

# On labial-velar stops and nasals in Vietnamese

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## Abstract

Amongst the languages of the world, so-called doubly-articulated labial-velar stops and nasals, e.g. *kp* and *ŋm*, are common in only two areas: (a) west and central Africa and (b) Melanesia (Cahill 1999; Clements and Rialland 2005; Hajek 2006). They are reported rarely elsewhere, with very few examples in Asia. The reasons for such a geographically skewed distribution are unknown, but Asian exceptions to it are worth reporting—with particular attention given here to labial-velar stops and nasals in Vietnamese. These are of wider general interest because of their unusual areal and typological characteristics.

## 1. Labial-velar stops and nasals in Asia

Labial-velar stops and nasals, such as *kp gb ŋm*, although commonly found in some parts of the world, such as Africa and Melanesia, appear to be exceptionally rare in Asia. Of the very few Asian examples known to us, the first involves the Tibeto-Burman (Lolo-Burmese) language, Adu Yi, spoken in Southern China. It has a set of five labial-velar stops and nasals /*kp kph gb ŋgb ŋm*/ (Matisoff 2006). They occur only word- and root-initially, and have their origins in previously labialised velar and labial consonants, e.g. *\*kwu* > Adu Yi *kpu* ‘fist’. Although it is the only Tibeto-Burman language currently known to have such segments, Hajek (2006) suggests, based on comparative evidence, that labial-velar *kp* may previously have been more widespread in that family. From a general typological perspective the system of doubly articulated labial-velars in Adu Yi is unusual for its relatively large size and for the presence of contrastive aspirated /*kph*/ which has previously only been reported in a small number of closely related Edoid languages spoken in western Africa (see Hajek 2006 for further information).

The second and only other confirmed example of labial-velar stops and nasals in Asia involves Vietnamese as described below.

## 2. Labial-velars in Vietnamese

The presence of labial-velar allophones [*kp*] and [*ŋm*] for velar /*k*/ and /*ŋ*/ respectively have long been reported for Vietnamese, e.g. Edmondson (2005), Emeneau (1951), Kirby (2006), Thompson (1959, 1991). Labial-velar

[kp] and [ŋm] are restricted to word-final position and occur only after rounded vowels or vocalic nuclei with rounded off-glides, as seen in the following set of examples:

- (1) *khung*/xuŋ/[xuŋm] ‘frame’      *hục*/huk/[hukp̚] ‘to turn  
into an addict’  
*không*/xoŋ/[xɤ̞ŋm] ‘no, not’      *hộc*/hok/[hɤ̞kp̚] ‘drawer’  
*khòng*/xoŋ/[xa̠ŋm] ‘bent over’      *học*/hɔ̠k/[ha̠kp̚] ‘to study’  
(based on Kirby 2006 and Edmondson 2005)

Labial /p m/ when in final position after rounded elements do not show such allophonic variation, e.g. /hup/ [hup̚] ‘sink in water’ /jum/ [jum] ‘a pinch of a substance’.

So-called doubly-articulated stops and nasals normally involve two constrictions (labial and velar) of equal degree. While they are mostly overlapping, they are not completely synchronous: velar closure occurs before labial closure which is held until slightly after velar release (Cahill 1999; Kirby 2006). In Vietnamese there is no clear release of the labial closure—in line with the general pattern of unreleased final stops in that language. Some sources on Vietnamese, e.g. Kirby (2006), also note that as a result of the slightly asynchronous closure/release of labial-velars visible cheek-puffing is possible as the velar burst becomes trapped in the oral cavity still closed at the lips.

The development of doubly articulated allophones in Vietnamese is easily explicable—they result from marked lip-rounding of word-final velars after rounded nuclei, e.g. /huk/ > [huk<sup>w</sup>] > [hukp̚] ‘to turn into an addict’. Carry-over rounding onto the final velar is then subject to further constriction equivalent to that of the velar stop closure.

Sources are not in complete agreement with regard to the facts about labial-velarization in Vietnamese. Kirby (2006) and others imply that the process of labial and velar closure is regular, since they do not point to any variability. Edmondson (2005) is more explicit on this point: “Whenever the velars *–c* or *–ng* follow back rounded vowels *u*, *ô* or *o*, there is *double closure*....” Others suggest instead that the process is optional, e.g. Thompson (1991:25) who states that “[the final velar is] .... unreleased with simultaneous strong rounding (and often closure or near closure) of the lips”. Previously, Thompson (1959:460) had been more specific: the degree of constriction was reported to vary according to vowel height. For both /k/ and /ŋ/ he noted the following allophonic distribution:

- (2) after      /u w/      simultaneous labial closure  
                 /o/      simultaneous labial closure (more common)  
                      in free variation with strong labialization  
                 /ɔ̠/      weakly labialized

The description and phonemic treatment of vowels before final labial-velars also varies according to the source. While some sources, e.g. Kirby (2006) describe only monophthongal mid-vowels [o ɔ] before final labial-velars, Thompson (1991) transcribes diphthongs before final /k ɲ/, e.g. [hawkp] ‘to study’ which he analyses as /hawk/ rather than /hɔk/ seen previously in (1). Emeneau (1951) and Edmondson (2005), on the other hand, treat these diphthongs as surface forms of underlying mid-vowels.

