Language contact and areal diffusion in rural Yunnan: A comparative case study on Azha Yi and Nong Zhuang[1]

云南乡土语言接触与区域性扩散交融—砚广壮语与阿扎彝语实例比较研究

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Abstract

The diverse, thriving ethnic patchwork of Yunnan Province features intricate networks of language contact that span thousands of years. Migration, commerce, intermarriage, and other factors have contributed to the dispersal and borrowing of linguistic features throughout East and Southeast Asia alike. Although numerous broad-based studies (e.g., Bradley 1979, Matisoff 1996, Bisang 1996, Yu 2000, LaPolla 2002, Huang 2005) have noted the prevalence and mechanics of contact and diffusion in the region, few concentrated studies have been undertaken that examine distinct languages in contact at the local level. To provide a local-level case study on language contact and areal diffusion, this paper focuses on Azha Phula of the Yi Nationality and Nong Zhuang of the Zhuang Nationality—both inhabiting numerous villages of Binglie District, Northeast Wenshan County. Although the Zhuang and Yi nationalities are of widely diverse stock ethnolinguistically, the two groups have been in contact in southeast Yunnan since the Tang and Song Dynasties 618-1234AD (WSZZ 2000:339-88, WSXZ 1999:184). Through lexical, semantic, phonological, and sociolinguistic comparisons, the paper demonstrates ways in which Southern Zhuang and Azha Yi have both yielded to areal linguistic influences and ways in which the two have influenced each other. While both varieties have been impacted from historic contact with the linguistic macroregion, and while both languages have influenced each other lexically, the phonology of Azha Yi spoken in Xiaopingba in particular has been reconfigured by extended contact with Nong Zhuang through space and time.

1. INTRODUCTION

As a local-level case study on language contact and areal diffusion in rural Yunnan, this paper seeks to build on findings and principles established in such works as Bradley (1979), Matisoff (1996), Yu (2000), Yuan (2001), LaPolla (2002), and Huang (2005) in an attempt to identify the ways in which two specific dialects spoken by two distinct language groups living in neighboring villages in Wenshan Prefecture have influenced each other and been influenced independently by the greater linguistic macro-regions of SW China and SE Asia. The paper limits itself to sociolinguistic, lexical, and phonological comparisons, and serves a two-fold function:

1. By presenting fresh data from, and analysis on, two little known language varieties, the paper advances ongoing linguistic documentation efforts in the region.
2. By comparing the influence and interaction of lexical and phonological features from both synchronic and diachronic perspectives, the paper reinforces the idea that a consideration of contact induced change and areal diffusion between divergent languages that frequently interact is essential for adequate linguistic comparison.

Field research for this paper was carried out in Binglie District, Wenshan County, Wenshan Prefecture, Yunnan Province, China (中国云南省文山州文山县秉烈乡) during August 2005 in the villages of 迷勒湾 Milewan, 小平坝 Xiaopingba, and 罗家邑 Luojiayi.

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2. ETHNOHISTORICAL BACKGROUND

Indigenous to Southwest China, the Zhuang are trustees of a rich culture and a long history. With a population of over 16 million (GZTJ 2003), they constitute the largest official ethnic group in China. The region which the Zhuang inhabit lies between the Lianshan Zhuang-Yao Autonomous County in Guangdong province in the east and the Wenshan Zhuang-Miao Autonomous Prefecture in the west. The Zhuang have a wide distribution from north to south inhabiting outlying regions as far south as the highlands of central Vietnam.

The languages the Zhuang speak have been classified as part of the Tai (known as *Zhuang-Dai* in Chinese) branch of the Tai-Kadai (*Zhuang-Dong* in Chinese) family. The Chinese-American linguist Li Fang Kuei (1977) divided the Tai branch into three divisions, with Northern Zhuang belonging to Northern Tai and Southern Zhuang belonging to Central Tai.

The Yi Nationality is also one of the most ancient of the officially recognized ethnic groups of China and is spread over Yunnan, Sichuan, Guizhou, and northwestern parts of Guangxi Zhuang autonomous prefecture. The heaviest concentrations of Yi can be found in the Liangshan Yi Autonomous Prefecture of Sichuan Province, in the Chuxiong Yi and Honghe Hani-Yi Autonomous Prefectures of Yunnan province, and in the Bijie and Liupanshui regions of Guizhou Province. According to the Fifth National Population Census of 2000, the Yi had a total population of close to eight million (GZTJ 2003). The languages spoken by the Yi nationality belong to the Tibeto-Burman branch of the Sino-Tibetan language family.

This paper is limited to research on the Nong branch of the Zhuang nationality and the Azha branch of the Yi nationality located in Binglie District of Wenshan County, part of the Wenshan Zhuang-Miao Autonomous Prefecture of Yunnan Province.

2.1. Ethnohistorical overview of Azha Yi and Nong Zhuang

The Nong people and the Azha people both belong to the Mongoloid racial type. In ancient times, through long periods of development, the ancestors of these people formed stable communities which were known during the Warring States period of Chinese history as *Baiyue* (百越) and *Diqiang* (氐羌), respectively (ZGSM 1981).

According to ancient Chinese records, throughout the Yuan, Ming and Qing dynasties, the nationality now known as the Zhuang (壮) were referred to (by the Han Chinese) as *Nong* (侬), *Sha* (沙) or *Tuliao* (土僚). Earlier, during the Tang dynasty and the Southern Zhao Dali Kingdom period, they were known as the *Liao* (僚), *Xi'ou* (西瓯), and *Louyue* (骆越). During the Wei and Jin dynasties, they were known as the *Liao* (僚) and *Jiuliao* (鸠僚); during the Qin and Han as the *Liao* (僚), *Phu* (濮) and *Jiuliao* (鸠僚); during the Warring States period as the *Baiyue* (百越) or *Baipu* (百濮). (ZGSSMZ, 1981)

Since ancient times, numerous different Chinese appelations have been used to refer to the various groups that are now classified as Yi (彝). During the Qing and Ming dynasties various Yi groups were known as *Lolo* (罗罗). Some such groups were known as *Wuman Lolo* (乌蛮罗罗) during the Yuan dynasty, as *Wuman* (乌蛮) and *Cuan* (爨) during the Tang, Song, Wei and Jin dynasties and the Southern Zhao Dali kingdom, and as *Wuman* (乌蛮), *Kunming* (昆明), *Dian* (滇) and *Sou* (叟) during the Qin and Han dynasties. During the warring states period various Yi groups were referred to as *Diqiang* (氐羌) (ZGSM 1981).

Today, numerous Yi branches live within Yunnan Province's Wenshan Prefecture. Ethnohistorically speaking, these groups can be sub-divided and summarized as follows: White Lolo (using autonyms such as *Suodu*, *Lolobu*, *Xiqima*, and *Gaisipo*), Black Lolo (using such autonyms as *Nosupo* and *Lolopo*), Flowery Lolo (using such autonyms as *Luwu*, and *Nisi*), Black Phula (using the autonyms *Azha* and *Pholo*), White Phula (using the autonym *Zuoke*), Flowery Phula (using autonyms such as *Abo*), and many others including Sani, Mengwu, Gepo, Axi, and Lalupu. In general these varieties are

considered by Chinese linguists to speak 'Southeastern Yi'—one of the six official 'dialect' divisions of the Yi in China. This paper selects Azha Yi, which affiliates with the larger Yi ethnic distinction, 'Phula', as a research focus. For further discussion of the historic Lolo-Phula distinction within the Yi Nationality and some of the challenges that face further classification of the Phula varieties within the Ngwi[2] branch of Tibeto-Burman, see Pelkey (in press).

Prior to the 1950's, the Zhuang Nationality of Wenshan Prefecture reportedly used more than 20 autonyms including *Butong*, *Buyi*, *Buyue*, *Buyayi*, *Burui*, *Buha*, *Phulia*, *Phunong*, *Phuxiong*, *Phuman*, *Budai*, *Butu*, *Bulong*, and *Busha*. As a result of research begun after the founding of the People's Republic of China, these various groups were united under the name "Zhuang" (僮). (The character used to represent the Zhuang nationality was changed from僮 to壮 in 1965.) The Zhuang people of Wenshan Prefecture can be divided into three main branches, called by Chinese speakers *Nong*, *Sha*, and *Tu*. The pronunciation of the corresponding autonyms vary, but are often something like p^hu^{31} $nɔŋ^{33}$ for the Nong, $pu^{35}ʔjai^{34}$/ $pu^{33}juei^{34}$/ $pu^{33}ji^{34}$ for the Sha, and p^hu^{55} dai^{31} for the Tu.[3] The Nong and Tu branches speak Southern Zhuang language varieties, whereas the Sha speak several varieties of Northern Zhuang.[4] This paper selects the dialect of a Nong village of Southern Zhuang as a research subject. This dialect appears to belong to what has been called the Yan-Guang subdialect, named for Wenshan prefecture's Yanshan and Guangnan counties where most speakers live (Zhang et al. 1999).

2.1.1 Historical interaction between Azha Yi and Nong Zhuang

Since ancient times, the ancestors of the Zhuang flourished in the Pearl River region. Numerous artifacts have been excavated from this region that date back to the late Paleolithic period. These artifacts indicate that the ancestors of the Zhuang used stone tools and subsisted as hunter-gatherers. Further findings indicate that this ancient ethnic group lived communally and participated in a society that was clan-based, group-oriented, and matriarchal. By the late Neolithic period (c. 5,000 years ago), this ancient people seems to have gradually shifted away from a matriarchal society replacing it with the present-day patriarchal counterpart. (ZTMY 2004)

Wenshan Prefecture of Yunnan Province is also a cradle of early human development, being home to the "Xichou man"—scant human skeletal remains dated by Chinese archeologists as early as 50,000 years ago (corresponding with 'late *homo sapiens*'). Furthermore, numerous pottery shards have been excavated from archeological digs within the borders of the Prefecture—shards that date back to the Neolithic and Paleolithic periods alike. According to research by scholars of ancient Chinese records, the ancestors of the Zhuang were part of the people known to the Han by the name of *Baiyue* 百越 (ZGSM 1981). This ancient people left many marks of their cultural characteristics in the region that is now known as Wenshan Prefecture—marks including prehistoric cliff paintings, bronze ware, and numerous historic sites. As such the modern-day Zhuang may be considered the original inhabitants of the prefecture.

