

TIPS FROM OUR READERS

Do not let the Spanish “s” misguide you



João Malta Barbosa, DDS, MSc,^a Graciela Granda Gill, DDS,^b and João Mendez Caramês, DDS, PhD^c

In prosthodontics, phonetics assumes a role of major importance in assessing and establishing a functionally acceptable incisal edge position, maxillomandibular relationship, and occlusal vertical dimension.^{1,2}

The /s/ sound, such as in the English word “sun,” was first described by Silverman in 1951¹ as being of great value for the assessment of what was later described as the closest speaking space (CSS). This sound is produced when the mandible assumes its most forward, most closed position during conversational speech and, according to Pound,² consists of a subtle whistle created when air is forced through a 1- to 1.5-mm space between the incisal edges of the mandibular central incisors and the coronal surfaces of the maxillary central incisors. However, most recent articles have found the CSS to be closer to 2 or 2.5 mm in both English and non-English speaking populations.³⁻⁵

The CSS is therefore a useful method of determining the occlusal vertical dimension⁴ and may be achieved not only through the pronunciation of the /s/ sound but also through other “surd” and “sonant” sibilants such as /sh/, /ch/, /z/, /zh/, and /j/ sounds. These sounds present with similar labial and incisal patterns,⁴ although not all are represented in Spanish.⁶

Despite its great value in the rehabilitation of the native English speaking population, other populations may present considerable variations between the /s/ and its correspondent sounds. The presence of variations was acknowledged by Silverman,¹ who recommended the

ABSTRACT

The orthographic representation of the “s” in the Spanish language may have three phonetic variations and be associated with other phonological phenomena that add to its unpredictability when used to evaluate the closest speaking space. These are of clinical interest since each of these variations may represent a more or less pronounced difference from what is observed in the English language and patient population. The present article explains the previously mentioned variations and reviews the suggested Spanish terms for evaluation of the closest speaking space. (*J Prosthet Dent* 2017;118:686-688)

study and analysis of variations in phonetic sounds for languages other than English in order to determine which would cause the mandible to assume its closest level in relation to the maxilla.

The goal of the present article was to highlight the phonetic variations that the /s/ may assume in Spanish speaking populations and suggest new targets for the determination of CSS in these populations. The International Phonetic Alphabet (IPA) is used throughout the present article to provide consistency when referring to phonetic transcription.⁷

PHONETIC VARIATIONS OF THE SPANISH /S/

The /s/ has been described to be “the most unpredictable, elusive, shifting, erratic, and troublesome sound in the Spanish language.”³ Special attention should therefore be given to the Spanish speaking population.⁸⁻¹¹

Spanish is the second most spoken language in the world, with approximately 427 million native speakers.¹² Simultaneously, the Hispanic population has been reported to be the fastest-growing minority group in the United States, with 56.6 million people representing 17.6% of the US population in 2015.¹³

^aResident, Jonathan and Maxine Ferencz Advanced Program in Prosthodontics, New York University College of Dentistry, New York, NY; and Prosthodontist, Department of Prosthodontics, Implantology Institute, Lisbon, Portugal.

^bResident, Advanced Education in General Dentistry, Columbia University College of Dental Medicine, New York, NY.

^cFull Professor, Lisbon University College of Dentistry, Lisbon, Portugal; Assistant Professor, New York University College of Dentistry, New York, NY; and Clinical Director, Implantology Institute, Lisbon, Portugal.

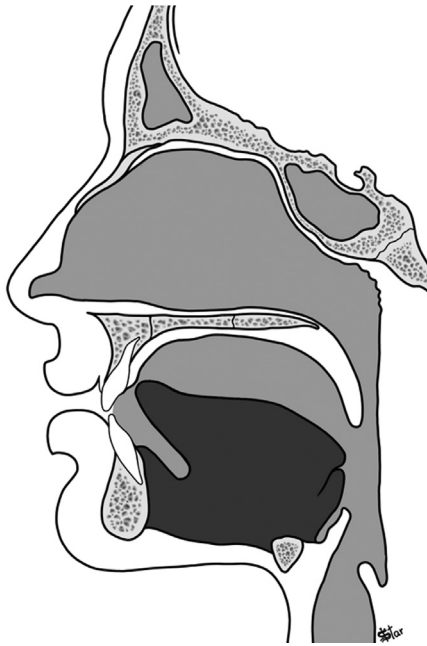


Figure 1. Castilian [s].

