Topics in the phonology of Tibeto-Burman languages in China

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Today's Talk

- Phonology of the Tibeto-Burman languages (TB) in China
- Some topics

  Syllable structure

  Consonants

  Vowels

  Tone/ Toneless

- Typological Remarks

  Geographical Distribution,

  Differences with the related languages

Directions

(1) Even within a single subbranch, there exists a considerable diversity of phonological inventories.

(2) Complexities in consonants, vowels, and tone may be influenced by areal features or language contact.

**overview;
not comprehensive**

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Major Previous Works

- Ma (1991): conspectus
- Dai (1979, 1990, 1991, etc.): comparison
- Ju (ed.) (1996): phonological inventories
- Thurgood & LaPolla (2003, 2017): introduction
- Suzuki et al. (2017, 2021): geolinguistics

…, among others

Figure 1: Languages of China. (2024, February 26). In *Wikipedia*. https://en.wikipedia.org/wiki/Languages_of_China

Tibet

Qinghai

Sichuan

Guizhou

Yunnan

Hunan

Guangxi

Austroasiatic
Austronesian
Greater Bai (Sino-Tibetan)
Hmong–Mien
Indo-European
Koreanic
Kra–Dai
Mongolic
Tibeto-Burman (Sino-Tibetan)
Tungusic
Turkic
Sinitic (Sino-Tibetan)
Uninhabited

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Figure 2: Tibeto-Burman Subgroups
Adapted from van Driem (2015: 140)

Tibet

Qinghai

Sichuan

Guizhou

Yunnan

Hunan

Guangxi

West Himalayish · Tshangla · rGyalrongic · Bái · Sinitic

Tamangic · Bodish · Lepcha · Qiāngic · Tǔjiā

Newaric · Lhokpu · Kiranti · Ěrsūish · Lolo-Burmese

Magaric · Digarish · Nàic · Kachinic

Dura · Chepangic

Raji-Raute · Midźuish · Nungish · Kukish

Siangic · Tani

Ao · Angami-Pochuri

Black-Mountain · Karenic

Kho-Bwa

Zeme · Karbí · Meithei

Hrusish · Pyu

Dhimalish · Gongduk · Brahmaputran · Mru · Tangkhul

FIGURE 10.5 The 2012 version of the agnostic Fallen Leaves model. Thirty out of the forty-two Tibeto-Burman subgroups lie south of the great Himalayan divide, seven to the north and east of the Himalayas, and five (i.e., Tshangla, Bodish, Nungish, Lolo-Burmese, and Kachinic) on both sides of the Himalayas.

Major TB Subgroups and Their Distribution
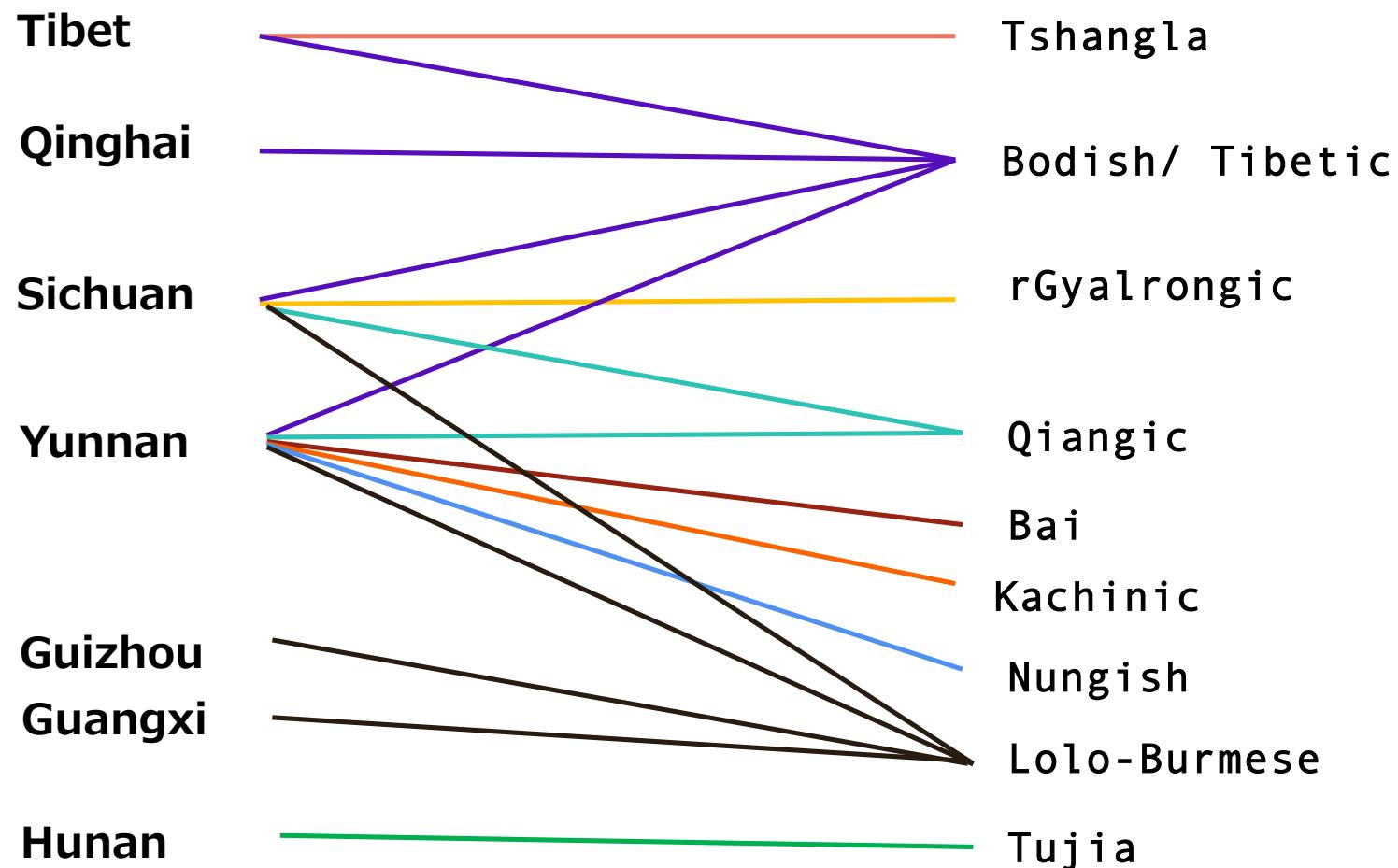
Figure 3: Distribution of Tibeto-Burman Lgs
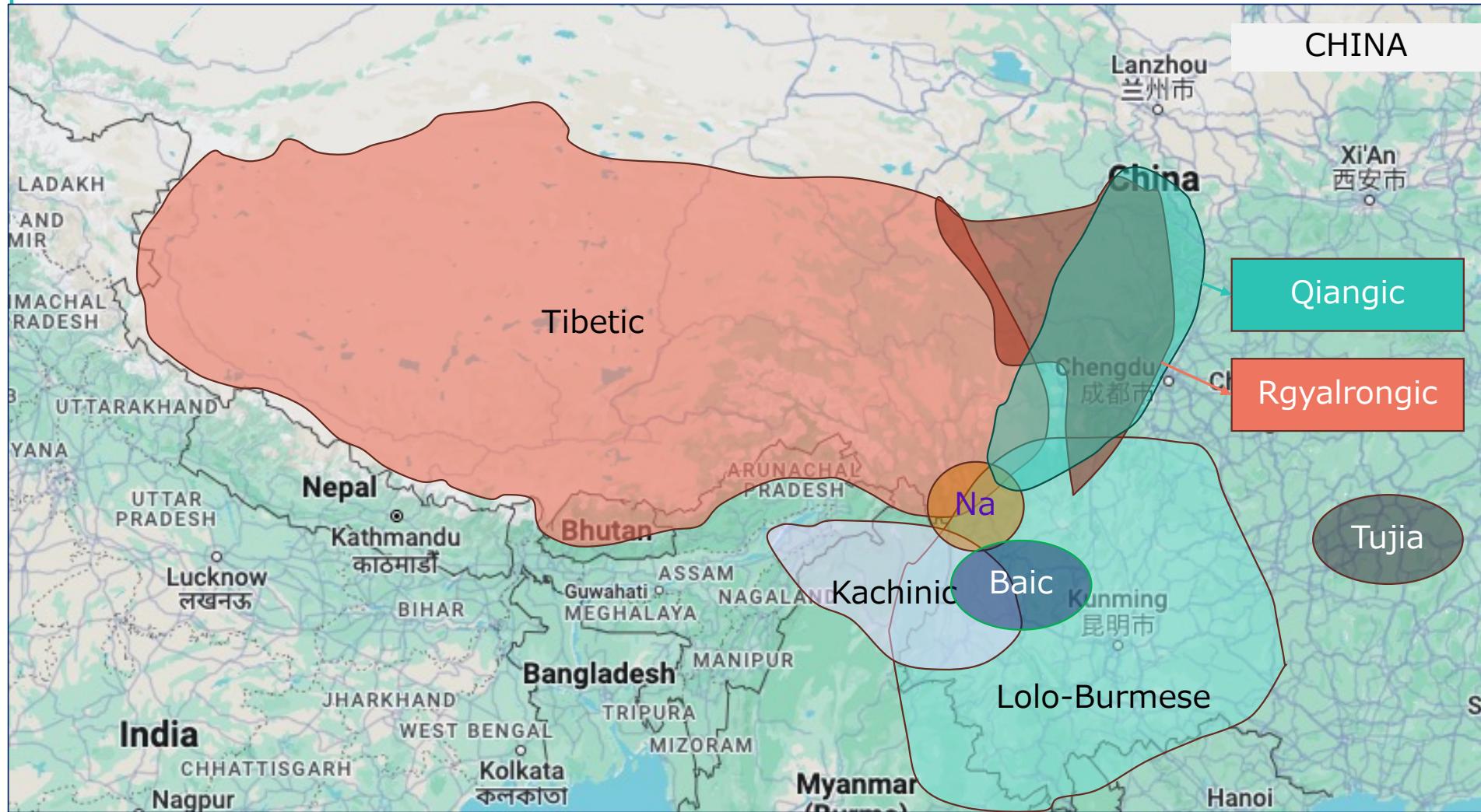
Syllable Structure

- Matisoff (2003)

$$[T]$$

$$(P_2) \quad (P_1) \leftrightarrow C_i \leftarrow (G) \rightarrow V \ (\text{ː}) \leftrightarrow (C_f) \leftrightarrow (s)$$
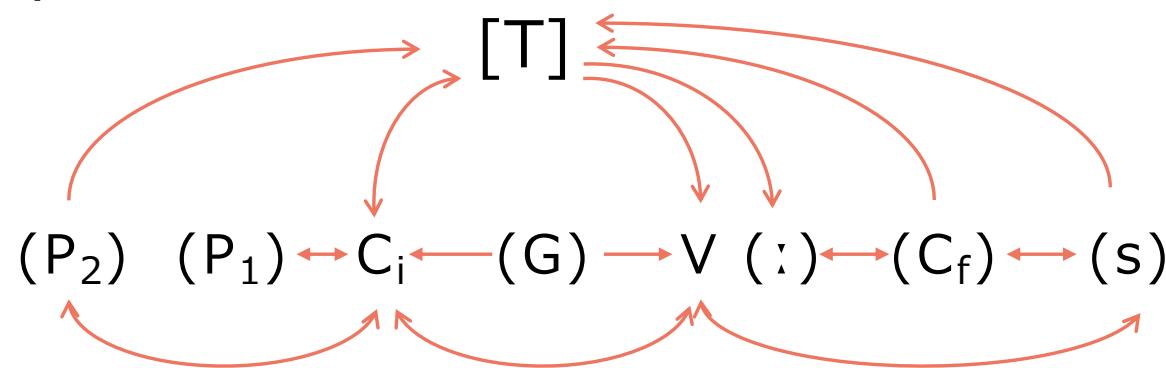
- Lolo-Burmese

CCVC/ T

IMVF/T [Chinese Tradition] (cf. Hirayama 1967)

Consonants as Onset

Selected Topics

- Prenasalization

- Preaspiration

- Preglottalization

- voiceless sonorants vs. voiced sonorants

- Bilabial trill

- K- vs. Q-

- Medials and Complex Onsets

Stops

• Suzuki, Ebihara, Iwasa, Kurabe and Shirai (2021)

A: /t-d/ (/t-d-n/ only)

B1a: /th-t-d-nd-nt-nth-n-n̥/

B1b: /th-t-d-nd-nt-nth-n/

B2a: /th-t-d-nd-nth-n-n̥/

B2b: /th-t-d-nd-nth-n/

B3a: /th-t-d-nd-n-n̥/

B3b: /th-t-d-nd-n/

B4: /th-t-d-nth-n/

B5a: /th-t-d-n-n̥(ʔn)/

B5b: /th-t-d-n/

B6: /th-t-d/

Ca: /th-t-d-dɦ-n-n̥/

Cb: /th-t-d-tʼ-n/

D1: /th-t-nd-n/

D2a: /th-t-n-n̥/

D2b: /th-t-n/

D3: /th-t/

E: others

relatively complex

Figure 4: Distribution of Tibeto-Burman STOPS

relatively complex
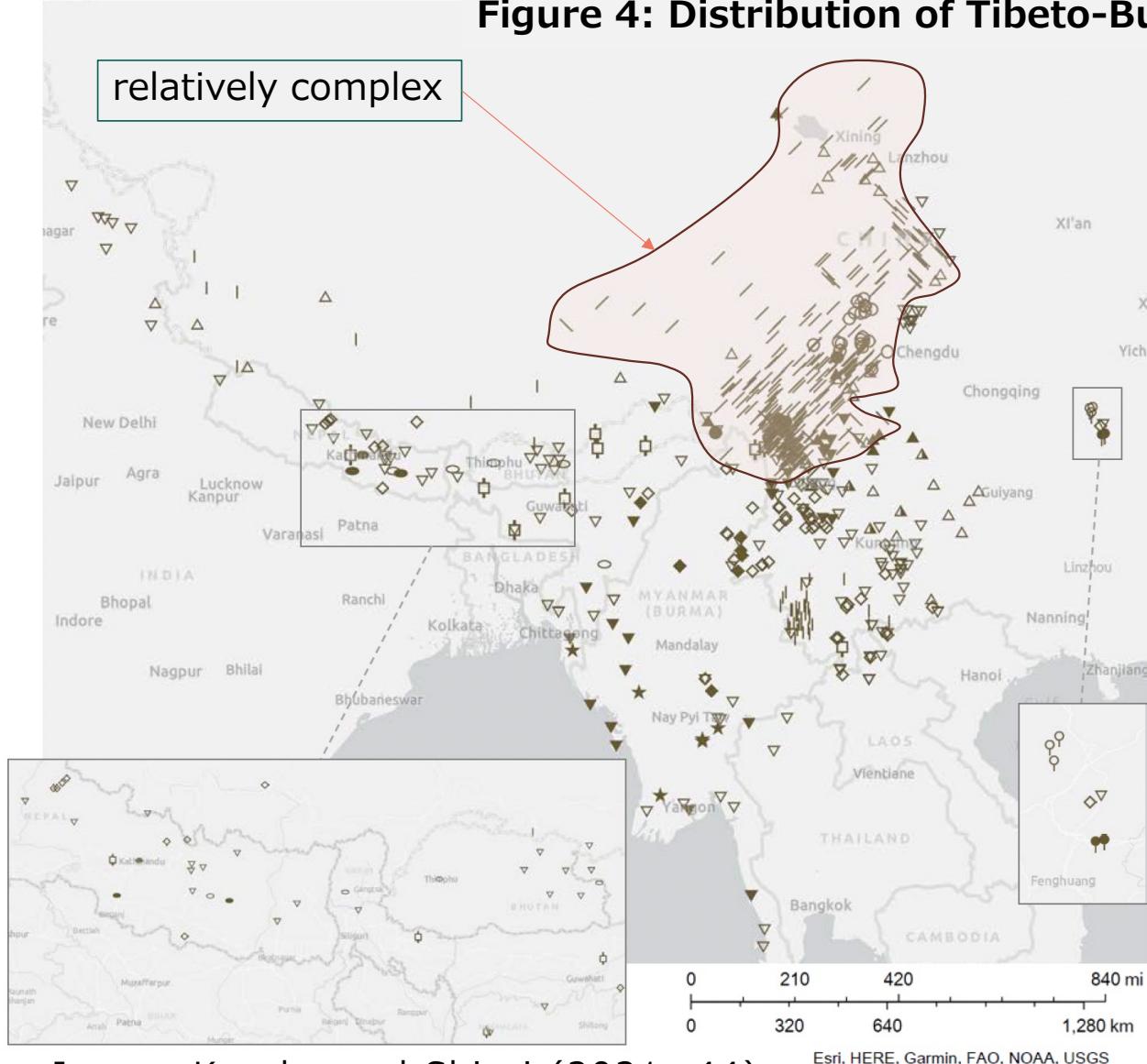
Suzuki, Ebihara, Iwasa, Kurabe and Shirai (2021: 44)

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Prenasalization

- Amdo Tibetan (Tibetic) [e.g. Danzheng 2017]

- nDrapa (Qiangic) [e.g. Shirai 2006]

- Nuosu Yi (Lolo-Burmese) [e.g. Chen & Wu 1998]

- Dafang Yi (Lolo-Burmese) [e.g. Dai 1992]

- Wuding Yi (Lolo-Burmese) [e.g. Dai 1992]

- Hlepho Phowa (Lolo-Burmese) [e.g. Pelkey 2011]

- Phola (Lolo-Burmese) [e.g. Pelkey 2011]

- Naxi (Naic) [e.g. Dai 1992]

Prenasalization

- Nuosu Yi (Lolo-Burmese)

[e.g. Chen & Wu 1998, Edmondson et al. 2016]

ndi^{55} "to wear, put on"

a^{21}di^{55} "that"

mbo^{21} "to bury"

bo^{21}tʂhi^{33} "trip hammer for hulling rice"

