Velar nasals and sound change. Data from Florentine anaphonesis

In Florentine dialect, high vowels /i/ and /u/ occur before a velar nasal instead of the expected /e/ and /o/, e.g. vinco ‘I win’ < VİNÇO, punto ‘point’ < PÎNCİMT (cf. lembo ‘hem’ < LÎMBUM, rompo ‘I break’ < RÎMPO, entro ‘within’ < İNTRO). The phenomenon, referred to as Florentine anaphonesis since Castellani 1961 – is said by scholars to be either a conservative phenomenon (i.e., late Latin İ > /e/ would not have applied in pre-velar nasal contexts) or a modern innovation (see, among others, Tuttle 1991, Sampson 1999, Calamai in press, Barbato in press). Its motivation still remains rather obscure, although it is generally agreed that there must be a phonetic motivation for why [ŋk] and [ŋg] clusters have favored high vowel maintenance (or mid-vowel raising). [ŋk] and [ŋg] clusters are produced with concurrent dorsum raising and velum lowering; these are likely to produce spectral changes on the preceding vowel since coarticulatory activity associated with lowering of the velum spreads backwards over the speech chain and tends to be anticipatory (Chafcouloff and Marchal 1999, Recasens 2014). In particular, the spectral changes induced by the velar nasal context should favor the listener interpretation of the speaker’s targets [enk] and [ŋk] as [iŋk] and [uŋk], respectively, or should inhibited the expected vowel lowering.

This paper investigates the production of [iŋk], [enk] and [ŋk], [uŋk] nonword stimuli by focusing on the frequency values of the first three formants, the nasality degree and the duration of the vowel. The stimuli were then compared to two non-anaphonic baselines: [int] [ent] – [ont] [unt] (where the nasal cluster is alveolar) and [ik] [ek] – [ok] [uk] (where the following obstruent is velar but there is no contextual nasalization of the vowel). The expectation were the following. The nasality degree of the vowel in [ŋk] clusters should be higher than the nasality degree of the corresponding vowel in [nt] clusters, since [ŋ] conduces to the highest level of anticipatory nasalization (Tuttle 1991, Ohala 1975). Consequently, the acoustic differences between [iŋk], [enk] on the one hand, and [ŋk], [uŋk] on the other hand, should be consistently reduced with respect to the corresponding alveolar clusters pairs, thus facilitating a sort of spectral average on the perceptual côté. In this respect, acoustic modifications associated with increased velo-pharyngeal aperture could be perceived as changes in oral tract shape, since first formant variation in nasalized vowels is similar to acoustic changes associated with tongue height (Krakow et al. 1988, Beddor et al. 1986).

At the time this abstract was written, the analysis was still in progress. If accepted for the workshop, the results of the acoustic analysis will be illustrated and discussed with respect to the hypothesis that Florentine Italian anaphonesis originated from the spectral changes induced by the velar nasal context on [iŋk], [enk] and [ŋk], [uŋk].

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References


