

Portland State University

**PDXScholar**

---

World Languages and Literatures Faculty  
Publications and Presentations

World Languages and Literatures

---

2017

# A Diachronic Approach to the Old Spanish Sibilant Merger and its Impact on Trans-Atlantic Spanish. Part II.

Eva Núñez-Méndez  
enunez@pdx.edu

Follow this and additional works at: [https://pdxscholar.library.pdx.edu/wll\\_fac](https://pdxscholar.library.pdx.edu/wll_fac)



Part of the [Spanish Linguistics Commons](#)

**Let us know how access to this document benefits you.**

---

## Citation Details

Núñez-Méndez, Eva. 2017. "A diachronic approach to the Old Spanish sibilant merger and its impact on Trans-Atlantic Spanish. Part II." *Revista de Estudios Hispánicos (U Puerto Rico)* 1: 31-73.

This Article is brought to you for free and open access. It has been accepted for inclusion in World Languages and Literatures Faculty Publications and Presentations by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: [pdxscholar@pdx.edu](mailto:pdxscholar@pdx.edu).

**A DIACHRONIC APPROACH TO THE OLD  
SPANISH SIBILANT MERGER  
AND ITS IMPACT ON TRANS-ATLANTIC  
SPANISH (PART II)**

**RECONSIDERANDO LA CONFUSIÓN DE  
SIBILANTES EN ESPAÑOL: APLICACIONES  
CRONOLÓGICAS Y REPERCUSIONES EN EL  
ESPAÑOL TRANSATLÁNTICO (PARTE II)**

*Eva Núñez Méndez, Ph. D.  
Portland State University, Oregon, USA  
Correo electrónico: emunez@pdx.edu*

The evolution of the medieval sibilant phonetic system is crucial to understanding the origin of Castilian varieties on both sides of the Atlantic. It helps to distinguish varieties such as Andalusian Spanish, Judeo-Spanish, and trans-Atlantic Spanish, which constitute proof of many of the diachronic processes happening during and after the late medieval period. This study helps the reader understand the linguistic variations of the sibilants in the modern language, and explores the origins and different steps in their evolution; furthermore, it evaluates recent research about the timeline of these phonetic changes.

The reorganization in the sibilant paradigm greatly altered the configuration of the Spanish language as we know it today. It also made this language unique compared to other Romance languages that still maintain certain similarities with the old medieval Spanish sibilant system. These transformations happened at different stages and contexts throughout long periods of time, mainly between the fifteenth and seventeenth centuries.

This article is a continuation of Part I, published in the previous volume of *Estudios Hispánicos*.

### 1. Chronological accounts: grammarians and treatise-writers

As a point of departure, it is very important to consider grammarians' and treatise-writers' opinions about pronunciation habits and practices in the past in order to date phonetic changes. A few of them have been selected according to their time period and relevance. During the fifteenth and sixteenth century, the modern notion of voiced/voiceless did not exist so the scholars used other ways to describe the articulatory contrast: for voiceless they used *fuertes* strong, *apretadas* tight, *espesas* thick, *densas* dens, *recias* stout, or of *sonido entero* whole sound; and for voiced, *blandas* soft, *suaves* soft, or of *medio sonido* half sound. The distinction was based on the energy used in the articulation of the sound.

#### 1.1. Alveolar pair /s/~z/

The first attestation of the voiced sound [z] comes from Nebrija's Gramática (1492) where he differentiates the soft <s> from the strong <s>. He states that the only consonants that are doubled in Spanish are the <ss> and the <rr>; which can be written as single letters according to their pronunciation<sup>1</sup>. During the sixteenth century, scholars followed Nebrija's description, terminology, and distribution for both letters <s> and <ss>. Valdés, in 1535, also defends the different articulation between the thick <ss> (written as a geminated ss) from the non-thick <s> (written as a single letter); nevertheless, he criticizes the graphic confusion of these two letters<sup>2</sup>. In 1558, Villalón also distinguishes between <s> and <ss>, and in his Gramática castellana, he emphasizes several orthographic rules, clarifying the matter, which implies that the sounds were already merging in speech. According to A. Alonso (1955: 348), Villalón, being from Valladolid, was defending the Old Castile practice of distinction, the Toledo norm, although the new devoicing had already spread among speakers. It is very likely that he himself was not speaking with this distinction. In 1589, Cuesta writes about the need to differen-

<sup>1</sup> “La <s> en que comienza la sílaba siguiente suena poco [...] pero si suenan apretadas, doblarse han en medio de la palabra, como diziendo: *amassa, passa* [...] de donde se puede coger, cuándo estas dos letras se han de escreuir senzillas, y cuándo dobladas, mirando a la pronunciación, si es apretada, o si es floxa” (Nebrija in Blanco 2006: 61).

<sup>2</sup> “En muchos vocablos he mirado que scrivís dos eses adonde otros se contentan con una, y una donde otros ponen dos; ¿tenéis alguna regla para esto? [...] Generalmente pongo dos eses quando la pronunciación ha de ser espessa, y donde no lo es pongo una sola” (Valdés in Blanco 2006: 63).

tiate <s> and <ss> in writing and insists in not mistaking and misspelling them, which indicates that the mix-up between sounds [s] and [z] was common<sup>3</sup>. In 1625, Correas does not write about this pair; he only writes about one type of <s>, which proves that the voiced [z] was no longer differentiated. In 1609, Alemán, who does not distinguish them either, gets rid of <ss> and only uses the simple <s> with two typographic variations: a long *s* at the beginning of the word or syllable and a short *s* and the end of the word or syllable<sup>4</sup>. Like Alemán, both Sebastián, in 1619, and Bonet, in 1620, do not differentiate the letters <s> and <ss>. However, around that time, Jiménez Patón, in 1614, still writes about the distinction and the <s> that sounds soft between vowels<sup>5</sup>, which is contradictory to what his contemporaries were describing.

