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'Rhinoglottophilia' re-visited: observations on 'the mysterious connection between nasality and glottality'

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In a characteristically challenging article Matisoff has claimed 'an affinity between the feature of nasality and the articulatory involvement of the glottis'; 'at first glance', he writes, 'there does not seem to be any particular relationship between the lowering of the velum and the articulation of such laryngeal sounds as [h] or [ʔ]. Yet we can document this connection with evidence from a variety of genetically unrelated languages - - -' (1975, 265). Despite this evidence from 'a variety of unrelated languages' it is Matisoff's 'first glance' that I wish to support against his second, mainly on articulatory grounds; but first I must recognize that Matisoff's revised view, 'the mysterious connection', has commended itself to both Michailovsky and Bradley: the former has used it in his 'A case of Rhinoglottophilia in Hayu' (1975); and the latter refers to it in an aside on the Arakanese lexical item [ɸi̤]/[ɹi̤]/[hi̤]/[hĩ̤]: 'more common in informal spoken Arakanese is [hi̤ ˥] or most frequently [hĩ̤ ˥], with voiceless cavity friction and nasalization; rhinoglottophilia strikes again' (1985, 186).

1. Laryngeal v. vocalic

Matisoff's second view depends on classing [h] as laryngeal, and grouping [h] with [ʔ]. I have, of course, no objection to classifying [ʔ] as laryngeal: since the glottis is within the larynx, a glottal stop (or glottal plosive) must also be laryngeal; but Pike has taught me that [h] is not laryngeal but a symbol summarizing numerous types of voiceless vowel: 'The letters [h] and [ʁ] would simply be convenient symbols representing any vocalic mouth position with the requisite inner modifications' (1943, 71-2); one can go further, and describe [h] as symbolizing a voiceless breathed vowel as opposed to a voiceless whispered ([W] in Pike's symbolization; cf. Sprigg 1978a, 5-6, 10-11, 13-14, 16); e.g. (specifying the tongue position)

[i̥- ɑ̥-],

as in he and hard in British English (in American English, on the other hand, I understand from Bradley that [ʁ] is used by some speakers, including himself, even in word-initial position).[1] The import of Pike's observations is that 'timbres of [h] (i.e. voiceless vocoids)' should be classed not with the consonant [ʔ] but with 'voiced vocoids', ['V'], through 'cavity friction' (1943, 142).

2. Cavity friction v. local friction

Pike's identifying [h] with the category of voiceless

non-whispered vowel arises out of the important distinction that he draws between 'two types of friction which function very differently and have different origins. - - - The first type results from stricture at a single local point; the second is due to cavity friction, that is, voiceless resonance of a chamber as a whole caused by air going through it as through an open tube. - - - By working with these two degrees of friction - - - one can arrive at a significant statement concerning the patterning of [h], in relation to voiceless vowels, and whispers, and "voiced [h]". Both voiceless and voiced vowels have cavity friction, - - - the first tend to be audible and the second inaudible' (1943, 71).

[h], then, comprising [i̥], [ɑ̥], etc., symbolizes the voiceless resonance of an oral cum pharyngeal cum pulmonic chamber. The larynx, as part of the pharynx, necessarily has a share in the total resonance function of this large chamber, just as it has for [V] (symbolizing any voiced vowel); but its role in such a large air chamber is comparatively minor, too minor to justify the use of the term laryngeal for [h] or, for that matter, [V] and corresponding voiced non-syllabic vowels such as [j], [w], or [ɹ] (cf. Pike 1943, 143).[2] The role of the larynx is bound to be even more minor in the case of [h̃] and of [Ṽ], in which the resonance chamber comprises not three but four cavities, the nasal in addition to the pharyngeal (including the larynx), the oral, and the pulmonic.

3. Vowels v. consonants

With Pike's phonetic classification of [h] as a type of voiceless vowel, voiceless breathed vowel, in mind I welcome Matisoff's associating [h] with vowels in Lahu: '- - - nasal consonants do not have any noticeable nasalizing effect on the following vowel. On the other hand, many speakers have strong nasalization in syllables beginning with a vowel (i.e. zero consonantal onset) or with h-' (267), though I should not wish to describe [V-] as 'zero consonantal onset' (symbolized phonetically by Matisoff as '[zero consonant]', 267): it is important to my argument not to obscure the relationship of [h-] (or [y-]) to [V-] as fellow members of a class of vocalic articulations, voiceless and voiced.[3] Matisoff makes it clear that when an oral consonant is initial in the syllable (and, in Lahu, even a nasal initial consonant), a following vowel is not nasalized or is not commonly nasalized (266-9); so it is important to keep vowels ([V h]) distinct from consonants (and to group [h] not with [ʔ] but with [V]) if a propensity to nasalize vowels in syllable-initial position is to be accounted for.

4. Nasalization in [h-] syllables

Matisoff describes the degree to which vowels are nasalized in what I regard as vowel-initial ([h- V-]) syllables as varying considerably in the South East Asia languages Thai and Lao, Lahu, and Lisu from one language to another. In Lahu he

shows an alternation of orality with nasalization according to the individual speaker; e.g.

