

**THE PRENASALIZED STOP INITIALS OF MIAO-YAO,
TIBETO-BURMAN, AND CHINESE:
A RESULT OF DIFFUSION OR EVIDENCE OF
A GENETIC RELATIONSHIP?**

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I. MIAO-YAO

The Miao-Yao reflexes of prenasalized stops include prenasalized stops, both voiceless and voiced, simple nasals, in which nasal and stop have merged, voiced stops corresponding to prenasalized voiceless stops, and, in some dialects, simple stops with no indication of a prenasalized origin. Chart 1 surveys the reflexes of Proto-Miao prenasalized dental stops in some modern Miao dialects.

In the Miao dialect of Yang-hao, nasals have merged with voiced stops but have been lost before voiceless stops. In the Shui-wei reflexes of prenasalized voiceless stops, glottalization is a transitional phenomenon on the way to the loss of the nasal: cessation of nasalization first precedes onset of the dental stop— $n^?t$ -; $^?t$ - is a later stage in the loss of the nasal. Shui-wei is also one of the two dialects on which the reconstruction of Miao-Yao preglottalized nasals is based: in those words where most Miao-Yao dialects have voiced nasal initials but tones indicating a voiceless origin, Shui-wei has preglottalized nasal initials. The Shui-wei situation is, then, this:

	Proto-Miao	Shui-wei
(1)	*N-t-	$n^?t$ -, $^?t$ -
	*N-th-	$n^?th$ -, $^?th$ -
(2)	*N-d-	nt-

(3)	*ʔn-	ʔn-
(4)	*nh-	nh-
(5)	*n-	n-

Typical Shui-wei initial reflexes are shown in Charts 2 (plain stops and affricates), 3 (prenasalized stops and affricates), and 4 (nasals, laterals, and *r-). (Data on this dialect, which is spoken in Lung-li, Kweichow, are from Li, Ch'en, and Ch'en 1959.)

In Tibeto-Burman and Chinese we also find such reflexes of prenasalized stops as prenasalized stops per se, nasals in which nasal and stop have merged, and voiced stops corresponding to prenasalized voiceless stops. Chart 5 lists six of the Miao-Yao forms in which Tibeto-Burman and/or Chinese also have reflexes of the prenasalized stop; to give some indication of the range of an item's use, we include some forms which do not reflect the nasal. (In subsequent sections, we treat the Tibeto-Burman and Chinese reflexes of prenasalized stops in greater detail.) Where one language has a prenasalized voiceless-stop initial and another has a voiced stop, we tentatively attribute the voicing of the latter to a lost nasal preceding the stop. On principle, we disregard both the present-day-locations in which these languages are spoken and premature notions of genetic relationship.

Chart 1

Reflexes of Proto-Miao Prenasalized Dental Stops

[A, B, C, D are tonal categories.]

Dialects	*N-t-	*N-th-	*N-d-	
Shih-men-k'an	nt-	nth-	nd-	(C/B ^[nouns])
			ndh-	(A/D/B ^[verbs])
Hsien-chin	nt-	nth-	nt-	(A/D)
			ndh-	(B/C)
Pai-chin	nt-	nth-	nt-	(A/D)
			nth-	(B/C)
Tsung-ti	nt-	nth-	nt-	(A/D)
			nth-	(B/C)
T'uan-p'o	nt-	(n)th-	nt-	(A/D)
			nth-	(B/C)
Shui-wei	(n)?t-	(n)?th-	nt-	
Chi-wei	nt-	nth-	n-	(A)
			nh-	(B/C/D)
Tung-t'ou-chai	nd-	(n)th-	n-	
Hsiao-chang	d-	(n)th-	n-	
Yang-hao	t-	th-	n-	(A/D)
			nh-	(B/C)
Hsi-shan-chieh	n-	nh-	n-	

Chart 2. Plain Stop and Affricate Initials in the Shui-wei Dialect

Initials:	I. Voiced	II. Voiceless Unaspirated	III. Voiceless Aspirated
Tones:			
A (31)	'door' *dr- 'nine' *g(j)-	'hair' *pl- 'deep' *t-	'to blow' *ph- 'to thread' *tsh-
	z ^d oŋ ʒ ^{dʒ} u	plu tu	pha tshoŋ
B (55)	'fire' *d- 'to wait' *d-	'full' *p- 'waist' *ql-	'bone' *tsh- 'hole' *qh-
	ʃ ^d o ʃ ^d oŋ	puŋ qla	tshoŋ qhoŋ
C (35)	'to die' *d- 'to hatch' *b-	'foot' *t- 'egg' *q-	'shoe' *kh- 'charcoal' *th-
	ʃ ^d u v ^b u	to qwe	khu thuŋ
D (31)	'ten' *g- 'to bite' *d-	'wing' *t- 'smile' *tr-	'itching' *kh- 'lacquer' *tsh-
	ʃ ^g o ʃ ^d u	tu tu	kho tshe

Chart 3. Prenasalized Stop and Affricate Initials in the Shui-wei Dialect

Initials:	I. Voiced	II. Voiceless Unaspirated	III. Voiceless Aspirated
Tones:			
A (31)	'ear' *N-br- mpi 'mouth' *N-dž- ntšo	'green' *N-pr- (m)ʔpa 'mushroom' *N-k(j)- (ñ)ʔtši	'leggings' *N-trh- (p)ʔthoŋ *N-tsh- (n)ʔtshen
B (55)	'fish' *N-br- mpi 'lazy' *N-g- ŋkaŋ	'long' *N-t- (n)ʔti 'salt' *N-tsr- (n)ʔtsi	'blood' *N-tsh- (n)ʔtshen
C (35)	'hemp' *N-d- nta	'snow' *N-p- (m)ʔpaŋ 'pig' *N-p- (m)ʔpi (e. g. fish)	'to wash' *N-tsh- (n)ʔtsha 'to smoke' *N-tšh- (n)ʔtšhu
D (31)	'tongue' *N-bl- mple 'narrow' *N-G- nqe	'to peck' *N-tš- (n)ʔtšo 'girl, daughter' *N-phr- (m)ʔphe	

Chart 4. Nasal, Lateral, and *r- Initials in the Shui-wei Dialect

Initials:	I. Voiced	II. Glottalized	III. Voiceless Aspirated
Tones:			
A (31)	'silver' *ñ-	'pain' *ʔm-	'Miao' *mh- mhø
	'field' *l-	'red' *ʔl-	'brain' *lh- lhu
	'dragon' *r-	'vegetable' *ʔr-	
B (55)	'horse' *m-	'late' *ʔm-	'tooth' *mh- mheŋ
	'old' *l-	'short' *ʔl-	
	'urine' *r-		
C (35)	'eye' *m-		'to smell' *mh- mheŋ
	'to look' *l-		'iron' *lh- lho
	'strength' *r-	'good' *ʔr-	
D (31)			
		'to suppress' *ʔn-	'to cough' *nh- nho
		'to peel' *ʔl-	'to cut' *lh- lhe

Chart 5

Proto-Miao-Yao Prenasalized Stops

	*N-p- (C1)	*N-p- (C1)
	'snow'	'pig'
Ma-chia-t'un	mpo 55	mpa 55
Hsien-chin	mpo 44	mpua 44
Thailand Miao	mpu 33	mpua 33
Kao-p'o	mpɤŋ 54	mpa 54
Ke-cheng	mpu 33	mpo 33
Shui-wei	m [?] paŋ, [?] paŋ 35	m [?] pi, [?] pi 35
Yao-lu	mpuŋ 33	mpa 33
Hsi-shan-chieh		mɛ 55
Ch'ien-tung	pai C1	pa C1
Shih-tung-k'ou		pa 45
Kao-t'ung	pa 34	pɛ 34
Hai-ninh Yao	bôn	

'snow'. Nahsi mbe 44 (Li-chiang), mpe 33 (Wei-hsi). Gyarong -po (Wassu taipo, Tzu-ta taipje). Lopu Chai (southern Ch'iang) pi. Hsi-hsia wi. (Cf. 'year', Wassu pu, tiepo, southern Ch'iang pu, pə, Hsi-hsia wi.)

