

ON DOUBLY ARTICULATED LABIAL-VELAR STOPS AND NASALS IN TIBETO-BURMAN*

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Observations are made here of an areal, typological and historical nature about labial-velar stops and nasals in the Adu variety of Yi. These segments are shown to be unusual in a series of different ways. It is also likely that the presence of labial-velar stops was once more widespread in Tibeto-Burman.

Keywords: Adu Yi, Tibeto-Burman, labial-velar stops and nasals, typology.

1. INTRODUCTION

In the previous issue of *Linguistics of the Tibeto-Burman Area*, James A. Matisoff (2006) discusses the presence and historical development of labiovelar stops and nasals in the ‘Adu’ variety of Northern Yi (= Loloish) languages in Southern China. These unusual sounds, e.g. *kp*, *ŋm*, were previously brought to the attention of linguists by Pan Zhengyun (2001). As far as I am aware, Adu Yi is the first case of a language anywhere in the large Tibeto-Burman family reported to have such segments as part of its sound system. Such a fact is unusual enough that the opportunity is taken here to make some typological and areal observations as well as very brief comparative historical comments about them, whilst also suggesting,

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based on cross-linguistic data, that these sounds may once have had a wider distribution in Tibeto-Burman.

2. TYPOLOGICAL AND AREAL OBSERVATIONS ABOUT LABIAL-VELAR STOPS AND NASALS

Labiovelar stops and nasals are today increasingly referred to as labial-velar (also labial-dorsal) in the phonetic and phonological literature, e.g. Ladefoged and Maddieson (1996) and Cahill (1999). This slight modification of terminology is intended to indicate explicitly the equal degree of constriction at both labial and velar places of articulation. These sounds are also known more generally as doubly articulated segments, given the fact that constriction occurs at two places. Experimental work confirms significant overlap of velar and labial gestures (hence they are often transcribed with the ligature sign, as Pan Zhengyun (2001) does). However, it is known that the onset of velar constriction always slightly precedes labial constriction which in turn is released slightly after velar release. Ladefoged and Maddieson (1996: 332-343) provide a useful phonetic overview of the articulatory and acoustic characteristics of labial-velar stops and nasals. As a result of areal and typological surveys, in particular Cahill (1999) and Hajek (in prep.) but also Clements and Rialland (2005) and others, a reasonable amount is also now known about their geolinguistic distribution and historical development, as well as their place and behaviour in the sound systems of languages.

Labial-velar stops and nasals are common in only two areas of the world: (a) a broad area of west and central Africa, involving a very large number of languages across a range of families; and (b) different parts of Melanesia (including New Guinea, the Solomons and Vanuatu, involving both Austronesian and non-Austronesian languages). The same type of segment occurs only rarely elsewhere in the world and the reasons for this very specific geographical concentration are not known. Adu Yi is, therefore, particularly

significant, given its location in Asia. The only labial-velar stops and nasals reported to occur elsewhere in Asia are found in Vietnamese (Matisoff 2006: 104) and possibly also a small number of languages also spoken in Vietnam (Hajek in prep). However, in these languages they have a typologically unusual distribution: Vietnamese *kp* and *ŋm* appear only as word-final allophones of /k ŋ/ respectively after rounded vowels or glides, e.g. /xuŋ/ [xuŋm¹] ‘frame’, /huk/ [hukp⁵] ‘to addict oneself’ (Kirby 2005). The articulatory source for this process is carryover lip rounding from the preceding rounded vowel or glide, e.g. *huk* > *huk^w* > *hukp*. It is unlikely, however, given the geographical and phonotactic differences, that the phenomenon in the Vietnamese area is related to word- and syllable-initial labial-velars in Adu Yi.

