

A Phonological Reconstruction of Proto-Plang

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1. Introduction

1.1 Purpose

The purpose of this paper is to reconstruct the phonemic system of Proto-Plang using the comparative method to examine three related languages. The languages used in this study are the Kontoi and Shinman dialects of Plang, both from Yunnan province in southwestern China, and Samtao from the neighboring border area of Burma.¹ The reconstruction will then be a basis for identifying the interrelatedness of the three languages.

1.2 Geographical Setting

The Plang people (in China written as Blang or Bulang) come from the Sip Song Panna area of Yunnan province. They have mostly settled between the Burma border and the Mekhong River (known as the Lancangjiang in China).

During the time of the Cultural Revolution in China (1966-1976), the Plang people started migrating out of Yunnan. They initially settled just across the Burma border around the city of Kengtung and gradually moved down into northern Thailand where the economic opportunities were greater. Most of those in Thailand have settled in a village called Baan Huay Nam Khun, 20 kilometers from the northern Thai border. Plang people from different villages and dialects in China have settled in this village, which is half comprised of Shan (Thai Yai) people as well.

¹I am very grateful to Pateng and Yanang for sharing their language with me. And many thanks to Ronald Werth, Kenneth Gregerson and Paulette Hopple for their helpful participation in this project.

After spending several months in this village in Thailand, the author learned that there are several varieties of Plang in Yunnan province. The dialects were referred to by the Plang people by their village names; thus some of these "dialects" are merely village distinctions of linguistically identical situations, but others, possibly as many as ten varieties, are distant enough to be completely unintelligible. This appears to be the case with Kontoi and Shinman.

The *Ethnologue* (Grimes 1984) lists the Plang population as 58,476. Rough estimates by the Plang put the population of the Kontoi variety at approximately 6,000 in China, 1,000 in Burma and around 800 in Thailand. There is no census information for Shinman.

Samtao is a language spoken in the Shan state of eastern Burma in an area north of Kengtung known as the Samtao mountains. This area is heavily inhabited by people speaking various kinds of Wa and, in fact, the Samtao also refer to themselves as Wa. The Plang migrated through this area en route from China to Thailand, and a few Samtao have followed the Plang to Thailand.

No demographic statistics were available on the Samtao due to their remote location within Burma.

1.3 Previous Studies

For the last ten years Chinese scholars have been conducting research on Mon-Khmer languages such as Wa, Plang, Ta-ang, Mang, Hu, Kammu and Khbit (Li et al. 1988). The first knowledge of Plang outside of China was in 1976 when Jimmy Harris and Jerry Gainey recorded about a 1,000 word list from a woman in the village Baan Huay Nam Khun in northern Thailand. Gerard Diffloth (1980) used the data from this tape. He refers to the language as Samtao but the author has since met the woman who made the recording and discovered that the language she speaks is actually a variety of Plang called Man Beek. She previously lived in the region of the Samtao people but she identifies herself with the other Plangs. Thus the Samtao that Diffloth refers to is different from the Samtao treated in this study.

Some have thought that Plang and Samtao are the same language (Diffloth 1982, Grimes 1984) but that is only due to the above-mentioned confusion. They are definitely distinct languages such that speakers of one do not understand speakers of the other. The only work done previously on any of the languages used here is a phonology of Kontoi Plang (Phijitra 1986) and a brief phonological and grammatical description of Shinman Plang by Li et al. (1986). There are only slight differences between Phijitra's analysis and the one used in this study.

1.3.1 Classification

Plang fits into the Waic group along with Lawa, K'ala, P'uman, La and the many Wa languages. Diffloth (1980) makes Samtao (which is actually Man Beek Plang) a direct offshoot of Proto-Wa with the other Waic languages more closely related to each other, roughly diagrammed as in Fig.1.

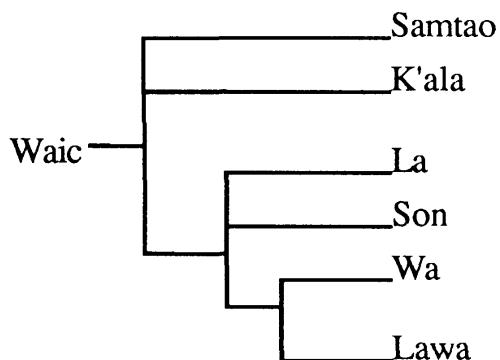


Figure 1. The Waic Languages (after Diffloth 1980)

This study will attempt to discover the relationship between Kontoi, Shinman, and Samtao, but the three languages together would fit into Fig.1 where Samtao is placed. After briefly comparing the three languages in this study with the forms that Diffloth (1980) proposes for Proto-Wa it appears that Kontoi Plang is the most similar and therefore least innovative of the three.

1.4 Data Sources

The data for Shinman, both the word list and the phonemic analysis, come from Li et al. (1986).

Data for the other two languages, Kontoi and Samtao, were collected by Paulette Hopple and the author in Baan Huay Nam Khun, in northern Thailand, in 1986-1987. The informants for both of these languages were approximately 45-50 years of age. The Kontoi woman had lived in a Kontoi speaking village in China until she was in her late 20's. She then lived in villages in Thailand and Burma with other Kontoi speakers, but the surrounding area for the most part consisted of Tai or Tibeto-Burman speakers. The Samtao woman lived in the area of the Samtao people until about a year and a half before the data were gathered. At that time she was living among the Plang and beginning to learn the Kontoi Plang language.

The phonemic analyses of these two languages were done by Hopple and Paulsen (1988).

2. Synchronic view of Kontoi, Shinman and Samtao

2.1 Kontoi Plang

2.1.1 Kontoi Consonants

The consonants of Kontoi are shown in Fig.2.

	labial	alveolar	palatal	velar	glottal
stops, vl. unasp.	p	t	c	k	?
vl. asp.	p ^h	t ^h	c ^h	k ^h	
vd.	b				
fricatives, vl.	f	s			h
vd.	v				
nasals, vd.	m	n	ɲ	ŋ	
vl.	m̥	n̥	ɲ̥	ŋ̥	
liquids, vd.		l̥			
vl.		jh			
vd.		r			
semivowels, vd.	w		y		
vl.			y̥		

Figure 2. Kontoi Plang Consonants

/b/, /f/ and /y/ have a very low rate of occurrence. In Kontoi the /c/ and /c^h/ are grooved alveopalatal affricates in syllable initial position, with the /c/ having an unreleased alveopalatal stop allophone in syllable final position. The alveolar fricative has an aspirated allophone /sh^h/ when initial in breathy syllables. The symbol /l^h/ represents an aspirated lateral articulated with voicing initially followed by a voiceless articulation with a greater puff of air. By auditory impression it seems that the voicing is turned off halfway through the articulation of the sound. There are no vowel-initial words in Kontoi. Words written with an initial vowel are actually articulated with an initial glottal.

Initial consonant clusters include /pl/, /kl/, /p^h r/, k^h r/ and the nasals with /h/.

In syllable final position only /p, t, c, k, ?, m, n, ɲ, ŋ, l, w, y, h/ occur, with the stops being unreleased.

2.1.2 *Kontoi vowels and register*

The vowels of Kontoi are as follows:

	Front	Central	Back
	Unrnd	Rd	
High	i		ɯ
Mid	e		o
Low		a	ɔ

Figure 3. Kontoi Plang Vowels

Though they are few in number for a Mon-Khmer language, the vowels manifest much variation phonetically. The front vowels, especially in the breathy register, fluctuate in tenseness as well as in vowel height. The high front vowel has

the greatest degree of variation, with [aⁱ] freely fluctuating with [ɛ] before /k/. Generally the front vowels can be much laxer in breathy syllables.

The low central vowel /a/ has the allophone [ʌ] in a breathy syllable.

In the back rounded vowels there is again some free variation, with /u/ being realized as [o] in many environments. The [o] has an offglide [o^ə] before /l/. In the breathy register there is only a two-way contrast in back rounded vowels between /u/ and /o/, with /o/ becoming /ɔ/ before velars.

The only contrastive glides contain a final /y/ and /w/ .

One other vowel not shown in the inventory, namely schwa [ə], only occurs in presyllables, which will be discussed later.

There are two contrastive voice qualities in Kontoi, breathy and clear. Clear voice is unmarked here, while breathy voice is symbolized with a / under the vowel, e.g. /ɑ/. As has been seen in the discussion of the vowels, one of the manifestations of register is a variation in the quality of the vowels. The characteristics of the register phenomenon in Kontoi will not be discussed at length here, as a discussion of it by Paulette Hopple should be appearing soon.

2.1.3 *Kontoi Presyllables*

Words in Kontoi, as well as Shinman and Samtao, are monosyllabic, compounds of monosyllables, or single syllables with presyllables. There are two types of presyllables in Kontoi. One type generally consists of a single consonant /p, t, k, s/ and a reduced vowel /a/, phonetically [ə] . Other consonants do occur in the presyllable but very rarely. Likewise, a few other vowels can occur, but very rarely and only following /s/. The other type of presyllable is a syllabic nasal. All voiced nasals can occur as presyllables.

Presyllables are much less stable than main syllables. For example, occasional fluctuations such as /p/ ~ /k/ are only found in presyllables. The reduction of vowels to [ə] in presyllables also demonstrates this instability.

2.1.4 *Kontoi Tone*

There are two tones, high and low. The high tone is level with non-sonorant finals (˥) and rising with sonorant finals (˥). The low tone likewise is level with non-sonorant finals (˨) but falling with sonorant closure (˨). There also exists a high falling tone (↑), marked ^{1`} which only occurs with sonorant finals. It is much less frequently found and mostly in loan words.

2.2 *Shinman Plang*

2.2.1 *Shinman Consonants*

The phonology of Shinman as shown in Fig.4. is taken from Li et al. (1986).

	labial	alveolar	palatal	velar	uvular	glottal
stops, vl. unasp.	p	t	c	k		?
asp.	ph	th	ch	kh	qh	
prenasal. stops, unasp.	np	nt	nc	nk		
asp.	nph	nth	nch	nkh	nqh	
fricatives, vl.	f	s			x	h
vd.	v		z			
nasals, vd.	m	n	ŋ	ŋ		
vl.	ṁ	ń	ŋ	ŋ		
laterals, vd.	l̪					
vl.	l̪					

Figure 4. Shinman Plang Consonants

All consonants can occur syllable-initially. The palatal series is written by Li et al. as /tç, tçh, ntç, ntçh/. Prenasalization assimilates to the point of articulation of the following stop so that /np, nt, nc, nk/ are realized as [mp, nt, nc, nk]. The initial /l/ is realized as a lateral fricative [ɬ]. As in Kontoi, words written with initial vowels are articulated with an initial glottal stop. Initial consonant clusters include /pl, kl, phl, khl, npl, nkl, nphl, nkhl/.

There are ten final consonants, which are /p, t, k, m, n, ŋ, h, ?, l, l̪/. The stops are unreleased. When /k/ follows the diphthongs /ei, εi, ai, ɔi, oi, ui, ȳi, uि/ or the vowel /i/ it is pronounced as a [t], as in [veit²] /veik²/ ‘intestines’ The same is true of the velar nasal /ŋ/. Following the above-mentioned vowels it has the value of [ŋ] as in /pairŋ²/ ‘white’ realized as [pairŋ²].

2.2.2 *Shinman Vowels and Register*

The nine simple vowels and sixteen complex vowels of Shinman are shown in Figs. 5 and 6. All of the simple vowels can occur with each of the ten final consonants. The complex vowel nuclei have limited cooccurrence with the finals as shown in Fig. 7.

	Front	Central	Back	
			Unrd	Rd
High	i		u	u
Mid	e		ȳ	o
Low	ɛ	a		ɔ

Figure 5. Shinman Plang Simple Vowels

ie	ei	wi	ui	ua	uai
ia	ɛi	vi	oi	v̞u	iau
iu		ai	ɔi	au	

Figure 6. Shinman Plang Complex Vowels

iap	iet	iam	ien	ianj	ie?	iel	iel ^ø
	iat		ian		ia?		
	eik		ein		einj		
	ɛik		ɛin		ɛinj		
	aik				ainj		
	uat		uan			au?	
	ɔik					ual	ual ^ø
	oik						

Figure 7. Shinman Plang Complex Vowels With Finals

According to Li et al. the vowel /u/ in the combinations /ua, uat, uan, ual, ual^ø/ has a lower tongue height close to [ɔ] such that /ŋual²/ ‘fire’ and /puan¹/ ‘meat’ are pronounced [ŋɔal²] and [pɔan¹] respectively. Similarly, the vowel /a/ in the final rhymes /iap, iat, iam, ian/ has a higher tongue height close to [ɛ]. Therefore /tiap¹/ ‘flea’ and /kian³/ ‘heavy’ are pronounced [t̪iɛp¹] and [kiɛn³].

The vowel /i/ is sometimes actually closer to [ɪ] as in [piu?³] /piu?³/ ‘clothes pocket’.

In the sequences /o?/ and /ɔŋ/ the vowels are followed by a glide [u]. Thus /pho?¹/ ‘shirt’ and /plɔŋ¹/ ‘thatching grass’ are pronounced [phou?¹] and [plɔu?¹] respectively.

Li et al. do not mention any voice quality distinctions in Shinman.

2.2.3 *Shinman Presyllables*

Presyllables in Shinman are very similar to those in Kontoi. According to Li et al. the only vowel which appears in the presyllable is /a/. By far the most frequently occurring presyllables in Shinman are /ka?¹/ and the syllabic nasal /n/ (which is realized as a nasal at the same point of articulation as the following stop).

2.2.4 *Shinman Tone*

There are four tones in Shinman, which Li et al. describe as follows:

Tone 1	˥	35	/taŋ ¹ /	‘to support’
Tone 2	˧	33	/taŋ ² /	‘to carry on the back’
Tone 3	˧˧	331	/taŋ ³ /	‘to step over’
Tone 4	˨	21	/taŋ ⁴ v̞ik ¹ /	‘completely’

Tone 1 becomes a tone 4 when it occurs on the first syllable of a compound of two morphemes. Except for these compounds there are relatively few occurrences of tone 4.

2.3 *Samtao*

2.3.1 *Samtao Consonants*

The consonants occurring syllable-initially in Samtao are shown in Fig.8.

	labial	alveolar	palatal	velar	glottal
stops, vl. unasp.	p	t	c	k	?
vl. asp.	p ^h	t ^h	c ^h	k ^h	
fricatives, vl.	f	s			h
asp.		s ^h			
vd.	v				
nasals, vd.	m	n	n̥	ŋ	ŋ̥
vl.	m ^h	n ^h	n̥ ^h	ŋ ^h	ŋ̥ ^h
liquids, vd.		l			
asp.		l ^h			
vd.		r			
asp.		r ^h			
semivowels, vd.			y		
vl.			y		

Figure 8. Samtao Initial Consonants

The unaspirated stop series can become voiced following a syllabic nasal. The sounds represented here by the symbols /s^h, m^h, n^h, n̥^h, ŋ^h, l^h, r^h/ are aspirated, as in Kontoi, such that the articulation is initially voiced, then voiceless with a greater puff of air. In the voiced sounds it appears that the voicing is turned off halfway through the articulation of the consonant. The /c, c^h/ in Samtao are alveopalatal affricates.

Initial consonant clusters in Samtao consist of /pr, kr, k^h r, pl, kl, k^h l/.

Syllable-finally only /p, t, c, k, ?, h, m, n, n̥, ŋ/ occur, with the stops being unreleased.

2.3.2 *Samtao Vowels and Register*

The simple vowels of Samtao are shown in Fig.9. The front vowels exhibit a transitional schwa offglide [i^ø] before bilabials and alveolars. Also, the mid front vowel becomes open before everything but palatals. The vowel /i/ only occurs in loan words from Thai. The back unrounded vowel /ɯ/ acts like the front vowels in having a transitional schwa glide before bilabials and alveolars as well as becoming the central vowel [ʌ] in low tone syllables. The back rounded vowels display the

schwa transition only before alveolar finals. Also, [u] and [o] freely fluctuate before alveolars.

	Front	Central	Back	
			Unrd	Rd
High	close	i		u
	open	(ɪ)		
Mid		e		y o
Low		a		ɔ

Figure 9. Samtao Simple Vowels

The complex vowels of Samtao are shown in Fig.10. They can all occur in open syllables. Only /ai/ and /ao/ occur in syllables closed with a glottal /ʔ/. The vowels with an [a] offglide also occur before an /h/.

ia	ṛa	ua	eo	ṛi	ui
		oa	ao	ai	oi

Figure 10. Samtao Complex Vowels

Nasalization can occur with vowels following an /m/.

Samtao has two contrastive phonation types, breathy and clear. As in Kontoi, clear register is unmarked and breathy register is marked by // under the vowel, as in /a/. A third phonation type, which we have termed "creaky", was also found, but its relative frequency was very low, being found mainly in a limited number of phrase-final particles.² Thus it was determined to be non-contrastive and is therefore not marked in this data.

2.3.3 *Samtao Presyllables*

The presyllables in Samtao are very similar to those in the other languages. They consist mostly of /p, t, k, s/ with [ə], /ṛa/ and /si/. A few other combinations occur as well but rarely. As with the others, syllabic nasals can also be presyllables.

2.3.4 *Samtao Tone*

There are two tones in Samtao, high and low. Rising and falling do not appear to be significant in Samtao.

²Words with creaky phonation in Samtao include nos. 182, 198, 199, 230, 296, 353, 432, 469, and a final particle, te?

3. Reconstructed Consonants

3.1 Consonant System of Proto-Plang

The reconstructed consonant system of Proto-Plang is shown in Fig.11. All consonants occur in initial position. Word-final position can be occupied by the unaspirated stops, simple voiced nasals, *h*, *l*, *lh*, *r*, and *y*.

	labial	alveolar	palatal	velar	glottal
stops, vl. unasp.	p	t	c	k	?
vl. asp.	p ^h	t ^h	c ^h	k ^h	
fricatives, vl.	(f)	s			h
asp.		s ^h			
vd.	v				
nasals, vd.	m	n	n̥	ŋ	
vl.	mh	nh		(ŋh)	
liquids, vd.		l			
vl.		lh			
vd.		r			
semivowels, vd.			y		
vl.			(yh)		

Figure 11. Reconstructed Proto-Plang Consonants

Table 1 shows the correspondences and correspondence sets extracted from the data. Included is a frequency count of the number of times each correspondence occurs. The frequency count includes some correspondences in which only two of the three languages have cognate items. Correspondences which are exceptions to the better attested sets or are from borrowings are not included in the chart but will be presented in the discussion that follows.

TABLE 1
REFLEXES OF PROTO-PLANG CONSONANTS

PP	Environment	Kontoi	Shinman	Samtao	no. of occurrences
*p	initial	p	p	p	49
	initial / _ *l	p	p	p	3
	- *r	p ^h	p ^h	p	10
*p ^h	final	p	p	p	23
*t	initial	p ^h	p ^h	p ^h	10
	final	t	t	t	59
*t ^h	initial	t ^h	t ^h	t ^h	32
*c	initial	c	c	c	17
	final / back vowels _	c	k	c	21

TABLE 1 Cont.

PP	Environment	Kontoi	Shinman	Samtao	no. of occurrences
	front vowels _	c	?	?	3
*c ^h	initial	c ^h	c ^h	c	2
		c ^h	c	c	1
*k	initial / _back vowels _ front vowels	k	k	k	48
	_ *r	c	k	c	8
		k ^h	q ^h	k	9
		k ^h	q ^h	Ø	2
	_ *	k	k	k	7
	final / back vowels _	k	k	k	48
	front vowels _	k	k	c ^h	6
*k ^h	initial / _back vowels _front vowels	k ^h	k ^h	k ^h	6
		c ^h	k ^h	c ^h	3
*?	final	?	?	?	86
		?	Ø	Ø	6
*f	initial	f		f	1
*v	initial	v	v	v	15
	final	w	u	o	4
*s	initial	s	s	s	32
*s ^h	initial	s	s	s ^h	13
*h	initial	h	h	h	19
	final	h	h	h	25
*m	initial	m	m	m	47
	final	m	m	m	58
*mh	initial	m [·]	m [·]	m	5
		m [·]	m	m ^h	3,
		m [·]	n	n	1 •
*n	initial	n	n	n	13 •
	final	n	n	n	27
*nh	initial	n [·]	n [·]	n ^h	2
		n [·]	n [·]	n	1
		n [·]	n	n	1
*ŋ	initial	ŋ	ŋ	ŋ	9
	final / back vowels _	ŋ	ŋ	ŋ	11
	front vowels _	ŋ	ŋ	ŋ	1
*ŋ	initial / _ back vowels	ŋ	ŋ	ŋ	15
	_front vowels	ŋ	ŋ	ŋ	3
	final / back vowels _	ŋ	ŋ	ŋ	71
	front vowels _	ŋ	ŋ	ŋ	15
*ŋh	initial / _ back vowels	ŋh	ŋ	ŋ ^h	2
	_front vowels	ŋ	ŋ	ŋ ^h	1
*l	initial	l	l	l	26
	cluster with p, k	l	l	l	16
	final	l	l	Ø	29
*lh	initial	l ^h	l ^h	l ^h	9
	final	h	l ^h	h	21

TABLE 1 Cont.

