European Portuguese nasal nuclei: structure and variation

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One of the main theoretical issues of the study of nasal nuclei is to define the place of vocalic nasality within a language structure: is it the product of an assimilation from a surrounding sound or an intrinsic feature of the vowel? This choice is reflected in the syllable structure: in a representation like /vN/ (Câmara Jr 1953, Bisol 1998, Mateus & d'Andrade 2000, etc.), with a nasal consonant in the coda, the syllable is closed while in a representation like /ṽ/ (Hall Jr 1943, Rogers 1954, etc.) or /vṽ/ (Parkinson 1983, 1997) the syllable is open, with the difference that /vṽ/ represents a complex nucleus. In the studies of Portuguese, stress assignment and syllable weight were important arguments in favor of biphonemic representations.

In order to identify the structure of Portuguese nasal nuclei, I propose to join diachronic and synchronic arguments left aside the existent formalizations. My first argument, the constraint against nasal vowels as the first vowel of a hiatus (*ṽ.v), shows how diachrony can shed light into synchronic structures. In the evolution from Latin to Portuguese, vowels that were nasalized by a following intervocalic simplex -n- would maintain its nasalization once the consonant was deleted if and only if they could get connected with the following vowel, which could be done in the means of a total coalition, forming a nasal monophthong, or in the formation of a nasal falling diphthong (*e.g.* lat. LANA > pt. *lã* [lɐ̃] 'wool'; lat. MANO > pt. *mão* [mɐ̃õ̯] 'hand'). Clearly, lack of solidarity between the two vowels meant the loss of vowel nasality.

The second argument I'll explore is related to the integration of variation into the analysis and to the asymmetry between final and non-final nasal diphthongs frequency. Despite the great number of final nasal diphthongs in the language, internal nasal diphthongs are strongly dispreferred, existing in a very few number of words (*muito* 'too much'*, cãibra* 'cramp'*, zãibo* 'cross-eyed'). Interestingly, the unpublished data of the project *Atlas Linguístico-Etnográfico de Portugal e da Galiza* (ALEPG) shows many examples of diphthongization of internal and final lexical nasal vowels, *e.g. campo* [ˈkɐ̃õ̯pʊ] 'field', *maçã* [mɐˈsɐ̃õ̯] 'apple' and, in some regions, we can even find final position diphthongization in words like *irmã* [iɾˈmɐ̃]~[iɾˈmɐ̃õ̯] 'sister', which undermines its distinction of gender with the word *irmão* [iɾˈmɐ̃õ̯] 'brother'. These data bring new clues to the analysis of the rare cases of lexical nasal diphthongs in internal position.

Both diachronic and synchronic data seem to support the hypotheses that vowel nasality in Portuguese must branch. A theory like 'strict CV' (Scheer 2004, 2012) offers the possibility to formalize the constraint on vowel nasality in hiatus and to unify the representation of nasal monophthongs and diphthongs at the same time as it offers a natural way to express variation in the realization of lexical nasal monophthongs.