'pig'. Lepcha món. Liang-shan Lolo vo 55. Ahi vie[?] 44. Hsi-hsia vuŋ. WT phag. Gyarong p-, ph- (Tzu-ta pag-, pjak, Tsa-ku-nao p[h]ia, pag-). Southern Ch'iang pja, pa, pæ, pje. Chinese 豕 *pra (K39 d: *pā). For other examples of Miao-Yao C tone corresponding to non-Miao-Yao stop endings, see Chang 1972. 576-7.

Chart 5 (cont., 1)
Proto-Miao-Yao Prenasalized Stops

	*N-br- (B2)	*N-bl- (A2)
	'fish'	'rice'
Ma-chia-t'un		mple 21
Hsien-chin	ntse 21	mple 32
Thailand Miao	ntse 11	mple 53
Kao-p'o	mplæ 21	mplæ 55
Ke-cheng	mpa 31	mpla 55
Shui-wei	mpi 55	
Yao-lu	mpjai 42	
Hsi-shan-chieh	mjo 11	
Ch'ien-tung	nai B2	na A2
Shih-tung-k'ou	ne 22	
Kao-t'ung	nai 21	nai 51
Thailand Yao	byau (RFL)	byau (F)

'fish'. *N-pr- → MY *N-br-? Miao-Yao *N-br- outnumbered *N-pr- by a ratio of at least six to one. *-r- → Trung -l- in 'fish' and 'six', Trung khlu, Written Burmese khrok (Proto-Burmese *khr-: Okell 1971, 34), WT drug.
'rice'. WT N-bras. Chinese 米 *miəd ← Proto-Chinese *N-biəd (K598 a: *mijər).

Chart 5 (cont., 2)

Proto-Miao-Yao Prenasalized Stops

	*N-t- (D1)	*N-tsr- (B1)
	'to weave'	'salt'
Ma-chia-t'un	nto 44	ntše 51
Hsien-chin	nto 33	ntše 54
Thailand Miao	nto 11	ntše 34
Kao-p'o		ntsæ 13
Ke-cheng	ntau 33	ntša 45
Shui-wei		nʔtsi, ʔtsi 55
Yao-lu	ntau 44	ntsɕi 34
Hsi-shan-chieh	næ 54	
Ch'ien-tung		ši B1
Shih-tung-k'ou		še 55
Kao-t'ung	tau 13	še 55
Thailand Yao	dat (RFH)	dzaau (RFH)

'to weave'. WT N-thag-pa. Nahsi nta 35 (Wei-hsi), da 11 (Li-chiang).

Gyarong -tyak (Tzu-ta katyak, Suo-mo tatak). Chinese 織 *tjək (K920 f: *tjək).

'salt'. Chinese 鹺 *dza (K5 m: *dz'â). WT tshwa. Gyarong tsha- (Tsa-ku-nao), tshje (Tzu-ta).

II. TIBETO-BURMAN

We do not pretend to trace here, in any comprehensive way, the development of prenasalized stops in Tibeto-Burman languages. We do hope to present examples of the basic types of Tibeto-Burman reflexes for such stops: that is, prenasalized stops, both voiceless and voiced, nasals, voiced stops corresponding to prenasalized voiceless ones, and zero. This last type, characteristic of the southern Ch'iang dialects, is open to interpretation. Were there Tibeto-Burman dialects which never had prenasalized stops, or did such dialects lose the nasal, replacing it, in some instances, with other prefixes?

Even within the languages we present here there are, of course, areas yet to be covered. Because written Tibetan has preserved so many prenasalized stops, and with a contrast of voicing, we have, for example, focussed on this aspect of Tibetan in our comparisons. Tibetan was, however, probably not totally without the changes in prenasalized stops we see in other Sino-Tibetan languages, such as the voicing of a voiceless stop by a preceding nasal or the merging of nasal and stop. For example: 'sweat', Old Burmese khruy (Proto-Burmese *khr-: Okell 1971. 44), Chinese 汗 *gan (K139 t: *g'ân) [← *N-kh-?], WT rɲul (← *ɲrul ← *N-grul? *N-khrul?); 'rainbow', WT N-dža (← *N-tša?), Chinese 隄 *tsid (K593 r: *tsiər); 'whetstone', WT N-dzeɲ (← *N-tsheɲ?), Chinese 厝 *tshak (K798 p: *ts'âk).

The nasal element of the prenasalized stop has at least one known function as a prefix in Tibeto-Burman, where it marks the noncausative. (In the paradigm of Tibetan verbs which have contrasting present and non-present forms, the nasal may also mark the present.) In Liang-shan Lolo, for example, some noncausatives have N-, which has voiced a voiceless stop:

- (1) Noncausative: ndo 33 'to drink' (WT N-thuɲ-ba, N-thuɲ-s, ____, N-thuɲ)

- Causative: to 21 'to cause to drink' (to ← *s-to? Cf. Lepcha tyan [*s-t- → ty-], causative to thaŋ, thoŋ 'to drink')
- (2) Noncausative: ndi 55 'to wear (a hat, shoes)' (Proto-Miao-Yao *N-t- [C1], e. g. Kao-p'o ntoŋ 54, Ch'ien-tung te C1 'to wear [a hat]')
- Causative: ti 55 'to make someone wear (a hat, shoes)'

Other causative pairs have a simple voiced-stop initial in the non-causative of both Tibetan and Liang-shan Lolo, which appears to have been devoiced by *s- in the causative:

- (1) Noncausative: ga 55 'to wear clothes' (WT gon-pa 'to put on [clothes, shoes]')
- Causative: ka 55 'to cause someone to wear clothes, i. e. to put clothes on another person or give someone clothes to wear' (WT skon-pa)
- (2) Noncausative: bi 55 'to come out' (Lhasa Tibetan phiü 'to come (or go) out (or off)' (← *bud; cf. Chang 1971: VII.6)
- Causative: pi 55 'to cause to come out' (WT N-bud-pa, phud; Lhasa Tibetan püi 'to cause to come [or go] out [or off...]', implying a perfect *s-pud ← *s-bud)
- (3) Noncausative: guu 33 'to hear' (WT go-ba 'to understand', Lhasa qho 'to hear')
- Causative: kuu 33 'to cause to hear'

A. Tibetan

The reconstruction of prenasalized stops for Proto-Tibetan is based on the appearance of modern Tibetan prenasalized stops where written Tibetan has either a-chung (ʔ) or m- followed by a stop, as well as on eighth to tenth-century Tibetan transcriptions of Chinese Buddhist texts in which

Northwest Chinese [ŋg] is shown as a-chung followed by -g-. Since there has been extensive loss of the nasal in modern dialects, in degree depending on the dialect, we use written Tibetan for comparative purposes. If, where modern Tibetan dialects have lost the nasal and we must use written Tibetan as evidence, we find a prenasalized stop or its reflex in other languages, we are not dealing with the results of recent diffusion. Either we have cognates or very early loans, and to distinguish between the two is no easy matter.

We consider here the prenasalized stops of two modern dialects, Lhasa and Chamdo.