In ancient times, the Zhuang people began establishing their villages on river banks and shore sides where for many centuries hence their society and culture has developed around rice paddy cultivation. This rice paddy culture is known as "'*Na*' society" in Zhuang—*Na* meaning, 'rice paddy' or 'rice terrace.' Statistically speaking, Yunnan Province can claim approximately 1,000 village names that incorporate this *Na* into their title—an impressive collection of which Wenshan Prefecture, with 518 *Na* village names, boasts more than half of the total number (Huang and Wang 2000).

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[2] Ngwi is now recommended by Bradley (2004) as a diachronically favored replacement for 'Loloish' ('Lolo' having become a derogatory title in China) and alternate titles such as 'Yi group', 'Ni', and 'Yipho.'

[3] *Pʰu* and *pu* both mean 'people', 'tribe' or 'ethnic group' in many Zhuang varieties.

[4] Since these Chinese exonyms are not believed to be pejorative by the Zhuang themselves, and are widely used by both Zhuang and non-Zhuang in the Wenshan area, we will make use of the terms "Nong", "Tu" and "Sha" in this article as cover terms for speakers the various Central and Northern Tai lects of Wenshan prefecture.

The Yi sub-groups are said to have arisen as a result of the ancient 'Qiang' (羌)[5] people ever expanding south, mixing with southwestern tribes as they went, and in that way forming ethnic groups. Evidently, the ancient Qiang began to spread out some six to seven thousand years ago from the banks of the northwestern river Huang (湟). One branch traveled southern routes into southwest China where, some 3,000 years later, after mixing with local tribes, they began being called such names as 'Liudi' (六夷), 'Qiqiang' (七羌) and 'Jiudi' (九氐). In historical records these groups are often referred to by such names as 'Qingqiang' (青羌), 'Kunming' (昆明) and 'Laojin' (劳浸). Over a long period of time, they spread out through the territory that comprises modern-day Yunnan, Sichuan, and Guizhou Provinces. In 830 AD, the superstratum of some of these ancient Yi peoples[6] joined ranks with the Bai to establish the Nanzhao (Nanchao) Kingdom—with its administration center located in what is now Dali Prefecture. The expansive domain of this kingdom encompassed the regions that are now known as eastern and southern Yunnan, western Guizhou, and Southern Sichuan. Thus the Nanzhao kingdom essentially controlled the regions into which the ancestral Yi peoples had spread.

Some of the ethnic groups now classified as Yi who inhabit Wenshan Prefecture began to migrate to the region as early as the Nanzhao Kingdom period of the Tang Dynasty. Arriving in the region they began to hunt, farm, and subsist alongside the Zhuang. Many times during the period in which the Azha Yi and Nong Zhuang subsisted side-by-side, they united to wage war against intruders or to fight off outside governing forces that sought to control them. During times of war, it was normal for the Azha and Nong to come to each other's aid.

With the advent of the People's Republic of China, the Azha Yi and Nong Zhuang have continued to interact daily. Trade and intermarriage between these two ethnic groups flourishes more than ever. With Azha Yi and Nong Zhuang living not only in the same regions, but even, sometimes, in the same family, contact and communication between the two groups is closer than it ever was. As a result of such close contact, these two groups provide a good case study for rural language contact and areal diffusion phenomena.

2.2 Modern Demographics

Wenshan Zhuang-Miao Autonomous Prefecture spans some 31,456 square kilometers and lies on the borderlands of Southwest China. Three of its Counties, Maguan, Malipo, and Funing, share a common border with Vietnam—a border 438 kilometers in length. The Prefecture administrates eight Counties: Wenshan (文山), Yanshan (砚山), Qiubei (丘北), Guangnan (广南), Xichou (西畴), Maguan (马关), Malipo (麻栗坡), and Funing (富宁). Eleven official nationalities live within the Prefecture including the Han, Zhuang, Miao, Yi, Yao, Hui, Dai, Bai, Buyi, Mongolian and Gelao among others.

2.2.1 Ethnic Demography of Wenshan Prefecture

The 2004 total population of Wenshan Prefecture is listed at 3,349,665 (WNFB 2005). Of this number 29.9% (1,002,641) were Zhuang and 9.7% (326,007) were Yi. As was mentioned above, the Zhuang of Wenshan Prefecture can be divided into three main branches: the Nong, the Sha, and the Tu (WSZC 2004). Due to historical migration and ethnic blending issues precise population figures for each ethnic sub-branch are difficult to calculate. The following percentages can be given for the three sub-branches of Zhuang in Wenshan Prefecture, however: 53% Nong, 36% Sha, and 11% Tu. The county-by-county population breakdown for the Yi and Zhuang Nationalities in Wenshan Prefecture are given in the following table:

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[5] It is crucial to note that the ancient people group known as 'Qiang' should not be confused with the nationality currently recognized by the Chinese government under the name "Qiang" nor with the Qiangic branch of Tibeto-Burman.

[6] Note, however, that the Yi subgroups in NW Yunnan during the Nanzhao Kingdom period would not have included the prototypical Northern Ngwi (Bradley, personal communication).

County		Zhuang Population				Yi Population
		Total	% Nong	% Tu	% Sha	
文山县	Wenshan	91,550	50%	50%	0%	74,273
麻栗坡	Malipo	32,812	90%	10%	0%	5,252
广南县	Guangnan	320,940	60%	05%	35%	38,272
丘北县	Qiubei	125,116	15%	05%	80%	73,757
马关县	Maguan	54,922	60%	10%	30%	27,874
砚山县	Yanshan	134,824	75%	20%	05%	86,605
富宁县	Funing	218,380	40%	10%	50%	12,260
西畴县	Xichou	24,097	96%	02%	02%	7,714
Prefecture Totals:		**1,002,641**	**53%**	**11%**	**36%**	**326,007**

Table 1. 2004 Zhuang and Yi Populations for Wenshan Prefecture (WSZC 2004, WNFB 2005)

As was mentioned above, the Yi sub-branches in Wenshan Prefecture are widely diverse. No official population statistics have been tabulated that estimate Yi sub-branch populations. The present day Azha sub-branch of the Yi Nationality is fairly centrally distributed along the common borders of Wenshan and Yanshan Counties; furthermore, Qiubei, Guangnan, Maguan, Malipo and Xichou Counties are also home to a handful of Azha Yi villages. In 1996, Wu (1996:36) estimated the total Azha population to stand around 80,000. Pelkey (in press) offers an estimate of 95,000. Either way, the Azha Yi population can be placed at roughly 25–30% of the total Yi population for Wenshan Prefecture.

2.2.2 Ethnic Demography of Wenshan County and Binglie District

Wenshan County itself features some 12 official nationalities including Han, Zhuang, Miao, Yi, Hui, Dai, Yao, Bai, and Lisu. Out of a year 2000 total population of 434,994, the Zhuang nationality comprised 21% of the total county population (91,550), and the Yi Nationality comprised 17% (74,273) (GZTJ 2003).

Binglie District (秉烈乡) is located on the northern border of Wenshan County. The administrative seat of Binglie District is a market town situated some 45 kilometers from the Wenshan County Seat and covers 293.49 square kilometers. The district is a mountainous region with elevation ranging from 1,380 to 1,600 meters. In 2004, the district was home to five official nationalities: Han, Zhuang, Yi, Miao, and Dai. The general ethnic composition of the district is summarized in the following chart:

Official Nationality	Binglie Population	% of Total Population
Han	1,120	5.0%
Zhuang	12,508	56.1%
Yi	8,454	37.9%
Miao	201	0.9%

Table 2. Ethnic composition of Binglie District (WNFB 2005)

Significantly more than 80% of the Yi and Zhuang in Binglie district belong to the Azha and Nong sub-branches respectively making this an ideal place for researching the two varieties. Note the general distribution of ethnic groups in the district illustrated in the following map:

