

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-Waic with the other Waic languages more closely related to each other, roughly diagrammed as in Fig.1.

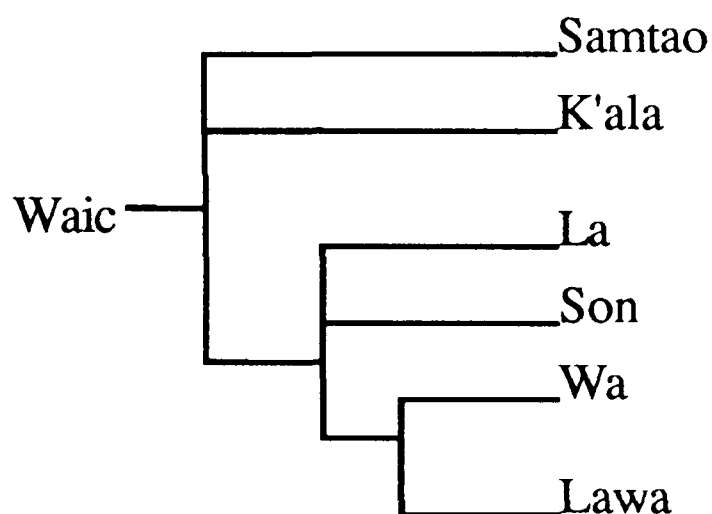


Figure 1. The Waic Languages (after Diffloth 1980)

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	ʔ
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		
liquids, vd.		l			
vl.		l ^h			
vd.		r			
semivowels, vd.	w		y		
vl.			ɣ		

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 /s^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^hr/, k^hr/ and the nasals with /h/.

In syllable final position only /p, t, c, k, ʔ, 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	
			Unrd	Rd
High	i		ɯ	u
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. /ạ/. 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 (ˉ) and rising with sonorant finals (ˊ). The low tone likewise is level with non-sonorant finals (ˋ) but falling with sonorant closure (ˋ̣). There also exists a high falling tone (ˊ̣), 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		ʔ
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		ʒ			
nasals, vd.	m	n	ɲ	ŋ		
vl.	m̥	n̥	ɲ̥	ŋ̥		
laterals, vd.		l				
vl.		l̥				

Figure 4. Shinman Plang Consonants

All consonants can occur syllable-initially. The palatal series is written by Li et al. as /tɕ, tɕh, ntɕ, ntɕh/. Prenasalization assimilates to the point of articulation of the following stop so that /np, nt, nc, nk/ are realized as [mp, nt, ɲc, ŋk]. 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, ʔ, l, l̥/. The stops are unreleased. When /k/ follows the diphthongs /ei, ɛi, ai, ɔi, oi, ui, vi, wi/ 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 [ɲ] as in /pain²/ ‘white’ realized as [pain²].

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		ɯ	u
Mid	e		ɤ	o
Low	ɛ	a		ɔ

Figure 5. Shinman Plang Simple Vowels

ie	ei	ɯi	ui	ua	uai
ia	ɛi	ɣi	oi	ɣu	iau
iu		ai	ɔi	au	

Figure 6. Shinman Plang Complex Vowels

	iet		ien		ie?	iel	iel̩
iap	iat	iam	ian	iaŋ	ia?		
		eik	ein	eiŋ	iu?		
		ɛik	ɛin	ɛiŋ			
		aik		aiŋ			
	uat		uan		au?	ual	ual̩
		ɔik					
		oik					

Figure 7. Shinman Plang Complex Vowels With Finals

According to Li et al. the vowel /u/ in the combinations /ua, uat, uan, ual, ual̩/ 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 [tiɛp¹] 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 [ʷ]. Thus /pho[?]]¹/ ‘shirt’ and /plɔŋ¹/ ‘thatching grass’ are pronounced [pho^{ʷ?}]¹] and [plɔ^ʷŋ¹] 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 ɣik 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	ʔ
vl. asp.	p ^h	t ^h	c ^h	k ^h	
fricatives, vl.	f	s			h
asp.		s ^h			
vd.	v				
nasals, vd.	m	n	ɲ	ŋ	
vl.	m ^h	n ^h	ɲ ^h	ŋ ^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, ɲ^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^hr, pl, kl, k^hl/.

Syllable-finally only /p, t, c, k, ʔ, h, m, n, ɲ, 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^ə] 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 /ɤ/ 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			ɤ	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	ɤa	ua	eo	ɤi	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 /_h/ under the vowel, as in /a_h/. 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], /ʔa/ and /sɪ/. 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, *teʔ*

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	ʔ
vl. asp.	p ^h	t ^h	c ^h	k ^h	
fricatives, vl.	(f)	s			h
asp.		s ^h			
vd.	v				
nasals, vd.	m	n	ɲ	ŋ	
vl.	m ^h	n ^h		(ŋ ^h)	
liquids, vd.		l			
vl.		l ^h			
vd.		r			
semivowels, vd.			y		
vl.			(y ^h)		

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
	final	p	p	p	23
*p ^h	initial	p ^h	p ^h	p ^h	10
*t	initial	t	t	t	59
	final	t	t	t	32
*t ^h	initial	t ^h	t ^h	t ^h	3
*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	ʔ	ʔ	3
*c ^h	initial	c ^h	c ^h	c	2
		c ^h	c		1
*k	initial / _back vowels	k	k	k	48
	_ front vowels	c	k	c	8
	_ *r	k ^h	q ^h	k	9
		k ^h	q ^h	∅	2
	_ *l	k	k	k	7
	final / back vowels _	k	k	k	48
	front vowels _	k	k	c	6
*k ^h	initial / _back vowels	k ^h	k ^h	k ^h	6
	_ front vowels	c ^h	k ^h	c ^h	3
*ʔ	final	ʔ	ʔ	ʔ	86
		ʔ	∅	∅	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	m̥	m̥	m	5
		m̥	m	m	3
		m̥		m ^h	1
*n	initial	n	n	n	13
	final	n	n	n	27
*nh	initial	n̥	n̥	n ^h	2
		n̥	n̥	n	1
		n̥	n	n	1
		nh	n̥	n ^h	1
*ɲ	initial	ɲ	ɲ	ɲ	9
	final / back vowels _	ɲ	ɲ	ɲ	11
	front vowels _	ɲ		ɲ	1
*ŋ	initial / _back vowels	ŋ	ŋ	ŋ	15
	_ front vowels	ɲ	ŋ	ɲ	3
	final / back vowels _	ŋ	ŋ	ŋ	71
	front vowels _	ŋ	ŋ	ɲ	15
*ŋh	initial / _back vowels	ŋh		ŋ ^h	2
	_ front vowels	ɲ̥	ŋ	ɲ ^h	1
*l	initial	l	l	l	26
	cluster with <i>p, k</i>	l	l	l	16
	final	l	l	∅	29
*lh	initial	lh	l̥	lh	9
	final	h	l̥	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	∅	r	7
		r	∅	∅	3
		l	h	∅	11
*y	initial	y	ʒ	y	10
	final	y	i	i	35
*yh	initial	y	ʒ	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	puy ²	pvi ³	pqi ²
298. to blow	pəŋ ²	pʋŋ ²	pʋŋ ¹
346. to forget	pɛl ²	pil ²	pɛ ²
Exceptions to this are:			
236. bucket	poŋ ²	t ^h oŋ ³	pɔŋ ²
289. window	kəvəpɔŋ ¹	phaʔ ⁴ moŋ 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	phɪ 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' (*kəvaʔ*). The word in Shinman appears to be noncognate. Shinman shows the expected unaspirated *p* in *npih* ¹'broom', an affixed form of 'sweep'.

*Initial before */l/*

*p > K p, Sh p, S p

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

Two items do not follow this pattern:

114. land leech	aplɛŋ ¹	klin ¹	piŋ ¹
421. to swallow	nnuɔt ²	pluɔt 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 p^h, S p

130. wing	p ^h ruɔc ¹	phvik ¹	pruc ¹
509. spicy	səp ^h ric ²	kaʔ ⁴ pheiʔ ¹	səpraiʔ ¹
275. shirt	p ^h rɔʔ ²	phoʔ ¹	----
491. old (object)	p ^h rɛm 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:

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

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

Final

*p > K p, Sh p, S p

60. grass	arɛp ²	xɛp ²	rɛp ²
105. flea	atep 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 ruɔp ¹	qhɔp ¹	k ^h ɔt ¹
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/p^h / Initialp^h > K p^h , Sh p^h , S p^h

284. table	p ^h uɔn ¹	phuɔn ²	p ^h ɤn ¹
414. to split	p ^h aʔ 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 uɔl ¹	pɤh ¹	pua ¹
395. to ride	p ^h ɔk ²	pɔk ²	pɔk ²

Irregular correspondences include:

290. wok	pəc ^h iŋ ¹	phaʔ ⁴ cheiŋ ²	m̄pa ¹
192. male in-law	apɯʔ ¹	konphau ¹	----
499. sharp pointed	səpɯc ¹	kaʔ ⁴ pɛik ²	m̄p ^h oc ¹
88. bee	ap ^h el ¹	phɛh 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	tɔʔ ¹	tuʔ ¹	taoʔ ¹
65. mushroom	təh ¹	tɯl ¹	tiah ¹
96. crab	kətam ¹	kaʔ ⁴ tam ¹	tam ¹

There are only two exceptions to this set:

49. bud	tom ¹	----	alom ¹
524. here	teʔ ²	manniʔ ¹	kətɯŋ 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	ŋsat ¹	nsat ¹	sot ¹
296. to bite	cet ²	kɛt 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 klaʔ ¹
387. to point	səcit ¹	----	cɛ ²

Both of these show a weakening of the final consonant in Samtao, to a final ʔ in ‘duck’, and complete deletion in ‘to point’.

***/tʰ/ Initial**

*tʰ > K tʰ, Sh th, S tʰ

314. to clap	tʰɔp ²	nthop ²	ɳtʰap ²
2. cave	tʰam ²	----	tətʰam ¹
301. to breathe	tʰɔy ¹ pʰɔm ¹	----	tʰui ¹ pʰom ¹

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

91. butterfly	tʰaŋlʰ ak ¹	taŋ ¹ klau ³	taŋŋalak ²
233. rice bowl	tʰalʰ uy ¹	----	təlʰ ai ¹
286. tray	tʰalepʰ an ¹	----	təlaitep ¹
288. wall	ɳtʰal ²	ntal ²	taʔ 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	coŋ ²	cuŋ ³	coŋ ²
416. to stand	cɔŋ ²	cuŋ ³	cɔŋ ²
98. sambhar deer	kɔncak ¹	----	kɔncak ¹
531. side/end	----	man ⁴ cɛiŋ ²	kəceŋ ²

Three exceptions to this are:

402. to sew	cɛŋ ²	ciŋ ³	keŋ ²
291. able	caŋ ²	ɟoŋ ³	----
330. to do	yuh ²	----	coʔ 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 *yɔh, with none of his languages showing a /c/ initial or a /ʔ/ 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	vuc ²	veik ²	vec ²
336. to enter	luc ²	leik ²	lec ²
439. to wash dishes (Samtao-wash face)	k ^h ɔc ¹	khoik ¹	k ^h oc 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	numɲic ²	kaʔ ⁴ ɲiʔ ²	ɲonsɲpeʔ ²
19. moon	raŋk ^h ic ²	khaŋ ⁴ khiʔ ¹	raŋk ^h iʔ ¹
509. spicy	səp ^h ɲic ²	kaʔ ⁴ pheiʔ ¹	səpraiʔ 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:

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

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

389. to pull	yac ²	ʒat ²	----
392. to reap rice	vɔc ²	vuik ²	vɔk 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 ɔp ¹	chup ²	cip ¹
290. wok	pəc ^h ɲ ¹	p ^h aʔ ⁴ chɛɲ ²	m̩pa ¹

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

364. to kick	ɲc ^h ah ¹	ca 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	----	ɲc ^h oc ¹
-----------------	------------------	------	---------------------------------

And a similar occurrence in Shinman:

488. new	sɔʔ ¹	chuʔ ¹	----
----------	------------------	-------------------	------

Diffloth (1980) gives a proto-form for 'new' as **croʔ*. 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 /c^h/ 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	kɔnkaŋ ²	kaŋ ³	kɔnkaŋ ²
231. bottle	kuŋ ¹	kaŋ ⁴ kiau ^{ʔ1}	koŋ ¹

And before front vowels is the set:

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

28. salt	cɛh ²	ki ²	cɪah ²
59. ginger	sɛcɛŋ ¹	sa ^{ʔ4} kiŋ ¹	sɛciŋ ¹
296. to bite	cet ²	kɛt ²	cet ²

This change can be captured with a rule of palatalization:

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

This rule applies to both Kontoi and Samtao.

