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The Evolution of Tai Phake and Tai Turung Consonant Inventories: An OT Account

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1. Introduction

Tai Phake and Tai Turung are two languages spoken in Assam, a northeastern state of India. Both belong to the Kra-Dai language family, also known as Tai-Kadai. This family of languages is predominantly spoken across regions such as Thailand, northern Vietnam, Laos, Myanmar, and the Southwestern part of China. A key feature of these languages is their tonal structure, and they are spoken by approximately 93 million people.

There are a total of six Tai languages spoken in Assam: Tai Ahom, Tai Khamti, Tai Khamyang, Tai Aiton, Tai Phake, and Tai Turung. These Tai languages face a critical threat as their speakers are predominantly bilingual, using Assamese (the lingua franca of the state) in their daily interactions and restricting their native tongue to familial contexts. The younger generation, in particular, exhibits greater fluency in Assamese compared to their ancestral language. This shift could be attributed to their educational environment, where English or Assamese are the primary mediums of instruction, as well as the perceived prestige associated with Assamese due to its wider usage.

The Tai-Kadai language family has been categorized into five branches by Weera Ostapirat (2005:128): a) Tai, the largest branch, spoken in Southern China and Southeast Asia, b) Kra, also known as Kadai, spoken in Southern China and Northern Vietnam, c) Kam-Sui, spoken in the southern part of China, d) Be, spoken in Hainan, and, e) Hlai, spoken in Hainan. TheKra-Dai languages spoken in the Northeastern state of Assam belong to the Tai branch of the Kra-Dai

language family. Henceforth, this study will refer to the group of Kra-Dai languages spoken in Assam as Tai languages.

This study focuses specifically on Tai Phake and Tai Turung, examining the consonant systems of Proto-Tai and Proto-Southwestern Tai in general, and of Tai Phake and Tai Turung in particular. The aim is to trace how the Tai languages of Assam have evolved from their proto forms and to contribute to the literature on these languages, as they are critically endangered. The changes observed are accounted for in Optimality Theory.

The paper is divided into seven sections, with the introduction as the first. The second section deals with the history of these languages and the third section deals with the consonant system of Proto Tai followed by the consonant system of Proto-Southwestern Tai, Tai Phake and Tai Turung. The sections analyze the differences in their evolution by comparing these two languages with their Proto forms (PT and PSWT). Allophonic variations and cases of neutralization are accounted for using Optimality-theoretic constraints in section six and section seven puts forth a summary and a conclusion.

2. History of Tai Phake and Tai Turung

Tai Phake is predominantly found in the Buri Dihing valley of Assam and its villages include Namphake and Tipam Phake in the Dibrugarh district, and Borphake, Nigamphake, Faneng, Mounglang, Man Mau, and Man Long in the Tinsukia district. The Phake community is believed to have migrated from Men Mau in South China, across Myanmar before entering Assam via the Patkai hills. According to the 17th edition of Ethnologue (2013), the population of Tai Phake speakers was approximately 2000. Tai Phake is taught in primary schools and has been labelled “4 (educational)” by the Ethnologue, indicating that “the language is in vigorous use, with standardization and literature being sustained through a widespread system of institutionally supported education.”

Tai-Turung, also known as Tairung or Tailung, is spoken across Jorhat, Golaghat, and Karbi-Anglong districts, with a significant number of speakers residing in parts of Arunachal Pradesh also. Turung is also considered to be a variety of Singpho language (Morey, 2010).

While some consider Turung to be a variant of the Singpho (also called Jingpho) language, there is ongoing debate since Singpho itself is a cluster of varieties. However, native speakers identify themselves as part of the Tai (or Thai) language family. One of the main reasons for including Tai Turung in our study is to see if it has more phonological features of the Tai languages or of Singpho, which is a Tibeto-Burman language. According to the 2001 census, there are approximately 1200 Tai Turung speakers. Although labeled as "Extinct (10)" in the Ethnologue, the language is used within family settings among the elder generation.

