

Articulatory realization of nasal codas in Mandarin

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Impressionistic studies suggested that Mandarin nasal codas optionally delete before vowels (/dan+/ai/->[dã.ai]) and assimilate to the following stops in place (/dan+/pai/-> [dam.pai]). This study used EMA to investigate their articulatory realization in these contexts. Three native Mandarin speakers read disyllabic words [da:.a:] vs. [daN.a:] (N = [n]/[ŋ]), [da:.ba:] vs. [daN.ba:], in a carrier sentence at three speeds. The results show that before [a:], the tongue gestures of the nasal codas are retained. [n] shows large reduction, the degree of which increases as speech rate increases; [ŋ] shows small reduction and minimal variation across speech rates. This indicates that the gestural overlap between [n] and the following [a:] is large and increases in faster speech; while that between [ŋ] and [a:] is stably small. In [daN.ba:], all speakers showed anticipation of the labial gesture of [b]. The relative timing/overlap of the labial gesture and the preceding syllable is stable across speech rates. Speakers vary in whether the tongue gestures of the nasal codas are deleted. This suggests the labial gesture of [b] and gestures of the preceding syllable in [daN.ba:] and [da:.ba:] have different relationship: the former are co-selected, i.e. {a(N)b}, while the latter are in competition, i.e. {a}{b}.