Sound Files from Shen Hong

Prenasalization

- Sample
- Amdo Tibetan (Tibetic) [e.g. Danzheng 2017]

Sound files from Danzheng recorded by Hayashi

		phonemic	phonetic	gloss
voiceless unaspirated	1)	payi	[payi]	"to kiss (IMPF)"
voiceless aspirated	2)	phem	[pʰɛm]	"to lose"
voiceless preaspirated	3)	ʰpaŋthaŋ	[ʰpaŋtʰaŋ]	"bog, marsh"
voiced (prenasalized)	4)	be	[ᵐbɛ]	"target"
voiced preaspirated	5)	ʰbaŋma	[ᵊbaŋma]	"sake lees"

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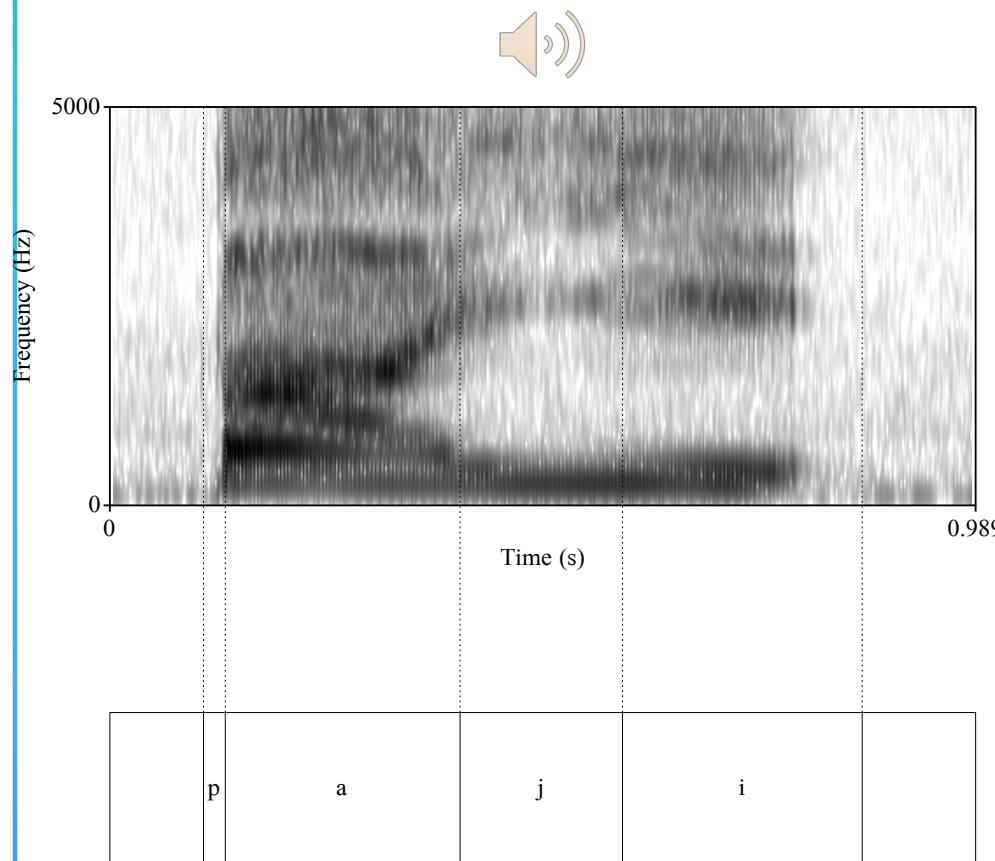
Prenasalization

**Figure 5: Amdo Tibetan prenasalization**

- Amdo Tibetan (Tibetic) [e.g. Danzheng 2017]

Sound files from Danzheng
recorded by Hayashi

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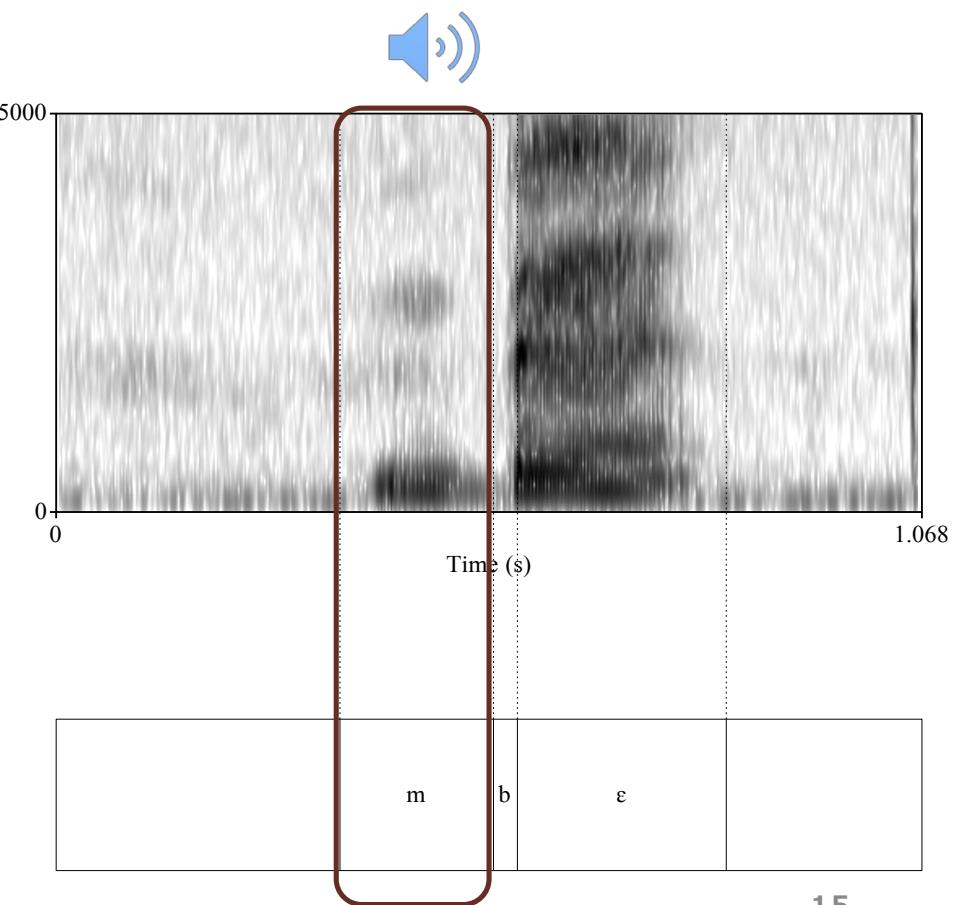
Prenasalization

- Comparison of Phula Languages (Lolo-Burmese)

[Adapted from Pelkey 2011]

	Phola	Phuza	Hlepho	Azha
"door"	${}^{\eta}k\dot{i}^{55}t\underline{\text{u}}^{23}$	$ʑɛ^{31}k^hɯ^{31}$	${}^{\eta}ga^{21}ts^hɻ^{55}$	$la^{21}k^hɛ^{33}$
"shrine; temple"	${}^{m}pi^{55}ʑ\underline{ɛ}^{23}$	$bɯ^{55}ʑɛ^{31}$	$bɯ^{21}za^{55}hɛ^{21}$	$p\dot{i}^{33}xɛ^{21}$
"drink"	${}^{n}tɔ^{33}$	$dʌ^{31}$	${}^{n}də^{21}$	$ŋ\dot{i}^{33}$
"pat; beat; smack"	${}^{n}t\underline{æ}^{23}$	$dɛ^{13}/sɛ^{55}$	${}^{n}də^{13}$	$t^hɔ^{33}$

Preaspiration

Previous Studies

Tibetan Dialects

Amdo: de Roerich (1958); Sun (1986), etc.;
Suzuki (2005, 2006), etc.; Danzheng (2017)

Kham: Suzuki (2018, 2021), etc.

nDrapa   Shirai (2006)

Preaspiration

- Amdo Tibetan (Tibetic) [e.g. Danzheng 2017]

Sound files from Danzheng
recorded by Hayashi

		phonemic	phonetic	gloss
voiceless unaspirated	1)	payi	[paji]	"to kiss (IMPF)"
voiceless aspirated	2)	phem	[pʰɛm]	"to lose"
voiceless preaspirated	3)	ᴴpaŋthaŋ	[ʰpaŋtʰaŋ]	"bog, marsh"
voiced (prenasalized)	4)	be	[ᵐbɛ]	"target"
voiced preaspirated	5)	ᴴbaŋma	[ᵊbaŋma]	"sake lees"

Preaspiration

- Amdo Tibetan (Tibetic) [e.g. Danzheng 2017]

Sound files from Danzheng recorded by Hayashi

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Preaspiration

🔊

- Amdo Tibetan (Tibetic) [e.g. Danzheng 2017]
  Sound files from Danzheng

🔊

h	p	a	ŋ	tʰ	a	ŋ	

	ə	b	a	ŋ	m	a	

Preaspiration

- nDrapa (Qiangic) [Adapted from Shirai 2006: 7-16]

consonant cluster

$$\left\{ \begin{array}{c} \text{N-} \\ \text{H-} \\ \text{ʔ-} \end{array} \right\} + \left\{ \begin{array}{c} \text{p-} \\ \text{b-} \end{array} \right\}$$
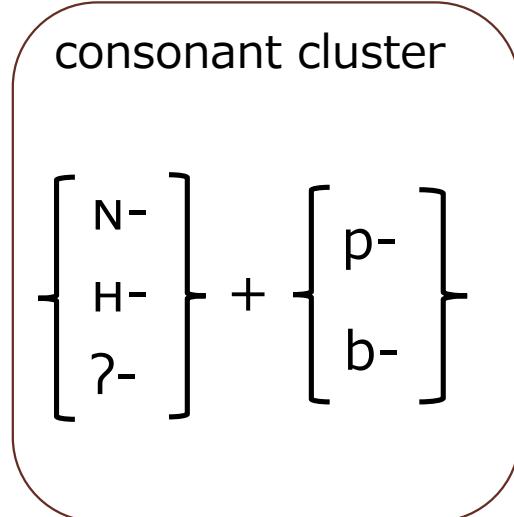
	phonemic	phonetic	gloss	PTB (Matisoff 2003)
1)	ˌ**p**je	[**p^h**ĭɪʎ]	"father"	< *pʷa?
2)	ˉ**ɴp**e	[m̥**p^h**eĭ˧]	"ice"	< *s-pʷal?
3)	ˉdo-**ʜp**u	[to˥**ɸp**u˥]	"DIR-blow out"	< *pu
4)	ʼ**b**ʌbi	[**p̬**ʌ˩pi˥]	"bug"	< *bəw
5)	ʼ**ɴb**uʜɖo	[ᵐ**b**u˩ʰɖo˥]	"brown sugar"	
6)	ʼ**ʜb**a	[ʰ**b**aʎ]	"kiss"	
7)	ʼseʔ**b**u	[sˑe˩**pp**u˥]	"tree"	<*bul ⋈ *pul

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Figure 8. Preaspiration 🔴 & Prenasalization 🟣 & both 🟢

SAMPLE

Adapted from Google Map

Preglottalization

- Anong (Nungish) [e.g. Sun & Liu 2009]

- nDrapa (Qiangic) [e.g. Shirai 2006]

- Weishan Yi (Lolo-Burmese) [e.g. Huang & Dai 1992, Li 1996]

- Lalo (Lolo-Burmese) [Björverud 1998, Yang 2010]

- Hlepho (Lolo-Burmese) [Pelkey 2011]

- Taliu (Lolo-Burmese) [e.g. Zhou 2004]

Preglottalization

- Anong (Nungish) [e.g. Sun & Liu 2009]

consonant cluster

$$\text{ʔ-} + \begin{bmatrix} \text{obstruents} \\ \text{sonorants} \end{bmatrix}$$
[+voiced]

ʔb	ʔd	ʔɖ		ʔg
	ʔdz	ʔdʐ	ʔdʑ	
ʔm	ʔn	ʔɳ	ʔȵ	ʔŋ
	ʔl			
ʔbɹ				

contrasts with voiceless sonorants

m̥	n̥	ɳ̥	ȵ̥	ŋ̥
	ɬ			

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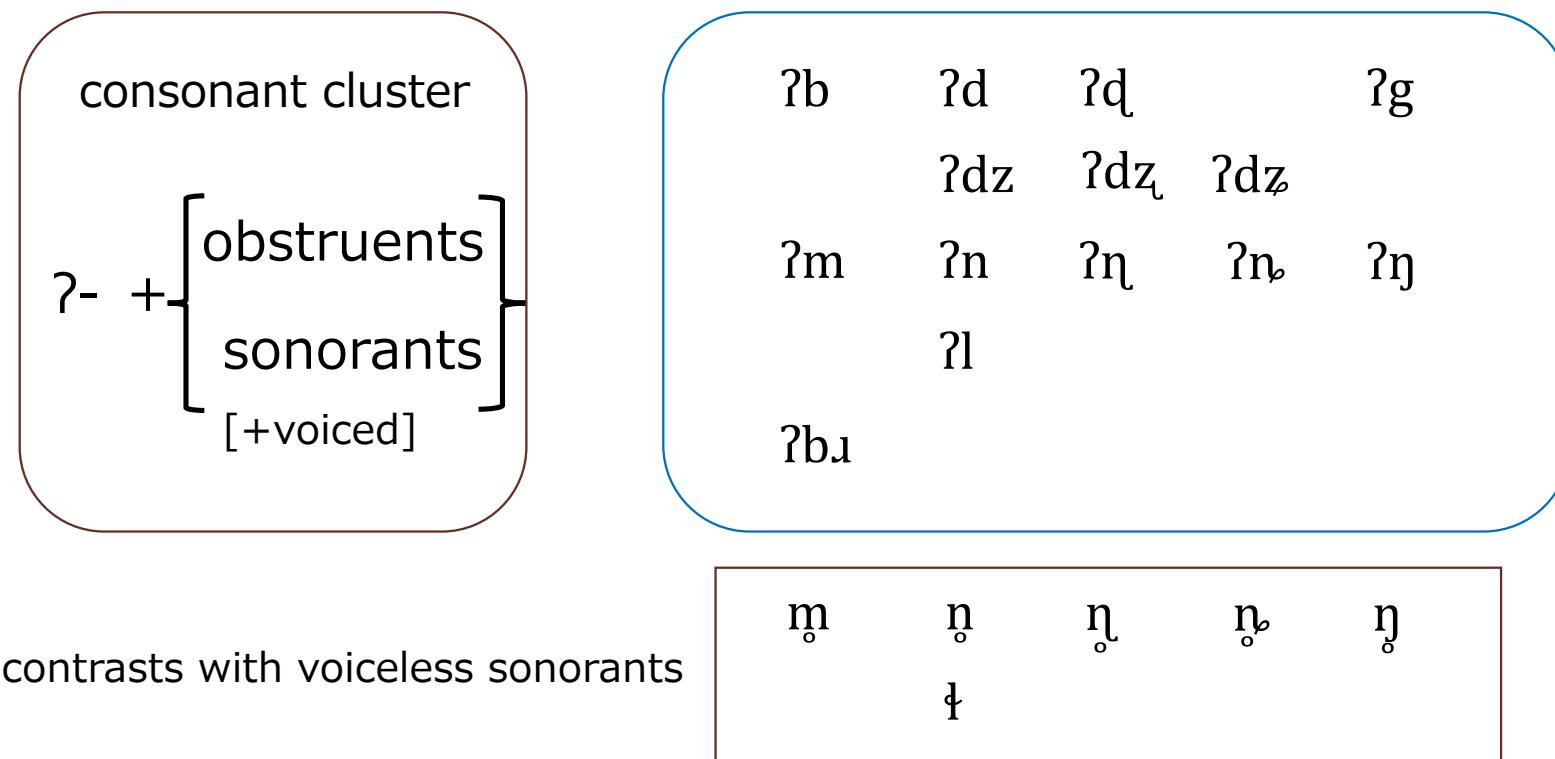
Preglottalization

- Taliu (Lolo-Burmese) [Zhou 2004]

ʔm   ʔn

ʔl

contrasts with voiceless sonorants

m̥   n̥   ŋ̊

l̥

Preglottalization

Anong (Sun & Liu 2009)

ɑ³¹ʔban⁵⁵   "bamboo"

ʔdɛm⁵⁵   "on credit"

ʔɖɑŋ⁵⁵   "crawl"

ʔgam⁵⁵   "carve; engrave"

ʔdzɑm⁵⁵   "drench (rain)"

ɑ³¹ʔnɑ³¹   "dye (cloth)"

ʔlɑ³¹sum⁵⁵   "musk"

ɕɑ⁵⁵ʔbɹɯn³⁵   "step over"

Taliu (Zhou 2004)

ʔmɛ̠³¹vu⁵⁵   "son-in-law"

ʔnuaŋ³¹   "paste"

ʔny³¹   "lay an egg"

ʔno³¹   "ask"

ʔlu⁵⁵kɤ²¹   "eat with mouth"

ʔluan³¹   "shed skin"

Preglottalization

- Development of Lalo dialects (Lolo-Burmese) [Adapted from Yang 2010]

Modern Lalo Dialects

Gloss	PN	Pla	Eka	C-CJ	CW-QY
"many"	C-mja^2	mja^2	m	m	m
"see"	mraŋ^1	mraŋ^1	m	m	m
"eye"	C-mjak^H	ʔmj<u>e</u>^{H}	mi	mɛ	ʔmɛ
"son-in-law"	ʔ-mak^L	(ʔ)m<u>e</u>^{L}	mɨ	mɛ	mɛ
"tail"	ʔ-mri^2	ʔmɛ^2	m	m	ʔm
"teach"	s-ma^2	ʔma^2	m	m	ʔm
"cooked"	s-miŋ^3	ʔmi^1	m	m	ʔm