There's ongoing debate over the language's original script. They do not have an agreed orthography for this language. Some prefer the Roman script, like Singpho, while others opt for the Assamese script for its familiarity to the younger generation. Those strongly connected to their Tai heritage favor the Tai script.

2.1 Tai Languages and Script

Tai Phake is written with a version of the Myanmar / Burmese alphabet known as Lik Tai. It is based on the alphabet used for Northern Shan in Myanmar / Burma. Tai Turung, on the other hand, uses the Eastern Nagari script, which is an Eastern Brahmic script. This clearly shows the influence of Assamese on Tai Turung.

3. Consonant System of Proto Tai

The consonant system of Proto-Tai was very complex with many marked segments like implosives and glottalized sounds; and voiceless sonorants (nasals, liquids and glides). Pittayaporn (2009) identified 36 consonants in Proto-Tai that can occur as simple onsets discussed in Table 1.

Table 1 Inventory of PT Initial Consonants (Pittayaporn 2009:70)

		labial	alveolar	palatal	velar	uvular	glottal
stops	voiceless	*p	*t	*c	*k	*q	
	voiced	*b	*d	*ɟ	*g	*ɢ	
glottalized		*ɓ	*ɗ	*ʔj			*ʔ
fricatives	voiceless		*s	(*ɕ)	*x	*χ	*h
	voiced		*z	(*ʑ)	*ɣ		
nasals	voiceless	*ʰm	*ʰn	*ʰɲ	(*ʰŋ)		
	voiced	*m	*n	*ɲ	*ŋ		
liquids and glides	voiceless	*ʰw	*ʰr *ʰl				
	voiced	*w	*r *l				

The consonants in Proto-Tai can be categorized into four groups based on their manner of articulation: 1) stops, 2) fricatives, 3) nasals, and 4) liquids and glides. Regarding places of articulation, Pittayaporn (2009: 71) identified six distinct categories for Proto-Tai consonants: 1) labial, 2) alveolar, 3) palatal, 4) velar, 5) uvular, and 6) glottal. Regarding phonation type, Proto-Tai exhibited a three-way contrast: 1) voiceless, 2) implosive/glottalized, and 3) voiced.

Pittayaporn (2009:208) has posited eleven consonants in PT that could function as codas (Table 2).

Table 2 Inventory of PT Final Consonants (Pittayaporn 2009:70)

	labial	alveolar	palatal	velar	uvular	glottal
stop	*p	*t	*c	*k		
fricative						
nasal	*m	*n	(*ɲ)	*ŋ		
liquid		*l				
glide	*w		*j			

While Proto-Tai (PT) onsets can be voiceless, implosive/glottalized, or voiced, each manner of articulation in the coda position is restricted to a single phonation type: all final obstruents are voiceless, but all final sonorants are voiced. This phenomenon is known as laryngeal neutralization (Pittayaporn 2009: 194). Such a limited inventory of coda consonants is very common typologically and is one of the most widespread traits in the Southeast Asian (SEA) linguistic area (Matisoff 2001; Rhee 2003).

4. Consonant System of Proto Southwestern Tai

According to Pittayaporn (2009: 121), the initial consonants in PSWT can be categorized into six types: labials, dentals, velars, sibilants, laryngeals, liquids, and semivowels. The stops exhibit four contrasting phonation types: voiceless aspirated, voiceless unaspirated, glottalized, and voiced. The final consonant system in PSWT consists of only nasals and stops. The final consonant system in PSWT consists of only nasals and stops.The consonants in the final position do not contrast as aspirated or unaspirated, voiced and voiceless or glottalized and unglottalized.

5. Differences in Consonant Inventories

As the focus of our study is on the evolution of the two languages, Tai Phake and Tai Turung, which supposedly, both belong to the South-Western branch of the Tai languages, it is imperative to compare the phonemic inventories of these two languages with Proto Tai and Proto-Southwestern Tai to trace the changes. We firstly, look at Tai Phake in detail and then at Tai Turung.