The following is irregular:

518. wet	səku ^{ʔ1}	----	cɻ ^{ʔ2}
----------	--------------------	------	------------------

*Initial before */l/*

**k* > K k, Sh k, S k

101. eagle	klaŋ ¹	klaŋ ¹	klaŋ ¹
309. to carry on shoulder	klɔm ¹	klɔm ¹	klɔm ¹
470. fat	klɯŋ ¹	klɯŋ ¹	klɯŋ ¹

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

132. armpit	cokklik ¹	nlɛk ¹	kɻm ² klec ¹
-------------	----------------------	-------------------	------------------------------------

*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 ri ^h ¹	qhi ¹	kɻ ^h ¹
90. buffalo	ak ^h rak ¹	qhak ¹	krak ¹
174. throat	k ^h rɔŋ ²	qhɔŋ ¹	kraŋ 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	kaʔ 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 rɯp ¹	qhɯp ¹	k ^h ɣt ¹
337. to fall	----	qhwiik ¹	k ^h ɣc ¹
279. sieve	ak ^h rɯŋ ¹	----	k ^h rɣŋ 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	----	kɔt ² ŋɔk 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	arɔk ²	xɔk ²	rok ¹
156. hair	hɔk ¹	hɯk ¹	hɣk ¹
165. neck	ŋuk ²	ŋɔk ²	ŋɔk ²

Then following front vowels there is:

*k > K k, Sh k, S c

118. pig	kɔnlik ¹	lik ²	kɔnlec ²
132. armpit	cokklik ¹	nlek ¹	kɣm 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	t ^h an ^l hak ¹	taŋ ⁴ klau ³	taŋ ^l alak ²
408. to dry in sun	hɔk 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	kəlɯm	k ^h ɯ ^{ʔ1} khu ^{ʔ1}	nom ² k ^h ao ^{ʔ1}
----------	-------	--	--

439. to wash dishes k^hɔc¹ khoik¹ k^hoc¹

And before front vowels the correspondence is:

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

10. firewood c^hiʔ¹ khiʔ¹ c^hiʔ¹
276. shoes c^hep¹ khiap² c^hep¹

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 tiŋk^hem¹ ---- t^hoc^him¹

*/ʔ/ Final

*ʔ > K ʔ, Sh ʔ, S ʔ

10. firewood c^hiʔ¹ khiʔ¹ c^hiʔ¹
109. goat apeʔ² pɛʔ⁴ peʔ¹
191. husband kəmiʔ² kaʔ⁴ meʔ² ameʔ¹
214. I uʔ² uʔ¹ ʏʔ¹

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

39. wet rice field	tiʔ naʔ ¹	naʔ ⁴	na ²
148. face	----	naʔ ⁴	n ^h a ¹
229. boat	vayruʔ ¹	xɻʔ ⁴	rɻ ²
264. pair	təkʊʔ ²	kuʔ ⁴	təkɔʔ ²
533. spatial/front	lak ² n̄naʔ ¹	kha ² naʔ ²	kraʔn ^h a ¹
1. ashes	puyʊʔ ¹	kaʔ ⁴ ʒu ²	noʔ ²
51. corn	sɛlɛʔ ¹	saʔ ⁴ le ²	sɛlɛʔ ²
355. to grind	m̄mɔʔ ¹	mɔ ²	mɔ ²
414. to split	p ^h aʔ ¹	pha ²	p ^h a ¹
526. left side	aviʔ ¹	kha ² kaʔ ⁴ ve ²	kraʔveʔ ¹
532. space behind	----	kha ² qhuʔ ²	kraʔkri ¹
553. where	naŋnɔʔ ¹	man ⁴ muʔ 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 may¹ ---- meʔ

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	faʔ ¹	----	kɔnfaʔ 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	kaʔ ⁴ vai ³	avai ²
159. intestines	vuc ²	veik ²	vec ²
173. thigh	kəvaŋ ²	kaʔ ⁴ vaŋ ¹	avaŋ 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	k ^h raw 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	sʊt ¹	sut ²	ŋkaŋsut ¹
335. to eat (rice)	som ¹	som ¹	som ¹
385. to plant	ŋsum ¹	nsʏm ¹	sum ¹

*/s/ remains unchanged.

103. elephant	kaʔ ⁴ saŋ ¹	shəŋ ¹
---------------	-----------------------------------	-------------------

/s^h/ Initials^h > K s, Sh s, S s^h

89. bird	sɛm ¹	sim ¹	shim ¹
99. dog	suʔ ¹	soʔ ¹	shoʔ ¹
103. elephant	kəsaŋ ¹	kaʔ ⁴ saŋ ¹	shaŋ ¹

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

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

***/h/ Initial**

*h > K h, Sh h, S h

156. hair	hək ¹	huk ¹	hvk ¹
294. to bathe	həm ¹	hum ¹	hvm ¹
351. to go	hul ¹	hvl 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	hək ¹	qhah ¹	hok ¹
411. to smell good	hum ¹	xom 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 /hǒm/, 'to smell good'.

Final

*h > K h, Sh h, S h

352. to go down	lɛh ²	lih ²	lɛh ²
433. to untie	kah ¹	kah ¹	kah ¹
468. dry	səʔuh ¹	kaʔ ⁴ oh ¹	kroh ¹

Unique correspondences are:

137. body	iktoh ²	nyʔ ⁴ tuʔ ¹	to ¹ meŋ ²
330. to do	yuh ²	----	coʔ ¹
350. to give	kah ²	kaʔ ²	----
427. to tell	lah ²	laʔ 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	mɔ̃l ²	kaʔ ⁴ muɔ̃l ²	mɯ ²
194. mother	amaʔ ²	maʔ ²	maʔ ²
210. wife	mɔ̃ɲ ²	kaʔ ⁴ muɲ ³	amɯɲ ²

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

553. where	naŋɔ̃ʔ ¹	man ⁴ muʔ ⁴	təmo ²
550. who	anɔ̃ʔ ¹	----	mo ¹ mo ²
552. when	numnoʔ ¹	----	ɲammɔ ²
551. what	kənoʔ ¹	kaʔ ⁴ ɲa ²	miʔmo ²

Final

*m > K m, Sh m, S m

38. water	um ¹	um ¹	rom ¹
41. year	num ²	ny ³ m 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 *l^h* in both Samtao and Kontoi), this combination will be proposed for Proto-Plang.

The most common correspondence for */mh/ is:

*mh > K m̥, Sh m̥, S m

311. to catch	m̥m̥uɔ̃t ¹	m̥uɔ̃t ¹	mut ¹
158. heart	m̥m̥uɔ̃lp ^h om ¹	m̥ul ¹	----
185. doctor	m̥ɔ̃ʔ ¹	m̥ɔ̃ʔ ² ʔaʔ ¹	----
340. to feel	m̥ɔ̃ŋ ¹	----	mon 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	m̄al ¹	mah ¹	ma ¹
273. rope	m̄uʔ ¹	muʔ ¹	maoʔ ¹
355. to grind	m̄m̄oʔ ¹	m̄o ²	m̄o ²

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

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

**/n/ Initial*

*n > K n, Sh n, S n

41. year	num ²	nvm ³	nom ²
508. sour	ṇnaʔ ²	naʔ ²	naʔ ²
529. outside	lak ² n̄ok ²	kha ² nok ²	n̄ok ²

There are a few exceptions:

18. first month	n̄uncin ¹	nvn ¹ ciŋ ¹	l̄vn̄ceŋ ¹
506. smooth	k̄ənul ¹	----	ɲo ¹
552. when	numn̄oʔ ¹	----	ɲamm̄o ²

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

The morpheme being compared in ‘when’ means ‘year’ in Plang and is used in many time-related words, e.g. /numk̄oʔ¹/ ‘yesterday’. But the equivalent form for ‘year’ in Samtao is /nom²/, so the form /ɲam/ in Samtao ‘when’ is not derived from /nom²/ ‘year’.

Final

*n > K n, Sh n, S n

211. woman	m̄puwn ¹	kaʔ ⁴ pvn ¹	k̄ɔnpun ¹
348. to get	p̄ɔn ²	pon ²	pun ²
384. to place/put	an ¹	uwn ¹	vn ¹

Two exceptions to this involve final /t/:

421. to swallow	ṇn̄wt ²	pl̄wt ²	pl̄on ¹
415. to squeeze	----	m̄iet 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 ɲ, Sh ɲ, S n^h

533. spatial/front lak² ɲa¹ kha² ɲa² kra²n^ha¹

*nh > K ɲ, Sh ɲ, S n

178. urine
(Kontoi-‘to urinate’)

ɲam¹ ɲum¹ nɣm²

*nh > K nh, Sh ɲ, S n^h

136. blood nham¹ ɲam¹ n^ham¹

*nh > K ɲ, Sh n, S n

265. paper/poster kənnat¹ ka² 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 nɲin¹ sin² amɛn²

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 ɲa² ɲa² ɲa²
420. to stretch ɲat¹ ɲat¹ ɲat¹
397. to rub ɲuɲal¹ ---- ɲɣ²

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 ʒ, S y

366. to know ɲoŋ² ʒoŋ³ yɔŋ²
399. to see ɲu² ʒu¹ yo²
94. cock’s comb ɲat² ka² ʒat¹ ----
555. if ɲu² ---- yu

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

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

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

263. needle pəŋiʔ¹ kaʔ⁴ ŋeʔ¹ aneʔ¹

Final

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

*ŋ > K ŋ, Sh ŋ, S ŋ

33. star	səmuŋ ¹	kaʔ ⁴ mviŋ ¹	səmuŋ ¹
186. father	akəŋ ¹	kwiŋ ¹	kʷŋ ¹
404. to shoot	pəŋ ¹	pviŋ ¹	pʷŋ ¹

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 [ŋ].

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

369. to lean səciŋ¹ ---- səceŋ²

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

523. far	səŋəŋ ¹	kaʔ ⁴ ŋai ³	sŋai ²
36. today	səŋeŋ ¹	----	iŋeʔ ²

The second example is parallel to what happens with the oral palatal stop. For */c/ in final position we had the correspondence c/?/? . 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 ŋtut¹

*/ŋ^h/

Although the voiceless palatal nasal (or its counterpart /ŋ^h/ 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 */ŋ^h/ 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 ŋ, Sh ŋ, S ŋ

Velar nasals occur before back vowels in each language.

9. fire	ŋol ²	ŋual ²	ŋɔ ²
74. sesame	kəŋaʔ ²	laʔ ⁴ ŋaʔ ²	aŋaʔ ²
145. eye	ŋay ¹	ŋai ¹	ŋai ²

Before front vowels the following correspondence is found:

*ŋ > K ŋ, Sh ŋ, S ɲ

5. day numɲic² kaʔ⁴ ɲiʔ² ɲɔnsɲɲeʔ²
This palatalization in Kontoi and Samtao has already been expressed in Rule (3) for */k/.

There are three irregular correspondences.