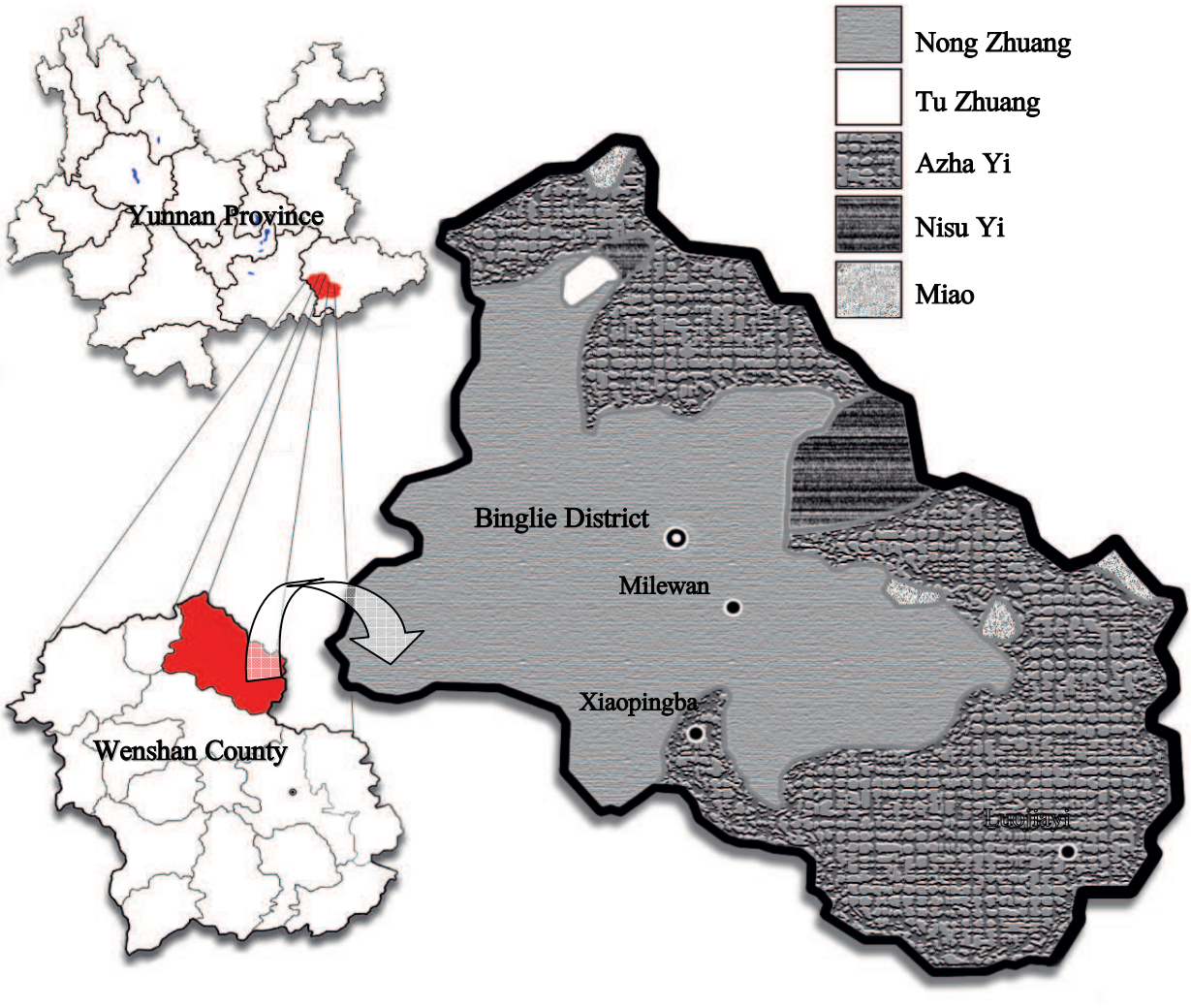

Figure 1. Distribution of Binglie District's ethnic populations

3. SOCIOLINGUISTIC BACKGROUND

Of all the Nong Zhuang and Azha Yi villages in Wenshan County's Binglie District, few are in closer contact with each other than *Milewan* (弥勒湾) and *Xiaopingba* (小平坝)—the former inhabited by Nong Zhuang and the latter by Azha Yi. Interestingly, according to WSZZ (2000:389) the Azha Yi in Wenshan Prefecture send the spirits of their deceased back to Milewan since that village is considered to be the ancient Azha ancestral homeland. Today, however, Milewan is almost entirely inhabited by Nong Zhuang. This piece of history alone speaks volumes about the lengthy and close interaction between these two ethnic groups. Both villages are rather large, Xiaopingba being composed of over 300 households with a total population of 1,400, and Milewan being composed of 128 households with a total population of 576.

In modern times social links between the two villages continue through friendships, intermarriage, and commerce. Parents from both villages marry out their daughters to the adjoining village, though more Azha brides are married to Zhuang households than vice-versa. Xiaopingba villagers claim that of the four or so Azha-Nong couples living in their village the husband and wife usually speak Chinese with each other in order to communicate, but in some cases the wife will learn to slowly learn to speak a little Azha.

Nevertheless, several villagers of Xiaopingba claim that the majority of Xiaopingba's Azha Yi inhabitants can speak Nong Zhuang with varying degrees of proficiency. Reportedly only a handful of the Zhuang in Milewan can speak Azha, however.

Children in both villages speak their respective mother tongues with their parents from childhood. Children of mixed families reportedly learn to speak the language of their mother, and then learn to speak the respective village language at play with other children.

4. PHONOLOGICAL ORIENTATION

The following phonological sketches are presented in order to offer an introduction to the respective phonological systems of Nong Zhuang and Azha Yi, and in order to establish a context for examining the ways they have influenced each other and incorporated common influences from outside.

4.1 A Sketch of Nong Zhuang Phonology

The variety of Southern Zhuang as spoken by the Nong of Binglie District (Milewan Village) is most phonologically similar to the "Yan-Guang" subdialect of Southern Zhuang. Of all the previously published Zhuang data, the Binglie pronunciation appears most similar to the dialect spoken by the Nong of Yanshan County data as published in Yan 1994 and Zhang et al. 1999.

4.1.1 The Syllable

The speech variety spoken by the Binglie Nong (hereafter BLN) syllable template is CV(V)(V)(C)T, in which a initial consonant, a vowel and a tone are obligatory. The range of possible syllable combinations for BLN is represented in the following table:

Syllable Type	*BLN*	*Chinese*	*English*
CVT	mi^{33}	有	have
CVCT	lam^{33}	风	wind
CVVT	tɕ^{h}ei^{11}	蛋	egg
CVVCT	liak^{33}	铁	iron
CVVVT	t^{h}uei^{11}	汗	sweat

Table 3. The Nong Zhuang syllable template

If a syllable begins with a vowel, a glottal stop is inserted in order to conform with the syllable structure (Ø→ʔ/#__V) as the following examples demonstrate:

Syllable Type	*BLN*	*Chinese Gloss*	*English Gloss*
CVT	[ʔu^{22}]	乳房	breast
CVCT	[ʔɔk^{11}]	脑子	brain
CVVT	[ʔoi^{22}]	甘蔗	sugar cane

Table 4. Glottal initials and the BLN syllable template

4.1.2 Consonants

BLN has 22 phonemic consonants at seven places of articulation, of which six (p, t, k, m, n, ŋ) can form syllable codas:

p		t		k	
			tɕ		
pʰ		tʰ		kʰ	
			tɕʰ		
ʔb		ʔd			
m		n	ɳ	ŋ	
	f	θ [7]	ɕ [8]		h
	v	ð [9]			
		l			
			j		

Table 5. BLN phonemic consonants

The chart below presents BLN consonant initials in context:

Initial	*BLN*	*Chinese*	*English*	*Initial*	*BLN*	*Chinese*	*English*
p	pa^{24}	鱼	fish	**ŋ**	$ŋa^{33}$	芝麻	sesame
pʰ	p^ha^{24}	石	stone	**f**	fa^{33}	天	sky
ʔb	$ʔba^{11}$	肩	shoulder	**v**	vai^{33}	水牛	water buffalo
t	tap^{55}	肝	liver	**h**	ha^{22}	五	five
tʰ	(luk^{33}) t^ha^{24}	眼睛	eye	**tɕ**	$tɕa^{22}$	秧苗	rice seedling
ʔd	$ʔda{:}u^{24}$ $ʔdi^{11}$	星星	star	**tɕʰ**	$tɕ^hai^{11}$	蛋	egg
k	$ka^{22}ðo^{33}ʔdi^{55}$	什么时候	when	**l**	lam^{33}	风	wind
kʰ	k^hai^{24}	卖	sell	**ɕ**	$ɕa^{55}baŋ^{33}nai^{41}$	如果	if
m	ma^{24}	狗	dog	**θ**	$θa^{24}$	纸	paper
n	na^{33}	田	field	**ð**	$ðaŋ^{33}$	一些	some
ɳ	$ɳa^{22}$	草	grass, hay	**j**	$ja^{31}ɳiŋ^{33}$	妻子	wife

Table 6. BLN consonant initials in context

The phoneme /v/ has two allophones [v] and [w] which are in free alternation:

$[wan^{33}]$, $[van^{33}]$	天，日子	day (24 hours)
$[t^haŋ^{24}\ van^{33}]$, $[t^haŋ^{24}\ wan^{33}]$	太阳	sun

The phoneme /θ/ (corresponding to Li Fang Kuei's proto-Tai *s) has two allophones [θ] and [s] which are in free alternation when preceding a non-front, unrounded vowel (also /ɯ/→ ɨ / s__). Elsewhere this phoneme surfaces as [θ]. (/θ/ → [θ], [s]/ __ ɯ, ɨ):

$[sɨ^{11}]$, $[θɯ^{11}]$	老虎	tiger
$[sɨk^{55}]$, $[θɯk^{55}]$	熟	ripe

[7] The Binglie phoneme /θ/ usually corresponds to Li Fang Kuei's (1977) proto-Tai *s.

[8] It is possible that /ɕ/ is only used in Chinese loanwords, such as 'elephant' $[dɑ^{33}ɕiɑŋ^{33}]$ and 'to pay taxes' $[ɕiou^{24}ɕuei^{11}]$. The other three examples in our data with this phoneme do not appear to have descended from proto-Tai, but nor can we yet confirm that they are Chinese loanwords. (E.g. 'thin (person)': $[ɕɑn^{24}]$ vs. Puthonghua: $[ɕɔu^{52}]$; 'urine': $[ɕio^{55}]$ vs. PTH: $[nʲɑu^{52}]$; 'if': $[ɕɑ^{55}bɑŋ^{33}nɑi^{41}]$ vs. PTH: $[ɹu^{24}gʷɔ^{11}]$, $[\widehat{tɕ}ja^{21}ru^{24}]$.

[9] The Binglie phoneme /ð/ usually corresponds to what is know in Zhang et al's *Zhuangyu Fangyan Yanjiu* (1999) as the "r-like sound" (" r 声类"), which is pronounced as ʐ, z, ɣ, etc. in other Zhuang dialects.

The phonemes /p/, /t/, and /k/ have the following allophones, respectively, when appearing in syllable-final position: [pˀ], [tˀ] and [kˀ]. (/p/, /t/, /k/ → [pˀ], [tˀ], [kˀ] / ___$):

[matˀ ^{31}]	袜子	socks
[k^{h}apˀ ^{55}]	痒	itchy
[ʔakˀ ^{55}]	胸脯	chest

4.1.3 Vowels and Codas

BLN has seven short vowel phonemes and one long vowel phoneme:

i u ɯ e o ɔ a aː

Vowel	*BLN*	*Chinese*	*English*
i	ʔdi^{24}	里（面）	in (side)
u	tu^{33}	帽子	hat
ɯ	tɯ^{55}	大	big
e	te^{22} ðat^{55}	结(果子)	to bear(fruit)
o	to^{11} nam^{55}	蜜蜂	bee
ɔ	tɔ^{31}	河	river
a	ʔdaŋ^{24}	鼻	nose
aː	ʔdaːŋ^{24}	身体	body

Table 7. BLN vowels in contrastive context

The phoneme /ɯ/ has an allophone of [ɨ] when preceded by [s] (which itself is a freely alternating allophone of [θ]). /ɯ/ → [ɨ] / [s] __:

[sɨ^{24}]	老虎	tiger
[pei^{33}sɨ^{55}]	买	buy, to

The phoneme /ɯ/ has an allophone [ə] when followed by the nasal consonant /ŋ/: /ɯ/ →[ə] /__ŋ. Before the nasal consonant /n/ this allophone [ə] is in free alternation with the allophone [ɯ] (/ɯ/ → [ə], [ɯ] /__n):

[nəŋ^{33}]	跟	with
[kən^{55}]	吞	to swallow
[ʔdɯn^{24}]	蚯蚓	earthworm

The phoneme /e/ has an allophone of [ɛ] when preceded by /i/ (/e/ → [ɛ] / i__):

[n̩iɛn^{55} tɕiou^{22}]	脚跟	heel
[t^{h}iɛ^{24}]	跑	to run

The phoneme /e/ has an allophone of [eː] before nasal consonants (/e/ → [eː] /__m, n, ŋ):

[heːn^{22}]	黄	yellow
[ʔdeːŋ^{24}]	红	red

The phoneme /ɔ/ has an allophone of [ɔː] before nasal consonants (/ɔ/ → [ɔː] /__m, n, ŋ):

[pʰɔːm^{24} tʰu^{24}]	头发	hair (on the head)
[mɔːn^{24} tʰu^{24}]	枕头	pillow
[ʔdɔːŋ^{24}]	森林	forest;woods

The phoneme /ɔ/ also lengthens before the high open vowel /i/ (/ɔ/ → [ɔː] /___i):

[θɔːi^{11}]	蒜	garlic

Our data contains 57 unique syllable codas, monophthongs, diphtongs, triphthongs, monophthongs and dipthongs with nasal consonant codas and monophthongs and diphthongs with oral plosive codas. These codas are listed in the following chart (phonemicized according to the rules listed above). Much work remains to be done in understanding the allophony patterns of BLN dipthongs and tripthongs.