5.1 Proto-Tai, Proto-Southwestern Tai and Tai Phake

Morey (2005:117) identifies fifteen consonants in Tai Phake, as shown in Table 3. When comparing the consonant inventory of Tai Phake with Proto-Tai and Proto-Southwestern Tai, it becomes evident that voiced plosives have undergone devoicing in Tai Phake (Table 4). This devoicing of voiced stops from the proto form is seen in most modern Tai varieties, with exceptions such as Cao Bang, Wenma, and some other dialects (Pittayaporn, 2009). In most dialects, these voiced stops have become either plain /p-/, /t-/, /c-/, /k-/ or aspirated /p^h/, /t^h-/, and /k^h-/.

Table 3 Consonant Phonemes in Tai Phake

	Bilabial	Labio-dental	Alveolar	Palatal	Velar	Glottal
Plosive	p p^h	t t^h		c	k k^h	ʔ
Nasal	m		n	ɲ	ŋ	
Fricative			s			h
Approximant			ɹ			
Lateral approximant			l			
Semi-vowel	w			j		

In Tai-Phake, PT /*b-/, /*d-/, /*g-/ are seen to be replaced by their voiceless counterparts /p-/, /t/, /k-/.

Table 4 Etyma with PT Voiced Stops in Tai Phake

Gloss	PT	PSWT	Tai-Phake
fat	*bi	*bi:	pi:
all	*dəŋ	*daŋ	tuŋ
tongs	*giəm	*gi:m	kim

The implosives in PT have also undergone changes in Tai Phake. They are preserved in Proto-Southwestern Tai but change into nasals in Tai Phake. (Table 5). This behavior can be attributed to the ambiguous nature of implosives, which some linguists classify as sonorants and others as obstruents. According to Clements and Osu (2002:35), "Non-obstruent stops exhibit two types of behavior: in some respects, they pattern like sonorants, and in others, like obstruents. Their sonorant-like behavior appears related to their aerodynamic properties (lack of air pressure buildup), while their obstruent-like behavior may be related to their auditory properties (lack of sonority)."

Table5 Etyma with PT Implosives in Tai Phake

Gloss	PT	PSWT	Tai Phake
wound	*ɓ-	*ɓaːt	maːt
nose	*ɗ-	*ɗaŋ	naŋ

The voiced fricatives in PT have also undergone devoicing, converting to their voiceless counterparts or aspirated plosives.

Table 6 Etyma Showing PT Voiced fricatives in Tai Phake

Gloss	PT	PSWT	Tai Phake
straight	***z-**	*zɯː	sɯː
night	***ɣ-**	*ɣɯːn	k^{h}ɯːn

All the voiceless sonorants (nasals, liquids and glides) in PT undergo change and convert into their voiced counterparts or the unmarked voiceless sounds /h or /p^{h}/.

Table 7 Etyma showing PT Voiceless Sonorants in Tai Phake

Gloss	PT	PSWT	Tai Phake
dog	*^{h}m-	*^{h}ma:	ma:
to bark	*^{h}r-	*^{h}rau	hau
back	*^{h}l-	*^{h}laŋ	laŋ

The examples provided illustrate that all the voiced obstruents (plosives and fricatives) in Tai Phake have undergone devoicing while retaining their place feature. Consequently, this results in a loss of contrast in the language between underlying voiced forms. However, there is an interesting tonal difference to distinguish the underlying voiceless stops from the stops that result from devoicing. Morey (2005:152) notes that "words with initial voiced stops would have been pronounced with lower pitch than those with initial voiceless stops, because of the tendency of voiced initials to depress the pitch of the words that follow them. It is hypothesized that as a result of this, combined with the merging of initial voiced consonants to voiceless (either aspirated or unaspirated), tonogenesis or tone-split arose, and the different pitch levels of words came to be contrastive. For example, in languages where voiced stops merged with voiceless aspirated stops, the word which was *bii (A4) 'fat' would become *phii (A4) and thus identical to *phii (A1) 'ghost'. The lower pitch on the new word *phii (A4) 'fat' would then become the contrastive feature that would disambiguate it from *phii (A1) 'ghost".