PP	Environment	Kontoi	Shinman	Samtao	no. of occurrences
*r	initial / tone 2	r	x	r	7
	tone 1	r	x	r ^h	2
	cluster with p, k	r	Ø	r	7
		r	Ø	Ø	3
*y	final	l	h	Ø	11
	initial	y	z	y	10
	final	y	i	i	35
*yh	initial	y	z	y	1

3.1.1 Stops

Since the majority of the reconstructed consonants are well attested in the data, only a few examples of each correspondence will be listed. Exceptions will be explained where possible. "Initial" position means main syllable initial, with or without the presence of a presyllable.

*/p/ Initial

*/p/ is found to be unchanged in each of the three languages word-initially.

*p > K p, Sh p, S p

	Kontoi	Shinman	Samtao
200. person	pwy ²	pvi ³	pøi ²
298. to blow	pŋ ²	pŋ ²	pŋ ¹
346. to forget	pɛl ²	pil ²	pɛ ²

Exceptions to this are:

236. bucket	pŋ ²	t ^h on ³	pŋ ²
289. window	kəvapɔŋ ¹	pha ⁴ mon ²	pətupɔŋ ¹
307. to carry child on back	----	pɔʔ ²	kɔʔ ¹
328. to dance	hɔn ²	----	pɔn ²
422. to sweep	pɛh ¹	phil ¹	piah ¹

In 'window', Samtao uses the Thai word for 'door' (*prətuu*) as the first syllable of this compound. Kontoi uses the Plang form for 'door' (*kəva?*). The word in Shinman appears to be noncognate. Shinman shows the expected un aspirated *p* in *npih*¹ 'broom', an affixed form of 'sweep'.

Initial before */l/

*p > K p, Sh p, S p

77. thatching grass	ploŋ ¹	ploŋ ¹	ploŋ ¹
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257. liquor	play ¹	plai ¹	plai ¹
381. to open (eyes)	plan ¹	----	plen ²

Two items do not follow this pattern:

114. land leech	aplen ¹	klin ¹	pjñ ¹
421. to swallow	nnut ²	plut ²	plon ¹

'land leech', is a borrowing from Thai /plin/. For 'to swallow', Diffloth (1980) reconstructs *ntɔt for Proto-Waic, a form similar to Kontoi Plang, but he says there is very little evidence for it yet. Given this Proto-Wa form, Kontoi, as is true in most cases, is the most conservative in respect to the parent language, and the Samtao form may not even be cognate.

*Initial before */r/*

Before */r/, the unaspirated *p* becomes aspirated in Kontoi and Shinman. This is a common phenomenon in Mon-Khmer languages. It is seen in South Wa and in BoLuang and Phae Lawa, to name a few in the Waic branch (Diffloth 1980).

*p > K p^h, Sh ph, S p

130. wing	p ^h rucl ¹	phyik ¹	pruc ¹
509. spicy	səp ^h ric ²	ka? ⁴ phe?i? ¹	səprai? ¹
275. shirt	p ^h rɔ? ²	pho? ¹	----
491. old (object)	p ^h rem ¹	----	prim ¹

In Kontoi the */r/ has caused aspiration and remains intact itself, while in Shinman aspiration has developed and the */r/ has been absorbed as well.

A rule summarizing this phenomenon of aspiration in Kontoi and Shinman can be written:

$$(1) \quad \left[\begin{smallmatrix} \text{-cont} \\ \text{-nas} \end{smallmatrix} \right] \rightarrow [\text{+asp}] \ / \text{_r}$$

The */r/ deletion rule will be discussed later.

Final

*p > K p, Sh p, S p

60. grass	aręp ²	xep ²	ręp ²
105. flea	atęp ¹	tiap ¹	tip ¹
276. shoes	c ^h ep ¹	khiap ²	c ^h ep ¹

Again there is no change in the stop from the parent language to the daughter forms.

One exception to the above occurs in :

378. to meet	k ^h rup ¹	qhvp ¹	k ^h ytl ¹
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/p^h / Initial**p^h > K p^h, Sh p^h, S p^h**

284. table	p ^h win ¹	phwin ²	p ^h vñ ¹
414. to split	p ^h a?1	pha ²	p ^h a ¹

The aspirated bilabial stop is thus retained in all three languages.

There is a slight tendency for Shinman to lose aspiration which is seen throughout the series of stops, as is, for example, found in items 345 and 395.

345. to fly	p ^h wl ¹	pvh ¹	pua ¹
395. to ride	p ^h ɔk ²	pɔk ²	pɔk ²

Irregular correspondences include:

290. wok	pəc ^h inj ¹	pha? ⁴ cheinj ²	mpa ¹
192. male in-law	apu? ¹	konphau ¹	----
499. sharp pointed	səpuw ¹	ka? ⁴ peik ²	mphoc ¹
88. bee	ap ^h el ¹	pheh ¹	hia ²

The first example is most likely irregular due to the unstable nature of presyllables. There are only four items which contain a /b/ (116, 235, 256, 407), these occurring in Kontoi, and three of these follow a syllabic nasal. The asymmetry of such isolated b's, no other voiced stops being found, would justify not reconstructing a proto-voiced bilabial stop at the Proto-Plang level. There is no doubt that voiced stops did exist at an older stage of the language. Diffloth (1980) reconstructs them at the Proto-Wa level but they appear to be all but gone by the time of Proto-Plang.

t/ Initial**t > K t, Sh t, S t**

31. smoke	tq? ¹	tu? ¹	tao? ¹
65. mushroom	tah ¹	tu? ¹	tiah ¹
96. crab	kətam ¹	ka? ⁴ tam ¹	tam ¹

There are only two exceptions to this set:

49. bud	tom ¹	----	alom ¹
524. here	te? ²	manni? ¹	kətip ¹

In the word for 'here' in Shinman there appears to be a morphophonological alternation, where the */t/ becomes an /n/ following /n/ in the previous syllable.

Final***t > K t, Sh t, S t**

78. thorn	kat ¹	kat ¹	kat ¹
243. comb	nsat ¹	nsat ¹	sot ¹
296. to bite	cet ²	kət ²	cet ²

As with the bilabial stop, the alveolar stop remains the same for each of the languages. There are two nonuniform correspondences for */t/.

100. duck	elkat ¹	ɛh ¹	kap ²	ia ² kla? ¹
387. to point	səcit ¹	----	----	cɛ ²

Both of these show a weakening of the final consonant in Samtao, to a final ? in 'duck', and complete deletion in 'to point'.

*/*t^h*/ Initial

**t^h* > K *t^h*, Sh *th*, S *t^h*

314. to clap	t ^h ɔp ²	nthop ²	nθap ²
2. cave	t ^h am ²	----	tət ^h am ¹
301. to breathe	t ^h ɔy ¹ p ^h om ¹	----	t ^h ui ¹ p ^h om ¹

There is a tendency toward deaspiration of these stops in Shinman and Samtao, as in the bilabial stops.

91. butterfly	t ^h anlj ^h ak ¹	tan ¹ klau ³	tanŋalak ²
233. rice bowl	t ^h alh wyl ¹	----	təl ^h ai ¹
286. tray	t ^h alep ^h an ¹	----	təlaiteŋ ¹
288. wall	ŋ ^h al ²	ntal ²	ta? ¹

The first three items may be accounted for by the instability of presyllables. It appears that the first syllable of each of these is in the process of shortening in moving from Kontoi to Shinman to Samtao.

*/*c*/ Initial

**c* > K *c*, Sh *c*, S *c*

154. foot	cɔŋ ²	cun ³	cɔŋ ²
416. to stand	cɔŋ ²	cun ³	cɔŋ ²
98. sambhar deer	kɔncak ¹	----	kɔncak ¹
531. side/end	----	man ⁴ cεiŋ ²	kəceŋ ²

Three exceptions to this are:

402. to sew	cɛŋ ²	cɪŋ ³	kɛŋ ²
291. able	caŋ ²	zɔŋ ³	----
330. to do	yuh ²	----	co? ¹

The first item probably belongs to the above set of c/c/c. The /k/ in Samtao is very fronted and at times sounds palatal. This slight shifting in position before a front vowel is easily allowed as there is no contrast between /c/ and /k/ before front vowels in Samtao.

The third item may not be cognate. Diffloth (1980) has the proto-form of 'to do' as *ydh, with none of his languages showing a /c/ initial or a /ŋ/ final. This makes the Samtao form seem an unlikely cognate.

Final

The first correspondence set occurs after back vowels in Kontoi.

*c > K c, Sh k, S c

159. intestines	v <u>w</u> c ²	veik ²	vec ²
336. to enter	luic ²	l <u>e</u> ik ²	le <u>c</u> ²
439. to wash dishes (Samtao-wash face)	k ^h o <u>c</u> ¹	khoik ¹	k ^h o <u>c</u> ¹

As was mentioned in the Shinman phonology, the final /k/ in the environment of /i/ is actually a pre-palatal stop, so no rule is needed to account for any change in Shinman.

Another correspondence set for */c/ occurs following high front vowels in Kontoi.

5. day	nuum <u>j</u> ic ²	ka? ⁴ <u>ŋ</u> i? ²	ŋ <u>ɔ</u> nsiŋ <u>j</u> ne? ²
19. moon	raŋk ^h ic ²	khan ⁴ khi? ¹	raŋk ^h i? ¹
509. spicy	səp ^h ri <u>c</u> ²	ka? ⁴ phe? ¹	səprai? ¹

Again Kontoi is the most conservative, while in both Shinman and Samtao /c/ weakens to a glottal stop /ʔ/ following a proto-front vowel. This weakening is expressed in the following rule:

$$(2) \quad \left[\begin{smallmatrix} -\text{cont} \\ -\text{nas} \\ -\text{ant} \end{smallmatrix} \right] \rightarrow \left[\begin{smallmatrix} +\text{glottal} \\ -\text{cor} \end{smallmatrix} \right] / \left[\begin{smallmatrix} +\text{syl} \\ -\text{back} \end{smallmatrix} \right] _ \#$$

Two irregular correspondences also exist, each with just one example:

389. to pull	yac ²	zat ²	----
392. to reap rice	v <u>ä</u> c ²	v <u>u</u> ik ²	v <u>ɔ</u> k ²

**c^h/ Initial*

There are so few occurrences of /c^h/ that a reconstruction, though plausible, is very tentative.

*c^h > K c^h, Sh ch, S c

440. to wear	c ^h op ¹	chup ²	cip ¹
290. wok	pəc ^h inj ¹	p ^h a? ⁴ cheinj ²	mpa ¹

*c^h > K c^h, Sh c

364. to kick	ŋ <u>c</u> hah ¹	ca <u>l</u> ¹	----
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As with *p and *t, there is a tendency toward deaspiration in Shinman.

There is one occurrence of the aspirate /c^h/ in Samtao:

445. to whistle	soc ¹	----	ŋ <u>c</u> hoc ¹
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And a similar occurrence in Shinman:

488. new	s <u>q</u> ? ¹	chu? ¹	----
----------	---------------------------	-------------------	------

Diffloth (1980) gives a proto-form for ‘new’ as **cro?*. Evidence from Wa and Lawa shows there was an /r/ cluster in the proto-form which would explain the aspirate found in Proto-Plang. Due to the lack of sufficient data no rule will be proposed for the /ch/ correspondence set.

**k/ Initial*

The first set of reflexes for */k/ occurs before back vowels:

*k > K k, Sh k, S k

78. thorn	kat ¹	kat ¹	kat ¹
121. rat	kɔŋkaŋ ²	kaŋ ³	kɔŋkaŋ ²
231. bottle	kun ¹	kaŋ ⁴ kiau? ¹	koŋ ¹

And before front vowels is the set:

*k > K c, Sh k, S c

28. salt	cɛh ²	kił ²	cjah ²
59. ginger	səcɛŋ ¹	sa? ⁴ kiŋ ¹	səcɪŋ ¹
296. to bite	cet ²	keł ²	cet ²

This change can be captured with a rule of palatalization:

$$(3) \quad [-\text{cont}] \rightarrow \left[\begin{smallmatrix} +\text{high} \\ -\text{back} \end{smallmatrix} \right] / _{-\text{back}}$$

This rule applies to both Kontoi and Samtao.

The following is irregular:

518. wet	səku? ¹	----	cv? ²
----------	--------------------	------	------------------

*Initial before */l/*

*k > K k, Sh k, S k

101. eagle	klan ¹	klan ¹	klan ¹
309. to carry on shoulder	klɔm ¹	klɔm ¹	klɔm ¹
470. fat	klwŋ ¹	klvŋ ¹	klŋ ¹

There is one curious exception to this where the /k/ disappears in Shinman:

132. armpit	cokklik ¹	nlɛk ¹	kvm ² klec ¹
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*Initial before */r/*

In clusters with */r/ the most common correspondence set is:

*k > K k^h, Sh qh, S k

87. bear	k ^h r̥ih ¹	qhił ¹	krvh ¹
90. buffalo	ak ^h rak ¹	qhak ¹	krak ¹
174. throat	k ^h r̥on ²	qhon ¹	kran ¹

This development is similar to what happens with the bilabial stop. The */r/ creates aspiration in both Kontoi and Shinman and is itself retained in Kontoi but absorbed in Shinman. The presence of the */r/ has also created a uvular stop /qh/ in Shinman. The quality of */r/ will be discussed in the section 3.1.4 under */r/. The rule of aspiration is the same as for */p/ in Rule (1).

A second rule in Shinman lowers back consonants subject to the above rule.

$$(4) \quad \begin{bmatrix} -\text{cont} \\ -\text{nas} \\ +\text{back} \end{bmatrix} \rightarrow [+low] / _r$$

There are two other instances of this same type of correspondence except that the /k/ is lost in Samtao:

493. red	sək ^h rak ¹	ka? ⁴ qhak ¹	sərak ¹
122. snail	sək ^h roc ¹	----	səroc ¹

There are a few cases where the */r/ has produced aspiration in Samtao as well:

378. to meet	k ^h rwip ¹	qhvp ¹	k ^h v ^t ¹
337. to fall	----	qhwik ¹	k ^h v ^c ¹
279. sieve	ak ^h rwŋ ¹	----	k ^h vŋ ¹

The */r/ is still seen in Kontoi and its effects are evident in Shinman, but it does not occur in Samtao in the first two words.

There are two other irregularities. One is the word for 'hug', which is a borrowing from Thai /kòt/.

360. to hug	k ^h ɔt ²	----	kot ² nŋok ²
398. to scratch	hac ¹	----	krac ²

Final

*k > K k, Sh k, S k

This set occurs following back vowels as seen in these examples:

107. frog	arök ²	xök ²	rok ¹
156. hair	häk ¹	hwuk ¹	hvök ¹
165. neck	njuk ²	njök ²	njök ²

Then following front vowels there is:

*k > K k, Sh k, S c

118. pig	kɔnlök ¹	lik ²	kɔnlęc ²
132. armpit	cokklik ¹	nlęk ¹	kvṁ ² klec ¹
429. to throw out	tik ²	----	tic ¹

Palatalization in Samtao is expressed by the following rule:

$$(5) \quad [-\text{cont}] \rightarrow \begin{bmatrix} +\text{high} \\ -\text{back} \end{bmatrix} / [-\text{back}] _$$

There are two exceptions to the final */k/ correspondences:

91. butterfly	tʰanŋl ^h ak ¹	tarŋ ⁴ klau ³	tarŋjalak ²
408. to dry in sun	hök ¹	qhah ¹	hok ¹

The form for 'to dry in sun' in Shinman appears to be non-cognate.

*/k^h / Initial

Before back vowels the following correspondence is found:

*k ^h > K k ^h , Sh kh, S k ^h			
79. tree	kəlum	k ^h ū? ¹ khu? ¹	nom ² k ^h ao? ¹

439. to wash dishes	k ^h qc ¹	khoik ¹	k ^h oc ¹
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And before front vowels the correspondence is:

*k^h > K c^h, Sh kh, S c^h

10. firewood	c ^h i?1	khi?1	c ^h i?1
276. shoes	c ^h ep ¹	khiap ²	c ^h ep ¹

This is the same process which occurs in the unaspirated velar stop and is accounted for by Rule (3).

One exception occurs in number 277, a borrowing from Thai /k^hěm/ ‘needle, syringe’.

277. shot of medicine	tinj ^h em ¹	----	t ^h oc ^h im ¹
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*/? Final

*? > K ?, Sh ?, S ?

10. firewood	c ^h i?1	khi?1	c ^h i?1
109. goat	ape?2	pε?4	pe?1
191. husband	kəmi?2	ka?4 me?2	ame?1
214. I	u?2	w?1	v?1

Glottal closure seems to be disappearing in both Samtao and Shinman, as demonstrated by the following items:

39. wet rice field	ti? na?1	na?4	na ²
148. face	----	ɳa?4	n ^h a ¹
229. boat	vayru?1	xv?4	rv ²
264. pair	təku?2	ku?4	təkɔ ²
533. spatial/front	lak ² nna?1	kha ² ɳa?2	kra?n ^h a ¹
1. ashes	pwyu?1	ka?4 zu ²	ŋo?2
51. corn	səle?1	sa?4le ²	sile ²
355. to grind	m̥mɔ?1	mɔ ²	mɔ ²
414. to split	p ^h a?1	pha ²	p ^h a ¹
526. left side	avi?1	kha ² ka?4 ve ²	kra?ve?1
532. space behind	----	kha ² qhui?2	kra?kri ¹
553. where	naŋnɔ?1	man ⁴ mu?4	təmɔ ²

The first five words have similar forms in Thai, but without glottal closure. All but ‘pair’ are similar enough that they may have been relatively recent borrowings.³ Thus the lack of glottal in Samtao in these words may be due to borrowing at a time when Plang had almost all closed syllables but Samtao allowed open syllables.

There is one exception to the glottal correspondences:

536. with	may ¹	----	me?
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This word is never found in isolation and is never stressed. Thus in rapid speech the vowel and final semivowel of Kontoi are probably coalesced into /e/ with very slight glottal closure.

³Though rice is a staple of the Plang, they grow mountain rice, not wet rice. So it is very likely that ‘wet rice field’ is a borrowing.

3.1.2 Fricatives

*/f/

Although /f/ occurs in each language, there is only one cognate set in the data involving an /f/.

108. gibbon	fa? ¹	---	kɔnfa? ¹
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It seems likely that there was an infrequently occurring /f/ at the Proto-Plang stage (just as it is infrequent in the modern languages), but its reconstruction is very tentative on the basis of one word.

*/v/ Initial

*v > K v, Sh v, S v

128. tiger	kɔnvay ²	ka? ⁴ vai ³	avai ²
159. intestines	vuc ²	veik ²	vec ²
173. thigh	kəvarŋ ²	ka? ⁴ varŋ ¹	avarŋ ²

There are two other occurrences of /v/:

181. female in-law	avɔy ¹	oi ¹	oi ¹
432. to twist/wring	vet ²	miet ⁴	yot ² yet ²

The phonetic value of the /v/, at least in Kontoi and Samtao, is very similar to a [w] and thus understandably lost before a back rounded vowel with semivowel or no closure. The cause of variation in initial position in ‘twist’ is not clear.

Final

*v > K w, Sh u, S o

467. drunk	mawrəplay ¹	mau ³	mao ² kəplai ¹
16. moment	kʰraw ²	----	təkrao ¹
50. coconut	makpaw ¹	----	makpao ²

Since both the first and third forms are suspected borrowings from Thai, the final *v is not well attested. (See also 83, 167, 447 and 457.) Remnants remain of a final [w], but further evidence is needed to support positing it in Proto-Plang.