Coda	*BLN Example*	*Chinese Gloss*	*English Gloss*	*Coda*	*BLN Example*	*Chinese Gloss*	*English Gloss*
i	pi^{24}	年	year (calendar)	**uk**	au pʰuk^{55}	捆绑	tie; bundle
ie	tʰie^{24}	跑	to run	**ɯ**	kɯ^{24}	盐	salt
iu	fei pʰau^{11}tɕiu^{55}	弯 (用火)	to bend (using fire)	**ɯn**	ðɯn^{33}	房子	house
io	ɕio^{55}	尿	urine	**ɯt**	ʔdɯt^{55}	喝	drink
im	ʔim^{11}	饱	full, satiated	**ɯk**	lɯk^{31}	挑选	select
in	tɕin^{24}	吃	eat, to	**ɯn**	kɯn^{55}	吞	swallow
iŋ	liŋ^{33}	猴子	monkey	**ɯŋ**	tʰɯŋ^{24}	糖	sugar
iem	ʔiem^{24}	茅草	thatch	**e**	te^{22} ðat^{55}	结(果子)	bear (fruit)
ien	tɕʰien^{11}	切(肉)	cut (meat), to	**ei**	tɕei^{11}	鸡	chicken
iaŋ	tʰiaŋ^{24}	千	thousand	**en**	hen^{22}	黄	yellow
ip	θip^{55}	十	ten	**eŋ**	ʔdeŋ^{24}	红	red
iap	liap^{33} kʰa^{24}	爪子	claw	**o**	ʔbo^{11}mi^{33}	黄牛	not yet
it	ʔdit^{55}	吸	suck, to	**oi**	noi^{55}	少	few
iet	fiet^{55}	扔	throw (a ball), to	**ou**	kou^{33}	曲，弯曲	crooked
ik	pik^{55}	翅膀	wing	**om**	n̡om^{55}pʰaŋ^{24}	染(布)	to dye
iak	liak^{55}	铁	iron	**oŋ**	moŋ^{55}	鸟窝	bird's nest
iau	miau^{11}	猫	cat	**ok**	tok^{33} pak^{11}	嘴巴	mouth
iou	n̡iou^{55} muŋ^{33}	手指	finger	**ɔ**	ʔɔ^{33}nei^{31}	这里	here
ioŋ	n̡ioŋ^{33}	蚊子	mosquito	**ɔi**	θɔi^{11}	蒜	garlic
u	ðu^{55}n̡in^{33}	听见	hear, to	**ɔt**	pɔt^{11}	肺脏	lungs
ua	pʰua^{24}	羽毛	feather	**ɔk**	mɔk^{55}	埋	cover up; bury
uan	huan^{24}	割(绳子)	to cut;to trim	**ɔm**	pʰɔm^{24} tʰu^{24}	头发	hair (on head)
uei	tʰuei^{11}	汗	sweat	**ɔn**	mɔn^{24} tʰu^{24}	枕头	pillow
uɯn	pʰa^{11}huɯn^{33}	破	to break (a bamboo strip)	**ɔŋ**	ʔdɔŋ^{24}	森林	forest;woods
uɔt	ʔbuɔt^{11}	瞎	blind	**aːu**	ʔdaːu^{24} ʔdi^{11}	星星	star
uɔk	huɔk^{55}	做	to do	**aːm**	naːm^{24}	刺(植物上的)	thorn
uɔn	ʔuɔn^{11}	年轻	young (boy)	**aːn**	waːn^{24}	甜	sweet
uɔŋ	kuɔŋ^{22}tɕʰit^{55}	冷(天气)	cold (weather)	**aːŋ**	kaːŋ^{33}	下巴	chin
uŋ	nuŋ^{31}	穿	put on, wear				

Table 8. Syllable coda combinations in BLN

4.1.4 Tone

One way of classifying Tai languages is by tone splitting patterns. In 1972, William Gedney made the following observations,

> "The most useful criterion for dialect boundaries within the Tai-speaking area is perhaps that of tonal systems; in traveling from place to place…one may consider that he has crossed a dialect boundary if he finds an increase or decrease in the number of tones in the system, or if he finds that a list of morphemes which in the previously studied dialect agreed in tone is now distributed among two or more different tones, or conversely, that a previously noted tonal distinction is now lost, with most or all of the morphemes previously noted as showing a tonal distinction now merging into a single list having the same tone." (1972).

Therefore special attention has been paid to the tone split system of Binglie Nong.

Li Fang Kuei (1977) posited that Proto-Tai had four tone categories, three on unchecked syllables (ending in a vowel or nasal coda), called "A", "B" and "C", and one on checked syllables "D". At some point in Tai history the D tone category split, based on vowel length, so "DS" refers to those checked syllables with a short vowel, and "DL" for those with a long vowel. In many Tai languages a tone split took place whose result was that the pronunciations of tones deriving from the proto-Tai tone categories A, B, C, DS, or DL on syllables whose initial sound was voiceless no longer resembled the pronunciations resulting from the same proto-Tai tone categories on those syllables initial sound was voiced. Apparently the voiceless initial consonants caused pitch to rise on these tones (or voicing on the initial consonants lowered the pitch of these tones). However, Edmondson (1994) notes that in the extreme southwest locations, such as eastern Yunnan, there is some tendency for this pitch difference to flip-flop (with the historically unvoiced initials resulting in lower pitched tone sets). In Li Fang Kuei's nomenclature, a "1" after the tone category letter (e.g. "A1") indicates the tone category resulting from the historically unvoiced initials, and a "2" (e.g. "A2") refers the tone categories resulting from the historically voiced initials.

Syllable Initial	Proto Tone Coda				
	A (unchecked)	B (unchecked)	C (unchecked)	DS (checked + short vowel)	DL (checked + long vowel)
1. voiceless friction //pʰ tʰ kʰ m̥ n̥ ŋ̊ h s f // 2. voiceless unaspirated stops //p t k// 3. preglottalized //ʔb ʔj ʔ//	A1	B1	C1	D1S	D1L
4. originally voiced //b d g m n ŋ l r//	A2	B2	C2	D2S	D2L

Table 9. Li Fang Kuei's (1977) proto-Tai tone split nomenclature

Chinese linguists, such as Zhang et al. in *Zhuangyu fangyan yanjiu* (1999), use the numbers 1 through 10 to refer to the modern descendents of these ten categories in living Zhuang dialects. The odd numbers correspond to those tones above numbered "1" (often higher in pitch), and the even numbers correspond to those numbered "2" above (often lower in pitch). Note that the order of the proto-Tai tone categories B and C is reversed in this numbering system.

Zhuang tone category numbering	1	2	3	4	5	6	7	9	8	10
LFK proto-Tai category numbering	A1	A2	C1	C2	B1	B2	D1S	D2L	D2S	D2L
Binglie Nong Tone Value	24	33	22	55	11	31	55	11	33	31

Table 10. Zhuang tone category nomenclature used in China

4.1.5 Binglie Nong Tone Split System

Synchronically Binglie Nong has only six unique tone contours, four level or register tones: 11, 22, 33 and 55 (˩, ˧, ˦, ˥) ; one rising tone: 24 (˧˦), and one falling tone: 31 (˦˩). All of these can occur on open syllables, but only the three level tones, 11, 33, and 55 (˩, ˦, ˥), and the falling tone (31, ˦˩). can occur on checked syllables (those ending with a oral plosive). Nevertheless, given the past tone split patterns in Tai languages, (and there's no reason not to assume that tonal systems, like other systems, continue to evolve into the present) it is probably better to consider Binglie Nong to have 10 tonemes or phonemic tone categories, of which there are four pairs which happen to share the same surface form at this point in Binglie Nong's development.

Tone Category	1	2	3	4	5	6	7	9	8	10
Proto-Tai Categories	A1	A2	C1	C2	B1	B2	D1S	D1L	D2S	D2L
BLN Tone Value	24	33	22	55	11	31	55	11	33	31
BLN	pi^{24}	pi^{33}	ʔbi^{22}	p^{h}i^{55}	pi^{11}	pi^{31}	p^{h}ak^{55}	pak^{11}kou^{33}	pak^{33}n̥in^{33}	ʔa^{33}pak^{31}
Chinese	年	肥 (肉)	蝴蝶	慢	笛子	哥，姐	蔬菜	百	听	打哈欠
English	star	fat (meat)	butterfly	slow	flute	elder sibling	vegetable	hundred	to hear	to sneeze
BLN	ma^{24}	ma^{33}tei^{33}	ma^{22}	ma^{55}	ma^{11}	ja^{31}n̥iŋ^{33}	nak^{55}	mak^{11}	mak^{33}wi^{24}	mak^{31}
Chinese	狗	来	生长	马	泡米	妻子	重	果子	梳子	滑
English	dog	to come	to grow	horse	to soak rice	wife	heavy	fruit	comb	smooth; slippery

Table 11. BLN's ten tone categories with examples

Diachronically, Binglie Zhuang, like many other Southern Zhuang varieties (Edmondson 1994), seems to have just undergone these two tone splits, resulting in a ten tone category system. (Some Southern Zhuang varieties underwent different or additional tone split phenomena.) In the case of Binglie Nong, some of the historically unvoiced initials result in tone pitches which are lower than their historically voiced counterparts, where as others do not.

