Change and Variation in Zhuang

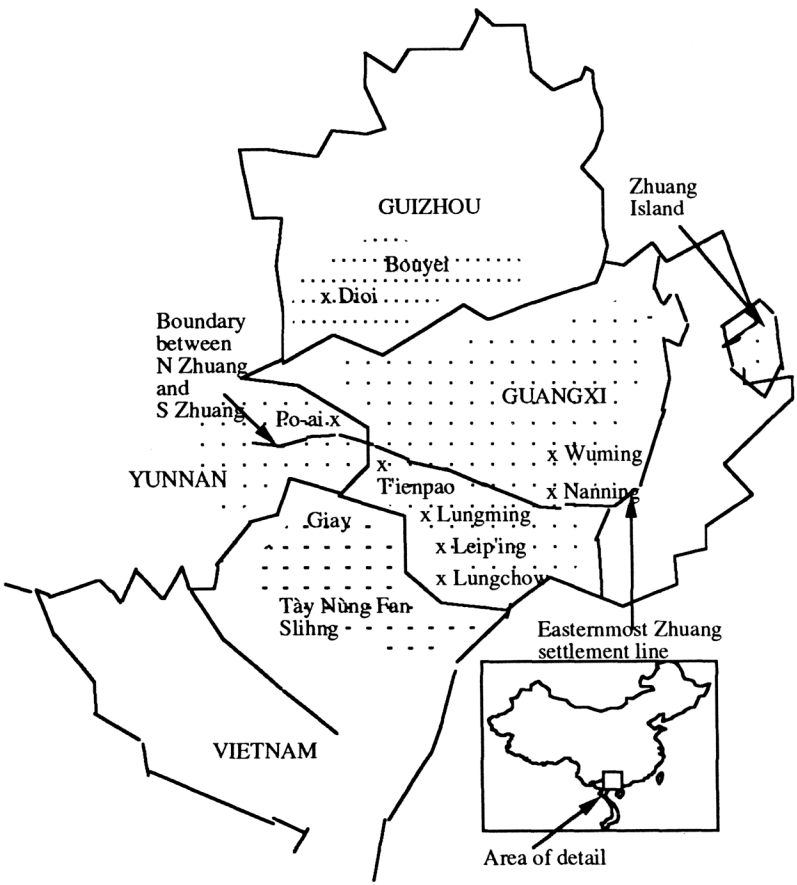
Jerold A. Edmondson
University of Texas at Arlington

1. Introduction. Despite a large population, despite relatively accessible settlement areas on flat land, and despite a sizable urban population, the Zhuang are not well-known even among Tai specialists and other SE Asian cognoscenti.[1] In this paper I wish to speak about this largest and yet least understood cousin of the more familiar languages of SE Asia by discussing aspects of the development and diversity in Zhuang and proposing some rules that have led to that diversity.

The sources for this study are both old and new. An old source, but one largely unknown until now and one from which I have drawn much information is the fieldwork report *Zhuangyu Yinxi* (Zhuang Phonology) 1959, which contains the phonological system for fifty-six kinds of Zhuang. There is also the *Zhuangyu Jianzhi*(Sketch of the Zhuang language) by Wei Qingwen and Qin Guosheng. Also useful has been the extensive field report for Bouyei *Buyiyu Diaocha Baogao* (1958) as well as Yu Cuirong's *Buyi Jianzhi* (Sketch of the Bouyei language). The Jianzhi Sketches for Zhuang and Bouyei are conveniently collected in Wang 1984. I have used Day (1966) for Tày,[2] Vy Thi Bé, Janice E. Saul, and Nancy Freiberger Wilson (1982), Nancy Freiberger and Vy Thị Bé (1976) as well as Janice E. Saul, and Nancy Freiberger Wilson (1980) for Nùng, and the materials in Gedney (1989, 1992a, 1992b) for Bac Va, Leiping, Yay, and Longming. The new sources are my extensive fieldnotes and instrumental recordings and analyses of the speech of Ms. Wei Feng, Zhuang linguist and head of Guangxi Province's Rongshui County Language Committee. I have also recently obtained tape recordings of Nùng Fan Slihng made by Mr. Vang Vang Vy. There are, moreover, two recent accounts of the variation in Zhuang and Bouyei respectively soon to appear in English, Zhang (1991) and Wang (1991).

The Zhuang are the largest minority group in China with a population of about fifteen million. Their home areas are located mostly in the western two-thirds of Guangxi-Zhuang Autonomous Region in South Central China. Although the majority of the Zhuang dwell in Guangxi, there are also a considerable number of Zhuang found in Yunnan Province to

the west of Guangxi along the Vietnamese border in Guangnan, Wenshan, and Qiubei Prefectures. There are also Zhuang living isolated in the far NE of Guangxi astraddle the Guangxi-Guangdong border. Beyond these larger settlements, Zhuang are found in scattered places in Hunan Province at Honghua Yao Autonomous County. Also a few Zhuang immigrated to SE Guizhou about nine generations ago and some other hardy Zhuang settlers are found in the Himalayan Highlands of Muli Tibetan Autonomous County of Sichuan Province. Outside of China there are Zhuang or close relatives of the Zhuang in northern Vietnam.



Map 1: The Zhuang, Bouyei and others

One of the close relatives of the Zhuang are the Tày, who the Vietnamese formerly called Thổ, though this designation is today regarded as pejorative; they are a 1 million strong group with a high degree of bilingualism and of acculturation. Another group are the more culturally and linguistically preservative Tày Nùng (hereafter Nùng) with a population of 700,000.[3] The Tày and the Nùng are found on the left bank of the Red River principally in Cao Bằng, Lạng Sơn, and Hà Giang Provinces across the extreme northeast of Vietnam extending up to the Sino-Vietnamese border. According to Vietnamese sources, the Nùng claim that they are descended of immigrants who left Guangxi or Guangdong some centuries ago, whereas the Tày are thought to have been in Vietnam much earlier. The Giày/Yay (also known as Nhắng, Dàng, Pu Nà) as well as the Bố-Y (or Chủng Chá) of Vietnam are relatively recent arrivals from Guizhou Province. They once were a part of the 2.5 million strong Bouyei, whose language is very closely related to Northern Zhuang.

The Zhuang people do not have a unified way of referring to themselves or to their language and this circumstance has certainly contributed to the confusion about who the Zhuang (Mandarin [tʂuaŋˇ], formerly spelled Chuang) are. Indeed, autonyms used by the Zhuang exceed twenty in number and include: *pou*^{4}*tsuɯŋ*^{6}/*pou*^{4}*ɕuɯŋ*^{6} (Central and Western Guangxi); *pu*^{4}*jai*^{4}=Bouyei (Western Guangxi and Yunnan); *pu*^{4}*noŋ*^{2} (Yunnan Wenshan); *bu*^{6}*dai*^{2} (Yunnan Wenshan, Malipo, Kaiyuan); *pho*^{6}*thai*^{2} (Guangxi Longzhou); *kuɯn*^{2}*tho*^{3} or *pu*^{4}*to*^{3} (Zuojiang); *pou*^{4}*maɯn*^{2} (Guangxi Hechi); *pou*^{4}*baɯn*^{3} ('village people' Guangxi Wuming); and *pou*^{4}*lau*^{2} (Guangxi Fengshan). Beyond these names, the *Zhongguo Da Baike Quanshu* (1986:585) reports the Zhuang in various places also call themselves: Bushuang, Butu (Gentu), Buyang, Buyue, Buna, Nong'an, Bubian, Tulao, Gaolan, Buman, Buming, Bulong, and Budong. The situation has been made more complex still by governmental decisions to group several non-Zhuang peoples, such as the E and Laji (Lachi), with the Zhuang, cf. Edmondson (1991, 1992) and Liang (1990).

The Chinese have generally regarded the Zhuang as being a single ethnic group. The earliest name of the Zhuang (Western Han) is Wuhu 鳥滸. Records of the Eastern Han period (AD 40) refer to the Zhuang as Li with the character 俚. During the

period of the Three Kingdoms they were known as the Lao or Liao 獠 and in the Jin Dynasty they were called the Lang 俍. Finally, in Song times there developed a tradition of referring to them as "Zhuang" and employing for this name the character 僮. This designation was particularly used for the Zhuang of the northern half of Guangxi. In 1965 the Chinese character 僮 was replaced with 壯.

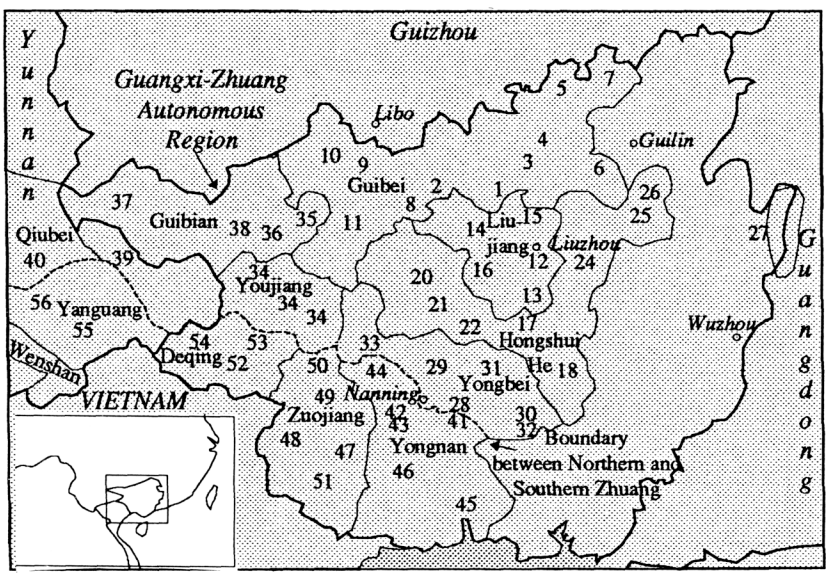
In contrast to the Chinese, Western scholars have rarely employed the name Zhuang to designate these people. The most common appellation for the Zhuang has been "Tai" with an additional qualification involving the place names along the lines, "the Tai dialect at Wuming", cf. Dodd (1923), even though the name "Tai" is not used (except at a very few places) by the Zhuang to refer to themselves. Indeed, Dodd claims that Tai, Dai, or Thai are usual names for the "literate" Tai, such as the Tai Lưu of Xishuang Banna (Sipsong Banna) or the Tai Nüa of Dehong Prefecture in Yunnan Province and those of SE Asia, whereas the "non-literate" Tai of Yunnan, Sichuan, Guangxi, and Guizhou employ a name resembling Jai (Yay) or Lao.

2. The major divisions of Tai. As is well-known, Zhuang is a part of the Tai Stock of languages. Li Fang Kuei (1960, 1977) divided this Stock into three subbranches: *Northern*, *Central*, and *Southwestern.* Haudricourt and Gedney tend to favor a two term system opposing Li's Central and SW (Tai "proper") to Northern Tai. The Southwestern group consists of several relatively well-studied languages such as Thai and Lao as well as Shan, Black and White Tai, and other groups in Vietnam, Myanmar, Laos, and China. The Central Division includes the Southern Zhuang as spoken at Longzhou, the Nùng, and the Tày (Vietnam). In the Northern Tai Branch one finds, aside from Northern Zhuang, E (a newly discovered group of 30,000 in Rongshui County, Guangxi Province, cf. Edmondson 1992), the Bouyei (population 2.5 million), the Yay and Bouyei of northern Vietnam situated between the Western Nùng and Tày, the Po-ai of Yunnan Province, the Saek near Nakhom Panom, Thailand and in Laos just across the Mekhong as well as the Tay Mène and the Tai Yo of Khamouan Province, Laos (Chamberlain 1991).[4] Thus, in some sense the Zhuang speak at least two languages, one belonging to Northern Tai and the other to Central Tai.