*s/ Initial

*s > K s, Sh s, S s

262. mosquito net	süt ¹	sut ²	ŋkaŋsut ¹
335. to eat (rice)	som ¹	som ¹	som ¹
385. to plant	ŋsum ¹	nsv̚m ¹	sum ¹

*s/ remains unchanged.

103. elephant	ka? ⁴ san ¹	s ^h anŋ ¹
---------------	-----------------------------------	---------------------------------

s^h/ Initial**s^h > K s, Sh s, S s^h**

89. bird	səm ¹	sim ¹	s ^h im ¹
99. dog	su? ¹	so? ¹	s ^h o? ¹
103. elephant	kəsan ¹	ka? ⁴ saŋ ¹	s ^h aŋ ¹

*s/ and */s^h/ have merged in Kontoi and Shinman. This merger is expressed in the following rule of sibilant deaspiration:

$$(6) \quad \left[\begin{array}{l} +\text{cont} \\ -\text{son} \\ +\text{cor} \end{array} \right] \rightarrow [-\text{asp}] / \$$$

h/ Initial**h > K h, Sh h, S h**

156. hair	hək ¹	hwk ¹	hvk ¹
294. to bathe	həm ¹	hum ¹	hvm ¹
351. to go	huł ¹	hvł ¹	hu ¹
459. clever	hiŋ ¹	----	heŋ ¹

The following are irregular correspondences with /h/.

188. friend	ay ¹	----	səhai ¹
334. to dry in sun	hɔk ¹	qah ¹	hok ¹
411. to smell good	hum ¹	xəm ²	hom ¹

The second item was mentioned previously (under final */k/) as having a non-cognate form in Shinman. The third word is a borrowing from the Thai /hɔm/, ‘to smell good’.

Final***h > K h, Sh h, S h**

352. to go down	ləh ²	lih ²	ləh ²
433. to untie	kah ¹	kah ¹	kah ¹
468. dry	sə?uh ¹	ka? ⁴ oh ¹	kroh ¹

Unique correspondences are:

137. body	iktoh ²	nv? ⁴ tu? ¹	to ¹ men ²
330. to do	yuh ²	----	co? ¹
350. to give	kah ²	ka? ²	----
427. to tell	lah ²	la? ¹	----

The second item ‘do’ does not appear to be cognate. The others show */h/ becoming a glottal stop /ʔ/.

3.1.3 *Nasals***m/ Initial*

*m > K m, Sh m, S m

30. silver	məl ²	ka? ⁴ mul ²	my ²
194. mother	ama? ²	ma? ²	ma? ²
210. wife	məŋ ²	ka? ⁴ muŋ ³	amvŋ ²

The only exceptions involve the question words, which show some unusual correspondences.

553. where	nəŋc? ¹	man ⁴ mu? ⁴	təmo ²
550. who	aŋc? ¹	----	mo ¹ mɔ ²
552. when	nəməŋc? ¹	----	ŋammo ²
551. what	kəŋc? ¹	ka? ⁴ nə ²	mi? ² mɔ ²

Final

*m > K m, Sh m, S m

38. water	um ¹	um ¹	rom ¹
41. year	num ²	nym ³	nom ²
72. rice husk	kam ¹	kam ¹	ŋkam ¹

*m/ did not undergo any systematic sound changes in the daughter languages.

**mh/ Initial*

Several languages within the Waic sub-branch have sonorant with /h/ clusters (Diffloth 1980). In Bo Luang and Kawa this cluster is analyzed as *h + sonorant*, while North Lawa has *sonorant + h* clusters. Also Palaung and Khmu outside of Waic have *h + sonorant* clusters. These clusters correspond to voiceless nasals and liquids in Plang. Samtao shows a more linear relation of *sonorant + h* similar to North Lawa, though there seems to be a voicing process active in Samtao causing the voiceless component of this cluster to be lost. In reconstructing a series of sonorants with a voiceless component, the question arises as to whether the proto-segments consisted of a linear sequence of *sonorant + voicelessness* or a simultaneous coarticulation of these two features. Since both Samtao and Kontoi show evidence of a linear cluster in the order *sonorant + h* (items 71, 86, 136, 448, *nasal + h* in Samtao and *lh* in both Samtao and Kontoi), this combination will be proposed for Proto-Plang.

The most common correspondence for *mh/ is:

*mh > K m, Sh m, S m

311. to catch	m̥mwt ¹	m̥wt ¹	mut ¹
158. heart	m̥mulp ^{hom} ¹	m̥ul ¹	----
185. doctor	m̥c? ¹	m̥c? ² za? ¹	----
340. to feel	m̥cŋ ¹	----	moŋ ¹

These show that the *voiceless + nasal* *mh/ is losing its voiceless feature in Samtao and thus merging with *m/. Though occurring less frequently, the same process of voicing is going on in Shinman.

271. mtn.rice field	ma ¹	mah ¹	ma ¹
273. rope	mu? ¹	mu? ¹	mao? ¹
355. to grind	mmɔ? ¹	mɔ ²	mɔ ²

This tendency toward nasal voicing in Samtao and Shinman may be expressed in the following rule:

$$(7) \quad \left[\begin{smallmatrix} +\text{cons} \\ +\text{son} \end{smallmatrix} \right] \rightarrow [\text{+voice}] / \#_$$

*/n/ Initial

*n > K n, Sh n, S n

41. year	num ²	nvn ³	nom ²
508. sour	nna? ²	na? ²	na? ²
529. outside	lak ² nɔk ²	kha ² nok ²	nɔk ²

There are a few exceptions:

18. first month	nuncin ¹	nvn ¹ ciŋ ¹	lvnceŋ ¹
506. smooth	kənul ¹	----	ŋo ¹
552. when	nvnkɔ? ¹	----	ŋammo ²

The first word is a borrowing, in fact the whole calendar system is borrowed from Tai. In central Thai 'month' is [dɯ̥n] and in Shan (Thai Yai), the variety of Tai which is Plang's closest neighbor geographically, it is [lɯ̥n].

The morpheme being compared in 'when' means 'year' in Plang and is used in many time-related words, e.g. /numkɔ?¹/ 'yesterday'. But the equivalent form for 'year' in Samtao is /nom²/, so the form /ŋam/ in Samtao 'when' is not derived from /nom²/ 'year'.

Final

*n > K n, Sh n, S n

211. woman	mpun ¹	ka? ⁴ pvn ¹	kɔnpun ¹
348. to get	pɔn ²	pon ²	pun ²
384. to place/put	an ¹	vn ¹	vñ ¹

Two exceptions to this involve final /t/:

421. to swallow	ŋnwt ²	plwt ²	plon ¹
415. to squeeze	----	miet ¹	men ¹

The questionable status of the first word was already discussed in the section on */p/ before */l/. In the second word the */n/ has become a final voiceless stop in Shinman following a common trend in Asian and other languages for final nasals to become voiceless stops and for voiceless stops to weaken to a glottal stop. The finals in Burmese exhibit a similar process (Paulette Hopple, personal communication).

***/nh/ Initial**

The alveolar *nasal + h* acts in a way similar to the bilabial. There is an increase in voicing from Kontoi to Shinman to Samtao. The following correspondences reflect this.

*nh > K ɳ, Sh ɳ, S n^h

533. spatial/front lak² ɳɳa?¹ kha² ɳa?² kra?n^ha¹

*nh > K ɳ, Sh ɳ, S n

178. urine ɳam¹ ɳum¹ nVm²
(Kontoi-‘to urinate’)

*nh > K nh, Sh ɳ, S n^h

136. blood nhám¹ ɳam¹ n^ham¹

*nh > K ɳ, Sh n, S n

265. paper/poster kənɳat¹ ka?⁴ nat² kənat¹

This change would best be described by saying that Samtao and, to a lesser degree, Shinman have a tendency toward losing the voiceless component of *nasal + h* clusters. Rule (7) thus applies to the alveolars as well.

There is one other correspondence which may belong to the set of */nh/.

322. to count nhin¹ sin² amen²

It seems possible that the voiceless friction of the */nh/ became an alveolar fricative in Shinman while the process of nasal voicing occurred in Samtao. The cause of the change in point of articulation is not immediately apparent.

***/ɲ/ Initial**

*ɲ > K ɲ, Sh ɲ, S ɲ

253. house ɲa?² ɲa?² ɲa?²

420. to stretch ɲat¹ ɲat¹ ɲat¹

397. to rub ɲwɺŋal¹ ---- ɲy²

For the majority of cases there is no change from the parent form, but there is a weakening process going on which significantly affects both Shinman and Samtao.

*ɲ > K ɲ, Sh ʐ, S y

366. to know ɲɔŋ² ʐɔŋ³ yɔŋ²

399. to see ɲu?² ʐu?¹ yo?²

94. cock’s comb ɲat² ka?⁴ ʐat¹ ----

555. if ɲu?² ---- yu

This weakening process in Shinman and Samtao would be expressed as:

$$(8) \quad \begin{bmatrix} +son \\ +high \\ -back \end{bmatrix} \rightarrow [-\text{nas}] / \$$$

There is one other correspondence belonging to */ŋ/.

263. needle	pəŋi?¹	ka?⁴ ne?¹	ane?¹
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Final

Final */ŋ/ acts just like the palatal stop. Following back vowels it is:

*ŋ > K ɲ, Sh ɳ, S ɲ

33. star	səməŋ¹	ka?⁴ mviŋ¹	səmʊŋ¹
186. father	akəŋ¹	kwiŋ¹	kvŋ¹
404. to shoot	pəŋ¹	pviŋ¹	pʊŋ¹

Just as in the oral stops there is no need to devise a rule for the alternate form in Shinman, as /ŋ/ following a glide /Vi/ is realized as a palatal nasal [ɲ].

One would expect a reflex of ɲ/p/ŋ following front vowels as with the stops. The only evidence of this rule is in an incomplete correspondence:

369. to lean	səcɪŋ¹	----	səceŋ²
--------------	--------	------	--------

A similar process of weakening happens in final position. It takes on two different forms:

523. far	səŋaj¹	ka?⁴ ɳai³	sɪŋai²
36. today	səŋen¹	----	iŋe?²

The second example is parallel to what happens with the oral palatal stop. For */c/ in final position we had the correspondence c/ɳ/ɳ. Again Kontoi is the most conservative in retaining the older form.

One other correspondence could be a variation of this weakening process:

162. mouth	----	ntuiŋ³	ɳtut¹
------------	------	--------	-------

**ŋʰ/*

Although the voiceless palatal nasal (or its counterpart /ŋʰ/ in Samtao) occurs in the sound inventory of each of the three languages, there are no cognate sets showing voiceless palatal nasal reflexes in our data. Thus a proto-segment */ŋʰ/ cannot be reconstructed here.

**ŋ Initial*

Just as with the velar stop */k/, the velar nasal */ŋ/ has two reflexes, one before back vowels and the other before front vowels.

*ŋ > K ɳ, Sh ɳ, S ɳ

Velar nasals occur before back vowels in each language.

9. fire	ɳol²	ɳual²	ɳɔ²
74. sesame	kəɳa?²	la?⁴ ɳa?²	aɳa?²
145. eye	ɳay¹	ɳai¹	ɳai²

Before front vowels the following correspondence is found:

*ŋ > K ɲ, Sh ɳ, S ɳ

5. day numŋic² ka?⁴ ɳi?⁴ ɳɔnsiŋne?⁴

This palatalization in Kontoi and Samtao has already been expressed in Rule (3) for */k/.

There are three irregular correspondences.

160. knee	ɳay ¹	ɳoŋ ¹	ɳai ¹ ka?⁴qhoŋ ²	ɳviŋčŋ ²
453. beautiful	ɳam ²	ɳom ¹	---	---
501. short (length)	ɳaŋ ¹	ɳeŋ ¹	---	ɳeŋ ¹

Final

In final position */ŋ/ likewise has two reflexes. After back vowels:

*ŋ > K ɳ, Sh ɳ, S ɳ

21. mountain	ɳkor ²	nkɔŋ ³	ɳkɔŋ ²
77. thatching grass	plɔŋ ¹	plɔŋ ¹	plɔŋ ¹
112. hornet	a?uŋ ¹	ɔŋ ¹	ɔŋ ¹

After front vowels:

*ŋ > K ɳ, Sh ɳ, S ɳ

59. ginger	səcəŋ ¹	sa?⁴ kin ¹	səciŋ ¹
394. to return	ɛŋ ¹	iŋ ¹	iŋ ¹
402. to sew	cəŋ ²	ciŋ ³	ken ²

The palatalization in Samtao is covered by Rule (5).

There is also an example of weakening:

515. tired	sətəŋ ¹	ka?⁴ tʂŋ ¹	tʂ?⁴
------------	--------------------	-----------------------	------

and one case of nasal assimilation:

152. index-thumb	tʂŋta?⁴	----	tenta?⁴
------------------	---------	------	---------

Number 226 is an example of syllable shortening to form a presyllable:

226. axe	taŋmet ¹	----	təmet ¹
----------	---------------------	------	--------------------

Other irregular correspondences are:

18. first month	nwncin ¹	nvn ¹	cŋiŋ ¹
259. mat	ɳrŋ ²	----	ɳkrɛ ²
370. to lick	liŋ ²	liat ²	leŋ ²
381. to open (eyes)	plan ¹	----	plen ²
388. to pound	ɳklɔŋ ¹	----	ɳklyh ¹
430. to trap	ton ¹	----	tom ¹

***/ŋh/ Initial**

Evidence for a */ŋh/ exists in the data, but only three cognate items were found in support of it.

151. fingernail	ŋŋem ¹	ŋim ¹	ŋhem ¹
71. paddy rice	ŋhu? ¹	----	ŋhu? ¹
448. to yawn	ŋhap ¹	----	ŋhap ¹

Thus a reconstruction of */ŋh/ needs more data for confirmation.

3.1.4 Liquids***l/ Initial**

*l > K l, Sh l, S l

118. pig	kɔnlɪk ¹	lik ²	kɔnlɛc ²
168. pus	ləm ²	lum ²	l̥m ²
258. market	lah ²	ka? ⁴ la? ²	alah ²

*l/ remains unchanged in syllable-initial position, with one exception:

80. clsf.for tree	lum ¹	ka? ⁴ lvm ¹	lhem ¹
-------------------	------------------	-----------------------------------	-------------------

In Clusters

*l > K l, Sh l, S l

55. fruit	płih ²	pli? ¹	pli? ¹
77. thatching grass	płɔŋ ¹	płɔŋ ¹	płɔŋ ¹
101. eagle	klaŋ ¹	klaŋ ¹	klaŋ ¹

Two correspondences do not fall into this category:

100. duck	el ¹ kat ¹	ɛh ¹ kap ²	ia ² kla? ¹
114. land leech	apɛŋ ¹	kliŋ ¹	piŋ ¹

Final

*l > K l, Sh l, S Ø

9. fire	ŋol ²	ŋual ²	ŋɔ ²
53. cucumber	acel ¹	ka? ⁴ kel ¹	ci ¹
135. belly	kətwl ²	ka? ⁴ tyl ²	tɔ ²

The deletion of /l/ in Samtao can be summarized as:

$$(9) \quad \left[\begin{smallmatrix} +\text{son} \\ +\text{lat} \end{smallmatrix} \right] \rightarrow \emptyset / _ \$$$

There is one exception to this:

288. wall	ŋthal ²	ntal ²	ta? ¹
-----------	--------------------	-------------------	------------------

**/lh/ Initial*

*lh > K l^h, Sh l̥, S l^h

339. to fear	l ^h at ¹	lat ¹	l ^h at ¹
511. tall	l ^h ɔŋ ¹	lɔŋ ¹	l ^h an ¹
521. yellow	l ^h wŋ ¹	lwŋ ¹	pəl ^h wŋ ¹

Again Samtao has a tendency toward voicing, as in the nasals, seen in the following items:

*lh > K l^h, Sh l̥, S l

14. iron	----	lɛk ²	lec ¹
25. rain	lhi? ¹	lɛ? ¹	le? ¹
61. leaf	lha? ¹	la? ¹	la? ¹

The rule for nasal voicing (#7) applies here as well.

The exceptions to these sets are:

155. forehead	ŋciŋl ^h el ¹	xel ¹	nari ¹
514. thin	l ^h el ¹	zih ¹	r ^h i ¹

It is rather doubtful that the forms for 'thin' are cognate. Nor does it seem likely that the Samtao form for 'forehead' is cognate with the others.

Final

*lh > K h, Sh l̥, S h

28. salt	cəh ²	kil ²	cjah ²
45. banana	kəməh ¹	ka? ⁴ mua? ²	amoah ²
65. mushroom	təh ¹	tu? ¹	tiah ¹

The voiceless component of */lh/ is all that remains in final position in Kontoi and Samtao. The following rule states this change:

$$(10) \quad \left[\begin{smallmatrix} +\text{son} \\ +\text{lat} \end{smallmatrix} \right] \rightarrow \emptyset / _h\$$$

**/r/ Initial*

There are two reflexes of initial */r/ in complementary distribution with each other. Syllables with tone two have this reflex:

*r > K r, Sh x, S r

60. grass	arəp ²	xep ²	ryp ²
73. root	reh ²	xel ²	riah ²
107. frog	arɔk ²	xɔk ²	rok ¹

Syllables with tone one are as follows:

*r > K r, Sh x, S r^h

111. horn	rwŋ ¹	xwŋ ¹	r ^h wŋ ¹
177. tooth	raŋ ¹	xaŋ ¹	r ^h aŋ ¹

In both of these reflexes Shinman has a post-velar fricative. In the discussion of */k/ in clusters with */r/ it was noted that the presence of a */r/ created a uvular stop initial in Shinman. Thus the quality of */r/ must have been far back in the vocal tract at some stage between Proto-Plang and today. There is evidence for this type of /r/ in some modern varieties of Wa as well as in Shinman (Paulette Hopple, personal communication). At the stage of Proto-Plang it is difficult to say exactly what the quality of */r/ was, whether closer in articulation to Kontoi /r/ or Shinman /χ/. If more like /r/ then the rule for Shinman would be:

$$(11) \quad \left[\begin{smallmatrix} +\text{cont} \\ +\text{back} \end{smallmatrix} \right] \rightarrow \left[\begin{smallmatrix} -\text{voice} \\ +\text{son} \end{smallmatrix} \right] / \$ _$$

The rule of aspiration in high tone syllables for Samtao is:

$$(12) \quad \left[\begin{smallmatrix} +\text{son} \\ -\text{nas} \\ +\text{back} \end{smallmatrix} \right] \rightarrow [+ \text{asp}] / _ \text{V(C)}^1$$

There are four exceptions to this for initial */r/.

38. water	um ¹	um ¹	rom ¹
124. spider	arəh ²	haŋ ⁴ huŋ ²	r̥ah ²
480. hot	rɔn ²	hɔn ⁴	ron ²
255. house pole	rɔŋ ¹	hɔŋ ¹	r̥on ¹

In 'water' most of the Wa languages retain the */r/, while P'uman, Tailoi and Khalo as well as Plang have lost the */r/ (Diffloth 1980). It is doubtful that the Shinman form for 'spider' is cognate with the others. The last two words are loans from Tai where Central Thai retains the /r/ and in Thai Yai the /r/ has become an [h].

In Clusters

*r > K r, Sh Ø, S r

87. bear	k ^h rih ¹	qhil ¹	krvh ¹
130. wing	p ^h ruč ¹	phvɪk ¹	pruc ¹
246. drum	k ^h rəŋ ¹	qhuŋ ¹	krvŋ ¹

As was discussed with */p/ and */k/, there are times when the */r/ has produced aspiration in Samtao as well, and is even deleted sometimes.