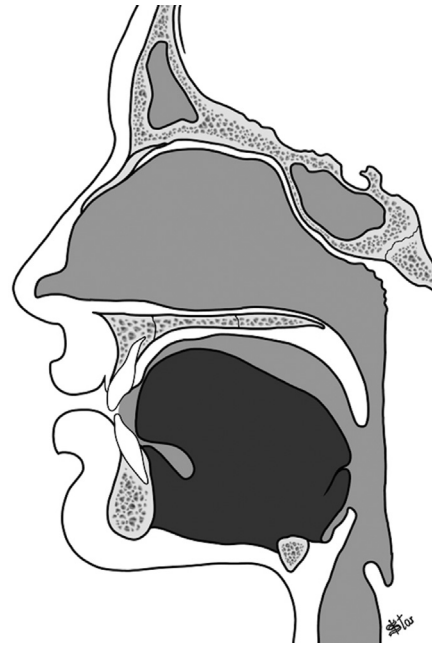


Figure 2. Andalusian/Latin American [s̺].

In the Spanish language, the orthographic representation of the letter “s” [s/] has been described as presenting 3 main phonetic variations:

1. The Castilian “s” [s] is a voiceless, concave, apicoalveolar fricative where the tip of the tongue turns upward to form a narrow opening against the alveoli of the maxillary incisors, similarly found orthographically in English as “s” in “sent” and “c” in “cent” (Fig. 1);
2. The Andalusian/Latin American “s” is a convex, dorsal, dentoalveolar voiceless fricative, with 2 variations:
 - a. One [s̺] in which the tip of the tongue is lowered, leaning against the inner side of the mandibular incisors, without equivalence in the English language (Fig. 2);
 - b. The second is less dorsal and less convex, produced by forming a narrow opening against the maxillary incisors and alveoli with the predorsal and ridge of the tongue, similar to the English “th” as in “theme” (Fig. 3).⁸

Other phonological phenomena adding to the complexity of the /s/ in the Spanish language include its weakening in intervocalic positions and replacement by /h/, as described in Latin American Spanish, with the exception of Argentina, Bolivia, and Uruguay,⁸ and a “strong tendency” for it to disappear:

- At the end of words
- At the end of a syllable
- In absolute final position

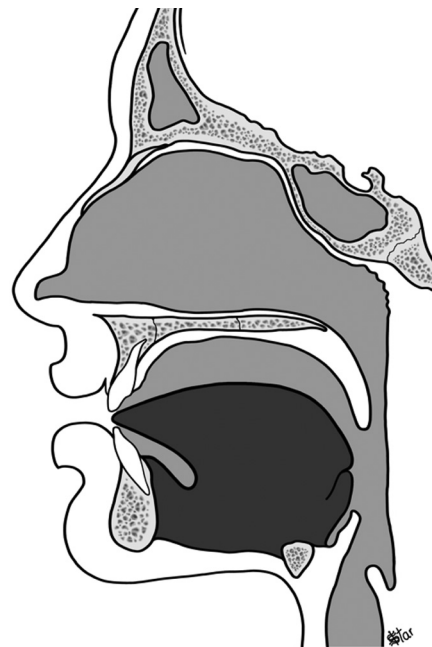


Figure 3. Andalusian/Latin American [θ].