Adu Yi is also unusual for its large number of labial-velar stops and nasals. It has five different doubly articulated labial-velar stops and nasals, as seen in the following set:

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|-----|-----------------------|---------------------------|----------|
| (1) | <i>kp</i> | <i>kpu</i> ³³ | ‘scream’ |
| | <i>kp^h</i> | <i>kphu</i> ³³ | ‘inside’ |
| | <i>gb</i> | <i>gbu</i> ²¹ | ‘goose’ |
| | <i>ŋgb</i> | <i>ŋgbu</i> ⁵⁵ | ‘steal’ |
| | <i>ŋm</i> | <i>ŋmue</i> ³³ | ‘blow’ |

It is more typical for languages to have much smaller systems, such as single /gb/ or /kp/ only, two-way /kp gb/, or three-way /kp gb ŋm/. Only a handful of languages, all spoken in Africa, are known to have systems as large as that found in Adu Yi, e.g. Bali /kp gb kb kɓ gɓ/ (with implosive element), and Dan /kp gb ŋm gb^j kp^j/ (with palatal off-glide). No other language is, however, known to have exactly the same set of labial-velars as Adu Yi. While each of the Adu Yi labial-velars are also found elsewhere, aspirated *kph* is very uncommon. To this point it has only been reported to contrast in the

Edoid languages of Nigeria, e.g. Auchi, Ibilo, where it also appears alongside /kp/ (Elugbe 1980).

3. HISTORICAL OBSERVATIONS ABOUT LABIAL-VELARS IN ADU YI AND ELSEWHERE

With regard to the historical development and significance of labial-velar stops and nasals in Adu Yi, Pan Zhengyun (2001) argues that their presence in Adu Yi necessitates their reconstruction for Proto-Loloish. Matisoff (2006: 103) is correct in pointing out that this hypothesis cannot hold since it does not explain the synchronic split between plain velar and labial reflexes found in the same sister language. He is also right to ascribe the development of such segments to a secondary development in the environment of labial segments *u w*. Matisoff (2006) places developments in Adu Yi within the wider context of so-called extrusional phenomena, specifically the appearance of a labial offglide [w] after labial and velar consonants and before the vowel *u* (Matisoff 2000). The appearance of such extrusional glides after labial consonants is of course commonly reported in languages around the world, e.g. Latin MATRE > Ligurian *mwae* ‘mother’, Latin PATELLA > French *poêle* ‘pan’. Matisoff (2006) notes that in Yinuo Yi, closely related to Adu Yi, the same kind of labialisation is common after velars and before high vowels *u* and *u*, e.g. *gwu*⁴² ‘goose (cf Adu *gbu*²¹), *khwu*³³ ‘solid’, *ngwu*³⁵ ‘poke’ (Adu *ngbu*⁵⁵). As such, Yinuo provides the critical comparative evidence of the intermediate stage between more conservative *gu*²¹ of Shengzha and Tianba Yi and *gbu*²¹ in Adu.

It is not surprising that labialised velars and labials, e.g. *kw* and *pw* respectively, should become *kpw* and then *kp*. The off-glide is labial-velar and the preceding stop is labialised (lip-rounded) and velarised (tongue dorsum raised) in anticipation. Cahill (1999:166) notes explicitly that “[t]he immediate predecessors of labial-velars seem always to be labialized consonants, whether *Pw or *Kw.”

There is evidence to suggest labial-velar stops were once found in other Lolo-Burmese languages. Matisoff (2006: 101) provides a useful comparative set for reconstructed $*k^w u$, ‘fist’ presented in slightly reduced form in (2):

(2)	$*k^w u$	‘fist’
	Wuding	$k^w u^{21}$
	Sani	khv^{21}
	Weishan	$k^w u^{21}$
	Mile	pu^{35}
	Mojiang	pu^{33}
	Lisu	pu^{35}
	Nanhua	pu^{33}
	Adu	kpu

The labial stop reflexes in Mile, Mojiang (both Yi), and Lisu, point to an intermediate stage of kp , now lost in these languages. Elsewhere in Lolo-Burmese, reconstructed labialised velar stop $*k^w$ often has labial reflexes, e.g. PLB $*k^w \partial y^2$ ‘dog’ > Lahu $ph\hat{i}$.

(3)	‘dog’	‘nest’
PLB	$*k^w \partial y^2$	$*k^w \partial y^1$
W. Burmese	$khw\acute{e}$	—
Lahu	$ph\hat{i}$	phi
Mpi	$khur^2$	$?a-khur^6$

(4)	‘comb’	
PTB	$*k^{w}i \sim *g^{w}i$	
PLB	$*ʔ- g^{w}əy^2$	
Lahu	pi	
Lisu	$o^{55} pu^{55}$	
Naxi	$py^{31} mi^{31}$	
Nanhua Yi	$u^{55} pi^{55}$	cf. Xide Yi $o^{33} ku^{55}$
Nanjian Yi	$u^{21} pu^{21} tci^{33}$	Dafang Yi $o^{33} ku^{55}$
Jinuo	$phi^{33} ci^{42}$	
Gazhuo	$o^{31} piε^{55}$	