*r > K r, Sh Ø, S Ø

378. to meet	k ^h rup ¹	qhvp ¹	k ^h v ¹
337. to fall	----	qhui ¹	k ^h v ¹
279. sieve	ak ^h ruŋ ¹	----	k ^h vŋ ¹

The */r/ deletion rule for Shinman, and partially Samtao, is as follows:

$$(13) \quad \left[\begin{smallmatrix} +\text{son} \\ -\text{nas} \\ +\text{back} \end{smallmatrix} \right] \rightarrow \emptyset / \left[\begin{smallmatrix} -\text{cont} \\ -\text{son} \end{smallmatrix} \right] _$$

Final

*r > K l, Sh h, S Ø

40. wind	kəl ¹	kwh ¹	ŋkva ¹
75. squash	mpeʃ ¹	npih ¹	mpia ¹
271. rice field	mał ¹	mah ¹	ma ¹

There is evidence in other Waic languages that there were both */r/ and */l/ finally in Proto-Wa (Diffloth 1980). Kontoi has lost that contrast since /l/ is the only liquid in final position. In Shinman the final */r/ is again a fricative but glottal in articulation. And in Samtao, final */r/ patterns like */l/ in deleting, but in its effect on the preceding vowel it patterns like */lh/.

So for Kontoi, the following rule expressing */r/ > /l/ holds::

$$(14) \quad \left[\begin{smallmatrix} +\text{cont} \\ +\text{son} \end{smallmatrix} \right] \rightarrow \left[\begin{smallmatrix} -\text{back} \\ +\text{lat} \end{smallmatrix} \right] / _ \#$$

The rule for Shinman */r/ becoming /h/ is similar to the one for initial */r/.

$$(15) \quad \left[\begin{smallmatrix} +\text{cont} \\ +\text{high} \\ -\text{ant} \end{smallmatrix} \right] \rightarrow \left[\begin{smallmatrix} -\text{voice} \\ -\text{son} \end{smallmatrix} \right] / _ \#$$

In Samtao the deletion of */r/ may be stated as:

$$(16) \quad \left[\begin{smallmatrix} +\text{son} \\ -\text{nas} \\ +\text{back} \end{smallmatrix} \right] \rightarrow \emptyset / _ \#$$

3.1.5 Semivowels

*y/ Initial

*y > K y, Sh z, S y

190. grandmother	ayaʔ ¹	zaʔ ²	ayaʔ ²
329. to die	yum ²	zv̥m ³	yɔm ²
482. lightweight	siyɔŋ ¹	kaʔ ⁴ zun ¹	siyan ¹

In Shinman the quality is slightly different from the others, being more of a fricative than a glide. It is difficult to determine if the proto-segment resembled [y] or [z].

Final

*y > K y, Sh i, S i

95. cow	amɔy ²	kaʔ ⁴ moi ²	moi ²
145. eye	ŋay ¹	ŋai ¹	ŋai ²
200. person	pwy ²	pvi ³	pqi ²

The difference is only one of notation. Since Kontoi has only closed syllables, a final consonant [y] was written rather than [i].

There is one exception to this rule:

181. female in-law avɔy¹ oi¹ o¹

*/y/

The sound inventories of both Kontoi and Samtao include a voiceless semivowel /y/ but only one cognate item is available for comparison.

143. ear yŋk¹ zuk¹ yak¹

Thus the reconstruction of a */y/ awaits further evidence.

3.2 Summary of Rules for Consonants

Aspiration rule for Kontoi and Shinman:

$$(1) \quad \begin{bmatrix} \text{-cont} \\ \text{-nas} \end{bmatrix} \rightarrow [\text{+asp}] / __r$$

Weakening of */c/ to /l/ in Shinman and Samtao:

$$(2) \quad \begin{bmatrix} \text{-cont} \\ \text{-nas} \\ \text{-ant} \end{bmatrix} \rightarrow \begin{bmatrix} \text{+glottal} \\ \text{-cor} \end{bmatrix} / \begin{bmatrix} \text{+syl} \\ \text{-back} \end{bmatrix} _\#$$

Initial consonant fronting in Kontoi and Samtao:

$$(3) \quad \text{[-cont]} \rightarrow \begin{bmatrix} \text{+high} \\ \text{-back} \end{bmatrix} / __[-\text{back}]$$

Backing in Shinman:

$$(4) \quad \begin{bmatrix} \text{-cont} \\ \text{-nas} \\ \text{+back} \end{bmatrix} \rightarrow [\text{+low}] / __r$$

Final consonant fronting in Samtao:

$$(5) \quad \text{[-cont]} \rightarrow \begin{bmatrix} \text{+high} \\ \text{-back} \end{bmatrix} / [-\text{back}] __$$

Deaspiration in Kontoi and Shinman:

$$(6) \quad \begin{bmatrix} \text{+cont} \\ \text{-son} \\ \text{+cor} \end{bmatrix} \rightarrow [-\text{asp}] / \$__$$

Sonorant voicing in Shinman and Samtao:

$$(7) \quad \left[\begin{smallmatrix} +\text{cons} \\ +\text{son} \end{smallmatrix} \right] \rightarrow [+voice] / \#_$$

Weakening of */ŋ/ to /y/ in Shinman and Samtao:

$$(8) \quad \left[\begin{smallmatrix} +\text{son} \\ +\text{high} \\ -\text{back} \end{smallmatrix} \right] \rightarrow [-\text{nas}] / \$_$$

Loss of final liquid */l/ in Samtao:

$$(9) \quad \left[\begin{smallmatrix} +\text{son} \\ +\text{lat} \end{smallmatrix} \right] \rightarrow \emptyset / _\$_$$

Loss of voiced liquid component of */lh/ finally in Kontoi and Samtao:

$$(10) \quad \left[\begin{smallmatrix} +\text{son} \\ +\text{lat} \end{smallmatrix} \right] \rightarrow \emptyset / _\$_h\$$$

Backing of liquid */r/ syllable-initially in Shinman:

$$(11) \quad \left[\begin{smallmatrix} +\text{cont} \\ +\text{back} \end{smallmatrix} \right] \rightarrow \left[\begin{smallmatrix} -\text{voice} \\ -\text{son} \end{smallmatrix} \right] / \$_$$

Aspiration of */r/ in high tone syllables for Samtao:

$$(12) \quad \left[\begin{smallmatrix} +\text{son} \\ -\text{nas} \\ +\text{back} \end{smallmatrix} \right] \rightarrow [+asp] / _\$\text{V(C)}^1$$

*/r/ deletion in clusters with */p/ and */k/ in Shinman and sometimes Samtao:

$$(13) \quad \left[\begin{smallmatrix} +\text{son} \\ -\text{nas} \\ +\text{back} \end{smallmatrix} \right] \rightarrow \emptyset \quad \left[\begin{smallmatrix} -\text{cont} \\ -\text{son} \end{smallmatrix} \right] __$$

In word final position, */r/ becomes /l/ in Kontoi:

$$(14) \quad \left[\begin{smallmatrix} +\text{cont} \\ +\text{son} \end{smallmatrix} \right] \rightarrow \left[\begin{smallmatrix} -\text{back} \\ +\text{lat} \end{smallmatrix} \right] / _\#_$$

Weakening of */r/ to /h/ word-finally in Shinman:

$$(15) \quad \left[\begin{smallmatrix} +\text{cont} \\ -\text{high} \\ -\text{ant} \end{smallmatrix} \right] \rightarrow \left[\begin{smallmatrix} -\text{voice} \\ -\text{son} \end{smallmatrix} \right] / _\#_$$

Deletion of */r/ word-finally in Samtao:

$$(16) \quad \begin{bmatrix} +\text{son} \\ -\text{nas} \\ +\text{back} \end{bmatrix} \quad \rightarrow \quad \emptyset / _ \#$$

4. Toward a reconstruction of Proto-Plang vowels and register

4.1 Vowel and Register System of Proto-Plang

The effects of register can be seen in each of the languages in this study. Each has developed at least a two tone system. Both Kontoi and Samtao have contrastive voice qualities breathy and clear. Kontoi and Samtao have a great amount of synchronic free variation in the vowels. Li et al. (1986) do not mention any free variation in Shinman. The fluctuation in the vowels obscures the diachronic picture. This is especially true in the back rounded vowels where [u] and [o] freely vary in many environments in Kontoi and also in some environments in Samtao. The phonetic boundaries of /u/ and /o/ in these two languages are very fluid. Given a synchronic situation less clear than one might wish, the proto-vowel segments are inevitably more complex and variable.

The data used to reconstruct the vowels were limited to those etyma attested in all three languages and are well-known Mon-Khmer forms. The reconstruction is also based generally on data from basic vocabulary, familiar enough to support a reliable analysis, rather than on suspect unique correspondences. The items selected for analysis in vowel reconstructions are marked by an asterisk (*) in section 6. Register one is marked here by a subscript I and register two by subscript II.

The reconstructed vowel system of Proto-Plang is:

Register I

i _I		u _I
e _I	y _I	o _I
	a _I	ɔ _I

Register II

i _{II}		u _{II}
e _{II}	y _{II}	o _{II}
	a _{II}	ɔ _{II}

Figure 12. Proto-Plang Vowel System

Table 2 shows the correspondence sets attested in the data. Again a frequency count is included.

TABLE 2
REFLEXES OF PROTO-PLANG VOWELS

PP	Environment	Kontoi	Shinman	Samtao	# of occurrences
*i _I	stop final	i	e	e	4
	continuant final	e	ɛ	i	3
*i _{II}	stop final	j	i	i	7
	continuant final	ɛ	i	i	7
*e _I	stop final	e	ɛ	e	4
	continuant final	e	e	e	1
*e _{II}	stop final	j	i	e	3
	continuant final	ɛ	i	e	4
*y _I	tone 1	w	y	u	16
*y _{II}	tone 2, normal	w	y	o	4
	tone 2, -1	w	y	ø	2
	tone 2, -c, j̪	w	ɛ	e	3
*a _I	all environments	a	a	a	45
*a _{II}	all environments	ä	w	y	14
*u _I		u	u	o	2
		u	o	o	2
		u	o	u	2
*u _{II}		u	u	u	4
	y-j̪, k	u	u	a	3
*o _I		ɔ	o	o	2
		ɔ	o	ɔ	2
*o _{II}		o	o	o	2
		o	u	o	3
		ø	o	u	1
*ɔ _I	normal	ɔ	ɔ	o	7
	-i	ɔ	o	o	2
*ɔ _{II}	normal	ɔ	ɔ	ɔ	3
	-i	ø	u	u	2
	-l̪	ɔ	ua	o	2
	-l̪	o	ua	ø	1
	-n	ɔ	ua	ɔ	1

Since the reconstructed vowels are not as well attested as the consonants, all examples of each reflex will be listed. There is one process in Samtao by which the final consonant causes gliding in all the vowels except the low central, so the rule describing it is presented first.

(1) Samtao V → Va/ _l, r

	K	Sh	S
422. to sweep	pəh ¹	[npih ¹]	piah ¹
88. bee	ap ^h el ¹	phəh ¹	hia ²
149. fat	rə?uh ¹	la? ⁴ u? ¹	aluah ¹
345. to fly	p ^h wl ¹	pvh ¹	pua ¹
as well as in items 28, 40, 45, 65, 73, 75, 93, 166, 235, 238, 297, 320, 324, 517, 542, and 543.			

Another rule, affecting all vowels in Shinman, gives a high front off-glide /i/ before palatal consonants /c/ and /ɲ/ (written /k/ and /ŋ/ respectively in Shinman).

(2) Shinman V → Vi / __c, ɲ

	K	Sh	S
33. star	səməŋ ¹	ka? ⁴ mviŋ ¹	səməŋ ¹
186. father	akəŋ ¹	kwiŋ ¹	kvŋ ¹
413. to spit	p ^h rwic ²	pheik ²	mpec ²
546. all	wc ¹	vik ¹	uc ¹

4.1.1 *Front Vowels*

*/i/

*/i_I/ Stop Final

One reflex of first register */i/ occurs with stop finals:

*i_I > K i, Sh e, S e

191. husband	kəmi? ²	ka? ⁴ me? ²	ame? ¹
263. needle	pəŋi? ¹	ka? ⁴ ne? ¹	ane? ¹
526. left side	avi? ¹	kha ² ka? ⁴ ve ²	kra? ¹ ve? ¹
528. near	nti? ¹	nte? ²	nte? ²

Typically for first register, the vowel is lowered in both Shinman and Samtao. Though all these examples end in a glottal stop, symmetry with the other front vowels would suggest the broader category of any stop being the relevant environment.

*/i_I/ Continuant Final*i_I > K e, Sh ε, S i

73. root	reh ²	xε? ²	riah ²
88. bee	ap ^h el ¹	phəh ¹	hia ²
93. chicken	kənel ¹	ɛh ¹	kənia ²

Again, vowel lowering is found but this time in Kontoi and Shinman.

Variations from the above rules for */i_I/ include:

8. earth	kəti? ¹	ka? ⁴ tɛ? ¹	ti? ¹
----------	--------------------	-----------------------------------	------------------

25. rain	l ^h i? ¹	lε? ¹	le? ¹
76. sugar	səmi? ¹	um ¹ mie? ²	nomame? ²
105. flea	atep ¹	tiap ¹	tip ¹
142. dung	in? ¹	ɛn? ¹	en? ¹
204. Tai	sem ¹	sem ¹	s ^h im ¹
220. we (3+)	i? ¹	ɛ? ¹	i? ¹

Each of these is a slight variation from the stated correspondences for */i_H/, the degree of lowering of the vowel being different for each. These variations reflect the complexity and variation of the proto-high front vowel as well as of the synchronic front vowel system of each of the daughter languages.

*i_H/ Stop Final

*i_H > K ɿ, Sh i, S i

10. firewood	ch ^h i? ¹	khi? ¹	ch ^h i? ¹
55. fruit	plih ²	pli? ¹	pli? ¹
409. sleep	it ¹	it ¹	it ¹

This correspondence with stops also occurs in nos. 17, 115, and 221. It also occurs once before a continuant:

461. cooked	sin ¹	sin ¹	s ^h in ¹
-------------	------------------	------------------	--------------------------------

There are two examples of vowel lowering in this set:

157. hand	tj? ¹	ti? ¹	tai? ¹
509. spicy	səphric ²	ka? ⁴ phe? ¹	səprai? ¹

Though these are second register correspondences, the high tone in each has affected the vowel height in Samtao, as if it were a first register correspondence.

*i_H/ Continuant Final

*i_H > K ɛ, Sh i, S i

28. salt	cɛh ²	kil ²	cjah ²
75. squash	mpɛl ¹	npih ¹	mpia ¹
394. to return	ɛŋ ¹	in? ¹	ip ¹
545. nine	sətɛm ¹	ka? ⁴ tim ¹	sitim ¹

This correspondence also occurs in nos. 89, 235, 422.

One other item demonstrates a *i_H/ reflex:

87. bear	k ^h rih ¹	qhil ¹	krvh ¹
----------	---------------------------------	-------------------	-------------------

The Samtao vowel in ‘bear’ is backed due to the influence of the back consonant /r/.

The main distinguishing feature of *i_H/ correspondences is that Kontoi has a breathy vowel. Occasionally Samtao has a breathy vowel as well, but breathiness is much less common in Samtao than in Kontoi, though it is still contrastive. The low frequency of breathiness in Samtao is probably due to its status as a recent and continuing innovation. Thus it does not correspond consistently with proto registers.

***/e/**

The correspondence sets for */e/ are again dependent on the nature of the final. Each of the correspondences can occur in high or low tone syllables.

***/e_I/ Stop Final**

Before stops the following correspondence is found:

***e_I > K e, Sh ε, S e**

109. goat	ape? ²	pε? ⁴	pe? ¹
296. to bite	cet ²	kεt ²	cet ²
505. small	et ¹	εt ¹	et ¹

The vowel is lowered in Shinman before stops.

One continuant final also has this correspondence:

12. hail	lhiaphel ¹	phel ¹	per ¹
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There is one exception to this correspondence with a stop final:

276. shoes	c ^h ep ¹	khiap ²	c ^h ep ¹
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The palatal initial has raised the vowel in Shinman to a high front vowel. The final /p/ also has an effect on the vowel in Shinman, giving the high front vowel /i/ a transitional offglide [a]. This was also seen in the word for 'flea' in first register */i/:

105. flea	atep ¹	tiap ¹	tip ¹
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The rule expressing this offglide in first register front vowels in Shinman is:

(3) Shinman V_I > V_I a / __p

***/e_I/ Continuant Final**

***e_I > K e, Sh ε, S e**

534. there (far)	teh ¹	man ⁴	teh ¹	kəteh ¹
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This correspondence is not well attested in the data, but looking at the whole system we would expect more like this or very similar correspondences for */e_I/ with low front vowel reflexes in each of the daughter languages.

There are two other words which have reflexes that can be reconstructed as */e_I/:

478. heavy	səcen ¹	ka? ⁴	kian ³	cen ²
542. six	leh ²	lie ²	leah ²	

Again Shinman has a raised vowel with offglide as in the word for 'shoes' mentioned above (*e_I stop final). 'Heavy' has the initial palatal which accounts for the raised vowel, but the cause of the high vowel in 'six' in Shinman is obscure.

***/e_{II}/ Stop Final**

The normal reflex for */e_{II}/ with stop finals is:

***e_{II} > K ɿ, Sh i, S e**

5. day	n̥umŋic ²	ka? ⁴ n̥i? ²	n̥onsinŋe? ²
118. pig	kɔnlik ¹	lik ²	kɔnlɛc ²
537. one	kət̥i? ²	ka? ⁴ ti? ⁴	te? ²

There is one other unique correspondence that can also be reconstructed as *e_{II}:

51. corn	s̥ele? ¹	sa? ⁴ le ²	sile? ²
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The breathy low vowels make this distinctly a proto second register low vowel.

Another exception to this correspondence for */e_{II}/ is:

60. grass	aręp ²	xep ²	ręp ²
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Here Samtao has a backed vowel [v] following the back consonant */r/, just as in the word for ‘bear’ seen in the section on */i_{II}/.

/e_{II}/ Continuant Final**e_{II} > K ɛ, Sh i, S e**

151. fingernail	n̥n̥em ¹	n̥im ¹	n̥hem ¹
346. to forget	p̥el ²	pil ²	p̥e ²
352. to go down	l̥eh ²	lih ²	l̥eh ²
402. to sew	c̥en ²	c̥in ²	keŋ ²

As with */i_{II}/, the second register */e/ reflexes for Kontoi have a breathy vowel. Again, Samtao occasionally has breathiness, but it is not as frequent or consistent in correspondences as in Kontoi.

4.1.2 Central Vowels ⁴***/v/**

The alternation in correspondences for */v/ is completely dependent on tone and final segments. Thus the correspondences could all be accounted for by contrast within one register. But since tone often correlates with register, the vowel */v/ here will be analyzed as first register */v_I/ in high tone syllables and second register /v_{II}/ in low tone syllables.

/v_I/ Tone 1**v_I > K u, Sh v, S u**

33. star	səmuŋ ¹	ka? ⁴ mvŋiŋ ¹	səmuŋ ¹
351. to go	huŋ ¹	hvŋ ¹	hu ¹
546. all	uŋ ¹	vik ¹	uc ¹

This correspondence also occurs in items 30, 111, 123, 211, 297, 300, 320, 345, 385, 404, 470, 495, and 517. The exact value of */v_I/ is difficult to reconstruct except that it was a central/back unrounded vowel which has become rounded in Samtao. Over all, Samtao has a much lower frequency of unrounded vowels

⁴Throughout this section /v/ will be referred to as a back unrounded vowel, while /a/ will be termed a central vowel, though both have been allocated to the central section of the vowel chart.

than the other two languages. The back unrounded vowel is merging with the rounded vowels in Samtao.

*/*v_{II}*/ Tone 2

**v_{II}* > K w, Sh v, S o

41. year	n <u>w</u> m ²	n <u>v</u> m ³	nom ²
200. person	p <u>w</u> y ²	p <u>v</u> i ³	p <u>ø</u> i ²
363. to kick	ɳ <u>w</u> n ²	ɳ <u>v</u> n ³	ɳ <u>ø</u> n ²
425. to take out food	p <u>w</u> k ²	p <u>v</u> k ²	p <u>ø</u> k ²

The vowel in Samtao is lower in tone 2 syllables than in tone 1. Also, breathiness does not consistently correlate in Samtao. This correspondence occurs before all finals except */l/, */c/ and */n/.

Before */l/ the following is found:

**v_{II}* > K w, Sh v, S ɔ

135. belly	k <u>ə</u> t <u>w</u> l ²	ka? ⁴ t <u>v</u> l ²	t <u>ɔ</u> ²
513. thick	k <u>ə</u> p <u>w</u> l ²	ka? ⁴ p <u>v</u> l ³	p <u>ɔ</u> ²

The vowel in Samtao is not only rounded but lowered further before */l/.