160. knee	ɲay ¹ ɲoŋ ¹	ɲai ¹ kaʔ ⁴ qhoŋ ²	ɲvɲoŋ ²
453. beautiful	ɲam ²	nom ¹	----
501. short (length)	nuɲ ¹	ɲeɲ ¹	ɲeɲ ¹

Final

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

*ŋ > K ŋ, Sh ŋ, S ɲ

21. mountain	ɲkoŋ ²	nkɔŋ ³	ɲkoŋ ²
77. thatching grass	plɔŋ ¹	plɔŋ ¹	plɔŋ ¹
112. hornet	aʔuŋ ¹	ɔŋ ¹	ɔŋ ¹

After front vowels:

*ŋ > K ŋ, Sh ŋ, S ɲ

59. ginger	səcɛŋ ¹	saʔ ⁴ kiŋ ¹	səcɲɲ ¹
394. to return	ɛŋ ¹	iŋ ¹	iŋ ¹
402. to sew	cɛŋ ²	ciŋ ³	keɲ ²

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

There is also an example of weakening:

515. tired	sətɔŋ ¹	kaʔ ⁴ tɔŋ ¹	tɔʔ ²
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and one case of nasal assimilation:

152. index-thumb	tɔŋtaʔ ²	----	tentaʔ ²
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Number 226 is an example of syllable shortening to form a presyllable:

226. axe	taŋmet ¹	----	təmet ¹
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Other irregular correspondences are:

18. first month	nuŋcin ¹	nuŋ ¹ ciŋ ¹	lɔncɛŋ ¹
259. mat	ɲriŋ ²	----	ɲkreʔ ²
370. to lick	liŋ ²	liat ²	leɲ ²
381. to open (eyes)	plɔŋ ¹	----	plɛŋ ²
388. to pound	ɲklɔŋ ¹	----	ɲklɔh ¹
430. to trap	toŋ 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	ŋ̣ɛ̣m ¹	ŋim ¹	ŋ ^h em 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	kɔ̣nlik ¹	lik ²	kɔ̣nleç ²
168. pus	lɔ̣m ²	lum ²	lym 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 lym ¹	l ^h em ¹
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In Clusters

*l > K l, Sh l, S l

55. fruit	plih ²	pli? ¹	pli? ¹
77. thatching grass	plɔ̣ŋ ¹	plɔ̣ŋ ¹	plɔ̣ŋ 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	apɛ̣ŋ ¹	kliŋ ¹	piŋ ¹

Final

*l > K l, Sh l, S ∅

9. fire	ŋol ²	ŋual ²	ŋɔ̣? ²
53. cucumber	acel ¹	ka? ⁴ kel ¹	ci ¹
135. belly	kətul ²	ka? ⁴ tvl ²	tɔ̣? ²

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

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

There is one exception to this:

288. wall	ŋt ^h al ²	ntal ²	ta? ¹
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**/lh/ Initial*

*lh > K lh, Sh l, S lh

339. to fear	lh ^h at ¹	lat ¹	lh ^h at ¹
511. tall	lh ^h oŋ ¹	loŋ ¹	lh ^h aŋ ¹
521. yellow	lh ^h uŋ ¹	lvŋ ¹	pəlh ^h vŋ ¹

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

*lh > K lh, Sh, l, S l

14. iron	----	lek ²	lec ¹
25. rain	lh ^h iʔ ¹	leʔ ¹	leʔ ¹
61. leaf	lh ^h aʔ ¹	laʔ ¹	laʔ ¹

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

The exceptions to these sets are:

155. forehead	ŋciŋ ^h el ¹	xel ¹	nari ¹
514. thin	lh ^h eŋ ¹	ʔih ¹	rhi 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 l, S h

28. salt	cəh ²	kil ²	cjah ²
45. banana	kəmɔh ¹	kaʔ ⁴ mual ²	amoah ²
65. mushroom	təh ¹	tul 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:

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

**/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	rɣp ²
73. root	reh ²	xel ²	riah ²
107. frog	arək ²	xək ²	rok ¹

Syllables with tone one are as follows:

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

111. horn	ruŋ ¹	xvŋ ¹	r ^h uŋ 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 /x/. If more like /r/ then the rule for Shinman would be:

$$(11) \quad \begin{bmatrix} +\text{cont} \\ +\text{back} \end{bmatrix} \rightarrow \begin{bmatrix} -\text{voice} \\ +\text{son} \end{bmatrix} / \$ _$$

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

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

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

38. water	um ¹	um ¹	rom ¹
124. spider	arəh ²	har ⁴ huɿ ²	rɣah ²
480. hot	rɔn ²	hɔn ⁴	ron ²
255. house pole	rɔŋ ¹	hɔŋ ¹	r ^h oŋ 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 rɿh ¹	qhɿ ¹	krɿh ¹
130. wing	p ^h ruɿc ¹	phɿik ¹	pruc ¹
246. drum	k ^h rəŋ ¹	qhəŋ ¹	krɿŋ 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	qhɿp ¹	k ^h ɿt ¹
337. to fall	----	qhɿik ¹	k ^h ɿc ¹
279. sieve	ak ^h ruŋ ¹	----	k ^h ɿrɿŋ ¹

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

$$(13) \quad \begin{bmatrix} +\text{son} \\ -\text{nas} \\ +\text{back} \end{bmatrix} \rightarrow \emptyset / \begin{bmatrix} -\text{cont} \\ -\text{son} \end{bmatrix} _$$

Final

*r > K l, Sh h, S ∅

40. wind	kəl ¹	kuh ¹	ŋkva ¹
75. squash	m̄pəl ¹	npih ¹	m̄pia ¹
271. rice field	m̄al 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:

$$(14) \begin{bmatrix} +\text{cont} \\ +\text{son} \end{bmatrix} \rightarrow \begin{bmatrix} -\text{back} \\ +\text{lat} \end{bmatrix} / _ \#$$

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

$$(15) \begin{bmatrix} +\text{cont} \\ +\text{high} \\ -\text{ant} \end{bmatrix} \rightarrow \begin{bmatrix} -\text{voice} \\ -\text{son} \end{bmatrix} / _ \#$$

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

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

3.1.5 *Semivowels***/y/ Initial*

*y > K y, Sh ʒ, S y

190. grandmother	aya ¹	ʒa ²	aya ²
329. to die	yum ²	ʒym ³	yom ²
482. lightweight	siyɔŋ ¹	ka ⁴ ʒuŋ ¹	siyaŋ 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 [ʒ].

Final

*y > K y, Sh i, S i

95. cow	amɔy ²	ka ⁴ moi ²	moi ²
145. eye	ŋay ¹	ŋai ¹	ŋai ²
200. person	puy 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 yʊk¹ zʊk¹ yak¹

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

3.2 Summary of Rules for Consonants

Aspiration rule for Kontoi and Shinman:

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

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

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

Initial consonant fronting in Kontoi and Samtao:

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

Backing in Shinman:

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

Final consonant fronting in Samtao:

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

Deaspiration in Kontoi and Shinman:

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

Sonorant voicing in Shinman and Samtao:

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

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

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

Loss of final liquid */l/ in Samtao:

$$(9) \quad \begin{bmatrix} +\text{son} \\ +\text{lat} \end{bmatrix} \quad \rightarrow \quad \emptyset / _ \$$$

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

$$(10) \quad \begin{bmatrix} +\text{son} \\ +\text{lat} \end{bmatrix} \quad \rightarrow \quad \emptyset / _ \text{h} \$$$

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

$$(11) \quad \begin{bmatrix} +\text{cont} \\ +\text{back} \end{bmatrix} \quad \rightarrow \quad \begin{bmatrix} -\text{voice} \\ -\text{son} \end{bmatrix} / \$ _$$

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

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

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

$$(13) \quad \begin{bmatrix} +\text{son} \\ -\text{nas} \\ +\text{back} \end{bmatrix} \quad \rightarrow \quad \emptyset \quad \begin{bmatrix} -\text{cont} \\ -\text{son} \end{bmatrix} \quad _$$

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

$$(14) \quad \begin{bmatrix} +\text{cont} \\ +\text{son} \end{bmatrix} \quad \rightarrow \quad \begin{bmatrix} -\text{back} \\ +\text{lat} \end{bmatrix} / _ \#$$

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

$$(15) \quad \begin{bmatrix} +\text{cont} \\ -\text{high} \\ -\text{ant} \end{bmatrix} \quad \rightarrow \quad \begin{bmatrix} -\text{voice} \\ -\text{son} \end{bmatrix} / _ \#$$

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

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

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	ɤ _I	o _I
	a _I	ɔ _I

Register II

i _{II}		u _{II}
e _{II}	ɤ _{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	ɨ	i	i	7
	continuant final	ɛ̣	i	i	7
*e _I	stop final	e	ɛ	e	4
	continuant final	e	e	e	1
*e _{II}	stop final	ɨ	i	e	3
	continuant final	ɛ̣	i	e	4
*ɤ _I	tone 1	ɯ	ɤ	u	16
*ɤ _{II}	tone 2, normal	ɯ	ɤ	o	4
	tone 2, - l	ɯ	ɤ	ɔ̣	2
	tone 2, - c, ɲ	ɯ	ɛ	e	3
*a _I	all environments	a	a	a	45
*a _{II}	all environments	ɑ̣	ɯ	ɤ	14
*u _I		u	u	o	2
		u	o	o	2
		u	o	u	2
*u _{II}		u	u	u	4
	y-ŋ, k	u	u	a	3
*o _I		ɔ̣	o	o	2
		ɔ̣	o	ɔ̣	2
*o _{II}		o	o	o	2
		o	u	o	3
		ɔ̣	o	u	1
*ɔ̣ _I	normal	ɔ̣	ɔ̣	o	7
	- i	ɔ̣	o	o	2
*ɔ̣ _{II}	normal	ɔ̣	ɔ̣	ɔ̣	3
	- i	ɔ̣	u	u	2
	- l	ɔ̣	ua	o	2
	- l̥	o	ua	ɔ̣	1
	- n	ɔ̣	ua	ɔ̣	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	pɛh ¹	[npih ¹]	piah ¹
88. bee	ap ^h el ¹	phɛh ¹	hia ²
149. fat	rəʔuh ¹	laʔ ⁴ ul ¹	aluah ¹
345. to fly	p ^h uul 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	səmɯŋ ¹	kaʔ ⁴ mviŋ ¹	səmɯŋ ¹
186. father	akɤŋ ¹	kwiŋ ¹	kɤŋ ¹
413. to spit	p ^h rɯc ²	phɛik ²	mɤpec ²
546. all	ɯc 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	kəmiʔ ²	kaʔ ⁴ meʔ ²	ameʔ ¹
263. needle	pəniʔ ¹	kaʔ ⁴ ɲeʔ ¹	aneʔ ¹
526. left side	aviʔ ¹	kha ² kaʔ ⁴ ve ²	kraʔ veʔ ¹
528. near	ŋtiʔ ¹	n ^h teʔ ²	n ^h teʔ 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	xɛl ²	riah ²
88. bee	ap ^h el ¹	phɛh ¹	hia ²
93. chicken	kɔnel ¹	ɛh ¹	kɔnia ²

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

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

8. earth	kətiʔ ¹	kaʔ ⁴ tɛʔ ¹	tiʔ ¹
----------	--------------------	-----------------------------------	------------------

25. rain	lh _i ? ¹	le? ¹	le? ¹
76. sugar	səmi? ¹	um ¹ mie? ²	nomame? ²
105. flea	atep ¹	tiap ¹	tip ¹
142. dung	iŋ ¹	εŋ ¹	eŋ ¹
204. Tai	sem ¹	sem ¹	shim ¹
220. we (3+)	i? ¹	ε? ¹	i? ¹

Each of these is a slight variation from the stated correspondences for */i_I/, 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_{II}/ Stop Final*

*i_{II} > K i, Sh i, S i

10. firewood	ch _i ? ¹	khi? ¹	ch _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	sjn ¹	sin ¹	shin ¹
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There are two examples of vowel lowering in this set:

157. hand	t _i ? ¹	ti? ¹	tai? ¹
509. spicy	səp ^h rɪc ²	ka? ⁴ phei? 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_{II}/ Continuant Final*

*i_{II} > K ɛ, Sh i, S i

28. salt	cɛh ²	kil ²	ɕiah ²
75. squash	m̥pɛl ¹	npih ¹	mpia ¹
394. to return	ɛŋ ¹	iŋ ¹	iŋ 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_{II}/ reflex:

87. bear	k ^h rɪh ¹	qhil ¹	krɪh ¹
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The Samtao vowel in 'bear' is backed due to the influence of the back consonant /r/.

The main distinguishing feature of */i_{II}/ 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	apeʔ ²	pεʔ ⁴	peʔ 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	lhiaph ^h el ¹	phεl 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 e, 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	kaʔ ⁴ kian ³	cen ²
542. six	leh ²	liel 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 i, Sh i, S e

5. day	numɲic ²	kaʔ ⁴ ɲiʔ ²	ɲonsɲneʔ ²
118. pig	kɔnɭik ¹	lik ²	kɔnɭɛc ²
537. one	kətɪʔ ²	kaʔ ⁴ tiʔ ⁴	teʔ ²

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

51. corn	sɛɭɛʔ ¹	saʔ ⁴ le ²	sɪɭɛ 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	arɛp ²	xep ²	rɻp ²
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Here Samtao has a backed vowel [ɻ] 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	ɲɲɛm ¹	ɲim ¹	ɲ ^h em ¹
346. to forget	pɛɭ ²	pil ²	pɛ ²
352. to go down	ɭɛh ²	lih ²	ɭɛh ²
402. to sew	cɛɲ ²	ciɲ ²	keɲ 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

*/ɻ/

The alternation in correspondences for */ɻ/ 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 */ɻ/ here will be analyzed as first register */ɻ_I/ in high tone syllables and second register /ɻ_{II}/ in low tone syllables.

*/ɻ_I/ *Tone 1*

*ɻ_I > K ʊ, Sh ɻ, S u

33. star	səmʊɲ ¹	kaʔ ⁴ mɻiɲ ¹	səmʊɲ ¹
351. to go	hʊɭ ¹	hɻɭ ¹	hu ¹
546. all	ʊc ¹	ɻik 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 */ɻ_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 /ɻ/ 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.