PN = Proto-Ngwi = Proto-Loloish
PLa = Proto-Lalo

PN. *C-m/ *ʔ-m/ *s-m > PLa. *ʔm-

Adapted from Google Map

nDrapa

Taliu

Anong

Weishan Yi

Hlepho

Lalo

Figure 9. Preglottalization

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Adapted from Google Map

Figure 10.
Preglottalization ●

Preglottalization &
Prenasalization &
Preaspiration ●

Prenasalization &
Preaspiration ●

Preaspiration ●

Prenasalization ●

Prenasalization
& Preglottalization ●

Amdo Tibetan

Northern Qiang

nDrapa

Anong

Nuosu Yi

Taliu

Weishan Yi

Hlepho

Lalo
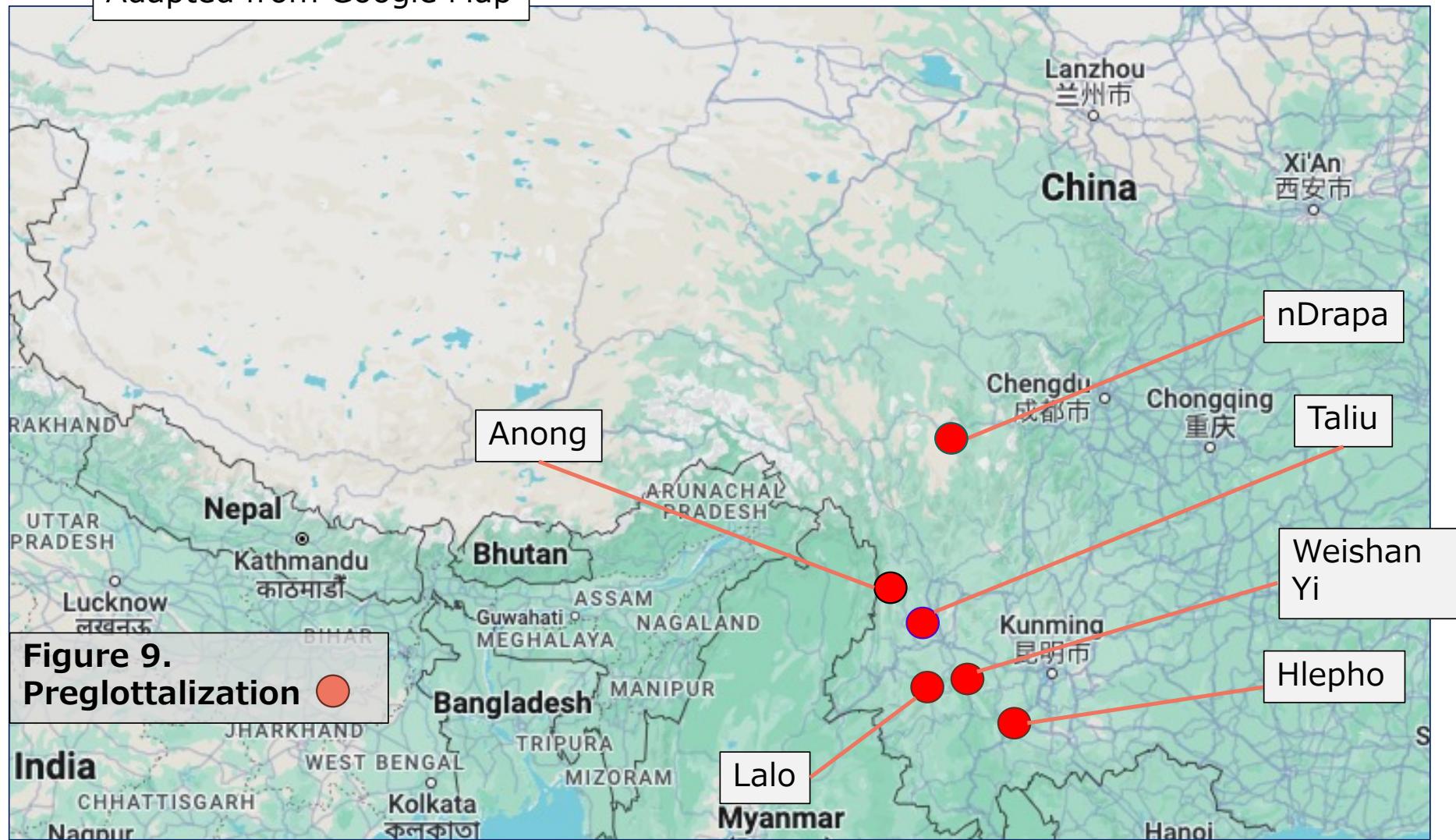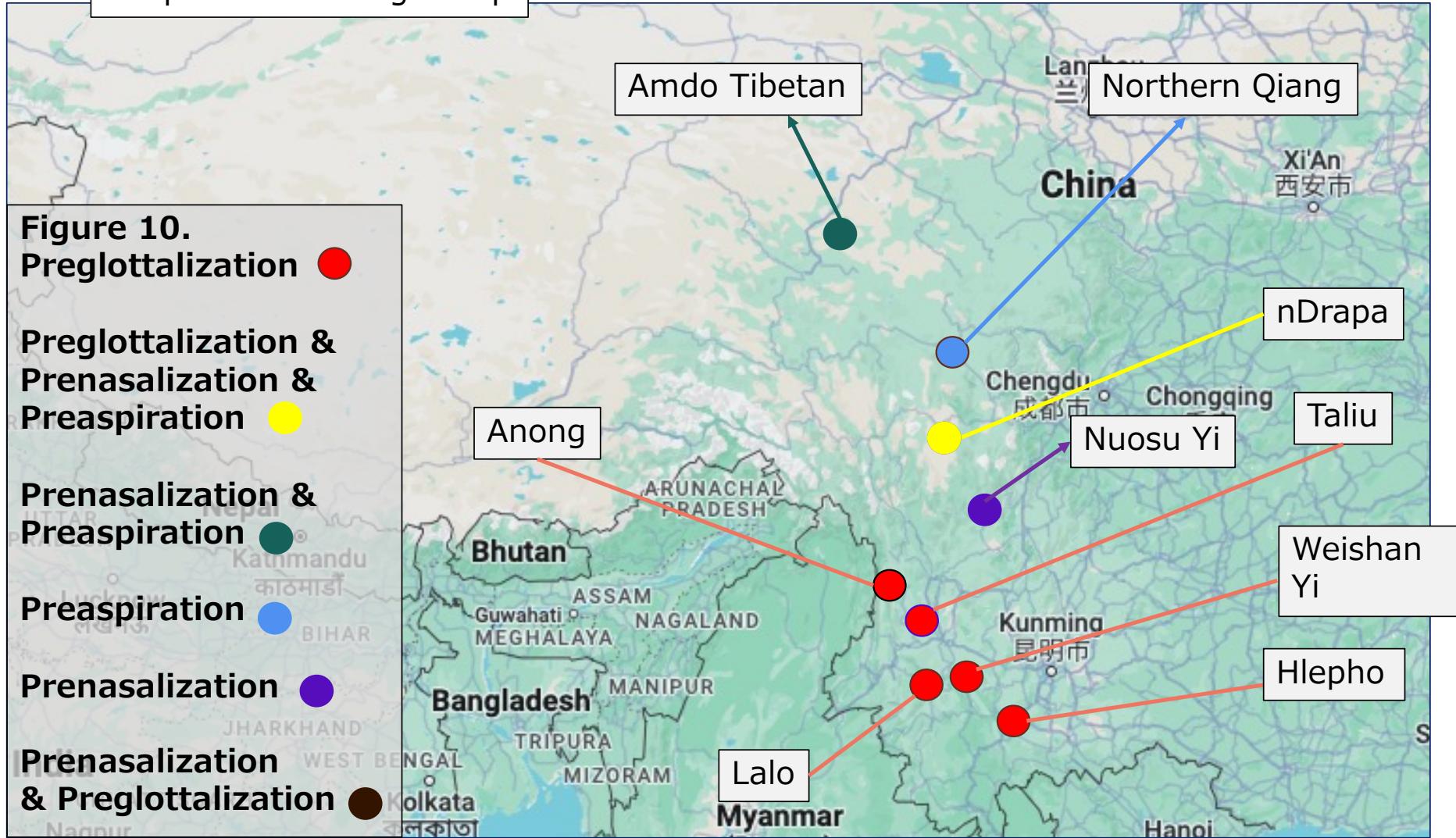
voiceless sonorants vs. voiced sonorants

- Lhasa Tibetan (Tibetic) [e.g. Kitamura 1977]

- Litang Tibetan (Tibetic) [e.g. Chen & Zhou 2020]

- Anong (Nungish) [e.g. Sun & Liu 2005]

- Nusu (Nungish) [e.g. Sun ed. 1991]

- Nuosu Yi (Lolo-Burmese) [e.g. Chen & Wu 1998]

- Youle Jino (Lolo-Burmese) [e.g. Gai 1986, Hayashi 2009]

- Longchuan Achang (Lolo-Burmese) [e.g. Shi 2021]

cf. Yi Languages Comparison [e.g. Li 1996]

voiceless sonorants vs. voiced sonorants

• Litang Tibetan (Tibetic) [Chen & Zhou 2020]

p	b	t	d	tɕ	dʑ	k	g
ph		th		tɕh		kh	
m̥h	m	n̥h	n	n̥ʑh	n̠ʑ	ŋ̥h	ŋ
		ɬ					
		l̥h	l				

Adapted plosives, affricates, nasals and laterals only

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voiceless sonorants vs. voiced sonorants

- Litang Tibetan (Tibetic) [Chen & Zhou 2020: 69]

Figure 11: Litang Tibetan lateral fricative and voiceless aspirated lateral
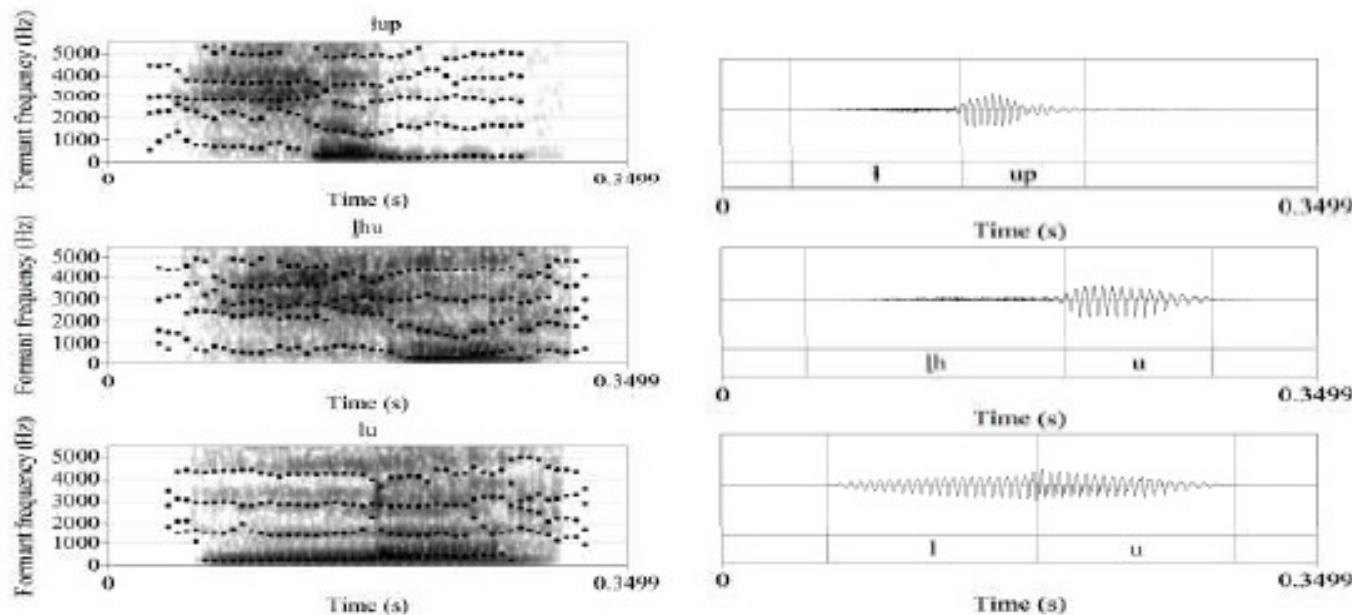
图 3   理塘话 ɫup "飘扬"、l̥hu "引诱" 和 lu "龙" 的语图和波形图

Litang Tibetan: ɫup"flutter", l̥hu "lure" and lu "dragon"

voiceless sonorants vs. voiced sonorants

- Nuosu Yi (Lolo-Burmese) [e.g. Chen & Wu 1998]

$\mathring{\eta}i^{33}$ "ear, spike"

ni^{33} "to smell"

$\mathring{l}a^{55}$ "trousers"

la^{55} "tea"

Sound Files from Shen Hong

voiceless sonorants vs. voiced sonorants

• Nuosu Yi (Lolo-Burmese) [e.g. Chen & Wu 1998]   Sound Files from Shen Hong
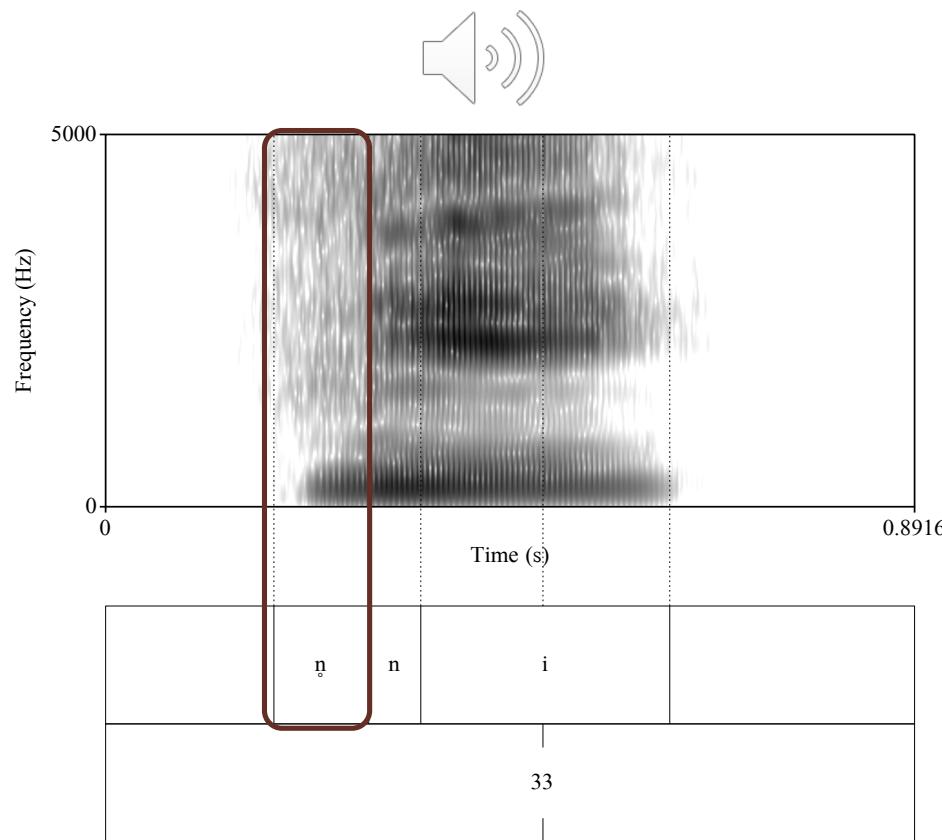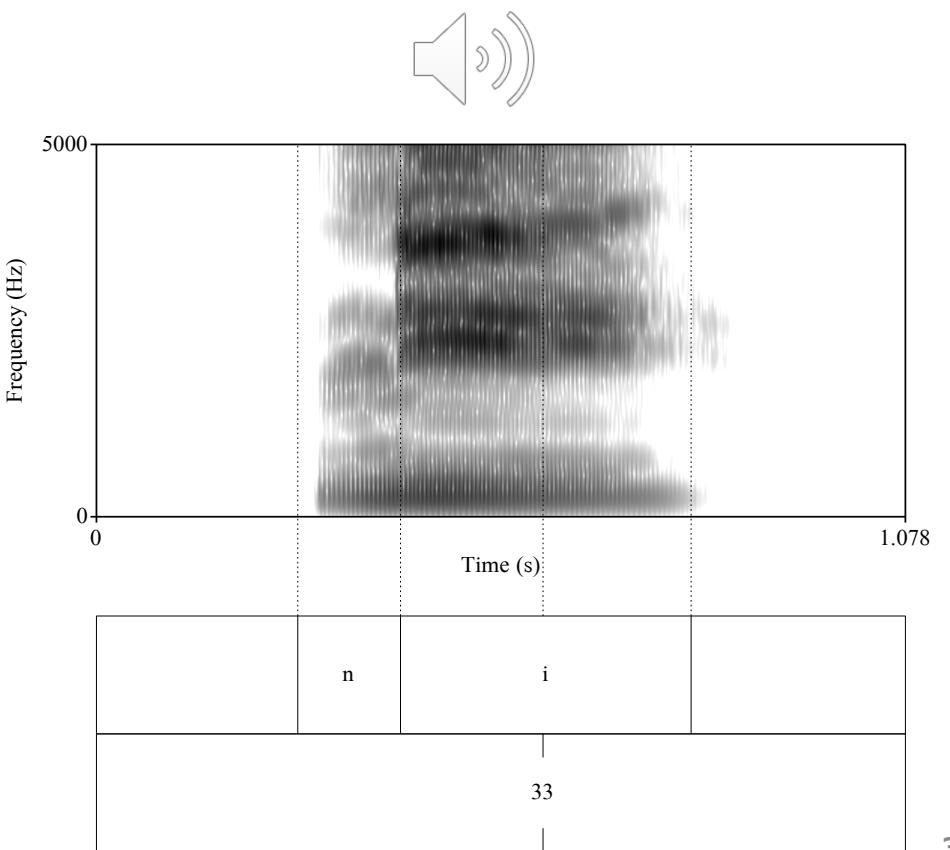
voiceless sonorants vs. voiced sonorants

• Youle Jino (Lolo-Burmese) [e.g. Hayashi 2009]