This lowering is also found once before */m/ in Samtao:

329. to die	y <u>m</u> ²	z <u>v</u> m ³	y <u>ɔ</u> m ²
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But, as seen above in no. 41 'year', /m/ does not normally produce this effect.

Before the palatals */c/ and */n/ the vowel */v_{II}/ is fronted. The height of the vowel is somewhat variable in Shinman.

**v_{II}* > K w, Sh ε, S e

336. to enter	l <u>w</u> c ²	l <u>ɛ</u> ik ²	le <u>c</u> ²
413. to spit	p <u>h</u> r <u>w</u> c ²	p <u>h</u> e <u>ɛ</u> ik ²	m <u>p</u> e <u>c</u> ²
159. intestines	v <u>w</u> c ²	v <u>e</u> ik ²	ve <u>c</u> ²

This fronting also occurs once in a high tone:

501. short (length)	n <u>w</u> ŋ ¹	n <u>ɛ</u> iŋ ¹	n <u>e</u> ŋ ¹
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There is also one occurrence of fronting in Shinman but not in Samtao:

499. sharp pointed	s <u>ə</u> p <u>w</u> c ¹	ka? ⁴ p <u>ɛ</u> ik ²	mp <u>h</u> oc ¹
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*/*a*/

The two register manifestations of */a/ occur in both high and low tone.

*/*a_I*/

**a_I* > K a, Sh a, S a

78. thorn	kat ¹	kat ¹	kat ¹
271. rice field	maɻ ¹	maɻ ¹	ma ¹
444. to weep	yam ²	zam ²	yam ²

This correspondence is well attested in the data, occurring in 45 items out of those used for the vowel analysis. In this first register the vowel remains low in all three languages.

*/a_{II}/

*a_{II} > K ᾳ, Sh w, S ɣ

40. wind	kāl ¹	kuh ¹	ŋkva ¹
81. vegetable	tā? ¹	tu? ¹	tv? ¹
168. pus	lām ²	lum ²	lym ²

This correspondence is also well attested in the data, occurring in nos. 30, 86, 156, 178, 186, 234, 246, 294, 333, 463, and 492. The phonetic value of /a/ in Kontoi is [ʌ], and /ɣ/ in Samtao in low tone is also [ʌ]. Thus the quality of */a_{II}/ was probably a centrally located unrounded vowel.

There are four examples of a slight variation from this normal correspondence, where the vowel in Shinman is written as a lower vowel:

298. to blow	pāŋ ²	pvŋ ²	pvŋ ¹
304. to bury	kēpāŋ ²	ka? ⁴ pvŋ ¹	apvŋ ¹
428. to think	kāt ²	ka? ⁴ kyt ¹	kyt ² p ^h om ¹
464. deep	rā? ¹	xy? ¹	rv? ¹

It is possible that the contiguous backed consonants in each are causing lowering of the vowel in Shinman, but this does not happen in most instances (see no. 246 especially).

There is one unusual exception in Samtao to this correspondence for */a_{II}/:

65. mushroom	tāh ¹	tu? ¹	tiah ¹
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Two other cognate sets show an unexpected reflex for Shinman.

166. nose	ŋkorj ²	māh ²	mul ²	ŋkorj ²	mrāh ²
210. wife	māŋ ²	ka? ⁴	muŋ ³	amvŋ ²	

The presence of the bilabial nasal could explain the added rounding to the vowel in Shinman.

There is also one occurrence of a rounded vowel in Kontoi where one would expect the second register reflex /ɑ/:

214. I	u? ¹	w? ¹	v? ¹
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4.1.3 Back Vowels

As was mentioned in section 4.1, the back vowels especially are obscured by the high degree of free variation between [u] and [o]. This makes reconstruction of these two vowels rather difficult, but looking at the correspondences with common register phenomena in mind we can tentatively assign each to a particular proto-vowel. This means that there may not be strict contrast and complementary distribution of correspondences as desired using the comparative method. The lack of consistent correspondences and the lack of high frequency correspondences make contrast and complementary distribution difficult to substantiate.

*/u/

*/u_I/

Vowel lowering is a common manifestation of the first register.

*u_I > K u, Sh u, S o

38. water	um ¹	um ¹	rom ¹
399. to see	jŋu? ²	z̥u? ¹	yo? ²

In the back vowels, the breathiness in Kontoi is less common and much less consistent in vowel correspondences.

This proto vowel in another correspondence shows vowel lowering in Samtao as well as Shinman in the first register:

*u_I > K u, Sh o, S o

99. dog	su? ¹	so? ¹	s ^h o? ¹
256. ladder	m̥buŋ ²	npoŋ ¹	m̥poŋ ¹

One other correspondence shows vowel lowering in first register, this time in Shinman:

*u_I > K u, Sh o, S u

358. to hide	səmu? ¹	ka? ⁴ mo? ²	mu? ¹
435. to wait	ku? ¹	kho? ¹	ŋku? ¹

There is another correspondence which has perhaps accentuated vowel lowering in Shinman and Samtao due to the surrounding segments:

112. hornet	a? ² un ¹	ɔŋ ¹	ɔŋ ¹
165. neck	ŋuk ²	ŋɔk ²	ŋɔk ²

The low vowel occurs in Shinman and Samtao in the environment of back and low consonants: glottal or velar initial and velar final.

*/u_{II}/

In the second register this vowel in all of the languages remains high:

*u_{II} > K u, Sh u, S u

149. fat	rə? ^{uh} ¹	la? ⁴ u? ¹	aluah ¹
262. mosquito net	s? ^u t ¹	sut ²	ŋkaŋsut ¹
324. to crawl	mul ²	mu? ²	mua ²
540. four	ləpun ¹	pun ¹	pun ¹

Another correspondence for */u_{II}/ occurs in the following three items:

*u_{II} > K u, Sh u, S a

143. ear	y? ^u k ¹	z? ^u k ¹	yak ¹
205. village	y? ^u n ¹	z? ^u n ¹	p? ^v riyan? ¹
482. lightweight	siy? ^u n ¹	ka? ⁴ z? ^u n ¹	siyan? ¹

In this environment the vowel is lowered by the presence of the velar final and fronted by the palatal initial, producing a low central vowel in Samtao. The lower vowel in Kontoi in no. 482 is phonetically in free variation between [u] and [v]. Again, breathiness in Kontoi is not consistent in this correspondence.

Unlike the front vowel correspondences, those for the back vowels do not correlate with either tone or final consonants. The correspondence for */u_{II}/ is the

most frequent of any of the high back vowel correspondences and it includes both high and low tone, and both continuant and stop finals. Thus a case cannot be made for either of these being determining factors for register in */u/.

Other single-occurring correspondences are reconstructed under the first register:
 $*u_I > K \text{ u}, Sh \text{ u}, S \circ$

332. to dream	kəmu? ²	ka? ⁴ mu? ²	itəmo? ²
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K \u, Sh u, S \circ	səm\u? ¹	ka? ⁴ mu? ²	səm\u? ¹
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K u, Sh u, S ao	m\u? ¹	mu? ¹	mao? ¹
-----------------	-------------------	------------------	-------------------

K \u, Sh u, S ao	kəlumk\u? ¹	khu? ¹	nom ² k\uao? ¹
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K \o, Sh u, S ao	t\u? ¹	tu? ¹	tao? ¹
------------------	-------------------	------------------	-------------------

K u, Sh o, S \circ	kətum ¹	ka? ⁴ tom ¹	tom ¹
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The main characteristic of each of these correspondences is the lowering of the vowel height in Samtao. In particular, the third, fourth, and fifth correspondences show a typical first register phenomenon of lowered vowel onset glide. Also, each of these, except the first, occurs in high tone syllables, another factor indicating first register.

The questions then arise as to why these six unique correspondences exist and why they are different. In Kontoi, the main difference is just breathiness, which we have already seen does not consistently correlate in the back vowels. Thus the major difference in these correspondences is the two distinct reflexes in Samtao of /o/ and /ao/. The first five items each end in a glottal stop, with the initials being proto-voiced consonants for words having an /o/ vowel and /ao/ for proto-voiceless consonant initials. The last word has a voiced final */m/ with an /o/ vowel. Thus /o/ correlates with a voiced environment in the proto language and /ao/ with a voiceless environment.

*/o/

*/o/¹

$*o_I > K \circ, Sh o, S \circ$

455. bitter	səŋ ¹	soŋ ²	soŋ ¹
530. right side	atəm ¹	kha ² ka? ⁴ tom ²	kra? ² tom ¹

$*o_I > K \circ, Sh o, S \circ$

183. child	kən ¹	kon ¹	kən ¹ et ¹
366. to know	nəŋ ²	zəŋ ³	yəŋ ²

Vowel lowering again occurs in first register, this time in Kontoi and Samtao.

There is a single occurrence of a correspondence that would best fit into first register */ɔI/:

107. frog	arɔk ²	xɔk ²	rok ¹
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*/ɔII/

*ɔI I > K o, Sh o, S o

335. to eat (rice)	som ¹	som ¹	som ¹
439. to wash dishes (Samtao-wash face)	kʰoç ¹	khoik ¹	kʰoc ¹

Again breathiness is not consistent in Kontoi.

The following correspondences fit into a second register */ɔII/, with a raised vowel in Shinman or Samtao:

*ɔI I > K o, Sh u, S u

23. night	num ²	som ¹	nsum ¹
154. foot	coŋ ²	cuj ³	coŋ ²
434. to vomit	hɔl ¹	hul ¹	ho ¹

*ɔI I > K ɔ, Sh o, S u

348. to get	pɔn ²	pon ²	pun ²
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Exceptions to these correspondences for */o/ include:

243. comb	nsat ¹	nsat ¹	sot ¹
174. throat	kʰrɔŋ ²	qhon ¹	kraŋ ¹
511. tall	lʰɔŋ ¹	lɔŋ ¹	lʰan ¹

*/ɔ/

*/ɔI/

*ɔI > K ɔ, Sh ɔ, S o

77. thatch grass	płɔŋ ¹	płɔŋ ¹	płon ¹
102. egg	kətɔm ¹	ka? ⁴ tɔm ¹	tom ¹
113. horse	ŋɔrɔŋ ²	ŋxɔŋ ³	mpron ²
309. to carry on shoulder	klɔm ¹	klɔm ¹	klom ¹
326. to cut/slash	mɔk ²	mɔk ²	mok ²
395. to ride	pʰɔk ²	pɔk ²	pɔk ²
504. slow	kɔy ²	kɔi? ⁴	koi ²

*/ɔI/ appears to be the least stable of the Proto-Plang vowel system with many factors influencing its reflexes. The final palatal in nos. 95 and 539 below appears to cause raising of [ɔ] to [o] in reflexes of */ɔ/.

*ɔI > K ɔ, Sh o, S o

95. cow	amɔy ²	ka? ⁴ moi ²	koi ²
539. three	la? ⁴ ɔy ¹	la? ⁴ oi ¹	loi ¹

*/ɔ_{II}/

The first correspondence for */ɔ_{II}/ consists of all low back rounded vowels:

*ɔ_{II} > K ɔ, Sh ɔ, S ɔ

355. to grind	m̥mɔ?¹	mɔ²	mɔ²
456. black	lɔŋ²	lɔŋ³	lɔŋ²
500. sharp (knife)	lɔm²	lɔm³	lɔm²

*/ɔ_{II}/ has a raised variant before /i/ in Shinman and Samtao, just as */ɔ_I/ is raised in this same environment:

*ɔ_{II} > K ɔ, Sh u, S u

356. to have	kɔy¹	kui²	kui¹
412. smell bad	sə?ɔy¹	ka?⁴ ui²	sə?ui¹

Three final correspondences are very similar for */ɔ_{II}. The first occurs preceding final */l/. In this set the vowel in Samtao is raised:

*ɔ_{II} > K ɔ, Sh ua, S o

45. banana	kəmɔh¹	ka?⁴ mual²	amoah²
238. charcoal	pəsɔh¹	ka?⁴ sual¹	soah¹

The second occurs before */l/. Here Kontoi has a raised vowel.

*ɔ_{II} > K o, Sh ua, S ɔ

9. fire	ŋɔl²	ŋual²	ŋɔ²
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The third occurs before */n/.

*ɔ_{II} > K ɔ, Sh ua, S ɔ

541. five	ləpʰɔn¹	phuan¹	pʰɔn¹
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These last three correspondences all demonstrate a vowel raising and offglide for Shinman (ua) before alveolar consonants. This rule is expressed as:

$$(4) \quad \text{Shinman } \circ \rightarrow \text{ua} / _ \left[\begin{array}{l} +\text{cons} \\ +\text{ant} \\ +\text{cor} \end{array} \right]$$

There is one exception to the */ɔ/ correspondences:

416. to stand	cɔŋ²	cunʒ³	cɔŋ²
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Comparing ‘to stand’ with ‘foot’:

154. foot	cɔŋ²	cunʒ³	cɔŋ²
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we find that Kontoi and Samtao have contrasting vowels for these two items, whereas Shinman does not. According to Diffloth (1980), Proto-Wa has two distinct etyma for ‘to stand’ and ‘foot’. Since Shinman does not demonstrate a merger of */o/ and */ɔ/ anywhere else in the data, the vowel in Shinman in this unique correspondence for ‘stand’ is probably due to a transcriptional error. This is highly likely because of the semantic similarity between ‘to stand’ and ‘foot’.

4.2 Summary of Rules for Vowels

Gliding rule for Samtao:

$$(1) \quad V \rightarrow Va / _ l, r$$

Vowel palatalization in Shinman:

$$(2) \quad V \rightarrow Vi / _ c, n$$

Transitional glide for first register front vowels before /p/ in Shinman:

$$(3) \quad V_I \rightarrow V_Ia / _ p$$

Low back vowel raising and transition before alveolars in Shinman:

$$(4) \quad \text{Shinman } \circ \rightarrow ua / _ \begin{bmatrix} +\text{voc} \\ +\text{ant} \\ +\text{cor} \end{bmatrix}$$

5. Reconstructed tone and presyllables

5.1 Tone

It has been seen in the previous section that sometimes tone correlates with register in Proto-Plang vowels, but there are a few different factors which can be associated with the formation of a tone system, such as advanced vs. retracted tongue root, voiced vs. voiceless initial consonants, and final consonants. Therefore the difficulty lies in the fact that a combination of these factors is involved with tone in the languages under study. That is, tone does not correlate simply with any one factor.

Li et al. (1986:13) propose four tones for Shinman Plang. This is a relatively high number of tones for a Mon-Khmer language of the Waic branch. Li's tone 4 mostly occurs in the first syllable of compounds or in loan words. Outside of these instances its frequency is too low to justify the existence of a fourth tone in Proto-Plang.

Tone 3 in Shinman always occurs with sonorant finals:

	K	Sh	S
21. mountain	ŋkonj ²	nkɔŋj ³	ŋkɔŋj ²
200. person	pwy ²	pvi ³	pɔi ²
402. to sew	cɛŋ ²	cɪŋ ³	kɛŋ ²
with one exception:			
405. to shout	rak ²	xak ³	---

Other examples of tone 3 are nos. 35, 41, 69, 91, 106, 113, 121, 128, 154, 162, 201, 210, 236, 250, 291, 299, 313, 329, 363, 366, 403, 416, 447, 456, 457, 467, 469, 478, 500, 502, 513, 523, 549. It does not however act in complementary distribution with either tone 1 or tone 2, though it generally corresponds with tone 2 in the other languages.

Similarly, Kontoi has a high falling tone (1`) which occurs only with sonorant finals and generally corresponds with tone 2 in the other languages but contrasts with both tones 1 and 2 in Kontoi.

	K	Sh	S
160. knee	ŋay ¹ ŋoŋ ¹	nai ¹ ka ² qhon ² ɲvɪŋçŋ ²	
478. heavy	səcen ¹	ka ² kian ³	cen ²
523. far	səŋŋaŋ ¹	ka ² nai ³	sinjai ²
331. don't !	pay ¹	----	pai ¹

It is also found in items 32, 50, 57, 62, 83, 182, 369, 458, 474. Unfortunately, Kontoi tone 1` does not generally correspond with Shinman tone 3. Both are relatively infrequent and several of the Kontoi tone 1` words are loanwords (nos. 50, 62, 83, 182). At this point there is not enough evidence to support the reconstruction of a third tone for Proto-Plang, but the existence of Kontoi tone 1` and Shinman tone 3 does point to a possible development in this sub-branch.

Haudricourt (1954) describes the origin of tones in Vietnamese as coming from two sources. First a three-way split occurred due to the final consonants forming a three-tone system. Then, these three tones further split into two tones each, this split being conditioned by the initial consonants. This same kind of process may be happening here but in the reverse order. One split, caused by the initials or advanced/retracted tongue root, occurred prior to the stage of Proto-Plang such that a two contrastive tone system was complete in Proto-Plang. This split occurred later than Proto-Wa though, as Proto-Wa has contrasting voiced/voiceless initials and no tone (Diffloth 1980). In the modern languages, both Kontoi and Shinman have tones (1` and 3 respectively) which seem to be dependent on sonorant finals. Thus a further split, determined by finals, may be underway in both of these daughter languages. It is interesting to note that the Palaungic branch of Mon-Khmer (to which Plang and Samtao belong) includes several tonal languages, Danaw, Riang, Man Met (Svantesson 1988), which are rare in all but the Vietic branch of Mon-Khmer.

With these things in mind a two-tone system is reconstructed for Proto-Plang. Though the majority of items are clear cases of either tone 1 or tone 2, there are abundant examples of tone 1 corresponding with tone 2. The strict application of the procedures of contrast and complementary distribution using the comparative method would force the reconstruction of several tones and introduce unnecessary complexity in a proto-tone system that was, if anything, less complex than the system in the daughter languages. Thus only high and low tone can be supported in Proto-Plang. Taking all of the factors affecting register/tone into mind, tone is reconstructed on an item by item basis.

5.2 Presyllables

The nature of presyllables makes them rather difficult to reconstruct phonologically. As was mentioned in section 2; presyllables are unstable and limited in their components. They are non-tonal and unstressed. The CV type presyllables will be discussed first.

The vowel in CV type presyllables is generally reduced to [ə]. The only component of presyllables that could participate in correspondences are the initials. The initial consonant correspondences of this type of presyllable do not produce meaningful proto-segments. It is the full presyllable which alternates, and these alternations are rarely phonologically determined.

From these data it appears that Samtao is losing its presyllables. Samtao has deleted presyllables in many items where they have often been retained in Kontoi and Shinman.

	K	Sh	S
96. crab	kətam ¹	ka? ⁴ tam ¹	tam ¹
103. elephant	kəsaŋ ¹	ka? ⁴ saŋ ¹	s ^h aŋ ¹
358. to hide	səmu? ¹	ka? ⁴ mo? ²	mu? ¹

By far the most frequent presyllable in Shinman is *ka?*, as seen in the above examples. Kontoi shows the greatest variety of presyllables:

	K	Sh	S
53. cucumber	acel ¹	ka? ⁴ kel ¹	ci ¹
263. needle	pəni? ¹	ka? ⁴ ne? ¹	ane? ¹
372. to listen	rəciŋ ²	----	aceŋ ²

If we look at the most frequent correspondences of presyllables we would find the following two commonly occurring:

K kə, Sh ka?

K sə, Sh ka?, S sə

There are two possible explanations for these correspondences. One is that there were two presyllables, possibly [kə] and [cə] with the second shifting in different directions for Kontoi and Shinman. The other possible explanation is that Shinman is reducing all presyllables to /ka?/, while Kontoi is retaining a variety of presyllables. The second is the preferred analysis here, as there is no evidence within Proto-Plang for a [cə] presyllable.

The syllabic nasal presyllables generally assimilate to the point of articulation of the following consonant. The assimilation is written overtly in the Kontoi and Samtao data and is implied in the Shinman transcription.

	K	Sh	S
21. mountain	ŋkorŋ ²	nkɔŋ ³	ŋkɔŋ ²
75. squash	m̪pel ¹	npih ¹	m̪pia ¹
176. tongue	ntak ¹	ka? ⁴ tak ¹	ntak ¹
385. to plant	ŋsum ¹	ŋsvm ¹	sum ¹

The only change from the proto form in the nasal presyllables would be in the point of articulation. Any change in the point of articulation of the presyllable is completely dependent upon the evolution of the root initial consonant.