**/ɻ_{II}/ Tone 2*

**ɻ_{II} > K ɯ, Sh ɤ, S o*

41. year	num ²	nɻm ³	nom ²
200. person	pɯy ²	pɻi ³	pɔi ²
363. to kick	ɳtuɯ ²	ntɻn ³	ɳton ²
425. to take out food	pɯk ²	pɻk ²	pɔk 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 **/ɲ/*.

Before **/l/* the following is found:

**ɻ_{II} > K ɯ, Sh ɤ, S ɔ*

135. belly	kətɯl ²	kaʔ ⁴ tɻl ²	tɔ ²
513. thick	kəpɯl ²	kaʔ ⁴ pɻl ³	pɔ 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	yɯm ²	ɻɻm ³	yɔm 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 **/ɲ/* the vowel **/ɻ_{II}/* is fronted. The height of the vowel is somewhat variable in Shinman.

**ɻ_{II} > K ɯ, Sh ε, S e*

336. to enter	lɯc ²	lɛik ²	lec ²
413. to spit	p ^h rɯc ²	p ^h ɛik ²	m ^h pec ²
159. intestines	vɯc ²	veik ²	vec ²

This fronting also occurs once in a high tone:

501. short (length)	nɯɲ ¹	ɲɛiɲ ¹	ɲɛɲ ¹
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There is also one occurrence of fronting in Shinman but not in Samtao:

499. sharp pointed	səpɯc ¹	kaʔ ⁴ pɛik ²	m ^h ɔc 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	m ^h al ¹	mah ¹	ma ¹
444. to weep	yam ²	ɻam 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 ɔ̄, Sh ɯ, S ɤ*

40. wind	kɔ̄l ¹	kuh ¹	ŋkva ¹
81. vegetable	tɔ̄ʔ ¹	tɯʔ ¹	tɤʔ ¹
168. pus	lɔ̄m ²	lum ²	lɤm 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 /ɔ̄/ in Kontoi is [ʌ], and /ɤ/ 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	pɔ̄ŋ ²	pɤŋ ²	pɤŋ ¹
304. to bury	kəpɔ̄ŋ ²	kaʔ ⁴ pɤŋ ¹	apɤŋ ¹
428. to think	kɔ̄t ²	kaʔ ⁴ kɤt ¹	kɤt ² p ^h om ¹
464. deep	rɔ̄ʔ ¹	xɤʔ ¹	rɤʔ 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	tɔ̄h ¹	tɯl ¹	tiah ¹
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Two other cognate sets show an unexpected reflex for Shinman.

166. nose	ŋkoŋ ² məh ²	mul ²	ŋkoŋ ² mɤah ²
210. wife	mɔ̄ŋ ²	kaʔ ⁴ muiŋ ³	amɤŋ 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 /ɔ̄/:

214. I	uʔ ¹	ɯʔ ¹	ɤʔ 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/

Vowel lowering is a common manifestation of the first register.

*_{uI} > K u, Sh u, S o

38. water	um ¹	um ¹	rom ¹
399. to see	ɲu ^{?2}	ʒu ^{?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:

*_{uI} > K u, Sh o, S o

99. dog	su ^{?1}	so ^{?1}	sho ^{?1}
256. ladder	m̄buŋ ²	n̄poŋ ¹	m̄poŋ ¹

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

*_{uI} > 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 ^{?u} ŋ 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.

*/uII/

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

*_{uII} > K u, Sh u, S u

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

Another correspondence for */uII/ occurs in the following three items:

*_{uII} > K u, Sh u, S a

143. ear	yuk ¹	ʒuk ¹	yak ¹
205. village	yun ¹	ʒun ¹	pviyaŋ ¹
482. lightweight	siyɔŋ ¹	ka ^{?4} ʒun ¹	siyaŋ 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 [ʏ]. 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 */uII/ 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 u, Sh u, S ɔ

332. to dream	kəmu ^{?2}	ka ^{?4} mu ^{?2}	itəmə ^{?2}
	K ɸ, Sh u, S ɔ		
27. rock	səmu ^{?1}	ka ^{?4} mu ^{?2}	səmə ^{?1}
	K u, Sh u, S ao		
273. rope	m̥u ^{?1}	mu ^{?1}	mao ^{?1}
	K ɸ, Sh u, S ao		
79. tree	kəlɯmk ^h ɸ ^{?1}	khu ^{?1}	nom ² k ^h ao ^{?1}
	K ɸ, Sh u, S ao		
31. smoke	tɸ ^{?1}	tu ^{?1}	tao ^{?1}
	K u, Sh o, S ɔ		
161. liver	kətum ¹	ka ^{?4} tom ¹	təm ¹

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 /ɔ/ and /ao/. The first five items each end in a glottal stop, with the initials being proto-voiced consonants for words having an /ɔ/ vowel and /ao/ for proto-voiceless consonant initials. The last word has a voiced final */m/ with an /ɔ/ vowel. Thus /ɔ/ correlates with a voiced environment in the proto language and /ao/ with a voiceless environment.

*/o/

*/o_I/

*o_I > K ɔ, Sh o, S o

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

*o_I > K ɔ, Sh o, S ɔ

183. child	kɔn ¹	kon ¹	kɔn ¹ et ¹
366. to know	ɲɔŋ ²	zɔŋ ³	yɔŋ 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 */o_I/:

107. frog	arɔk ²	xɔk ²	rok ¹
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*/o_{II}/

*o_{II} > K o, Sh o, S o

335. to eat (rice)	som ¹	som ¹	som ¹
439. to wash dishes (Samtao-wash face)	k ^h ɔc ¹	khoik ¹	k ^h oc ¹

Again breathiness is not consistent in Kontoi.

The following correspondences fit into a second register */o_{II}/, with a raised vowel in Shinman or Samtao:

*o_{II} > K o, Sh u, S o

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

*o_{II} > 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	k ^h rɔŋ ²	qhoŋ ¹	kraŋ ¹
511. tall	l ^h ɔŋ ¹	loŋ ¹	l ^h aŋ ¹

*/ɔ/

*/ɔ_I/

*ɔ_I > K ɔ, Sh ɔ, S o

77. thatch grass	plɔŋ ¹	plɔŋ ¹	plɔŋ ¹
102. egg	kətɔm ¹	kaʔ ⁴ tɔm ¹	tom ¹
113. horse	ŋrɔŋ ²	nxɔŋ ³	m̩prɔŋ 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	p ^h ɔk ²	pɔk ²	pɔk ²
504. slow	kɔy ²	koiʔ ⁴	koi ²

*/ɔ_I/ 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_I/.

*ɔ_I > K ɔ, Sh o, S o

95. cow	amɔy ²	kaʔ ⁴ moi ²	koi ²
539. three	laʔ ɔy ¹	laʔ 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	m̄m̄ɔʔ ¹	mɔ ²	mɔ ²
456. black	lɔŋ ²	lɔŋ ³	lɔŋ ²
500. sharp (knife)	lɔm ²	lɔm ³	lɔm ²

**/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 ɔ̄, Sh u, S u*

356. to have	kɔ̄y ¹	kui ²	kui ¹
412. smell bad	səʔɔ̄y ¹	kaʔ ⁴ ui ²	səʔui ¹

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 ɔ*

45. banana	kəmɔh ¹	kaʔ ⁴ mual ²	amoah ²
238. charcoal	pəsɔh ¹	kaʔ ⁴ sual ¹	soah ¹

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

**/ɔ_{II} > K ɔ, Sh ua, S ɔ̄*

9. fire	ŋɔl ²	ŋual ²	ŋɔ̄ ²
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The third occurs before **/n/*.

**/ɔ_{II} > K ɔ, Sh ua, S ɔ*

541. five	ləp ^h ɔn ¹	phuan ¹	p ^h ɔn ¹
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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:

$$(4) \quad \text{Shinman } \text{ɔ} \rightarrow \text{ua} / \text{ ___ } \begin{bmatrix} +\text{cons} \\ +\text{ant} \\ +\text{cor} \end{bmatrix}$$

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

416. to stand	cɔŋ ²	cun ³	cɔŋ ²
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Comparing ‘to stand’ with ‘foot’:

154. foot cɔŋ² cun³ cɔŋ²
 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:

$$(1) \quad V \rightarrow Va / \text{ ___ } \text{ l, r}$$

Vowel palatalization in Shinman:

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

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:

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

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	ŋkɔŋ ²	nkɔŋ ³	ŋkɔŋ ²
200. person	pɯy ²	pvi ³	pɔi ²
402. to sew	cɛŋ ²	ciŋ ³	keŋ 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^ˋ) 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	ŋai ¹ kaʔ ⁴ qhoŋ ²	ŋvriŋoŋ ²
478. heavy	səcen ¹	kaʔ ⁴ kian ³	cen ²
523. far	səŋaŋ ¹	kaʔ ⁴ ŋai ³	siŋai 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	kaʔ ⁴ tam ¹	tam ¹
103. elephant	kəsəŋ ¹	kaʔ ⁴ səŋ ¹	shəŋ ¹
358. to hide	səmuʔ ¹	kaʔ ⁴ moʔ ²	muʔ ¹

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

	K	Sh	S
53. cucumber	acel ¹	kaʔ ⁴ kel ¹	ci ¹
263. needle	pəŋiʔ ¹	kaʔ ⁴ ŋeʔ ¹	aneʔ 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 *kaʔ*

K *sə*, Sh *kaʔ*, 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 /kaʔ/, 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	ŋkoŋ ²	nkəŋ ³	ŋkoŋ ²
75. squash	ŋpɛl ¹	ŋpih ¹	ŋpia ¹
176. tongue	ŋtak ¹	kaʔ ⁴ tak ¹	ŋtak ¹
385. to plant	ŋsum ¹	ŋsɤm 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	pliʔ ¹	pliʔ ¹
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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 inter-relatedness 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.

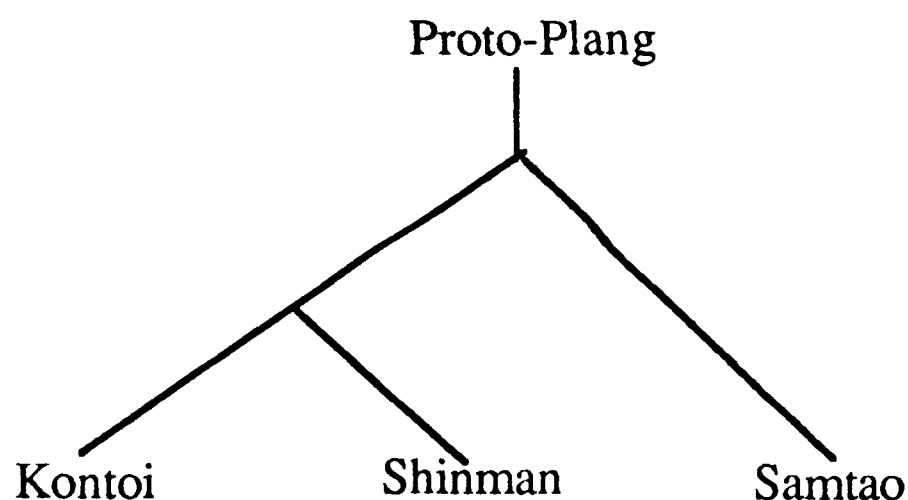


Figure 13. Genetic relationships

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	puyɯʔ ¹	kaʔ ⁴ ʒu ²	ɲoʔ ²	*ɲuʔ ²
2.	cave	t ^h am ²	----	tət ^h am ¹	*t ^h am ²
3.	cloud	kətɯl ² um ¹	----	taoʔom ¹	----
4.	country	nəkkaŋ ¹	kɤŋ ¹	nək ² yaŋ ¹	*nəkkaŋ ¹
*5.	day	numɲic ²	kaʔ ⁴ ɲiʔ ²	ɲonsiŋneʔ ²	*-ɲèc ²
6.	dew	----	um ¹ mvi ¹	rom ¹ m ^h vi ¹	*rummhVy ¹
7.	dust	pələŋ ²	kaʔ ⁴ lɤŋ ²	----	*Cələŋ ²
*8.	earth	kətiʔ ¹	kaʔ ⁴ tɛʔ ¹	tiʔ ¹	*kətiʔ ¹
*9.	fire	ɲol ²	ɲual ²	ɲɔ ²	*ɲòl ²
*10.	firewood	c ^h iʔ ¹	khiʔ ¹	c ^h iʔ ¹	*k ^h iʔ ¹
11.	gold	sɛl ¹	----	səri ¹	*srìl ¹
*12.	hail	l ^h iaphel ¹	phel ¹	pre ¹	*prel ¹
13.	hole	kətəʔ ¹	kaʔ ⁴ tuʔ ¹	tɤʔ ¹	*kətàʔ ¹
14.	iron	----	lɛk ²	lec ¹	*lhek ¹
15.	mist	mɯynɔŋ ¹	----	m ^h vi ¹ kɤʔ ²	*mhVy ¹ -
16.	moment	k ^h raw ²	----	təkrao ¹	*kraV ¹
*17.	month	təc ^h iʔ ¹	khiʔ ¹	tɛʔ ² c ^h iʔ ¹	*k ^h ic ¹
18.	first month	nuncin ¹	nɤn ¹ ciŋ ¹	lɤnceŋ ¹	----