$m̥^{55}$ "to speak"

m^{33} "to do"

$l̥ø^{55}$ "to undress"   cf. Akha /lɛq/ (Hansson 1989)

$lø^{42}$ "there"

Sound Files from WAZ
recorded by Hayashi

voiceless sonorants vs. voiced sonorants

- Youle Jino (Lolo-Burmese) [e.g. Hayashi 2009]

Sound Files from WAZ
recorded by Hayashi

"to do"

"to speak"

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Adapted from Google Map

Figure 14: Voiceless Sonorants
- voiceless nasal only
- voiceless nasal + lateral

Lhasa Tibetan

Anong

Liangsu Nu

Nusu

Longchuan Achang

Nuosu Yi

Taliu

Youle Jino

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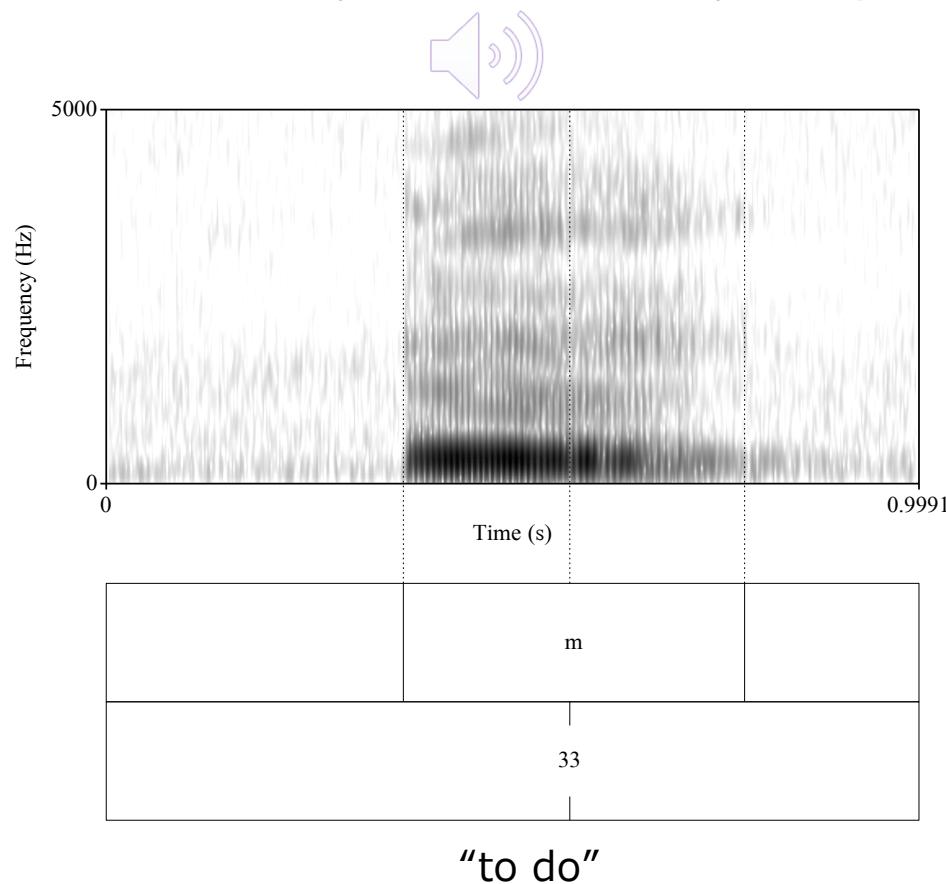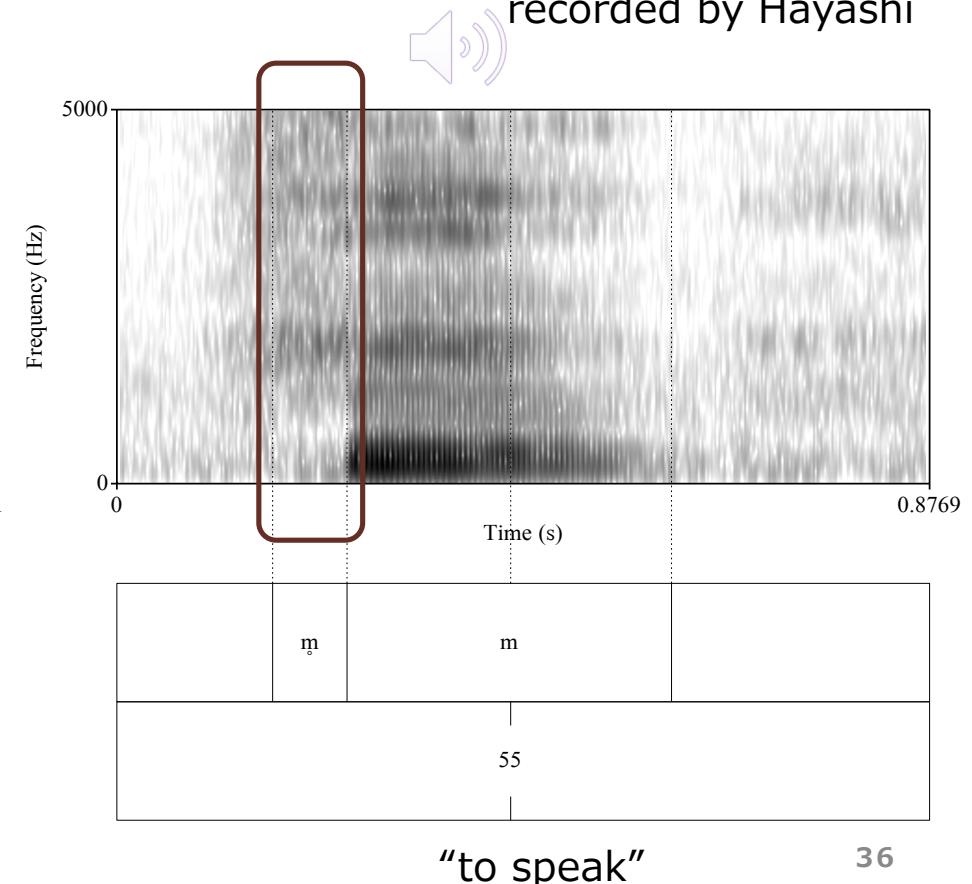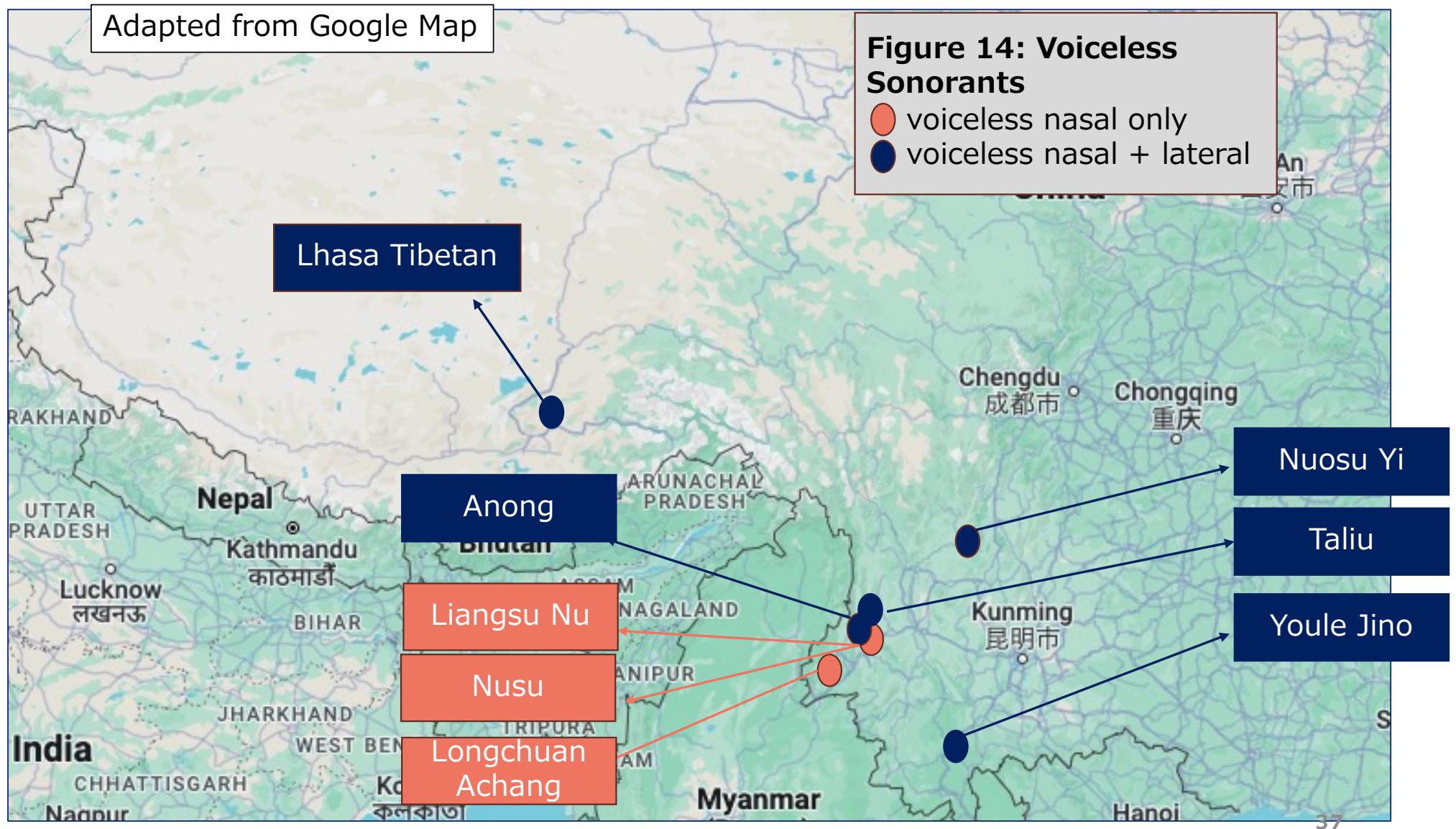
voiceless sonorants and preglottalization

- Li (1996)   Weishan Yi and other TB

Gloss	Weishan Yi	Other TB
"teach"	$\text{ʔ}\mathbf{m}a^{21}$	$\mathbf{m̥}a^{55}$ (Nuosu Yi), $\mathbf{m̥}ɔ^{ʔ55}$ (Achang)
"eye"	$\text{ʔ}\mathbf{m}ɪ^{33}tsE^{21}$	$\mathbf{m}\underline{e}^{33}du^{21}$ (Nanhua Yi), $\mathbf{m}j\underline{a}^{33}$ (Hani) , etc.
"nose"	$\text{ʔ}\mathbf{n}ɑ^{55}khu^{33}$	$\mathbf{sn}a$ (Written Tibetan), $\mathbf{ŋ̥}ɑ^{21}bi^{55}$ (Nuosu Yi) , etc.
"red"	$\text{ʔ}\mathbf{n}^{55}$	$ɑ^{33}\mathbf{ŋ̥}i^{33}$ (Nuosu Yi), $\mathbf{ŋ̥}e^{33}$ (Nusu)

Data adapted from Li (1996)

voiceless sonorants and preglottalization

Typology: Sample Languages

		Preglottalization	
		Yes	No
Voiceless Sonorants	Yes	nDrapa, Anong, Nusu, Taliu	Lhasa Tibetan, Nuosu Yi, Youle Jino, Longchuan Achang
	No	Lalo, Hlepho Phowa	MANY Languages [default]

Adapted from Google Map
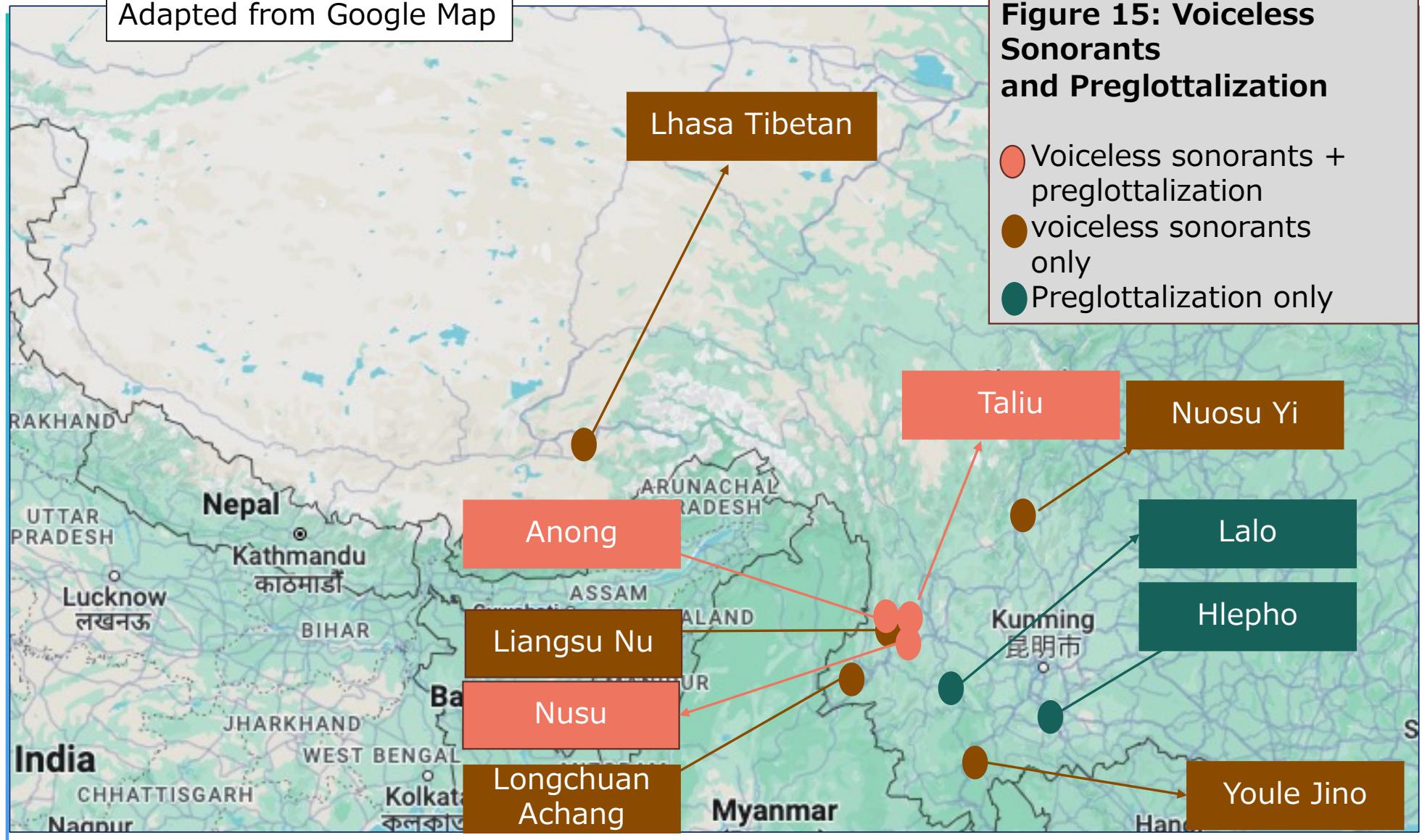
Figure 15: Voiceless Sonorants and Preglottalization

🔴 Voiceless sonorants + preglottalization
🟤 voiceless sonorants only
🟢 Preglottalization only

Lhasa Tibetan

Taliu

Nuosu Yi

Anong

Lalo

Hlepho

Liangsu Nu

Nusu

Longchuan Achang

Youle Jino

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Figure 16: Phula Languages

Adapted from Pelkey (2011: vii)

Bilabial Trill

cf. Northern Sangtam (Nagaland; Ao)
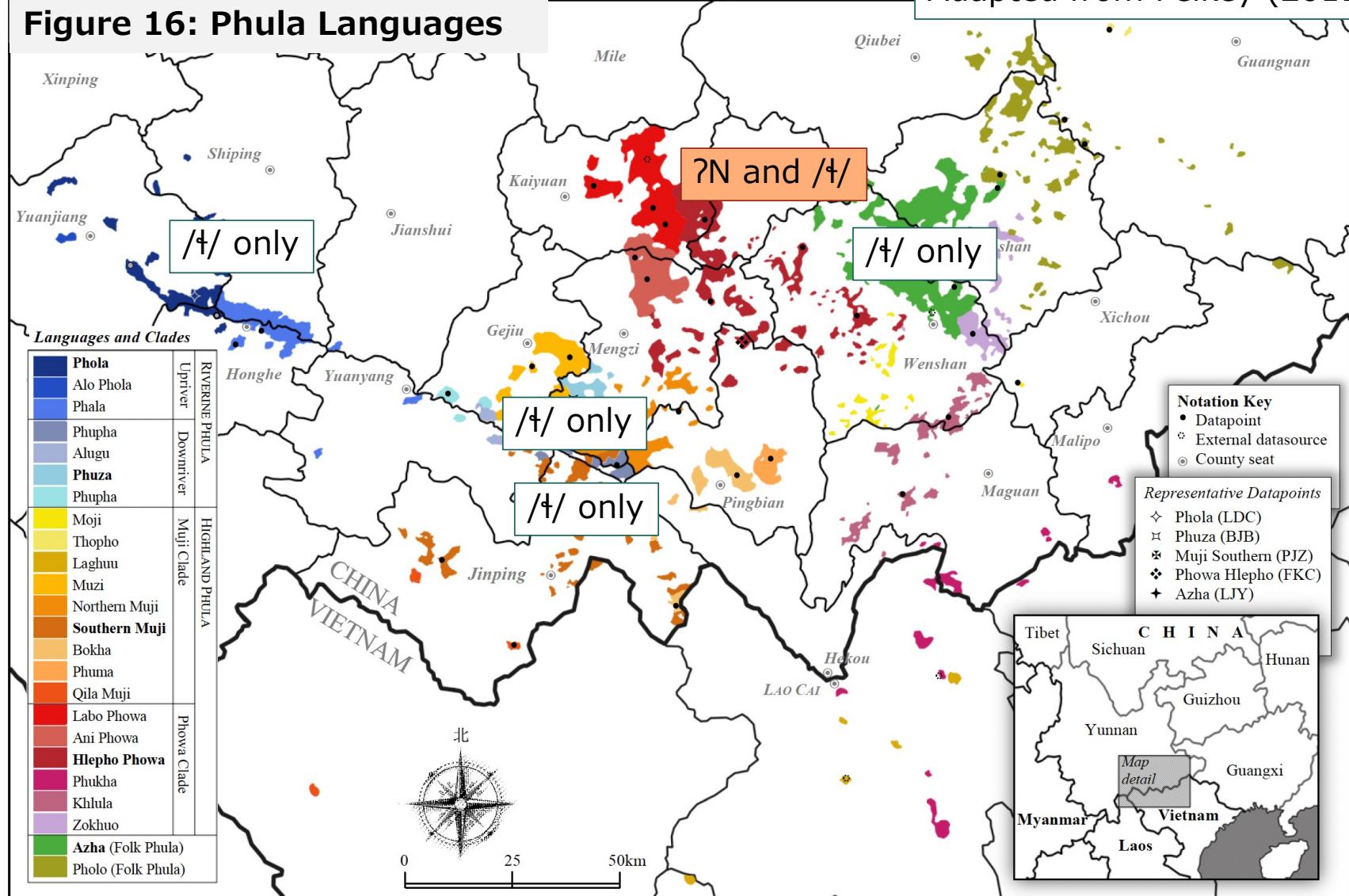
prestopped bilabial trill /t͡ʙ̥, t͡ʙ̥ʰ/ [Coupe 2020]