The presyllables play a role in the development of register and tone. Since the voicing of initial consonants is one factor associated with tonogenesis, the presyllables may be important to the reconstruction of tone. The scope of conditioning varies though. Sometimes tone is conditioned by the presyllable initial, sometimes by the main syllable initial, and even sometimes by the consonant in a cluster closest to the vowel. This can be a cause of tone flip-flops where one tone is expected according to the initial consonant but a different tone is manifest due to an -r or -l cluster. One example is 'fruit':

55. fruit	plih ²	pli? ¹	pli? ¹
-----------	-------------------	-------------------	-------------------

Shinman and Samtao both have the high tone which is expected with the voiceless initial /p/. Kontoi, on the other hand, has a low tone which is probably due to the presence of the voiced segment /l/. This difference in the range of conditioning would be a useful topic for further study.

6. Conclusion and Word List

6.1 Conclusion

The reconstruction of Proto-Plang and the rules reflecting innovations formulated in the preceding sections are used as a basis for determining the interrelatedness of Kontoi, Shinman, and Samtao, along with their cognateness.

Based on this reconstruction it is apparent that Kontoi Plang is the closest to the proto language. The reason for this claim is the number of innovations in Kontoi. Only 5 of the 17 consonant change rules are used to derive Kontoi from Proto-Plang. The more rules necessary to derive a present language from the parent language, the more innovative the present language is and the more distant phonologically it is from the parent. Conversely, the fewer rules applied, the closer the daughter language is to the parent language.

The most innovative of the three languages is Samtao, with 10 of the 17 consonant change rules necessary to derive it from Proto-Plang. Shinman is almost as innovative as Samtao in having 9 rules necessary. It might appear that Samtao and Shinman are closely related to each other by the number of innovations each has, but only four of these are shared innovations.

Cognate counts add supporting evidence that Samtao and Shinman are not most closely related. The following cognate percentages were found: Kontoi and Shinman 68% cognate, Kontoi and Samtao 68% cognate, and Shinman and Samtao 63% cognate. These percentages would indicate that Shinman and Samtao are least closely related. Thus, according to the reconstruction and the cognate counts, there are no two languages which are strikingly more closely related to each other than to the third. Figure 13 illustrates the genetic relationship between the daughter languages.

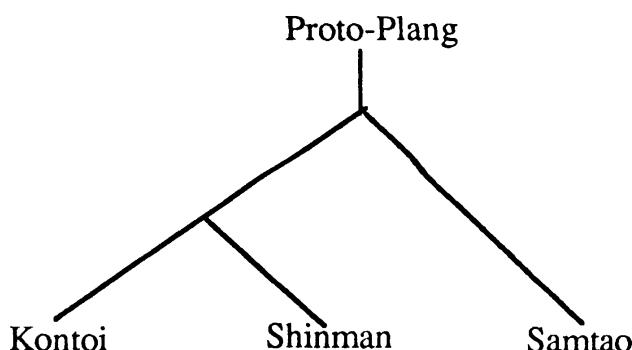


Figure 13. Genetic relationships

6.2 Word List

The following word list includes the forms for each of the three daughter languages and the proto form for Proto-Plang. A series of hyphens means no cognate form is available in the daughter languages or that no form is reconstructable for Proto-Plang. A grave accent mark over a vowel in Proto-Plang signifies second register, while first register is unmarked. An underline below a vowel signifies uncertain register. Parentheses around a form denote a tentative reconstruction. A single hyphen in combination with a reconstructed form means another syllable (or presyllable) exists but there is not enough evidence for reconstruction. An * before an item number signifies an item used for determining the vowel reconstruction.

The word list is organized according to the following categories:

1-42	lifeless nature
43-83	flora
84-131	fauna
132-180	human anatomy
181-212	sociology
213-223	pronouns
224-290	man-made objects
291-448	verbs
449-521	statives
522-536	spatial relations
537-549	quantifiers
550-554	interrogatives

English	Kontoi	Shinman	Samtao	Proto-Plang
1. ashes	pwyu [?] ¹	ka? ⁴ zu ²	ju? ²	*nu? ²
2. cave	tʰam ²	---	tətʰam ¹	*tʰam ²
3. cloud	kətwl ² um ¹	---	tao?om ¹	----
4. country	nɔkkəŋ ¹	kvŋ ¹	nɔk ² yaŋ ¹	*nɔkkəŋ ¹
*5. day	n̥umŋic ²	ka? ⁴ n̥i? ²	ŋɔnsiŋne? ²	*-ŋèc ²
6. dew	----	um ¹ m̥vi ¹	rom ¹ m̥hvi ¹	*rummhVy ¹
7. dust	pələŋ ²	ka? ⁴ lvŋ ²	----	*Cələŋ ²
*8. earth	kəti? ¹	ka? ⁴ tε? ¹	ti? ¹	*kəti? ¹
*9. fire	ŋol ²	ŋual ²	ŋɔ ²	*ŋɔl ²
*10. firewood	cʰi? ¹	khi? ¹	cʰi? ¹	*kʰi? ¹
11. gold	sel ¹	----	səri ¹	*sril ¹
*12. hail	l̥hiapʰel ¹	phel ¹	pre ¹	*prel ¹
13. hole	kətə? ¹	ka? ⁴ tu? ¹	tv? ¹	*kətə? ¹
14. iron	----	l̥ek ²	lec ¹	*lhek ¹
15. mist	m̥wynɔŋ ¹	----	m̥hvi ¹ k̥y? ²	*mhVy ¹ -
16. moment	kʰraw ²	----	təkrao ¹	*kraV ¹
*17. month	təcʰi? ¹	khi? ¹	te? ² cʰi? ¹	*kʰic ¹
18. first month	n̥uncin ¹	n̥vn ¹ ciŋ ¹	lvnceŋ ¹	----

	English	Kontoi	Shinman	Samtao	Proto-Plang
19.	moon	ranjk ^h ic ²	khan ⁴ khi? ¹	raŋk ^h i? ¹	ranjk ^h ic ¹
20.	morning	numŋop ²	ti? ⁴ ɳup ⁴	paŋŋɔp ²	*ɳVp ²
*21.	mountain	ŋkor ²	nkɔŋ ³	ŋkɔŋ ²	*ŋkɔŋ ²
22.	mud	----	ka? ⁴ piŋ ²	pɛŋ ²	*pɛŋ ²
*23.	night	nuim ² som ¹	nsum ¹	ŋɔnsom ¹	*sòm ¹
24.	noon	nuŋŋic ²	----	ŋɔnsiŋne? ²	*ŋèc ²
*25.	rain	l ^h i? ¹	le? ¹	le? ¹	*lhi? ¹
26.	rainbow	pəyuntoŋ ²	----	ayɔŋ ²	*-yVŋ ²
*27.	rock	səmū? ¹	ka? ⁴ mu? ²	səmə? ¹	*Cəmu? ¹
*28.	salt	cəh ²	ki? ²	ciah ²	*kìlh ²
29.	shadow	səpāy ¹	ka? ⁴ pui ¹	kɔnpui ¹	*-pVy ¹
*30.	silver	mål ²	ka? ⁴ mwl ²	mv ²	*mål ²
*31.	smoke	tq? ¹	tu? ¹	tao? ¹	*tu? ¹
32.	snow	sətapap ¹	----	m ^h ví ¹ paj ²	*-pap ²
*33.	star	səməŋ ¹	ka? ⁴ mviŋ ¹	səmūŋ ¹	*Cəmvyŋ ¹
34.	sun	ŋay ¹ ŋic ²	ŋai ⁴ ɳi? ²	ŋaisiŋne? ²	*ŋay ¹ ŋèc ²
35.	thunder	ŋnum ²	nvm ³	anompre? ¹	*nVm ²
36.	today	səneŋ ¹	----	ipe? ²	*neŋ ¹
37.	tomorrow	pənsa? ¹ nsa? ¹	----	pəshəa? ¹	*-shəa? ¹
*38.	water	um ¹	um ¹	rom ¹	*rum ¹
39.	wet rice field	ti? ¹ na? ¹	na? ⁴	na ²	*na? ¹
*40.	wind	käl ¹	kuh ¹	ŋkvə ¹	*kär ¹
*41.	year	nuim ²	nvm ³	nom ²	*nVm ²
42.	yesterday	nuŋkq? ¹	nku? ¹	nəmkao? ¹	*-ku? ¹
43.	bamboo	pa? ¹ u? ¹	ka? ⁴ ɔ? ¹	nomo? ¹	*-V? ¹
44.	bamboo shoot	apoŋ ²	ka? ⁴ poŋ ²	pɔŋ ² o? ¹	*poŋ ²
*45.	banana	kəmɔh ¹	ka? ⁴ mual ²	amoah ²	*kəmɔlh ¹
46.	bark	l ^h u? ²	----	k ^h i ² l ^h o? ¹	*lhu? ¹
47.	betel nut	tɔy ¹	----	kətoi ¹	*tɔy ¹
*48.	branch	kak ¹	kak ¹	kak ²	*kak ¹
49.	bud	tom ¹	----	alom ¹	*Còm ¹
50.	coconut	makpaw ¹	----	makpao ²	*makpaV ²
*51.	corn	selę? ¹	sa? ⁴ le ²	sile ²	*səlè? ¹
52.	cotton	kay ¹	----	kvi ¹	*kày ¹
53.	cucumber	acel ¹	ka? ⁴ kel ¹	ci ¹	*kVl ¹
54.	flower	tay ²	----	tai ²	*tay ²
*55.	fruit	plih ²	pli? ¹	pli? ¹	*plih ¹
56.	clsf. for fruit	ŋmul ¹	----	mu ¹	*mvl ¹
57.	fruit seed	sumal ¹	----	sima ²	*səmaC ²
58.	garlic	hɔmlaw ¹	hom ¹	hɔmyan ²	*hom ²
59.	ginger	səceŋ ¹	sa? ⁴ kin ¹	səcij ¹	*səkin ¹
*60.	grass	aręp ²	xep ²	ręp ²	*ręp ²
*61.	leaf	l ^h a? ¹	la? ¹	la? ¹	*lha? ¹
62.	mango	makmuŋ ¹	----	makmoŋ ²	*makmuŋ ²
63.	meat	pon ¹	puan ¹	----	*pVn ¹
64.	millet	səpi? ¹	----	s pe? ²	*səpè? ¹

	English	Kontoi	Shinman	Samtao	Proto-Plang
*65.	mushroom	təh ¹	tuł ¹	tiah ¹	*tàlh ¹
66.	orange	məcük ²	----	makcuk ¹	*makcük ²
67.	papaya	maksanp ^{hɔ?1}	----	maksanp ^{hɔ?2}	*maksanp ^{hɔ?1}
68.	red pepper	pʰræk ²	pʰeik ²	----	*prVk ²
69.	pine tree	rəŋ ²	khu? ¹ xəŋ ³	----	*ranj ²
70.	cooked rice	əp ¹	----	vپ ¹	*àp ¹
71.	paddy rice	ŋhu? ¹	----	ŋhu? ¹	*ŋhu? ¹
*72.	rice husk	kam ¹	kam ¹	ŋkam ¹	*kam ¹
*73.	root	reh ²	xəl ²	riah ²	*rilh ²
74.	sesame	kəŋa? ²	la? ⁴ nə? ²	aŋa? ²	*ŋa? ²
*75.	squash	mpeʃ ¹	npih ¹	mpia ¹	*mpìr ¹
*76.	sugar (cane)	səmi? ¹	um ¹ mie? ²	nomame? ²	*mi? ¹
*77.	thatch grass	ploŋ ¹	ploŋ ¹	ploŋ ¹	*ploŋ ¹
*78.	thorn	kat ¹	kat ¹	kat ¹	*kat ¹
*79.	tree	kəlummk ^{hụ?1}	khu? ¹	nom ² kʰao? ¹	*kʰu? ¹
80.	clsf. for tree	lum ¹	ka? ⁴ lvm ¹	lhem ¹	*lVm ¹
*81.	vegetable	tə? ¹	tu? ¹	tv? ¹	*tə? ¹
82.	vermicelli	casan ²	----	cisan ¹	*cesan ¹
83.	watermelon	makteŋtaw ¹	----	makteŋtao ²	*makteŋtav ²
84.	animal	sat ¹	----	sat ¹	*sat ¹
85.	animal clsf.	tɔ? ¹	tu? ¹	to ²	*tò? ¹
*86.	ant	amhac ¹	ka? ⁴ muik ¹	mvc ¹	*mhàc ¹
*87.	bear	kʰr̥ih ¹	qhil ¹	krvh ¹	*krVlh ¹
*88.	bee	aphel ¹	pheh ¹	hia ²	*Cir ¹
*89.	bird	sem ¹	sim ¹	sʰim ¹	*sʰim ¹
*90.	buffalo	akʰrak ¹	qhak ¹	krak ¹	*krak ¹
91.	butterfly	tʰanj ^h hak	tan? ⁴ klau ³	tanŋalak ²	*tʰanj-
92.	cat	miaw ²	miau ¹	miao ²	*miav ²
*93.	chicken	kənel ¹	ɛh ¹	kənia ²	*konir ¹
94.	cock's comb	nat ²	ka? ⁴ zat ¹	----	*nat ²
*95.	cow	amɔy ²	ka? ⁴ moi ²	moi ²	*mɔy ²
*96.	crab	kətam ¹	ka? ⁴ tam ¹	tam ¹	*kətam ¹
*97.	crow	ak ¹ ak ¹	ka? ⁴ ak ²	alak ¹	*-ak ¹
98.	sambhar deer	kəncak ¹	----	kəncak ¹	*koncak ¹
*99.	dog	su? ¹	so? ¹	sho? ¹	*shu? ¹
100.	duck	elkat ¹	ɛh ¹ kap ²	ia ² kla? ¹	*ir ¹ kaC ¹
*101.	eagle	klaŋ ¹	klaŋ ¹	klaŋ ¹	*klaŋ ¹
*102.	egg	kətəm ¹	ka? ⁴ təm ¹	tom ¹	*kətəm ¹
103.	elephant	kəsaŋ ¹	ka? ⁴ saŋ ¹	sharŋ ¹	*kəs ^h arŋ ¹
*104.	fish	ka? ¹	ka? ¹	ka? ¹	*ka? ¹
*105.	flea	atep ¹	tiap ¹	tip ¹	*tip ¹
106.	a fly	----	xəŋ ⁴ xoi ³	roi ²	*rɔy ²
*107.	frog	aroŋ ²	xɔk ²	rok ¹	*rok ²
108.	gibbon	fa? ¹	----	kənfa? ¹	*fa? ¹
*109.	goat	ape? ²	pe? ⁴	pe? ¹	*pe? ¹
110.	goat	ceh ¹	----	ciah ¹	*Cilh ¹

	English	Kontoi	Shinman	Samtao	Proto-Plang
*111.	horn	rwaŋ ¹	xvŋ ¹	r ^h uŋ ¹	*r̥vŋ ¹
*112.	hornet	a?uŋ ¹	ɔŋ ¹	ɔŋ ¹	*uŋ ¹
*113.	horse	ŋroŋ ²	nxɔŋ ³	mpron ²	*Crɔŋ ²
114.	land leech	apləŋ ¹	klin ¹	pip ¹	*Cìŋ ¹
*115.	louse	sí? ¹	si? ¹	s̥hi? ¹	*s̥hí? ¹
116.	milk	bɑ? ²	um ¹ p̥v? ²	----	*(b)à? ²
117.	mosquito	amwŋ ²	mvŋ ⁴	----	*m̥vC ²
*118.	pig	kɔŋlik ¹	lik ²	kɔnlęc ²	*konlèk ²
119.	porcupine	----	nkhut ¹	ŋkuah ¹	*ŋCùC ¹
120.	python	klun ¹	----	klun ¹	*klvn ¹
*121.	rat	kɔnkanj ² kan ³	----	kɔnkanj ²	*konkanj ²
122.	snail	sək ^h roc ¹	----	səroc ¹	*səkròc ¹
*123.	snake	sə?uŋ ¹	ka? ⁴ vɪŋ ¹	sə?uŋ ¹	*Cə?vŋ ¹
124.	spider	arəh ²	han ⁴ huł ²	r̥yah ²	*r̥alh ²
125.	squirrel	lay ¹	----	lai ¹	*lay ¹
*126.	tail	sətał ¹	ka? ⁴ ta? ¹	sətał ¹	*Cətał ¹
127.	termite	ŋraŋ ²	nxvŋ ³	kryŋ ²	*ŋkrąŋ ²
*128.	tiger	kɔnvey ² ka? ⁴	vai ³	avai ²	*vay ²
129.	turtle	arəh ² kɔp ²	----	r̥yah ²	*ralh ²
*130.	wing	p ^h ruw ^c ¹	phvik ¹	pruc ¹	*pryc ¹
131.	worm	ŋruw ^c ²	----	ŋkrec ²	*ŋkryc ²
132.	armpit	cokklik ¹	nlęk ¹	kvm ² klec ¹	*ClVk ¹
133.	armspan	----	tɔp ¹	tətop ¹	*top ¹
134.	back	ką? ¹	nqhuw? ¹	----	*krà? ¹
*135.	belly	kətwl ²	ka? ⁴ tvl ²	tɔ ²	*kətvl ²
*136.	blood	nham ¹	ŋnam ¹	n ^h am ¹	*nham ¹
137.	body	iktoh ²	ny? ⁴ tu? ¹	to ¹ meŋ ²	*tòh ²
*138.	bone	sə?an ¹	ka? ⁴ aŋ ¹	sa?an ¹	*Cə?an ¹
139.	breast	bą? ²	p̥v? ²	----	*(b)à? ²
140.	chest	na?wk ¹	----	na?vk ¹	*na?Vk ¹
141.	chin	kap ²	----	kap ¹	*kap ¹
*142.	dung	iŋ ¹	ɛŋ ¹	eŋ ¹	*iŋ ¹
*143.	ear	yük ¹	zuk ¹	yak ¹	*yùk ¹
144.	elbow	sok ¹	----	cas ^h ok ¹	*s̥òk ¹
*145.	eye	ŋay ¹	ŋai ¹	ŋai ²	*ŋay ¹
146.	eyebrow	hák ¹ kita? ¹	----	hvk ¹ kita ¹	*hák ¹ kita? ¹
147.	eyelash/brow	hák ¹ ŋay ¹	kvh ⁴ ŋai ¹	----	----
148.	face	----	na? ⁴	n ^h a ¹	*nha? ¹
*149.	fat	rə?uh ¹	la? ⁴ ul ¹	aluah ¹	*Cə?ùlh ¹
150.	finger	ŋkun ¹ ti? ¹	nklaik ¹ ti? ¹	cen ¹ tai? ¹	*-ti? ¹
*151.	fingernail	ŋp̥em ¹ ŋim ¹	----	jŋhem ¹	*ŋhèm ¹
152.	index-thumb	tuŋta? ²	----	tenta? ²	*ta? ²
153.	flesh	huć ¹	----	ne? ¹ huc ¹	*hvć ¹
*154.	foot	coŋ ²	cun ³	coŋ ²	*còn ²
155.	forehead	ŋciŋ ^h ell ¹ xeł ¹	----	nari ¹	----
*156.	hair	hák ¹	huk ¹	hvk ¹	*hák ¹