In my own direct observation of spoken Vietnamese no vowel height conditioned variability in labial closure as suggested by Thompson (1959) was noted. Later reports, e.g. Edmondson (2005), of regular allophony appear to be accurate. It is possible that this difference reflects completion of an earlier sound change in progress. Moreover, labial-velar articulation can be perceptually difficult to identify, with velar closure largely masked visually and auditorily by labial closure. As a result, final [kp] and [ɲm] are not always easily distinguishable from final plain [p] and [m], precisely as Thompson (1991:26) notes. The strongest auditory cue to velar constriction is at its onset just before labial closure, rather than at velar offset. Lip-rounding is also very clear throughout the articulation of [kp] and [ɲm].

Although final labial-velarization is found in both Hanoi (North) and Saigon/Ho Chi Minh City (South) varieties of Vietnamese (see, e.g. Kirby 2006 and Thompson 1959 respectively), much more information is needed with respect to regional or dialectal variation.

3. Final labial-velarization elsewhere in the Vietnamese linguistic area?

Whilst most information on labial-velar stops and nasals in the Vietnamese area refers only to Vietnamese, there are very scarce and conflicting reports on word-final labial-velarization in other languages spoken in Northern Vietnam, specifically Tay Nung [Tai-Kadai] and Dao or Iu Mien [Hmong-Mien]. Published information on the phenomenon in these languages (Doan 1996; Doan and Mai 1992) is very limited but it seems to follow conditions in Vietnamese, with [kp] and [ɲm] appearing word-finally after rounded vowels:

(3) Tay Nung		<i>p<sup>h</sup>uɲm</i>	‘mend’
		<i>k<sup>h</sup>ukp</i>	‘clogs’
Dao	(Ô Gong dialect)	<i>ɲɔɲm</i>	‘buffalo
	(Quan Trang dialect)	<i>ɲɔɲm</i>	‘buffalo’

In a curious statement Doan and Mai (1992:169) note for Dao only that “.... /ɲ k/ do not necessarily become labialized .....after rounded vowels.... For example: *k’ɔɲm<sup>1</sup> ɲɛɲ<sup>6</sup>* ‘stiff’....” This wording (translated from the original Vietnamese) appears to suggest that the process is optional. Unfortunately, they give no specific examples of /k/ > [kp].

Despite these reports, other fieldworkers working on the same languages, e.g. Edmondson (2006, p.c.), have not found evidence of it. For the moment, therefore, we view the identification of labial-velarization in Tay-Nung and Iu Mien as still tentative, pending further investigation. Apart from these possible examples, extensive checking of available phonological descriptions for numerous other languages spoken in Vietnam has found no mention as yet of word-final labial-velarization.<sup>1</sup> This does not preclude the possibility that future investigation of minority languages in Vietnam may uncover further evidence of the phenomenon.

#### 4. A typological note: final labial-velars across the world's languages

Finally, the typologically unusual phonotactics of Vietnamese labial-velarization require comment. Across the world's languages, doubly articulated labial-velar stops and nasals occur preferentially in word-initial (as in Adu Yi) or intervocalic position, i.e. prevocally. It is highly unusual for such labial-velars to be found in word-final position. The number of languages uncovered so far with such labial velars is only a handful (e.g. Hajek in prep., Cahill 1999). What is even more striking about the phenomenon in Vietnamese is the fact that in this language *kp* and *ŋm* only occur word-finally. This seems to be a feature unique to the Vietnamese area. Elsewhere, the same labial-velar segments always also appear word-initially and/or medially, as in South Efate (Austronesian, Vanuatu), e.g. /ŋmas/ 'only', /nasuŋm/ 'house', /kpafkpof/ 'adult', /frakpo/ 'beetle', /sakup/ 'mistake' (Thieberger 2006). The reasons for this atypical distribution in the Vietnamese area are unknown, particularly since /kw/ and /ŋw/ are both permissible word-initially in Vietnamese, e.g. /kwa/ 'cross over', /ŋwaj/ 'outside'. As already noted, these labialized elements in non-final position are the most common source for labial-velar stops and nasals across languages (see Cahill 1999) and would, based on cross-linguistic patterning, be expected to be preferentially subject to the process of labial closure to *kp* and *ŋm* in Vietnamese and elsewhere as well. Why this is not the case remains a mystery and also requires further investigation.

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<sup>1</sup>To date additional checking with experts currently working on languages in Vietnam has not uncovered additional evidence of wider diffusion of the phenomenon (my thanks go to Mark Alves, Jerry Edmondson and Paul Sidwell for kindly responding to my request for information). It is hoped that readers of this article may be able to provide new examples that would expand the number of languages with final labial-velar stops and nasals in Vietnam.

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