Outside of Lolo-Burmese, Matisoff (2006: 97-98) notes labial stops for reconstructed velars in a number of Qiangic languages, e.g. Qinghua Pumi spa^{55} and Dayang Pumi $ʒdʒwɪŋ \phi p\check{\delta}$ for Proto-Tibeto-Burman (PTB) $*s-kwa$ ‘hoof’. Similarly, Shixing and Namuyi have $\phi iε^{55}$ and $pəi^{35}$ for PTB $*kwi \sim *gwi$ ‘comb’, with expected velar reflexes elsewhere. These examples are also suggestive of an earlier phase of labial-velar obstruents now lost in these languages.

The other area that may have had an earlier labial-velar stop series involves the Naga-speaking (Kuki-Chin-Naga) parts of eastern India. Matisoff (2006: 104) notes that a number of PTB etyma with *velar + *w* initials appear today in Angami Naga with labiodental affricates pf pfh mv , e.g. Proto-Kuki-Naga $*m-kwul >$ Angami $m\grave{e}p\check{\delta}$ ‘twenty’, PTB $*m-kwa:y >$ Angami $m\grave{e}p\check{h}i$ ‘bee’, PTB $*\eta^w a >$ Angami $t\grave{e}mv\acute{\delta}$ ‘goat/cattle’. There are also cases of what must have involved an intermediate stage of spontaneous labialisation (as found also in Adu Yi above), e.g. $*ka >$ Angami $pfh\acute{\delta}$ ‘bitter’. The historical origins of these labio-dentals in Angami have been the subject of some discussion (Matisoff 1980, 1982, Weidert 1981), but it is accepted by all sides that there was in each of these cases labial off-gliding of labials and velars, whether at the initial reconstructed starting point or as a secondary local phenomenon. Weidert (1981:

14-15) provides a comparative model of change for Angami and closely related Chakhesang Naga, noting two different patterns:

	proto-form	Angami	Chakhesang
A1	*velar stop + *-a 'bitter'	labiodental affr. + ə <i>pfhə¹</i>	velar + -u <i>khu¹</i>
A2	*bilab. stop + *-a 'search'	labiodental affr. + ə <i>pfhə⁵</i>	bilabial + u <i>phu⁴</i>
B1	*velar stop + *-ua 'bee'	labiodental affr. <i>mɛ²pfhi³</i>	labiodental affr. <i>mɛ²fi³</i>
B2	*bilab. stop + *-ua 'rainbow'	labiodental affr. <i>pfɛ²si²</i>	labiodental affr. <i>fu²sv²</i>

We see in (5) that in all listed contexts, there has been a shift to labiodental affricates in Angami. In Chakhesang the shift (which has proceeded further to labiodental fricative *f*) has only occurred in those contexts where prevocalic labial *u* appears in the reconstructed form. Both Matisoff (1980, 1982) and Weidert (1981) accept that spontaneous labial-velar off-gliding has occurred in the first set as an intermediate stage, i.e. **ka*, **pa* > **k^wa*, **p^wa*. In Chakhesang the glide has coalesced with the following low vowel leading to *kho* and *phu* respectively. But with respect to Angami, I would expand the reconstructed set of intermediate changes, as follows: **ka/pa* > **k^wa/p^wa* > **kp^w* > **kp* > **kpf* > *pf* or alternatively **kp^w* > **kp_v* > **kpf* > *pf*.

Overall, the available evidence seems to indicate that secondary labial-velar stops may have once been more widespread in Tibeto-Burman languages – we have examples of labial reflexes for earlier

velar **k* and/or **kw* in three different branches, i.e. Lolo-Burmese, Tangut-Qiang and Kuki-Chin-Naga. At this stage there is no suggestion that all three are synchronic fragments of a single historical phenomenon, given the geographical dispersion (Eastern India and Southern China). But historical language contact in Southern China, particularly in Yunnan, between Qiangic and Lolo-Burmese languages (especially Yi) would favour the notion of some kind of areal diffusion of labial extrusion and possibly also of subsequent secondary labial velars across these two branches. Further investigation is of course required to determine if this hypothesis and others, are correct.

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