

## Chapter 2

### Background and Methodology

#### 2.1 Previous Phonological Studies

The first study of the Plang variety in China was done in 1986 by a group of Chinese linguists. Data in that study was collected from Xin Man E<sup>3</sup>, which is in the Bulang Mountain District, and from Guan Shuang, which is in the Meng Man district. Based on these two data sources the linguists produced a sketch of the Plang language. It must be noted that the two varieties differ greatly, yet there was only one phonology made combining both varieties.

Debbie Paulsen (1992, 1996a, 1996b) has done most of the phonological study on the Plang language. She has done a phonological description of the Kontoi dialect, as well as a phonological reconstruction of Proto-Plang using three dialects of Plang; Kontoi, Xin Man E, and Samtao. The Kontoi dialect is from a group of villages in the Xiding district of Xishuangbanna. The Samtao dialect used in the reconstruction, which is actually the Man Beek dialect, is from the Shan State in Burma. Previously, Samtao and Plang were listed as one language (Diffloth 1982, Grimes 1984) but it is now realized that the two are mutually unintelligible (Paulsen 1992:161) and are in fact separate languages under the Waic node.

#### 2.2 Consonants

Paulsen (1991:129) list twenty five consonant phonemes, /p, p<sup>h</sup>, t, t<sup>h</sup>, c, c<sup>h</sup>, k, k<sup>h</sup>, ʔ, f, s, h, m, n, ɲ, ɲ̃, ɲ̃̃, ɲ̃̃̃, l, l̃, r, w, j, j̃/. Of these phonemes only /p, t, c, k, ʔ, m, n, ɲ, l, w, y, h/ can occur in the syllable final position. Consonants in the final position are unreleased. There are also five consonant clusters, /pl/, /kl/, /p<sup>h</sup>r/, /k<sup>h</sup>r/, and nasals that occur with /h/. Paulsen also states that

/b/, /f/, and /y/ have a very low rate of occurrence.

In Kontoi the /c/ and /c<sup>h</sup>/ are grooved alveopalatal

<sup>3</sup> In Paulsen (1992) Xin Man E is written as Shiman.

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<sup>h</sup>/ when initial in breathy syllables. The symbol /l<sup>h</sup>/ 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 (1992:163).

The Chinese sketch of Plang (Li et al. 1986) lists thirty five consonant phonemes, /p, ph, np, nph, t, th, nt, nth, tɕ, tɕh, ntɕ, ntɕh, k, kh, nk, nkɰ, qh, nqh, m, m̥, n, n̥, ɲ, ɲ̥, ɺ, ɺ̥, f, v, s, z, x, h, ʔ/. There are eight syllable initial consonant clusters, /pl, phl, npl, nphl, kl, khl, nkl, nkhl/. The Chinese sketch uses /tɕ/ to write the palatal /c/, therefore /tɕ, tɕh, ntɕ, ntɕh/ will be written as /c, ch, nc, nch/. Prenasals assimilate to the point of articulation thus [np, nt, nc, nch] are realized as /mp, nt, ɲc, ŋk/. Vowels written in the word initial position are preceded by a glottal stop, as they are in Kontoi. There are ten consonants that occur in the syllable final position, /p, t, k, m, n, ɲ, h, ʔ, l, l̥/.

Paulsen (1992) list twenty six Proto-Plang consonants. As seen in Table 1 below.

	Bilabial		Labio-Dental		Alveolar		Palatal		Velar		Glottal	
Plosives	*p				*t		*c		*k		*ʔ	
	*p <sup>h</sup>				*t <sup>h</sup>		*c <sup>h</sup>		*k <sup>h</sup>			
Nasals		*m				*n	*ɲ			*ŋ		
		*mh				*nh				*ŋh		
Fricatives			*f	*v	*s							*h
					*s <sup>h</sup>							
Approximants					*r			*y				
								*yh				
Lateral App.						*l						
						*lh						

Table 1 Proto Consonants

## 2.3 Vowels

In the Kontoi variety there are eight vowel phonemes listed; /i, e, a, ɯ, ə, u, o, ɔ/. Paulsen states that the vowels, while being few, vary phonetically (1992:163). Front vowels, in breathy syllables, can become much more lax. Back vowels also have free variation. /u/ is realized as [o] in certain environments (1992:164). She states that all vowels occur in clear register, however in breathy register [ɯ] does not occur and /ɯ/ and /o/ only have a two-way contrast (Paulsen 1991:134).

The Chinese sketch found nine simple vowels and sixteen diphthongs. The simple vowels, /i, e, ɛ, a, ɯ, ɤ, u, o, ɔ/, can occur with the ten final consonants. The complex vowels, /ie, ia, iu, ei, ɛi, ɯi, xi, ai, ui, oi, ɔi, ua, xu, au, uai, iau/, have a limited cooccurrence with the finals. (Paulsen 1992:166)

Paulsen (1992:192) also states that there are seven Proto-Plang vowels, as seen below.