Since the Zhuang are so numerous, Zhuang language data

have figured prominently in Tai studies. Li Fang Kuei carried out fieldwork starting in the thirties at several locations: *Wuming*, Lungchow (*Longzhou*), Po-ai (*Pak-Ngai* or *Bo-ai*), T'ienpao, and others. William J. Gedney has also amassed extensive data from Lungming (*Longming*), Leip'ing (*Leiping*), and Giáy (*Yay*). He and Haudricourt have reported as well on *Saek*, a northern Tai language spoken near Nakhom Panom, Thailand and in Laos.

While these valuable materials contain a large amount of vocabulary and texts, there are at present no published translectal studies of Zhuang variation of a type that correspond to the *Buyiyu Diaocha Baogao* (1958). Therefore, because scholars have had data at only isolated points, it has been difficult to judge the degree of diversity among the subgroups of Tai and the family as a whole. Gedney's assessment is that, "Except for such outliers as Saek, the Northern Tai area may well be a single dialect continuum without internal linguistic boundaries." (Gedney 1989:230-1). Nevertheless, the materials to be presented here suggest that Northern Tai in China, though certainly more homogeneous than SW or Central Tai, still possesses subgroupings of a type not classifiable as a single continuum.



Map 2: Vernacular areas and locations in *Zhuangyu Yinxi*

3. The local vernaculars. On the basis of phonological and lexical differences Chinese scholars have established twelve vernacular areas within Zhuang, seven in the north and five in the south (Zhang 1991). The names of these vernacular areas as well as the list of all locations are given in the Appendix in Chinese characters and Hanyu Pinyin romanization.

4. The north-south division. Seven vernacular areas are assigned to Northern Zhuang (NZ) and four vernacular areas belong to Southern Zhuang (SZ). As Map 2 shows, the geographic division between NZ and SZ follows a line that passes from the southeast through Nanning, the provincial capital of Guangxi-Zhuang Autonomous Region and then extends out to the west and north dissecting Guangnan Prefecture in Yunnan Province. About 60% of the Zhuang population live in NZ areas.

The most distinctive linguistic features dividing Northern Zhuang and Southern Zhuang are as follows: (1) Southern forms possess an aspiration contrast, but Northern forms do not possess aspirated initial consonants, e.g., Jingxi *tha*^{1} 'eye' vs. Laibin *ta*^{1}; Longzhou *kha*^{3} 'kill' vs. Wuming *ka*^{3}. (2) Northern forms possess a segment //r// (often realized as [ɣ], though these are not all from a single source in the parent language), whereas in the Southern forms one finds this segment has merged with others and is realized in a variety of ways such as //h khj l n//; (3) there are also additional lectal alternations as follows (N~S): *f~m; p~v, ɯŋ ~aɯ; aːk~ɯːk; aːn~ɯːn.*

There are also a number of diagnostic lexical items that separate Northern Zhuang from Southern Zhuang. *Zhuangyu Jianzhi* (45-6) lists:

Table 1: Distinctive lexical items N Zhuang vs. S Zhuang

Gloss	Northern	Southern
sky	bɯn^{1}	fa^{4}
dry ground	ŋaːm^{6}	tum^{1}
cow	ɕɯ^{2}	mo^{2}
tiger	kuk^{7}	ɬɯ^{1}
butterfly	buŋ^{5}ba^{3}	kap^{7}fɯ^{4}
dragonfly	piːŋ^{2}pei^{6}	fi^{4}
wing	fɯːt^{8}	pik^{7}

horn	kau[1]	koːk[7]
bamboo shoot	ɣaːŋ[2]	ŋo[5]maːi[4]
flax	daːi[3]	paːŋ[5]
head	kjau[3]	hu[1]/bau[3]
cloth	paŋ[2]	phaːi[3]
clothing	pu[6]	ɬɯ[3]
black	lap[7]	dam[1]
blanket	teŋ[2]	fa[2]

Generally speaking, Northern Zhuang also uses a greater number of Han loan words than Southern Zhuang. So, for example, one finds borrowings in northern vocables as compared to native vocabulary in these NZ vs. SZ pairs: *waːn*[3] vs. *tuːi*[4] 'bowl'; *jiŋ*[2] vs. *beː*[3] 'sheep'; *vaː*[1] vs. *bjoːk*[7] 'flower'; *siŋ*[5] vs. *kjoːk*[8] 'last name'.

Despite the evidence for a north-south dichotomy in Zhuang, the division between the two is not so categorical. Some historical sound changes—the pattern of sibilant deflection, e.g., s -> θ -> ɬ—seem to have operated as if there were no boundary between NZ and SZ at all. Haudricourt (1960) and Strecker (1985) also point out that the word for 'tiger' can be either NZ *kok* or SZ *su* in northern Vietnam and unexpected northern-Tai forms for proto-Tai clusters are attested in Cao Bằng Province, Vietnam.

5. Variation as history. This paper is not intended to be a theoretical treatise on the question of language variation. Nevertheless, I do feel the necessity to say something about how variation relates to linguistic history.

From the initial studies of dialect geography in the *Wellentheorie* of Johannes Schmidt of the 19th century and Saussure's conception of variation as *états de langue* down to the work of Labov and especially Charles-James Bailey's Wave Model (1973:65-109), variation has been viewed as a consequence of the historical process. I wish to provide an introduction to some of the terms and ideas of this approach.

In Bailey's Wave Model sound change in its simplest form is assumed to begin at one location, whether started by linguistically internal or external factors, and then spreads out from this origin. The Zhuang data I have access to at present provides information only about the geographic location and

none on the gender, age, social situation, or degree of accommodation to the Han language of the principle language helpers. Thus, a perfect view of Zhuang variation is not yet possible. Beside the problem of the possible hetereogeneity of sampled data, a wavelike propagation in sound change can be perturbed by lectal borrowing, especially if it is recent; these factors must also remain unstudied. Nevertheless, the current data seem adequate to warrant preliminary conclusions.

Bailey assumes the following model of propagation. At Relative time 0 the change has not yet begun; at Relative time i it begins in geographical space at the weakest phonological environment a—the origin; at Relative time ii the change commences in a new location again in the weakest phonological environment (the one most apt to mutate), meanwhile at the origin the change envelopes the next stronger environment b. In this fashion the change spreads across an area but is strongest at the origin. The resulting implicational pattern is illustrated in Figure 1.

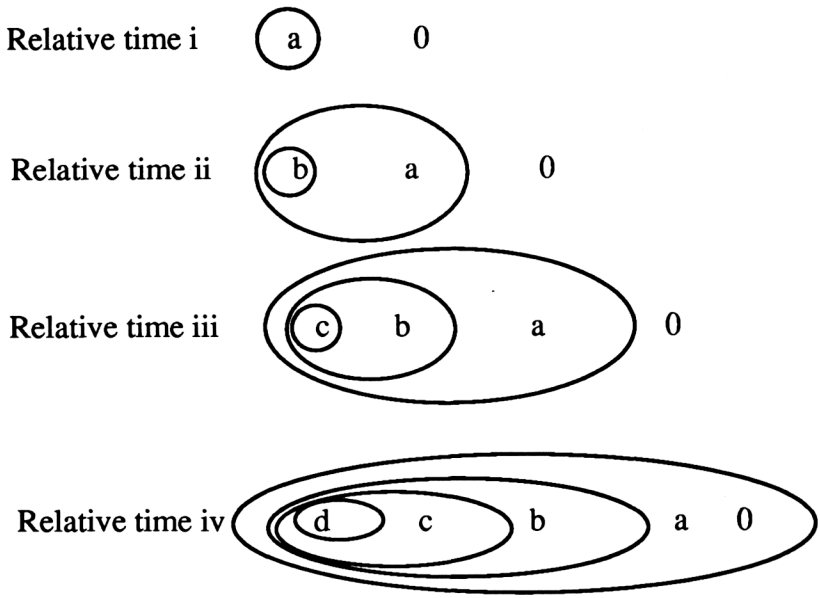


Figure 1: Bailey's Wave Model

Location 1 represents the origin of change. This location is recognizable by the generality of the environment conditioning

the change. Location 5, by contrast, is found in still unaffected territory, as the change has occurred in no linguistic environments as yet. This representation is an idealization to the degree that change often skips over some areas or speakers, who are "out of phase" with the local norms and because there may be perturbing and competing waves that either "bleed" or "feed" a *sound change in its path.*

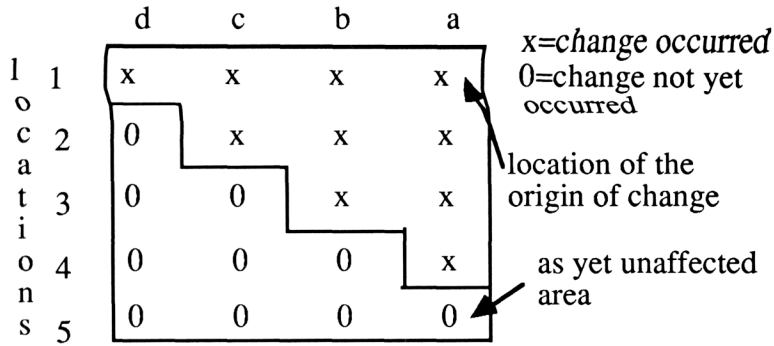


Figure 2: Implicational pattern of the Wave Model

6. Variation in initials. In order to the see the patterns of changes and variation in Zhuang, it is instructive to consider mutations in initial consonants. Because we will be looking at a great deal of data, it is necessary to take examples of sound changes that are fairly well understood. I have selected three particularly transparent changes to examine across the various lects. The three are: (a) *weakening of original clusters*, as in initial pl -> pj/pɣ/pr -> p, cf. *pla*^{1} 'fish'; *plai*^{3} 'walk, to' and (b) the *loss of preglottalized voiced stops*, as in ʔb ʔd -> ʔm ʔn, and (c) *deflection of fricatives*, as in s -> θ -> ɬ.

First consider the declustering process in which phl/pl/ml/kl migrate to their non-clustered counterparts. Table 2 displays a diagram showing the progress of declustering. Note that for Northern Zhuang the areas from Pingguo, Wuming, Hengxian (N), and Binyang are the most conservative; the areas at Guixian, Lipu, Laibin (S), Luzhai, Shilong (Wu), Yangshuo, and Shilong (Xiang) also retain some residue of the original liquid member of the cluster preserved as a velar fricative or //r//. The vast majority of locations, however, have evolved far beyond these stages and show only //p k m//. Moreover, we can also tell that the simplification began in the west and spread wavelike to the

east, leaving a zone of unchanged clusters overlapping NZ and SZ territory including Long'an and Shangsi in SZ and Pingguo, Wuming, and Hengxian in NZ.