In the Lhasa dialect described by Chang and Shefts (1964), there are no prenasalized nasal stops in initial position. Medially in compounds, stops may be preceded by nasal elements (nasalized vowels, -ŋ-, or -m-). Such prenasalized stops are of two sorts. In one, the nasal is morph-final. For example: 'thirst', Lhasa qom̐ (WT skom), 'to die of thirst', Lhasa qum̐ši thēē (WT ši-ba 'to die'); 'building', Lhasa qhaŋ-pa (WT khaŋ-pa), 'householder', Lhasa qhāātāā (WT khaŋ-bdag). In a second type (treated in Chang and Shefts 1965), the nasal is morph-initial and correlates primarily with written Tibetan a-chung and m-. The correlations with written Tibetan voiceless stops are fewer than those with voiced stops. This suggests some early loss of the nasal element of prenasalized voiceless stops. (Note [Chart 1] that certain Miao dialects, such as T'uan-p'o, Shui-wei, Tung-t'ou-chai, Hsiao-chang, and Yang-hao, have, in varying degrees, lost the nasality of Proto-Miao prenasalized voiceless stops—particularly aspirated ones—while they retain nasality where voiced stops are reconstructed for Proto-Miao.) Examples:

(a) WT a-chung (N-; also variously transcribed h-, ɣ-, '·).

1. 'beads, rosary'. WT N-phreŋ-ba, Lhasa ʈhāŋā (nonhonorific), chāātāā (honorific). The first member of the compound chāātāā is, in isolation, chāā 'hand' (WT phyag).

2. 'message'. WT N-phrin, Lhasa $\text{th}\bar{\text{h}}$. Cf. $\text{l}\bar{\text{u}}\text{ŋ}\bar{\text{t}}\bar{\text{h}}$ 'radio'. First member in isolation: $\text{l}\bar{\text{ö}}$ 'electric; electricity' (WT glog 'lightning').

In this compound, as in (b) 3, the velar-stop final of the first member, seen in written Tibetan glog, has merged with the nasal of the second member. Such merging has not taken place in the honorifics of (a) 1 and (b) 4.

3. 'rice'. WT N-bras, Lhasa $\text{t}\bar{\text{e}}\bar{\text{e}}$. Cf. $\text{š}\bar{\text{a}}\text{m}\bar{\text{t}}\bar{\text{e}}\bar{\text{e}}$ '(fried) rice with meat'. First member in isolation: $\text{š}\bar{\text{a}}$ 'meat' (WT ša).

As in WT by-: Lhasa ch- ('bird', WT bya , Lhasa $\text{ch}\bar{\text{a}}$), WT -by-: Lhasa -pc- ('water bird', WT $\text{t}\bar{\text{š}}\text{hu-by}\bar{\text{a}}$, Lhasa $\text{ch}\bar{\text{ü}}\text{pc}\bar{\text{a}}$), so here, too, the labial stop has dual representation medially, in both the -m- of $\text{š}\bar{\text{a}}\text{m}\bar{\text{t}}\bar{\text{e}}\bar{\text{e}}$ (WT -Nb-) and the -t- (WT -br-; cf. 'to write', WT N-bri-ba, bris, Lhasa $\text{t}\bar{\text{h}}\bar{\text{i}}$).

4. 'side'. WT N-gram, Lhasa $\text{t}\bar{\text{ä}}\text{p}\bar{\text{a}}$ 'the side (of the face, i. e. the cheek)'. Cf. $\text{ch}\bar{\text{ü}}\bar{\text{t}}\bar{\text{a}}\text{m}$ 'riverbank, shore'. First member in isolation: $\text{ch}\bar{\text{ü}}$ 'water, river' (WT $\text{t}\bar{\text{š}}\text{hu}$).
5. 'to desire, want to'. WT N-dod-pa, Lhasa $\text{t}\bar{\text{ö}}\bar{\text{ö}}$. Cf. $\text{t}\bar{\text{ä}}\bar{\text{t}}\bar{\text{ö}}\bar{\text{ö}}$ 'the desire to stay'. First member in isolation: $\text{t}\bar{\text{e}}\bar{\text{e}}$ 'to stay' (WT bsdad , pft. to sdod-pa).

(b) WT m-. (Note that the Tibetan "prefix" m- is *b- added to a prenasalized initial. [See Chang 1971:X.23 ff.] Whether the nasal itself is a prefix is another question. The form with both *b- and *-N- is rarely, if ever, used medially in compounds.)

1. 'lips'. WT $\text{mt}\bar{\text{š}}\text{hu}$, Lhasa $\text{ch}\bar{\text{ö}}\bar{\text{tö}}$ (-tö: WT do 'two; a pair'). Cf. $\text{š}\bar{\text{e}}\bar{\text{e}}\bar{\text{c}}\bar{\text{ü}}$ 'human lips' (honorific). First member in isolation: $\text{š}\bar{\text{e}}\bar{\text{e}}$ 'mouth' (honorific; WT žal).
2. 'head'. WT mgo , Lhasa $\text{qo}(\bar{\text{o}})$. Cf. $\text{t}\bar{\text{ä}}\bar{\text{q}}\bar{\text{o}}$ 'a horse's head'. First member in isolation: $\text{t}\bar{\text{ä}}$ 'horse' (WT rta).
3. 'arrow'. WT mda , Lhasa $\text{t}\bar{\text{a}}$. Cf. $\text{c}\bar{\text{a}}\bar{\text{ŋ}}\bar{\text{t}}\bar{\text{a}}$ 'a knitting needle'. First member in isolation: $\text{c}\bar{\text{ä}}$ 'iron' (WT $\text{lt}\bar{\text{s}}\text{ags}$).

4. 'knot'. WT mdud, Lhasa t̥p̥ā. Cf. chāā^htūū 'a knot' (honorific). First member in isolation: chāā 'hand' (WT phyag).
5. 'spear'. WT mduŋ, Lhasa tuŋ. Cf. tātūū 'a spear carried on horseback'. First member in isolation: tā, 'horse' (WT rta).

In the Chamdo dialect (Chin 1958), the nasal element of prenasalized voiceless stops is preserved only medially. For example: WT N-khor-lo 'circle, wheel', Chamdo khor l lo l 'a machine with a wheel, e.g. a sewing machine', but WT t̥shu-N-khor 'whirlpool', Chamdo t̥h̥ l ŋkho l. On the other hand, where the stop is voiced in written Tibetan, there appears to be fairly extensive preservation of the nasal even initially. (Some aspects of Chin's transcription, such as the frequent lack of correlation in Chamdo tone and voicing with written Tibetan orthography, are admittedly surprising.) Examples:

(1) WT prenasalized voiced stop: Chamdo prenasalized stop:

Written Tibetan	Chamdo
N-bu 'worm, insect'	mb̥ 3
N-bug(s)-pa 'to pierce'	mbu 3 'an instrument which pierces'
N-gul-ba 'to move'	ŋgy(i) 3
N-gro-ba 'to go'	ŋdzo 3
N-d̥ža 'rainbow'	ñda 3

but

(2) WT prenasalized voiced stop: Chamdo simple stop:

N-d̥zo-ba 'to milk'	đo 3 wa 3
N-dom-pa-gaŋ 'a fathom'	duŋ 3 pa 1 guŋ 3
N-go-pa 'head-man'	ko 5 pha 2
N-gram-so 'side tooth'	t̥san 3 so 2

B. The Rong Languages

We have noted that the use of pronominal affixes in the verbal systems of the languages called Rong (Gyarong, Trung, Lepcha) suggests an early

period of close contact (Chang and Chang 1975: 398). These languages are, however, not as one in their development of the prenasalized stops. In Trung and Lepcha, unlike Gyarong, there are examples of the voicing of a voiceless stop by a preceding nasal, and the nasal could merge not only with voiced stops but with voiceless ones as well; we may speculate that the voiceless stop was voiced at an intermediate stage.