From sixteenth-century grammarians' statements, it can be concluded that the graphemes <s> and <ss> had different articulations; however, from the seventeenth century reports, excluding Jiménez Patón's, the inference is that there was not a voiced [z] pronunciation with graphic correspondence since the beginning of this century.

## 1.2. Dento-alveolar pair /ts/~/dz/

Going back to the first grammar in Spanish written by Nebrija in 1492, there is no clear description for the sounds represented by <ç> and <z>. Nebrija separates the sounds from Latin origins, which he names as *proprios* 'proper', from sounds from Arabic, named as *prestados* 'borrowed' or *ajenos* 'foreign'. He considers that <ç> has a borrowed sound and relates its pronunciation to the Hebrew letter Samekh. On the other hand, he writes that the letter <z> has been kept from Latin<sup>6</sup>. Nevertheless, Nebrija

<sup>3</sup> “La pronunciacion de la .s. [...] tiene sonido doblado y sencillo como si dixesemos en algunas partes esse, dandole fuerça. Y en otras, ese, dandole sonido floxo [...] para bien pronunciarlas y escreuir las” (Cuesta in Blanco 2006: 65).

<sup>4</sup> “En todo principio de dición o silaba usamos de la *f* larga, i a fines dellas, de la *s* pequeña” (Alemán in Blanco 2006: 65).

<sup>5</sup> “S. en principio y medio de parte, quando tienen ante sí otro consonante, suenan recias, aunque estén sencillas, como quando las ponemos dobladas [...] Mas quando se ponen entre dos vocales suenan floxas y con poca fuerça” (Jiménez Patón in Blanco 2006: 66).

<sup>6</sup> “Que ni los griegos ni los latinos [...] la sienten ni conocen por suia; de manera que, pues la *c*, puesta debaxo aquella señal, muda la substancia de la pronunciación, ia no es *c*, sino otra letra, como la tienen distinta los judíos y moros, de los cuales nos otros la recibimos [...]” “De letras que tenemos prestadas del latín para escribir castellano, sola mente nos sirven por sí mesmas estas doze: a, b, d, e, f, m, o, p, r, s, t, z” (Nebrija in Blanco 2006: 48).

does not define the way these letters are pronounced. His contemporary writers do the same; they acknowledge the difference in pronunciation without explaining it. In 1531, Venegas says that it is a compound letter, which suggests an affricate articulation<sup>7</sup>. In 1535, Valdés adds that Castilian has added three letters to the Latin alphabet: <ç>, <j> and <ñ> and that the sound of letter <ç> is *espesso* ‘thick’ as in *çapato*, *coraçón*, *açucar*<sup>8</sup>. In 1558, Villalón explains that <z> has the same pronunciation as <ç> but pronounced twice; his definition is not clear; however, he seems to denote different pronunciations for both graphemes<sup>9</sup>. In 1552, Torquemada writes that the sounds written with <ç > and <z> have different but very similar pronunciations, and consequently, many people interchange them. He underlines that the <z> is less strong, referring perhaps to the manner of articulation or its voicing<sup>10</sup>. In 1582, López de Velasco states that the sounds for <ç > and <z> are different; nevertheless, he confirms that the confusion was quite general among all people<sup>11</sup>. In 1589, Cuesta, following López de Velasco, differentiates the letters <c>, <ç > and <z> and adds that the confusion was a common practice among children<sup>12</sup>. In 1578, Fray Juan de Córdoba describes that the distinction was not practiced in Old Castile where speakers pronounced the same sound for both letters <ç> and <z><sup>13</sup>.

<sup>7</sup> “Ai a este syluo aplicamos una .d. de suerte que precede al syluo: como la culebra le haze [...] quedara formado el verdadero sonido de la .z. porque esta y la .r. son letras dobladas” (Venegas in Blanco 2006: 49).

<sup>8</sup> “La lengua castellana, de más de a.b.c. latino, tiene una j larga, que vale lo que al toscano gi; y una cerilla que, puesta debajo de la c, la haze sonar casi como z”. “La cerilla se ha de poner quando, juntándose con a, con o y con u, el sonido ha de ser espesso, diciendo çapato, coraçón, açucar” (Valdés in Blanco 2006: 50).

<sup>9</sup> “z tiene la mesma pronunçiaçión que la c con çedilla dos vezes pronunçiada” (Villalón in Blanco 2006: 51).

<sup>10</sup> “La c y la z se parecen casi tanto en el sonido de la pronunçiaçión como la b y la v, de manera que muchas personas no saben diferenciarlas ni escreuir las, y muchas vezes hallaréis puesta la vna por la otra, avnque en las pronunçiaçiones son tan diferentes [...] çaço que ambas vezes se pronunçia la c con la fuerça que he dicho y vazío [...] con la mitad de la fuerça menos que aueis pronunçiado la c” (Torquemada in Blanco 2006: 51).

<sup>11</sup> “Parecido el sonido de la .c. cedilla al de la .z. viene a no percibirse por todos la diferencia que ay del vno al otro; y el error y confussion que hay en la pronunçiaçion dellas, no sólo entre gente sin letras, pero entre curiosos y obligados a saberlo” (López de Velasco in Blanco 2006: 52).

<sup>12</sup> “Sepan los niños distinguir el sonido de la c á la z porque ordinariamente [...] muy pocos niños hazen diferencia en pronunçiar estas dos letras, es la causa no mirar los que enseñan al principio de ello” (Cuesta in Blanco 2006: 53).