	Front	Central	Back
Close	*i		*u
Close-mid	*e	*ɤ	*o
Open-mid			*ɔ
Open		*a	

Table 2 Proto Vowels

## 2.4 Register Complex

Matisoff states that Mon-Khmer languages have not quite developed true tone-systems in the ST [Sino-Tibetan] sense. But rather an intermediate sort of two-way articulatory opposition in which pitch-difference plays a role but is not the only distinguishing factor (Matisoff 1973:86). Linguists commonly use “register” to refer to several different aspects of language. Henderson used the term in her description of Cambodian syllables (Henderson 1952:151). However, because register actually consists of many different components that are interconnected it is better to refer to it as a “register complex.” This complex can consist of consonant voicing, voice quality (phonation), aspiration, pitch level, contour, etc (Suwilai 2004:12).

Henderson's description included two separate registers. These two registers are represented in Gregerson's chart (1976). Thurgood (2007) then modified the chart, see Table 3 below, based on a composition of Henderson (1952, 1977), Matisoff (1973), Edmondson and Gregerson (1993), and Bradley (1982).



The first is the clear register which he describes as modal tending toward slightly tense, the second is breathy which is described as modal tending toward slightly breathy and/or lax (Watkins 2002:20). Suwilai (2004:12) states that among Khmu dialects register complex consist of tone and phonation and both equal partners. Both of these features can develop into a contrastive system. Theraphan found there to be two registers in Mon, tense and lax, but also stated that pitch and phonation-type differences are significant (Theraphan 1990:21). Theraphan also found there to be two registers in Kui, clear and breathy, but states that pitch and phonation-type are equally prominent (Theraphan 1989:14). Finally, Narumol (1982:40) states that there are two contrastive tones in Lamet that is related to tongue tension. Narumol also states that Wiang Papao Lua is a “quasi-tonal register” language with two contrastive tones, falling breathy tone and normal tone, with pitch, not voice quality being the most distinctive feature (Narumol 1982:44).

Among Plang studies specifically Paulsen and Hopple found that in Kontoi there are two types of register, clear and breathy. The clear register appears as a normal, clear voice quality. Breathly register appears as a breathy phonation type (Paulsen 1996:134; Hopple n.d.: 1). The Chinese sketch of Plang has no discussion of register for the Xin Man E dialect.

## **2.5 Presyllable**

In Kontoi there are two presyllable types. The first type appears with the combination of /p, t, k, s/ and /a/. The second is a syllabic nasal as the presyllable. All voiced nasals can occur as presyllables (Paulsen 1992:164).

In the Chinese sketch the presyllables mainly appear as /ka/. There is also a prenasal that can occur in the presyllable position. The prenasal assimilates to the point of articulation of the stop, which they precede.

## **2.6 Tone**

Paulsen states that there are two contrastive tones in Kontoi, high and low. These both have positional variants dependent on the type of syllable final consonants. The high tone is level before non-sonorant finals, but becomes a rising tone when before sonorant finals. The low tone is also level before non-sonorant finals, however it becomes a falling tone before sonorant finals. Finally, Paulsen states that there is the existence of a high falling tone that can only occur before sonorant finals, but this tone is rare and is usually in loan words (1996:164).

The Chinese sketch list four tones; the first tone is a high rising tone, /35/, the second tone is a high tone, /33/, the third is a high falling tone, /331/, the fourth tone is a low falling tone, /21/. The first tone, when it takes the place of the first syllable in a compound word, becomes the fourth tone. It also list that the second tone can become an extra high tone, /44/, but the occurrences are very few (Li et al. 1986:13-14).

## 2.7 Summary and Predictions

These studies show that the Plang in Xishuangbanna Tai Autonomous Prefecture has plosives occurring at the bilabial, alveolar, palatal, velar, glottal, and uvular points of articulation. Nasals occur at the bilabial, alveolar, palatal, and velar points of articulation. There are labio-dental, alveolar, velar, and glottal fricatives. Finally, there are approximants and lateral approximants at the alveolar and palatal points of articulation.

There are only front and back vowels. Front vowels occur at the close, close-mid, open-mid, and open positions. Back vowels occur at the close, close-mid, and open-mid position. While the Chinese sketch contains a complex system of diphthongs, the Kontoi variety has a limited set of diphthongs because of a constraining syllable structure. Vowels also can be produced in either clear or breathy register.

Tone is contrastive in Plang and has been understood as either two tones, low and high, or as four contrastive tones, high rising, high, high falling, and a low tone. When understood as two contrastive tones, high and low, there are two tonemes and two allotones.