	English	Kontoi	Shinman	Samtao	Proto-Plang
*157.	hand	t̪i?¹	ti?¹	tai?¹	*t̪i?¹
158.	heart	m̪m̪w̪l p̪hom¹	mul¹	---	*mhVl¹
*159.	intestines	v̪uc²	veik²	vec²	*v̪yc²
160.	knee	ŋ̪ay¹ ŋ̪oŋ¹	ŋ̪ai¹ ka?⁴ qhoŋ² ŋ̪virŋ̪əj²	---	*ŋ̪ay¹ C̪oŋ²
*161.	liver	k̪etum¹	ka?⁴ tom¹	t̪om¹	*k̪etum¹
162.	mouth	----	ntuiŋ̪³	ŋ̪tut¹	*ntuiŋ̪¹
163.	mucus	----	um¹ mul²	m̪yah²	*m̪alh²
164.	navel	k̪etirŋ̪t̪ol¹	ka?⁴ tiŋ̪²	tv̪ateŋ̪²	*-tVŋ̪²
*165.	neck	ŋ̪uk²	ŋ̪ok²	ŋ̪ok²	*ŋ̪uk²
*166.	nose	ŋ̪koŋ̪² m̪ah²	mul²	ŋ̪koŋ̪² m̪yah²	*m̪alh²
167.	penis	klaw¹	----	kli?¹	----
*168.	pus	l̪am²	l̪um²	l̪ym²	*l̪am²
169.	ribs	sə?an¹ p̪hroŋ̪k¹	----	sa?anprak¹	*sə?anprak¹
170.	saliva	----	um¹ miah¹	rom¹mia²	*rum¹ miC²
*171.	skin	hak¹	hak¹	hak¹	*hak¹
172.	testicle	k̪etɔm¹ klaw¹	----	tom¹ kla¹	*k̪etɔm¹klav¹
*173.	thigh	k̪evarŋ̪²	ka?⁴ vanj¹	avarj²	*k̪evarŋ̪²
*174.	throat	k̪hroŋ̪²	qhoŋ̪¹	kraŋ̪¹	*k̪roŋ̪¹
175.	thumb	ayma?¹	----	ŋ̪kunma?²	*ma?¹
*176.	tongue	ŋ̪tak¹	ka?⁴ tak¹	ŋ̪tak¹	*ntak¹
*177.	tooth	raŋ̪¹	xanj¹	r̪hanj¹	*raŋ̪¹
*178.	urine (K-v)	ŋ̪äm¹	ŋ̪um¹	n̪ym²	*nhäm¹
179.	vein	sənak¹	----	sənak²	*sənak¹
180.	waist	ŋ̪n̪oŋ̪²	----	ŋ̪oŋ̪²	*ŋ̪Vŋ̪²
181.	fem. in-law	avɔy¹	oi¹	o¹	*(C)ɔy¹
182.	Burman	t̪əman¹	----	man²	*man²
*183.	child	k̪on¹	kon¹	k̪on¹ et¹	*kon¹
184.	custom/habit	r̪et²	----	m̪eret² m̪erao¹	*r̪Vt²
185.	doctor	m̪ɔ?¹	m̪ɔ?² za?¹	----	*mhɔ?¹
*186.	father	ak̪aŋ̪¹	k̪wiŋ̪¹	k̪v̪ŋ̪¹	*k̪aŋ̪¹
187.	father's bro.	aloŋ̪²	loŋ̪²	----	*l̪oŋ̪²
188.	friend	ay¹	----	səhai¹	*(C)ay¹
*189.	grandfather	ata?¹	ta?¹	ata?¹	*ta?¹
*190.	grandmother	aya?¹	za?²	aya?²	*ya?²
*191.	husband	k̪emi?²	ka?⁴ me?²	ame?¹	*k̪emi?²
192.	male in-law	ap̪u?¹	kon¹ phau¹	----	----
193.	man	m̪mi?²	ka?⁴ me?²	k̪onme?¹	*mi?²
*194.	mother	ama?²	ma?²	ma?²	*ma?²
195.	mother's sis.	----	pu?¹	ma?p̪ɔ?²	*pu?¹
196.	name	m̪ah²	mul²	----	*m̪alh²
197.	nephew/niece	k̪onl̪han¹	lan¹	l̪han¹ p̪ɔ?²	*lhan¹
198.	old man	tak̪ot²	----	pak̪ot²	*tak̪ot²
199.	old woman	yak̪ot²	----	yak̪ot²	*yak̪ot²
*200.	person	p̪wy²	p̪vi³	p̪oi²	*p̪vy²
*201.	Plang	plan²	planj³	planj²	*planj²
202.	single female	k̪onk̪hreh¹	----	p̪ek̪rih¹	*kr̪ih¹

	English	Kontoi	Shinman	Samtao	Proto-Plang
203.	single male	k ^h upum ¹	me? ² naŋ ² num ¹	----	*C ^{um} ¹
*204.	Tai person	sem ¹	sem ¹	s ^h im ¹	*s ^h im ¹
*205.	village	yurj ¹	zun ¹	priyan ¹	*yùŋ ¹
206.	Wa person	----	va? ⁴	va? ¹	*va? ¹
207.	wedding	k ^h ukkan ¹	----	pra?kan ¹	*-kan ¹
208.	widow	məmhay ¹	----	məmhai ²	*m(ε)mhay ¹
209.	widower	pomhay ¹	----	pomhai ²	*pomhay ¹
*210.	wife	məŋ ²	ka? ⁴ muŋ ³	amvŋ ²	*məŋ ²
*211.	woman	m̥puŋ ¹	ka? ⁴ pvn ¹	kənpun ¹	*pvn ¹
212.	ygr. sibling	ɔŋ ¹	ɔŋ ¹	----	*ɔŋ ¹
213.	he	ən ²	vŋ ¹	----	*vŋ ¹
*214.	I	u? ²	w? ¹	v? ¹	*a? ¹
215.	they (2)	ka? ²	ka? ²	----	*ka? ²
216.	they (3+)	ki? ¹	kε? ²	----	*ki? ¹
217.	that	ɔ? ¹	ɔn ²	an ¹	*Vn ¹
218.	this	e? ²	en ²	in ¹	*in ²
219.	we (2)	a? ²	a? ¹	----	*a? ¹
*220.	we (3+)	i? ¹	ɛ? ¹	i? ¹	*i? ¹
*221.	thou	mj? ²	mi? ²	mi? ¹	*mì? ²
222.	you (2)	pa? ²	pa? ¹	----	*pa? ¹
223.	you (3+)	pi? ¹	pε? ¹	----	*pi? ¹
224.	armband	p ^h ɔlsq ^k ¹	----	ples ^h ok ¹	*-s ^h ök ¹
225.	arrow	ti? ¹ ak ¹	tie? ⁴	----	*ti? ¹
226.	axe	tanjmet ¹	----	təmet ¹	*met ¹
227.	ball	maklom ²	mak ² lum ²	makəlum ¹	*maklVm ²
228.	silver belt	sɔysçyŋ ¹	----	soisə?eŋ ²	*sɔy-inj ¹
229.	boat	vaytu? ¹	xv? ⁴	rv ²	*r(v)? ¹
230.	book	----	pap ²	pap ²	*pap ²
231.	bottle	kun ¹	kaŋ ⁴ kiau? ⁴	korj ¹	*kVŋ ¹
*232.	bow	ak ¹	ak ¹	ak ¹	*ak ¹
233.	rice bowl	t ^h al ^h way ¹	----	təl ^h ai ¹	*t ^h əlhVy ¹
*234.	bridge	m̥pák ¹	ka? ⁴ pwk ²	apvk ¹	*pák ²
*235.	broom	mb ^h eh ¹	npih ¹	mpiah ¹	*mpih ¹
236.	bucket	porj ²	thon ³	pɔŋ ²	*Cɔŋ ²
237.	car	ka? ²	----	ka ²	*ka? ²
*238.	charcoal	pəsəh ¹	ka? ⁴ sual ¹	soah ¹	*sɔlh ¹
239.	live charcoal	ŋkoh ²	----	ŋkorj ¹	*ŋkòC ²
240.	cigarette	səlik ²	----	sələc ²	*səlek ²
241.	clsf. clothes	p ^h ən ¹	phvn ¹	p ^h vñ ¹	*p ^h ən ¹
242.	clsf. cup	muł ¹	----	mu ¹	*mył ¹
*243.	comb	ŋsat ¹	nsat ¹	sot ¹	*nsot ¹
244.	digging stick	mol ¹	----	mo ¹	*mòl ¹
245.	door	kəva? ¹	----	ava? ²	*kəva? ¹
*246.	drum	k ^h raŋ ¹	qhuŋ ¹	krvŋ ¹	*kràŋ ¹
247.	fish basket	asa? ²	----	sia ²	----
248.	fishing net	ninj ²	----	neŋ ²	*ninj ²

	English	Kontoi	Shinman	Samtao	Proto-Plang
249.	garden	val ²	----	va ²	*vaC ²
250.	gong	----	[ka?⁴ paŋ⁳]	akanj ²	*Caŋ ²
251.	grease	rə?uh ¹	la?⁴ u_l ¹	----	*Cə?ulh ¹
252.	hat	m̥uk ¹	----	m̥uk ¹	*mhuk ¹
*253.	house	na?⁡ ²	na?⁡ ²	na?⁡ ²	*na?⁡ ²
254.	house clsf.	l̥anj ¹	----	l̥anj ¹	*lhanj ¹
255.	house pole	rɔŋ ¹	hɔŋ ¹	r̥onj ¹	*rɔŋ ¹
*256.	ladder	m̥burŋ ²	nponj ¹	m̥ponj ¹	*mpunj ²
*257.	liquor	play ¹	plai ¹	plai ¹	*play ¹
*258.	market	lah ²	ka?⁴ la_l ²	alah ²	*lalh ²
259.	mat	ŋrinj ²	----	ŋkrę ²	*ŋkrVŋ ²
260.	medicine	ŋpay ¹	ka?⁴ pai ¹	----	*pay ¹
261.	mortar	p̥əlok ¹	----	təlok ²	*Cəlök ¹
*262.	mosquito net	sut ¹	sut ²	ŋkaŋsut ¹	*sùt ¹
*263.	needle	pəni?⁠ ¹	ka?⁴ ne?⁠ ¹	ane?⁠ ¹	*ji?⁠ ¹
264.	pair	təkŋ ²	ku?⁣ ⁴	təkŋ ²	*ku?⁣ ²
265.	paper/poster	kənнат ¹	ka?⁣ ⁴ nat ²	kənat ¹	*kənhat ¹
*266.	path	k̥ra?⁠ ¹	qha?⁠ ¹	kra?⁠ ¹	*kra?⁠ ¹
267.	photograph	p̥onj ¹	----	p̥unj ¹	*p̥onj ¹
268.	pillow	k̥hanŋkɔŋ ²	----	mɔŋkonj ²	*kVŋ ²
269.	planting tool	ŋre?⁡ ²	----	ŋkre?⁡ ¹	*ŋkre?⁡ ¹
270.	price	cęŋ ¹	kiŋ ¹	----	*kVŋ ¹
*271.	rice field	mał ¹	mah ¹	ma ¹	*mhar ¹
272.	ring	kəcup	----	paicup ¹	*cup
*273.	rope	mu?⁠ ¹	mu?⁠ ¹	mao?⁠ ¹	*mhu?⁠ ¹
274.	men's sarong	ntay ¹	----	ntai ¹	*ntay ¹
275.	shirt	p̥rɔŋ ²	pho?⁠ ¹	----	*prō?⁡ ²
*276.	shoes	č̥ep ¹	khiap ²	č̥ep ¹	*k̥ep ¹
277.	shot medicine	tiŋkhem ¹	----	t̥oc̥im ¹	*k̥Vm ¹
278.	sickle	vik ²	nviuk ¹	səvɔk ²	*vVk ²
279.	sieve	ak̥rwaŋ ¹	----	k̥rvŋ ¹	*krVŋ ¹
280.	space by well	ləmo?⁠ ¹	----	nvmmo ¹	*-mo ¹
281.	spear	pleh ¹	----	pleah ²	*pleh ¹
282.	stool	paŋ ¹	paŋ ¹	----	*paŋ ¹
283.	sword	vac ² lanj ¹	----	vac ²	*vac ²
284.	table	p̥wun ¹	phwun ²	p̥vn ¹	*p̥Vn ¹
285.	thatched roof	plɔŋ ¹	----	top ² plɔŋ ¹	*plVŋ ¹
286.	tray	t̥alep̥han ¹	----	t̥elaiteŋ ¹	----
287.	tumpline	ntol ¹	----	kaj ¹ toa ²	*tòr ¹
288.	wall	nt̥al ²	ntal ²	ta?⁠ ¹	*t̥al ²
289.	window	k̥vapɔŋ ¹	pha?⁣ ⁴ moŋ ²	p̥ətupɔŋ ¹	*pon ¹
290.	wok	p̥əchŋ ¹	pha?⁣ ⁴ cheŋ ²	mpa ¹	*ChVŋ ¹
291.	able	caŋ ²	zɔŋ ³	----	----
292.	answer	tup ¹	tɔp ¹	----	*tVp ¹
293.	bark	kwal ¹	kual ¹	----	*kwal ¹

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*294.	bathe	häm ¹	hum ¹	hvm ¹	*hàm ¹
295.	beat	päh ²	---	pvh ²	*pàh ²
*296.	bite	cet ²	kət ²	cet ²	*ket ²
*297.	blossom	kɔnpʰruh ¹	phv ¹	pluah ¹	*prvh ¹
*298.	blow	pəŋ ²	pvn ²	pvn ¹	*pàn ²
299.	borrow	----	vai ³	vai ²	*vay ²
*300.	break (tr)	mpwök ¹	npvk ²	puk ¹	*mpvk ¹
301.	breathe	tʰqy ¹ pʰqm ¹	----	tʰui ¹ pʰom ¹	*tʰɔy ¹ pʰom ¹
302.	burn (intr)	ŋol ² ha? ¹	----	ŋo ² ha? ¹	*ŋòl ² ha? ¹
303.	burp	kʰwʔ ²	----	sa?v ¹	----
*304.	bury	kəpəŋ ²	ka? ⁴ pvn ¹	apvn ¹	*kəpəŋ ¹
305.	buy	vi? ²	----	avę ²	*vi? ²
306.	carry on back	pwh ²	----	püah ²	*pvlh ²
307.	carry child on back	----	pɔ? ²	kɔ? ¹	*Cɔ? ¹
308.	carry in hand	pẽn ¹	----	pin ¹	*pìn ¹
*309.	carry on shoulder	klõm ¹	klõm ¹	klom ¹	*klõm ¹
310.	carry water	cən ²	----	cən ²	*cVn ²
*311.	catch	m̥mwt ¹	m̥wt ¹	mut ¹	*mhvt ¹
*312.	chew	pam ²	pam ²	pam ²	*pam ²
313.	choose	rɔh ¹	xɔ? ³	----	*rɔlh ¹
314.	clap	tʰɔp ²	nthop ²	ntʰap ²	*tʰVp ²
315.	climb	hük ¹	----	hak ¹	*hük ¹
316.	close(eyes)	yep ²	----	yep ²	*yep ²
317.	comb	sat ¹	sat ¹	----	*sat ¹
318.	come	ɛŋ ¹	----	iŋ ¹	*iŋ ¹
319.	to come from	nwm ²	----	nom	*nvm ²
*320.	cook (rice)	kuh ¹	ky ¹	kuah ¹	*klvh ¹
321.	cough	ŋhak ¹	ŋhek ¹	mak ¹	*CVk ¹
322.	count	nhin ¹	sin ²	amen ²	----
323.	cover (pot)	käp ¹	----	kvp ²	*käp ¹
*324.	crawl	mul ²	muh ²	mua ²	*mùr ²
325.	cut (trees)	ŋkol ²	----	ŋkɔ ²	*ŋkVl ²
*326.	cut/slash	mɔk ²	mɔk ²	mok ²	*mɔk ²
327.	cut (hair)	cẽp ²	kip ¹	cip ¹	*kip ¹
328.	dance	hõn ²	----	põn ²	*CVn ²
*329.	die	yum ²	zvñ ³	yɔm ²	*yvñ ²
330.	do	yuh ²	----	co? ¹	----
331.	don't (imper.)	pay ¹	----	pai ¹	*pay ¹
*332.	dream	kəmu? ²	ka? ⁴ mu? ²	itəmo? ²	*kəmu? ²
*333.	drink	ŋə? ¹	ŋw? ¹	ŋv? ²	*ŋà? ¹
334.	dry in sun	hɔk ¹	qhah ¹	hok ¹	*hv ¹

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*335.	eat (rice)	som ¹	som ¹	som ¹	*sòm ¹
*336.	enter	lu ^c ²	ləik ²	lec ²	*lìc ²
337.	fall	----	qhuwik ¹	k ^h yc ¹	*kràc ¹
338.	fan/wave hand	vì? ²	----	vi ¹	*vì? ²
*339.	fear	l ^h at ¹	lat ¹	l ^h at ¹	*lhat ¹
340.	feel	mɔŋ ¹	----	mɔŋ ¹	*mhVŋ ¹
341.	fill up	----	nuk ²	nok ²	*nVk ²
342.	fish	met ¹	----	met ¹	*met ¹
343.	float	tɔy ¹	----	tui ¹	*tɔy ¹
344.	flow	----	lai ¹	lhai ¹	*lhay ¹
*345.	to fly	p ^h wl ¹	pvh ¹	pua ¹	*phvr ¹
*346.	forget	pèl ²	pil ²	pè ²	*pèl ²
347.	fry (meat)	----	kho? ²	k ^h ru ¹	*krV? ¹
*348.	get	pòn ²	pon ²	pun ²	*pòn ²
349.	get up	kuh ¹	----	kaoh ¹	*kulh ¹
350.	give	kah ²	ka? ²	----	*kah ²
*351.	go	hw ^l ¹	hyl ¹	hu ¹	*hyl ¹
*352.	go down	lèh ²	lih ²	lèh ²	*lèh ²
353.	go out	ew?	----	io ¹	----
354.	go up/north	----	huk ¹	hak ¹	*hùk ¹
*355.	grind	mɔmɔ? ¹	mɔ ²	mɔ ²	*mhò? ¹
*356.	have	kɔy ¹	kui ²	kui ¹	*kòy ¹
357.	hear	mɔŋ ¹	----	mɔŋ ¹	*mhVŋ ¹
*358.	hide	səmu? ¹	ka? ⁴ mo? ²	mu? ¹	*mu? ¹
359.	hold (hand)	ñsɔp ¹	----	sop ¹	*ñsVp ¹
360.	hug	k ^h ɔt ²	----	kɔt ²	*k ^h Vt ²
361.	ill	sɔ? ¹	----	sɔ? ¹	*sà? ¹
*362.	itch	ŋa? ²	ŋa? ²	ŋa? ²	*ŋà? ²
*363.	kick	ñtuñ ²	ntvñ ³	ñton ²	*ñtvñ ²
364.	kick	ñc ^h a ^h ¹	ca ^l ¹	----	*ñc ^h alh ¹
365.	kill	ñyuñ ²	----	mpium ¹	*Cym
*366.	know	ñɔŋ ²	zɔŋ ³	yɔŋ ²	*ñoŋ ²
367.	laugh	----	ka? ⁴ ñal ¹	ñah ²	*kəŋalh ¹
368.	lay an egg	----	ka? ⁴ tɔm ¹	tom ¹	*kətɔm ¹
369.	lean	səcij ¹	----	səceŋ ²	*səcij ²
370.	lick	lin ²	liat ²	len ²	*liŋ ²
*371.	like	mak ²	mak ²	mak ²	*mak ²
372.	listen	rəcij ²	----	aceŋ ²	*ciŋ ²
373.	live	muk ¹	mok ¹	----	*muk ¹
374.	look at	nɔk ²	nɔk ²	----	*nɔk ²
375.	look up	mɔmɔŋ ¹	----	mɔŋ ²	*mun ¹
376.	love	muh ¹	----	amuah ¹	*mhylh ¹
377.	make thatch	p ^h ruwy ²	----	plai ²	----
378.	meet	k ^h rw ^p ¹	qhvp ¹	k ^h vt ¹	*krVC ¹
379.	open	toh ¹	tuh ¹	----	*tòh ¹