• Nuosu Yi (Lolo-Burmese; Sichuan)

Figure 17: Nuosu Yi Bilabial Trill

[e.g. Chen & Wu 1998, Edmondson et al. 2016]
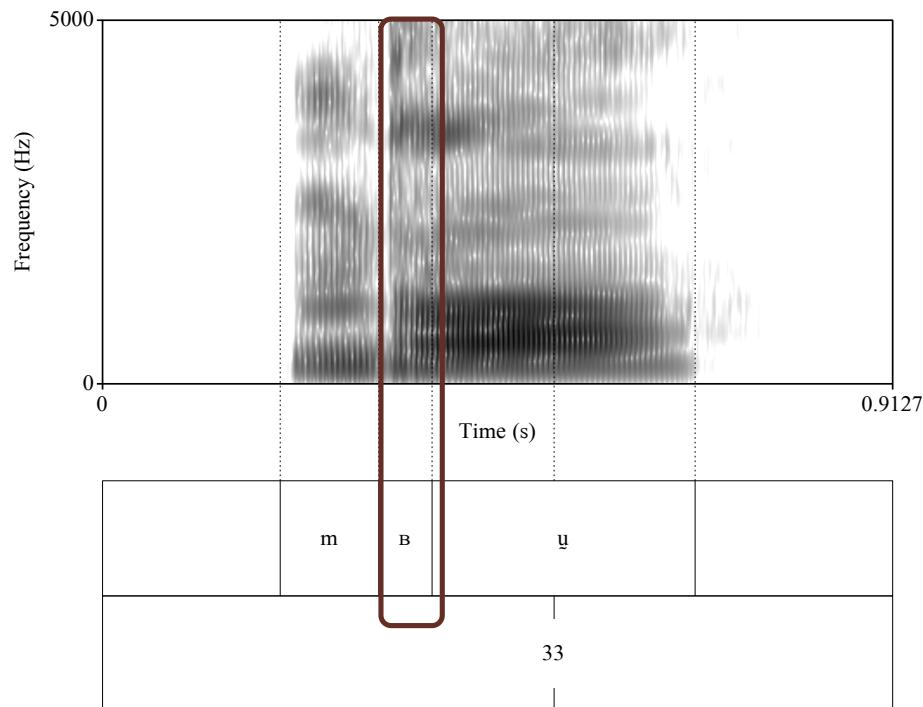
mbu̠^{33} [mʙũ̠^{33}]

"full"

Sound Files from Shen Hong

phonetic level

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Bilabial Trill

cf. Northern Sangtam (Nagaland; Ao)

prestopped bilabial trill /t͡ʙ̥, t͡ʙ̥ʰ/ [Coupe 2020]

- Jianchuan Bai (Baic; Yunnan) [Adapted from Edmondson et al. 2021]

"The /u/ vowel following /t/ yields a bilabial trill [ʙ̥] that becomes voiced into the vowel:"

/tu^{55}/ [t̪ʙ̥ṳ^{55}]   "alone; mean person"

/tṳ$^{55+}$/ [t̪ʙ̥ṳ$^{55+}$]   "belly"

phonetic level

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Bilabial Trill

cf. Northern Sangtam (Nagaland; Ao)

prestopped bilabial trill /t͡ʙ̥, t͡ʙ̥ʰ/ [Coupe 2020]

- Yongning Na(Naic; Yunnan) [Adapted from Lidz 2010]

"The labials /pʰ, p, b, m, w/ appear as their allophones [ʙ̥ʰ, ʙ̥, ʙ, ɱ, ɣ] preceding /ɯ, u, ɣ/," (Lidz 2010: 26)

/pʰu³³/ [ʙ̥ʰu³³] "money"

/pu¹³/ [ʙ̥u¹³]   "barrel"

/bu³³/ [ʙu³³]   "POSS"

phonetic level

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Consonants as Onset

K- vs. Q-

- velar vs. uvular   relatively few

Lolo-Burmese languages   Bangduo Lahu (Lolo-Burmese) [Li 2014: 23-24]
Sangkong (Lolo-Burmese) [Li 2002: 17-19]

For Loloish uvulars, see Gai and Jiang (1992).

Qiangic languages

Rgyalrongic languages   Japhug (rGyalrongic) [Jacques 2021: 49]

cf. Sumi (Nagaland; Ao) /q, qʰ/ [Teo 2014]

   Mara (Mizoram; Kuki-Chin) /q, qʰ/ [Arden 2010]

K- vs. Q-

- Bangduo Lahu (Lolo-Burmese) [Li 2014: 23-24]

ka^{53}	"to hear"	**q**a^{53}	"calm"

< PLB. ***gl**a^2 Matisoff (2003)

kha^{53}	"to be astonished"	**qh**a^{53}	"bitter"

< PL. ***k**a^2 Bradley (1979)

xa^{35} "to stay"

ɣa^{53} "to win"

K- vs. Q-

• Japhug (rGyalrongic) [Jacques 2021: 49]

kɯki	"this"	**q**ɯqli	"staring"
kʰɯna	"dog"	kɯ-sɤ**qʰ**ɯqʰa	"naughty"
gɯgɯɣ	"very dark (sky)"		
ɯ-**ŋg**ɯ	"inside"	mɯ**ɴɢ**ɯ	"Ligularia fischeria"
xɯrxɯr	"round"	**χ**ɯχɯ	"having big nostrils"
ɣɯ	"genitive"	naŋ**ʁ**ɯ	"shirt"

Adapted from Google Map

Figure 17: /k-/ vs. /q-/

Qiangic

Rgyalrongic

Northern Bai

Yongning Na

Lahu

Sani Yi

Sangkong

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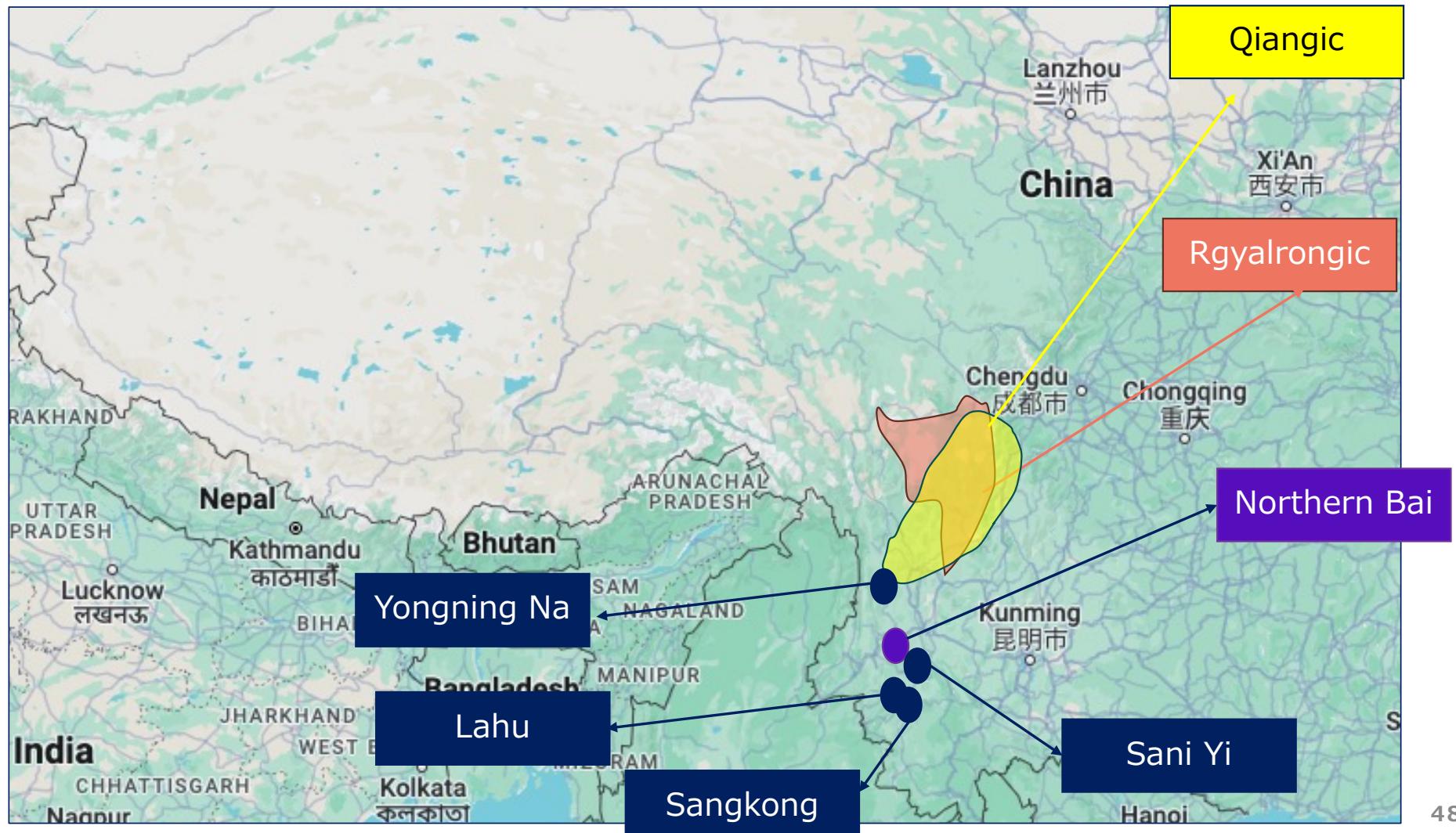
Medials and Complex Onsets

- Medials: Sonority increases toward the nucleus

- Complex Onsets: Sonority decreases before the nucleus in some cases.

Medials

Lolo-Burmese
Naic
Baic

Complex Onsets

Tibetic
Rgyalrongic
Qiangic

pre-initial (Evans 1999, etc.)

Medials and Complex Onsets

Complex Onsets

Tibetic
Rgyalrongic
Qiangic

Japhug [Rgyalrongic; Sichuan]
Jacques (2019)

double sonority
peaks

/ʐ ŋ g r i/

"star"
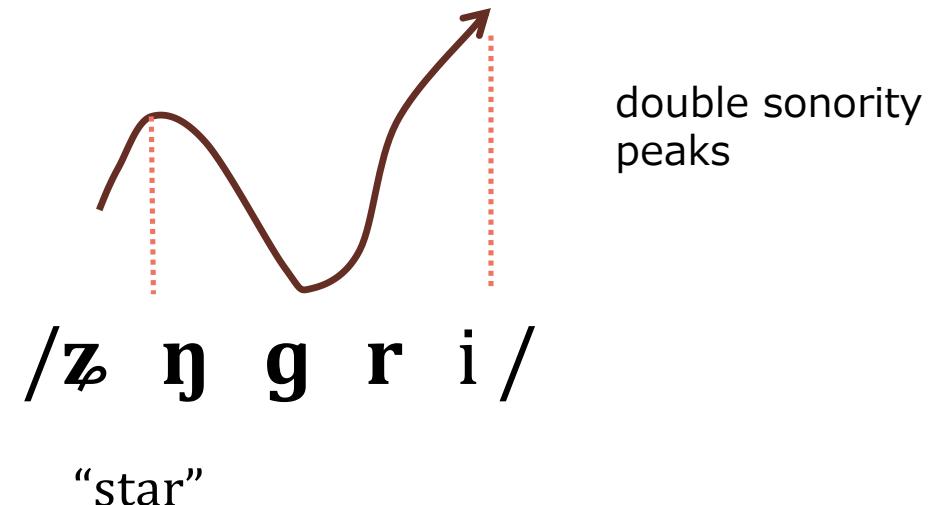
Medials and Complex Onsets

Complex Onsets Japhug [Rgyalrongic; Sichuan] (Jacques 2019)

(C1)(C2)(C3)V(V)(Cf)

Table 13 Count of consonant clusters.

Type	CC	CCC	Total
w-C	15	8	23
s/z-C	23	0	23
l-C	17	1	18
ʂ/r-C	35	0	35
j-C; ɕ/ʑ-C	29	1	30
x/ɣ-C	23	0	23
χ/ʁ-C	26	0	26
N/m-C	35	1	36
n-C	4	0	4
C-ɕ	2		2
C-j; C-w	30	18	48
C-l; C-r	44	53	97
C-ɣ; C-ʁ	32	18	50
Total	315	100	415

Medials and Complex Onsets

Complex Onsets

Japhug [Rgyalrongic; Sichuan] (Jacques 2019)

/ft/ /wd/ /wc/ /wxt/ /sp/ /sŋ/ /zb/ /lp/ /ldʑ/

/wts/ /wɟ/ /wst/ /sm/ /sq/ /zmb/ /lm/ /ldz/

/wtsʰ/ /wk/ /wrt/ /st/ /sqʰ/ /zm/ /lt/ /lc/

/ws/ /wg/ /wsk/ /stʰ/ /znd/ /ltʰ/ /lcʰ/

/wz/ /wzg/ /sn/ /zn/ /ld/ /lŋ/

/wtɕ/ /wzd/ /sc/ /zɟ/ /ln/ /lx/

/wtɕʰ/ /wzɟ/ /scʰ/ /zɲɟ/ /lts/ /lq/

/wɕ/ /wrɟ/ /sɲ/ /zg/ /ltsʰ/ /lpɕ/

/wʑ/ /sk/ /zŋg/ /ltɕ/

/skʰ/ /ltɕʰ/

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Medials and Complex Onsets

Complex Onsets

Japhug [Rgyalrongic; Sichuan] (Jacques 2019)

/rmb/	/rʐ/	/ʂp/	/ʂc/
/rm/	/rɟ/	/ʂpʰ/	/ʂcʰ/
/rd/	/rɲɟ/	/ʂt/	/ʂɲ/
/rnd/	/rɲ/	/ʂtʰ/	/ʂk/
/rn/	/rg/	/ʂts/	/ʂkʰ/
/rdz/	/rŋg/	/ʂtsʰ/	
/rndz/	/rŋ/	/ʂs/	/ʂq/
/rz/	/rɴɢ/	/ʂtɕ/	/ʂqʰ/
/rndʐ/		/ʂtɕʰ/	/ʂχ/
		/ʂɕ/	

.....

Medials and Complex Onsets

Complex Onsets Japhug [Rgyalrongic; Sichuan] (Jacques 2019)

/**ntsɣ**e/   "he sells it"

/**ɲcʰɣ**aʁ/   "birchbark"   < Proto-Tibeto-Burman
*s/r-kawk ⋊ s/r-kwak
Matisoff (2003)

/**ʁmbɣ**i/   "sun"   < Proto-Tibeto-Burman *s-nəy **??**
Matisoff (2003)

/**χpl**oʁ**χpl**oʁ /   "round like a ball"

/**ʑŋgr**i /   "star"   < Proto-Rgyalrongic *tsu-gray
Matisoff (2003)

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Rhymes

- <u>Vowels in Rhyme</u>

  plain vs. creaky

  plain vs. breathy

  long vowels vs. short vowels

  /a/ vs. /ɐ/ or /ɑ/

  apical vowels [ɿ]/ [ʅ]

- <u>Vowel + Coda</u>

  V + Nasal Coda

  V + Stop Coda

  V + liquid Coda

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Rhymes

- plain vs. creaky

For genetic classification, see Bradley 1997.

