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Aspiration: A dying phenomenon in Bangla

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Abstract

The feature aspiration or [spr.gl] is getting confined to certain fixed places in Bangla. The result is an overall reduction of the orthographic alphabet of the language, the aspirated stops being the major casualties. Out of the ten aspirates the voiced ones are no longer productive. The voiceless ones are allowed only in onsets in word initial and intervocalic positions. It is not as yet clear if any systematic alternatives are adopted by the language for the dying feature. For instance, in Tripura Bangla and Noakhali Bangla aspiration is replaced regularly by high tone. If a similar process is underway in Bangla too, before long the language can be listed amongst the tone languages. The paper provides a glimpse of the issue focusing only on velar aspirates.

Keywords: Aspiration, deaspiration, onset, coda, geminates

1. Introduction

This paper deals with the present status of aspiration in Standard Colloquial Bangla (SCB). Aspiration can be phonemic or allophonic across languages. In English it is allophonic and is restricted to accompany only voiceless stops in the onsets of stressed syllables. In the Noakhali Bangla (NKB) it is phonemic only word initially with voiceless stops. In the Sino-Tibetan language Kokborok aspiration is contrastive only in onsets with voiceless velar, labial or dental stops. What is common amongst these languages in that a) aspiration is used only with voiceless stops; b) its preferred place of occurrence is in onsets; and c) such onsets are preferably stressed or/and word-initial. As against this, SCB allows aspiration both with voiced as well as voiceless stops; and b) SCB is said to freely distribute aspirates in onsets and codas in all positions in a word. The present study closely looks at the phenomenon though restricting itself only to the velar plosives. It concludes that in SCB aspiration a) is an exclusively-licensed-by-onset phenomenon; b) it predominantly accompanies voiceless stops; and c) voiced stops licensing aspiration, though extremely non-productive, follows the exclusively-licensed-by-onset principle. The findings of the study points towards an underlying process of reducing the consonantal inventory of SCB compared at least to its orthography. A natural question to ask is what alternatives are adopted by the language for fresh signification of age old concepts. Such a restructuring of the languages is significant both from the point of theory and language change.

§2 presents the relevant set of data in brief. §3 initiates the discussion on the distribution of aspiration in case of velars. The distribution of velar aspirates in CVCCV(C) type words figures prominently in §4. In §5 under non-geminate clusters, the velar aspirates in trans-syllabic sequences are taken for examination. §6 recapitulates the findings of the paper and alerts about the possible course of change Bangla is going to witness.

2. Data

1. /k/

ke 'who'	kak 'crow'	kaka 'uncle'
ki 'what'	ʃak 'leafy vegetable'	couki 'cot'

2. /g/

ga 'physique'	rag 'anger'	ʃagu 'sago'
gan 'song'	mag 'beg'	aga 'tip'

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3. /k^h/

k^haɪ 'greed' ʃɔk^(h) 'hobby' pak^hi 'bird'
 k^hun 'murder' rak^(h) 'keep' rak^hal 'shepherd'

4. /g^h/

g^ha 'wound' mæg^(h) 'cloud' ðig^hi 'lake'
 g^hɔr 'house' mag^(h) 'a month' ag^hat 'injury'

3. Aspiration in SCB

The picture of the distributional properties of velars in SCB that emerges from the preceding data is that /k, g/ occur both in the onset and coda while /k^h, g^h/ appear only in the onsets. That is, the consonants without any aspiration enjoy a wider distribution compared to their aspirated counterparts. In (3) above the so-called orthographic presence of k^h in the non-medial syllable final i.e., coda positions is shown without the aspiration marker since in the word final codas aspiration is not allowed in SCB. That this is not a mere idiosyncratic law of SCB is attested by the fact that aspirated voiced velars are also prohibited in the word final codas in SCB: bag^(h) 'tiger', mæg^(h) 'cloud' etc. In the onsets whether word initial or medial, velar aspirates are licensed by the language: /g^hi/ 'rarefied butter', /g^hɔr/ 'house', /ðig^hi/ 'lake' etc.