Table 2: Lectal continuum of clusters weakening in Zhuang

Northern Zhuang

kjau^{3} rice seedling		pa^{1}	Du'an
kau^{3}		pa^{1}	Yunnan Qiubei
kjau^{3}	mai^{2}	pai^{3}	Mashan
		pek^{7}	Yongning (N)
palatalized consonant or affricate retains residue of original //l//			
tɕau^{3}	nai^{2}	pjai^{3}	Baise
tɕau^{3}	nai^{2}	tɕai^{3}	Tiandong
tɕai^{1}	mjak^{8}	pa^{1}	Tianlin
tɕau^{3}	mjak^{8}		Yunnan Guangnan
tɕau^{3}	mja^{2}	pjai^{3} go	Lingle
tɕau^{3}	mjap^{8}	pjai^{3}	Longlin
palatalized consonant retains residue of the original //l//			
	mjai^{2}	pjek^{7}	Yangshuo
kjau^{3}		pja^{1} fish	Donglan
		pja^{1}	Hechi
kjau^{3}	mja^{2} saliva	pja^{1}	Hengxian (S)
kjoŋ^{1}	mjai^{2}	pja^{1}	Huanjiang
kjai^{5}	mjai^{2}	pja^{1}	Longsheng
kjau^{3}	mjai^{2}	pja^{1}	Rong'an
kjau^{3}	mjai^{2}	pja^{1}	Sanfang
kjau^{3}	mjai^{2}	pja^{1}	Rongshui
kjai^{5}	mjai^{2}	pja^{1}	Sanjiang
kjau^{3}	mjai^{2}	pja^{1}	Xincheng
kjai^{5}	mjai^{2}	pja^{1}	Yongfu
		pjai^{3}	Fengshan
		pjai^{3}	Laibin (N)
kjai^{5}	mjai^{2}	pjai^{3}	Liucheng
kjai^{5}	mjai^{2}		Laibin (N)
	mjai^{2}	pjai^{3}	Liujiang
	mjai^{2}	pjai^{3}	Luocheng
kjai^{5}	mjai^{2}		Hechi
kjau^{3}	mjai^{2}	pjai^{3}	Nandan
kju^{1}	mjai^{2}	pjai^{3}	Shanglin
tɕau^{3}	n-nai^{2}	pjai^{3}	Tianyang
	mjai^{2}	pjai^{3}	Yishan
kjoŋ^{1}	mjai^{4}	pjai^{3} pja^{1}	Tian'e
original //l// retained as //pr mr kr// or velarized consonant			

kɣau^3	mjai^2	pjai^3	Hexian
kru^1	mra^2	prai^3	Guixian
kjau^3	mɣai^2	pɣa^1	Lipu
kɣu^1	mɣa^2	pɣai^3	Laibin (S)
kɣai^5	mɣai^2	pɣai^3	Luzhai
kɣu^1		pɣai^3	Shilong (Wu)
kɣau^3			Yangshuo
kɣai^5	n-nai^2	pɣai^3	Shilong (Xiang)

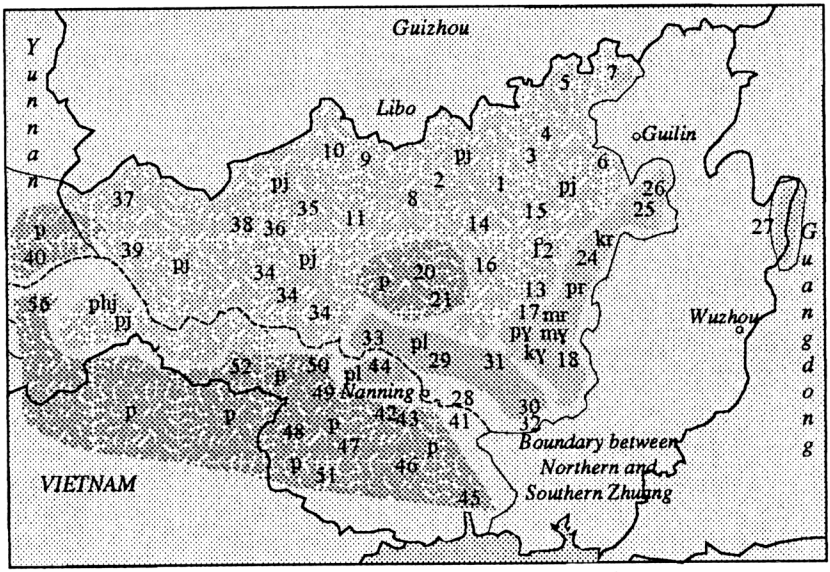
retention of //l// in //pl kl ml//

kjau^3	n-nai^2	plai^3	Pingguo
klou^1	mla^2	pla^1	Binyang
kla^3	mla^2	pla^1	Hengxian (N)
kja^3	mla^2	pla^1	Wuming

Southern Zhuang

		p	Fusui (N)
lup^7(centipede)		p	Qingxian
lau^3		pa^1	Yongning (S)
hai^6	nai^2	pa^1	Nùng Fan Slihng
tʃai^1 far hit^7			
tʃai^5		pa^1	Yanshan
ku^1		ping^1	Fusui (C)
ka^1			Fusui (N)
tshai^5/tsa^3		pja^1	Yunnan Guang (S)
ky^1 kja^3		phjek^7	Debao
khjai^6			
kja^3	mjak^8	phlai^3	Shangsi
ku^1 khjai^5	mjak^8	phlai^3	Ningming
	mja^2		Fengshan
khjau^1		pja^1	Jingxi
hlau^3 kju^1		pla^1	Long'an

From there, the line of change-resistant areas extends to the NE falling to the east of Liuzhou. The far west of both SZ and NZ territory is the most advanced in the change showing only a plain stop //p k// or //m n// in many cases. Variably, the softened //l// has palatalized the preceding stop to //tɕ//; indeed, both //pl kl// can yield this affricate.



Map 3: Geographic variation of declustering in Zhuang

This distribution can be put into lectal continuum perspective as follows:

THE LECTAL CONTINUUM OF DECLUSTERING

	cluster	velar sulcal	weakening pj mj kj	complete p m k declustering
Du'an Yunnan Qiubei Mashan				pa1 ka3 ma:i2 ta1 ka3 na:i2
everywhere else			pja1 kja3 mja:i2	
Hexian Guixian Lipu Shilong Laibin (S) Luzhai Yangshuo		py/ra ky/ra my/ra:i		
Pingguo Binyang Hengxian (N) Wuming	pla1 kla3 mla:i2		NORTHERN ZHUANG	
Long'an Shangsi	pla1 kju1 hlau phlai3		SOUTHERN ZHUANG	
Ningming Debao Yunnan Guang (S)			pja1 phjek7 kja3	
Yongning (S) Fusui Yanshan Nung Fan Slihng				pa1 nai2 kuu1

Figure 3: Implicational hierarchy of declustering

In the southern Zhuang area one can detect a direction of change from the south to the north. For instance, in Nùng Fan Slihng of northern Vietnam only the bare stops //p m/n k// remain as vestiges of the original cluster, whereby m/n arises from ml by means of the following sequence of changes, ml -> mj -> {m, nj -> n}. At the other end of the spectrum in Long'an, the fully clustered form is found. On balance, the rule of cluster simplification in SZ is more advanced than in NZ, since it is only in the area of Long'an and Shangsi that //pl kl// are retained; the cluster //ml// is not recorded in the *Zhuangyu Yinxi* at any SZ location.

Let us now take up the anatomy of the second sound change, preglottalized voiced stops become nasals.[5] I have listed the reflexes of the original preglottalized stops in Zhuang for each of the regions.

Table 3: Table of preglottalized voiced stops

Loc	*Northern Zhuang ʔb*	*ʔd*	*ʔ*
3	Sanfang	ʔba1 harrow	ʔda1 back bag	
18	Laibin (S)	ʔba5 shoulder	ʔdi1 good	ʔau1 want
31	Hengxian (N)	ʔba:n3 village	ʔda:ŋ1 body	ʔai1 cough
13	Liujiang	ʔba:n3 village	ʔdi1 good	ʔau1 want
14	Laibin (N)	ʔba:n3 village	ʔdi1 good	ʔau1 want
34	Tiandong	ʔba:n4 village	ʔdo:k7 bone	ʔai1 cough
34	Tianyang	ʔba:n4 village	ʔdo:k7 bone	ʔai1 cough
35	Baise	ʔba:n4 village	ʔdo:k7 bone	ʔai1 cough
1	Luocheng	ʔba:ŋ1 thin	ʔdi1 good	ʔau1 want
15	Yishan	ʔba:ŋ1 thin	ʔdi1 good	ʔau1 want
16	Liucheng	ʔba:ŋ1 thin	ʔdi1 good	ʔau1 want
17	*Xincheng*	*ʔba:ŋ1 thin*	*ʔdi1 good*	*ʔau1 want*
20	Shilong (Wu)	ʔba:ŋ1 thin	ʔdi1 good	ʔau1 want
21	Du'an	ʔba:ŋ1 thin	ʔdi1 good	ʔau1 want
23	Shanglin	ʔba:ŋ1 thin	ʔda:ŋ1 body	ʔau1 want
24	Shilong (Xiang)	ʔba:ŋ1 thin	ʔdi1 good	ʔau1 want
32	Binyang	ʔba:ŋ1 thin	ʔda5 scold	ʔau1 want
19	Guixian	ʔbau1 light wt	ʔdiu1 awake	ʔau1 want
12	Donglan	ʔbaɯ1 leaf	ʔdiŋ1 read	ʔau1 want
41	Yunnan Qiubei	ʔbaɯ1 leaf	ʔda5 scold	ʔau1 want
25	Luzhai	ʔbei1	ʔda5 scold	ʔek7 hungry
4	Rongshui	ʔbi1	ʔdə1 inside	ʔai1 cough
2	Huanjiang	ʔbin1 fly	ʔda:i3 flax	ʔau4 rice
9	Hechi	ʔbin1 fly	ʔda5 scold, to	ʔoi3 sugarcane