Lolo-Burmese

Burmish
Loloish

Burmese | Langsu Leqi Zaiwa | Achang

Bisu | Lahu Jino | Akha Akeu Hani   Nuosu

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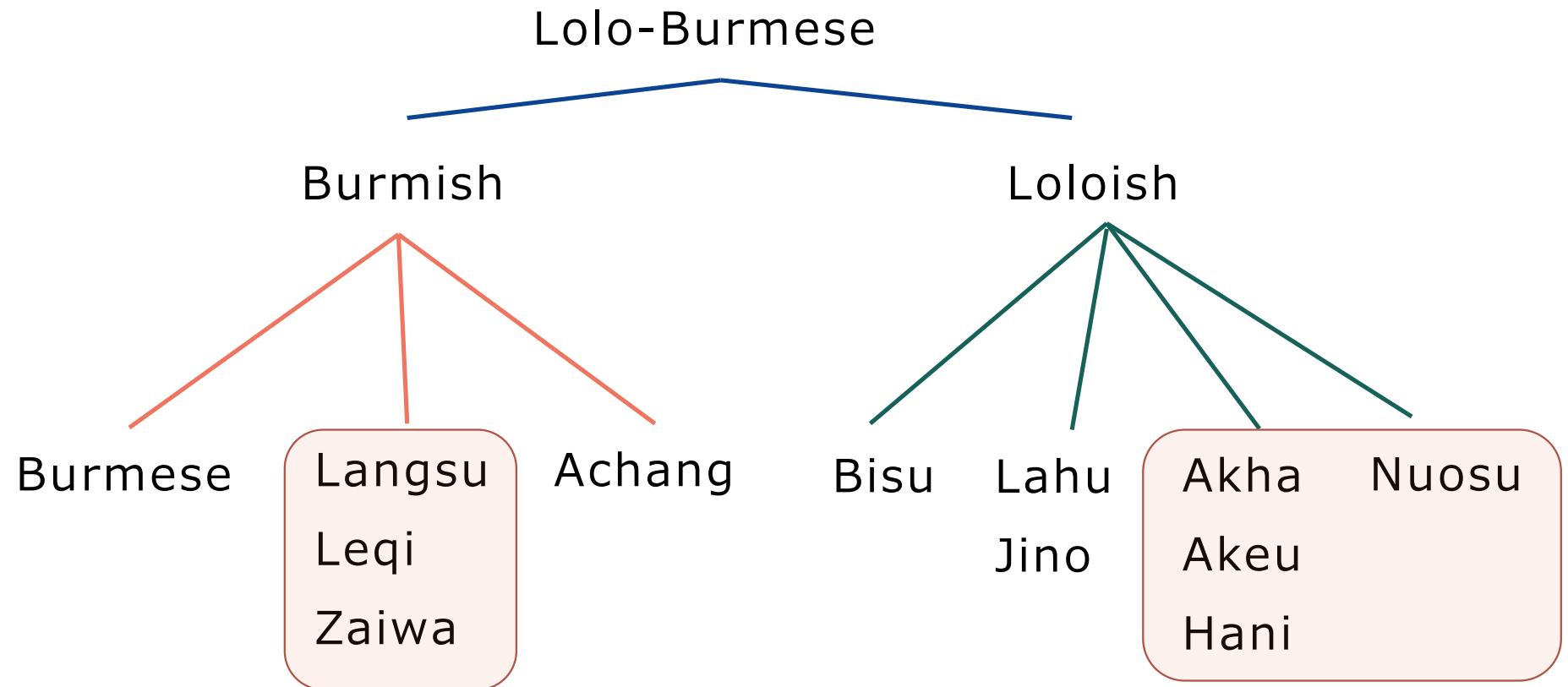
Creaky vowels

・Major Previous Studies

Ma (1948): Nuosu Yi [Lolo-Burmese]

Dai (1958): TB in China

Dantsuji (1982): Nuosu Yi Acoustic Phonetics

Kurosawa (2001): Naxi

Suzuki (2005, 2007, 2008, etc.): Tibetan dialects

Suzuki (2011): Phonetic features

, …, among others

Creaky vowels

- Nuosu Yi (Lolo-Burmese) [e.g. Chen & Wu 1998]

plain | creaky

si^{33} "to die"   si^{33} "firewood"

va^{33} pu^{33} "cock"   pu^{33} "to return"

For acoustic studies,
see Dantsuji (1982), Kong (1992), etc.

Sound Files from Shen Hong

Creaky vowels

Sound Files from Shen Hong

Figure 18: Nuosu Yi non-creaky vowel

Nuosu Yi
va³³pu³³
"cock"

	pig		male	
	v	a	p	u	
		33	33	
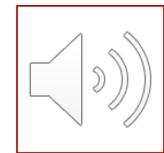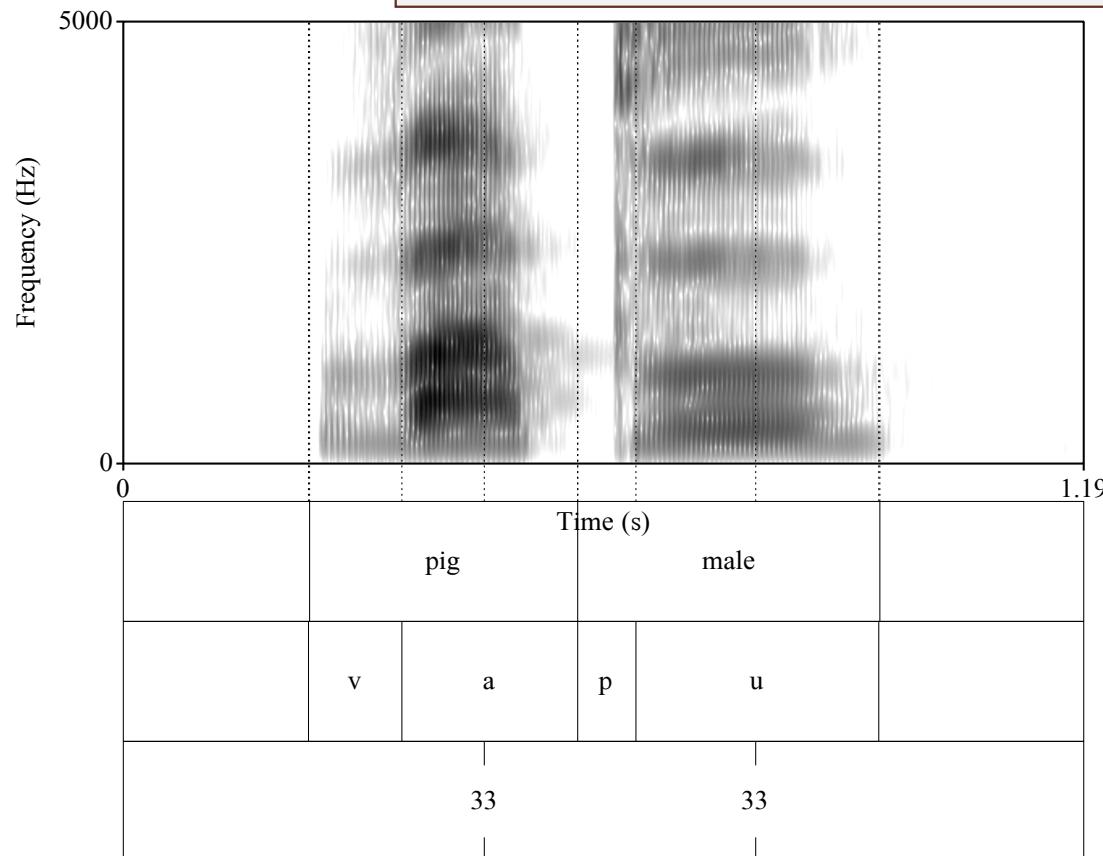
Creaky vowels

Sound Files from Shen Hong

Figure 19: Nuosu Yi creaky vowel

Nuosu Yi
pu̠³³
"to return"
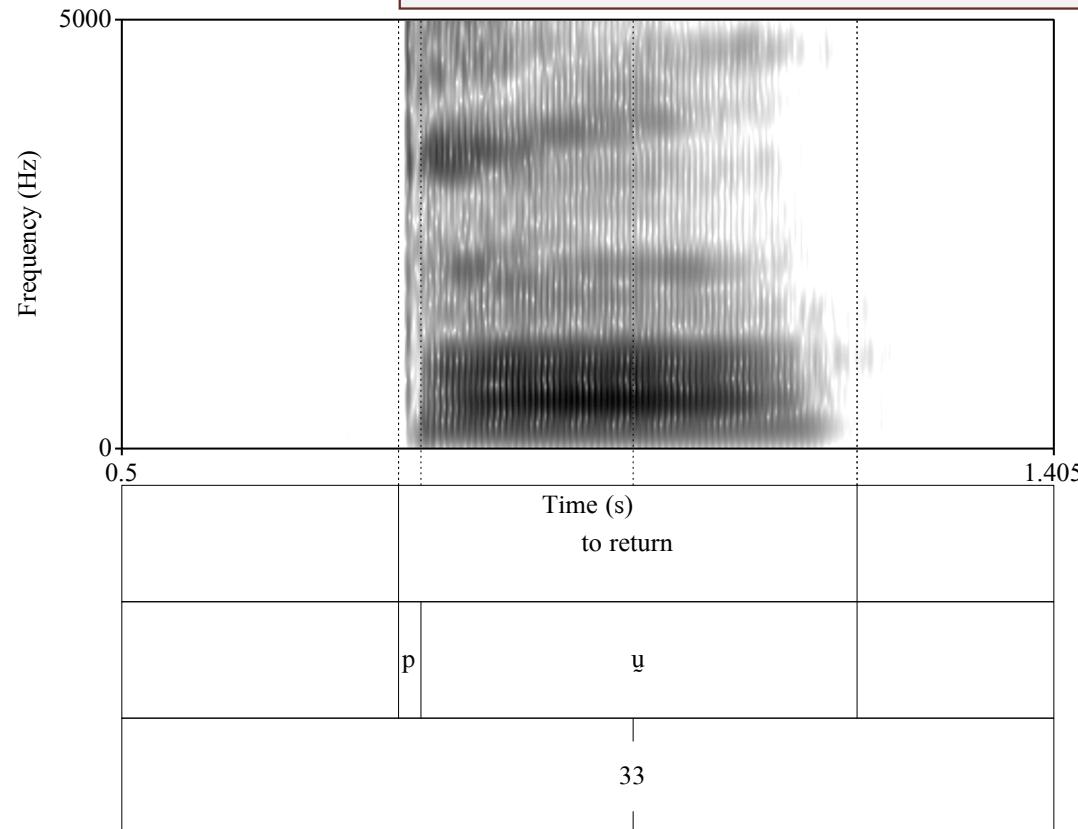
Creaky vowels

- Hani (Lolo-Burmese) [e.g. Huang ed. 1992]

plain

creaky

na^{55} "ill" < Proto Loloish *C-na^1
Bradley (1979)

n<u>a</u>^{33} "black" < Proto Loloish *C-na**k**^{H}
Bradley (1979)

Development of Creaky Vowels [e.g. Bradley 1979, Dai 1979, Matisoff 2003, etc.]

*CVC# > C<u>V</u>#
[+stop] [+creaky]

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Creaky vowels and Aspiration

- Creaky vowels generally tend not to occur after aspirated onsets. (cf. Dai & Duan 1995 for Hani, Kurabe 2020, etc.)

- Menglun Akeu(Lolo-Burmese) [Hayashi & Gao 2019]

$$\begin{bmatrix} \text{-continuant,} \\ \text{-sonorant,} \\ \text{-voiced} \end{bmatrix} \rightarrow [\text{+aspirated}] \, / \, \underline{\quad} \begin{bmatrix} \text{+vocalic} \\ \text{-creaky} \end{bmatrix}$$
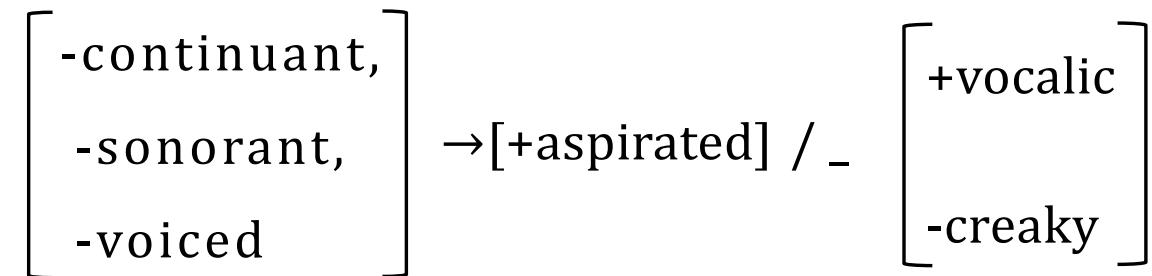
cf. Lewis (1968) for Akha

/tu⁵⁵pɔ⁵⁵/ [tʰu⁵⁵pʰɔ⁵⁵/   /tsɤ⁵⁵tɤ̰²¹/ [tsʰɤ⁵⁵tɤ̰²¹/   Sound Files from ZL recorded by Hayashi

"to stand" 🔊   "eleven" 🔊

Figure 20.
Lolo-Burmese Area,
Nuosu Yi, and
Menglun Akeu

Nuosu Yi

Lolo-Burmese

Menglun Akeu

Breathy vowels few in China

- dGonpa dialect of mBrugchu Tibetan [Gansu, China; Tibetic] (Suzuki 2015)

- Guiqiong [Sichuan; Qiangic] (Jiang 2015)

- nDrapa [Sichuan; Qiangic] (Shirai 2006) phonetic level

- Lalo [Yunnan; Lolo-Burmese] (Yang 2011)

, etc.

Breathy vowels   few in China

- Guiqiong [Sichuan; Qiangic] (Jiang 2015)

"In phonation, two sets of distinctions are made: voiced and breathy, voiceless and aspirated voiceless." (Jiang 2015: 31)

voiceless	/k/	/kɐ/	"pluck; pick"
aspirated voiceless	/kh/	/khɐŋ/	"give"
voiced	/g/	/gi/	"backwheat"
breathy-voiced	/gʼ/	/gʼi/	"highland barley"
		[ki̤] ?	

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Long Vowels vs. Short Vowels

- Leqi (Lolo-Burmese) [Dai & Li 2007]

Long		short

jaː^{31}	"to cure"	a^{33}ja^{31}	"not cure"
thuː^{33}	"thick"	a^{33}thu^{33}	"not thick"
naːm^{53}	"smelly"	a^{33}nam^{53}	"not smelly"
pjəːŋ^{55}	"full"	a^{33}pjiŋ^{55}	"not full"

morphosyntactic conditions

Long Vowels vs. Short Vowels

• Lhasa Tibetan (Tibetic) [e.g. Kitamura 1977]

Long		short	
/ˉkyii/	"of the dog"	/ˉkyi/	"dog"
/ˈmee/	"of fire"	/ˈme/	"fire"
/`jii/	"one"	/ˈgu/	"nine"
/ˈtree/	"mule"	/ˈca/	"tea"

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/a/ vs. /ɐ/ or /ɑ/

- Lianghe Achang (Lolo-Burmese) [Shi 2009]

/a(ʔ)/   /ɑ(ʔ)/

pa^{ʔ31} "inject"   pɑ^{ʔ31} "pull out (the grass)"

kha^{ʔ31} "add (salt)"   khɑ^{ʔ31} "feed (pigs)"

tɕha^{31} "winnow (wheat)"   tɕɑ^{31} "eat"

Apical Vowels

[ɿ]/ [ʅ]

Allophonic variation of /i/
Cooccurrence with Dental
Onsets

non-
IPA

IPA: [ɹ̩][z̩][ʂ̩][ʐ̩~ɻ̩]

Mandarin Chinese   cf. Lee & Zee (2003)

四 <sì> [sɿ⁵¹] /[sɹ̩⁵¹]
是 <shì> [ʂʅ⁵¹] /[ʂɻ̩⁵¹]
日 <rì> [ɻʅ⁵¹] /[ɻ̩⁵¹]

Apical Vowels   [ɿ]/ [ʅ]

- Nuosu Yi (Lolo-Burmese)   Sound Files from Shen Hong

[e.g. Chen & Wu 1998, Edmondson et al. 2016]

/pi²¹/ [pɿ²¹]/ [pẓ²¹] "to carry on the back" 🔊   Allophone of /i/

/si²¹/ [sɿ²¹]/ [sẓ²¹] "to understand" 🔊

/a³³ʂi⁵⁵/ [ɐ³³ʂɿ⁵⁵]/ [ɐ³³ʂẓ⁵⁵] "new" 🔊

/zi³³/ [zɿ³³]/ [zẓ³³] "early" 🔊

Figure 21: Nuosu Yi apical vowel

Apical Vowels [ɿ]/ [ʅ]

Allophone of /i/

• Nuosu Yi (Lolo-Burmese)   Sound Files from Shen Hong

[e.g. Chen & Wu 1998, Edmondson et al. 2016]

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Rhotacized Vowels

[ɚ], [ɛɾ]
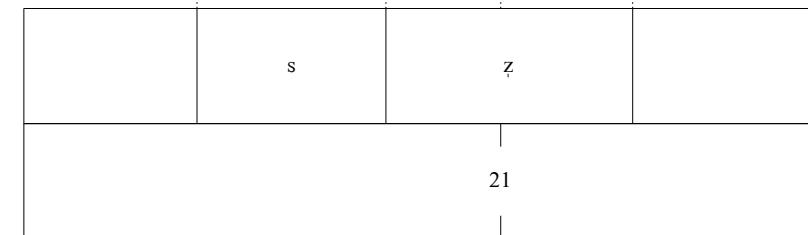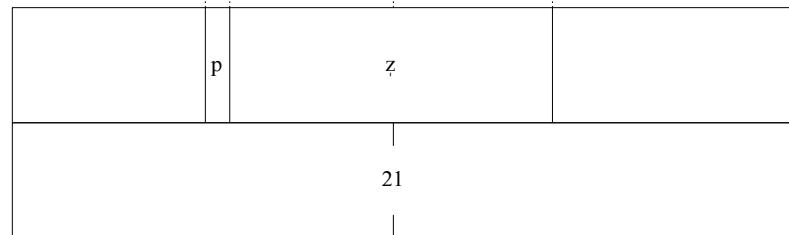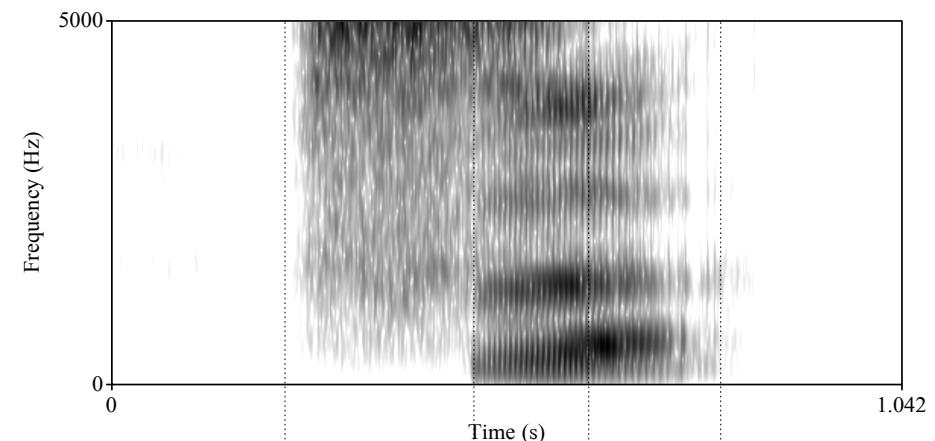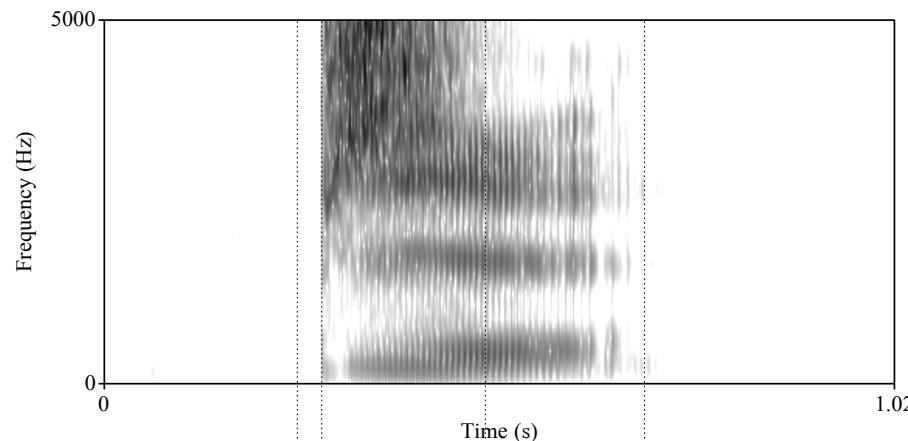
- Sadu (Lolo-Burmese) [e.g. Bai et al. 2012]