<sup>13</sup> “Que los de Castilla la Vieja dizen haçer y en Toledo hazer” (F. Juan de Córdoba in

It seems that during the sixteenth century, although grammarians criticize the confusion, the sounds were perceived as different. On the other hand, during the seventeenth century, all authors attest the neutralization of these two sounds as common in speech; those that still write about the distinction (such as Alemán, Sebastián, Bonet and Dávila) point out that it is very weak and difficult to maintain, only practiced by a few, admitting that the in-distinction has become a habit and wide spread phenomenon. In 1625, Correas states that the distinction was lost in common speech and criticizes those authors that still defend different articulations for <ç> and <z><sup>14</sup>. He also does not maintain the graphic distinction between <ç>, <c> and <z>, using only <z><sup>15</sup>. In 1604, Pérez de Nájera censures the use of letter <ç> instead of <z>, which means that the phonetic distinction was not practiced at that time<sup>16</sup>. In 1614, Jiménez Patón writes that both sounds for letters <ç> and <z> are limited to only <ç>, without any further reference to the letter <z><sup>17</sup>. In 1620, Luna claims that the sounds for both letters <ç> and <z> are the same<sup>18</sup>. In 1634, Bravo Grájera admits the same sound for the two letters; however, he insists in writing them differently according to their etymological origin<sup>19</sup>. In 1651, Villar acknowledges the same sound for both graphemes and leaves the distinction in writing to the author's free will and guessing<sup>20</sup>.

---

Blanco 2006: 53).

<sup>14</sup> “Muchos [...] quieren dezir que la çedilla es blanda, i la zeda mas fuerte i rrezia. I es error imaxinar que tenemos mas de un sonido de ze en Castellano” (Correas in Blanco 2006: 54).

<sup>15</sup> “I hallando tanta confusion en que aia tres letras de un sonido, devemos desechar las otras dos c [...] i usar sola esta z [...] i ansi evitaremos la anbiguedad que deseamos quitar” (Correas in Blanco 2006: 54).

<sup>16</sup> “En qué se falta en la orthographia castellana? Faltase [...] de tres maneras [...] La tercera mudando como hacemos por hazemos, goçamos por gozamos [...] y assí de otros poniendo en lugar de z, ç con cedilla” (Pérez de Nájera in Blanco 2006: 58).

<sup>17</sup> “C. es letra muda, pronúnciase Ce, tiene tres officios. El segundo es prestado [...] quando se pronuncia como zeta griega, poniéndole debajo vna zerilla, como en estas diciones, zapato, çapato, zedaço, zarça, çeniça, çieno. La qual pronunçión hallo que se pegó a los castellanos de los moros andaluzes” (Jiménez Patón in Blanco 2006: 59).

<sup>18</sup> “Esta letra ç con aquella coma abajo, y esta z tienen en todo el mismo valor, ansi çarça, zerda” (Luna in Blanco 2006: 59).

<sup>19</sup> “Dos letras Griegas [...] que de la lengua Griega se auian de comunicar a la nuestra, como son y, z, [...] que aunque las latinas i, c, lo podían suplir, no era bien usar dellas, sino que las Griegas señalassen en el vocablo el origen” (Bravo Grájera in Blanco 2006: 59).

<sup>20</sup> “La poca, o ninguna diferencia que ay en la pronunçión de ç y z [...] da licencia para escribir con la que mas presto a la memoria venga, y a lo sumo, solamente señalara

## 1.3. Alveopalatal pair /ʃ/~/ʒ/

In 1492, Nebrija defines the sound of the grapheme <x> as an Arabic borrowing, confirming that while it existed in Latin, the pronunciation was borrowed from the Arabs<sup>21</sup>. Specifically, A. Alonso identifies it with the Arabic sound shin (palatal voiceless fricative) (1949: 73). Likewise, Nebrija describes the sound of <ge,i> as belonging to Arabic<sup>22</sup>. A. Alonso associates it with the Arabic sound gim (palatal voiced affricate) (1949: 73). In 1535, Valdés writes about the difference in sounds for the letters <x> and <ja, o, u> or <ge, i>; he clarifies the use of the grapheme <s> for Latin x [ks] and of <x> for the Arab sound [ʃ]. He also compares the sound of <ja, o, u>~<ge, i> with the Italian *gi*, which could denote a fricative [ʒ] or affricate pronunciation [dʒ]<sup>23</sup>. In 1552, Torquemada explains that the sounds of <x> and <ja, o, u> or <ge, i> are very similar and many writers mistake them<sup>24</sup>. In 1558, Villalón reports the indistinction; both letters <x> and <j> have the same sound<sup>25</sup>. He, being an Old Castilian, may not have pronounced them differently; however, he also mentions that there is a slight differentiation<sup>26</sup>. In 1578, Fray Juan de Córdoba tells us that Old Casti-

---

yo al uso de la z, al principio [...] y en el medio [...] y también quando se halla entre dos vocales como dezir, hazer, induzir, etc.; esto es inteligible [...] lo demas es adivinar (Villar in Blanco 2006: 60).

<sup>21</sup> “La x en el latín no es otra cosa que la breuiatura de cs o de gs; nosotros dámosle tal [...] pronunciación propia de la lengua aráuiga, de donde parece que nosotros la recibimos, porque otra lengua ninguna la reconoce por suia, y los moros siempre la ponen en lugar de nuestra s, y por lo que nosotros dezimos señor, san, [...] por s, ellos dizen xenor, xan [...] por x” (Nebrija in Blanco 2006: 68).

<sup>22</sup> “La g [...] cuando después de ella se siguen e, i, es propria de nuestra lengua, que ni judíos ni griegos, ni latinos, la sienten, ni pueden conocer por suia, salvo el morisco, de la cual lengua io pienso que nos otros la recibimos” (Nebrija in Blanco 2006: 68).

<sup>23</sup> “De manera que podremos usar la s en los vocablos que viéremos tener origen del latín, y la x en los que nos pareciere tienen origen del aráuigo.” “Quanto a la j larga [...] suena al castellano lo que al toscano gi” (Valdés in Blanco 2006: 69).

<sup>24</sup> “Estas tres letras traen en gran baraja y discordia la buena ortographía, porque, con parecer tan diferentes en sí, tienen tanta semejança en la pronunciación, que muchas vezes se ponen la vna por la otra [...] Donde han de dezir dixo ponen dijo, y por poner lexos ponen lejos; [...] poniendo la x por j, deziendo enoxos por enojos, mensaxero por mensajero” (Torquemada in Blanco 2006: 70).