5.2 Proto-Tai, Proto-Southwestern Tai and Tai Turung

The consonants in Tai Turung are twenty-one in number, based on Morey (2010a). These consonants are classified into five places of articulation: labial, alveolar, palatal, velar, and glottal. Additionally, Tai Turung exhibits four distinct phonation types: aspirated voiceless, unaspirated voiceless, glottalized voiced and plain voiced, as outlined in Table 8.

Table 8 Consonant Phonemes in Tai Turung

	Bilabial	Dental / Alveolar	Palatal / affricate	Velar	Glottal
Voiceless unaspirated stops	p	t	c	k	(ʔ)
Voiceless aspirated stops	ph	th		kh	
Voiced stops	b	d	j	g	
Nasals	m	n	ɲ	ŋ	
Voiceless fricative		s			h
Semi vowel	w		y		
Rhotic Approximant		r			
Lateral Approximant		l			

As discussed earlier, in many modern Tai varieties, voiced plosives typically undergo devoicing. However, Tai Turung maintains its voicing and does not undergo any devoicing process (Table 9).

Table 9 Etyma with PT Voiced Stops in Tai Turung

Gloss	PT	PSWT	Tai-Turung
group	--	*buak	bak

Conversely, voiceless plosives in Tai Turung undergo voicing in word-initial positions in some contexts (see Table 10).

Table 10 Etyma Showing PT Occlusives in Tai Turung

Gloss	PT	PSWT	Tai-Turung
section	*tɔn	*tɔn	dɔn[1]
bow	*koŋ	*koŋ	boŋ

[1]The origin of these words is unknown. If it is a Chinese loanword, as suggested by some, it is originally /dɔn/, which we assume to be the case, rather than voicing of a voiceless sound.

In Tai Turung, voiced fricatives from PT undergo devoicing, as the Turung consonant inventory completely lacks voiced fricatives. Additionally, voiceless sonorants in Turung undergo voicing.

In summary, voiced obstruents present in PT and retained in PSWT are replaced with voiceless obstruents in Tai Phake but remain unchanged in Tai Turung. Furthermore, while voiceless plosives in PT and PSWT are preserved in Tai Phake, they undergo voicing in Tai Turung under certain conditions.

Table 11 Summary of the Differences Observed

	PT	PSWT	Tai Phake	Tai Turung
Number of consonants	36	39	18	22
Voiceless nasals, glide and liquids	Yes	Yes	No	No
Implosives and glottalized sounds	Yes	No	No	No
Minimum prosodic word	Disyllabic (sesquisyllables present) or Bimoraic	Bimoraic	Bimoraic (except in words ending in ə which are created by change of a diphthong to a monophthong)	Disyllabic (sesquisyllables present) or bimoraic

6. An OT Perspective

The reduction in the number of segments and the loss of some sounds clearly is an indication of the reordering of constraints in Optimality Theory. It indicates that certain Markedness constraints have been promoted over Faithfulness constraints in both Tai Phake and Tai Turung. Apart from these, there are cases of merger noted in both Tai Phake and Tai Turung, but they differ in which segment undergoes the change.

Firstly, we list the phonological changes perceived in Tai Phake and Tai Turung in comparison to PT and PSWT.

Segmental Changes in Tai Phake

- Implosives become nasals in the onset position
- Voiced plosives become voiceless plosives
- Voiced fricatives become voiceless fricatives
- Voiceless sonorants become voiced

Segmental Changes in Tai Turung

- Implosives become plosives in the onset position
- Voiceless plosives become voiced plosives in the initial position
- Voiced fricatives are allowed
- Voiceless sonorants become voiced

6.1 OT Constraints for Tai Phake

Optimality Theory is a theory that basically looks at the conflict between Faithfulness constraints that do not allow any changes from their input or base form and Markedness constraints, which on the other hand, target marked segments and try to eliminate or change them to less marked segments. Each language has a different ordering of constraints, and it is this factor that makes them unique. In the development of languages, though, we often see the progress from more marked to less marked structures, and this is what we see in the development of Tai Phake too.