	English	Kontoi	Shinman	Samtao	Proto-Plang
19.	moon	raŋk ^h iç ²	khaŋ ⁴ khi [?] 1	raŋk ^h i [?] 1	raŋk ^h iç ¹
20.	morning	numŋop ²	ti [?] 4 ŋup ⁴	paŋŋop ²	*ŋVp ²
*21.	mountain	ŋkoŋ ²	nkɔŋ ³	ŋkɔŋ ²	*ŋkɔŋ ²
22.	mud	----	ka [?] 4 piŋ ²	pɛŋ ²	*pɛŋ ²
*23.	night	num ² som ¹	nsum ¹	ŋɔnsom ¹	*sòm ¹
24.	noon	numŋiç ²	----	ŋɔnsiŋŋe [?] 2	*ŋɛç ²
*25.	rain	l ^h i [?] 1	lɛ [?] 1	le [?] 1	*l ^h i [?] 1
26.	rainbow	pəyũŋtoŋ ²	----	ayɔŋ ²	*-yVŋ ²
*27.	rock	səmu [?] 1	ka [?] 4 mu [?] 2	səmo [?] 1	*Cəmu [?] 1
*28.	salt	çəh ²	kil ²	çiah ²	*kìlh ²
29.	shadow	səpəy ¹	ka [?] 4 pui ¹	kɔnpui ¹	*-pVy ¹
*30.	silver	məl ²	ka [?] 4 muul ²	mɻ ²	*màl ²
*31.	smoke	tɔ [?] 1	tu [?] 1	tao [?] 1	*tu [?] 1
32.	snow	sətapaŋ ¹	----	m ^h vi ¹ paŋ ²	*-paŋ ²
*33.	star	səmuŋ ¹	ka [?] 4 mviŋ ¹	səmuŋ ¹	*Cəmvŋ ¹
34.	sun	ŋay ¹ ŋiç ²	ŋai ⁴ ŋi [?] 2	ŋaisiŋŋe [?] 2	*ŋay ¹ ŋɛç ²
35.	thunder	ŋnum ²	nɻm ³	anompre [?] 1	*nɻm ²
36.	today	səŋeŋ ¹	----	iŋe [?] 2	*ŋeŋ ¹
37.	tomorrow	pənsa [?] 1 nsa [?] 1		pəshə [?] 1	*-shə [?] 1
*38.	water	um ¹	um ¹	rom ¹	*rum ¹
39.	wet rice field	ti [?] na [?] 1	na [?] 4	na ²	*na [?] 1
*40.	wind	kəl ¹	kɯh ¹	ŋkɻa ¹	*kàr ¹
*41.	year	num ²	nɻm ³	nom ²	*nɻm ²
42.	yesterday	numkɔ [?] 1	nku [?] 1	nəmkaɔ [?] 1	*-ku [?] 1
43.	bamboo	pa [?] u [?] 1	ka [?] 4ɔ [?] 1	nomo [?] 1	*-V [?] 1
44.	bamboo shoot	apɔŋ 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	*l ^h u [?] 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	sələ [?] 1	sa [?] 4 le ²	sələ ²	*sələ [?] 1
52.	cotton	kəy 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	ŋmuul ¹	----	mu ¹	*mɻl ¹
57.	fruit seed	sumal ¹	----	sima ²	*səmaC ²
58.	garlic	hɔmlaw ¹	hom ¹	hɔmyaŋ ²	*hom ²
59.	ginger	səçəŋ ¹	sa [?] 4 kiŋ ¹	səçiŋ ¹	*səkiŋ ¹
*60.	grass	arɛp ²	xep ²	rɻp ²	*rɛp ²
*61.	leaf	l ^h a [?] 1	la [?] 1	la [?] 1	*l ^h a [?] 1
62.	mango	makmuŋ ¹	----	makmoŋ ²	*makmuŋ ²
63.	meat	pon ¹	puan ¹	----	*pVn ¹
64.	millet	səpi [?] 1	----	s pɛ [?] 2	*səpɛ [?] 1

	English	Kontoi	Shinman	Samtao	Proto-Plang
*65.	mushroom	təh ¹	tuŋ ¹	tiah ¹	*təh ¹
66.	orange	məcuk ²	----	makcuk ¹	*makcuk ²
67.	papaya	maksanp ^{hɔʔ1}	----	maksanp ^{hɔʔ2}	*maksanp ^{hɔʔ1}
68.	red pepper	p ^h rək ²	phɛik ²	----	*prVk ²
69.	pine tree	raŋ ²	khu ^{ʔ1} xaŋ ³	----	*raŋ ²
70.	cooked rice	ap ¹	----	ɤp ¹	*ap ¹
71.	paddy rice	ŋhu ^{ʔ1}	----	ŋ ^h u ^{ʔ1}	*ŋhu ^{ʔ1}
*72.	rice husk	kam ¹	kam ¹	ŋkam ¹	*kam ¹
*73.	root	reh ²	xɛl ²	riah ²	*rilh ²
74.	sesame	kəŋa ^{ʔ2}	la ^{ʔ4} ŋa ^{ʔ2}	aŋa ^{ʔ2}	*ŋa ^{ʔ2}
*75.	squash	mpeŋ ¹	npih ¹	m ^h piā ¹	*mpir ¹
*76.	sugar (cane)	səmi ^{ʔ1}	um ¹ mie ^{ʔ2}	nomame ^{ʔ2}	*mi ^{ʔ1}
*77.	thatch grass	pləŋ ¹	pləŋ ¹	pləŋ ¹	*pləŋ ¹
*78.	thorn	kat ¹	kat ¹	kat ¹	*kat ¹
*79.	tree	kəlumk ^h u ^{ʔ1}	khu ^{ʔ1}	nom ² k ^h ao ^{ʔ1}	*k ^h u ^{ʔ1}
80.	clsf. for tree	lum ¹	ka ^{ʔ4} lvm ¹	lhem ¹	*lVm ¹
*81.	vegetable	tə ^{ʔ1}	tu ^{ʔ1}	tɤ ^{ʔ1}	*tə ^{ʔ1}
82.	vermicelli	casan ²	----	cisan ¹	*cəsan ¹
83.	watermelon	maktəntaw ¹	----	maktəntao ²	*maktəntav ²
84.	animal	sat ¹	----	sat ¹	*sat ¹
85.	animal clsf.	tə ^{ʔ1}	tu ^{ʔ1}	to ²	*tə ^{ʔ1}
*86.	ant	amhac ¹	ka ^{ʔ4} muik ¹	mɤc ¹	*mhac ¹
*87.	bear	k ^h rih ¹	qhil ¹	krɤh ¹	*krVlh ¹
*88.	bee	ap ^h el ¹	phɛh ¹	hia ²	*Cir ¹
*89.	bird	səm ¹	sim ¹	shim ¹	*shim ¹
*90.	buffalo	ak ^h rak ¹	qhak ¹	krak ¹	*krak ¹
91.	butterfly	t ^h aŋl ^h ak	taŋ ⁴ klau ³	taŋŋalak ²	*t ^h aŋ-
92.	cat	miaw ²	miau ¹	miao ²	*miav ²
*93.	chicken	kənel ¹	ɛh ¹	kənia ²	*konir ¹
94.	cock's comb	ŋat ²	ka ^{ʔ4} zat ¹	----	*ŋat ²
*95.	cow	aməy ²	ka ^{ʔ4} moi ²	moi ²	*məy ²
*96.	crab	kətam ¹	ka ^{ʔ4} tam ¹	tam ¹	*kətam ¹
*97.	crow	ak ¹ ak ¹	ka ^{ʔ4} ak ²	alak ¹	*-ak ¹
98.	sambhar deer	kəncak ¹	----	kəncak ¹	*kəncak ¹
*99.	dog	su ^{ʔ1}	so ^{ʔ1}	sho ^{ʔ1}	*shu ^{ʔ1}
100.	duck	elkat ¹	ɛh ¹ kap ²	ia ² kla ^{ʔ1}	*ir ¹ kaC ¹
*101.	eagle	klaŋ ¹	klaŋ ¹	klaŋ ¹	*klaŋ ¹
*102.	egg	kətəm ¹	ka ^{ʔ4} təm ¹	təm ¹	*kətəm ¹
103.	elephant	kəsəŋ ¹	ka ^{ʔ4} saŋ ¹	shəŋ ¹	*kəs ^h aŋ ¹
*104.	fish	ka ^{ʔ1}	ka ^{ʔ1}	ka ^{ʔ1}	*ka ^{ʔ1}
*105.	flea	atep ¹	tiap ¹	tip ¹	*tip ¹
106.	a fly	----	xaŋ ⁴ xoi ³	roi ²	*rəy ²
*107.	frog	arək ²	xək ²	rok ¹	*rok ²
108.	gibbon	fa ^{ʔ1}	----	kənfə ^{ʔ1}	*fa ^{ʔ1}
*109.	goat	ape ^{ʔ2}	pɛ ^{ʔ4}	pe ^{ʔ1}	*pe ^{ʔ1}
110.	goat	ceh ¹	----	ciah ¹	*Cilh ¹

	English	Kontoi	Shinman	Samtao	Proto-Plang
*111.	horn	ruŋ ¹	xvŋ ¹	r ^h uŋ ¹	*rvŋ ¹
*112.	hornet	aʔuŋ ¹	ɔŋ ¹	ɔŋ ¹	*uŋ ¹
*113.	horse	ŋrɔŋ ²	nxɔŋ ³	mpron ²	*Cɔŋ ²
114.	land leech	aplɛŋ ¹	kliŋ ¹	piŋ ¹	*Cɪŋ ¹
*115.	louse	sɪʔ ¹	siʔ ¹	shɪʔ ¹	*shɪʔ ¹
116.	milk	bəʔ ²	um ¹ pɸʔ ²	----	*(b)əʔ ²
117.	mosquito	amuŋ ²	mɸŋ ⁴	----	*mɸC ²
*118.	pig	kɔnlik ¹	lik ²	kɔnleç ²	*konlèk ²
119.	porcupine	----	nkhut ¹	ŋkuah ¹	*ŋCùC ¹
120.	python	klun ¹	----	klun ¹	*klɸn ¹
*121.	rat	kɔnkaŋ ² kaŋ ³	----	kɔnkaŋ ²	*konkaŋ ²
122.	snail	sək ^h roc ¹	----	səroc ¹	*səkròc ¹
*123.	snake	səʔuŋ ¹	kaʔ ⁴ viŋ ¹	səʔuŋ ¹	*Cəʔvŋ ¹
124.	spider	arəh ²	haŋ ⁴ huɿ ²	rɸah ²	*ràlh ²
125.	squirrel	lay ¹	----	lai ¹	*lay ¹
*126.	tail	sətaʔ ¹	kaʔ ⁴ taʔ ¹	sətaʔ ¹	*Cətaʔ ¹
127.	termite	ŋrəŋ ²	nxviŋ ³	krɸŋ ²	*ŋkrəŋ ²
*128.	tiger	kɔnvay ² kaʔ ⁴ vai ³	----	avai ²	*vay ²
129.	turtle	arəh ² kɔp ²	----	rɸah ²	*ralh ²
*130.	wing	p ^h ruç ¹	phvik ¹	pruc ¹	*prɸç ¹
131.	worm	ŋruç ²	----	ŋkrec ²	*ŋkrɸç ²
132.	armpit	cokklik ¹	nlek ¹	kɸm ² kleç ¹	*ClVç ¹
133.	armspan	----	tɔp ¹	tətop ¹	*top ¹
134.	back	kəʔ ¹	nqhuʔ ¹	----	*kràʔ ¹
*135.	belly	kətɸl ²	kaʔ ⁴ tɸl ²	tɔ ²	*kətɸl ²
*136.	blood	nham ¹	ŋam ¹	n ^h am ¹	*nham ¹
137.	body	iktoh ²	nɸʔ ⁴ tuʔ ¹	to ¹ meŋ ²	*tòh ²
*138.	bone	səʔaŋ ¹	kaʔ ⁴ aŋ ¹	saʔaŋ ¹	*Cəʔaŋ ¹
139.	breast	bəʔ ²	pɸʔ ²	----	*(b)əʔ ²
140.	chest	naʔɸk ¹	----	naʔɸk ¹	*naʔVç ¹
141.	chin	kap ²	----	kap ¹	*kap ¹
*142.	dung	iŋ ¹	ɛŋ ¹	ɛŋ ¹	*iŋ ¹
*143.	ear	yɸk ¹	ɸuk ¹	yak ¹	*yùk ¹
144.	elbow	sok ¹	----	cas ^h ok ¹	*shòk ¹
*145.	eye	ŋay ¹	ŋai ¹	ŋai ²	*ŋay ¹
146.	eyebrow	hək ¹ kitaʔ ¹	----	hɸk ¹ kita ¹	*hàk ¹ kitaʔ ¹
147.	eyelash/brow	hək ¹ ŋay ¹	kɸh ⁴ ŋai ¹	----	----
148.	face	----	naʔ ⁴	n ^h a ¹	*nhaʔ ¹
*149.	fat	rəʔuh ¹	laʔ ⁴ ul ¹	aluah ¹	*Cəʔùlh ¹
150.	finger	ŋkuun ¹ tɪʔ ¹	nklaik ¹ tiʔ ¹	cen ¹ taiʔ ¹	*-tɪʔ ¹
*151.	fingernail	ŋŋem ¹ ŋim ¹	----	ŋhem ¹	*ŋhèm ¹
152.	index-thumb	tunŋtaʔ ²	----	tentaʔ ²	*taʔ ²
153.	flesh	huç ¹	----	neʔ ¹ huç ¹	*hɸç ¹
*154.	foot	coŋ ²	cun ³	coŋ ²	*còŋ ²
155.	forehead	ŋciŋ ^h el ¹ xel ¹	----	nari ¹	----
*156.	hair	hək ¹	huç ¹	hɸk ¹	*hàk ¹