<sup>25</sup> “La x en el castellano tiene la mesma pronunciación en el vocablo que tiene la j larga [...] porque poca diferencia haze dezir *jarro* o *xarro*, *jornada* o *xornada*” (Villalón in Blanco 2006: 71).

<sup>26</sup> “Verdad es que algo mas aspera se pronuncia la x, que la j, consonante [...] El sonido de la pronunciacion le enseñara con que letra deua escreuir. Dira *jarro* y no *xarro*, dira *xara* y no *jara*. Dira xabón y no jabón” (Villalón in Blanco 2006: 71).

lians could not distinguish between the voiced and voiceless palatals<sup>27</sup>. In 1582, López de Velasco, although claiming their distinction, declares the confusion both in writing and in pronunciation<sup>28</sup>. In 1589, Cuesta reports that many people (both children and elders) mistake these two sounds written as <x> and <j><sup>29</sup>. In 1597, Oudin, a French grammarian, explains that the sounds for letters <x> and <ja, o, u> or <ge, i> were different but very close; he also adds that the sound for <j> was articulated very close to the throat<sup>30</sup>.

At the end of the sixteenth century we find the first reports about the velar or glottal pronunciation of [ʃ] distancing itself from its palatal articulation. It is then that we can assume a regression in its point of articulation to velar [x]. In 1552, Torquemada already mentions this articulation in the throat<sup>31</sup>. In 1582, López de Velasco observes the pronunciation of <x> as articulated from inside the throat<sup>32</sup>. In 1597, Oudin defines the sound of <j> as articulated in the throat<sup>33</sup>. In 1630, Correas still describes <x> as palatal; nevertheless, he supplies us with the details that in Andalusia the sound for this letter is mistaken with that of the letter <h><sup>34</sup>. This implies that if the aspiration was happening in Andalusian, then the velarization of [ʃ] to [x] was also already occurring in stan-

---

<sup>27</sup> “[Los de Castilla la Vieja] dizen *xugar*, y en Toledo dizen *jugar*” (F. Juan de Córdoba in Blanco 2006: 71).

<sup>28</sup> “En muchas palabras apenas percibe la oreja la diferencia que ay entre ellos, como *trabajo* y *abaxo* [...] No puede el oyo sacar la verdadera escriptura dellas” (López de Velasco in Blanco 2006: 71).

<sup>29</sup> “Es menester que los que enseñan leer y escriuir adviertan en que sus discipulos tengan entendido como han de diferenciar de la .x. a la .i. jota, porque muchas vezes he visto descuydarse en esto, no digo los niños solamente, sino los de mayor edad, que por escriuir Guadaluja dizen con .x. Guadalaxara. Y otras vezes por el contrario por decir con .x. Xaramillo dizen con la .i. Iaramillo” (Cuesta in Blanco 2006: 72).

<sup>30</sup> “Faut noter qu’il y a grand affinité de prononciation entre le g mis deuant e ou i, le j [...] and l’x [...] Car i’ay remarqué des mots escrits indifferemment par ces trois lettres, comme tixeras, tixeras & tijeras qui signifie des ciseaux” (Oudin in Blanco 2006: 72).

<sup>31</sup> “Estas letras se pronunçien en lo vltimo del paladar cerca de la garganta [...] la de la j sale blanda y amorosamente, y la de la x con mayor fuerça, diferenciándose [...] viejos, lexos; hijo, dixo; juez, Xuárez” (Torquemada in Blanco 2006: 72).

<sup>32</sup> “La .x. [...] es como la .g., pero más denso y metido a la garganta” (López de Velasco in Blanco 2006: 73).

<sup>33</sup> “j consone que les Espanols appelent jota & le prononcent [...] au dedans de la gorge” (Oudin in Blanco 2006: 73).

<sup>34</sup> “Avia aki de rreprehender al vulgo de Andaluza la baxa, ke la truekan feamente por xe, i la xe por h. Mas los kuerdos, ó no lo hazen, o se korrixen dello en Kastilla, o komuni-kando kastellanos viexos, l se ofenden de tan torpe vizio” (Correas in Blanco 2006: 73).

dard Spanish, though it was still in its expansion stage. In 1614, Jiménez Patón criticizes the Spanish pronunciation of letters <x> and <ge, i>, as being different from other Romance languages, which suggests that they were already pronounced velar as [x] at this time<sup>35</sup>. In 1619, Sebastián advises not to mispronounce the letters <x> and <j>, which have very similar articulations<sup>36</sup>. In 1631, Dávila attests how difficult it was to keep the distinction between <x> and <j><sup>37</sup>.

Treatise writers from the sixteenth century (except Nebrija and Valdés) agree that the confusion between [ʃ] and [ʒ] was quite common after the middle of the century. Grammarians from the seventeenth century confirm that the indistinction was general in this century. See Table 1.

Sibilant merger according to Grammarians	
End 15 <sup>th</sup> cent.	Clear distinction of sounds [s]~[z], [ʃ]~[ʒ] and [ts]~[dz]
Mid 16 <sup>th</sup> cent.	The merger (voiced/voiceless) began spreading
End 16 <sup>th</sup> cent.	Confusion was widespread and common; still some reports about distinction
17 <sup>th</sup> cent.	No distinction

Table 1. Chronology of sibilant devoicing according to grammarians' reports

Grammarians' opinions show important details about the chronology and geography of medieval sibilant changes. See below a summary with names, work titles (first printing), origins, and whether they comment on the sibilant merger (indicated by '+') and where it happens.

<sup>35</sup> "La G. tiene dos oficios: vno propio, como suena en [...] nego, legas, garça, gordo; otro, prestado, como suena en [...] Gerónimo, Gil, neges, legis. Esta vltima pronunciación es de sólo el romance castellano, y así las otras naciones no pueden sufrir que se la demos al latín" (Jiménez Patón in Blanco 2006: 74).

