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Consonant Length as Expressive Resource in Sung Spanish

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Abstract

In classical singing, the pronunciation of Spanish is subordinated to an aesthetic canon which limits the expressive range of speech. According to this canon, vowels have a leading role since they can be sustained, while consonants must be articulated “clearly” but “marked”. Due to these requirements, consonants must be shortened in classical singing, which ignores their variability and identity effects on communication. In order to study the imposition of this aesthetic canon in classical singing and outside of it, we measured the length of the consonants /l m n/ (which can be sustained) in 10 famous singers’ recordings (5 classical and 5 folk) of “La Tempranera” by Carlos Guastavino. The correlation between syllable length and consonant length was significant in all cases, which indicates that the consonants /l m n/ keep in proportion with the subsequent vowels. The absolute and relative lengths were higher in folk-style performances (means = 0.109 s 27.61%) than in classical ones (means = 0.090 s 21.86%). Nevertheless, the data showed a high length variability in both singing styles. These results show that in Spanish folk singing the consonants /l m n/ in consonant-vowel syllables tend to be longer than in classical singing. However, although the imposed aesthetic canon seems to have an effect on the classical performances’ pronunciation, the evidence suggests that the length of the consonants /l m n/ is used in an expressive way in both singing styles.

Background

A review of 19th-century Spanish literature on vocal pedagogy (Guzmán, Shifres & Carranza, September 2017) found that in classical singing the pronunciation is subordinated to an aesthetic canon which limits the expressive range of speech. According to this canon, vowels have a leading role since they can be sustained, while consonants must be articulated “clearly” but “marked”. Due to these requirements, consonants must be shortened in classical singing (Miller, 1996), which ignores the variability of segmental length in spoken Spanish (Mendoza et al., 2003) and its identity effects on communication (Carter & Wolford, 2016).

Although phonemes have traditionally been considered meaningless linguistic structures, it has been proposed that they get expressive value when placed in context, within a word or a phrase (Alarcos Llorach, 1950; Posadas de Julián, 2008). For example, the sound /s/ in *sigh* can evoke the exhalation in this action through its own hissing or *sibilance*. Due to each phoneme contains a bundle of articulatory features (such as *sibilance*, *precision*, *length*, etc.), it would be possible to take advantage of them to increase the expressive range of singing (Guzmán, 2017). However, the common scission between technique and expression in musical training (Shifres, 1994) reduces the role of pronunciation to technical purposes, ignoring its expressive nature.

Studies on diction for singing (Mahaney, 2006) show this scission. They examine how speech sounds are written and

transform this knowledge into a system of *phonetic rules* that musicians can apply to the study of vocal pieces in a foreign language. In a certain way, these rules contribute to the development of a *proper* vocal performance and give it intelligibility. Nevertheless, we note that putting pronunciation at the service of technical problems tends to homogenise it and deprives singers of expressive resources that are possible in speech (such as the consonant length).

Although recent studies compare the expressiveness in speaking and singing (Scherer, Sundberg, Tamarit & Salomão, 2015), the scope of consonant length as expressive resource in sung Spanish is still unknown.

Aims

Study the imposition of the aesthetic canon of classical singing on the length of 3 sustainable consonants in sung Spanish and how they are articulated outside of that canon in a more spontaneous way.

Methods

Ten famous singers’ recordings (5 classical and 5 folk) of “La Tempranera” (a classical chamber song by Carlos Guastavino) were phonemically segmented and labelled by Praat 6.0.26 through auditory and visual evaluations of their acoustic signals. Since this song is composed in a zamba rhythm (an Argentinian folk dance), it is widely performed by both classical and folk singers. The length of the consonants /l m n/ (which can be sustained) was measured in all available consonant-vowel (CV) syllables, as well as the full syllables that contain them (e.g., *elegía*, *mía*, *tempranera*, etc.). Thus, it was possible to study the length of the consonants /l m n/ at the syllable onsets, where these sounds should be shortened in classical singing to give way to the vowel.

Results

The correlation between syllable length and consonant length was significant in all cases, which indicates that the consonants /l m n/ keep in proportion with the subsequent vowels. The absolute and relative lengths were higher in folk-style performances (means = .109 s 27.61%) (Table 2) than in classical ones (means = .090 s 21.86%) (Table 1). Differences are statistically significant ($F_{[1,54]} = 44.459$; $p < .000$). However, the differences between consonants are not significant, which means that classical singers tend to shorten the relative length of these sounds in all cases.

Table 1. The descriptive statistics of classical performances.