Though it is not the goal of the present paper to classify Binglie Nong historically, this tone split pattern is the same as that reported by Edmondson (1994) and Zhang (1999) for the central Tai speech varieties spoken in Yanshan, Southern Guangnan, Jingxi, Longzhou, Central Fusui, Ningming, Qingzhou (Qingxian), as well as the Central Tai language Tày of Vietnam.

4.2 A Sketch of Azha Yi Phonology

To date, very little research (linguistic or otherwise) has been carried out on Azha Yi and the greater Phula Yi varieties with which the Azha affiliates. Wu (1996a & b) and Pelkey (in press) have presented the only known linguistic analyses of Azha. Based on an Azha variety spoken in Huangzhai (荒寨) of Wenshan County, Pelkey briefly discusses Azha diachronic system correspondences with Proto-Ngwi, whereas Wu presents a concise phonology & grammar sketch of an Azha variety spoken in the village of Gaodeng (高登) a few kilometers north of the Kaihua City, the Wenshan Prefecture seat. Although the consonant inventories of Gaodeng Azha and Huangzhai Azha are virtually identical with the Azha variety spoken in Binglie District's Xiaopingba Village (hereafter XPA)—featuring only a few allophonic variations—the XPA vowel system, tonal system, and syllable template all feature significant variation.

4.2.1 The Syllable

The XPA syllable template can be described as [(C)V(V)T] in which a vowel (or a segment with high sonority) and tone are obligatory. With only one known exception, no phonemic consonant codas are permitted in the XPA syllable. Thus, the following syllable combinations are possible:

Syllable Type	*XPB*	*Chinese*	*English*
VT	œ^{44}	蛋	egg
VVT	a^{44}iɛ^{33}mɔ^{33}	影子	shadow
CVT	t^{h}œ^{31}	厚	thick
CVVT	xiɛ^{44}	累	tired

Table 12. XPA syllable types with examples

As in Binglie Zhuang and many other Southeast Asian Languages, a glottal stop is often inserted as a syllable initial (Ø→ʔ/#__V). The glottal initial is neither obligatory nor contrastive in XPB however.

4.2.2 Consonant Initials

XPA features 30 phonemic consonant initials at seven places of articulation:

p	t				k	
p^{h}	t^{h}				k^{h}	
m	n	ɲ			ŋ	
f	s	ɕ	ɬ	ʂ	x	h
v	z	ʑ	l	ʐ	ɣ	
	ts	tɕ	tɬ	tʂ		
	ts^{h}	tɕ^{h}		tʂ^{h}		

Table 13. XPA phonemic consonant initials

These segments are illustrated in syllable contexts in Table 14:

Initial	*XPB*	*Chinese*	*English*	*Initial*	*XPB*	*Chinese*	*English*
p	pi^{33}	衣服	clothes	**ɣ**	i^{44} $ɣʉ^{21}$	肠子	intestines
pʰ	p^hi^{33}	臼	mortar	**t**	$tɛ^{33}$	爬	climb
m	mi^{44}	土	soil	**tʰ**	$t^hɛ^{33}$	快	sharp
n	ni^{33}	红	red	**ts**	$tsɛ^{44}zo^{22}$	醒	star
ɳ̥	$ɳ̥i^{33}$	饿	hungry	**tsʰ**	$ts^hɛ^{22}$	掉	fall
ŋ	$ŋɨ^{44}$	喝	drink	**tɕ**	$tɕɛ^{44}$	煮	cook
f	$nɨ^{44}fɨ^{44}$	雾	fog	**tɕʰ**	$tɕ^hɛ^{33}$	抓	scratch
v	vi^{33}	远	far	**tɬ**	$tɬɛ^{33}$	满	full
s	si^{44}	木	wood	**ɬ**	$ɬœ^{21}$	白	white
z	zi^{44}	闪	flash	**l**	$lɛ^{21}$	来	come
ɕ	$ɕi^{44}$	编	weave	**tʂ**	$tʂɨ^{33}$	缝	sew
ʑ	$ʑi^{44}$	割	reap	**tʂʰ**	$tʂ^hœ^{33}$	焚	burn
ʂ	$ʂɨ^{33}$	七	seven	**k**	$mʉ^{33}kœ^{22}$	屁股	buttocks
ʐ̩	$ʐ̩u^{33}$	数	count	**kʰ**	$k^hɛ^{21}$	个	CLF(general)
x	xi^{33}	八	eight	**h**	$hɛ^{21}$	窝	nest

Table 14. XPA consonant initials in context

Voiced stops and voiced affricates are non-phonemic in XPAzha. Proto-Ngwi *b for example goes to /p/ in such lexemes as [nọ^{44}pu^{33}pu^{33}] ‘deaf’ in which Proto-Ngwi *baŋ^{1}→/pu^{33}/. While this is an uncommon characteristic for a Ngwi phonological inventory in general, the absence of voicing as a phonemic feature on Azha stops and affricates was also noted by Wu (1996a) in his description of Gaodeng Azha. Only very scant remnants of voicing (e.g., [tɕy^{21}pɜ^{21}] ~ [dʑy^{21}pɜ^{21}] 身体 ‘body’) have been noted to occur. The loss of this manner of articulation is possibly attributable to contact with Chinese, but not attributable to contact with Zhuang. Further phonological features and rules are summarized below.

The alveopalatal series regularly conditions palatal off-glides such that [ɳ̥, ʑ, ɕ, tɕ, tɕʰ]→[ɳ̥j, ʑj, ɕj, tɕj, tɕʰj], respectively, especially in the environment of front vowels, but in free variation with other vowels:

[ɳ̥jy^{21}]	哭	‘cry’
[ʑjiʔ^{35}]	躺	‘lie down’
[ɕjiʔ^{35}]	草	‘grass’
[tɕji^{21}]	酒	‘liquor’
[tɕʰji^{33}]	狗	‘dog’

The labiodental phoneme /v/ includes [v] and [w] as allophones—the former for front and central vowels and the latter for back vowels (/v/→[w]/__[back vowel]; /v/→[v]/__[front & central vowels]):

[wɔ^{33}]	走	‘walk’
[wu^{22}tɕjiʔ^{35}]	蔬菜	‘vegetable’
[va^{21}]	买	‘buy’
[vɛ^{44}]	猪	‘pig’

The phoneme /s/ is in free variation with [θ] in all environments ([s]~[θ] in all environments):

[sɨ^{44}]~[θɨ^{44}]	三	‘three’

[sʌ^{44}lʌ^{44}vi^{22}]~[θʌ^{44}lʌ^{44}vi^{22}] 棉花 'cotton'

[to^{44}sɛ^{44}]~[to^{44}θɛ^{44}] 龟 'turtle'

The phoneme /z̩/ includes [ʒ] as an allophone in free variation and frequently conditions a rhoticized quality on vowels--a quality that often spreads over the entire syllable:

[z̩ɻ^{21}]~[z̩ɹu^{21}]~[ɹʒɻ^{21}] 绵羊 'sheep'

Having high sonority, the phoneme /n/ can sometimes fill syllable template position (V) through elision of the high front unrounded vowel /i/. The elision is not obligatory, but is the most usual pronunciation in such cases: (/n/→[n̩]~[n]/_[i]#):

[ni^{33}tɕj͡øœ^{32}]~[n̩^{33}tɕj͡øœ^{32}] 嘴 'mouth'

The velar stops /k/ and /k^h/ have as allophones [q] and [q^h] respectively in the environment of /ʌ/ and /ɔ/ ([velar stop]→[uvular stop]/__ [+back, +open]):

[qɔ^{44}] 嚼 'chew'

[q^{h}ɔ^{33}χɔ^{21}] 灰/烬 'ashes'

4.2.3 Vowel Finals

A preliminary analysis of the XPA vowel system indicates evidence for 12 phonemic monophthongs featuring five rounding contrasts. These distinctions are illustrated in the vowel chart below which attempts to incorporate something of their average place of articulation taking allophonic variation into consideration:

	ɨ	
i y		ɯ u
ɛ œ		ʌ ɔ
	a	

Table 15. XPA vowel phonemes

These 12 vowels and two phonemic diphthongs are listed below in contrastive contexts along with a curious nasal final:

Vowel	*XPA*	*Chinese*	*English*	*Vowel*	*XPA*	*Chinese*	*English*
i	ni^{44}	系	tie; bind	ɜ	tɕ^{h}y^{33}nɜ^{21}	腐烂	rot
y	ny^{44}	绿	green	ʌ	lʌ^{22}pa^{33}	枪	gun
ɛ	nɛ^{44}	早	early	ɔ	nɔ^{33}	多	many
œ	nœ^{33}	软	soft	a	na^{33}	湿	wet
ɨ	nɨ^{44}	想要	want to (do)	iɛ	dy^{33}ly^{33}miɛ^{21}	脐	navel
ʉ	mʉ^{33}kœ^{22}	屁股	buttocks	uɔ	muɔ^{33}tɕ^{h}y^{33}mɔ^{33}	寡妇	widow
ɯ	lɯ^{21}	轻	light	*Other*	*XPA*	*Chinese*	*English*
u	nu^{21}	你	2S(you)	ɜŋ	mɜŋ^{35}	铜锣	gong

Table 16. XPA vowel phonemes in context

Although only two phonemic diphthongs have been observed to date in XPA, multiple other allophonic diphthong combinations have also been noted to occur—most of which are conditioned by the glottalized mid-rising toneme [^{35}]. These will be discussed in Section 4.2.4 and again in Section 7 below.

The aberrant open-mid vowel + nasal final /*ɜŋ*/ defies the XPA syllable template but has only one known occurrence in the XPB lexicon. Under the circumstances one would expect such an aberrant syllable to be a loan word. This does not seem to be the case, however, as will be discussed further under Section 7 below. The section at hand will simply concern itself with the regularly patterning phonemic rules and phonetic features of vowel finals.