<sup>36</sup> "Devese llevar cuydado, en no confundir la .j. y la .x. por lo mucho que en el son son parecidas" (Sebastián in Blanco 2006: 75).

<sup>37</sup> "La j tiene tanta semejança con la x, que solo el cuidado las puede diferenciar" (Dávila in Blanco 2006: 76).

Authors	Book Title	1 <sup>st</sup> edition	Author's Origin	Merger [s]~[z]	Merger [ts]~[dz]	Merger [ʃ]~[ʒ]
Alemán, Mateo (1547-1615)	<i>Ortografía castellana</i>	1609, México	Seville, Andalusia	+ general [s]	+ people from Andalusia, Toledo and Old Castile [ts]~[ʒ]	+ general [ʃ]
Bonet, Juan Pablo (c. 1573-1633)	<i>Reduccion de las letras y arte para enseñar ablar los mudos</i>	1620, Madrid	Torres de Berrellen, Aragon	+ general [s]	+	+ general [ʃ]
Bravo Grájera, Gonzalo (?-1672)	<i>Breve discurso, en que se modera la nueva orthographia de España</i>	1634, Madrid	Coria, Cáceres?		+ general	
Correas, Gonzalo (1571?-1631)	<i>Arte de la lengua española castellana</i>	1625 pub. [1954]	Jaraiz de la Vera, Extremadura	+ general [s]	+ general [ʒ]	+ general [ʃ]/[x]?
Cuesta, Juan de (?)	<i>Libro y tratado para enseñar a leer y escribir</i>	1589, Alcalá de Henares	Guadalajara?	+	+ children [ts]~[θ]	+ many
Davila, Nicolás (?)	<i>Compendio de la ortografía castellana</i>	1631, Madrid	Cartagena, Castile		+	+ general
Córdoba, Fray Juan de (1503-1595)	<i>Arte de la lengua zapoteca</i>	1578, México	Cordoba, Andalusia		+ Old Castile	+ [ʃ]~[ʒ] Old Castile
Jiménez Patón, Bartolomé (1569-1640)	<i>Ortografía</i>	1614, Baeza	Ciudad Real, Castile	[s]~[z]	+ general [ts]	+ [x] general
López de Velasco, Juan (c. 1530-1598)	<i>Orthographia y pronuncia-ción catellana</i>	1582, Burgos	Soria, Castile	+ [s]~[z]/[s]	+ many [ʒ]~[z]	+ [ʃ]~[ʒ]

Luna, Alejandro de (?)	<i>Ramillete de flores poéticas y notables jeroglíficos</i>	1620, Toulouse	Toledo, Castile		+ general	
Nebrija, Antonio (1441-1522)	<i>Gramática de la lengua castellana</i>	1492, Salamanca	Lebrija, Sevilla, Andalusia	— [s]~[z]	—	—
Oudin, César (1560?-1625)	<i>Grammaire espagnolle expliquée en françois</i>	1597, Paris				+
Pérez de Nájera, Francisco (1530-1619)	<i>Ortografía castellana</i>	1604, Valladolid	Valladolid, Castile?		+ general	
Sebastián, Miguel (?)	<i>Othographia y Orthologia</i>	1619, Zaragoza	?	+ general [s]	+ [ts]~[dz]	+ general
Torquemada, Antonio de (c. 1507-1569)	<i>Manual de escribientes</i>	c. 1552-59, Madrid pub. 1970	Astorga, Leon		+ many [ts]~[z]	+ many
Valdés, Juan de (c. 1500-1541)	<i>Diálogo de la lengua</i>	1535 pub. 1736	Cuenca, Castile	+ [s]~[z]	—	—
Venegas, Alejo (c. 1497-1562)	<i>Tractado de orthographía y accentos en las tres lenguas principales</i>	1531, Toledo	Toledo, Castile		—	
Villalón, Cristobal (c. 1510-1562?)	<i>Gramática castellana</i>	1558, Amberes	Valladolid, Castile ?	+ [s]~[z]/ [s]	—	+ [ʃ]~[ʒ]
Villar, Juan P. (1585-1660)	<i>Arte de la lengua española</i>	1651, Valencia	Arjonilla, Jaen, Andalusia		+ general	

Table 2. Grammarians' opinions about sibilant change.

## 2. Chronological accounts: graphemes

If we consider the graphemes, the equivalency will be letters <ce, i, ç> for sound [ts], <z> for [dz]; double <-ss->, initial <s->, final <-s> for [s], intervocalic <-s-> for [z]; <x> for [ʃ], <j, ge, i> or <i> for [ʒ]. There is confusion when the writing does not regularly reflect this correspondence, that is to say, when words such as *fuerça*, *fazer*, *esse*, *casa*, *dexar*, *ceja* are written as *fuerza*, *facer*, *ese*, *cassa*, *dejar* and *cexa*. Only then can it be sustained that the writing was showing the lack of distinction in speech. Some illustrative examples follow from medieval Spanish (Blanco 2006):

