Is Malay nasal substitution phonetically natural?

Nasal substitution in standard Malay/Indonesian has often been analyzed as a strategy for avoiding phonetic markedness (e.g. Pater 2001). That is, given the phonetic naturalness of postnasal voicing, a nasal prefix is said to coalesce with the initial voiceless obstruent of a root to avoid a marked nasal+voiceless obstruent cluster. This substitution does not happen when the root initial segment is voiced since no marked cluster results.

However, if we examine a variety of Malay dialects, we find that underlying nasal+obstruent sequences surface with many different patterns. More interestingly, within a single dialect, nasal+obstruent sequences often behave differently depending on whether the nasal is root-internal or a prefix.

Lee (2002) observes that two generalizations can be made about nasal+obstruent behavior root-internally: i) with an underlying or historical nasal+voiceless obstruent sequence, the nasal tends to delete, leaving just the voiceless obstruent. This is observed in Kelantan Malay or the Kacung variety of Bangka, for example; ii) with a nasal+voiced obstruent sequence, the two segments tend to coalesce into a post-stopped nasal or a simple nasal, as observed in Langkawi Malay, Kelantan Malay, the Gunungmuda variety of Bangka or even in a close relative like Sundanese.

But in such dialects, these two generalizations do not hold in prefixal environemnts. Thus, in Kelantan Malay, a nasal prefix+voiceless obstruent sequence results in denasalization and gemination, whereas a nasal prefix+voiced obstruent sequence leads to a geminate nasal. In Kacung and Gunungmuda, nasal substitution results when the nasal is prefixed to both voiced and voiceless initials. In Sundanese, we see nasal substitution with voiceless initials and vowel epenthesis with voiced initials.

In this paper, I argue that the true phonetically-motivated process is seen in root-internal environments, not in nasal substitution. Building on Hayes and Stivers (1996), I propose that the two processes observed root-internally (nasal deletion in nasal+voiceless obstruent sequences, coalescence with nasal+voiced obstruent sequences) increase the perceptual contrast of the sonority of nasal+obstruent sequences without compromising the phonetic naturalness of postnasal voicing.

In contrast, the surface patterns seen in prefixal environments - including nasal substitution - are affected not just by phonetic considerations but also by the additional demands of maintaining the morphemic integrity of the nasal prefix. Thus, Malay dialects preserve as much as possible particular features of the nasal prefix, like its nasality, voicing or segmental status. I show that dialects differ as to which of these morphemic features are considered salient, and also provide a tentative analysis of how featural faithfulness interacts with the phonetic demands of postnasal voicing. The conclusion thus is that Malay nasal substitution is not purely natural.

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