The phonemes /i/ and /y/ usually go to [ɪ] and [ʏ], respectively, in the environment of alveolopalatals ([+high, +close, αrounded] ~ [+high, +near close, αrounded]/[alveolopalatals]__) this rule has especially been noted to occur with higher pitched tonemes:

[wu^{22}tɕjɪʔ^{24}]	蔬菜	‘vegetable’
[ɕjɪ^{44}]	瘦	‘skinny’
[tɕjʏ^{44}lu̩^{44}]	跪	‘kneel’

The phoneme /i/ also includes the allophone [ɿ^{j}] in frequent free variation with [ɪ] in the environment of alveolopalatals ([i]~[ɿ^{j}]/[alveolopalatals]__) this rule has especially been noted to occur on syllables with lower pitched tonemes:

[ʑi^{21}]~[ʑɿ^{j21}]	水	‘water’
[ɕi^{22}]~[ɕɿ^{22}]	灭	‘extinguish’
[tɕ^{h}i^{22}]~[tɕ^{h}ɿ^{22}]	磨	‘mill by grinding’

The phoneme /ɨ/ goes to [ɿ] in the environment of /s/__ ([ɨ]~[ɿ]/s_) and to [ʅ] in the environment of a retroflexed initial: ([ɨ]→[ɿ]/[retroflexed initial]__):

[sɿ^{33}]	木炭	‘charcoal’
[sɿ^{44}]	三	‘three’
[wɔ^{44}tʂɿ^{44}]	针	‘needle’
[ʂʅ^{33}]	七	‘seven’

The phonemes /ʉ/ and /ɯ/ often take the phonetic shape [ʉβ] and [ɯβ]:

[lu^{44}pʉβ^{33}]	石头	‘stone’
[le^{33}kɯβʔ^{35}]	手掌	‘palm (of hand)’

The phoneme /œ/ has as an allophone the diphthong [øœ] (/œ/→[øœ]/[+continuant]__):

[møœ^{33}]	马	‘horse’
[ʑi^{21}løœ^{33}]	湖	‘natural lake’
[n̩^{33}tɕjøœ^{32}]	嘴	‘mouth’
[t^{h}œ^{21}]	厚	‘thick’
[ʑi^{21}pœ^{21}]	江	‘river’

Many other allophonic variations occur in the XPA vowel system as well—all of which will not be listed here except in summary. The phoneme /ɜ/ includes [ɜ] and [ə] as allophones: The phoneme /ɛ/ includes [ɛ], [æ] and [ɐ̯] as allophones—

[æ̤] only occurring with the tense-voice low-falling tone /^{21}/ (e.g., 'nest' 窝 [hæ̤^{21}]). The phoneme /ʉ/ has as allophones [ʉ̤], [ɵ], [ʊ̤] and [ʊ]. The two back vowel rounding contrasts seem to split [o] and [ɤ] as allophones the Close pair taking [o̤] and [ɤ̤] and the Open-Mid pair taking [o̤] and [ɤ̤].

4.2.4 Tone and Phonation

XPA phonology features five tonemes—two of which incorporate phonation characteristics:

Toneme	35	44	33	22	21
Suprasegmental Features	glottalized and/or constricted	modal voice	modal voice	modal voice	laryngealized or nasalized
Phonetic Contrasts	[ni̤ʔ^{35}]	[ni^{44}]	[ni^{33}]	[ny^{22}]	[ni̤^{21}] ~ [nĩ^{21}]
Phonemicized Minimal Pairs	/ni^{35}/	/ni^{44}/	/ni^{33}/	/ny^{22}/	/ni^{21}/
Chinese	坐	系	口	绿	有
English	sit	bind	mouth	green	EXIST

Table 17. XPA tonemes with examples

As will be discussed further in Section 7 below, historically conditioned tense/laryngealized phonation seems to have been lost as a contrastive feature in this variety of Azha; nevertheless, laryngealized phonation or, alternatively, nasalization still occurs as a suprasegmental tonetic feature of the low-falling toneme /^{21}/ (e.g., [k^{h}ɛ̤^{21}] 'CLF(general)'; [p^{h}ɔ̤^{21}]~[p^{h}ɔ̃^{21}] 'cloth'), and the mid-rising toneme / ^{35}/ features a constricted and/or glottalized quality.

Tense phonation usually occurs with the high rising tone /^{35}/ conditioned by the glottalization that tends to be a feature of this tone: e.g., [ʔi̤ʔ^{45}tsʉ̤^{45}] 'head'

Velarization of aspirated segments occurs before high front vowels as an evident phonation feature on the low falling constricted tone: e.g., /p^{h}i^{21}/ 'slow' is pronounced [p^{h}xi^{21}].

The glottalized /^{35}/ tone also conditions a series of non-phonemic diphthongs which are summarized below with examples:

- /i̤/→[i̤ɜ]/__ /^{35}/: e.g., [nɛ^{22}ti̤ɜʔ^{35}] 盲 'blind'
- /a/→[a̤ʌ]/__/^{35}/: e.g., [i^{22}maʌʔ^{24}] 尾巴 'tail'
- /ɛ/→[ɛɪ]/__/^{35}/: e.g., [n̥i^{44}tɕi^{33}p^{h}jɛɪʔ^{25}] 墙壁 'wall'
- /ʉ̤/→[ʉ̤ɵ̤]/ __/^{35}/: e.g., [pʉ̤ɵ̤ʔ^{35}qo̤^{33}] 膝盖 'knee'

These diphthongs will be discussed further in Section 7 below.

5. AREAL DIFFUSION

Binglie District, where the Azha and Nong speech varieties are spoken, lies at the veritable intersection of two large *sprachbünde* or linguistic macro-regions: the East Asian area (including Chinese and the many languages influenced by it) and the Southeast Asian area. Bradley (1978), Matisoff (1996) and others have observed that in these areas there are characteristics that seem to have spread across these geographic regions, influencing the development of their many speech varieties regardless of typology or genetic stock. These characteristics may affect phonology, morphology, syntax, lexicon and discourse structures. A morphosyntactic example given by Bradley (1979) is that of noun classifiers which are present in both Azha and Nong.

5.1 Chinese Loans in Azha Yi and Nong Zhuang

In order to determine what lexical and phonological influence has taken place between Azha and Nong because of the direct contact of the speakers of these varieties in Binglie, it is necessary first to identify what lexical and phonological similarities are due to larger areal features and/or direct influence from Chinese. As Bradley (1978: 105) has noted, "it is not now possible to determine the exact origins of area words". It is beyond the scope of this paper to answer the question of the degrees to which ancient Chinese, Cantonese (Yue) or other southern Chinese dialects may have been influenced by Tai or Ngwi languages. We will simply list the Azha and Nong words in our data which appear to be Chinese loans, and those which appear to be wider areal loans, noting whether or not a Proto-Ngwi or Proto-Tai reconstruction has been offered for these words.

The following is a list of words in our BLN dataset that are likely to be loans from Chinese:

English	Chinese	BLN	Mandarin	Proto-Tai[10]
bronze gong	铜锣	(tɕoŋ^{22}) la^{33}	t^{h}ɔŋ^{35}luɔ^{35}	*dɔŋ^{A2} = copper
candle	蜡烛	la^{31}tɕu^{31}	la^{51}t͡ʂu^{35}	no protoform
elephant	大象	ta^{33}ɕiaŋ^{33}	ta^{51}ɕiaŋ^{51}	*d͡ʒaŋ^{C2}
lime	石灰	hoːi^{24}	xuei^{55}	no protoform
float (on water)	浮	fɯt^{55}	fu^{35}	*lɔi^{A2}
heel	脚跟	n̥iɛn^{55} tɕiou^{22}	t͡ɕiau^{21}kən^{55}	*son^{C1}
oil	油	ju^{33}	jɔu^{35}	no protoform
to fry	炒	tɕ^{h}au^{22}	t͡ʂ^{h}au^{55}	no protoform
road	路	lo^{31}	lu^{51}	*xrṵɯn^{A1}, *daŋ^{A2}
rattan	藤子	t^{h}ou^{24}	t^{h}əŋ^{35}ʐ̩^{21}	*hwai^{A1}
shoes	鞋子	haːi^{33}	ɕjɛ^{35}ʐ̩^{2111}	no protoform
gun	枪	tɕoŋ^{11}	t͡ɕ^{h}jaŋ^{55}	no protoform
to pay	交	ɕuei^{11}	tɕjau^{55}	no protoform
to push	推	toi^{55}	t^{hw}ei^{55}	no protoform
friend	朋友	toŋ^{33}pən^{31}	t^{h}ɔŋ^{35}pan^{51} (同伴)	no protoform
green	绿	lɔk^{33}	lu^{51}	*xiau^{A1}
hundred	百	pak^{11}kou^{33}	pai^{214}	no protoform
thousand	千	t^{h}iaŋ^{24}	t͡ɕjɛn^{35}	no protoform
hard, difficult	难	nan^{55}	nan^{35}	*jak^{D1L}

Table 18: Chinese loanwords in BLN

In XPA, by contrast, working from a virtually identical database of lexical items we have identified significantly fewer Chinese loans. Chinese loans noted to date in XPA are listed in the following table:

English	Chinese	XPA	Mandarin	Proto-Ngwi
candle	蜡烛, 洋蜡	ja^{31}la^{21}	jaŋ^{35}la^{51}	no protoform
elephant	大象	ta^{22}ɕã^{34}	ta^{51}ɕjaŋ^{51}	*ʔ-ya^{3}
socks	袜子	va^{53}tsɨ^{33}	wa^{51}ts̩^{21}	no protoform
flat	平	p^{h}i^{21}	p^{h}iŋ^{25}	*ʔ-bra^{2}
surname	性	ɕi^{22}	ɕjiŋ^{51}	no protoform
sing	唱歌	ʈʂ^{h}a^{44}kɔ^{33}	ʈʂ^{h}aŋ^{55}kə^{51}	*mi^{1} & *ʔka^{3}

[10] Proto-Tai reconstructions are those of Li Fang Kuei (1977) accessed via the Thai Lexicography Resources page of the Center for Computational Linguistics, Bangkok (seasrc.th.net/index.html?main=http%3A//seasrc.th.net/proto/).

[11] The Wenshanhua (the Wenshan county dialect of Southwest Mandarin, 西南官话文山县方言) pronunciation of 'shoes' is [haːi^{33}].