Examples:

(a) Rong prenasalized stops:

1. Gyarong. 'to wrap', WT N-phur-ba, Tzu-ta mphoŋ 'I wrap'. 'a row', WT N-phreŋ, Suo-mo təmprieŋ. 'to pull', WT N-then-pa, Suo-mo kanthân. 'to have', WT N-dug-pa, Tzu-ta ndut, Tsa-ku-nao kendud. 'a mask', WT N-bag, Suo-mo mbâk. 'to break, crack', WT N-gas-pa, Suo-mo kəŋgat (intransitive).
2. Trung. 'fish', Proto-Miao-Yao *N-br- (B2), e.g. Kao-p'o mplæ 21, Ke-cheng mpra 31, Trung ampla.

(b) Rong voicing of a voiceless stop by a preceding nasal:

1. Trung. 'to spit, vomit', Proto-Miao-Yao *N-t- (B1), e.g. Kao-p'o ntu 13, Trung du. 'star', Hsi-hsia *ŋgɕ, Trung glumjet (cf. WT skar-ma).
2. Lepcha. 'to be late', WT N-phyi-ba, Lepcha blin. 'to quarrel', WT N-khrug-pa, Lepcha gyó. 'father', Nahsi ẽ 55 mpa 51 (Wei-hsi), Lepcha a-bo (cf. WT pha).

(c) Rong merging of nasal and stop:

1. Gyarong. 'to drive (cattle)', WT N-ded-pa, Tzu-ta na-, no-, Suo-mo kono. 'dragon', WT N-brug, Suo-mo tarmok (← *ta-mrok).
2. Trung. 'to blow', WT N-bud-pa, Trung mət. 'bamboo shoot', Proto-Miao-Yao *N-br- (C2), e.g. Kao-p'o mplu 33, Ke-cheng mpro 22, Trung rmaŋ (*N-br- → *mbr- → *mr- → rm-, with the sort of metathesis common in Gyarong [cf. 'dragon', ex. (c) 1]).

3. Lepcha. 'to boil', WT N-khol-ba, Lepcha ṇó, ṇót. 'to grudge', WT N-khon-pa, Lepcha ṇón. 'to expel', WT N-don-pa, Lepcha nók. (On WT -n: Lepcha -k, cf. 'target', the final example in this set.) 'to die', WT N-groṇ-ba, Lepcha ṇrók ('to be dying'). 'to die', WT N-bud-pa, Lepcha mǎk. (On WT -d: Lepcha -k, cf. 'skull', WT thod [-pa], Lepcha thok.) 'to bend together', WT N-gum-pa, Lepcha ṇǎm. 'to blow', WT N-bud-pa, Lepcha mǎt, mǔt. 'target', WT N-ben, Lepcha mǎk. (For 'target', Thailand Yao—with be? (EL)—agrees with Lepcha in having a stop ending.)

'to boil', Proto-Miao-Yao *N-p- (C1) [intransitive], e.g. Kao-p'o mpo 54, Hsi-shan-chieh me 55, Lepcha men 'boiled'. 'pig', Proto-Miao-Yao *N-p- (C1), e.g. Kao-p'o mpa 54, Ke-cheng mpo 33, Lepcha món. 'dry', Proto-Miao-Yao *N-qh- (A1), e.g. Kao-p'o ṇqha 34, Ke-cheng ṇqho 44, Lepcha ṇram 'to be dry' (e.g. hair) (*N-khram? cf. WT skam-pa [← *s-khram-pa?], with loss of *-r- as in 'star', Burmese kray, WT skar-ma ← *s-krar-ma), Lepcha ṇróṇ 'to have become over-dry' (← *N-khrok? cf. Burmese khrok 'dry'). Note the frequent correlation of Miao-Yao postvelar stops with non-Miao-Yao velar stops followed by (*)-r- or (*)-l-, as in, for example, 'guest' (Chang 1972. 576). 'field', Proto-Miao-Yao *N-dr- (B2), e.g. Kao-p'o ṇṭaṇ 21, Lepcha nyót. Non-Rong-ṇ: Lepcha -t is also seen in, for example, 'heart', Lushai lung, Lepcha a-lǔt and 'lamp', WT sgron-ma, Lepcha mí-glót.

C. The I Languages

The I languages of China which we shall discuss here are the I or Lolo dialect of Liang-shan (Ch'en 1962, 1963), the Yang-wu dialect of Hani (Kao 1955), Lisu (Fraser 1922; Institute of National Languages 1959),

Nahsi or Moso (Li-chiang dialect: Li, Chang, Ho 1944, 1953, 1972; Wei-hsi dialect: Fu 1943), Ahi (Yüan 1953), Nasu (Kao 1958), and Sani (Ma 1951).

Of these languages, two have prenasalized stops: Liang-shan Lolo and Nahsi.

Nahsi words with prenasalized stop initials are, for the most part, found with the same initials in written Tibetan, Miao-Yao, Hsi-hsia, or Chinese:

(a) Written Tibetan: Nahsi:

	Written Tibetan	Li-chiang	Wei-hsi
1. 'to move, migrate'	N-pho-ba	mbur 44	mpu 55
2. 'to crawl'	N-phye-ba	mbv 11	mpu 55 mpu 21
Nahsi - ϕ - corresponds, in a number of examples, to non-Nahsi -y- or -i-: 'to sweep', WT N-phyag-pa, Li-chiang bæ 44, Wei-hsi mpě 21; 'to fall down', WT N-gyel-ba, Li-chiang gu 11, Wei-hsi gu 21; 'crooked', WT N-khyog-po, Li-chiang gv 11, Wei-hsi gu 33 gu 21; 'muscle', Hsi-hsia *ngiuf, Li-chiang ngv 44, Wei-hsi ŋku 51.			
3. 'to fly'	N-phir-ba, N-phur-ba	mbi 11	
4. 'to sweep'	N-phyag-pa	[bæ 44]	mpě 21
5. 'narrow path'	(N-)phrag	mbo 44	mpo 33
	('along a narrow ('around a paddy field') ledge')		
6. 'to weave'	N-thag-pa	[da 11]	ntu 15
7. 'wing'	N-dab-ma	ndv 44	
8. 'canine tooth'	mtšhe-ba	ndzæ 11	
9. 'to walk'	N-tšhag-pa	ndži 44	ntši 51
10. 'to come apart'	N-bral-ba 'to be separated'	mby 44	
11. 'to chase, drive after'	N-ded-pa	ndy 55	nty 55
12. 'mud'	N-džim-pa	ndzæ 11	ntšě 15

- | | Written Tibetan | Li-chang | Wei-hsi |
|--|-------------------------------------|--|---------|
| 13. 'to melt' | N-džu-ba | ndzɿr 11
(intransitive),
ndzɿr 55 (transitive) | |
| (Cf. the causative pairs for 'to melt' in Liang-shan Lolo [džz 33, tšz 33] and Suo-mo Gyarong [kəndzi, kaptši].) | | | |
| 14. 'to crack' | N-gas-pa 'to be
cleft or split' | ŋgu 44 | |
| 15. 'soft' | N-bol-po 'soft,
gentle' | | mpi 15 |
| (Cf. also example [d] 3.) | | | |
| 16. 'to burn' | N-bar-ba
(causative:
sbor-ba) | mbur 11, -mbur 11
-mbv 44
(ndžo 11 mbur 11 'mountain
burning' [ndžo 11 'mountain',
ru 44 mbv 44 'rock burning'
[a ceremony]]) | |

(b) Miao-Yao: Nahsi:

(Miao-Yao examples are from the Ke-cheng dialect.)