Proto-Tai permitted a number of marked segments, and these were faithful to their base form. Hence, in PT, Faithfulness constraints >> Markedness constraints.

Implosives Become Nasals in the Onset Position

Implosives have been described as ‘problematic’ (McLaughlin 2005: 201) because of the ‘challenges in defining their articulatory and acoustic properties. Catford (1939) describes implosives as ‘suction stops.’ According to Lex (1994, cited in Clements & Osu

2002: 304), researchers agree that there is no egressive airflow for implosives. That might be why implosives are sometimes called 'nonexplosive stops' (Clements & Osu 2002). It is widely agreed that implosives have four defining features: glottal closure, lowering of the larynx, rarefaction, and release of the implosive. Implosives do show glottal closure and can occur with modal voice as well (Ladefoged &Maddieson 1996). However, larynx lowering, and rarefaction are not always present in all types of implosives. "For this reason, Clements & Osu (2002: 10) take implosives to be non-obstruent stops because the property that 'distinguishes implosives from plosives is the **absence of air pressure buildup in the oral cavity'** (emphasis added)."

It is because of these acoustic properties; implosives are phonetically sonorants (not obstruents). However, implosives can phonologically pattern as both; that is, they may be phonological sonorants or obstruents depending on the language. Clements and Osu (2002) propose that implosives are phonologically neither obstruents nor sonorants.

The implosives in PT are retained in PSWT and converted to nasals in Tai Phake. The language disallows the marked sounds, implosives, in the inventory, which can be captured using the markedness constraint ***IMPLOSIVE [+/-SON [2] , +CONSTRICTED GLOTTIS]*[3].This means that if implosives pattern with sonorants in a language, they should surface as sonorants, whereas if they pattern with obstruents, they will surface as obstruents.

***IMPLOSIVE [+/- SON, +CONSTRICTED GLOTTIS]:** No implosives allowed

This is in conflict with the faithfulness constraint **IDENT-IO (F)**which states that the features in the input be preserved in the output.

IDENT-IO (F)

The specifications for the features of an input segment must be preserved in its output correspondent.

[2]SON = Sonorants

[3]The reason we use these features (as per Clements & Osu 2002) is because it best describes the changes from PT to PSWT and Tai Phake.

Since only the laryngeal and major class features change but the place, voice and manner features are intact, **IDENT-IO (PLACE), IDENT-IO (VOICE), IDENT-IO (MANNER) >> IDENT-IO [+/- SON, CONSTRICTED GLOTTIS]**

IDENT-IO (PLACE)

The specification for the feature [PLACE] of an input segment must be preserved in its output correspondent.

IDENT-IO (VOICE)

The specification for the feature [VOICE] of an input segment must be preserved in its output correspondent.

IDENT-IO (MANNER)

The specification for the feature [MANNER] of an input segment must be preserved in its output correspondent.

Therefore, the constraint hierarchy for implosives in Tai Phake is as follows:

IDENT-IO (PLACE), IDENT-IO (VOICE), IDENT-IO (MANNER) >> *IMPLOSIVE [+/-SON], +CONSTRICTED GLOTTIS) >> IDENT-IO [+/-SON, CONSTRICTED GLOTTIS]

Table 12 Tableau for Realization of Implosives in the Onset position (Tai Phake)

Input [*ɓa:t]	IDENT-IO (PLACE)	IDENT-IO (VOICE)	IDENT-IO (MANNER)	*IMPLOSIVE [+/- SON, +CONSTRICTED GLOTTIS]	IDENT-IO [+/SON, CONSTRICTED GLOTTIS]
a.[*ɓa:t]				*!	
☞ b. [ba:t]					*
c. [pa:t]		*!			*
d. [ma:t]					*