- At the end of a word in a phrase where the next word begins with a vowel
- In some absolute initial positions
- In 2 successive syllables
- At the beginning of a breath group
- At the beginning of a syllable in the middle of a word shielded by a preceding consonant.⁸

In addition, the clinician should also be aware that the Spanish language also presents distinct pronunciations

ranging from a “literary/cultivated” Spanish to a “rustic/popular” Spanish, also capable of affecting the pronunciation of /s/.⁸

SUGGESTED SPANISH TERMS FOR EVALUATION OF CSS

With the previous considerations in mind, the suggested Spanish terms used to aid in the evaluation of the CSS should be reviewed.⁶

Robinson and Sullivan⁶ suggested the following Spanish terms when evaluating the CSS:

- /s/ - Ciento seis (*One hundred six*);
- /ch/ - Chica (*Girl*);
- /z/ - Asma (*Asthma*);
- /j/ - Inyeccion (*Injection*);
- /ch/, /s/ - Muchas gracias (*Thank you very much*);
- /ch/, /s/ - Mucho gusto (*Pleased to meet you*).

However, in order to avoid the variations that the /s/ may present phonetically in the Spanish language, some alterations are presented in the terms recommended by Robinson and Sullivan⁶ to more consistently achieve the sibilant sounds associated with the CSS in Spanish speaking populations:

- /s/ Distincion (*Distinction*);
- /ch/ Chica (*Girl*);
- /z/ Juzgar (*To judge*);
- /j/ Inyeccion (*Injection*);
- /ch/, /s/ Mucho sol (*A lot of sunlight*).

SUMMARY

The orthographic representation of the “s” in the Spanish language may have 3 phonetic variations: [s], [ʃ], and [θ] and be associated with other phonological phenomena that add to its unpredictability when used to evaluate the CSS. These are of clinical interest since each of these

variations may represent a more or less pronounced difference from what is observed in the English language and patient population. It is recommended therefore that clinicians take care when evaluating the CSS in the Spanish speaking patient population; the inclusion of other sibilant sounds such as the ones proposed in this article should be considered.

REFERENCES

1. Silverman MM. Accurate measurement of vertical dimension by phonetics and the speaking centric space. Part I. Dent Dig 1951;57:261-5.
2. Pound E. Let /S/ be your guide. J Prosthet Dent 1977;38:482-9.
3. The glossary of prosthodontic terms. Ninth edition. J Prosthet Dent 2017;117(5S):e1-e105.
4. Burnett CA, Clifford TJ. Closest speaking space during the production of sibilant sounds and its value in establishing the vertical dimension of occlusion. J Dent Res 1993;72:964-7.
5. De Souza RF, Compagnoni MA, Leles CR, Sadalla KBF. Association between the speaking space of /s/ sound and incisal overlaps in dentate and edentate subjects. J Appl Oral Sci 2005;13:413-7.
6. Robinson FG, Sullivan JA. Evaluating the closest speaking space with Spanish terms. J Prosthet Dent 2006;95:333.
7. International Phonetic Association. The international phonetic alphabet and the IPA chart. 2016. Available at: <https://www.internationalphoneticassociation.org/content/ipa-chart>.
8. Obaid AH. The vagaries of the Spanish “S”. Hispania 1973;56:60-7.
9. Mack S. A sociophonetic analysis of /s/ variation in Puerto Rican Spanish. In: Luis AL, editor. Selected Proceedings of the 13th Hispanic Linguistics Symposium. 1st ed. Somerville: Cascadilla Proceedings Project; 2011. p. 81-93.
10. Schmidt L. Regional variation in the perception of sociophonetic variants of Spanish /s/. In: Carvalho A, Beaudrie S, editors. Selected Proceedings of the 6th Workshop on Spanish Sociolinguistics. 1st ed. Somerville, MA: Cascadilla Proceedings Project; 2013. p. 189-202.
11. Garcia A. Allophonic variation in the Spanish sibilant fricative [dissertation]. Milwaukee: University of Wisconsin-Milwaukee; 2013.
12. Ethnologue. Summary by language size. 2016. Available at: <http://www.ethnologue.com/statistics/size>.
13. Bureau U. FFF: Hispanic heritage month 2016. Available at: <http://www.census.gov/newsroom/facts-for-features/2016/cb16-ff16.html>.

Corresponding author:

Dr João Malta Barbosa
 Implantology Institute
 Av. Columbano Bordalo Pinheiro n. 50
 1070-064, Lisbon
 PORTUGAL
 Email: joamaltabarbosa@gmail.com

Copyright © 2017 by the Editorial Council for *The Journal of Prosthetic Dentistry*.