- Xinping Lalu (Lolo-Burmese) [e.g. Wang 2020]

- Nasu Yi (Lolo-Burmese) [e.g. Pu 2017]

- Hlersu (Lolo-Burmese) [e.g. Xu et al. 2013]

- Bijiang Bai (Baic) [e.g. Sun et al. 1991]

- Northern Qiang (Qiangic) [e.g. Sun et al. 1991]

Rhotacized Vowels

Figure 22: Ersu Rhotacized vowel

/a/ vs. /a˞/

Ersu

[Qiangic; Sichuan]

(Adapted from

Chirkova et al. 2015)
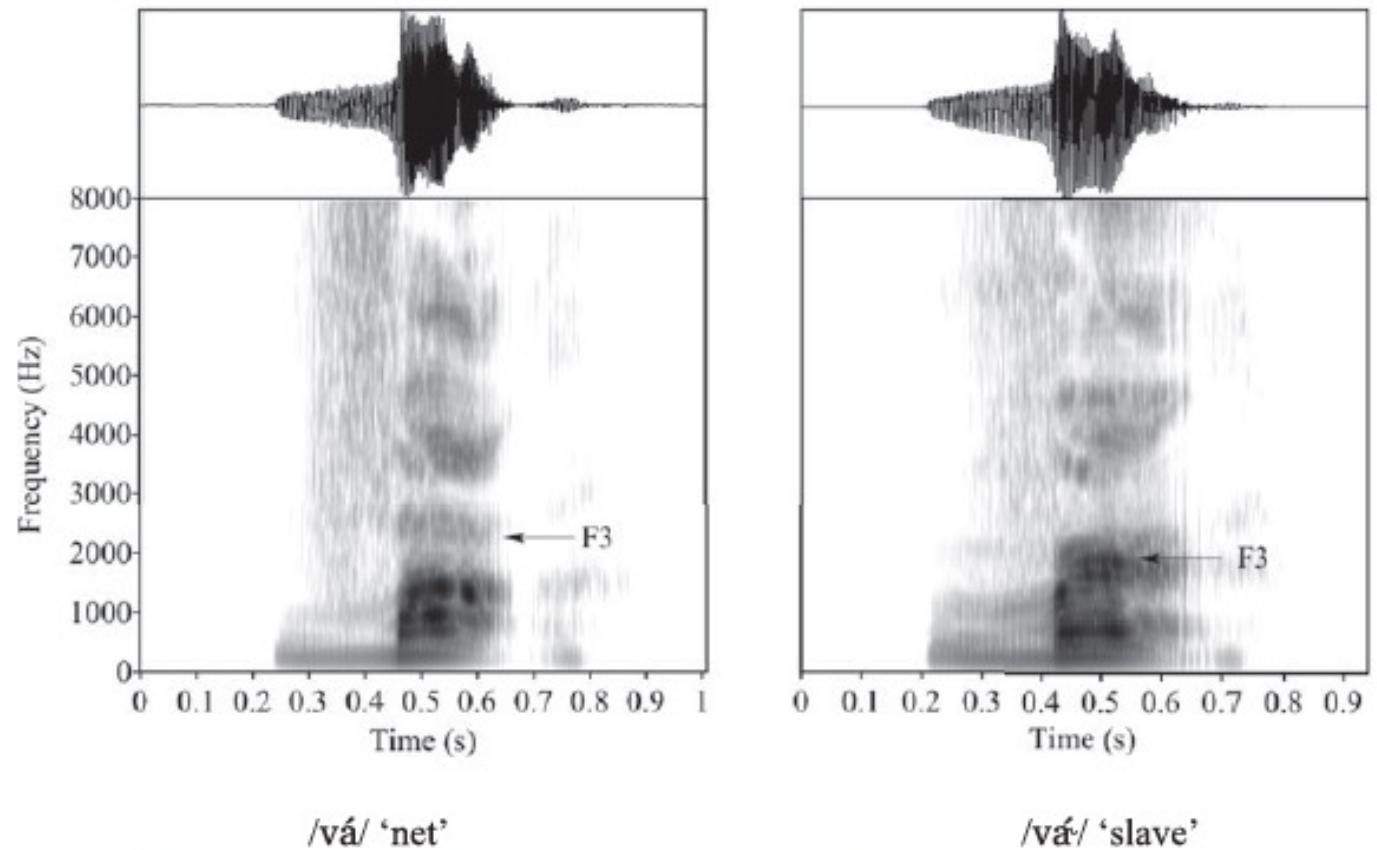
/vá/ 'net'

/vá˞/ 'slave'

Figure 18 Spectrograms of /vá/ 'net' vs. /vá˞/ 'slave' (arrows indicate F3).

Adapted from Google Map

Figure 23.
Rhotacized Vowels

Northern Qiang

Ersu

Nasu Yi

Sadu

Xinping Lalu

Hlersu

Nujiang Bai

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Rhymes

For genetic classification, see Bradley 1997.

- Vowel + Nasal Coda

Lolo-Burmese

Burmish

Loloish

Burmese Langsu Achang
Leqi
Zaiwa

Bisu Lahu Akha Nuosu
Jino Akeu
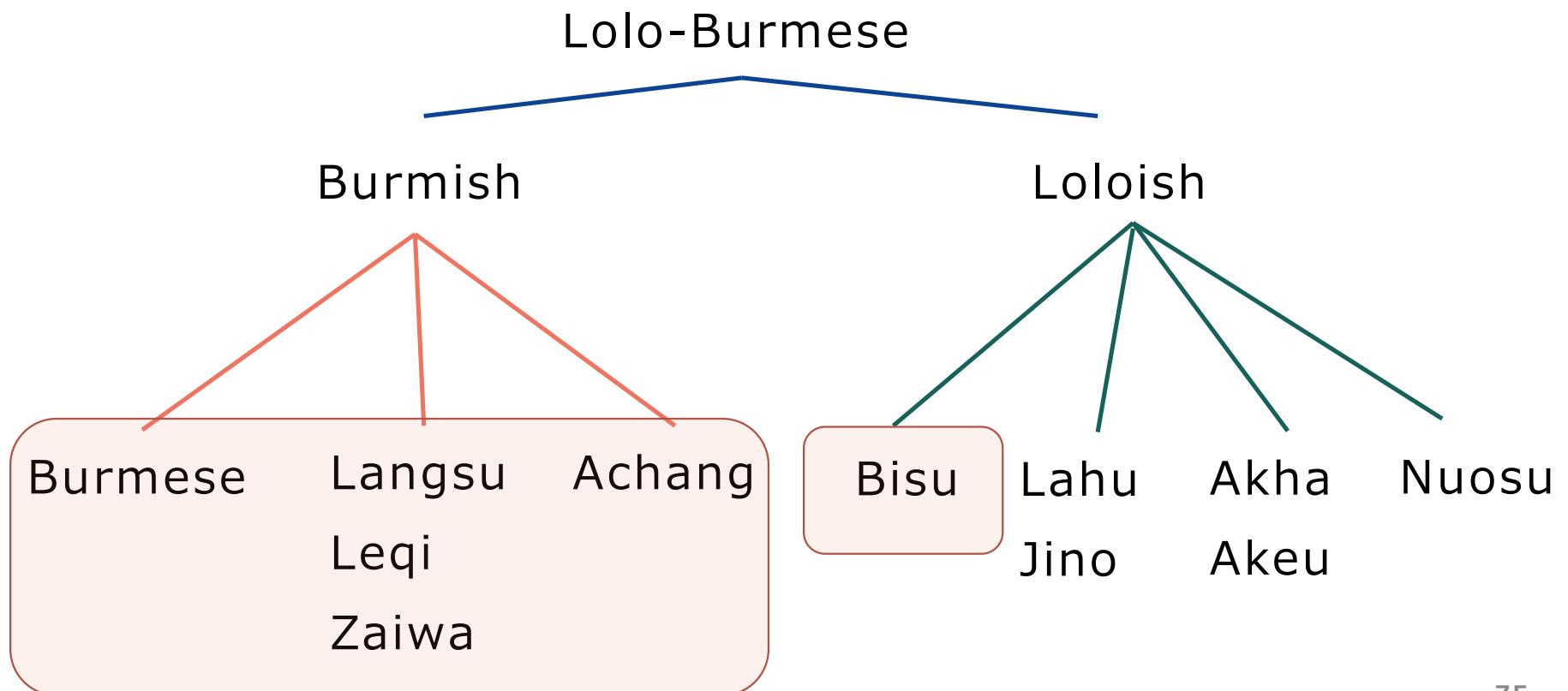
Nasal Coda

• <u>Bisoid and Burmish</u>

	Bisoid	Burmish		Loloish
gloss	**Bisu**	**Langsu**	**Leqi**	**Hani**
"three"	su**m**^{55}	sa**m**^{31}	sɔ**m**^{31}	sɔ^{55}
"smell/ smelly"	aŋ^{33}na**m**^{55}	nɛ^{31}	naː**m**^{31}	nɔ^{55}xu^{33}
"wing"	aŋ^{33}to**ŋ**^{55}	taʊ**ŋ**^{31}	tu**ŋ**^{31}	a^{31}dɔ^{55}
"to bray/ to moo"	bɯ**ŋ**^{55}	mja**ŋ**^{31}	mjaː**ŋ**^{31}	[gɔ^{31}] (mɯ^{55})<Mojiang>

Rhymes

For genetic classification, see Bradley 1997.

cf. Hayashi (2007)

• <u>Vowel + Stop Coda</u>

Lolo-Burmese

V + Stop Coda
non-creaky

V+ Stop Coda
creaky

Burmish

Loloish

Burmese

Langsu
Leqi
Zaiwa

Achang

Bisu

Lahu
Jino

Akha   Nuosu
Akeu

Open Syllable
creaky

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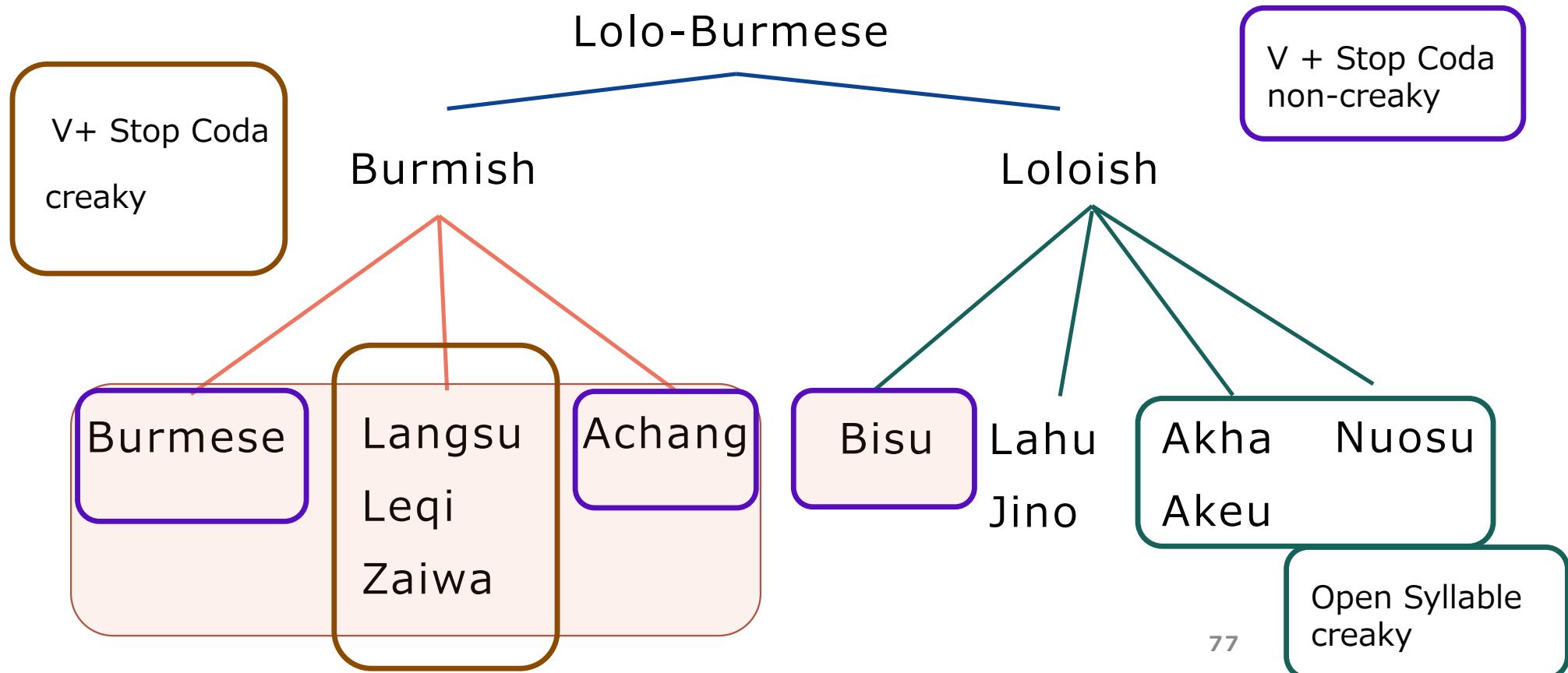
Stop Coda

- <u>Bisoid and Burmish</u>

	Bisoid	Burmish		Loloish
gloss	**Bisu**	**Langsu**	**Leqi**	**Hani**
"to poke, insert"	tsho**k**^{33}	ts<u>au</u>**k**^{55}	ts<u>u</u>ː**k**^{55}	ts<u>u</u>^{33}
"sharp"	aŋ^{33}tha**k**^{33}	thɔ**ʔ**^{55}	thɔː**ʔ**^{55}	t<u>a</u>^{33}
"to wipe"	ɕi**t**^{33}	s<u>a</u>**t**^{55}	suː**t**^{55}	[d<u>u</u>^{31}] (ɕ<u>i</u>^{33}) <Mojiang>

Rhymes

- <u>Vowel + liquid Coda</u>

Lhasa Tibetan	Monosyllabic	innovative
Amdo Tibetan	Monosyllabic	conservative
Rgyalrongic	Monosyllabic or Polysyllabic ?	

Rhymes

• Vowel + liquid Coda

Lhasa Tibetan [Tibetic; Lhasa] (Adapted from Kitamura 1977)

/-r/   /ˈmar/ [ˈmaɹ]   "butter"   cf. also as/ˈmaa/ [ˈmaː]

/-p/ [-p]   /-m/   [-m]

/-r/   [-ɹ]

/-k/ [-k]   /-ŋ/   [-ŋ]

/-ɴ/   [Ṽː]

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Rhymes

- <u>Vowel + liquid Coda</u>

Amdo Tibetan [Tibetic; Qinghai] (Adapted from Ebihara 2019)

/-l/	/je**l**/ [jɛ**l**]	"to do (IPFV)"
/-r/	/hte**r**/ [ʰtɛ**ɹ**]	"to give (IPFV)"

/-p/ [-p~-ɸ]		/-m/ [-m]	/-l/ [-l]
[-b~-β]		/-n/ [-n]	/-r/ [-ɹ]
/-k/ [-k~-χ]		/-ŋ/ [-ŋ]	
[-g~-ʁ]			

Tones

- Tonal languages or Atonal/ Toneless languages

- Tonal languages

  level vs. contour

  TBU = syllable or word

  Accent languages

  Some Qiangic

  (Mu-nya [Ikeda 2002], Prinmi [Ding 2014])

- Atonal/ Toneless languages

  Amdo Tibetan

  Rgyalrongic

  Some Qiangic

For theoretical analysis of Qiangic tones, see also Evans (2009).