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380.	open (door)	tah ¹	toh ¹	---	*tVh ¹
381.	open (eyes)	plan ¹	---	plen ²	---
382.	pass wind	p ^h um ¹	---	p ^h um ¹	*p ^h Vm ¹
383.	peel	pah ¹	---	pah ¹	*pah ¹
384.	place/put	an ¹	vn ¹	vn ¹	*Vn ¹
*385.	plant	ŋsum ¹	nsVm ¹	sum ¹	*ŋsVm ¹
386.	play	ra? ¹	ka? ⁴ xa? ¹	---	*ra? ¹
387.	point	səcit ¹	---	ce ²	*cit ¹
388.	pound	ŋklɔŋ ¹	---	ŋklyh ¹	---
389.	pull	yac ²	zat ²	---	*yaC ²
390.	push	ŋnut ²	---	ŋnut ¹	*ŋnut ²
391.	raise	ɔy ¹	---	vi ¹	*ɔy ¹
392.	reap rice	vac ²	vuik ²	vok ²	*vVc ²
393.	rest	tah ¹	tah ¹	---	*tah ¹
*394.	return	ɛŋ ¹	iŋ ¹	iŋ ¹	*iŋ ¹
*395.	ride	p ^h ɔk ²	pɔk ²	pɔk ²	*p ^h ɔk ²
396.	roast (tr)	mpeŋ ¹	piŋ ¹	---	*pVm ¹
397.	rub (hand)	ŋwulŋal ¹	---	jŋ ²	*ŋVl ²
398.	scratch	hac ¹	---	krac ²	*Cac ¹
*399.	see	ŋu? ²	zu? ¹	yo? ²	*ŋu? ²
400.	sell	paj ¹	paiŋ ¹	---	*paj ¹
401.	separate	---	ka? ⁴ kah ²	ŋkoah ²	*kVh ²
*402.	sew	cẽŋ ²	ciŋ ³	keŋ ²	*cẽŋ ²
403.	shiver	ŋrəŋ ²	nxyŋ ³	---	*ŋrəŋ ²
*404.	shoot	pwŋ ¹	pviŋ ¹	pun ¹	*pviŋ ¹
405.	shout	rak ²	xak ³	---	*rak ²
406.	sing	cay ²	---	coi ²	*CVy ²
407.	sink	mbah ²	---	mpah ²	*mpah ²
408.	sit	muk ¹	mok ¹	---	*muk ¹
*409.	sleep	jt ¹	it ¹	it ¹	*jt ¹
410.	smell	hət ¹	---	hyt ¹	*hət ¹
411.	smell good	hum ¹	xəm ²	hom ¹	*hVm ¹
*412.	smell bad	sə?ɔy ¹	ka? ⁴ ui ²	sə?ui ¹	*Cə?ɔy ¹
*413.	spit	p ^h rwic ²	pheik ²	mpec ²	*pryc ²
414.	split	p ^h a? ¹	pha ²	p ^h a ¹	*p ^h a? ¹
415.	squeeze	---	miet ¹	men ¹	*mVn ¹
*416.	stand	cɔŋ ²	cuj ³	cɔŋ ²	*cɔŋ ²
417.	start a fire	pəŋ ²	---	pviŋ ¹	*pəŋ ²
*418.	steal	ŋra? ²	nxa? ²	pra? ²	*Cra? ²
419.	sting	hac ¹	---	hvc ¹	*hac ¹
*420.	stretch (hand)	ŋat ¹	ŋat ¹	ŋat ¹	*ŋat ¹
421.	swallow	ŋnuit ²	pluit ²	plon ¹	----
*422.	sweep	pəh ¹	phi ¹	piah ¹	*pilh ¹
423.	swell	puŋ ²	---	poŋ ²	*puŋ ²
424.	swim	lɔy ²	----	lɔi ²	*lɔy ²

	English	Kontoi	Shinman	Samtao	Proto-Plang
*425.	take out food	pwuk ²	p <small>v</small> k ²	p <small>o</small> k ²	*p <small>v</small> k ²
426.	take	t <small>i</small> ? ²	---	t <small>o</small> i ²	*tV? ²
427.	tell	lah ²	la? ¹	---	*lah ²
*428.	think	k <small>a</small> t ²	ka? ⁴ k <small>v</small> t ¹	k <small>y</small> t ² p <small>h</small> om ¹	*k <small>a</small> t ²
429.	throw out	tik ²	---	tic ¹	*tik ²
430.	trap	ton ¹	---	tom ¹	*t <small>ò</small> C ¹
431.	turn head	p ^h at ¹	---	p ^h at ¹	*p ^h at ¹
432.	twist/wring	vet ²	miet ⁴	yot ² yet ²	*Cit ²
*433.	untie	kah ¹	kah ¹	kah ¹	*kah ¹
*434.	vomit	h <small>o</small> l ¹	hul ¹	ho ¹	*h <small>ò</small> l ¹
*435.	wait	ku? ¹	kho? ¹	ŋku? ¹	*k ^h u? ¹
436.	wake up	kuh ¹	qh <small>ə</small> n ¹	kaoh ¹	*kuh ¹
437.	walk	huwl ¹	h <small>v</small> l ¹	hu ¹	*h <small>v</small> l ¹
438.	want	som ¹	---	som ¹	*s <small>ò</small> m ¹
*439.	wash dishes	k ^h oc ¹	khoik ¹	k ^h oc ¹	*k ^h oc ¹
440.	wear	c ^h op ¹	chup ²	cip ¹	*c ^h Vp ²
*441.	weave	taj ¹	taiŋ ¹	taj ¹	*taj ¹
442.	weed	nl <small>ø</small> h ²	luh ²	---	*l <small>ò</small> h ²
443.	weed	rem ²	---	riam ²	*rim ²
*444.	weep	yam ²	zam ²	yam ²	*yam ²
445.	whistle	soc ¹	---	ŋchoc ¹	*C <small>ò</small> c ¹
446.	winnow	---	kum ⁴	kym ²	*k <small>à</small> m ²
447.	wrap	kaw ²	kau ³	ka ²	*kav ²
448.	yawn	ŋhap ¹	---	ŋhap ¹	*ŋhap ¹
449.	all gone	uc ¹	---	uc ¹	*yc ¹
450.	ashamed	kac ²	---	kac ²	*kac ²
451.	bad	l ^h u? ^{moj¹}	---	lv? ² akah ¹	*lhV? ¹ -
452.	bald	tohpak ¹	---	kaj ¹ pak ¹	*-pak ¹
453.	beautiful	ŋam ²	ŋom ¹	---	---
454.	big	k <small>ə</small> təŋ ²	---	teŋ ²	*k <small>ə</small> təŋ ²
*455.	bitter	sɔŋ ¹	son ²	son ¹	*son ¹
*456.	black	lɔŋ ²	lɔŋ ³	lɔŋ ²	*lɔŋ ²
457.	cheap	---	zau ³	ya ²	*ya ²
458.	clear	s <small>im</small> cm ¹	---	s <small>im</small> cm ²	*s <small>im</small> Vm ²
459.	clever	hiŋ ¹	---	heŋ ¹	*hiŋ ¹
460.	cold	k <small>ò</small> t ¹	kuat ¹	---	*k <small>ò</small> t ¹
*461.	cooked	siŋ ¹	sin ¹	s ^h in ¹	*s ^h in ¹
462.	correct	cɔp ¹	---	cap ¹	*cVp ¹
*463.	deaf	nl <small>h</small> at ¹	naŋ ² l <small>u</small> it ¹	l ^h yt ¹	*lh <small>à</small> t ¹
*464.	deep	r <small>ə</small> ? ¹	xv? ¹	rv? ¹	*r <small>ə</small> ? ¹
465.	delicious	ŋum ²	---	ŋom ²	*ŋum ²
466.	difficult	ŋŋap ¹	---	ŋhap ¹	*ŋhap ¹
467.	drunk	mawrəplay ¹	mau ³	mao ² k <small>ə</small> plai ¹	*mav ² -
468.	dry	sə? ¹ uh ¹	ka? ⁴ oh ¹	kroh ¹	*Cuh ¹
469.	fast	vwy ²	v <small>e</small> i ³	vai ²	*vVy ²

	English	Kontoi	Shinman	Samtao	Proto-Plang
*470.	fat	kluŋ ¹	klvɪŋ ¹	kluŋ ¹	*klyŋ ¹
471.	finished	hoc ¹	----	hoc ¹	*hòc ¹
472.	full	lök ²	----	alɔ̄k ²	*lòk ²
*473.	full (w/food)	sak ¹	sak ¹	sak ¹	*sak ¹
474.	green	siŋal ¹	----	siŋa ²	*siŋaC ²
475.	green/alive	im ¹	----	im ¹	*im ¹
476.	grey	päl ¹	----	pv ¹	*pàl ¹
477.	hard	kol ¹	koh ¹	ŋkoə ¹	*kVr ¹
*478.	heavy	səcen ¹	ka? ⁴ kian ³	cen ²	*Cəken ²
479.	high	l ^h qŋ ¹	----	l ^h aŋ ¹	*lhVŋ ¹
480.	hot	rɔ̄n ²	hɔ̄n ⁴	ron ²	*rɔ̄n ²
481.	hungry	somp ^h om ¹	ka? ⁴ phum ¹	----	*phòm ¹
*482.	lightweight	siyoŋ ¹	ka? ⁴ zuŋ ¹	siyan ¹	*Ceyùŋ ¹
*483.	long	laŋ ¹	laŋ ¹	laŋ ¹	*laŋ ¹
484.	long (time)	lɛŋ ¹	----	lij ¹	*lìŋ ¹
485.	loud	lɔ̄h ¹	----	loah ¹	*lVlh ¹
486.	muddy	səkwł ¹	----	səku ¹	*səkyl ¹
487.	narrow	up ¹	op ¹	kop ¹	*up ¹
488.	new	sø? ¹	chu? ¹	----	*Cò? ¹
489.	not	un	un ²	----	*un
490.	old (man)	köt ²	----	taköt ²	*kVt ²
491.	old (object)	p ^h rem ¹	----	prim ¹	*prím ¹
*492.	pain	sə? ¹	sui ¹	sṛ? ¹	*sà? ¹
*493.	red	sək ^h rak ¹	ka? ⁴ qhak ¹	sərak ¹	*Cəkrak ¹
494.	ripe	kətäm ²	----	tvm ²	*kətäm ²
*495.	rotten	sə?wm ¹	ka? ⁴ v̄m ¹	sə?um ¹	*Cə?v̄m ¹
496.	round	m̄mwł ¹	----	mu ¹	*m̄ył ¹
497.	salty	w̄m ¹	v̄m ¹	----	*v̄m ¹
498.	shallow	tol ²	----	tɔ̄ ²	*tVl ²
*499.	sharp	səpwł ¹	ka? ⁴ p̄eik ²	mp ^h oc ¹	*p ^h ṛc ¹
	pointed				
*500.	sharp (knife)	lɔ̄m ²	lɔ̄m ³	lɔ̄m ²	*lòm ²
*501.	short (length)	nwŋ ¹	ŋeiŋ ¹	ŋej ¹	*Cŋj ¹
502.	short (ht)	tem ²	tiam ³	----	*tVm ²
503.	shy	kac ²	----	kac ²	*kac ²
*504.	slow	kɔ̄y ²	kɔ̄i? ⁴	koi ²	*kɔ̄y ²
*505.	small	et ¹	ɛt ¹	et ¹	*et ¹
506.	smooth	kənul ¹	----	no ¹	*kəCul ¹
507.	soft	kəcwł ²	ka? ⁴ nom ¹	----	*kəCv̄m ¹
*508.	sour	nna? ²	na? ²	na? ²	*na? ²
*509.	spicy	səp ^h ṛic ²	ka? ⁴ phεi? ¹	səprai? ¹	*Cəpric ¹
510.	sweet	tew ¹	tiu ¹	----	*tVv ¹
*511.	tall	l ^h qŋ ¹	lon ¹	l ^h aŋ ¹	*lhVŋ ¹
512.	tasteless	caŋ ¹	----	cancjäh ²	*caŋ ¹

	English	Kontoi	Shinman	Samtao	Proto-Plang
*513.	thick	kəpuwl ²	ka? ⁴ pvl ³	pɔ ²	*kəpvl ²
514.	thin	l ^h ɛl ¹	zih ¹	r ^h i ¹	---
515.	tired	sətunj ¹	ka? ⁴ tvŋ ¹	tv? ²	*CətVŋ ¹
516.	torn	ŋreh ²	----	ŋkreah ²	*ŋkrelh ²
*517.	warm	sə?ul ¹	ka? ⁴ vh ¹	sə?ua ¹	*Cə?vrl ¹
518.	wet	səku? ¹	----	cv? ²	---
*519.	white	pap ²	pain? ²	pap ²	*pap ²
*520.	wide	vah ²	vah ²	vah ¹	*vah ²
521.	yellow	l ^h wn ¹	l ^h ŋ ¹	pəlhŋy ¹	*lhVŋ ¹
522.	beside	pet ²	----	pət ²	*pet ²
*523.	far	səŋŋaj ¹	ka? ⁴ ŋai ³	sŋai ²	*Cəŋŋaj ²
524.	here	te? ²	man ⁴ ni? ¹	kətiŋ ¹	*-tVŋ ²
525.	inside	lak ² nuwy ²	kha ² nai ²	----	*-nVy ²
*526.	left side	avi? ¹	kha ² ka? ⁴ ve ²	kra?ve? ¹	*-vi? ¹
527.	middle/ between	ŋŋɔn ¹	----	kəŋŋɔn ¹	*ŋVn ¹
*528.	near	nti? ¹	nte? ²	nte? ²	*nti? ²
529.	outside	lak ² nɔk ²	kha ² nok ²	nɔk ²	*-nok ²
*530.	right side	atɔm ¹	kha ² ka? ⁴ tom ²	kra?tom ¹	*-tom ¹
531.	side/end	----	man ⁴ cεiŋ ²	kəceŋ ²	*-cVŋ ²
532.	space	----	kha ² qhu? ²	kra?kri ¹	----
	behind				
533.	spatial/ front	lak ² nŋa? ¹	kha ² nə? ²	kra?n ^h a ¹	*-nha? ¹
*534.	there (far)	teh ¹	man ⁴ teh ¹	kəteh ¹	*-teh ¹
535.	the top	ŋŋoc ²	----	ŋŋoc ²	*ŋŋoc ²
536.	with	may ¹	----	me? [?]	----
*537.	one	kətj? ²	ka? ⁴ ti? ⁴	te? ²	*kətē? ²
*538.	two	la? ¹ al ¹	la? ⁴ al ¹	ra ¹	*Ca? ¹ al ¹
*539.	three	la? ¹ oy ¹	la? ⁴ oi ¹	loi ¹	*la? ¹ oy ¹
*540.	four	ləpun ¹	pun ¹	pun ¹	*pūn ¹
*541.	five	ləp ^h ɔn ¹	phuan ¹	p ^h ɔn ¹	*p ^h ɔn ¹
*542.	six	leh ²	liel ²	leah ²	*lelh ²
*543.	seven	həreh ¹	al ⁴ ka? ⁴ liel ²	aleah ²	*həlelh ²
*544.	eight	səti? ¹	xɔŋ ⁴ ti? ¹	sitai? ¹	*səti? ¹
*545.	nine	sətem ¹	ka? ⁴ tim ¹	sitim ¹	*Cətim ¹
*546.	all	wc ¹	rik ¹	uc ¹	*yc ¹
547.	half	k ^h ruŋ ²	----	kryŋ ²	*krVŋ ²
548.	many	hun ¹	hyn ¹	----	*hyn ¹
549.	medium/few	ləmlen ²	ləiŋ ³	----	*lVŋ ²
550.	who	anɔ? ¹	----	mo ¹ mɔ ²	----
551.	what	kənɔ? ¹	ka? ⁴ nə? ²	mi?mɔ ²	----
552.	when	nəmənɔ? ¹	----	ŋammo ²	----
553.	where	nəŋŋɔ? ¹	man ⁴ mu? ⁴	təmo ²	----
554.	how much	----	pvn ⁴ mu? ⁴	pɔn ² mɔ ²	----
555.	if	ŋ? ²	----	yu	*ŋù?
556.	already	hoc ¹	----	he? ¹	----

REFERENCES

- Bloomfield, Leonard. 1933. *Language*. New York: Holt.
- Difflot, Gerard. 1980. The Wa Languages. *LTBA*. 5.2.
- Difflot, Gerard. 1982. Subclassification of Palaungic and notes on "P'uman". Paper presented at the 15th Sino-Tibetan Conference on Languages and Linguistics. Beijing.
- Ferlus, Michel. 1974. Les langues du groupe Austroasiatique-Nord. *ASEMI* 5:39-68.
- Glover, Warren. 1971. Register in Tibeto-Burman Languages of Nepal: A comparison with Mon-Khmer. *Pacific Linguistics*, Series A, 29:1-19.
- Gregerson, Kenneth J. 1976. Tongue-root and register in Mon-Khmer. *AAS* 1:323-369.
- Grimes, Barbara F. 1984. *Ethnologue*. Tenth Edition. Dallas: Wycliffe Bible Translators.
- Haudricourt, A.G. 1953. La place du vietnamien dans les langues austroasiatiques. *BSLP* 49:122-8.
- Haudricourt, A.G. 1954. De l'origine des tons en vietnamien. *JA* 242:69-82.
- Henderson, Eugenie. 1952. The main features of Cambodian pronunciation. *BSOAS* 14:149-74.
- Hopple, Paulette and Debbie Paulsen. 1988. A phonemic outline of Plang (Kon Toi) and Samtao (Pangloh). Unpublished ms.
- Jenner, Philip. 1966. Khmer phonemes and syllable. Mimeo. Honolulu: University of Hawaii.
- Ladefoged, Peter. 1971. *Preliminaries to linguistic phonetics*. Chicago and London: University of Chicago Press.
- Laver, John. 1980. *The phonetic description of voice quality*. New York and Cambridge: Cambridge University Press.
- Li Dao Yong, Nye Hsi Jen, Chyou Eh Feng. 1986. *Sketch of the Bulang Language*. [in Chinese] Beijing: Minorities Publishing House.
- Li Dao Yong, Nye Hsi Jen, Chyou Eh Feng. 1988. An outline of some phonetic characteristics of the Kammu languages in China. Paper delivered at the 21st International Conference on Sino-Tibetan Languages and Linguistics. Lund.
- Mitani, Yasuyuki. 1977. Palaung dialects: a preliminary comparison. *SEAS* 15: 192-212. Kyoto: Center for Southeast Asian Studies.
- Phillips, Richard L. 1962. Voice Register in Mon-Khmer languages. Unpublished ms.
- Phijitra Dissawarotham. 1986. *The phonology of Plang as spoken in Baan Huay Nam Khun*. Unpublished M.A. thesis, Mahidol University.
- Pike, Kenneth. 1967. Tongue-root position in practical phonetics. *Phonetica* 17:129-40.
- Pinnow, Heinz-Jürgen. 1959. *Versuch einer historischen Lautlehre der Kharia-sprache*. Wiesbaden: Harrassowitz.
- Pinnow, Heinz-Jürgen. 1963. The position of the Munda languages within the Austro-asiatic language family. *Linguistic Comparison in South East Asia and the Pacific*, ed. by H.L. Shorto, 140-52. London: Oxford.
- Przyluski, J. 1924. Les langues austroasiatiques. *Les langues du mond*, ed. by A. Meillet and M. Cohen, 385-403.

- Samarin, William J. 1967. *Field Linguistics*. New York: Holt, Rinehart and Winston.
- Schafer, Robert. 1952. Etudes sur l'austroasien. *BSLP* 48:11-58.
- Schmidt, Wilhelm. 1907-8. Les peuples Mon-Khmers. *BEFEO* 7:213-263; 8:1-35.
- Schmidt, Wilhelm. 1926. *Die Sprachfamilien und Sprachenkreise der Erde*. vol.1. Heidelberg: Carl Winter.
- Shorto, Harry L. 1976. The vocalism of Proto-Mon-Khmer. *AAS* 1:1041-67.
- Smalley, William A. 1963. *Manual of Articulatory Phonetics*. Rev. ed. Tarrytown, New York: Practical Anthropology.
- Smith, Kenneth D. 1972. *A Phonological Reconstruction of Proto-North-Bahnaric*. Santa Ana: Summer Institute of Linguistics.
- Stewart, J.M. 1967. Tongue-root position in Akan vowel harmony. *Phonetica* 16: 185-204.
- Svantesson, Jan-Olof. 1988. Tonogenetic mechanisms in Northern Mon-Khmer. Paper presented at the 21st International Conference on Languages and Linguistics. Lund.
- Thomas, David. 1964. A survey of Austroasiatic and Mon-Khmer comparative studies. *MKS* 1:149-63.
- Thomas, David. 1973. Some Characteristics of Southeast Asian Languages. Unpublished syllabus.
- Thomas, David, and Robert Headley. 1970. More on Mon-Khmer subgroupings. *Lingua* 25:398-418.
- Thomas, David, and Marilyn L. Smith. 1967. Proto-Jeh-Halang. *Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung* 20:157-75.
- Thomas, Dorothy. 1967. *A Phonological Reconstruction of Proto-East-Katuic*. Grand Forks: SIL.
- Thompson, Laurence C. 1976. Proto-Viet-Muong. *AAS* 2:1113-1203.

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