Table 19: Chinese loanwords in XPA

Although /pʰi²¹/ 'flat' may possibly seem to be cognate with Proto-Ngwi *ʔ-bra², it does not follow regular reflex patterns: *a, for example, usually surfaces in XPB as /ɛ/. Thus, the item seems to be a Chinese loan rather than a cognate shared residually by Chinese and Azha from the Sino-Tibetan stage.

5.2 The Challenge of Separating Chinese Loan Words from Proto-Tai Reflexes

Though the following BLN words are similar to the Chinese pronunciation, it is possible that they have developed relatively independently from proto-Tai onward as the BLN pronunciation also appears similar to the proto-Tai reconstructed etymons. Of course, many of these are likely ancient Chinese loans into proto-Tai. Those words for which the current BLN tone reflexes match that expected according to the reconstructed proto-Tai tone category are more likely to have developed from proto-Tai, rather than being more recent loans. Those for which the current tone reflex does not match could be more recent Chinese loanwords, or descendents of proto-Tai which are being conformed to modern Chinese pronunications through on-going Chinese influence.

English	Chinese	BLN	Standard Mandarin	Wenshanhua[12] tone reflex	Proto-Tai	Expected Tonal Reflex for BLN
head	头	tʰu²⁴	tʰɔ³⁵	42	*tʰrue^{A1}	24
buttocks	屁股	ku³³ tɕʰi³³	pʰi⁵¹ku	211	*kuɯn^{C1}	22
pus	脓	nɔːŋ²⁴	nɔŋ³⁵	42	*hnɔŋ^{A1}	24
early	早	tɕou⁵⁵	t͡sau²¹⁴	44	*d͡ʒau^{C2}	55
cat	猫[13]	miau¹¹	mau⁵⁵	55	*mɛu^{A2}	33
medicine	药	ja²⁴	jau⁵¹	211	*ʔjua^{A2}	33
ginger[14]	姜	tɕʰiŋ²⁴	t͡ɕjaŋ⁵⁵	55	*xiŋ^{A1}	24
to chop (meat)	切(肉)	tɕʰiɛn¹¹	t͡ɕʰiɛ⁵¹	211	*tʰram^{C1}	22
bow	弓	kɔːŋ²⁴	kɔŋ⁵⁵	55	*koŋ^{A1}	24
gold	金	tɕim²⁴	t͡ɕin⁵⁵	55	*ɣam^{A2}	33
mortar	臼	tɕuɔk³³	t͡ɕjo⁵¹	211	*gruok^{D2S}	33
needle	针	tɕʰam²⁴	t͡ʂən⁵⁵	55	*khiem^{A1}	24
tax	税	ɕuei¹¹	ɕʷei⁵¹	211	*suai^{B1}	11
bury	埋	mɔk⁵⁵	mai³⁵	42	*hmok^{D1S}	55
yellow	黄	heːn²²	xʷaŋ³⁵	42	*hlɯoŋ^{A1}	24

Table 20: BLN words of unclear origin

A number of lexical items in our data have already been demonstrated elsewhere to be loans from Ancient Chinese into Proto-Tai. These forms, along with their contemporary reflexes in BLN and their Mandarin and Cantonese forms, are listed in Table 21.

[12] Tone patterns of Wenshanhua, the local dialect of Southwest Mandarin spoken in Wenshan county, are from an article in The annals of Wenshan County (WSXZ 1999), author unknown. James Campbell's website (http://www.glossika.com/en/dict/tones/guanhua.htm) has two differing tone values for the Wenshan Mandarin dialect: the YinShang （阴上, 'third tone'）is listed as 53 and the YinQu （阴去， 'fourth tone'）as 11. This may belie the difficulty of describing a non-standardized Chinese dialect. The authors have not personally done any research on Wenshanhua to date. These tones are here presented to help the reader be aware than past and present Chinese tonal influence would most likely not from that of standard Mandarin.

[13] Of course, the similarity between the forms for 'cat' are likely due to onomatopoeia.

[14] Bradley (1979), citing Matisoff (1969b), lists 'ginger' as an area loanword from Chinese.

English	Chinese	Standard Mandarin	Proto-Tai	BLN	Expected Tonal Reflex for BLN
horse	马	ma^{214}	no protoform	ma^{55}	-
chicken	鸡	tɕi^{55}	*kəi^{B1}	tɕei^{11}	11
ride	骑(马)	t͡ɕʰi^{25}	*khu̯i^{B1}	kʰi^{11}	11
wash	洗(手)	ɕi^{214}	*suai^{A2}	θi^{11}	33
name[15]	名字	miŋ^{24}/miŋ^{24}zɿ	*d͡ʒɯ^{B2}	min^{55}tɕɯ^{31}	-
wide	宽	kʰʷan^{55}	*kwaŋ^{C1}	kaŋ^{33}	22
three	三	san^{55}	*sam^{A1}	θam^{24}	24
four	四	sɿ^{51}	*si^{B1}	θi^{11}	11
six	六	ljo^{51}	*xrok^{D1S}	tɕʰɔk^{55}	55
seven	七	t͡ɕʰi^{55}	*t͡ʃet^{D1S}	tɕʰiɛt^{55}	55
eight	八	pa^{55}	*pɛt^{D1L}	piɛt^{11}	11
nine	九	t͡ɕjo^{214}	*ki̯əu^{C1}	kou^{22}	22
ten	十	ʂʅ^{25}	*sip^{D1S}	θip^{55}	55

Table 21. Confirmed Chinese loans in BLN via Proto-Tai

5.3 Areal Loans in Nong Zhuang and Azha Yi

The following words are those which have proto-Ngwi (Bradley 1979) and/or proto-Tai (Li 1977) reconstructions, but show striking similarities to each other and/or to the Sinitic language family (here represented by Cantonese and Mandarin). Lacking a clearer understanding of the history of these words, these items may best be considered areal loans. That is to say, in this set of lexical items, the similarities between the Azha and the Nong of Binglie cannot automatically be attributed to direct contact between these two speech communities.

English Gloss	Chinese Gloss	Proto-Ngwi	XPAzha	Proto-Tai	Expected Tonal Reflex for BLN	BLNong	Standard Mandarin
sand[16]	沙	*say^{2}	lɯ^{44}sa^{44}	*zai^{A2}	33	θaːi^{33}	ʂa^{55}
cloth	布	*pa^{1}	pʰɔ^{21}	*pʰɯa^{C1}	22	pʰaŋ^{24}	pu^{51}
pants	裤子	*ʔ-/k-la^{2}	kɛ^{44}pɛ^{22}	no protoform	-	kʰa^{11}	kʰu^{55} ˈzɿ
ride	骑(马)	*dzi^{2}	tsʌ^{33}	*khu̯i^{B1}	11	kʰi^{11}	t͡ɕʰi^{25}
blanket	被子	*[boɬ]	kʌ^{44}pʉ^{33}	no protoform	-	fa^{33}	pei^{51} zɿ^{21}
tea	茶	*la^{1}	tsʰa^{21}	*tɕa^{A2}	33	tɕa^{33}	t͡ɕa^{31}
thin, flimsy	薄(纸)	*ba^{2} & *C-jok^{L}	pɔ^{22}	*ʔbaŋ^{A1}	24	ʔbaːŋ^{24}	pao^{25}, pɔ^{25}
crooked	曲	*gok^{L}	kʌ^{33}	*gu̯ot^{D2S}	33	kou^{33}	kuk^{55}

Table 22. A Summary of Areal Loans in Nong Zhuang and Azha Yi

Bradley (1979) lists several items as area loan words shared by Tai and Tibeto-Burman languages which have not surfaced as such in the BLN data collected to date. The BLN lexemes appear to have developed from different proto-Tai forms than the areal loans listed by Bradley:

[15] Note BLN pronunciation of 'family name 姓' is /t͡ɕɯ^{31}mou^{33}/, the first syllable likely having developed from the proto-Tai *d͡ʒɯ^{B2}.

[16] Of these items, 'Sand', 'cloth' and 'tea are recognized by Bradley (1979) as area loanwords.

English Gloss	Chinese Gloss	Areal Loan Reconstructed to Proto-Ngwi Stage (Bradley 1979)	XPAzha	Proto-Tai	Expected Tonal Reflex for (BLN)	**BLNong**
tiger	老虎	*k-la^{2}	lʌ^{35}	*sɯa^{A1}	24	**si^{24}**
duck	鸭子	*ʔ-hay^{2} & *ɢapL	ʑɛ^{33}pi^{44}	*pi̯et^{D1S}	55	**pat^{55}**
door	门	*ya^{1}/la^{1} mik^{L} & *k/go$^{2/3}$	la^{33}k^{h}ʉ^{33}	*tu^{A1}	24	**tu^{24}**
round	圆(球形)	*woŋ^{2}	vɛ^{44}	*mon^{A2}	33	**man^{33}**
chili pepper	辣椒	*Cpat^{L}	ts^{h}o^{33}p^{h}ɛ^{21}	*phet^{D1S} = 'spicy'	55	**luk^{31}ʔɯt^{11}**
tomorrow	明天	*ʔ-praŋ^{2}	a^{44}ni^{33}ɕi^{24}	*vruok$^{D2S/D2L}$	33/31	**wan^{33} pɯk^{31}**
straight	直(棍子)	*(C)-dwaŋ^{1} & *te^{2}	tʉ^{33}	*zɯ^{B2}	31	**piau^{24}, θɯ^{31}**

Table 23. BLN words that have not developed from areal loans cited by Bradley (1979)

6. LEXICAL INFLUENCE

Having screened for areal and Chinese loans, the stage is now set for identifying local-level lexical influence between BLN and XPA. Relative to Chinese and areal influence on their respective lexicons, XPA and BLN seem to have had less lexical influence on each other at the local level. The loans that have surfaced in our research thus far between the two, however, are important to note.