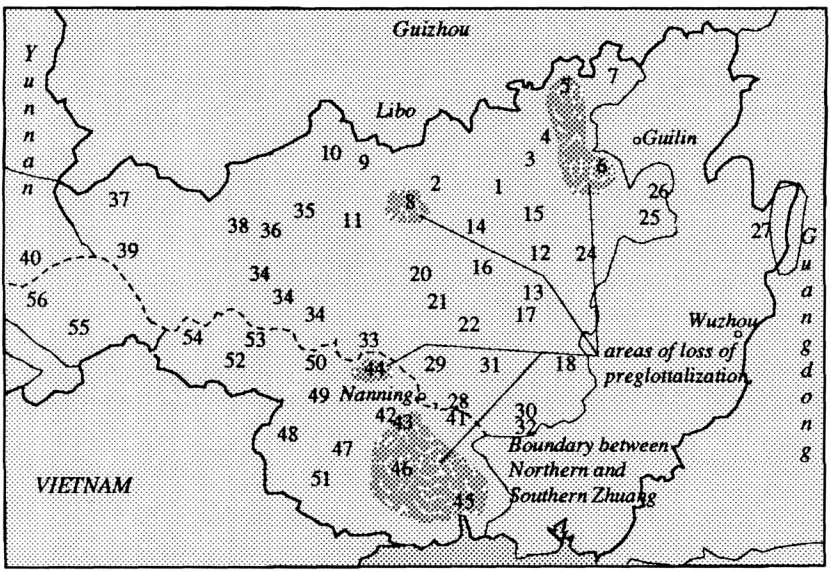
10	Nandan	ʔbin1 fly	ʔdi1 good	ʔau1 want
22	Mashan	ʔbin1 fly	ʔdai3 gain	ʔai5 gizzard
27	Yangshuo	ʔbin1 fly	ʔdiŋ1 red	ʔau1 want
40	Guangnan (N)	ʔbin1 fly	ʔda:i4 hemp	ʔau1 want
7	Yongfu	ʔbo5 well		ʔa1 crow
26	Lipu	ʔbo5 well	ʔdo:ŋ3 hard	ʔoi3 sugarcane
28	Hexian	ʔbo5 well	ʔdiŋ1 red	ʔau1 want
30	Wuming	ʔb. 5 well	ʔdi1 good	ʔau1 want
11	Tian'e	ʔbo6 well	ʔdi1 good	ʔam6 carry
34	Pingguo	ʔbou5 NEG	ʔda5 scold	ʔai1 cough
36	Fengshan	ʔbɯn1 day	ʔdai4 obtain	ʔum4 embrace
37	Lingle	ʔbɯn1 day	ʔdi1 good	ʔau1 want
38	Longlin	ʔbɯn1 day	ʔdi1 good	ʔe4 excrement
39	Tianlin	ʔbe:ŋ1 thin	ʔdi1 good	ʔau1 want
5	Rong'an			ʔuk7 brain
6	Sanjiang	area of loss of preglottalized stops		ʔau1 want
8	Longsheng			ʔai1 gizzard
29	Yongning (N)			ʔau1 want
33	Hengxian (S)			ʔau1 want

Southern Zhuang

Tày Lang Sơn		ʔba:ɯ1 leaf	ʔdəi1 good	ʔim5 full
53	Jingxi	ʔbau1 light	ʔdai3 gain	ʔau1 want
55	Debao	ʔbau1 light	ʔda6 scold	ʔoi3 sugarcane
Nùng Fan Slihng		ʔba1 light	ʔda6 scold	ʔai1 cough
56	Mubian	ʔbaɯ1 leaf	ʔdai1 good	ʔau1 want
42	Yongning (S)	ʔbo5 well	ʔdo:k7 bone	
52	Ningming	ʔbo5 well	ʔda5 scold	ʔai1 cough
51	Tiandeng	ʔbɛn1 fly	ʔda5 scold	ʔe:m3 embrace
58	Yanshan	ʔbən1 fly	ʔdaɯ1 meat	ʔau1 want
57	YGuangnan (S)	ʔda:ŋ1 thin	ʔdi	ʔum3 embrace
43	Fusui (Central)			ʔau1 want
44	Fusui (N)	area of loss of preglottalized stops		ʔau1 want
45	Long'an			ʔau1 want
46	Qinxian			ʔau1 want

As is evident from this table, preglottalized voiced stops are retained in Zhuang at virtually every location, mutating at only a few places. This change appears to have originated in just a few isolated regions, one is in the far NE around Sanjiang in NZ territory; another region is just to the west of Nanning in SZ territory. These two processes—for all their similarity—are quite dissimilar in regard to motivation; as will become evident

below, the loss of preglottalized stops is SZ is a concomitant of creating new tones; whereas the loss of preglottalization in NZ does not involve other parts of the phonological system.



Map 4: Geographic variation of loss of preglottalized voiced stops

The third rule I wish to discuss is the deflection of fricative airstream s -> θ -> ɬ. This transformation involves raising the tongue tip and widening the tongue groove from the narrow groove position of //s// to give //θ// and finally in the change of //θ// to //ɬ// pressing the body of the tongue so firmly against the palate that the air exits along the sides of the tongue as a voiceless lateral. There is no agreement as yet about what phonological features are changing in this process.

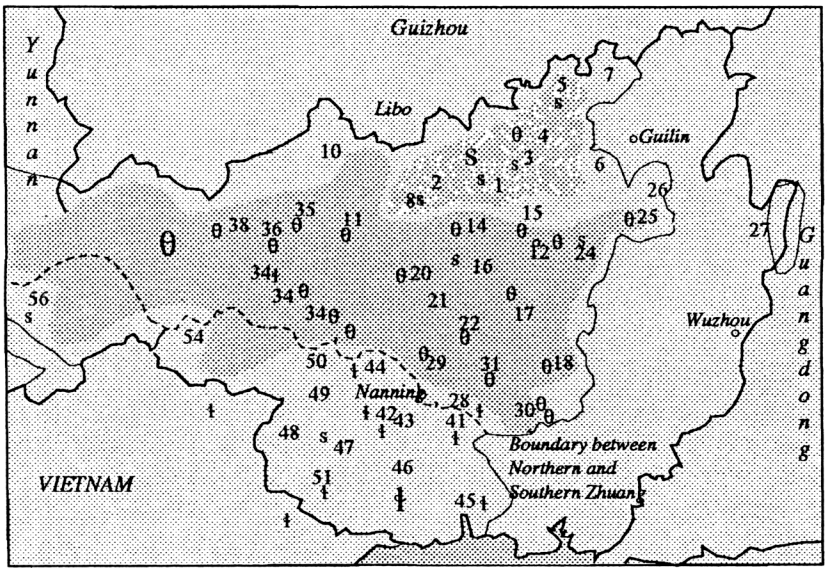
Table 4 illustrates the progress of this change.

Table 4: Deflection of fricatives

Sanfang	sa1 paper
Yunnan Guangnan (S)	sa:i4 left
Yangshuo	sa:m1 three
Hexian	sa:m1 three

Laibin (S)	sa:ŋ1 tall
Longsheng	sa:ŋ1 tall
Mashan	sai3 intestine
Huanjiang	saɯ2 cow
Tian'e	se1 west
Xincheng	sim1 heart
Shilong (Xiang)	sim1 heart
Luocheng	sim1 heart
Shilong (Wu)	sim1 heart
Luzhai	sip8 ten
Rongshui	so6 straight
Hechi	soi6 repair, to
Shangsi	soy1 poem
Sanjiang	su6 rice porridge
Yanshan	sɯ3 clothing
Yongning (S)	ɬa:m1 three
Long'an	ɬa:m1 three
Baise	ɬa:m1 three
Fusui (Central)	ɬa:m1 three
Yongning (N)	ɬa:ŋ1 tall
Tày Lạng Sơn	ɬip7 seven
Nùng Fan Slihng	ɬo:ŋ1 two
Fusui (N)	ɬu:i6 left
Guangdong Qinxian	ɬu:n5 garlic
Ningming	ɬɯ1 tiger
Longlin	θa1 paper
Yunnan Guangnan (N)	θa1 paper
Rong'an	θa1 sand
Jingxi	θa:m1 three
Hengxian (N)	θa:m1 three
Tiandong	θa:m1 three
Tianyang	θa:m1 three
Nandan	θa:m1 three
Yishan	θa:ŋ1 tall
Lingle	θa:ŋ1 tall
Yunnan Qiubei	θai3 intestine
Donglan	θaŋ5 blow nose
Guixian	θe:m3 sour
Shanglin	θim1 heart
Liucheng	θim1 heart
Liujiang	θim1 heart
Du'an	θim1 heart
Laibin (N)	θim1 heart
Binyang	θo6 straight

Wuming	θø6 straight
Pingguo	θo:ŋ1 two
Debao	θo:ŋ1 two
Hengxian (S)	θou1 you
Lipu	θu:n1 garden
Tianlin	θu:ŋ1 case
Tiandeng	θɯ1 tiger
Mubian	θɯ3 clothing
Fengshan	θəm1 heart



Map 5: Geographic variation of deflection in Zhuang

It is clear from Map 5 that this change is relatively advanced in NZ except for the extreme NE, which retains the original //s//; the SW is more developed still. Indeed, a relatively clear pattern of change emerges that shows deflection beginning in the south and propagating to the north. It has been suggested by Haudricourt (1960) and David Solnit (p.c.) that this change was initiated by contact with Cantonese, since the Cantonese spoken in the Sino-Vietnamese borderlands and in northern Vietnam shows some signs of fricative deflection, especially when //s// is followed by the vowel //a//. Whether a borrowing or not, it is quite significant that isoglosses do not correspond

to the NZ-SZ division in Zhuang, suggesting just as in the case of declustering that a north-south division is a too simplified picture of Zhuang linguistic history.

7. The panlectal tonology of Zhuang: themes and variations. Zhuang tones have figured prominently in the analysis of Tai languages, cf. especially Li Fang Kuei's *Handbook* (1977). Indeed, tonal variation from place to place is one of the most distinctive of Tai characteristics and Zhuang certainly proves itself to be one of the family. Some of the most elaborate kinds of tone splitting found anywhere in Asia are exemplified in Zhuang. I will structure this section by speaking of the general tendencies of the vernacular areas and then also point some of the special features found at individual sites.

If there is a theme about the tonology of northern Zhuang it is *paradigmatic tone splitting according to the voiced-low principle,* which basically states that original voiced initial consonants conditioned low tones and original voiceless initial consonants conditioned high tones; at a later time the voicing difference of initial consonants was replaced by a difference in pitch trajectory. This situation is sometimes obscured by subsequent tonal flip-flop of highs and lows, as is especially characteristic for SW Tai. In the vast majority of Zhuang lects north and south, however, the historically high tone set generally possesses a higher pitch than the historically low tone set, i.e., there has been no tonal flip-flop. Nevertheless, there is a slight tendency to tone reversal in the extreme southwestern locations (49, 53-56). These places are found in sites geographically closest to areas where Central and SW Tai languages are spoken, such as those of Vietnam, Laos, and the Dai Lu languages of Yunnan.

William J. Gedney and Li Fang Kuei have shown in a large number of Tai languages that there exists a relationship between types of initial consonants and tones more complex than that predicted merely by the voiced-low principle. In fact, Gedney has developed a checklist of lexical items that reveals the way each proto-Tai consonant is mapped onto the tone system of any modern daughter language. The proto-tones are called A, B, C, DS, and DL (where DS and DL stand for items in dead or CVC syllables and S means short vowel and L means long vowel nucleii, cf. Gedney 1972.) As for the

consonants, *1* refers to the "voiceless friction consonants" such as aspirated stops and voiceless continuants //ph th kh m̥ n̥ ŋ̊ h s f//. The number 2 refers to voiceless stop initial consonants such as //p t k//; *3* refers to the preglottalized consonants //ʔb ʔb ʔj ʔ//, and finally *4* stands for the original voiced consonants such as //b d g m n ŋ l r//, some of which are voiceless today. Those Tai proto-language syllables possessing an original consonant of category *4* developed tones belonging to the low set, indicated in the Chinese notation with even tone numbers, i.e., 2, 4, 6, or 8. Syllables with original consonant initials *1-3* produced reflexes with tones belonging to the high set, indicated in the Chinese notation with odd tone numbers, i.e., 1, 3, 5, or 7. Therefore, two tones are present in daughter languages today where once there was only one. Thus, A -> 1, 2; B -> 5, 6; C -> 3, 4; DS -> 7, 8; and DL -> 7, 8 (vowel length distinguishes these from DS). I will begin with a discussion of the northern Zhuang situation. Bipartition is the commonest scenario, but there are also instances of tripartition or even of quadripartition (Haudricourt 1961). A prime mark is used to signify these cases.

