

Denasalization of Ancient Initials—a phonetic based phonological analysis

Hsiu-Hsueh Sylvia Liu

Yuanpei University of Science and Technology

This paper seeks to explain the trigger for denasalization of Southern Min's ancient initials. Like most Chinese dialects, Southern Min consists of a group of nasal initials, [m, n, ŋ]. Historically, there were much more words with nasal initials than what exist now. Part of them has been denasalized as [b, d/l, g]. Table (1) presents contemporary forms of some ancient nasal initials in Min dialects. Fuzhou (Eastern Min) remains nasal readings for almost all ancient nasals. In the cases of Quanzhou and Zhangzhou (Southern Min), nasal initials are allowed only before nasal vowels, like *ear*. Some ancient nasal initials of Putian and Xianyou, located between Fuzhou and Quanzhou, are now voiceless obstruents.

glossary	Fuzhou	Putian	Xianyou	Quanzhou	Zhangzhou
rice	mi	pi	pi	bi	bi
flavor	ei/mei	pi	pi	bi	bi
south	naŋ	laŋ	laŋ	lam	lam
cattle	ŋieu/ŋu	kiu/ku	kiu/ku	giu/gu	giu/gu
the sun	niʔ	tsiʔ/liʔ	tsiʔ/liʔ	lit	dzit
ear	ŋi/ŋei	tsi/hi	tsi/hi	nĩ/hi	nzi/hi

Table (1) Words with ancient nasal initials in Min dialects

In fact, not only nasal consonants are denasalized before oral vowels, but also lateral initials are nasalized before nasal vowels in both Putian and Xiamen (Southern Min). The nasalization of laterals suggests the whole change be a kind of nasal harmony rather than simply nasal reduction. In Southern Min, nasal initials can only co-occur with a nasalized vowel or a syllabic nasal consonant, ($_V$, $_ŋ$). And only oral initials are allowed in other environments like $_V$, $_VC$, and $_VN$ syllables.

After a survey of Chinese dialects and related changes, we conclude that the potential trigger of denasalization is probably the contrast between NV and $NV̄$. So a NASAL-AGR constraint may serve well to describe the complementary distribution of nasals and voiced obstruents.

- NASAL-AGR: Initials must agree with their vowels in nasality.

Even NASAL-AGR can describe where the nasal initials appear, but what kind of force enables the nasal harmony? Among all Chinese dialects, only Southern Min and subjacent Puxian exhibit the phenomenon of denasalization. As for the notion of markedness, a change from

m→b cannot make it less marked. Neither does a change from m→b / ___ V.

If the trigger of denasalization is the contrast between NV and NV̄, how did it work? It is a competition between sonorant initials compete and its following vowels for IDENT (nasal). According to P-map comparisons (Steriade 2001), the more distinctive the contrast is, the easier to preserve. Because of the shorter duration and weaker amplitude of consonants, [mV]-[bV] contrast is smaller than [mV̄]-[mV̄]’s, /mV/→[bV] is then the follow-up consequence. As a result, only the initial in [mV̄] can remains its nasality.

P-map comparisons	<i>More distinctive contrast</i> e.g. nasality of vowels	vs.	<i>Less distinctive contrast</i> Nasality of consonants
Ranking of correspondence constraints	<i>Higher ranked constraint</i> e.g. Ident [+/-V nasal]	>>	<i>Lower ranked constraint</i> Ident [+/- C nasal]

- Ident [+/-V nasal] >> Nasal Agr >> Ident [+/- C nasal]

If this assumption is correct, why do not the other dialects with [mV]-[mV̄] contrast undergo denasalization? So far as we know, only Southern Min, and its related dialects, underwent denasalization, but it is not the only Chinese dialect with nasal vowels. Nasal vowels can be found commonly in Southern Min, Wu, and Xiang dialects, but the latter two show no effect of denasalization.

This discrepancy is resulted from different ranking of IDENT [+/- C nasal] and NASAL AGR in these dialects. In Southern Min IDENT [+/- C nasal] is ranked lower than NASAL AGR, so it shows effect of consonantal denasalization.

- IDENT [+/- C nasal]; IDENT [+/- V nasal] >> NASAL AGR

Dialects Wu and Xiang have IDENT [+/- C nasal] ranked higher than NASAL AGR, so nasal harmony cannot be phonologically realized.

There is another reason to support this ranking. Both Wu and Xiang dialects retain the voicing of ancient voiced obstruents. In Southern Min, nasal vowels were phonemized after all ancient voiced obstruents devoicing; so there was no contrast between [m]-[b] at that time. But this contrast has been kept in Wu and Xiang dialects, therefore, it’s quite reasonable for IDENT [+/- C nasal] to be ranked higher in Wu and Xiang than in Southern Min.

In the paper, we adopt the notion of perceptibility to explain denasalization in Southern Min, which can hardly be accounted for in terms of markedness constraints or convenience of articulation. And the different rankings of IDENT [C nasal], IDENT [V nasal] and NASAL AGR have also successfully explained the discrepancy between Southern Min and Wu, Xiang dialects.