	English	Kontoi	Shinman	Samtao	Proto-Plang
*157.	hand	tjʔ ¹	tiʔ ¹	taiʔ ¹	*tjʔ ¹
158.	heart	m̄m̄wul p ^h om ¹	m̄ul ¹	----	*mhVl ¹
*159.	intestines	vuc ²	veik ²	vec ²	*v̄vc ²
160.	knee	ŋay ¹ ŋoŋ ¹	ŋai ¹ kaʔ ⁴ qhoŋ ²	ŋviŋoŋ ²	*ŋay ¹ Cōŋ ²
*161.	liver	kətum ¹	kaʔ ⁴ tom ¹	tōm ¹	*kətum ¹
162.	mouth	----	ntuiŋ ³	ntut ¹	*ntuiŋ ¹
163.	mucus	----	um ¹ mwul ²	myah ²	*māl ^h ²
164.	navel	kətinj̄t̄ol ¹	kaʔ ⁴ tinj̄ ²	tv̄ʔateŋ ²	*-tVŋ ²
*165.	neck	ŋuk ²	ŋok ²	ŋok ²	*ŋuk ²
*166.	nose	ŋkoŋ ² məh ²	m̄ul ²	ŋkoŋ ² myah ²	*māl ^h ²
167.	penis	klaw ¹	----	kliʔ ¹	----
*168.	pus	l̄am ²	lum ²	l̄ym ²	*l̄am ²
169.	ribs	səʔaŋ ¹ p ^h r̄ok ¹	----	saʔaŋprak ¹	*səʔaŋprok ¹
170.	saliva	----	um ¹ miah ¹	rom ¹ mia ²	*rum ¹ m̄iC ²
*171.	skin	hak ¹	hak ¹	hak ¹	*hak ¹
172.	testicle	kətōm ¹ klaw ¹	----	tom ¹ kla ¹	*kətōm ¹ klav ¹
*173.	thigh	kəvaŋ ²	kaʔ ⁴ vaŋ ¹	avaŋ ²	*kəvaŋ ²
*174.	throat	k ^h r̄oŋ ²	qhoŋ ¹	kraŋ ¹	*kroŋ ¹
175.	thumb	aymaʔ ¹	----	ŋkunmaʔ ²	*maʔ ¹
*176.	tongue	ntak ¹	kaʔ ⁴ tak ¹	ntak ¹	*ntak ¹
*177.	tooth	raŋ ¹	xaŋ ¹	r ^h aŋ ¹	*raŋ ¹
*178.	urine (K-v)	ṇam ¹	ṇum ¹	nvm ²	*nhām ¹
179.	vein	sənak ¹	----	sənak ²	*sənak ¹
180.	waist	ŋŋoŋ ²	----	ŋoŋ ²	*ŋVŋ ²
181.	fem. in-law	av̄oy ¹	oi ¹	o ¹	*(C)oy ¹
182.	Burman	təman ¹	----	man ²	*man ²
*183.	child	kōn ¹	kon ¹	kōn ¹ et ¹	*kon ¹
184.	custom/habit	r̄et ²	----	m̄oret ² m̄erao ¹	*rVt ²
185.	doctor	m̄oʔ ¹	m̄oʔ ² ʔaʔ ¹	----	*mh̄oʔ ¹
*186.	father	ak̄aŋ ¹	kuiŋ ¹	k̄v̄ŋ ¹	*k̄aŋ ¹
187.	father's bro.	al̄oŋ ²	loŋ ²	----	*l̄oŋ ²
188.	friend	ay ¹	----	səhai ¹	*(C)ay ¹
*189.	grandfather	ataʔ ¹	taʔ ¹	ataʔ ¹	*taʔ ¹
*190.	grandmother	ayaʔ ¹	ʔaʔ ²	ayaʔ ²	*yaʔ ²
*191.	husband	kəmiʔ ²	kaʔ ⁴ meʔ ²	ameʔ ¹	*kəmiʔ ²
192.	male in-law	ap̄uʔ ¹	kon ¹ phau ¹	----	----
193.	man	m̄miʔ ²	kaʔ ⁴ meʔ ²	kōnmeʔ ¹	*miʔ ²
*194.	mother	amaʔ ²	maʔ ²	maʔ ²	*maʔ ²
195.	mother's sis.	----	puʔ ¹	maʔp̄oʔ ²	*puʔ ¹
196.	name	m̄əh ²	m̄wul ²	----	*māl ^h ²
197.	nephew/niece	kōnl ^h an ¹	lan ¹	l ^h an ¹ p̄oʔ ²	*l ^h an ¹
198.	old man	tak̄ot ²	----	pak̄ot ²	*tak̄ot ²
199.	old woman	yak̄ot ²	----	yak̄ot ²	*yak̄ot ²
*200.	person	p̄uy ²	p̄vi ³	p̄oi ²	*p̄ȳy ²
*201.	Plang	pl̄aŋ ²	pl̄aŋ ³	pl̄aŋ ²	*pl̄aŋ ²
202.	single female	kōnk ^h r̄eh ¹	----	p̄əkrih ¹	*krih ¹

	English	Kontoi	Shinman	Samtao	Proto-Plang
203.	single male	k ^h uŋum ¹	meʔ ² naŋ ² num ¹	----	*C _u m ¹
*204.	Tai person	sem ¹	sem ¹	s ^h im ¹	*s ^h im ¹
*205.	village	yun ¹	ʒun ¹	pviyaŋ ¹	*y _u ŋ ¹
206.	Wa person	----	vaʔ ⁴	vaʔ ¹	*vaʔ ¹
207.	wedding	k ^h uŋkan ¹	----	praʔkan ¹	*-kan ¹
208.	widow	m ^ə mhay ¹	----	m ^ə m ^h ai ²	*m(ɛ)mhay ¹
209.	widower	pomhay ¹	----	pom ^h ai ²	*pomhay ¹
*210.	wife	m ^a ŋ ²	kaʔ ⁴ muiŋ ³	amvŋ ²	*m ^a ŋ ²
*211.	woman	m ^ə p ^u n ¹	kaʔ ⁴ p ^v n ¹	k ^ə npun ¹	*p ^v n ¹
212.	ygr. sibling	ɔŋ ¹	ɔŋ ¹	----	*ɔŋ ¹
213.	he	u ⁿ ²	v ⁿ ¹	----	*v ⁿ ¹
*214.	I	uʔ ²	uʔ ¹	vʔ ¹	*aʔ ¹
215.	they (2)	kaʔ ²	kaʔ ²	----	*kaʔ ²
216.	they (3+)	kiʔ ¹	kɛʔ ²	----	*kiʔ ¹
217.	that	ɔʔ ¹	ɔn ²	an ¹	*Vn ¹
218.	this	eʔ ²	en ²	in ¹	*in ²
219.	we (2)	aʔ ²	aʔ ¹	----	*aʔ ¹
*220.	we (3+)	iʔ ¹	ɛʔ ¹	iʔ ¹	*iʔ ¹
*221.	thou	m ⁱ ʔ ²	m ⁱ ʔ ²	miʔ ¹	*m ⁱ ʔ ²
222.	you (2)	paʔ ²	paʔ ¹	----	*paʔ ¹
223.	you (3+)	piʔ ¹	pɛʔ ¹	----	*piʔ ¹
224.	armband	p ^h ɔlsɔk ¹	----	ples ^h ok ¹	*-s ^h òk ¹
225.	arrow	tiʔ ¹ ak ¹	tieʔ ⁴	----	*tiʔ ¹
226.	axe	taŋmet ¹	----	t ^ə met ¹	*met ¹
227.	ball	maklom ²	mak ² lum ²	mak ^ə lum ¹	*maklVm ²
228.	silver belt	s ^ə y ^s ɔy ⁱ ŋ ¹	----	sois ^ə ʔeŋ ²	*s ^ə y-iŋ ¹
229.	boat	vayruʔ ¹	xvʔ ⁴	r ^v ²	*r(v)ʔ ¹
230.	book	----	pap ²	pap ²	*pap ²
231.	bottle	kuŋ ¹	kaŋ ⁴ kiauʔ ⁴	koŋ ¹	*kVŋ ¹
*232.	bow	ak ¹	ak ¹	ak ¹	*ak ¹
233.	rice bowl	t ^h al ^h uy ¹	----	t ^ə l ^h ai ¹	*t ^h əlhVy ¹
*234.	bridge	m ^ə p ^a k ¹	kaʔ ⁴ pu ^k ²	ap ^v k ¹	*p ^a k ²
*235.	broom	m ^ə b ^ə h ¹	np ⁱ h ¹	m ^ə p ⁱ ah ¹	*mp ⁱ h ¹
236.	bucket	poŋ ²	thoŋ ³	p ^ə ŋ ²	*C ^ə ŋ ²
237.	car	kaʔ ²	----	ka ²	*kaʔ ²
*238.	charcoal	p ^ə s ^ə h ¹	kaʔ ⁴ su ^a l ¹	soah ¹	*s ^ə lh ¹
239.	live charcoal	ŋk ^ə h ²	----	ŋkoŋ ¹	*ŋk ^ə C ²
240.	cigarette	s ^ə l ⁱ k ²	----	s ^ə l ^ə c ²	*s ^ə lek ²
241.	clsf. clothes	p ^h an ¹	ph ^v n ¹	p ^h v ⁿ ¹	*p ^h an ¹
242.	clsf. cup	mu ¹	----	mu ¹	*m ^v l ¹
*243.	comb	ŋs ^a t ¹	nsat ¹	sot ¹	*ns ^ə t ¹
244.	digging stick	mo ¹	----	mo ¹	*m ^ə l ¹
245.	door	k ^ə vaʔ ¹	----	avaʔ ²	*k ^ə vaʔ ¹
*246.	drum	k ^h raŋ ¹	q ^h u ^a ŋ ¹	kr ^v ŋ ¹	*kr ^a ŋ ¹
247.	fish basket	asaʔ ²	----	sia ²	----
248.	fishing net	niŋ ²	----	neŋ ²	*niŋ ²