7.1. Northern Zhuang tonal development. Northern Zhuang tone systems are generally very close to the paradigmatic 5X2 profile that results from splitting according to the Voiced-Low Principle (Brown 1975) having the top three boxes in each column in the high tone category and bottom box in the low tone category. This standard system, which I will call Type 1 is found at very many NZ locations.

Type 1 Pure voiced-low splitting exceptionless at points (4-8, 12-22, 24-33), represented by Yongfu.

	A	B	C	DS	DL
1	na1	kjai5	na3 face	lok7 water wheel	ke:k7 guest
2	kun1 eat	kai5 chicken	tin3 short	pit7 duck	pa:k 100
3	?bin1 fly	?bo5 well	?oi3 sugar-cane	lip7 raw < ?d	
4	na2	ta6	hai4 ram4 water	mit8	na:k8 otter

Figure 4: Northern Zhuang paradigmatic tone splitting, illustrated at Yongfu (6)

Type 2 Type 2 has voiced-low splitting where, generally, category *3* consonants produce high tone reflexes, but there are a few lexical items in these locations in which preglottalized initials yielding low consonants. These are found at points (1-3):

1. Luocheng-ʔdem^{6} 'flush'; ʔbjoŋ^{6} 'midnight'; ʔbja^{6} 'sorcery'.
2. Huanjiang-ʔdon^{6} 'half'; ʔdwan^{2} 'swallow'.
3. Rongshui-ʔgep^{8} 'bite'; ʔgjak^{8} 'rope'.

Type 3 In this system voiced-low splitting occurs—with the exception of syllables possessing original preglottalized initials in tone C, which were assigned to the low tone category, a situation found at points (9), (39), and (40). This division corresponds to the Bouyei system of Guizhou Province and also the system Gedney found for Yay. At point (34) Tiandong, Tianyang, and Baise Tone C splits similarly but there is also some splitting of DL.[6]

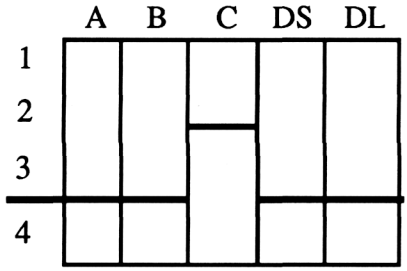
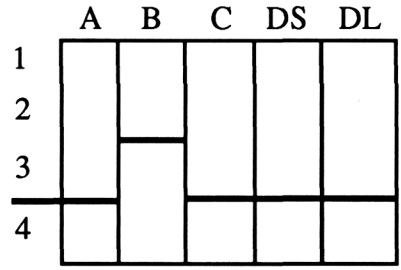


Figure 5: Northern Zhuang tone splitting C3 in the low set

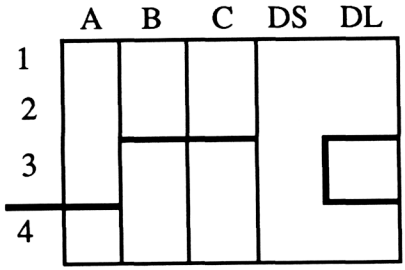
Type 4 In this location there is voiced-low splitting except that syllables with original preglottalized initials in tone B were assigned to the low tone category, as is found at point 10, Tian'e:



10 ʔbo^{6} 'well, spring'; ʔba^{6} 'shoulder'; ʔdiŋ^{6} 'pour water'

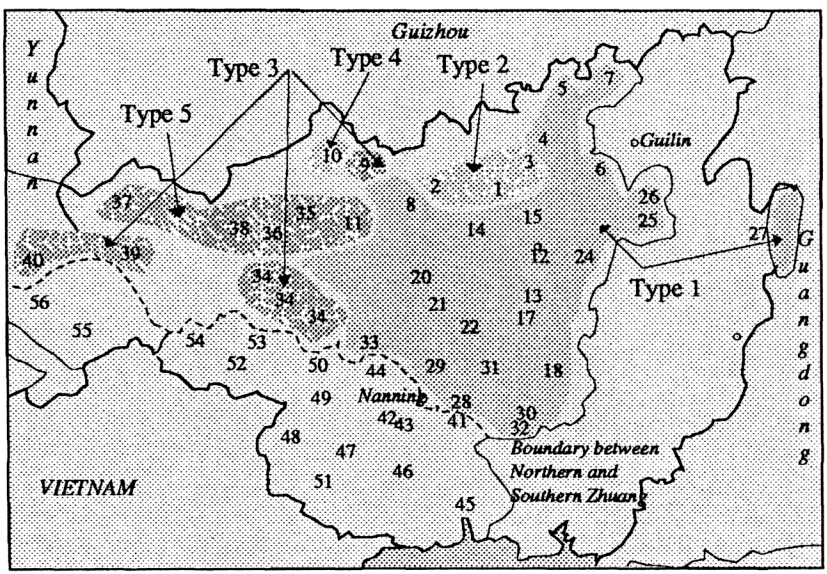
Figure 6: Northern Zhuang tone splitting with B3 low

Type 5 This location has voiced-low splitting except that syllables with original preglottalized initials in two or more original tone categories also go with the low set. In this group are (11) Donglan, (35) Fengshan, (38) Tianlin. In the locations (36) Lingle and (37) Longlin there is additional splitting but the currently available data is not sufficient to determined the conditions. Below I have given the Gedney chart for the location (35) Fengshan.



ʔba^{6} 'shoulder'; ʔdei^{4} 'can'; ʔda^{6} 'scold'
ʔba:t$^{8'}$ 'classifier for times'; ʔja:k$^{8'}$ 'hungry'; ʔdok$^{8'}$ 'bone'

Figure 7: Northern Zhuang with B3 and C3 low



Map 6: Northern Zhuang panlectal tone splitting

In northern Zhuang the relative insignificance of aspiration as a feature of initial consonants and, consequently, tone splitting is striking. Voiceless friction sounds may once have existed in NZ. If so, then the loss of aspiration as a contrastive feature must have occurred so early that it is not associated with tone

development. This set of circumstances suggests that aspiration disappeared in NZ before splitting began. By contrast, voicing as a feature in creating tones plays it usual role. There is also strong preservation of preglottalized consonants in NZ.

We can represent the translectal tone splitting of NZ as follows:

	asp	pregD&B&C	pregB/C	voiced
no	x	x	x	x
11, 35-38	0	x	x	x
10&9, 39, 40	0	0	x	x
4-8, 12-22, 24-33	0	0	0	x

Figure 8: Implicational hierarchy of tone splitting in NZ

Figure 8 expresses the translectal pattern of tone splitting in northern Zhuang. As is also evident, locations 35-40 show a spread of tonogenesis beyond that resulting from original voiced initial consonants. These areas include: Fengshan, Lingle, Longlin, Tianlin, Guangnan (N), and Yunnan Qiubei—the extreme west and plateau highlands of northern Zhuang territory. Note, furthermore, that the A tone demonstrates no secondary changes, as opposed to the situation in SZ to be described below.

7.2. Southern Zhuang tonal development. The situation of tonal development in southern Zhuang is generally far more diverse and complex than in NZ. If one can say that the theme of tone splitting in NZ is *voiced-low with variations of preglottalized B and C* going with the low, then the theme in SZ is *voiced-low with additional changes in the A tone.* Indeed, Gedney (1989) points to this development as being the paramount distinguishing feature between the Central Tai and the Northern Tai branches. Nevertheless, it is important not to ignore the voiced-low splitting. Indeed, the best known example of southern Zhuang, Longzhou, is of the paradigmatic type. Also in this category are Yanshan, Guangnan (S), Fusui (C), Ningming, Qinxian, Jingxi, as well as the language called Tày just across the border in northern Vietnam. But, in areas extending from

Yongning South and to the west and northwest of Nanning at Fusui (N) and Long'an, as well as the Nùng Fan Slihng of northern Vietnam one finds much more pronounced tone splitting than anywhere else in Zhuang territory. In regard to the factors that condition additional tone splitting, they extend beyond that occasioned by original voiced consonants; in fact, the following all appear to be important: (a) [±aspiration]; (b) [±preglottalization]; (c) [±continuant] or [±sonorant] (smooth consonants do not behave the same as those with turbulent airflow); (d) vowel length; and (e) Han borrowings vs. native Zhuang vocabulary. Furthermore, splitting in dead syllables (DS and DL) in SZ seems more prone to innovate than splitting in live syllables. Another dramatic difference divides the innovative and tonogenetically active kinds of SZ from the more conservative kinds of SZ and most of NZ. That difference involves the splitting of the A tone. Generally speaking, NZ splits the A tone only along the original [±voice] feature. In SZ there are also many more instances of tonal merger; distinctions that once existed have now converged.

Let us consider a SZ example of paradigmatic voiced-low tone splitting. Since Longzhou is well known from the work of Li Fang Kuei, I have chosen another location, Guangnan (S).

	A	B	C	DS	DL
1	ma1 dog na1 thick	ma5 soak	ma3 grow na3 face		mak7 fruit
2	pa1 fish	kjai5 chicken	tau3 come	tap7 liver	pak7 mouth
3	?di1 gallb ?dai good	?ba5 shoulder	ba:n3 village	?dip7 raw	?dat7 scald
4	na2 field	ta6 river	ma4 horse ha4 talk	mak8 ink	mak8 class knives

Figure 9: Tone splits at Guangnan (S)

Next consider Daxin. In this location, there is a tripartition

(perhaps two bipartitions) of the A tone with voiceless friction initials yielding the highest pitch trajectories, voiceless stops and preglottalized consonants yielding slightly lower pitch trajectories, and original voiced consonants giving the lowest. Consider the following comparative data from Wuming and Daxin in which I give only two of the three categories of A tone vocabulary. Daxin 1' tone has a value 55; Daxin 1 tone has a value 53; and Daxin 2 tone (not given here) has a value 21.

Gloss	Wuming	Daxin
go, to	pai^{1}	pai$^{1'}$
year	pi^{1}	pi$^{1'}$
thin	bau^{1}	ʔbau$^{1'}$
door	tou^{1}	tu$^{1'}$
light weight	ʔdəŋ^{1}	ʔdɯ$^{1'}$
gallbladder	ʔbei^{1}	ʔdi$^{1'}$
good	ʔdei^{1}	ʔdei$^{1'}$
nose	ʔdəŋ^{1}	ʔdəŋ$^{1'}$
fish	pja^{1}	pja$^{1'}$
house	kja^{1}	kja$^{1'}$
pig	mou^{1}	mu^{1}
thick	na^{1}	na^{1}
flow, to	lai^{1}	lai^{1}
much	laːi^{1}	laːi^{1}
three	saːm^{1}	saːm^{1}
lift, to	raːm^{1}	haːm^{1}
die, to	taːi^{1}	haːi^{1}
thread	mai^{1}	mai^{1}
clear water	saɯ^{1}	saɯ^{1}
see, to	ran^{1}	han^{1}
leg	ka^{1}	kha^{1}

The Gedney diagram for Daxin is given in Figure 10.

