

Discrete and Gradient Approaches to Lateral Darkness: Sociophonetic Variability in the Spanish and Catalan of Valencia

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Dialectological surveys and empirical studies alike, with respect to the production of laterals in Romance and across several of the world's languages, consistently invoke the characterization of laterals as either "light" or "dark" ([1,6,8,9,13,15,21,22,23,24]). The opposition between light and dark laterals reflects distinct articulatory configurations, whereby light laterals prototypically exhibit a high tongue predorsum and no tongue dorsum retraction, whereas dark laterals prototypically exhibit a low tongue predorsum and tongue dorsum retraction ([2,5,13,14,18,19]). These articulatory differences are correlated with F2, with light laterals cross-linguistically reported as exhibiting F2 means from 1500-2000hz, in contrast with dark laterals with means from 800-1200hz ([7,12,15]). As such, characterizations of languages as exhibiting either a light lateral category (e.g. Spanish, German, Indian English) a dark lateral category (e.g. Catalan, Russian, European Portuguese), or both (e.g. American English, British English) are abundant ([11,14,15,18,23,24]).

In spite of the aforementioned discrete treatments of laterals, recent articulatory and acoustic evidence nonetheless suggests that lateral darkness is a gradient phenomenon (13,14,15,16,17,20]). Beyond the lack of a definitive F2 boundary to distinguish light and dark laterals in any particular language, even across languages lateral categories are gradient, such that the Spanish light /l/ is lighter than the German light /l/, and the Russian dark /l/ is darker than the Catalan dark /l/ ([15,17]). Accordingly, how can we reconcile the gradient degrees of darkness in lateral production with the notion of discrete categories of laterals as light or dark?

In order to problematize the notion of discrete lateral categories differentiated by gradient measures, the present study investigates variation in lateral production in bilinguals whose two languages have previously been characterized as exhibiting a single opposing lateral category (light /l/ and dark /l/). Spanish and Catalan lateral production was elicited from a group of 70 Valencian Catalan-Spanish bilinguals by means of a controlled reading task in each language. The ~6,300 tokens of /l/ in Spanish and Catalan, stratified according to syllable position and phonological context, were analyzed in Praat with respect to F2 (and subsequently normalized using the S-Centralization procedure [[4,20,25]]).

The results of a mixed-effects linear regression modeling (with speaker as a random effect) revealed significant ($p < 0.01$) effects of speaker gender, language, language dominance, syllable position, and phonological context (respectively favoring darker laterals for males, Catalan, greater Catalan dominance, coda position laterals, and laterals aside a non-front vowel and velar consonant). Additionally, in order to more concretely assess the existence of one or more discrete lateral categories in each language, normed F2 distributions per language were submitted to a test of bimodality, the results for which suggest a single lateral category (i.e., a unimodal normed F2 distribution) in each of Spanish and Catalan.

We argue that based on the aforementioned linguistic factor effects and the distributions of normalized lateral measurements per dominance group and across each language, lateral production in Valencian Spanish and Catalan is best accounted for through an inherently relative and gradient hierarchy of darkness, rather than discrete applications of intrinsically light [l] or dark [ɫ]. Moreover, we interpret the mediation of darkness degree by the aforementioned social factors as consistent with claims of negative social value afforded to lateral darkness in other Catalan-Spanish contact communities, including Catalonia ([3]) and the Balearic Islands ([10,20]). Ultimately, we assert that the goal of linguistic inquiry may not entail a discrete and

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cross-linguistic differentiation between [l] and [ɫ] within or beyond Romance, as these articulatory targets exist in perpetual relativity to one another. Instead, we propose a new, relative hierarchical typology of laterals that positions Catalan /l/ as darker than Spanish /l/.

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