[ts] <c <sup>e,i</sup> , ç> written as  <z>	<i>pezes</i> <i>cozes</i> <i>lanza</i>  <i>dulzes</i> <i>cozes</i> <i>carzel</i>	ca. 1430 1600 1610  1635 1656 1674	<i>Cancionero de Baena</i> <i>El conde Alarcos</i> <i>Peribáñez y el comendador de Ocaña</i> <i>La vida es sueño</i> <i>Un bobo haze ciento</i> <i>La nave del mercader</i>
[dz] <z> written as  <ç, e>	<i>laço</i> <i>perdiçes</i> <i>feliçes</i> <i>nariçes</i> <i>amenança</i> <i>paces</i> <i>saçon</i> <i>racimo</i>	1330? 1330? ca. 1430 ca. 1430 1605 1619 1652 1670	<i>Libro de Buen Amor</i> <i>Libro de Buen Amor</i> <i>Cancionero de Baena</i> <i>Cancionero de Baena</i> <i>El curioso impertinente</i> <i>La prudencia en la muger</i> <i>El desden, con el desden</i> <i>Sueños ay, que uerdad son</i>
[s] <-ss-> written as  <s>	<i>escaso</i>  <i>paso</i>  <i>escasas</i> <i>gruesa</i> <i>huesos</i> <i>promesas</i> <i>mjeses</i> <i>masa</i> <i>pasos</i> <i>hueso</i> <i>paso</i> <i>masa</i> <i>promesas</i> <i>escaso</i> <i>mieses</i>	1270  1270  1300 1330? 1331 1330? 1330? 1344 1400 1528 1554 1612 1622 1653 1680	<i>Primera Crónica General de España</i> <i>Primera Crónica General de España</i> <i>El libro de Caballero Zifar</i> <i>Libro de los estados</i> <i>El Conde Lucanor</i> <i>Libro de Buen Amor</i> <i>Libro de Buen Amor</i> <i>Crónica General de España</i> <i>Danza de la muerte</i> <i>Retrato de la lozana andaluza</i> <i>La vida del Lazarillo de Tormes</i> <i>Fuente ovejuna</i> <i>La fingida Arcadia</i> <i>El lindo Don Diego</i> <i>El indulto general</i>

[z] <-s-> written as  <-ss->	<i>pessar</i>	1270	<i>Primera Crónica General de España</i>
	<i>El Libro de Caballero Zifar</i>		
	<i>susso</i>	1300	<i>Libro de Buen Amor</i>
	<i>messes</i>	1330?	<i>Libro de Buen Amor</i>
	<i>sezzo</i>	1330?	<i>Cancionero de Baena</i>
	<i>besso</i>	ca. 1430	<i>Cancionero de Baena</i>
	<i>prossa</i>	ca. 1430	<i>Cancionero de Baena</i>
	<i>rrossa</i>	ca. 1430	<i>Cancionero de Baena</i>
	<i>usso</i>	ca. 1430	<i>Tratado de las armas</i>
	<i>pessar</i>	1458	<i>Los siete libros de Diana</i>
	<i>pusse</i>	1559	<i>El mejor alcalde el rey</i>
<i>sezzo</i>	1623	<i>La reina Maria Estuarda</i>	
<i>quesso</i>	1660		
[ʃ] <x> written as  <j>	<i>tejo</i>	1344	<i>Crónica General de España</i>
	<i>lejos</i>	1528	<i>Diálogo de Mercurio y Carón</i>
	<i>madeja</i>	1612	<i>Fuenteovejuna</i>
	<i>queja</i>	1620	<i>El cavallero de Olmedo</i>
	<i>lejos</i>	1652	<i>El desden con el desden</i>

Table 3. Examples of orthographic confusion from 1270 to 1680.

From the grapheme corpus analyzed (Blanco 2006), the results confirm that the graphic distinction among the affricates [ts]~[dz] and fricatives [s]~[z] lasted until the end of the sixteenth century and the confusion was still minor in the seventeenth century. The graphic distinction between the palatal pair [ʃ]~[ʒ] was kept almost constantly, which could imply a phonological distinction in speech or just orthographic conservatism. However, the few graphic confusions for this pair jeopardize the study of its phonetic evolution. This chronological conclusion from graphemes diverges with the traditional hypothesis that the confusion of sibilants was a general phenomenon at the end of the sixteenth century and beginning of the seventeenth century. According to Blanco (2006: 100) the generalization was later and it did not finish until the beginning of the seventeenth century. See Table 4.

Grapheme analysis of sibilant merger by 17th cent.			
[ts]~[dz]	affricates	end of 16 <sup>th</sup> cent.	clear distinction
[s]~[z]	alveolar fricatives	17th cent.	confusion was a minor phenomenon
[ʃ]~[ʒ]	alveo-palatal fricatives	all periods	constant distinction

Table 4. Sibilant merger chronology based on graphemes.

Spelling in books corroborates the impression we get from the treatise-writers: in the first half of the sixteenth century all printers accepted the Toledan norm. On the other hand, from a little after 1580, Madrid printing-houses published books with very abundant cacographies (Catalán 1957: 295). In the first quarter of the seventeenth century, the Court speech from Madrid became the new standard: it is the triumph of the new Madrid norm.

### 3. Chronological accounts: rhymes

Based on rhyme analysis of a corpus from the twelfth until the sixteenth century, gathered together by Blanco, some outcomes have been extrapolated to clarify the controversy presented by graphemes: whether the level of graphic distinction was determined by phonological changes, and when the confusion started. If we look at the words that rhyme, independently of the letters, most texts from old medieval and classic Spanish (up to the sixteenth century) denote the distinction as is illustrated with the following selection of examples.

#### Rhymes [ts]~[ts]

3.1. Esta enbidia es por la **priuança**  
 ... que su daño faze aquel que la **alcança**  
 que preça vos vistas andar en **balança**  
 de grandes señores venjr a proeza  
 por ende tenet que faze proeza  
 ... el que se qujta desta **tribulança**  
 Por ende señores con grant **acordança**  
 ... a qujen sera dada la tal buen **andança**  
 (*Cancionero de Baena*, ca. 1430)

3.2. Que si el justo dolor mueve a **vengança**  
 alguna vez el español corage,  
 despedaçada con aguda **lança**  
 compensarás, muriendo, el hecho ultrage  
 (Herrera, *Poesía Castellana* 379, ca.1580)

3.3. Dichoso el hombre que de Dios **alcança**  
 ser corregido aquí por esto amigo  
 sufre su disciplina con **templança**  
 (Fray Luis de León, *Poesía Completa* 579,  
 ca. 1590)