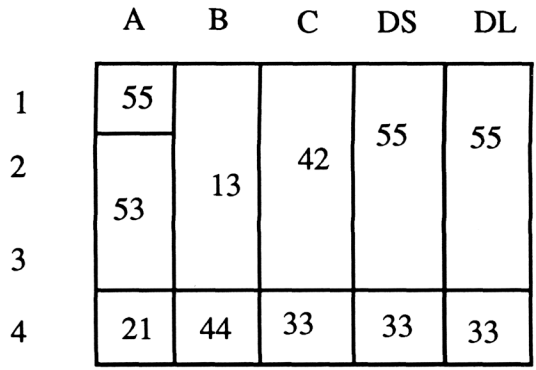


Figure 10: Tone splits at Daxin

Unlike Daxin, where preglottalization and plain stops ally, at Yongning (S) preglottalization diverges from all other consonant initial types; these form a separate tone category not equal in pitch value to either that of the voiceless friction initials nor original voiced consonants, cf. Figure 11. The preglottalized initials and not the aspirated stop initials of the A tone category show lowered onset; the aspirated initials associate to the unaspirated stop initials in regard to tone category. Therefore, *dwaŋ*$^{1'}$ 'rest, to'; *dei*$^{1'}$ 'good'; *bwau*$^{1'}$ light weight'; *ʔbei*$^{1'}$ 'gallbladder' (354) do not have the same value as *ma*^{1} 'dog'; *va*^{1} 'flower'; *pai*^{1} 'go, to'; *mai*^{1} 'thread'; *tha*^{1} 'eye'; *hoi*^{1} 'open' (53) or *na*^{2} 'ricefield'; *lwau*^{2} 'lard'; *lau*^{2} 'we'; *jou*^{2} 'oil' (33). The B tone splits paradigmatically: *thɔ*^{5} 'rabbit'; *mo*^{5} 'new'; *tam*^{5} 'short'; *ʔbɔ*^{5} 'spring, well' (213) vs. *wa*^{6} 'talk'; *mwan*^{6} '10,000' (21). In the C tone there is a unified voiced and preglottalized category for tones *ʔbwaːn*^{4} 'village'; *ʔduŋ*^{4} 'belly'; *mwa*^{4} 'horse' (35) opposed by *phi*^{3} 'cloud'; *haːi*^{3} 'give, to'; *pɛn*^{3} 'board'. The dead tones DS and DL show quadripartition, giving a total of eight categories. In DS one finds: *tap*^{7} 'liver'; *pak*^{7} 'north' (55) vs. *lek*$^{7'}$ 'vomit, to'; *net*$^{7'}$ 'ice' (21) vs. *nok*$^{8'}$ 'bird' *mak*$^{8'}$ 'ink' (33) vs. *lik*^{8} 'child' (35). In DL one finds: *maːk*^{7} 'fruit'; *paːk*^{7} 'mouth'; *thaːp*^{7} 'carry on a pole, to' (213) vs. *saːt*$^{7'}$'play, to' (55) vs. *mak*^{8} 'classifier for knives' (35) vs. *haːk*$^{8'}$ 'study, to' (21). The mechanism for the development of a four term system is unknown.

	A	B	C	DS	DL
1	ma1 dog wa1 flower tha1' eye 53	thø5 rabbit mo5 new 213	ha:i3 give 55	phak7 vegetable hat7 early	ma:k7 fruit 55
2	pai1 go	tam5 short	tau3 come	tap7 liver 55	pa:k7 mouth ?do:k7 bone
3	?dei1 good ?bei1 gall- bladder 354	?bo5 spring	?bwa:n4 village ?dwai4 obtain	nek7' cold lek7' vomit 21	ha:k8' study 21 ho:p8' suitable
4	nwa2 field va:i2 buffalo 33	wa6 talk 21	mwa4 horse 35	lik8 child 33 nok8' bird 35	ma:k8 class for knives mwa:t8 socks 35

Figure 11: Tone splits at Yongnan (S)

The next situation, Fusui, involves tone splitting of a type that I will call *tone vaulting*, because syllables with aspirated stop initials jump over the intervening voiceless stops to fuse with the preglottalized series. The combined series shows a lowered onset in pitch trajectory, i.e., 35 in comparison to 55 for the aspirated continuant and plain stop series. Not coincidentally, the dead tones (DS and DL) show a parallel development with both DS and DL categories joining with the DS preglottalized initials to form a category with a value 33, as opposed to 55. It is quite significant that [+continuant] consonants and [-continuant] consonants in Tone A behave differently in tonogenesis.

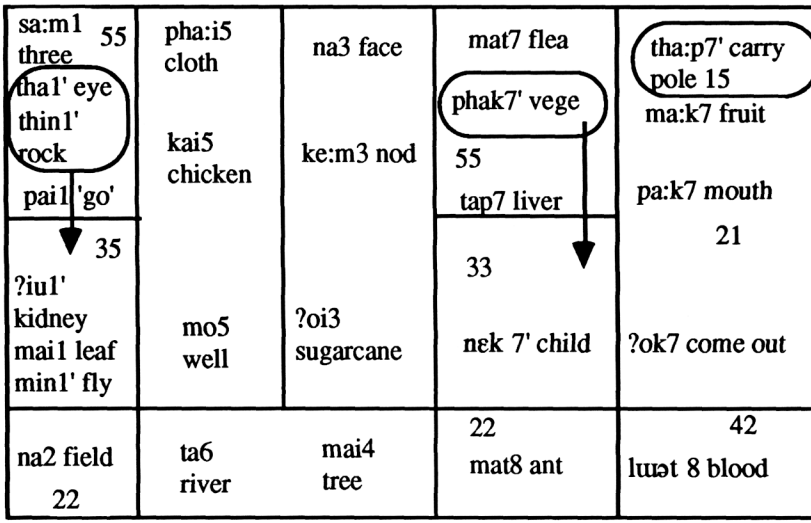


Figure 12: Tone splitting at Fusui

As Figure 12 shows, in Fusui North aspiration conditions several tone splits aside from the one caused by original voiced consonants in the A and DS Tones. Aspirates join with the preglottalized initial consonants in A and DS to form a new tone category with a lowered onset; aspiration from former breathiness or preglottalization may be a pitch depressor. Thus, one finds: *pai*^{1} 'go, to'; *mai*^{1} 'thread'; *saŋ*^{1} 'high'; *sam*^{1} 'three' (55) in contrast to *tha*$^{1'}$ 'eye'; *ʔiu*$^{1'}$ 'kidney'; *mai*$^{1'}$ (< *ʔbai*) 'leaf'; *naŋ*$^{1'}$ 'nose' (33) and *na*^{2} 'ricefield'; *vai*^{2} 'water buffalo'; *fei*^{2} 'fire' in the A tone. In dead tones there is a similar development. Six dead tone categories are distinguished. For example, in DS one finds: *mat*^{7} 'flea'; *tap*^{7} 'liver'; *kap*^{7} 'dragonfly' (55) vs. *nɛk*$^{7'}$ 'child' (< ʔd-); *thik*$^{7'}$ 'kick, to' (33) vs. *tak*^{8} 'poison'; *tɯk*^{8} 'be, to'; *mat*^{8} 'ant' (22). Compare these to DL: *ma:k*^{7} 'fruit'; *pa:k*^{7} 'mouth'; *ʔok*^{7} 'come out, to'; (21) vs. *tha:p*$^{7'}$ 'carry on a pole, to'; *hi:t*$^{7'}$ 'rest, to'; *fap*$^{7'}$ 'method' (15); vs. *la:p*^{8} 'wax'; *ha:k*^{8} 'study, to'; *lɯ:t*^{8} 'blood' (42). Very similar developments occurred at Long'an.

The most extreme form of splitting and secondary development is not found in the Zhuang of China but in Nùng Fan Slihng (NFS) of Lạng Sơn Province, Vietnam. The dictionaries of Freiberger and Bé 1976 and Bé, Saul and Freiberger-Wilson 1982) show a most complex system involving

both *tone vaulting and tone crossing*. From comparative evidence we know that the A and DS as well as the B and DL categories of proto-tones tend to operate as pairs. NFS follows this rule; in the B and DL the original aspirated stops and //h// (but not the sonorants) have merged with the preglottalized and voiced consonants; the original voiceless sonorants have preserved another category. In the both A and DS the original aspirates have crossed over tone categories to merge with the voiceless sonorants of B and DL respectively. Freiberger and Bé (1976: ix) have adopted the Quoc Ngu alphabet for writing NFS. Since the number of tones in northern Vietnamese and in NFS is identical and since there is considerable resemblence in tone values, this choice is natural. The diacritics for NSF illustrated in the vowel a are described as: (a) *á* high rising (b) *ã* high rising with final glottal; (c) *a* mid level; (d) *à* low rising; (e) *à* low falling ; and (f) *ạ* low glottal.[7] Because the script faithfully captures the NFS phonetic values, tone splitting can be discovered from examining dictionary entries and is illustrated in Figure 13.

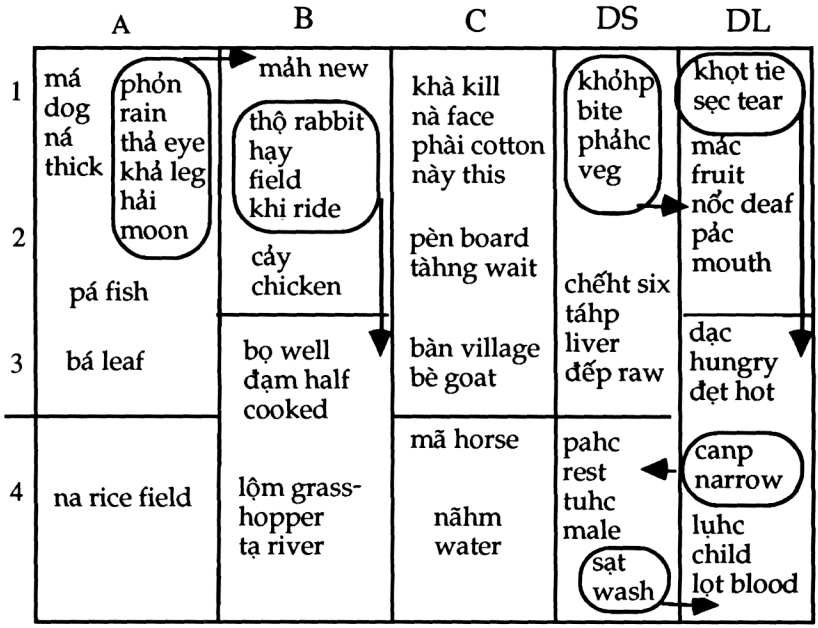


Figure 13: Tone splits in Nùng Fan Slihng

As Figure 13 shows, inherited vocabulary in the A tone with aspirated stop initials, such as khả 'leg', has its pitch lowered and thus allies itself with vocabulary in the B tone. At the same time, the inherited vocabulary in the B tone with aspirated stop initials is pushed into another tone category. This crossing behavior from the A to the B tone category for category 1 stops is paralleled in the dead tone categories (DS1stop -> DL1stop).