It is clear from this tableau that **IDENT-IO (PLACE), IDENT-IO (VOICE)** and **IDENT-IO (MANNER)** are high ranked and are hence inviolable. **IDENT-IO [+/-SON, CONSTRICTED GLOTTIS]**, on the other hand, are low ranked. The constraint ***IMPLOSIVE [+/- SON,**

+CONSTRICTED GLOTTIS] bans implosives from surfacing. Candidate a violates this constraint, which is a fatal violation. Candidate c violates **IDENT-IO (VOICE)** and is also out of the race. Candidates b and d are both optimal as they both violate only the lower ranked constraint. Candidate b would be optimal in a language where implsoives pattern with obstruents and Candidate d would be optimal in a language like Tai Phake where they pattern with sonorants. The implosive loses its constricted glottis feature. As it is ambivalent between a sonorant and an obstruent, it can either lose its sonorant feature to become a voiced oral stop or its obstruent feature to become a nasal stop (with no change in its place, manner or voice features). Tai Phake prefers d, whereas PSWT and other languages in Tai prefer b. This could be because implosives pattern more with sonorants rather than obstruents in Tai Phake. This aspect needs further investigation.

Devoicing of Obstruents in Tai-Phake

Tai Phake lacks voiced obstruents in their phoneme inventory. The voiced obstruents in PT have been replaced by their voiceless counterparts in Tai Phake.

This clearly signifies the domination of Markedness over Faithfulness constraints. The language disallows a marked segment as a voiced stop in its inventory, which can be captured with the constraint ***[-SON, +VOICE]**

***[-SON, +VOICE]:** Does not allow voiced obstruents.

This is a featural markedness constraint as proposed by Prince and Smolensky (1993). This constraint is violated by the presence of a voiced plosive or a voiced fricative.

This is in conflict with the faithfulness constraint **IDENT-IO (VOICE)** which states that the voice features in the input be preserved in the output. All voiced obstruents become voiceless, but place and manner are preserved which means **IDENT-IO (PLACE), IDENT-IO (MANNER)**would be high ranked.

Constraint hierarchy for voiced obstruents in Tai Phake is as follows:

***[-SON, +VOICE]** >> **IDENT-IO (OBST.PLACE), IDENT-IO (OBST.MANNER)** >> **IDENT-IO (OBST.VOICE)**

Table 13 Tableau for Realization of Voiceless plosives in the Onset position (Tai Phake)

Input [*ba:]	* [-SON, +VOICE]	IDENT-IO (OBST.PLACE)	IDENT-IO (OBST.MANNER)	IDENT-IO (OBST.VOICE)
a. [ba:]	*!			
☞b. [pa:]				*
c. [p^ha:]			*!	*
d. [ka:]		*!		*

Table 14 Tableau for realization of Voiceless fricatives in the Onset position (Tai Phake)

Input [*zɯ:]	* [-son, +voice]	IDENT-IO (OBST.PLACE)	IDENT-IO (OBST.MANNER)	IDENT-IO (OBST.VOICE)
a. [zɯ:]	*!			
☞b. [sɯ:]				*
c. [tɯ:]			*!	*
d. [kɯ:]		*!		*

In both these tableaus, candidate b. is the optimal candidate as it violates the least ranked constraint **IDENT-IO (OBST.VOICE)**. The other candidates violate the higher ranked constraints and are thus eliminated.

Voicing of Sonorants

Voiceless sonorants in Tai Phake underwent changes and transformed into their voiced counterparts. This clearly signifies the domination of Markedness over Faithfulness constraints. The language disallows a marked segment as a voiceless sonorant in its inventory. Therefore, a markedness constraint debarring voiceless sonorants needs to be posited.

***[+CONS, +SON, -VOICE]:** No voiceless sonorant

This is also a featural markedness constraint as proposed by Prince and Smolensky

(1993). This constraint is violated by the presence of voiceless nasals or glides.