From these studies it is expected that the varieties found in this description will have plosives at the bilabial, alveolar, palatal, velar, glottal, and uvular points of articulation. They will also have nasals occurring at the bilabial, alveolar, palatal, and velar points of articulation. Fricatives will occur at the labio-dental, alveolar, velar, and glottal points of articulation. Approximants and lateral approximants should occur at the alveolar and palatal points of articulation. There will be front vowels occurring in the close, close-mid, open-mid, and open position and back vowels occurring at the close, close-mid, and open-mid position. Vowels will either have a complex vowel system or a syllable structure that limits the diphthongs. Finally, there will be two contrastive tones, high and low, with two allotones which are predictable depending on syllable final consonants.

## 2.8 Methodology

The phonological description presented in this thesis is based on words elicited by a 598-item wordlist. The wordlist is composed of common nouns, verbs, and adjectives. The wordlist was created by combining the words of the Southeast Asia 436 wordlist and the Palaungic 242 wordlist (Hopple 2006). After combining the two wordlist, overlapping words or words for items that are not found in China, of which there were eighty, were removed reducing the wordlist to 598 words. It was then divided into semantic domains to ease elicitation. There was also a photo book that was created to ensure correct elicitation. Certain words were not able to elicited due to the language helper was not able to think of the word being asked. For that reason there were 546 words elicited from Man Noi, 531 words elicited from Bang Deng, and 525 words elicited from La Gang.

### 2.8.1 Data Source and Collection

A wordlist, of five hundred and ninety eight words, was elicited from 7 villages in the Bulang Mountain District; Jieliang<sup>5</sup>, Lao Man O, Mang An, Man Noi, Bang Deng Xin Zhai, and Xin Nan Dong. Plang males between the ages of sixteen and thirty-eight were sought for elicitation. This age range best reflects the current state of Plang pronunciation and vocabulary. Chinese was the main language used for elicitation, while some Thai was also used.

The word was read in Chinese and then the language consultant would say the Plang equivalent I would transcribe the word and he would repeat the word when I looked up at him. This would allow me time to write and give adequate space between words. Pictures to help convey meaning accompanied some words. When a word was encountered that the language consultant was not able to understand it was skipped until the end when they could have more time to think about the word or consult others who had come into the home.

A wordlist was elicited from one person, but in every case there were people around the speaker who would help him to understand what we were eliciting or to help him think of the word. Many problems that we had were over the group of people arguing over what word was correct because often they used different words. I asked the language helper to recite to me the word that he used and that was the word transcribed. Another problem occurred when those in the room to help would laugh at the speakers pronunciation. In Man Noi for the word 'frog' the speaker and

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<sup>5</sup> Due to technical problems only 158 words were successfully recorded from Jieliang.

another man said /ruk/, while others said /huk/. I would only transcribe the word that the main helper used.

### **2.8.2 Phonetic Analysis**

The data from the 7 villages was entered into Speech Analyzer<sup>6</sup>. The spectrograms and pitch listings were used to correct transcription errors. The words were then glossed and reference numbers were added. Once the wordlist were corrected and glossed in Speech Analyzer they were then exported to Phonology Assistant<sup>7</sup>. Words from both high and low tones were selected to be analyzed with Praat<sup>8</sup> to help determine tonemes and allotones. Finally, Praat was used to determine the vowel formant frequencies to distinguish the modal and breathy distinctions.

### **2.9 Limitations of the Study**

The study presented in this thesis is limited first by the amount of time that was allowed in each village. Due to the short amount of time that I was allowed to be in each village I could only collect a maximum of five hundred and ninety eight words from one person. It is also limited in that it only presents phonologies from three of villages in the district.

### **2.10 Goal of the Study**

The goal of this study is first to describe the phonology of each of the three villages. The phonological description will include word structure, syllable structure, phonemes, register, and tonal analysis. The second goal was to determine from these phonological descriptions if it would be possible to use one orthography for all three varieties.

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<sup>6</sup> Speech Analyzer is a computer program for acoustic analysis of speech sounds. It performs fundamental frequency, spectrographic and spectral analysis, and duration measurements. It also can add phonemic, orthographic, tone, and gloss transcriptions to phonetic transcriptions in an interlinear format. (<http://www.sil.org/computing/sa/index.htm>)

<sup>7</sup> Phonology Assistant manages transcribed Speech Analyzer files and can be used to produce phone and distribution charts as well as query the corpus to test phonological hypotheses. (<http://www.sil.org/computing/speechtools/pa.htm>)

<sup>8</sup> Praat is a program that can be used to determine the frequency of tones. (<http://www.praat.org>)



## **2.11 Benefits of the Study**

The first benefit of this study is that it will present phonological information for an area of Plang languages that have not been studied. It will serve to increase the amount of phonological information of Plang languages in general. This study will also help to start the process of literacy for the Plang in the Bulang Shan District.

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