The tone splitting in Nùng Fan Slihng provides strong support for the view that systematic preservation of contrast constrains tones to alter in a pattern that takes the entire system into account, i.e., //ph-^{A1} th-^{A1} kh-^{A1} h-^{A1}// -> //ph-^{B1} th-^{B1} kh-^{B1} h-^{B1}// -> //ph-^{B2} th-^{B2} kh-^{B2} h-^{B2}//. Moreover, the changes seen in Nùng Fan Slihng and the other active areas of SZ appear to be rather new, since the phonetic principle motivating the change seems still to be transparent, namely the initial stop consonants have lowered the original pitch trajectory. In fact, the areas of southern Zhuang just to the south of the capital at Nanning and extending out to the west into Yunnan Province demonstrate a clear tendency for the A tone and its dead tone equivalent DS to undergo additional splitting in very distinctive ways.

In this complex equation the features: aspiration, continuancy, and sonority figure into the rules of tonal reorganization. For example, [+aspirated, -cont] merge with preglottalized in one case and [+aspirated, -cont] merge with [+aspirated, +cont] in another. These development in SZ all appear to be secondary and to have been sparked by an aspiration contrast in SZ. Since this contrast has been lost in NZ, no such changes can occur. However, there is more at work than simply the presence of aspiration. Preglottalization figures prominently into the equation of whether there is a split or not; as does the feature [±continuant] and [±sonorant]. SZ is a laboratory in which tonogenetic affinities of various phonological features can be studied.

All of these dramatic changes seem to be occurring in areas around Nanning and to the west of the city. By contrast the SZ lects further south in places such as Longzhou and Ningming—Nùng Fan Slihng is only an apparent exception, since speakers of this area appear to have emigrated from a place called Wan Cheng near Nanning—tend not to show such extreme secondary developments. Consider, for example, the tonal pattern of Longzhou.

In the SZ area there is thus a pattern of tone splitting involving aspiration and involving preglottalization. It is unclear from the data presently in hand which of the two features initiates splitting and which follows. Still, the following situation is the result.

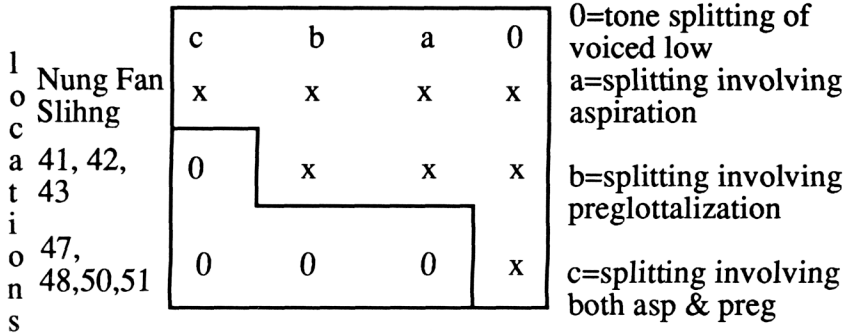


Figure 14: Implicational hierarchy of tone splits in SZ

As far as geographic correlation with tone splitting is concerned, it is noteworthy that the original voiced category in the Gedney Diagrams has split from the other initial types in all proto tone categories A, B, C, DL and DS, except for point 26, Yangshuo in the extreme NE of Zhuang settlement area, where the A tone failed to split for voice. The voiced-low splitting has transpired in the area between Liuzhou to Nanning, which is the near north central and near northeast part of Zhuang territory; incomplete splitting of the dead tones is characteristic of the extreme northeast and far west; there is secondary splitting of the A (or other proto-tones in some cases) in the area to the south and near west of Nanning (for example at Daxin, Mubian, Fusui, and Yongning (S)). Finally, the northwest shows some secondary splitting of the dead or D tones.

8. Conclusions. The Zhuang data from these various sources and especially the systematic data gathered suggests a language not only divided into two partially intelligible languages—northern and southern Zhuang, but that each of the local forms have within themselves considerable diversity. Certainly, Zhuang is more heterogeneous than, for example, Bouyei, which varies only very minimally from place to place *Buyiyu Diaocha Baogao* (1958). Northern Zhuang is not merely an accumulation of continuously varying lects (*états de*

language), but shows uneven preservation of some inherited sounds. For example, in Rongshui there are more initial consonants than anywhere else (46 initials); whereas the string of locations from Hengxian through Wuming to Long'an preserve consonant clusters that have disappeared elsewhere. On the other hand, preglottalized consonants are preserved in both NZ and SZ except in the far northeast and in the tonogenetically active area to the south of Nanning.

Summarizing the panlectal situation of Zhuang change and variation:

1. There are no startlingly new phonological segments in Zhuang likely to cause a dramatic recasting of current views.

2. Northern Zhuang is not strictly a uniform continuum. The NE has preserved the proto-Tai velars to a far greater degree than elsewhere.

3. In northern areas changes seem to begin in the north and west and spread to the south and east, leaving the area around Wuming as the last to undergo the change.

4. Northern Zhuang is characterized by virtually pure voiced-low tone splitting; change arises in north or west.

5. Northern Zhuang in the north and northwest areas resembles the tone splitting situation found in Bouyei of Guizhou suggesting that the Bouyei of Guizhou are linguistically much like the Zhuang found in NW Guangxi.

6. Northern Zhuang shows a much greater degree of contact with the Han language than does Southern Zhuang. In most cases, Han loans have been nativized into the tonal system long ago.

7. Aspiration has disappeared at almost all NZ locations but its disappearance did not induce changes in the tonal system.

8. Southern Zhuang has a much less homogeneous pattern of change. Declustering seems to have begun in the south and spread northward.

9. Change in tonal splitting affects the A tone principally, whereas in northern Zhuang it is the B and C tones that undergo additional changes.

10. The area to the south and west of Nanning is especially active tonogenetically. Areas further south and west are less active.

11. Zhuang in the west has lost the vowel length distinction sometimes preserving tone in its place.

12. Aspiration and preglottalization are both important phonologically in creating new tonal contrasts in Zhuang. Generally speaking, these two often go together and they often effect lowering of pitch trajectory.

13. There are also cases of tonal crossing especially evident in Nùng Fan Slihng in a fashion that is reminiscent of Saek of western Thailand and Laos.

14. On average NZ varieties share about 75% basic vocabulary from point to point. SZ shows values of shared vocabulary about the 65% level.

Notes

1. A part of this research was supported by the Committee on Scholarly Communications with the PRC and the National Endowment for the Humanities for the period Jan-Jun 1990. I wish to thank Dr. James R. Chamberlain, Janice Saul, and Nancy Freiberger Wilson as well as Professors Karen Adams and Tom Hudak for comments on an earlier version of this paper. The usual disclaimers of responsibility apply for what I have made of their sound advice.

2. I have not consulted Savina's (1910) nor his (1924) dictionaries.

3. According to Fan Honggui, Meng Weiren, Xu Quanyin, and Gu Shaosong (1986) and the Vietnamese original there are several kinds of Nùng. The Nùng principally take their autonyn from the place names in Guangxi from which they migrated. Thus there are: (a) Nùng An (from Anjiezhou 安結州); (b) Nùng Inh (from Longyinzhou 龍英州); (c) Nùng Phan Slình (Nùng Fan Slihng 萬承 from Wanchengzhou 萬承州); (d) Nùng Cháo (from Longzhou 龍州); (e) Nùng Qúy Rin (Guiren 歸仁 from 歸順州); and (f) Nùng Lòi (from Xialei 下雷). Beside these there are a number of other types of Nùng not named from their original homes.

4. The Tày are found in the following locations: Cao Bằng, Lạng Sơn, Hà Tuyên, Bắc Thái, Hoàng Liên Sơn, Quảng Ninh, Hà Bắc, Lám Dồng. The Nùng are found at: Cao Bằng, Lạng Sơn, Bắc Thái, Hà Tuyên, Hà Bắc, Hoàng Liên Sơn, and Quảng Ninh. These names do not reflect the recent changes in names of provinces, but lacking more specific locations I have been reluctant to be more specific.

There are also Giáy (Yay or Pu Nà) and Bô´ Y (Bouyei) speakers, cf. Gedney (1991a) and Các dân tộc ít người ở Việt Nam (1978). The Cao Lan-Sán Chi are made of several groups, one of which calls themselves *cunren* 村人 'village people' in Lunet de Lajonquière (1906). From a limited word list in this old source the Cunren of Vietnam is probably not

the same as the *Cunren* 村人 of Hainan Island, Edmondson/Solnit (1988).

5. Since Li Fang-Kuei (1943) the term *preglottalized* has been used in comparative Tai studies as a phonological term to refer to items that begin with glottal stops or with imploded voiced stops. Several speakers. I have studied informally articulate this sound by lowering the larynx over a stiff column of air and then allow it to recoil at release. There seems to be no ingressive airstream at the mouth at the time of release.

6. Some sample vocabulary showing this pattern are:

9-- tin3 'short'; he:n3 'yellow' vs. ʔdaːi^{4} 'hemp'; ʔbin^{4} 'strawmat'; ʔbaːn^{4} 'village'; ʔdeː^{4} 'can'

39-- ka3 'kill'; na3 'face' vs. ʔdaːi^{4} 'hemp'; ʔbaːn^{4} 'village'; ʔdeː^{4} 'can'; ʔdoŋ^{4} 'hard (not soft)'.

40-- ha3 'five'; kei3 'excrement' vs. ʔbɯn^{4} 'strawmat'; ʔdaːi^{4} 'hemp'; ʔdueŋ^{4} 'hard (not soft)'.

34-- ʔbaːn^{4} 'village'

To the degree that similar tone splitting is a mark of similarity, it is noteworthy that the tone systems of the Bouyei of Guizhou Province to the north of Guangxi-Zhuang Autonomous Region belongs predominantly to Type 3.

7. I have recently been able to carry out a preliminary investigation on the speech of one Nùng Fan Slihng speaker, Vang Vang Vy, who currently lives in Philadelphia. In his speech there is the pattern of tone crossing exhibited in Figure 13. My preliminary description of the tone contrasts of Mr. Vang Vang Vy are: (a) *á* (35); (b) *ã* (53^{ʔ}) with final glottal; (c) *a* (33); (d) *á* (13^{h}) with whispered voice at the end of the syllable; (d) *ạ* (31) (e) (e) *à* low falling (3̰1) with harsh voice and irregular fundamental frequency.

References

Bailey, Charles-James. 1973. Variation and linguistic theory. Washington: CAL.

Bản Đồ các dân tộc ơ Việtnam. 1979. Map of the ethnic groups of Vietnam.

Bé, Vy Thị Janice E. Saul, and Nancy Feiberger Wilson. 1982. Nùng Fan Slihng-English dictionary. Manila: SIL.

Benedict, Paul K. 1989. KD clusters/dyads: PT *pl/*p-l/*phl. Kadai 1.10-14.