#### Rhymes [dz]~[dz]

3.4. Con gran desgradecimiento  
 Me pagas y **satisfazes**  
 quien deshizo nuestras **pazes**  
 quien turbo tu sufrimiento  
 (*Cancionero de las obras*, 1496)

3.5. Este Lauro, que tiene'n su **corteza**  
 ... i en él el manso zéfiro resuena  
 mi mal, su resplandor i su **belleza**,  
 cuando el sol elevado en más **alteza**  
 ... i entonces m'alegrava l'**aspereza**  
 (Herrera, *Poesía Castellana* 530, ca.1580)

Rhymes [s]~[s]

- 3.6. Después a las noches venciendo los días  
y estando las tierras hinchadas y **gruessas**  
cobrando ya sombras los montes **espessas**  
las silvas y bosques con hojas sombrías  
(*Cancionero de las obras*, 1496)
- 3.7. El sueño diste al coraçon umano,  
para qu'al despertar mas s'**alegrasse**  
del estado gozoso, alegre i sano;  
Que como si de nuevo le **hallasse**,  
haze aquel interval, qu'a passado,  
qu'el nuevo gusto nunca'l bien se **passe**.  
(Garcilaso de la Vega, *Obras 451*, ca. 1530)

Rhymes [z]~[z]

- 3.8. Y porque eres tan **hermosa**  
te quiero mira veras  
quiere me quiere me mas  
pues por ti dexo a mi **esposa**  
y toma toma esta **rosa**  
... ni por mi se te de la **cosa**.  
(*Cancionero de las obras*, 1496)
- 3.9. Confieso qu'es ansi, que nadie es parte  
si Dios, respondió a Job, al hombre **acusa**  
a con justa razon guardar su parte.  
Que quien con la baraja, si ya **vsa**  
de todo su saber, dara turbado  
por mill acusaciones vna **escusa**.  
(Fray Luis de León, *Poesía completa 593*, ca. 1590)

Rhymes [ʃ]~[ʃ]

- 3.10. Porque a los miembros y **anexos**  
De san Juan el de letran  
Todas sus gracias se dan  
Aunque esten aca muy **lexos**.  
(*Cancionero de las obras*, 1496)
- 3.11. Que, como en el amor le fuiste junto,  
justo es qu'en tal estrecho no t'**alexes**  
d'aquel divino i celestial trassunto.  
I antes qu'el peso inútil veloz **dexes**,  
lleva d'el muerto amante la memoria,  
aunque tardando con razón te **quexes**...  
(Herrera, *Poesía castellana 720*, ca. 1580)

Rhymes [ʒ]~[ʒ]

- 3.12. Es un enxambre de **abejas**  
que todas van tras su rey  
es un pastor y una grey  
pastor de cien mil **ovejás**:  
desvelar quemar las **cejás**  
por privar y desprivar  
cien mil consejos **consejas**  
cien mil cosas nuevas **viejás**  
un usar y desusar.  
(*Cancionero de las obras*, 1496)
- 3.13. ¿Es éste'l fruto, Amor, qu'al fin **recojo**  
d'el continuo servicio de mis años?;  
¿está es la cierta fe de tus engaños?;  
¿de tus promesas, éste es el **despojo**?  
!Ai, que bien yo meresco el mal qu'**escojo**,  
pues que cierto los ojos en mis daños,  
i huyo de tus claros desengaños,  
i contra mí tan sin razón m'**enojo**!  
(Herrera, *Poesía castellana 615*, ca. 1580)

As a result of the rhyme studies, the sibilant merger must have started in the sixteenth century and the loss of [ts]~[dz], [s]~[z] and [ʃ]~[ʒ] oppositions was not general until the seventeenth century. Rhymes help to explain that the graphic differences between [ts] (<ce, i, ç>) and [dz] (<z>); [s] (<-ss-, s->) and [z] (<-s->); [ʃ] (<x>) and [ʒ] (<j, ge, i>) suggest a phonological distinction, minor but still present, in the sixteenth century. However, once the devoicing spread in the seventeenth century, the graphemes <z>, <-s-> and <j, ge, i> (of voiced [dz], [z] and [ʒ] respectively) stopped resembling pronunciation practices and simply reflected inherited etymological patterns. See examples below of rhymes with confusion from the seventeenth century.

### Rhymes with **no distinction** [ts]~[dz]

- |   |   |
|---|---|
| <p>3.14. Con la sombra del jarro y de las <b>nueces</b><br/>la sed bien inclinada se alborota;<br/>todo graznate esté con mal de gota,<br/>hasta dejar las cubas en las <b>heces</b>.<br/>Los brindis repetidos y las <b>veces</b><br/>crezcan el alarido y la chacota,<br/>y el agua aguachirle que las peñas trota<br/>buen provecho les haga a rana y <b>peces</b>.<br/>(Quevedo, <i>Un Heráclito</i> 378, 1613)</p> | <p>3.16. Espíritus sanguineos vaporosos<br/>suben del corazón a la <b>cabeza</b>,<br/>y saliendo a los ojos su <b>pureza</b><br/>pasan a los que miran amorosos,<br/>... rayos sintiendo en la sutil <b>belleza</b><br/>como de ajena son <b>naturaleza</b>...<br/>(Lope, <i>Rimas de Tomé de Burguillos</i><br/>790, 1634)</p> |
| <p>3.15. Pasos otro dio al aire, al suelo <b>coces</b>.<br/>Y premiados gradüadamente,<br/>advocaron a sí toda la gente,<br/>... mancebos tan <b>veloces</b>...<br/>(Góngora, <i>Soledad Segunda</i> 407, 1613)</p>   |   |

These cases of rhyme confusion between [ts] and [dz] from the first half of the seventeenth century show that the distinction was not commonly maintained, and it was the voiceless variant that leveled the contrast. Therefore, those words that should have been pronounced with voiced [dz] were pronounced as voiceless and in rhyme with [ts] words: *nueces* (Lat. NUX-NUCIS), *heces* (Lat. FEX-FECIS), *veces* (Lat. VIX-VICIS) with [dz] and *peces* (Lat. PISCIS) with [ts] in 3.14; *coces* (Lat. CALX-CALCIS) with [ts] and *veloces* (Lat. VELOX-VELOCIS) with [dz] in 3.15; *cabeza* (Lat. CAPITIA) with [ts]<sup>38</sup>, *pureza*, *belleza*, *naturaleza* (Lat. suffix -ITIA > -eza) with [dz] in 3.16.