- | | Miao-Yao | Li-chiang | Wei-hsi |
|------------------|---------------------------|-----------|---------|
| 1. 'snow' | mpu 33
(*N-p- [C1]) | mbe 44 | mpɛ 33 |
| 2. 'to chop' | ntau 45
(*N-t- [B1]) | nda 55 | |
| 3. 'lean' (adj.) | ntsau 22
(*N-ts- [C1]) | ndza 44 | |

(c) Hsi-hsia: Nahsi:

- | | Hsi-hsia | Li-chiang | Wei-hsi |
|-------------|----------|--------------|--------------|
| 1. 'kidney' | *ŋvɿr-lõ | mby 44 ly 44 | mpy 33 ly 33 |
| 2. 'muscle' | *ŋgɿuf | ŋgv 44 | ŋku 51 |

	Hsi-hsia	Li-chiang	Wei-hsi
3. 'nine'	*ŋgĩ	ŋgv 44	ŋku 33
(Cf. Gyarong [Tzu-ta] kɛŋgu, but WT dgu.)			

(d) Chinese: Nahsi:

	Chinese	Li-chiang	Wei-hsi
1. 'to chew'	齧 *N-graug or *N-kraug	ŋgu 44, gu 11	ŋku 21 ŋku 33
2. 'beautiful'	嬌 *N-gəm or *N-kəm (K651 k': *ŋəm)	ŋgis 11	
3. 'soft, gentle' (= ex. [a] 15)	謐 *N-bjit (K405 t: *miět)		mpi 15 'soft'

Though less has been published on Liang-shan Lolo than on Nahsi, we find, here too, examples of prenasalized stop initials correlating with those of written Tibetan and Miao-Yao: 'to drink', WT N-thuŋ-ba, Liang-shan Lolo ndo 33; 'to wear (a hat)', Proto-Miao-Yao *N-t- (C1), e.g. Ke-cheng ntau 33, Ch'ien-tung te C1, Liang-shan Lolo ndi 55.

There are a few examples of nasal and stop merging in the I dialects: 'thunder', WT N-brug-sgra, Li-chiang Nahsi mu 44 ŋgv 44; 'to ask, take', Proto-Miao-Yao *N-g(j)- (C2), e.g. Ke-cheng ŋkau 22, Kao-t'ung ŋo 33, Li-chiang Nahsi ŋi 44; 'to blow', WT N-bud-pa, Ahi m 44, mɛ 44, Nasu mu' 32, Sani m 44, Hani mə 55. (These same dialects have no trace of the nasal seen in Tibetan N-bu 'worm, insect': Ahi bu 21, Sani bv 11 pi 55, Hani pi 21 tɕu 21, Li-chiang Nahsi bi 44 di 11, Wei-hsi Nahsi bu 33 di 21.)

The Nahsi voiced-stop reflex of prenasalized voiceless stops correlates with both written Tibetan and Miao-Yao:

(a) Written Tibetan: Nahsi:

	Written Tibetan	Li-chiang	Wei-hsi
1. 'to see'	mthorj-ba (*b-N-thorj-ba)	do 11	
2. 'surface'	N-khod	gv 11	
3. 'crooked'	N-khyog-po	gv 11	gu 33 gu 21
4. 'to sweep'	N-phyag-pa	bæ 44	[mpɛ̃ 21]
5. 'to weave'	N-thag-pa	da 11	[nta 15]

(b) Miao-Yao: Nahsi:

(Miao-Yao examples are from the Ke-cheng dialect.)

	Miao-Yao	Li-chiang	Wei-hsi
1. 'pig'	mpo 33 (*N-p- [C1])	bo 11	bo 15
2. 'crooked'	ŋkhu 33 (= ex. [a] 3) (*N-kh- [D1])	gv 11	gu 33 gu 21

In having neither prenasalized-stop nor voiced-stop reflexes for prenasalized voiceless stops, the Yang-wu dialect of Hani is exceptional among the I dialects of China. Two examples of Tibeto-Burman prenasalized voiceless dental stops:

	'to come out'	'to drink'
Written Tibetan	N-thon-pa	N-thurj-ba
Liang-shan Lolo		ndo 33
Ahi	du 44	tu 22
Lisu	doʔ 44	do 33
Nasu	duʔ 32	dhɔ 213
Sani	du 44 'to go out', du 33 'to give birth'	to 33
Hani	tu 55	[su 13]

The I voiced reflex of prenasalized voiceless labial stops is in some cases a stop, in others a fricative. We infer for the fricative reflex a

secondary and intermediate *-y- or *-i-: *Np- → *Nb- → *b- → *by- → *vy- → v-. Examples:

	'to shoot'	'to float (in the air)'	'to fly'
Written Tibetan	N-phen-pa	N-phyo-ba	N-phir-ba
Thailand Yao	pwon B1	byou A2	
Chinese	發 *pjəut (K275 c: *piwat) 彈 *pjit (K407 i: *piēt)	漂 *phjaug (K1157 i: *p'iog) 浮 *bjəug ← *N-p(h)jəug (K1233 l-m: *b'iog)	
Li-chiang Nasi			mbi 11
Ahi	ba 44	po 33	
Lisu	buu [?] 44	bu 33	bi 33, be 33
Nasu		bu 21	
Sani	ba 22	pv 33	
Hani	pə 55		
	'snow'	'pig'	
Proto-Miao-Yao	*N-p (C1)	*N-p- (C1)	
Ke-cheng	mpu 33	mpo 33	
Written Tibetan		phag	
Li-chiang Nahsi	mbe 44	bo 11	
Wei-hsi Nahsi	mpɛ 33	bo 15	
Liang-shan Lolo		vo 55*	
Ahi**	wo 21	viə [?] 44	
Lisu	ua 31	ue [?] 42	
Nasu	vɛ 21	vă 55	
Sani	vă 11	ve [?] 2	
Hani	ɸo 21	ɸa 21	

* Note that Liang-shan Lolo *y-* corresponds to written Tibetan *by-* in 'chicken': WT *bya*, Liang-shan Lolo *va* 33.

** Cf., with the same initial reflexes reconstructed for these words, Hsi-hsia **wi* 'snow', **vu* 'pig'.

D. Hsi-hsia and Southern Ch'iang

That the reconstructed Hsi-hsia language of northwest China has certain affinities with such Tibeto-Burman languages now spoken in that region as Gyarong and southern Ch'iang has been noted, for example, by Nishida (1960). With respect to prenasalized initials, however, there is a difference. Gyarong and Hsi-hsia share both lexical items and the nasal prefix. For the southern Ch'iang dialects, on the other hand, evidence of a nasal prefix, in the form of either prenasalized stops or simple nasals, is so far lacking, and a lexical item which has **N-* in Hsi-hsia may have **s-* in southern Ch'iang.

Hsi-hsia nasal correlates to non-Hsi-hsia prenasalized stops are of two sorts. In the one, both nasal and stop are preserved; voiceless stops show voicing. In the other, nasal and stop have merged, yielding a simple nasal. Examples [Hsi-hsia reconstructions are from Nishida 1960 (so indicated in parentheses) and 1964; southern Ch'iang examples are from Chang 1967]:

(1) Non-Hsi-hsia prenasalized stop: Hsi-hsia prenasalized stop or fricative:

'gall'. WT *mkhris-pa* (**b-N-k[h]-*). Hsi-hsia **ŋgi*.

'heights'. WT *N-phay*. Hsi-hsia *mbif*. (On WT *-ŋ*: Hsi-hsia *-fi*, cf. 'heart', WT *sñiŋ*, Hsi-hsia *niefi*; 'room', WT *khaŋ-pa*, Hsi-hsia *khifi*; 'tree', WT *šiŋ*, Hsi-hsia *sifi*.)

'kidney'. Nahsi *mby 44 ly 44* (Li-chiang), *mpy 33 ly 33* (Wei-hsi). Hsi-hsia *ŋvur-lō*.