	N	Min.	Mean	Max.	SD
CV syllable length (s)	285	0.133	0.648	4.561	0.591
Absolute C length (s)	285	0.015	0.090	0.475	0.053
Relative C length (%)	285	1.42	21.86	60.79	15.59

Table 2. The descriptive statistics of folk performances.

	N	Min.	Mean	Max.	SD
CV syllable length (s)	285	0.144	0.615	5.533	0.688
Absolute C length (s)	285	0.020	0.109	0.444	0.067
Relative C length (%)	285	2.27	27.61	68.13	16.29

In addition, the relative minimum length was 37.23% lower in classical performances, which indicates that—even in short onsets—folk singers give more presence to the consonants /l m n/. However, although the standard deviations of the relative lengths were also higher in folk performances, we observed a high variability in consonant length of both singing styles (mean = 9.18%) (Figure 1).

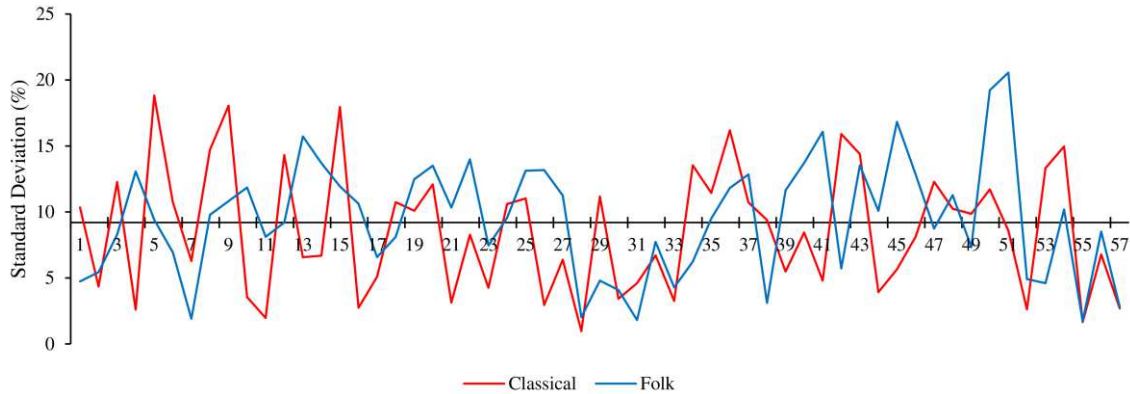


Figure 1. Average standard deviations of consonant lengths in classical and folk performances.

Moreover, each singer develops an idiosyncratic way of pronouncing (Figure 2) with significant differences between them ($F_{[4,54]} = 4.063$; $p = .003$). Also, the interaction between factors *singing style* (folk vs. classical), and *singer* was moderately significant ($F_{[4,8]} = 4,560$; $p = .001$). Similarly, the interaction between singing styles, singer and consonant was significant ($F_{[4,8]} = 3.820$; $p < .000$). These data support the high variability found in both singing styles.

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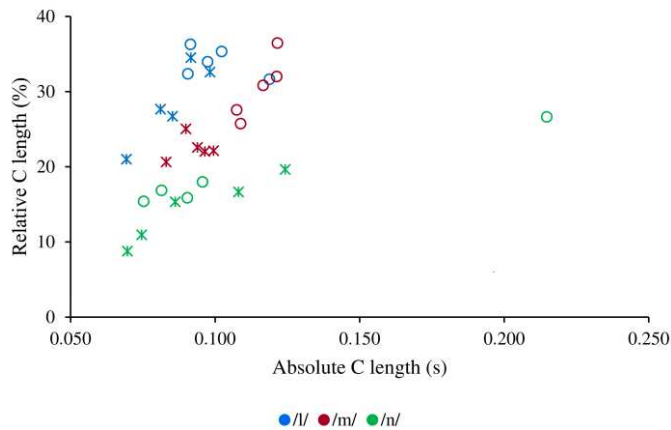


Figure 2. Average /l m n/ lengths in classical (asterisks) and folk (circles) performances.

Conclusion

The results show that in Spanish folk singing the consonants /l m n/ in CV syllables tend to be longer than in classical singing. However, although the imposed aesthetic canon seems to have an effect on the pronunciation of the classical professional’ performances, the evidence suggests that the length of the consonants /l m n/ –in particular, its variability– is used in an expressive way in both singing styles. Future studies will be done in order to determine the incidence of that canon in training periods of singers, studying the length of the consonants /l m n/ in students’ performances.