _l -	*h _l -	*h _l -
*s-	*s-	*s-	*s-	*s-
*z-	*z-	*z-	*z-	*z-
*c-	*c-	*c-	*c-	*c-
	*c ^h -	*j ^h -	*c ^h -	*c ^h -
*j-	*j-	*j-	*j-	*j-
*ɲ-	*ɲ-	*ɲ-	*ɲ-	*ɲ-
*h _ɲ -	*h _ɲ -	*h _ɲ -	*h _ɲ -	*h _ɲ -
*j-	*j-	*j-	*j-	*j-
* [?] j-	* [?] j-	* [?] j-	* [?] j-	* [?] ɲ-
*k-	*k-	*k-	*k-	*k-
*k ^h -	*k ^h -	*k ^h -	*k ^h -	*k ^h -
*x-				
*q-		*x-	*x-	*x-
*ɣ-				
*g-	*g-	*g-	*g-	*g-
*ɣ-	*ɣ-	*ɣ-	*ɣ-	*ɣ-
*ɳ-	*ɳ-	*ɳ-	*ɳ-	*ɳ-
*h _ɳ -	*h _ɳ -	*h _ɳ -	*h _ɳ -	*h _ɳ -
				*tr-
				*dr-
*kl-	*kl-	*kl-	*kl-	*kl-
	*kr-	*kr-	*kr-	*kr-
*k ^h l-	*k ^h l-	*k ^h r-	*k ^h r-	
*k ^h r-	*k ^h r-			
				*k ^h l-
*gl-	*gl-	*gl-	*gl-	*gl-
*gr-	*gr-	*gr-	*gr-	*gr-
*kw-	*kw-	*kw-	*kw-	*kw-
*h _w -	*h _w -	*h _w -	*h _w -	*h _w -
*gw-	*gw-	*gw-	*gw-	*gw-
*ɣw-	*ɣw-	*ɣw-	*ɣw-	

Pittayaporn	Li	Jonsson	Sarawit	Brown
* ^h w-	* ^h w-	* ^h w-	* ^h w-	* ^h w-
*ŋw-	*ŋw-	*ŋw-	*ŋw-	
*k ^h w-	*k ^h w-	*k ^h w-	*k ^h w-	*k ^h w-
*ʔ-	*ʔ-	*ʔ-	*ʔ-	*ʔ-
*h-	*h-	*h-	*h-	*h-
*i	*i	*i	*i	*i
*i:	*i:		*i:	*i:
*u	*u	*u	*u	*u
*u:	*u:		*u:	*u:
*ɣ	*ɯ	*ɯ	*ɯ	*ɯ
*ɯ				
*ɯ:				
				*ɣ
*e	*e	*e	*e	*e
*o	*o	*o	*o	*o
				*e:
				*o:
*ɛ:	*ɛ:	*ɛ	*ɛ:	*ɛ
*ɔ:	*ɔ:	*ɔ	*ɔ:	*ɔ
*a	*a	*a	*a	*a
*a:	*a:	*a:	*a:	*a:
*iə	*iə	*iə	*iə	*iə
*uə	*uə	*uə	*uə	*uə
*eɳ	*eɳ	*eɳ	*eɳ	*eɳ
*aɳ	*aɳ	*aɳ	*aɳ	*aɳ

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