In short, while all velar orals /k, g, k^h, g^h/ in SCB occur in syllable onsets, in the coda only non-aspirates occur. In other words, it is the feature of aspiration marked by the diacritic ^h that is prohibited in the codas in SCB. Evidence of deaspiration in coda is in fact very common in SCB. A thorough investigation of the phenomenon is necessary to arrive at the actual picture of the active inventory of consonants in SCB. This survey is also needed to distinguish the productive subset of consonants in SCB from the non-productive fossilized remnants.

3.1 Aspiration in decadence

To all literate SCB speakers the aspirate velars /k^h/ and /g^h/ constitute an integral part of the alphabet of their language. But very few of them are aware of the fact that these segments having relatively marked feature combinations are at the receiving end having got confined to some positions which enjoy a place of prominence in the hierarchy of prosodic units. In the phonological literature such positions include onset, word boundary, stressed syllables etc. that license marked elements.

Let us begin with a comparative study of the orthographic words which apparently contain the banned items (i.e., the velar aspirates) with their phonological forms. In (5-6) the left side of the pair of words represent the written form.

5. Orthography		Pronunciation	
cok ^h	~	cok	'eye'
ʃɔk ^h	~	ʃɔk	'hobby'
lak ^h	~	lak	'hundred thousand'

6. bag^h	~	bag	'tiger'
mæg ^h	~	mæg	'cloud'
mag ^h	~	mag	'Bengali month'

These monosyllabic monomorphemes are written with final aspirates: voiceless in (5) and voiced in (6). However, in pronunciation the native speakers systematically drop the aspiration in coda. That this phonotactics of deaspiration is coda-specific is adduced by the fact that under suffixation when the coda velar gets re-syllabified as onset, the 'lost' feature of aspiration revives:

7. [cok]ɛr] → co.k^hɛr 'of eye'
 [ʃɔk]ɛr] → ʃɔ.k^hɛr 'of hobby'
 [bag]ɛr] → ba.g^hɛr 'of tiger'

This reappearance of aspiration following the relocation of the velar in the onset reinforces the licensed-by-onset property of aspiration in SCB. The examples of CVCV and CVCVC type pure morphemes also strengthen this observation:

8. pak^hi 'bird'
 ðig^hi 'lake'
 rak^hal 'cowboy'
 ag^hat 'wound'

SCB attests a very meager number of underived lexical items with a medial velar aspirate. This small number of attested words is a strong piece of evidence against productivity of the aspirated sounds in standard Bangla. In consequence of the above it is now possible to formulate an aspiration rule for velars in SCB (cf. 9).

9. Aspiration rule in SCB

Aspiration for velars in SCB is exclusively licensed by onset. (9) is specific only to onsets either word initial or word medial. In the latter case it operates under the condition that the onset is preceded by an open i.e., CV type syllable. But for a maximally generalized principle one needs to remember that for a word medial onset, the preceding syllable can be a closed one too. In other words, in cases where the first syllable of the word is a closed one and the aspirate occurs in the onset of the second syllable in a structure like CVC.CV(C), it remains to be seen if (9) still holds good. For a comprehensive picture of the distribution of velar aspirates in standard Bangla an extension of the survey into the CVC.CV(C) type words is in order.

4. Aspiration in CVCCV(C) type words

Word medial distribution of aspiration across a closed syllable can have three possibilities:

10. (a) The medial C.C can be a geminate;
 (b) A cluster with the first i.e., coda C as a velar aspirate; and
 (c) A cluster with the second or onset C as the velar aspirate.

4.1 Geminates licensing aspirates**11. kk^h**

lok.k^hi 'endearing' ðok.k^ho 'sorrow'
 ʃik.k^ha 'education' ʃak.k^hi 'witness'
 muk.k^ho 'chief' ðok.k^ho 'expert'

12. 'No words'

The velar geminate [kk^h] is known to the traditional SCB speakers as a combination of /k/ and /ʃ/ i.e., a voiceless velar plosive and a voiceless retroflex sibilant. And it has acquired its geminate status synchronically in Bangla (cf. Hindi /lokʃmi/ 'Laxmi', /ʃikʃa/ 'education'). [kk^h] is syllabified across the syllabic boundary as C_{cod}.C_{onset} in Bangla.

