

## **Visual-phonetic cues in the phonology of Toulousain French**

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One common historical development in languages with distinctively nasalized vowels is the excrescence of coda dorsal nasals on nasalized vowels. This is a property of the variety of French spoken in Toulouse. We will present data showing that the appearance of dorsal nasal is indeed a perceptual cue of the Toulousain dialect, though it is less common than popular accounts might suggest.

Then in two experiments we will consider why the cross-linguistically unmarked place for this post-nasality nasal is dorsal. The experiments compare Ohala's (1975) acoustic explanation - namely that dorsal nasals, having no antiformants, are acoustically more similar to vowels than are labial or coronal nasals - with an explanation of our own based on visual correlates of distinctive features. The "visual correlates" explanation holds that if the perceiver detects a nasal coda consonant but does not see the lips or tongue tip produce a stop closure, then the visually "unmarked" place of articulation must be dorsal.

The experiments contrast place of articulation judgments given to tokens ending in nasalized vowels by French- and American English- speaking participants. In one experiment we simply presented monosyllabic CV nonwords with nasalized vowels. Listeners were to choose whether they heard a final [m], [n] or [ŋ] in a forced choice identification. Here the evidence argues for a spelling bias for French speakers and no change for audio versus audio-video presentation. Thus, experiment 1 supports Ohala's account. In the second experiment we obscured the last portion of CVN (N = /m/, /n/, or /ŋ/) and CV<sup>~</sup> syllables with white noise. This experiment was designed to force listeners to assume the existence of a final consonant and to rely on visual cues to determine the place of articulation. The paper will present the results of this experiment and conclude with a discussion of phonetic modality and featural markedness.