Tonal languages

- TBU = syllable

  Lolo-Burmese

  Baic

  Kachinic

  Naic

  Nungish

  Southern Area

- TBU = word

  Tibetic (Central, Kham)

  Qiangic

  Northern Area

Tonal languages

- Typology   Iwasa, Suzuki, Kurabe, Ebihara, Shirai, and Matsuse (2017)

○ ST
□ WT
— NT/NA
△ RG
| SA
Ⅲ WT+SA
+ NT/NA+SA
★ PA
Ⓓ ST+SA
⊖ NT/NA+ST
目 NT/NA+WT
⊛ PA+ST
⊠ PA+WT
✪ ST+PA
◪ WT+RG

ST=syllable tone

WT=word tone

NT=no tone

RG=register

SA=stress accent

NA=no accent

PA=pitch accent

plain patterns
hybrid patterns
tone/accent + phonation

no tone/ accent

word tone
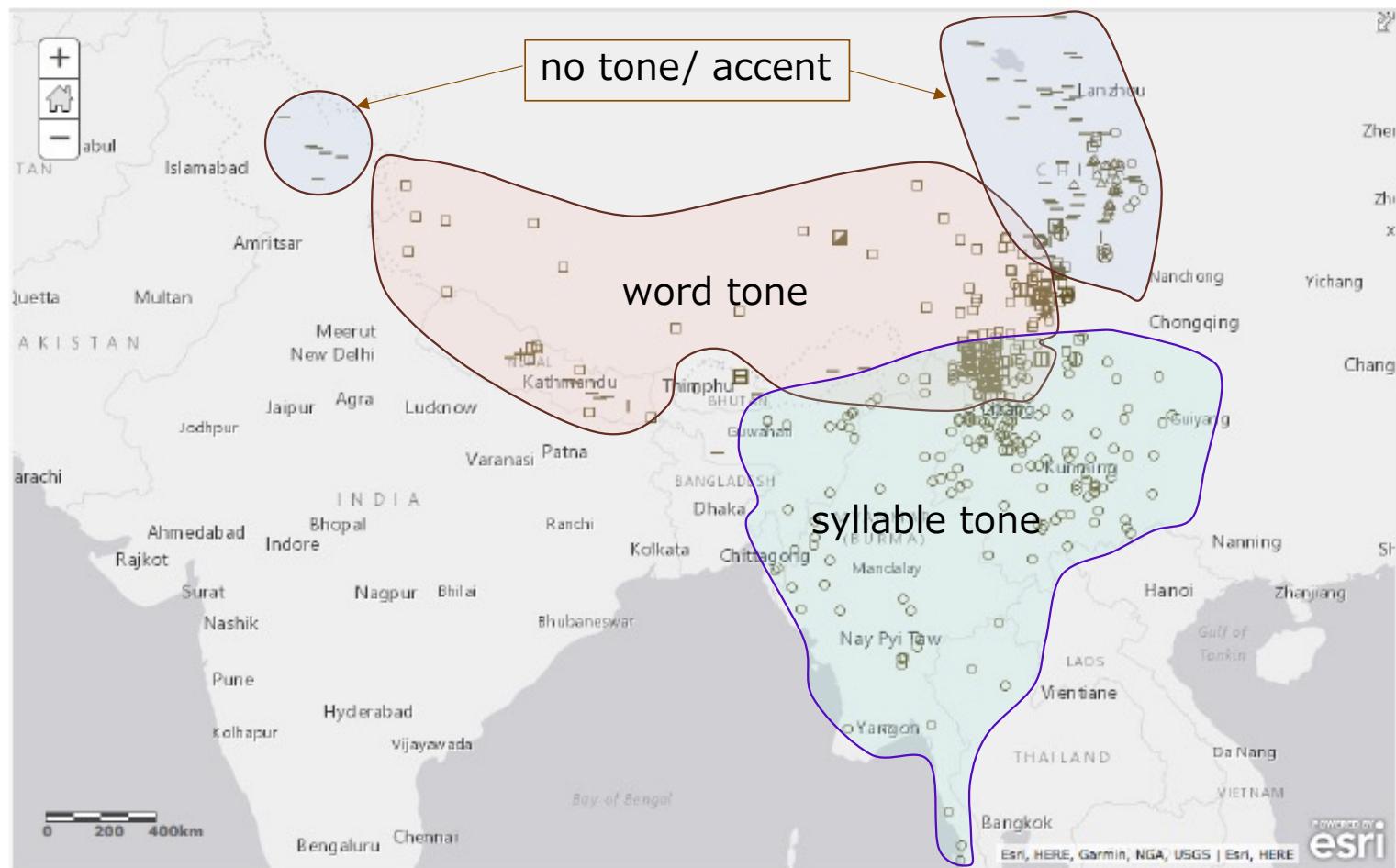
syllable tone

Figure 24: Tone and Accent in TB

Adapted from Iwasa, Suzuki, Kurabe, Ebihara, Shirai, and Matsuse (2017: 16)

TBU = syllable

- Nuosu Yi (Lolo-Burmese) [e.g. Chen & Wu 1998]
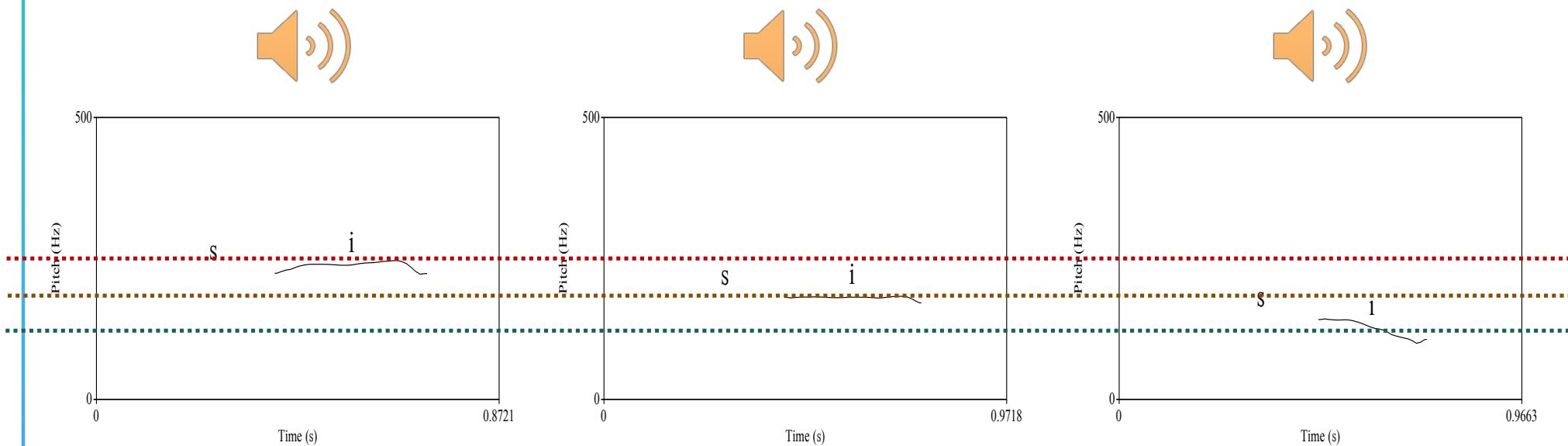
si^{55} "thirsty" <PL.*C-sip^L Bradley (1979)

si^{33} "to die" <PL.*ʃe^2 Bradley (1979)

si^{21} "to understand" <PL.*si^2 Bradley (1979)

TBU = word

- TBU = word

Lhasa Tibetan (Kitamura 1977)

(1) Monosyllabic words

ˉO [˥o] : high level
`O [˥˩o] : high falling ← appear only in CVV and CVC
ʼO [˩˥o] : low rising
^O [˩˥˩o] : low rising-falling ← appear only in CVV and CVC

TBU = word

• TBU = word

Lhasa Tibetan (Kitamura 1977)

Both A-type and B-type have four patterns.

(2) Disyllabic words

A-type ⁻OO [⌐o ⌐o]

`OO [⌐o ↗o]

'OO [∟o ⌐o]

^oo [∟o ↗o]

B-type ⁻O(·)O [⌐o ∣· o]

`O (·) O [↗o ∣· o]

'O (·) O [↘o∣· o]

^O (·) O [↖ o∣· o]

TBU = word

- TBU = word

nDrapa (Shirai 2006: 23-24)

High Falling	Mid Level	Low Rising
/ˋvɛ/ "Tsampa (food)" [vɛˑˏ]	/ˉji/ "go" [jiˉ]	/ˊvɛ/ "frost" [vɛ̤ˑˏ]
/ˈʁdoka/ "color" [ⁿdoˑˌkʰaˉ]	/ˉkaka/ "other" [kʰaˉkʰaˉ]	/ˊji/ "help" [jiˌ]
		/ˊkaka/ "hard" [kʰaˌkʰaˉ]
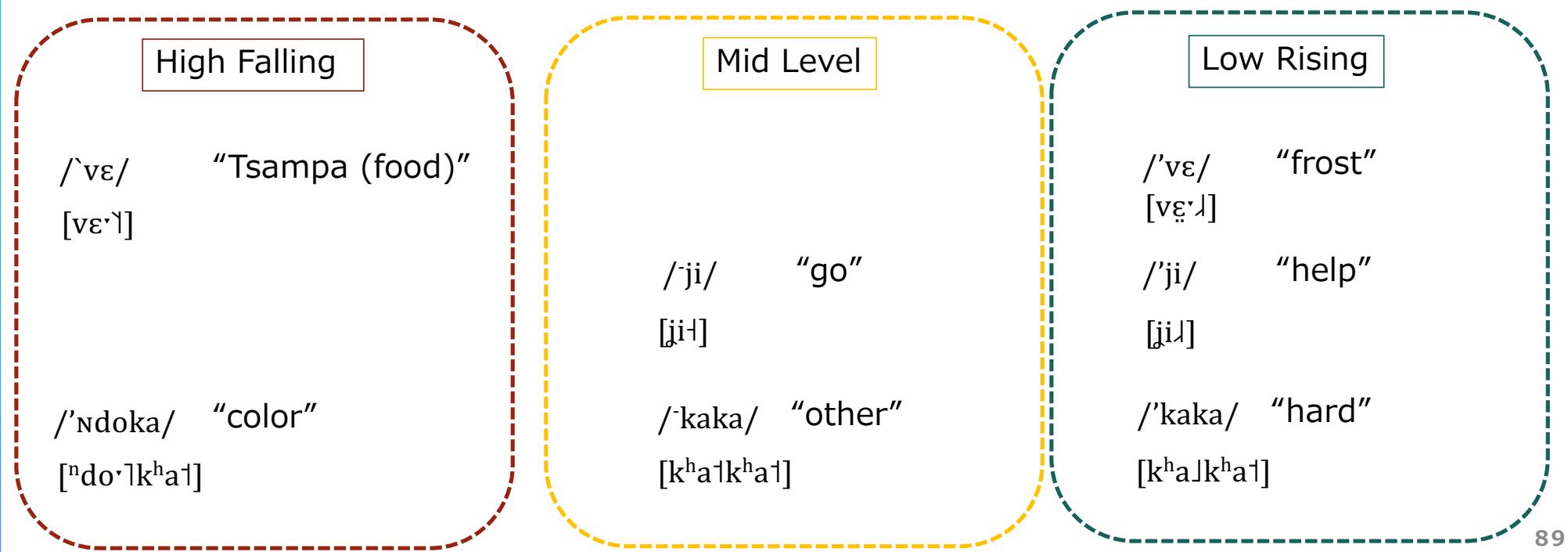
Atonal languages

• Amdo Tibetan (Tibetic)

  Northern Qiang (Qiangic)

  Rgyalrongic

cf. Often found in Nepal and Northeast India
    See Iwasa, Suzuki, Kurabe, Ebihara, Shirai, and Matsuse (2017: 16)

Figure 26.
Tonal and
Atonal Languages

Adapted from Google Map

Amdo Tibetan

Northern Qiang

Rgyalrong

Atonal area

Atonal area

Atonal area

Central Tibetan+Kham Tibetan + Qiangic

Tonal area

Lolo-Burmese
+
Nungish
+
Naic
+
Baic
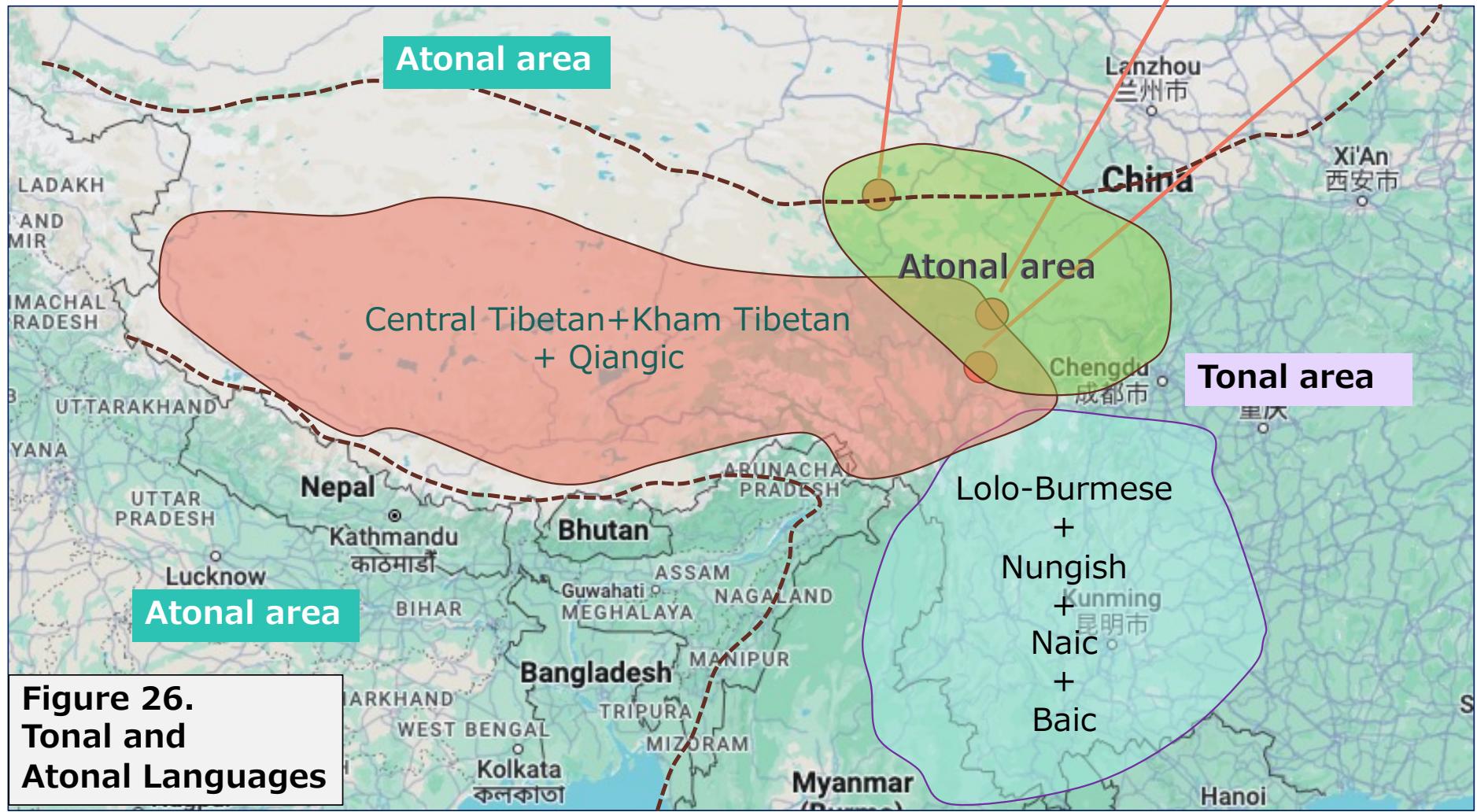
Conclusions

- Consonants

  Pre-initial

    preglottalization

    prenasalization

    preaspiration

  k- vs. q-

- Rhymes

  creaky

    Lolo-Burmese

  breathy

    [phonetic]

- Tones

  syllable tone

    Southern area

  word tone

    Northwest area

  no tone

    Northeast

Even in a single subbranch, there are striking diversities in phonology, as seen in other linguistic families.

Data Sources

Akha: Lewis (1968); Amdo Tibetan: Danzheng (2017), Ebihara (2019); Anong: Sun & Liu (2009); Azha: Pelkey (2011); Bangduo Lahu: Li (2014); Bijiang Bai: Sun et al. (1991); Bisu: Xu (1998); Burmese: Okell (1969); Dafang Yi: Dai (1992); Ersu: Chirkova et al. (2015); Guiqiong: Jiang (2015); Hani: Dai & Duan (1995), Huang ed. (1992); Hlepho Phowa: Pelkey (2011); Hlersu: Xu et al. (2013); Japhug: Jacques (2019, 2021); Jianchuan Bai: Edmondson et al. (2021); Lalo: Björverud (1998), Yang (2010); Langsu: Huang & Dai (1992); Leqi: Dai & Li (2007); Lhasa Tibetan: Kitamura (1977); Lianghe Achang: Shi (2009); Liangsu Nu: Chen & Tan 2022, Litang Tibetan: Chen & Zhou (2020); Longchuan Achang: Shi (2021); Mandarin Chinese: Lee & Zee (2003); Mara: Arden (2010); mBrugchu Tibetan: Suzuki (2015); Menglun Akeu: Hayashi & Gao (2019); Mu-nya: Ikeda (2002); Nasu Yi: Pu (2017);

Data Sources

Naxi: Dai (1992); nDrapa: Shirai (2006); Northern Qiang: Sun et al. (1991), Evans (1999); Nuosu Yi: Chen & Wu 1998, Edmondson et al. (2016); Northern Sangtam: Coupe (2020); Nusu: Li (1996), Ikeda & Lew (2017); Phola: Pelkey (2011); Phuza: Pelkey (2011); Prinmi: Ding (2014); Sadu: Bai et al. (2012); Sangkong: Li (2002); Sani Yi: Gai & Jiang (1992); Sumi: Teo (2014); Taliu: Zhou (2004); Weishan Yi: Huang & Dai (1992), Li (1996); Wuding Yi: Dai (1992); Xinping Lalu: Wang (2020); Yongning Na: Lidz (2010); Youle Jino: Gai (1986), Hayashi (2009); Zaiwa: Yabu (1982)

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ধন্যবাদ

धन्यवाद

Thank you very much！

ありがとうございました！

非常感谢！

감사합니다!