'widow'. Proto-Miao-Yao **N-br-* (C2), e. g. Kao-p'o *mplu 33*, Ke-cheng *mpro 22* 'being a widow(er)'. Hsi-hsia **ŋviō*.

'nine'. Nahsi η gv 44 (Li-chiang), η ku 33 (Wei-hsi). Gyarong - η gu: Tzu-ta kenggu. Hsi-hsia * η gĩ.

'muscle'. Nahsi η gv 44 (Li-chiang), η ku 51 (Wei-hsi). Hsi-hsia * η gĩuŋ.

(2) Non-Hsi-hsia prenasalized stop: Hsi-hsia nasal:

'insect'. WT N-bu 'insect; worm'. Chamdo Tibetan mb̥ 3 'worm'. Hsi-hsia *muu3 (Nishida 1960).

'to blow'. WT N-bud-pa. Trung mət, Lepcha măt, müt. Hsi-hsia *mu (*liuŋ *mu 'to blow a flute')

'dragon'. WT N-brug. Gyarong (Suo-mo) tarmok (-rmok ← *mrok ← *N-bruk). Hsi-hsia *mĩe. (Also, in other developments, Hsi-hsia *vi [*v- ← *by- ← *br-] and *i̯wō [*r-]. Cf. Chinese 龍 *bljuŋ [K1193 a-e: *liung].)

'illness'. Nahsi η go 11 (Li-chiang), η ko 21 (Wei-hsi) 'to be sick'. Hsi-hsia * η o.

'desert fox'. Nahsi ndæ 44 (Li-chiang) 'fox'. Hsi-hsia *ni.

'fruit'. WT N-bras-bu. Gyarong (Suo-mo) mbras-wu. Hsi-hsia *mu.

Before stops, the southern Ch'iang dialects have fricative prefixes (ʃ-, h-, ʒ-, h-) which correlate, on occasion, with Tibetan s- and which we derive from *s-; Gyarong, too, has ʃ-, ʒ-, as well as s-, z-, corresponding to Tibetan s-. ʃ- and h- occur before voiceless stops (which may have been devoiced by the *s-), as in 'jackal, wolf', WT spyar, Waszu ʃpa, T'aop'ing Hsiang, Chiutzu Ying, Jota Chai hpa; 'garlic', WT sgog-pa, Lopu Chai ʃkə, Chiutzu Ying hkəhtyə; and 'kidney', Hsi-hsia η vur-lō, Lopu Chai ʃpulu. Voiced stops may, however, remain voiced, with a change of *s- to ʒ-, h-, as in 'round', WT sgor-mo, Chiutzu Ying hgu, Jota Chai hgy. This regressive assimilation in the voicing of *s- is also a feature of Gyarong (e.g. 'hunchback', WT sgur-po, Suo-mo kəzgur), in contrast to Tibetan, which has some devoicing by *s- (Chang and Chang 1975. 434 ff., 508 f.).

We see reflexes of this *s- before voiced stops where Hsi-hsia has *N- before a stop in 'nine' and 'drum', and where Hsi-hsia has a nasal

deriving from a prenasalized stop in 'dragon':

'nine'. Lopu Chai ɰgwu, Chiutzu Ying ɰgwe, Jota Chai ɰgwə. Hsi-hsia *ŋĩ. (Note that southern Ch'iang also has *s- in 'six': WT drug, Waszu ɬɬsu, Lopu Chai ɬɬsu, Jota Chai htɬu.)

'drum'. Waszu ɰbu, Lopu Chai ɰbo, Chiutzu Ying ɰbo, Jota Chai ɰbu. Hsi-hsia *mbar, *mbufi.

'dragon'. Lopu Chai ɰbwu, Chiutzu Ying and Jota Chai ɰbə. Hsi-hsia *mĩe. WT N-brug.

We infer, then, that where southern Ch'iang has a voiced fricative before a voiced stop and Hsi-hsia has a nasal, the nasal derives from a prenasalized stop, as in 'dragon'. This is the case in 'cloud': Chiutzu Ying and Jota Chai ɰde (← *s-de), Hsi-hsia *ne (← *N-de; nẽ 'cloudy' derives, then, from *N-dẽ?). The forms for 'cloud' in the Waszu and Lopu Chai dialects, where we find the ɰ- reflex of *s-, have not been recorded.

Did Hsi-hsia extend its use of nasal prefixes beyond that inherited from Tibeto-Burman or Sino-Tibetan? Did southern Ch'iang extend its use of *s-? Did the *s- take the place of an earlier, lost *N-? Did southern Ch'iang have *s-N-, the intervening *N- preventing the devoicing of a voiced stop by the *s-? These may be unanswerable questions.

III. CHINESE

In a paper "On the Relationship of Chinese 稠 *djəug and 濃 *nəuŋ, *njəuŋ", we presented comparative evidence for our claim that Proto-Chinese had prenasalized stops, like Miao-Yao and Tibeto-Burman, and that Archaic Chinese preserved reflexes of these stops both in simple nasals, in which nasal and stop had merged, and in voiced stops which had been voiced by the preceding nasal. We now integrate these observations into a wider-ranging hypothesis. That is, during the period in which the phonetic compounds were being established, Chinese still had prenasalized stops; the changes which these initials underwent overlapped this period. The

series of phonetic compounds which represented prenasalized stop initials are those for which both stop and nasal initials have hitherto been reconstructed. In some series, for example, a velar nasal, *ng-, has been reconstructed for every entry in the series (e.g. Karlgren's series 956 [Karlgren 1957]); here we reconstruct *ŋ- for the period of the phonetic compounds and, where there is evidence for a Proto-Chinese prenasalized stop (as there is in 'to freeze', K956 h; Type I, example 7, below), attribute the merging of nasal and stop to an earlier period. The evidence for the reconstruction of a Proto-Chinese prenasalized stop is, in this type, primarily comparative and, for the moment, derived primarily through comparison with written Tibetan. (The existence of stop doublets within Chinese for words of this sort—as in Type I, examples 2, 3, 5, and 8—supplements the comparative evidence but would not, in itself, constitute evidence; devoicing of a nasal, perhaps by some other prefixed consonant, would, for example, have to be considered as an alternative explanation for the stop/nasal pairs.) In other series, nonnasal velar initials have been reconstructed for every entry (e.g. Karlgren's series 140, with *k-, *g'-); here we reconstruct nonnasal velar initials for the period of the phonetic compounds and, where there is evidence (again, comparative) of the voicing of a Proto-Chinese voiceless stop by a nasal (as there is in 'to wash', K140 m, Type III, example 1, below), attribute the voicing of the stop and the subsequent loss of the nasal to the preceding period. Where, however, both reconstructed nasals and nonnasal stops appear in the same series (e.g. Karlgren's series 224 [*p-, *m-] and 257 [*k'-, *g-, *g'-, *ng-], we reconstruct, in place of both stops and nasals, prenasalized stops for the period of the phonetic compounds. Where nasals have hitherto been reconstructed, we infer the merging of stop and nasal (e.g. 'hidden', K224 a, Type II, example 2, below). Where stops have been reconstructed, we infer the loss of the nasal after the period of the phonetic compounds (e.g. 'to wash [clothes]', K257 o, Type IV, example 1, below).

(Where nasal and stop have merged, as they have in Type II, we must turn to Chinese doublets or, failing these, the comparative evidence in our attempt to determine whether the stop was voiced or voiceless and, if voiceless, whether aspirated or unaspirated.)

Chronologically, our next evidence on the nature of Chinese initials lies in the fan-ch'ieh of the Ancient Chinese period. At what stage of development the initials of *Shih-ching* Archaic Chinese were is a moot point. In the stages we posit below we therefore omit *Shih-ching* Archaic Chinese, going from the period of the phonetic compounds to Ancient Chinese. The reconstructed forms we cite for Archaic Chinese are those of Karlgren 1957 (in parentheses), preceded by reconstructions for Chinese of the phonetic-compound period which incorporate suggestions made in Tung 1944, 1948, Li Fang-kuei 1971, and Chang and Chang 1972. These reconstructions will, in time, require even further modification. One ultimate aim is, of course, the reconstruction of Proto-Chinese.