	English	Kontoi	Shinman	Samtao	Proto-Plang
249.	garden	val ²	----	va ²	*vaC ²
250.	gong	----	[kaʔ ⁴ paŋ ³]	akaŋ ²	*Caŋ ²
251.	grease	rəʔuh ¹	laʔ ⁴ ul ¹	----	*Cəʔulh ¹
252.	hat	m̄uk ¹	----	m ^h uk ¹	*m ^h uk ¹
*253.	house	naʔ ²	naʔ ²	naʔ ²	*naʔ ²
254.	house clsf.	l ^h aŋ ¹	----	l ^h aŋ ¹	*l ^h aŋ ¹
255.	house pole	rəŋ ¹	həŋ ¹	r ^h əŋ ¹	*rəŋ ¹
*256.	ladder	m̄buŋ ²	npoŋ ¹	m̄poŋ ¹	*mpuŋ ²
*257.	liquor	play ¹	plai ¹	plai ¹	*play ¹
*258.	market	lah ²	kaʔ ⁴ la ²	alah ²	*lah ²
259.	mat	ŋriŋ ²	----	ŋkre ²	*ŋkrVŋ ²
260.	medicine	ŋpay ¹	kaʔ ⁴ pai ¹	----	*pay ¹
261.	mortar	p ^h əlok ¹	----	tələk ²	*Cələk ¹
*262.	mosquito net	sut ¹	sut ²	ŋkaŋsut ¹	*sūt ¹
*263.	needle	pəniʔ ¹	kaʔ ⁴ neʔ ¹	aneʔ ¹	*niʔ ¹
264.	pair	təkūʔ ²	kuʔ ⁴	təkə ²	*kuʔ ²
265.	paper/poster	kənnat ¹	kaʔ ⁴ nat ²	kənat ¹	*kənhat ¹
*266.	path	k ^h raʔ ¹	qhaʔ ¹	kraʔ ¹	*kraʔ ¹
267.	photograph	p ^h əŋ ¹	----	p ^h uŋ ¹	*p ^h əŋ ¹
268.	pillow	k ^h aŋkəŋ ²	----	mənkəŋ ²	*kVŋ ²
269.	planting tool	ŋreʔ ²	----	ŋkreʔ ¹	*ŋkreʔ ¹
270.	price	cəŋ ¹	kiŋ ¹	----	*kVŋ ¹
*271.	rice field	m̄al ¹	mah ¹	ma ¹	*mhar ¹
272.	ring	kəcup	----	paicup ¹	*cup
*273.	rope	m̄uʔ ¹	muʔ ¹	maoʔ ¹	*mhuʔ ¹
274.	men's sarong	ŋtay ¹	----	ŋtai ¹	*ntay ¹
275.	shirt	p ^h rəʔ ²	phoʔ ¹	----	*prəʔ ²
*276.	shoes	chep ¹	khiap ²	chep ¹	*k ^h ep ¹
277.	shot medicine	tiŋk ^h em ¹	----	t ^h oç ^h im ¹	*k ^h Vm ¹
278.	sickle	vik ²	nvuik ¹	səvək ²	*vVk ²
279.	sieve	ak ^h rəŋ ¹	----	k ^h rəŋ ¹	*krVŋ ¹
280.	space by well	ləməʔ ¹	----	nymmə ¹	*-mə ¹
281.	spear	pleh ¹	----	pleah ²	*plelh ¹
282.	stool	paŋ ¹	paŋ ¹	----	*paŋ ¹
283.	sword	vac ² laŋ ¹	----	vac ²	*vac ²
284.	table	p ^h uŋ ¹	phuŋ ²	p ^h uŋ ¹	*p ^h Vn ¹
285.	thatched roof	pləŋ ¹	----	top ² pləŋ ¹	*plVŋ ¹
286.	tray	t ^h aləp ^h an ¹	----	təlaiteŋ ¹	----
287.	tumpline	ŋtol ¹	----	kaŋ ¹ toa ²	*tə ^r ¹
288.	wall	ŋt ^h al ²	ntal ²	taʔ ¹	*t ^h al ²
289.	window	kəvapəŋ ¹	phaʔ ⁴ moŋ ²	pətupəŋ ¹	*poŋ ¹
290.	wok	pəçhiŋ ¹	phaʔ ⁴ çheiŋ ²	m̄pa ¹	*C ^h Vŋ ¹
291.	able	caŋ ²	zəŋ ³	----	----
292.	answer	tup ¹	təp ¹	----	*tVp ¹
293.	bark	kwal ¹	kual ¹	----	*kwal ¹

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*294.	bathe	həm ¹	hwm ¹	hvm ¹	*həm ¹
295.	beat	pəh ²	----	pyh ²	*pəh ²
*296.	bite	cet ²	ket ²	cet ²	*ket ²
*297.	blossom	kɔnp ^h ruh ¹	phyl ¹	pluah ¹	*prylh ¹
*298.	blow	pəŋ ²	pyŋ ²	pyŋ ¹	*pəŋ ²
299.	borrow	----	vai ³	vai ²	*vay ²
*300.	break (tr)	mpuək ¹	npvk ²	puk ¹	*mpvk ¹
301.	breathe	t ^h ɔy ¹ p ^h om ¹	----	t ^h ui ¹ p ^h om ¹	*t ^h ɔy ¹ p ^h om ¹
302.	burn (intr)	ŋol ² ha? ¹	----	ŋo ² ha? ¹	*ŋol ² ha? ¹
303.	burp	k ^h u? ²	----	sa? ² v? ¹	----
*304.	bury	kəpəŋ ²	ka? ⁴ pyŋ ¹	apvŋ ¹	*kəpəŋ ¹
305.	buy	vi? ²	----	ave? ²	*vi? ²
306.	carry on back	pwh ²	----	pṽah ²	*pvlh ²
307.	carry child on back	----	pɔ? ²	kɔ? ¹	*Cɔ? ¹
308.	carry in hand	pɛn ¹	----	pin ¹	*pìn ¹
*309.	carry on shoulder	klɔm ¹	klɔm ¹	klom ¹	*klɔm ¹
310.	carry water	cəŋ ²	----	cɛŋ ²	*cVn ²
*311.	catch	m̄m̄uət ¹	m̄uət ¹	mut ¹	*mhvt ¹
*312.	chew	pam ²	pam ²	pam ²	*pam ²
313.	choose	rɔh ¹	xɔl ³	----	*rɔlh ¹
314.	clap	t ^h ɔp ²	nthop ²	nt ^h ap ²	*t ^h Vp ²
315.	climb	huk ¹	----	hak ¹	*hùk ¹
316.	close(eyes)	yep ²	----	yep ²	*yep ²
317.	comb	sat ¹	sat ¹	----	*sat ¹
318.	come	ɛŋ ¹	----	ij ¹	*iŋ ¹
319.	to come from	num ²	----	nom	*nym ²
*320.	cook (rice)	kwh ¹	kyl ¹	kuah ¹	*klvh ¹
321.	cough	ŋhak ¹	ŋhek ¹	mak ¹	*CVk ¹
322.	count	nhin ¹	sin ²	amɛn ²	----
323.	cover (pot)	kəp ¹	----	kyp ²	*kəp ¹
*324.	crawl	mul ²	muh ²	mua ²	*mùr ²
325.	cut (trees)	ŋkol ²	----	ŋkɔ ²	*ŋkVl ²
*326.	cut/slash	mək ²	mək ²	mok ²	*mək ²
327.	cut (hair)	cɛp ²	kip ¹	cip ¹	*kip ¹
328.	dance	hɔn ²	----	pɔn ²	*CVn ²
*329.	die	yum ²	ɹvm ³	yɔm ²	*yvm 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	itəmɔ? ²	*kəmu? ²
*333.	drink	ŋə? ¹	ŋu? ¹	ŋv? ²	*ŋə? ¹
334.	dry in sun	hɔk ¹	qhah ¹	hok ¹	*hVk ¹

	English	Kontoi	Shinman	Samtao	Proto-Plang
*335.	eat (rice)	som ¹	som ¹	som ¹	*sòm ¹
*336.	enter	luc ²	leik ²	lec ²	*lỳc ²
337.	fall	----	qhwiik ¹	k ^h vc ¹	*kràc ¹
338.	fan/wave hand	vj? ²	----	vi ¹	*vì? ²
*339.	fear	lhat ¹	lat ¹	lhat ¹	*lhat ¹
340.	feel	mɔŋ ¹	----	mon 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	*tòy ¹
344.	flow	----	lai ¹	lhai ¹	*lhay ¹
*345.	to fly	p ^h uul ¹	pyh ¹	pua ¹	*phvr ¹
*346.	forget	pɛl ²	pil ²	pɛ ²	*pèl ²
347.	fry (meat)	----	kho? ²	k ^h ru ¹	*krV? ¹
*348.	get	pɔn 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	huul ¹	hvl ¹	hu ¹	*hvl ¹
*352.	go down	lɛh ²	lih ²	lɛh ²	*lèh ²
353.	go out	ew? ¹	----	io ¹	----
354.	go up/north	----	huk ¹	hak ¹	*hùk ¹
*355.	grind	m̄m̄ɔ? ¹	mɔ ²	mɔ ²	*mhò? ¹
*356.	have	kɔy ¹	kui ²	kui ¹	*kòy ¹
357.	hear	mɔŋ ¹	----	mon ¹	*mhVŋ ¹
*358.	hide	səmu? ¹	ka? ⁴ mo? ²	mu? ¹	*mu? ¹
359.	hold (hand)	ŋsɔp ¹	----	sop ¹	*ŋsVp ¹
360.	hug	k ^h ɔt ²	----	kɔt ²	*k ^h Vt ²
361.	ill	sə? ¹	----	sɤ? ¹	*sà? ¹
*362.	itch	ŋa? ²	ŋa? ²	ŋa? ²	*ŋà? ²
*363.	kick	ŋtɯn ²	ntɤn ³	ŋton ²	*ŋtɤn ²
364.	kick	ŋchah ¹	ca ¹	----	*ŋchalh ¹
365.	kill	ŋyɯm ²	----	m̄p̄i ¹ um ¹	*Cɤm
*366.	know	ŋɔŋ ²	zɔŋ ³	yɔŋ ²	*ŋɔŋ ²
367.	laugh	----	ka? ⁴ ŋa ¹	ŋah ²	*kəŋalh ¹
368.	lay an egg	----	ka? ⁴ tɔm ¹	tom ¹	*kətɔm ¹
369.	lean	səcip ¹	----	səcɛp ²	*səcip ²
370.	lick	liŋ ²	liat ²	leŋ ²	*liŋ ²
*371.	like	mak ²	mak ²	mak ²	*mak ²
372.	listen	rəcip ²	----	acɛp ²	*cip ²
373.	live	muk ¹	mok ¹	----	*muk ¹
374.	look at	nɔk ²	nɔk ²	----	*nɔk ²
375.	look up	m̄muŋ ¹	----	mon ²	*muŋ ¹
376.	love	m̄uuh ¹	----	amuah ¹	*mhv ¹ lh ¹
377.	make thatch	p ^h ruy ²	----	plai ²	----
378.	meet	k ^h rup 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	----	plən 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	un ¹	vn ¹	*Vn ¹
*385.	plant	ṅsum ¹	nsvm ¹	sum ¹	*ṅsvm ¹
386.	play	raʔ ¹	kaʔ ⁴ xaʔ ¹	----	*raʔ ¹
387.	point	səcit ¹	----	cɛʔ ²	*cit ¹
388.	pound	ŋklɔŋ ¹	----	ŋklyh ¹	----
389.	pull	yac ²	ʒat ²	----	*yaC ²
390.	push	ṅput ²	----	put ¹	*ṅput ²
391.	raise	ay ¹	----	vi ¹	*ay ¹
392.	reap rice	vəc ²	vuik ²	vək 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	----	*pVŋ ¹
397.	rub (hand)	ṅwɔlpa ¹	----	ṅɔ ²	*ṅVl ²
398.	scratch	hac ¹	----	krac ²	*Cac ¹
*399.	see	ṅuʔ ²	ʒuʔ ¹	yoʔ ²	*ṅuʔ ²
400.	sell	paŋ ¹	paŋ ¹	----	*paŋ ¹
401.	separate	----	kaʔ ⁴ kah ²	ŋkoah ²	*kVh ²
*402.	sew	cɛŋ ²	ciŋ ³	keŋ ²	*cɛŋ ²
403.	shiver	ṅraŋ ²	nxvŋ ³	----	*ṅràn ²
*404.	shoot	puŋ ¹	pvŋ ¹	puŋ ¹	*pvŋ ¹
405.	shout	rak ²	xak ³	----	*rak ²
406.	sing	cay ²	----	coi ²	*CVy ²
407.	sink	m̄bah ²	----	m̄pah ²	*m̄pah ²
408.	sit	muk ¹	mok ¹	----	*muk ¹
*409.	sleep	it ¹	it ¹	it ¹	*it ¹
410.	smell	hət ¹	----	hvt ¹	*hət ¹
411.	smell good	hum ¹	xɔm ²	hom ¹	*hVm ¹
*412.	smell bad	səʔɔy ¹	kaʔ ⁴ ui ²	səʔui ¹	*Cəʔɔy ¹
*413.	spit	p ^h ruuc ²	pheik ²	m̄pec ²	*prvc ²
414.	split	phaʔ ¹	pha ²	p ^h a ¹	*phaʔ ¹
415.	squeeze	----	miet ¹	men ¹	*mVn ¹
*416.	stand	cɔŋ ²	cun ³	cɔŋ ²	*cɔŋ ²
417.	start a fire	paŋ ²	----	pvŋ ¹	*paŋ ²
*418.	steal	ṅraʔ ²	nxaʔ ²	praʔ ²	*Craʔ ²
419.	sting	həc ¹	----	hvc ¹	*həc ¹
*420.	stretch (hand)	nat ¹	nat ¹	nat ¹	*nat ¹
421.	swallow	ṅnuit ²	pluit ²	plon ¹	----
*422.	sweep	pɛh ¹	phil ¹	piah ¹	*pilh ¹
423.	swell	puŋ ²	----	pɔŋ ²	*puŋ ²
424.	swim	lɔy ²	----	lɔi ²	*lɔy ²