6.1 Nong Loans in Azha

As was indicated in Section 5.1, Azha seems to have borrowed less frequently from Chinese than Zhuang. Nevertheless, all observed local level lexical influence between Azha and Nong has gone from Nong to Azha. This latter fact is likely due to sociolinguistic, demographic, and ethnohistorical reasons mentioned in Sections 1 through 3 above. Nong-to-Azha loans that we have noted thus far in our comparative research are listed below:

English	Chinese	Proto-Tai	**BLN**	**XPA**	Proto-Ngwi	Sani Yi[17]
fat (meat)	肥 (肉肥)	*bi	pi^{33}	pʉ$^{4\ 4}$	*tsi^{1}	ts^{h}ʐ̩^{33}
dust	灰尘	*tem + *hmon	na:m^{31} mu$^{5\ 5}$	ny$^{4\ 4}$ my^{33}	no protoform	q^{h}o^{11}ɬɒ^{33}
knee	膝盖	*xou	t^{h}u^{24} k^{h}ou^{11}	pʉ^{35} kɔ^{33}	*du^{3}	pʏ̩^{2}tsʐ̩^{55}
matches	火柴	*vɯən	jaŋ^{33} fat^{33} tɛu^{31}	ja^{21}pa^{21}tʂ^{h}u^{21}	no protoform	m̩^{11}tʏ̩^{55}ts^{h}ɑ^{2}χo^{55}

Table 24. A Summary of Nong Loans in Azha

Most of these lexical comparisons merit a discussion of their own since each case represents a slightly different borrowing process at work diachronically.

The lexeme 肥'fat (meat)' represents a classic loan process in which a morpheme from one language that is clearly cognate with the protoform of its family neatly replaces a phonologically distinct morpheme in a second language. The newly introduced form is then adapted to the phonology of the second language, and slowly takes on a life of its own within the ever-changing sound system of the borrowing language. XPA 灰尘 'dust' /ny^{44}my^{33}/ represents a similar borrowing process.

The Azha lexeme 膝盖'knee' represents another loan process: a native Ngwi morpheme compounded with a Zhuang loan morpheme that is itself part of a compound—only half of which is cognate with the original Proto-Tai etymon. The XPA lexeme /pʉ^{35}kɔ^{33}/ (pronounced [pʉʊʔ^{35}qo̤^{33}]), is evidently a combination of Proto-Ngwi *bay^{1} 'calf (of leg)' and the latter half of the BLN compound for 'knee' /k^{h}ou^{11}/—from Proto-Tai *xou. The semantic reconfiguration of body parts such as

[17] These items are taken from Dai (1992) and are offered in order to provide a comparative context from a nearby Yi language and in order to fill in the gaps in the absence of reconstructed etyma for Proto-Ngwi.

the components of the leg-foot alliance is not unusual in Phula Yi varieties. Seemingly, as noun compounding has became more and more morphologically prevalent (i.e., as these languages have become less and less isolative morphologically), Ngwi language varieties have been left to decide on the two (or three) syllable semantically felicitous combinations they will use to represent body part distinctions. In the process the original single-syllable morpheme is often replaced altogether. In Anipho Phowa, a Phula Yi variety spoken in northern Mengzi County of Honghe Prefecture, for example, 'knee' is now rendered with the compound /tɕʰi^{22}bə^{21}/ in which the first morpheme indicates the 'lower half of the leg-foot alliance' and the second morpheme is used in numerous other compounds indicating smooth, flat, and slightly rounded surfaces such as /ʁo^{33}bə^{21}/ 'tomb', /ʁi^{33}bə^{21}/ 'back of hand', and /n̩^{33}bə^{21}/ 'forehead'. In the case of the XPA half-loan compound, a Nong Zhuang morpheme was chosen instead to form a new lexeme.

Interestingly, the final item in Table 20, 火柴 'matches', seems to be a case of XPA borrowing a BLN lexeme which was already composed of a partial Chinese loan. (The /jaŋ^{33}/ and /ja^{21}/ segments perhaps from洋,'foreign', /jaŋ^{24}/ in Mandarin; the /tɕu^{31}/ and /tʂʰu^{21}/ segments from烛, 'illuminate; candle' /tʂu^{31}/ in Mandarin.)

7. PHONETIC AND PHONOLOGICAL INFLUENCE

Although BLN influence on the XPA lexicon seems to be fairly sparse, XPA phonology shows many more signs of BLN influence.

First of all, the lone nasal final [ɜŋ] noted above to occur in our XPA lexical data on the lexeme [mɜŋ^{24}] 'gong' (铜锣) seems to be the result of phonological influence from BLN. The BLN lexeme /tɕoŋ^{22}lɑ^{33}/ is not likely to be the source for XPA [mɜŋ^{24}] since the Ngwi etymon for this item is reconstructed by Bradley as /*loŋ^{1}/. It would seem, then, that this aberrant Azha final is a direct descendant of the Proto-Ngwi nasal final. Such a scenario is called into question on two accounts, however:

1. No other Proto-Ngwi nasal finals are preserved in this dialect of Azha (cf. *baŋ^{1}→/pu^{33}/ 'deaf'; *m-gaŋ^{1}→/kɯ^{21}/ 'pull'; *woŋ^{2}→/vɛ^{44}/ 'round').
2. Neither are any other Azha varieties known to exhibit a nasal final (or nasalization) on this or other lexemes. Luojiayi Azha, another, reportedly intelligible, Azha variety spoken in Binglie district that has slightly less contact with Nong Zhuang pronounces this 'gong' lexeme with the phonetic shape [ma^{33}].

This item may be of Chinese or areal origin, but, under the circumstances, there seems to be no good explanation for the occurrence of this nasal final in XPA unless we say that the possibility for nasal finals is left open in XPA by phonological influence from BLN which frequently utilizes nasal stops as finals as has been demonstrated in Table 8, Section 4.1.3.

The allophonic variation of XPA /s/ between [s] and [θ] referred to in Section 4.2.2 above is uncharacteristic for Ngwi languages, and offers still further evidence of phonological influence from BLN which (along with some other Southern Zhuang varieties) features the same allophonic variation between the same two segments.

As was mentioned in the phonology sketch above, historically conditioned tense-voice phonation seems have been lost in this variety as a contrastive feature. According to Wu (1996), however, tense voice is still contrastive in Gaodeng Azha. The lexeme 'black' was a checked syllable in Proto-Ngwi: /*C-nak^{H}/; accordingly, in Gaodeng Azha this syllable is pronounced /nę^{33}/ with contrastive tense voice conditioned by the loss of the proto-final proto-stop; in Huangzhai Azha the syllable takes on an analogous nasal quality /nẽ^{33}/ that is also contrastive; but in XPA the syllable is now pronounced as modal voice /nɛ^{33}/. Instead of being lost altogether, however, tense voice phonation has become a suprasegmental feature of two XPA tonemes as described in Section 4.2.4 above. Both the constricted, glottalized high-rising tone /^{35}/ and the laryngealized/nasalized low-falling tone /^{21}/ have incorporated tense voice suprasegmentally even as the feature has lost its contrastive capacity in the phonology—an overall process which can be attributed to extended contact with BLN. BLN neither incorporates phonation phonetically nor phonologically—accounting for the loss of phonation as a phonemic feature in XPA although it is retained in other varieties that have less contact with Zhuang. BLN does, however, incorporate a series of four checked tones, as described in Section 4.1.5, which are likely to have contributed to the re-introduction of the glottal stop finals as a tonal feature on the XPA toneme /^{35}/.

Besides having two phonemic diphthongs, XPA also features a number of other diphthongs that are conditioned by certain environments. These changes were discussed in Sections 4.2.3 and 4.2.4, and include the following diphthongs:

- [øœ]: /œ/ conditioned by initial segments that are [+continuant].
- [ɨɜ]: /ɨ/ conditioned by glottalized tone /^{35}/.
- [ạʌ]: /a/ conditioned by glottalized tone /^{35}/.
- [ɛɪ]: /ɛ/ conditioned by glottalized tone /^{35}/.
- [ʉɞ]: /ʉ/ conditioned by glottalized tone /^{35}/.

These diphthongs, along with the two phonemic diphthongs /iɛ/ and /uɔ/ are illustrated in the following table. Non-phonemic diphthongs are indicated by a dotted line. This illustration also seeks to capture something of the full range of allophony implied by in each phoneme:

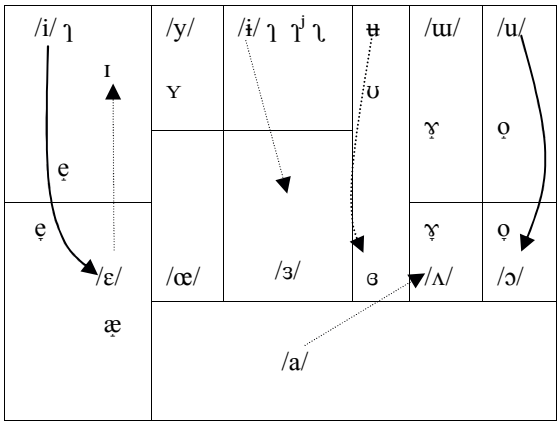

Figure 2. XPA diphthongs and allophonic space

In contrast, Wu (1996) describes only three diphthong possibilities for Gaodeng Azha—[ʉɛ], [ʉɐ] and [ʉɑ]—only the first two of which are phonemic (/uɛ/ and /ua/). The peculiar proliferation of diphthongs in XPA can, once again, be attributed to extended contact with BLN. As can be seen in Table 8, Section 4.1.3 Nong Zhuang utilizes no less than 11 contrastive diphthong/triphthong combinations.

8. CONCLUSION

Enjoying daily contact for centuries, the Xiaopingba Azha and Binglie Nong have influenced each other in many more ways than this preliminary study can characterize, but an initial overview of their interaction has yielded a number of worthwhile linguistic observations. First of all, both have been influenced by areal loans common across language families in the region, but the XPA lexicon exhibits significantly fewer Chinese loans than does Nong Zhuang. On the other hand, XPA has borrowed more lexical items from BLN than BLN has from XPA. BLN's influence over XPA also seems to have had a significant impact on XPA phonology—inducing changes such as an aberrant nasal final in a syllable template that otherwise forbids such phenomena and a number of otherwise odd tonal, suprasegmental, and vocalic variations. Any of these changes would be difficult to account for without a language contact mechanism. On the importance of looking into contact induced changes for responsible diachronic studies, Malcolm D. Ross (1996) makes the following observation:

> Clearly if we apply the comparative method to the data which are amenable to it and leave the rest, we have probably given a very biased account of the prehistory of the languages under study. Indeed, we have left much of their story untold.

Just as the ethno-historical story of Azha Yi cannot be told without reference to the aboriginal Zhuang paddy farmers of Wenshan Prefecture, the phono-historical saga of Azha Yi's development from Proto-Ngwi cannot be understood without reference to the language spoken by these same paddy farmers.

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