In Chart 6 we summarize our fourfold classification of Chinese pre-nasalized stops in which the nasal has either merged with or has voiced a following voiceless stop. For purposes of illustration, we give velar stops as representative of stops in general. Examples of these four types of development follow. Without getting into problems which will require detailed treatment in other papers we may note here certain changes and correlations in these examples: (1) The change of *-r- to *-j- implied in both Chinese second/third-division doublets and WT -r-: Chinese *-j- correspondences (e.g. Type I, examples 1 and 4). (2) The loss of *-r-, as implied by Chinese first/second-division doublets and Tibetan -r- or Miao-Yao *-r-: Chinese *-ϕ- correspondences (Type I, example 1; Type III, example 5). (3) The appearance of an epenthetic *-j- in Chinese, corresponding to zero in Tibetan or Miao-Yao (Type I, examples 2, 3, 8; Type II, examples 1, 2, 5; Type III, example 4). (4) The fronting of a back vowel, but the lowering of a front vowel, after *-j- (Type I, example

Chart 6

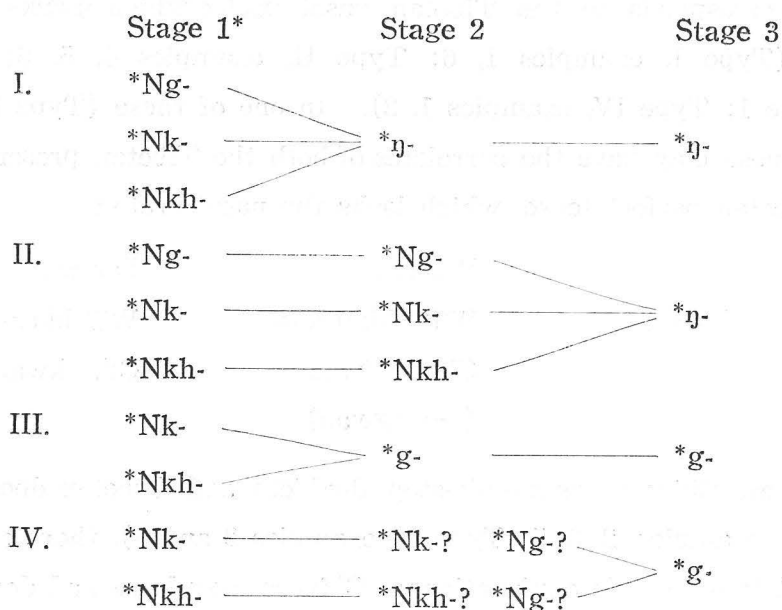
Chinese Prenasalized Stops which have undergone Merging or Voicing

Type I. Merging of stop and nasal precedes the establishment of phonetic compounds. (Stops are not in series with nasals.)

Type II. Merging of stop and nasal follows the establishment of phonetic compounds. (Stops are in series with nasals.)

Type III. The loss of the nasal which has voiced a following stop precedes the establishment of phonetic compounds. (Stops are not in series with nasals.)

Type IV. The loss of the nasal which has voiced a following stop follows the establishment of phonetic compounds. (Stops are in series with nasals.)



*Stage 1, Proto-Chinese; Stage 2, The Chinese of the period reflected in the phonetic compounds; Stage 3, Ancient Chinese.

1; Type II, examples 1 and 2). (5) The correspondence of a Chinese back rounded vowel to a Tibetan front unrounded vowel (Type I, example 5; Type II, example 3.) Cf. also 'eye', Chinese 目 *mjəuk [K1036 a-c: *mîôk], WT myig, mig. (6) The correspondence of WT -1: Chinese *-t (Type II, example 1; Type III, examples 2, 3). The most common change in these examples is, however, that implied by the frequent correspondence of Chinese nasal endings to Tibetan oral-stop endings (Type I, examples 1, 5, 7, 9; Type II, example 2; Type III, example 1; Type IV, examples 1 and 3). There are, of course, Chinese stop/nasal-ending doublets which do not have nasal or prenasalized initials, but there is a disproportionately large number among the words with prenasalized-stop initials. We interpret this as articulatory lag; it could also be seen as evidence that nasality is a suprasegmental phenomenon.

Among the examples we cite here are a number in which the Chinese nasal corresponds to the Tibetan nasal prefix which marks the present tense (Type I, examples 1, 6; Type II, examples 4, 5, 6; Type III, example 1; Type IV, examples 1, 2). In one of these (Type IV, example 1), Chinese may have the correlates of both the Tibetan present tense and the Tibetan perfect tense, which lacks the nasal prefix:

	Present	Perfect
'to wash'	WT N-khrud-pa	WT bkrus
	Ch. *N-kwan	Ch. *kwan
	(→ *gwan)	

Where Chinese has simple-stop doublets and Tibetan does not (as in Type I, examples, 2, 3, 5; Type II, examples 2 and 3), there are however, at least two possible explanations: Chinese may have had doublets, with and without a preceding nasal, from the beginning, or the nasal may have been lost, as it was in Types III and IV.

If a nasal prefix was one source of voicing contrasts in Chinese, *s- was another. We infer the devoicing capacity of *s- in Chinese from

comparisons with Tibetan. For example: 'to collect', WT sgrug-pa, Chinese 掇 *kjəug (K1066 g: *kĭôg), where we posit devoicing by *s- and its later loss: *sg- → *sk- → *k-.

The changes of voicing after a voiced nasal, devoicing after a voiceless fricative, and merging of nasal with stop may all be viewed as types of assimilation. Loss of the prefix could, however, take place after assimilation or in its absence. We have, then, a number of possible combinatory results to look for in doublets or "word families". Take, for example, the velar stops:

Proto-Chinese	Ancient Chinese					
(1) Voiced stops:	*N-g-	*ŋ-	*ŋ-	*ŋ-	*g-	*g-
				*g-		
	*s-g-	*g-	*k-	*k-	*g-	*k-
(2) Voiceless stops:	*N-k-	*ŋ-		*ŋ-	*g-	*k-
				*g-		
	*s-k-	*k-		*k-	*k-	*k-

If voiced nasals and voiced and voiceless stops could derive from either voiceless or voiced stops, we may need comparative evidence to reconstruct the feature of voicing. We would, for example, posit a Proto-Chinese prenasalized voiceless stop for Chinese *nəuŋ (Type I, example 9) and *djəug (Type III, example 4) on the basis of written Tibetan N-thug-pa.

EXAMPLES

Type I

1. 'to deceive'. Chinese 謾 *mran, *mjān, *man (K266 o: *man, *mjān, *mwān). WT N-brid-pa, brid. [Initial in K266: *m-.]
2. 'to disappear, die'. Chinese 沒 *mət (K492 b: *mwət). WT N-bud-pa, N-bud. Cf. Chinese 斃 *bjad (K341 f: *b'jad) 'die; destroy'. [Initial in K492: *m-; initials in K341: *p-, *p'-, *b'-.]