	English	Kontoi	Shinman	Samtao	Proto-Plang
*425.	take out food	puuk ²	pyk ²	pɔk ²	*pɤk ²
426.	take	tɨ ²	----	tɔi ²	*tV ²
427.	tell	lah ²	la ¹	----	*lah ²
*428.	think	kət ²	ka ⁴ kɤt ¹	kɤt ² p ^h om ¹	*kət ²
429.	throw out	tik ²	----	tic ¹	*tik ²
430.	trap	toŋ ¹	----	tom ¹	*tòC 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	hɔl ¹	hul ¹	ho ¹	*hòl ¹
*435.	wait	ku ¹	kho ¹	ŋku ¹	*k ^h u ¹
436.	wake up	kuh ¹	qhɔn ¹	kaoh ¹	*kuh ¹
437.	walk	hu ¹	hɤl ¹	hu ¹	*hɤl ¹
438.	want	som ¹	----	som ¹	*sòm ¹
*439.	wash dishes	k ^h ɔc ¹	khoik ¹	k ^h oc ¹	*k ^h òc ¹
440.	wear	chɔp ¹	chup ²	cɨp ¹	*c ^h Vp ²
*441.	weave	taŋ ¹	tain ¹	taŋ ¹	*taŋ ¹
442.	weed	ŋlɔh ²	luh ²	----	*lòh ²
443.	weed	rem ²	----	riam ²	*rim ²
*444.	weep	yam ²	ɯam ²	yam ²	*yam ²
445.	whistle	soc ¹	----	ŋ ^h oc ¹	*Còc ¹
446.	winnow	----	kum ⁴	kɤm ²	*kàm 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	*ɤc ¹
450.	ashamed	kac ²	----	kac ²	*kac ²
451.	bad	lhɯ ¹ moŋ ¹	----	lv ² akah ¹	*lhV ¹
452.	bald	tohpak ¹	----	kaŋ ¹ pak ¹	*-pak ¹
453.	beautiful	ŋam ²	nom ¹	----	----
454.	big	kətɔŋ ²	----	teŋ ²	*kətèŋ ²
*455.	bitter	sɔŋ ¹	soŋ ²	soŋ ¹	*soŋ ¹
*456.	black	lɔŋ ²	lɔŋ ³	lɔŋ ²	*lòŋ ²
457.	cheap	----	ɯau ³	ya ²	*ya ²
458.	clear	sɨŋɔm ¹	----	sɨŋɔm ²	*sɨŋVm ²
459.	clever	hiŋ ¹	----	heŋ ¹	*hiŋ ¹
460.	cold	kɔt ¹	kuat ¹	----	*kòt ¹
*461.	cooked	ɯin ¹	sin ¹	shin ¹	*shìn ¹
462.	correct	cɔp ¹	----	cap ¹	*cVp ¹
*463.	deaf	ŋlhət ¹	naŋ ² lut ¹	lhɤt ¹	*lhət ¹
*464.	deep	ra ¹	xɤ ¹	rɤ ¹	*rà ¹
465.	delicious	num ²	----	ŋom ²	*num ²
466.	difficult	ŋhap ¹	----	ŋhap ¹	*ŋhap ¹
467.	drunk	mawrɔplay ¹	mau ³	mao ² kəplai ¹	*mav ²
468.	dry	sə ¹ uh ¹	ka ⁴ oh ¹	kroh ¹	*Cuh ¹
469.	fast	vuy ²	vɤi ³	vai ²	*vVy ²

	English	Kontoi	Shinman	Samtao	Proto-Plang
*470.	fat	klɔŋ ¹	klɔŋ ¹	klɔŋ ¹	*klɔŋ ¹
471.	finished	hoc ¹	----	hoc ¹	*hòc ¹
472.	full	lɔk ²	----	alɔk 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	pəl ¹	----	py ¹	*pəl ¹
477.	hard	kol ¹	kəh ¹	ŋkoa ¹	*kVr ¹
*478.	heavy	səcen ¹ kaʔ ⁴	kian ³	cen ²	*Cəken ²
479.	high	lhɔŋ ¹	----	lhəŋ ¹	*lhVŋ ¹
480.	hot	rɔn ²	hɔn ⁴	ron ²	*rɔn ²
481.	hungry	somp ^h om ¹	kaʔ ⁴ phum ¹	----	*p ^h òm ¹
*482.	lightweight	siyɔŋ ¹	kaʔ ⁴ zɔŋ ¹	siyaŋ ¹	*Cəyùŋ ¹
*483.	long	laŋ ¹	laŋ ¹	laŋ ¹	*laŋ ¹
484.	long (time)	leŋ ¹	----	liŋ ¹	*liŋ ¹
485.	loud	lɔh ¹	----	loah ¹	*lVlh ¹
486.	muddy	səkɔul ¹	----	səku ¹	*səkɔl ¹
487.	narrow	up ¹	op ¹	kop ¹	*up ¹
488.	new	sɔʔ ¹	chuʔ ¹	----	*Còʔ ¹
489.	not	un	un ²	----	*un
490.	old (man)	kət ²	----	takət ²	*kVt ²
491.	old (object)	p ^h rəm ¹	----	prim ¹	*p ^h rim ¹
*492.	pain	səʔ ¹	sɔʔ ¹	sɔʔ ¹	*səʔ ¹
*493.	red	sək ^h rak ¹	kaʔ ⁴ qhak ¹	sərak ¹	*Cəkrak ¹
494.	ripe	kətəm ²	----	tɔm ²	*kətəm ²
*495.	rotten	səʔum ¹	kaʔ ⁴ ɔm ¹	səʔum ¹	*Cəʔɔm ¹
496.	round	mɔmɔl ¹	----	mu ¹	*mɔl ¹
497.	salty	um ¹	ɔm ¹	----	*ɔm ¹
498.	shallow	tol ²	----	tɔ ²	*tVl ²
*499.	sharp pointed	səpɔc ¹	kaʔ ⁴ pɛik ²	m ^h ɔc ¹	*p ^h ɛc ¹
*500.	sharp (knife)	lɔm ²	lɔm ³	lɔm ²	*lòm ²
*501.	short (length)	nɔŋ ¹	ŋɛiŋ ¹	ŋɛŋ ¹	*Cɔŋ ¹
502.	short (ht)	tem ²	tiam ³	----	*tVm ²
503.	shy	kac ²	----	kac ²	*kac ²
*504.	slow	kɔy ²	kɔi ²	koi ²	*kɔy ²
*505.	small	et ¹	ɛt ¹	et ¹	*et ¹
506.	smooth	kənul ¹	----	ŋo ¹	*kəCul ¹
507.	soft	kəcɔm ²	kaʔ ⁴ ŋom ¹	----	*kəCɔm ¹
*508.	sour	ŋnaʔ ²	naʔ ²	naʔ ²	*naʔ ²
*509.	spicy	səp ^h rɛc ²	kaʔ ⁴ p ^h ɛi ²	səprai ²	*Cəp ^h ɛc ¹
510.	sweet	tew ¹	tiu ¹	----	*tVv ¹
*511.	tall	lhɔŋ ¹	lɔŋ ¹	lhəŋ ¹	*lhVŋ ¹
512.	tasteless	caŋ ¹	----	caŋcɔh ²	*caŋ ¹

	English	Kontoi	Shinman	Samtao	Proto-Plang
*513.	thick	kəpʷl ²	kaʔ ⁴ pʷl ³	pɔ ²	*kəpʷl ²
514.	thin	lhɛl ¹	ʒih ¹	r ^h i ¹	----
515.	tired	sətʷŋ ¹	kaʔ ⁴ tʷŋ ¹	tʷʔ ²	*CətVŋ ¹
516.	torn	ŋreh ²	----	ŋkreh ²	*ŋkrelh ²
*517.	warm	səʔʷl ¹	kaʔ ⁴ ʷh ¹	səʔua ¹	*Cəʔʷr ¹
518.	wet	səkuʔ ¹	----	cʷʔ ²	----
*519.	white	paŋ ²	paŋ ²	paŋ ²	*paŋ ²
*520.	wide	vah ²	vah ²	vah ¹	*vah ²
521.	yellow	lhʷŋ ¹	lvŋ ¹	pəl ^h vŋ ¹	*lhVŋ ¹
522.	beside	pet ²	----	pɛt ²	*pet ²
*523.	far	səŋaŋ ¹ kaʔ ⁴	ŋai ³	sŋai ²	*Cəŋaŋ ²
524.	here	teʔ ²	man ⁴ niʔ ¹	kətij ¹	*-tVŋ ²
525.	inside	lak ² nuw ²	kha ² nai ²	----	*-nVy ²
*526.	left side	aviʔ ¹	kha ² kaʔ ⁴ ve ²	kraʔveʔ ¹	*-viʔ ¹
527.	middle/ between	ŋŋɔn ¹	----	kəŋɔn ¹	*ŋVn ¹
*528.	near	ntiʔ ¹	nteʔ ²	nteʔ ²	*ntiʔ ²
529.	outside	lak ² nɔk ²	kha ² nok ²	nɔk ²	*-nok ²
*530.	right side	atɔm ¹	kha ² kaʔ ⁴ tom ²	kraʔtom ¹	*-tom ¹
531.	side/end	----	man ⁴ cɛiŋ ²	kəcɛŋ ²	*-cVŋ ²
532.	space behind	----	kha ² qhʷʔ ²	kraʔkri ¹	----
533.	spatial/ front	lak ² ŋnaʔ ¹	kha ² naʔ ²	kraʔn ^h a ¹	*-nhaʔ ¹
*534.	there (far)	teh ¹	man ⁴ teh ¹	kətɛh ¹	*-teh ¹
535.	the top	ŋɔc ²	----	ŋɔc ²	*ŋɔc ²
536.	with	may ¹	----	meʔ [?]	----
*537.	one	kətʃiʔ ²	kaʔ ⁴ tiʔ ⁴	teʔ ²	*kətɛʔ ²
*538.	two	laʔal ¹	laʔ ⁴ al ¹	ra ¹	*Caʔal ¹
*539.	three	laʔɔy ¹	laʔ ⁴ oi ¹	loi ¹	*laʔɔy ¹
*540.	four	ləpun ¹	pun ¹	pun ¹	*pùn 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 kaʔ ⁴ liel ²	aleah ²	*hələleh ²
*544.	eight	sətʃiʔ ¹	xɔŋ ⁴ tiʔ ¹	sɪtaiʔ ¹	*sətʃiʔ ¹
*545.	nine	sətɛm ¹	kaʔ ⁴ tim ¹	sɪtim ¹	*Cətɪm ¹
*546.	all	ʷc ¹	ʷik ¹	uc ¹	*ʷc ¹
547.	half	k ^h rʷŋ ²	----	krʷŋ ²	*krVŋ ²
548.	many	hʷn ¹	hʷn ¹	----	*hʷn ¹
549.	medium/few	ləmlɛŋ ²	lɛiŋ ³	----	*lVŋ ²
550.	who	anɔʔ ¹	----	mɔ ¹ mɔ ²	----
551.	what	kənɔʔ ¹	kaʔ ⁴ na ²	miʔmɔ ²	----
552.	when	numnɔʔ ¹	----	ŋammɔ ²	----
553.	where	naŋnɔʔ ¹	man ⁴ muʔ ⁴	təmɔ ²	----
554.	how much	----	pʷn ⁴ muʔ ⁴	pɔn ² mɔ ²	----
555.	if	ŋʷʔ ²	----	yu	*ŋʷʔ
556.	already	hoc ¹	----	heʔ ¹	----

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