This is in conflict with a faithfulness constraint **IDENT-IO (VOICE)** which states that the voice features in the input be preserved in the output.

Constraint hierarchy for voiced sonorants in Tai Phake is as follows:

***[+CONS, +SON, -VOICE] >> IDENT-IO (SON.PLACE) >> IDENT-IO (SON. MANNER) >> IDENT-IO (SON.VOICE)**

Table 15 Tableau for Realization of Voiceless Sonorants in the Onset Position (Tai Phake)

Input: [*^{h}laŋ]	***[+CONS, +SON, -VOICE]**	**IDENT-IO (SON.PLACE)**	**IDENT-IO (SON.MANNER)**	**IDENT-IO (SON.VOICE)**
a.[*^{h}laŋ]	*!			
☞b. [laŋ]				*
c.[naŋ]			*!	
d. [maŋ]		*!	*	

Candidate b performs better with respect to the constraints posited and thus emerges as winner. Candidate a violates the highest ranked constraint, which is a fatal violation. Candidates c and d violate **IDENT-IO (SON.MANNER)** and **IDENT-IO (SON.MANNER), IDENT-IO (SON.PLACE)** respectively.

6.2 OT Constraints for Tai Turung

As Tai Turungis considered to be a descendant of the Tibeto-Burman language family but with a large vocabulary from Tai, we often see that the phonological changes that happen in Tai Turung are dictated by the phonology of Sinpho as Tai Turung is considered to be a variant of Singpho.

In the following section, we examine a peculiar case of merger in Tai Phake and in Tai Turung.

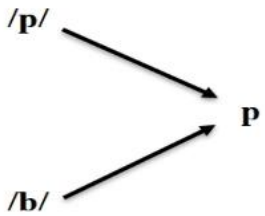
6.3 Merger in Tai-Phake and Tai-Turung

Merger is essentially treated as a structural phenomenon. Two sounds merge into one where a distinction in the earlier structure is lost in the later structure. Two kinds of mergers exist: "unconditional merger" in which the phonemic contrast is lost in all phonological environments and only one phoneme remains; and "conditioned merger" in which the merger is limited to certain contexts. The former is seen in the case of Tai Phake.

Table 16 Etyma with PSWT Voiceless Stops in Tai Phake

Tai-Phake	PSWT
pa:	pa: 'aunt' ba: 'to carry'
ta:	ta: 'eye' da: 'to paint'
ka:	ka: 'crow' ga: 'to trade'

Tai-Phake is seen to have "unconditioned merger" as this language does not allow any voiced plosive. All the voiced plosives in their Proto form have been changed to their voiceless counterpart. For instance, /p/ and /b/ in /pa:/ and /ba:/ respectively have lost their distinction and have merged into the phoneme /p/.



This merger is a movement to a less marked form.

However, in Tai Turung, there are two instances of voicing of a voiceless plosive which are presumably of PT origin. These two words are

*tɔn /dɔn/ ‘section’

*koŋ /boŋ ‘bow’

The phonological change from a voiceless to a voiced stop in Tai Turung is also a case of merger where the contrast between a voiceless and voiced stop is neutralized in the word initial position. This merger is a movement to a more marked form and is perhaps a case of “conditioned merger” as the spread of voice from the nasal coda. As the origin of these words is not known (it could be a loanword from Chinese or from PT), our analysis is very tentative and inconclusive. A more detailed study needs to be done.

7. Conclusion

To conclude, Tai Phake has undergone changes in its phoneme inventory leading to a decrease in the consonants while Tai Turung has retained its phoneme inventory.

The data on Tai Turung is limited which left us with some unanswered questions like the implosives in PT. We do not know if they have changed to plosives or nasals. It has more characteristics of Singpho than Tai languages. Although Turung has substantial vocabulary from Tai due to its contact language; the underlying phonological system is closer to Proto Tibeto-Burman language. The vocabulary taken from Tai languages are like loan words which have been adopted as per the phonological system of Turung.

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