3. 'hidden'. Chinese 微 *mjud (K584 d-e: *m_iwər). Also *N-bjan, Type II, example 2. WT sbed-pa (Proto-Tibetan *s-N-bed-pa: Chang 1971: VII.5), sbas 'to hide'. Cf. Chinese 屏 *bjud (K579 n: *b_iwər) 'hidden'; 陴 *bjud (K579 s: *b_iwər) 'conceal'; Thailand Yao bwei B2 'conceal, hide'. [Initials in K584: *m, *χm-; initials in K579: *p-, *p'-, *b'-.]
4. 'pasture-ground; herdsman'. Chinese 牧 *mjəuk (K1037 a-c: *m_iôk). WT N-brog; N-brog-pa. [Initial in K1037: *m-; only this example, however.]
5. 'to wipe off'. Chinese 拭 *mjun (K475 h: *m_iwən). Also *N-p(h)jit, Type II, example 3. WT N-phyid-pa. Cf. Chinese 拊 *pjun (K220 d: *p_iwən) 'to dust' and 拂 *phjut (K500 h: *p_iwət) 'wipe off'. [Initial in K475: *m-; initials in K220 and K500: *p-, *p'-, *b'-.]
6. 'to obstruct, hinder'. Chinese 礙 *ŋəg (K956 g: *ngəg). Also *N-khəg, Type II, example 6. WT N-gegs-pa, bkag. [Initial in K956: *ng-.]
7. 'to freeze, coagulate'. Chinese 凝 *ŋjəŋ (K956 h: *ngjəŋ). WT N-khyag(s)-pa. [Initial in K956: *ng-.]
8. 'to break'. Chinese 搥 *ŋwjat (K306 g: *ngjwat). Cf., with a stop initial, 缺 *khwjat, *khwiat (K312 h: *khiwat, *khiwat) 'break, splinter'. Proto-Miao-Yao *N-q- (C1) 'break', e.g. Ma-chia-t'un nqai 55, Kao-p'o nqu 54, Ke-cheng nqai 33. [Initial in K306: *ng-; initials in K312: *k-, *k'-, *χ-, *-.]
9. 'thick'. Chinese 濃 *nəuŋ, *njəuŋ (K1005 i: *nung, *n_iung). WT N-thug-pa. See also Type III, example 4. [Initials in K1005: *n-, *n'-.]

Type II

1. 'gentle'. Chinese 謐 *N-bjit (K405 t: *m_iět). WT N-bol-po. [Initials in K405: *p-, *b'-, *m-.]
2. 'hidden'. Chinese 鼻 *N-bjan (K224 a: *m_ian). WT sbed-pa (Proto-Tibetan *s-N-bed-pa), sbas 'to hide'. (Cf. also Type I, example 3.) [Initials in K224: *p-, *m-.]
3. 'to wipe'. Chinese 盪 *N-p(h)jit [K405 s: *m_iět) 'to wipe a vessel

- clean'. (Cf. also Chinese 拚 *pjun [K220 d: *piwən] 'to dust', 拂 *phjut [K500 h: *p'iwət] 'wipe off', and Type I, example 5.) WT N-phyid-pa. [Initials in K405: *p-, *b'-, *m-.]
4. 'to expel'. Chinese 難 *N-dan (K152 d-f: *nân), 儼 *N-dad (K152 k: *nâr). WT N-don-pa, bton; N-dor-ba, dor. [Initials in K152: *t'n-, *n-, *ń-.]
5. 'to tie' Chinese 紐 *N-djəug (K1076 g: *nĭôg). WT N-dogs-pa, btags. [Initials in K1076: *t'n-, *n-, *sn-.]
6. 'to hinder'. Chinese 礙 *N-khəg [*N-gəg?] (K937 t-u: *ngəg). WT N-khegs-pa, khegs. (Cf. also Type I, example 6.) [Initials in K937: *k-, *k'-, *g'-, *ng-.]
7. 'to chew'. Chinese 齧 *N-graug or *N-kraug. Cf. Nahsi ngu 44, gu 44 (Li-chiang), ŋku 21 ŋku 33 (Wei-hsi) 'to chew'. (This character, which is not in Karlgren 1957, has the phonetic element of series 1166. Initials in series 1166: *k-, *k'-, *g'-, *- [and, with the inclusion of this example, *ng-.])
8. 'beautiful'. Chinese 嬌 *N-gəm or *N-kəm (K651 k': *ŋəm). Cf. Nahsi ŋie 11 (Li-chiang) 'beautiful'. [Initials in K651: *k-, *k'-, *g-, *- , *ng-, *t'-.]

Type III

1. 'to wash'. Chinese 澣 *gwan (K140 m: *g'wân). WT N-khrud-pa, bkrus. (Cf. also 盥 *kwan [K161 a-c: *kwân] 'to wash hands' and Type IV, example 1.) [Initials in K140: *k-, *g'-; initial in K161: *k- (this example only).]
2. 'to come forward, become prominent'. Chinese 達 *dat (K271 b-c: *d'ât). WT N-thal-ba 'to go beyond; be prominent; play a prominent part'. [Initials in K271: *t'-, *d'-.]
3. 'penetrate, come through'. Chinese 達 *dat (K271 b-c: *d'ât) 'penetrate, reach to'. WT N-thal-ba 'to arrive at; to go or pass through, e.g. as a saint through a rock'.

4. 'thick'. Chinese 稠 *djəug (K1083 m: *d'jôg). WT N-thug-pā. [Initials in K1083: *t-, *t'-, *d'-, *t̥-.]
5. 'salt'. Chinese 齏 *dza (K5 m: *dz'â). Proto-Miao-Yao *N-tsr- (B1), e.g. Ma-chia-t'un nt̚se 51, Kao-p'o ntsæ 13, Shui-wei nʔtsi, ʔtsi 55, Thailand Yao dzaau (HRF). [Initials in K5: *ts-, *ts'-, *dz'-, *s-.]

Type IV

1. 'to wash (clothes)'. Chinese 浣 *N-kwan or *N-gwan (K257 o: *g'wân). WT N-khrud-pa, bkrus 'to wash (clothes or hands, face)'. Cf. 鹽 *kwan (K161 a-c: *kwân) 'to wash (hands)', and Type III, example 1. [Initials in K257: *k-, *k'-, *g-, *g'-, *ng-; initial in K161: *k- (this example only).]
2. 'to lift'. Chinese 翹 *N-k(h)jaug or *N-gjaug (K1164 h: *g'jog). WT N-khyog-pa, khyag. [Initials in K1164: *k-, *k'-, *k̥-, *g'-, *n-, *n̥-, *śn-, *ng-.]
3. 'dark'. Chinese 黯 *N-thəm, *N-dəm (K658 n: *t'əm, *d'əm). (Cf. Chinese 瞋 *thəd [K509 e: *t'əd] 'dark', where the phonetic element 隸 lends support to a derivation from *thəb.) WT N-thibs-po. Initials in K658: *t-, *t'-, *d'-, *s-, *ts-, *t-, *d-, *d'-, *k'-, *ng-; initials in K509: *t'-, *d'-, *d-, *s-.]

CONCLUSION

We have observed certain common developments of prenasalized stops in Miao-Yao, Tibeto-Burman, and Chinese, such as the merging of nasal and stop, the voicing of a stop by a preceding nasal, and the extension of nasality throughout a syllable. We are, however, left with rather basic problems in morphological analysis and linguistic classification. The nasal element in prenasalized stops is certainly a distinct morpheme in some cases. We can, for example, identify a noncausative or present-tense verbal prefix. But, at the other extreme, what role does the nasal play in nouns? If it is sometimes a prefix, is it always? Or may it sometimes be merely

one segment of a consonant cluster? And, then, what does the presence of prenasalized stops in Miao-Yao, Tibeto-Burman, and Chinese imply about the relationship of these languages? Are the prenasalized stops of interest only for typological classification? Or are examples such as those we have given in Chart 5 cognates which imply a genetic relationship for these languages? It would certainly be difficult to find much evidence of recent areal diffusion. We appear to be dealing, rather, with pockets of preservation, but this merely puts some distance between us and the ultimate question: are the prenasalized stops which are preserved remnants of diffusion or cognates?

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