

Laryngeal specifications of 'voiced-aspirated' stops and the role of VOT and post-release murmur

Islam, Md Jahurul (Georgetown University)

There has been a considerable debate regarding the phonological representation of the 'voiced-aspirated' stops (aka breathy-voiced or murmur stops) in the Indic languages many of which have four-way stop contrasts based on voicing and aspiration: voiceless-unaspirated, voiceless-aspirated, voiced-unaspirated, and voiced-aspirated.

Dixit (1987) maintained that the interplay between the two laryngeal aspects, voicing and aspiration can be helpful: 'voiced-aspirates' can be contrasted to the voiceless-aspirates on the basis of voicing, and to the voiced-unaspirates on the basis of aspiration; and, voiced-aspirates have both voicing and aspiration.

Schiefer (1989), however, claims that as aspiration 'cannot' be voiced; she prefers the term 'breathy-voiced' over 'voiced-aspirated', as a distinct type of phonation, similar to breathy-voiced vowels (e.g. in Gujarati).

Proposals from 'laryngeal realism' (Honeybone 2005, Beckman et al. 2013) maintain that 'voiced-aspirated' stops are phonologically specified for both [voice] and [spread glottis] features (Beckman et al. 2013), which has been supported by some others (e.g. Mikuteit and Reetz 2007).

While the role of the negative VOT (pre-voicing) has been assumed to be primary in most of the proposals reviewed above, the role of the murmur has remained a debatable issue. Davis (1994) claimed that the murmur is, in fact, just an optional element in the voiced aspirated stops since it is perfectly possible to perceive the difference without the murmur. Schiefer (1989), on the other hand, considered the murmur to be an active parameter (a separate phonation).

This study, with data from Bangla/Bengali, shows two things: first, even though a good number of tokens were produced without clear instance of the murmur, the phonetic evidence indicates that the gestures for the murmur were still there: the contours from the SS-ANOVA of the Harmonicity, Center of Gravity, and H1-H2 contours were consistently distinct, specially from the voiceless-aspirates. It could be phonetic markedness of the murmurs that often lead to the failure to produce perfect looking murmurs.

Second, it is also possible for the speakers to distinguish the voiced-aspirates on the basis of the murmur alone (i.e. without any pre-voicing). This fact, complicates the whole issue of phonological specifications of the voiced-aspirates. The feature [voice] primarily indicates the pre-release VOT; it does refer to any post-release vocalization (during the specified aspiration). So, if VOT is left out, only [spread glottis] would be left for the voiced-aspirates, and it would pose difficulty to distinguish them from the voiceless-aspirates which also are specified for [spread glottis].

The proposals from the laryngeals realism are probably not enough to capture the phonological specifications of the voiced-aspirated stops; the trading role of the VOT and the post-release murmur (or at least the gesture for it) in the phonological categorization still needs to be accounted for. (Word count 428)

References

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