The bottom line of the affaire is therefore that aspiration for velars in SCB is licensed exclusively in the onset even in case of geminates. Velar geminates with voice are not attested in the language: *gg^h.

4.2 Non-geminate clusters with aspirates

In (13) the left side of the paired words show the orthographic form and right side the oral.

13a. k^h in the medial coda**Orthography Pronunciation**

gok^hro ~ gokro 'cobra'
ak^hṭa ~ akṭa 'hermit's home'

13b. k^h in the medial onset

gork^ha¹ ~ gork^ha 'the Gorkhas'
ʃork^hel ~ ʃork^hel 'surname'

(13a) records a very limited number of trans-syllabic clusters with the voiceless velar aspirate /k^h/ in the coda followed by a consonant (t, r, ṭ) in the onset of the next syllable. These orthographic words are very limited and perhaps the list above is exhaustive. The point therefore is quite straight forward: *velar aspirates in the coda are prohibited in SCB trans-syllabic clusters*. k^h in the onset of the second syllable abutting a preceding coda is absent in SCB excepting stray cases like gork^ha and ʃork^hel. Being proper names, such words cannot be considered to reflect the core phonology of the language. The distribution of voiceless velar aspirates in the word medial post-coda onset is therefore utterly non-productive in SCB, if not totally prohibited as in case of (13a). This finding is a vital piece of evidence for (9) even as the latter needs to be reformulated incorporating the latest observation. The revised principle for distribution of aspiration in case of voiceless velars in SCB can now be stated as below.

14. Aspiration rule in SCB (First revision)

Aspiration for velars in SCB is exclusively licensed by the onsets if the latter is preceded by no coda. (14) however, remains a non-definitive one unless the phonotactics of the voiced velar aspirate /g^h/ is examined.

5. Voiced velar aspirates in trans-syllabic clusters

Voicing disparity like C_{+v}.C_{-v} or C_{-v}.C_{+v} between to clustering members is not attested and hence kept out of consideration. Agreement between place and manner features displays both assimilation as well as resistance to it. Discussion on such

harmony aspects pinpointing co-occurrence restrictions is kept to the minimum here for space constraint.

15a. Clusters possible and attested though few in number:

ḍg^h, ŋg^h, rg^h

15b. Clusters possible but not attested:

g^hḍ, ḍg^h/g^hḍ, jg^h/g^hj, bg^h/g^hb, lg^h/g^hl, g^hr, g^hŋ, ng^h/g^hn

The phonotactics of all such possibilities is worth studying but in the present paper we concentrate only on g^h.d and ḍ.g^h.

5.1 Velars-dentals and dental-velars

The survey in (15) yields a rather stray picture with very few actually attested monomorphemes with voiced velar aspirate /g^h/. There however emerges a pattern about the phonotactics of /g^h/ that reinforces our earlier observation of onset-only licensing of the marked item.

Only one word is found in SCB where ḍg^h constitutes a word medial C.C cluster justifying that the cluster is not totally banned. Conversely, /g^h/ in the onset provides additional support for the onset-licensing property of aspirates in SCB. As for the converse order of sequence g^hḍ where the velar aspirate figures in the coda the language does not provide a single instance. This fact only proves the hypothesis that onset has a stronger claim over coda in licensing the marked combination having velar voiced aspirates.

It cannot however be denied that both ḍg^h and g^hḍ are almost non-existent in SCB. One wonders what could be the reason behind this! This is because they do not violate the famous Syllable Contact Law (SLC) as such, since both the consonants share the same status in the sonority scale. SLC is a universally recognized standard for a scientific distribution of segments in the syllable internal positions. They also share the feature [+voiced]. The dissimilarities between the two are: a) they do not share the feature for aspiration namely [+spread glottis], and b) their place features are dental-velar, and vice versa. The fact that place distinction does not pose any serious hindrance for the co-occurrence of the two consonants can be easily proved by SCB words where the place features dental and velar co-occur freely: 'uḍgar 'belching', uḍgom 'rising' ʃoḍgun 'noble quality', iḍgah 'prayer place of Eid'. There may not be very many instances of ḍg cluster but the process is still productive as the native speakers are quite open to any new construction including this cluster. The same holds good for the reverse combination: bagḍa 'kind of prawn', bagḍi 'caste', bagḍebi 'Saraswati', bagḍoṭṭa² 'betrothed'.