'"four" /ɔ̂/ [ɔ̂] - [ɔ̰̂]' (I.P.A. [^ɔ̃])

'"elephant" /hɔ/ [hɔ] - [hɔ̰]' (I.P.A. [hɔ̃]) (267);

since the voiced vowel is shown as nasalized ([ɔ̰̂]), for some speakers, in the word '/ɔ̂/', in which it is syllable-initial, I naturally wonder whether the non-syllabic breathed vowel in '[hɔ̰]', which is also syllable-initial, might not share in the nasalization of the following syllabic vowel, and thereby justify a phonetic transcription [hɔ̰] (I.P.A. [hɔ̃]), and, similarly, whether Matisoff's Bangkok Thai form '[hɤ̃ɤ̃] "parade"' might not be heard as [hɤ̃ɤ̃], with nasalization occurring throughout the word, from beginning to end.

5. Signification of the tilde symbol

If [h̃-] were found to be justified for the initial sound of that Bangkok Thai form, giving [hɤ̃ɤ̃] as a revised phonetic transcription, should one not also expect [ʔ̃-] rather than [ʔ-] for Matisoff's Bangkok Thai form '[ʔɔ̃ɔ̃k] "leave"' (266)? Such a question leads to a further question: how is it possible for a glottal stop to be nasalized; for, clearly, the air-stream that that stop is acting on is confined to the cavity below the glottis, in the lower part of the laryngeo-pharynx and in the lungs, quite far removed from any action on the part of the velum?

6. Nasalization v; lowering the velum

In answering this question it is instructive to compare the role of the tilde symbol as part of the consonant symbol [ʔ̃-] with its very different role in such consonantal and vocalic symbols as [s̃] and [l̃] and [h̃] and [ṽ]. In these last the function of the tilde is to symbolize nasalization, i.e. the passage of air through the nasal cavity concurrently with its passage through the oral cavity, symbolized by the lower part of those symbols, below the tilde; but in [ʔ̃] the only role that could be assigned to the tilde would be that of lowered velum. The lowered velum in [ʔ̃] would act on whatever static air remained in the oral and the nasal cavities from an immediately preceding articulation; but it could not affect the air-stream capped by the closed glottis.

This latter function of the tilde symbol, lowered velum, would presumably also apply to the post-velic fricatives [ħ̃] and [ʕ̃] just as for [ʔ̃];[4] [ħ̃] and [ʕ̃], and [h̃] and [ʔ̃], symbolize an egressive air-stream exciting local friction in the pharynx on its way to the point of junction of the nasal cavity with the oral cavity, and therefore not yet in a position to be affected by the raised or lowered velum. In other words, a pharyngeal fricative cannot be nasalized: in the sequence of events it is both prenasal and pre-oral.

7. Ohala and post-velar consonants

These observations of mine on the very different function symbolized by the tilde in such pre-pharyngeal sounds as [ʒ̃] and [l̃] and the pre-pharyngeal cum pharyngeal sounds [ɪ̃ˤ], [ɑ̃ˤ], [ɛ̃ˤ] and [ɔ̃ˤ], for example, as opposed to the pharyngeal sounds [ħ̃] and [ʕ̃], a fortiori, the pharyngeal (and glottal) sound [ʔ̃], are in accordance, in my view, with passages that Matisoff quotes from Ohala, especially Ohala 1974, though he understands them as supporting his second view while I understand them as supporting his first view:[5]

'Unlike the oral obstruents glottal (and probably pharyngeal) consonants do not require soft palate elevation since they involve air pressure build-up further back in the oral tract than the point where the nasal and oral cavities join' (364; Matisoff 1975, 271).

Ohala is referring here to 'soft palate elevation'; but it appears to me that he could equally well have phrased his statement to read that these consonants do not require soft-palate depression, or lowering; in other words, the action of the velum in either direction, raising or lowering, is without relevance to the articulation of strictures in the pharynx and glottis. Such a statement seems to me to support Matisoff's 'first glance' against his second.

8. Open glottis and nasalization

With regard to [h], though, Matisoff cites a further passage from Ohala (1975, 6) on the basis of which he claims that '[h], by virtue of the open position of the glottis during its articulation, may actually produce acoustic effects on the adjacent vowel similar to an open velo-pharyngeal port' (271); and 'in the case of [h] the open glottis exerts a positive acoustic effect on the vowel similar to that exerted by the lowered velum' (272); but, if a nasalizing effect is to be attributed to the open glottis in [h], then the same nasalizing effect would be expected from the open glottis in all other types of open-glottis sounds as well;[6] so one might expect a nasalizing power, or tendency, to affect any vowel following any such oral consonant as [p s ɬ]. I have not observed any such tendency; on the contrary, (i) oral occlusive initial consonants such as [p b tɸ] require velic closure, and can be considered as somewhat opposed to the nasalization of a following vowel; (ii) fricative, lateral, and rolled consonants such as [s θ l r] do not require velic closure, and can be regarded as neutral with regard to nasalization; while (iii) nasal consonants require lowering of the velum, and are, therefore, somewhat predisposed towards nasalization of an immediately following sound. The oral component of the cavity friction of [h], like the oral fricatives [s] and [θ], is also neutral, while its pharyngeal component, like the pharyngeal fricatives [ħ] and [ʕ], and the glottal (hence laryngeal) friction of [ʔ] (and