Brown, J. Marvin. 1975. The great tone split. Did it work in two opposite ways? Studies in Tai linguistics in honor of William J. Gedney. CIEL: Bangkok. Reprinted in From ancient Thai to modern dialects and other writings on historical Thai linguistics. Bangkok:

White Lotus Co., Ltd.
Buyiyu Diaocha Baogao. 1958. (Field report on the Bouyei language.) Beijing: Kexue Chubanshe.
Các thành phần dân tộc Việtnam. 1983. Ethnic groups of Vietnam (as recognized by the Bureau ofCensus of Vietnam).
Chamberlain, James R. 1991. Tay Méne. Paper presented at the 24th ICSTLL, Bangkok.
Day, Arthur Colin. 1966. The syntax of Thô [Thổ], a Tai language of Vietnam. PhD dissertation, University of London.
De Beauclair, Inez. 1986. Ethnic groups of South China. In Ethnographic studies: The collected papers of Inez de Beauclair. Taipei: Southern Materials, Inc..
Dodd, WIlliam Clifton, D.D. 1923. The Tai race: Elder brother of the Chinese. Cedar Rapids, Iowa: The Torch Press.
Edmondson, Jerold A. 1991. Some Kadai languages of northern Guangxi, China. In Sudaporn Luksaneeyanawin et al (eds.) *Pan-Asiatic linguistics*. Vol. I. Bangkok: Chulalongkorn University Printing House, 28-43.
_____. 1992. Fusion and diffusion in E, Guangxi Province, China. T. Dutton et al (eds.) Memorial volume for Don C. Laycock (Pacific Linguistic Series). Department of Linguistics, Australian National University, Canberra, 131-41.
_____ and David B. Solnit. 1988. Comparative Kadai: linguistic studies beyond Tai. Dallas: SIL.
_____ and Yang Quan. 1989. Tone geometry in Kam-Sui: Contours, edges and dimorphism. To appear in Chinese in Minzu Yuwen.
Fan Honggui, Meng Weiren, Xu Quanyin, and Gu Shaosong (trans.) 1986. Yuenan beifang shaoshu minzu. n.p: Guangxi Minzu Xueyuan Minzu Yanjiusuo. (Vietnam's northern minorities. Chinese translation and adaptation of Vietnam Social Sciences Committee (ed.) 1978. Các dân tộc ít người ở Việt Nam (cái tỉnh phia bác).) Hanoi: Social Sciences Committee Publishing House.
Freiberger, Nancy and Vy Thị Bé. 1976. Nùng Fan Slihng vocabulary. Manila: SIL.
Gedney, William J. 1972. A check list for determining tones in Tai dialects. Studies in Linguistics in honor of

George L. Trager. The Hague, 423-37.
_____. 1989. Selected papers on comparative Tai studies. Edited by Bickner, Hartmann, Hudak, and Peyasantiwong. Michigan Papers on South and Southeast Asia. No. 29. Center for South and Southeast Asian Studies: The University of Michigan.
_____. 1992a. The Yay language: Glossary, texts, and translations. (ed. by Th. Hudak) No. 38. Center for South and Southeast Asian Studies: The University of Michigan.
_____. 1992b. The Tai dialect of Lungming: Glossary, texts, and translations. (ed. by Th. Hudak) No. 39. Center for South and Southeast Asian Studies: The University of Michigan.
Gohain, Aimya Khang. 1991. The Tai language as spoken by the Tai-Phakaes. In Sudaporn Luksaneeyanawin et al (eds.) *Pan-Asiatic linguistics*. Vol. I. Bangkok: Chulalongkorn University Printing House, 44-59.
Haudricourt, André. 1960. Note sur les dialecte de la région de Moncay. BEFEO 50.167-77.
_____. 1961. Bipartition et tripartition des systèmes de tons dans quelques langues d'Extrême-Orient. Bulletin de la Société de Linguistique de Paris 56.163-80.
Labov, Wm. 1972. Sociolinguistic Patterns. Philadelphia: University of Pennsylvania Press.
LeBar, Frank M, Gerald C. Hickey, and John K. Musgrave. 1964. Ethnic groups of Mainland Southeast Asia. New Haven: Human Relations Area Files Press.
Li Fang Kuei. 1940. The Tai dialect of Lungchow (Texts, Translation and GLossary). Academia Sinica, Institute of History and Philology mono. series A. No. 16.
_____. 1943. The hypothesis of a pre-glottalized series of consonants in Primitive Tai. BIHP 11.177-88.
_____. 1944. The influence of the Primitive Tai glottal stop and preglottalized consonants on the tone system of Po-ai. Bulletin of Chinese Studies 4.59-68.
_____. 1947. Phonology of the Tai dialect of Wu-Ming. BIHP 12.293-303.
_____. 1956 The Tai dialect of Wu-Ming (Texts, Translation and Glossary). Academia Sinica. The Institute of History and Philology. Monograph Series A. No. 19.
_____.1957. The Jui dialect of Po-ai: Phonology BIHP 28.551-66.
_____. 1960 A tentative classification of Tai dialects. In S.

Diamond (ed.) Culture in history: Essays in honor of Paul Radin, 951-9.
_____. 1977. A handbook of comparative Tai. Honolulu: The University Press of Hawaii.
Liang Min. 1990. The Lachi language. Kadai 2.35-44.
Liang Tingwang. 1987. Zhuangzu Fengsu Zhi. (Zhuang customs.) Beijing: Zhongyang Minzu Xueyuan Chubanshe.
Lunet de Lajonquiere. 1906. Ethnographie du Tonkin septentrional., redigee sur l'ordre de M. P. Beau. Paris: E. Leroux.
Manich, M. L. 1967. History of Laos (including the history of Lannathai, Chiengmai). Bangkok: Chalermnit.
Morev, L. N. 1988. Yazik Sek. (Yaziki narodov Asii i Afriki.) Moskva: Akademiya Naik SSSR.
Qin Xiaohang. 1991. Evolution of the clusters pl, kl, and ml in the local vernacular of Hongshuihe Zhang. Unpublished paper. Guangxi Zhuangzu Zizhi Qu Shaoshu Minzu Yuyan Wenzi Gongzuo Weiyuanhui. Committee on language and literacy Guangxi-Zhuang Autonomous Region.
Saul, Janice E. and Nancy Freiberger Wilson. 1980. Nung grammar. Dallas: SIL.
Savina, F. M. 1910. Dictionnaire tay-annamite-français. Hanoi.
_____. 1924. Dictionnaire Etymologique Français-Nùng-Chinois. Hong Kong: Soc. Miss. Etrang.
Strecker, David. 1985. The classification of the Caolan languages. In S. Ratanakul et al (eds.) Southeast Asian linguistic studies presented to Andre-G. Haudricourt. Bangkok: Mahidol University.
Tanakorn, Sungkep. 1983. A phonological study of Lao Ngaeo with comparisons to five Tai dialects. MA. Thesis. Mahidol University, Bangkok, Thailand.
Thongphiew, Urairat. 1989. A phonological comparison of Roi-et thai and Vientiane Lao. MA. Thesis. Mahidol University, Bangkok, Thailand.
Vy Thi Bé, Janice E. Saul and Nancy Wilson Frieberger. 1982. Nùng Fan Slihng-English Dictionary. Manila: SIL.
Wang Jun (ed.). 1984. Zhuang-Dong yuzu yuyan jianzhi. Beijing: Nationalities Publishing House.
Wang Wei. 1991. Buyi yu yuyin yu ji tedian. (Sounds and special features of Bouyei .) To appear in Edmondson/Solnit (eds.) Comparative Kadaii Vol II:

the Tai group. Dallas: SIL.
Wei Feng and Jerold A. Edmondson. 1990. Rongshui Sanfang Zhuangyu. Fieldnotes. 150pp of data with instrumental analysis.
Wei Qingwen and Qin Guosheng. 1984. Zhuangyu Jianzhi. In Wang Jun (ed.) Zhuang-Dong Yuzu Yuyan Jianzhi. Beijing: Minories Publishing House.
Xie Zhimin. 1983. The vocalic alternation of the Zhuang language in Longzhou, Guangxi. Yuyan Yanjiu 2.212-218.
Zhang Junru. 1982. An etymological study of the ancient loan words in Zhuang language (in Central South Guangxi) borrowed from ancient Ping dialect of Han language. Yuyan Yanjiu 1.197-219.
_____. 1986a. The trend, state and gradual change of sound change in Tai languages. Minzu Yuwen 1.27-37.
_____. 1986b. The development and changes of three finals ɯ, əɯ, aɯ in Zhuang languages. Minzu Yuwen 6.20-24.
_____. 1987. Loan words in the Zhuang language in the Ping dialect of Guangxi Province. Yuyan Yanjiu 1.185-189.
Zhang Shengqun (ed.). 1988. Guangxi-Zhuangyu dimin xinji. (Glossary of Guangxi Zhuang place name.) Nanning: Guangxi-Zhuang Minorities Publishing House.
Zhang Yuansheng and Wei Liangyun. 1991. Zhuangyu fangyan ji Biaojunyin. To appear in Edmondson/Solnit (eds.) Comparative Kadaii Vol II: the Tai group. Dallas: SIL.
Zheng Yiqing. 1987. The reflexion of the initial consonants of Proto-Tai in Jinxi speech of Zhuang language. Minzu Yuwen 6.35-45.
Zhongguo Da Baike Quanshu, Minzu. 1986. (Great Chinese Encyclopedia, Vol. Ethnic Groups). Beijing and Shanghai: Zhongguo Da Baike Quanshu Chubanshe.
Zhuangyu Yinxi. 1959. Unpublished report on Zhuang Phonology. Beijing: Chinese Academy of Social Sciences.

1 GUIBEI VERNACULAR

1	羅城	Luocheng
2	環江	Huanjiang
3	融水	Rongshui
4	融安	Rong'an
5	三江	Sanjiang
6	永福	Yongfu
7	龍勝	Longsheng
8	河池	Hechi
9	南丹	Nandan
10	天峨	Tian'e
11	東蘭	Donglan

2 LIUJIANG VERNACULAR

12	柳江	Liujiang
13	來賓北	Laibin (N)
14	宜山	Yishan
15	柳城	Liucheng
16	忻城	Xincheng

3 HONGSHUI HE VERNACULAR

17	來賓南	Laibin (S)
18	貴縣	Guixian
19	石龍武	Shilong (Wu)
20	都安	Du'an
21	馬山	Mashan
22	上林	Shanglin
23	石龍象	Shilong (Xiang)
24	鹿寨	Luzhai
25	荔浦	Lipu
26	陽朔	Yangshuo
27	賀縣	Hexian

4 YONGBEI VERNACULAR

28	邕寧北	Yongning (N)
29	武鳴	Wuming
30	橫縣北	Hengxian (N)
31	賓陽	Binyang
32	橫縣南	Hengxian (S)
33	平果	Pingguo

5 YOUJIANG VERNACULAR

34	田東	Tiandong
34	田陽	Tianyang
34	百色	Baise

6 GUIBIAN VERNACULAR

35	鳳山	Fengshan
36	凌樂	Lingle
37	隆林	Longlin
38	田林	Tianlin
39	云南廣南北	Yunnan Guangnan (N)

7 QIUBEI VERNACULAR

40	云南丘北	Yunnan Qiubei

8 YONGNAN VERNACULAR

41	邕寧南	Yongning (S)
42	扶綏中	Fusui (Central)
43	扶綏北	Fusui (N)
44	隆安	Long'an
45	欽縣	Qingxian
46	上思	Shangsi
47	崇左	Chongzuo

9 ZUOJIANG VERNACULAR

48	龍津	Longjin
49	大新	Daxin
50	天等	Tiandeng
51	寧明	Ningming

10 DEQING VERNACULAR

52	靖西	Jingxi
53	德保	Debao
54	睦邊	Mubian

11 YANGUANG VERNACULAR

55	云南廣南南	Yunnan Guangnan (S)
56	硯山	Yanshan