The picture that emerges from a comparison of the distribution of ḍg^h/g^hḍ and ḍg/gḍ is that the word medial CC clusters having a velar voiced aspirate is disallowed in SCB. The only attested instance of uḍg^haṭon is a historical remnant whose survival can be attributed to the exigency of formal occasions for which the borrowed word 'inauguration' is more popularly used. uḍg^haṭon and its derivative uḍg^haṭiṭo

¹ Another word that comes closer is aṭk^hana 'lit. eight pieces. This compound has acquired the status of an idiom in phrases like allaḍe aṭ-khana 'extremely happy'.

² bagḍoṭṭa, bagḍebi, though etymologically compounds, are now independent morphemes.

‘inaugurated’ though a very marked structure, allows aspiration only in the onset, however. The hypothesis that aspiration in any form of the velars is an exclusively licensed-by-onset phenomenon is once again vindicated.

The dental-velar or velar-dental sequences therefore operate in SCB under the following phonotactic terms:

- a) The velar and the dental must agree in voicing: either both are voiced or both are voiceless;³
- b) There need not be any assimilation, partial or total, of the place features of the two;⁴
- c) It is the feature for aspiration that invokes restrictive principles constraining the free use of the velars and dentals;
- d) Aspiration in respect of velars is never allowed in the coda;
- e) Aspiration of velars, itself a marked feature combination, is allowed only in the onset.

In the light of the above findings particularly (d-e), a revision of the aspiration rule (14) is only a logical development.

16. Aspiration rule in SCB (Second revision)

Aspiration for velars in SCB is licensed exclusively by the onset.

Whether (16) can be treated as a definitive statement for velars in SCB depends on the investigation proposed to be extended to other possible clusters involving velars in the language.

6. Conclusion

The study above, though inconclusive in nature, offers a rather tilted picture against the use of aspiration in SCB. The table below summarizes the findings.

17.

	ONSET				CODA		
	Initial onset	Intervocalic onset	Onset in geminate	Onset in medial cluster	Coda	Coda in geminate	Coda in clusters
k ^h	3	3	2	2	0	0	0
g ^h	1	1	0	1	0	0	0

0 = Not attested, 2 = Productive, 1 = Non-productive 3 = Highly productive

In a scale of 0 to 3 both the velar aspirates k^h and g^h, which are regarded as the integral parts of the SCB alphabet by the native speakers, and which are amply represented in the orthography, are not attested in the coda whether final or medial. The implication is that the sounds are adequately recorded in the onsets. Conversely, of them, the voiced velar though attested is non-productive. By contrast, the occurrence of the voiceless velar ranges between productive to highly productive. It has also been found that without aspiration the velars, whether with or without voice, enjoy a huge freedom of occurrence. Only when the feature [+ spread glottis] is added the freedom gets constrained. In terms of feature geometry, the disparity can be computed in a scale of inverse ratio of feature combinations and occurrence: the higher is the number of positive [+] values for features

constituting a segment the lower is its rate of productivity (cf. 18).

- 18.** k g k^h g^h
 [-voice] [+voice] [-voice] [+voice]
 [-spr. gl] [-spr.gl] [+spr.gl] [+spr.gl]

The voiceless velar /k/ is unmarked since it has 0 level of markedness (read difficulty); /g/ and /k^h/ are relatively marked compared to the unmarked /k/ having one level of markedness or [+]; and /g^h/ is most marked having two [+] values for the features [voice] and [spr. gl]. In the theory of Markedness, the phenomenon is explained simply as -- marked items are less frequent than the relatively unmarked ones. Hence /g^h/ in (18) being the most marked is the least productive in SCB. Such findings have significant stories to tell regarding Bangla alphabet currently in a state of reductive flux.

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³ Voicelessness is more preferable than voice as regards the phonation value of the members of the cluster and this explains the relative non-productivity of the voiced clusters.

⁴ The places velar and dental are integral parts of the underlying feature inventory of SCB and can be freely used whether in cluster or in isolation.