<sup>38</sup> Before the end of the sixteenth century, there were more restrictions to consonantal rhymes than in modern Spanish poetry, and words such as *passa* and *casa*, *cabeça* and *belleza*, *baraja* and *baxa*, *suave* and *sabe* could not rhyme (Menéndez Pidal 1962: 115).

Rhymes with **no distinction** [s]~[z]

- 3.17. Que no me quieren bien todas **confieso**,  
 que yo no soy doblón pra dudallo.  
 ... Si me aborrecen, no será por **eso**.  
 Con quien tiene codicia tengo **seso**,  
 en pagar soy discípulo de el gallo,  
 ... en estas retenciones que **profeso**.  
 (Quevedo, *Un Heráclito* 354, 1613)
- 3.18. Las redes califica menos **gruesas**,  
 Sin romper hilo alguno,  
 Pompa el salmon de las reales **mesas**,  
 Cuando no de los campos de Neptuno...  
 (Góngora, *Soledad Segunda* 435, 1613)
- 3.19. Esta cabeza, cuando viva, tuvo  
 Sobre la arquitectura destes **huesos**  
 carne y cabellos, por quien fueron  
**presos**  
 los ojos que mirándola detuvo.  
 Aquí la rosa de la boca estuvo  
 marchita ua con tan helados **besos**,  
 aquí los ojos de esmeralda **impresos**,  
 color que tanta almas entretuvo.  
 (Lope, *Rimas Sacras* 633, 1614)

The above rhymes from the beginning of the seventeenth century show illustrative examples of the lack of distinction between the voiceless [s] and the voiced [z] as *confieso* (med. Lat. CONFESSARE), *eso* (Lat. IPSUM) and *profeso* (Lat. PROFESSUS) are pronounced with [s] rhyming with *seso* (Lat. SENSUM) with [z] in 3.17; *gruesas* (Lat. GROSSUS) with [s] rhymes with *mesas* (Lat. MENSAM) with [z] in 3.18; *huesos* (Lat. OSSUM) with [s] rhymes with *presos* (Lat. PRENSUS) with [z], *besos* (Lat. BASIUM) with [z] rhymes with *impresos* (Lat. IMPRESSUS) with [s] in 3.19.

---

All sources studied indicate that cabeça was pronounced with [ts], nevertheless Pharies (2015: 133) describes it with [dz]. For more information about rhymes see Domínguez Caparrós (2014).

## Rhymes with no distinction [ʃ]~[ʒ]

3.20. Vase en el mundo dilatando el día  
 en cercos de oro y arboles **rojos**,  
 y en las hojas las perlas del rocío;  
 mas cuando tan hermoso el sol salía  
 anocheció para mis tristes **ojos**...  
 (Lope, *Rimas* 149, 1602)

3.21. Bien sé que al viento doy quejas baldías,  
 pues antes de llegar a tus **orejas**,  
 con ir ardiendo en fuego, vuelven frías.  
 Pero veo también que si me **dejas**  
 el alma, el cuerpo y el honor perdido,  
 no importa que se pierdan estas **quejas**.  
 (Lope, *Rimas* 435, 1602)

3.22. Las aves que leyeren mis tristezas  
 luego pondrán en tono mis **congojas**  
 y cantarán mi mal en las cortezas  
 al son que hiciere el aire con las **hojas**.  
 Cualquier viento, templado a mis ternezas,  
 de las cuerdas, Amor, que no me **aflojas**...  
 (Quevedo, *Un Heráclito* 267, 1613)

3.23. De Alcides lo llevé luego a las plantas  
 que estaban, no muy **lejos**,  
 trezándose el cabello verde a cuantas  
 da el fuego luces y el arroyo **espejos**.  
 (Góngora, *Soledad Primera* 327, 1613)

These verses from the beginning of the seventeenth century indicate that the merger of the prepalatal pair [ʃ]~[ʒ] favored the voiceless [ʃ]: *rojos* (Lat. RUSSUS) with [ʃ] rhymes with *ojos* (Lat. OCULUM) with [ʒ] in 3.20; *orejas* (Lat. AURICULAM) with [ʒ] rhymes with both *dejas* (Lat. LAXARE/DARE) and *quejas* (Lat. \*QUASSIARE/QUASSARE) with [ʃ] in 3.21; both *congojas* (Cat. congoixa) and *aflojas* (Lat. FLUXUS) with [ʃ] rhyme with *hojas* (Lat. FOLIAM) with [ʒ] in 3.22; and *lejos* (Lat. LAXIUS) with [ʃ] rhymes with *espejos* (Lat. SPECULUM) with [ʒ] in 3.23.

Consequently, the results from the rhyme corpus analysis delay the generalization of the confusion to the seventeenth century, while the opinions of grammarians and scholars place it at the end of the sixteenth century. See summary Table 5.

Rhyme analysis (following pronunciation)	
15 <sup>th</sup> cent.	Clear distinction between [s]~[z], [ʃ]~[ʒ], and [ts]~[dz]
16 <sup>th</sup> cent.	Sibilant merger began. Minor phenomenon at the end of 16th cent.
17 <sup>th</sup> cent.	Sibilant merger was general. No distinction between voiced/voiceless

Table 5. Chronology of sibilant devoicing according to rhymes.

Considering the opinions of grammarians, treatise-writers, and scholars, the analysis of graphemes and rhymes, and the traditional hypothesis of the history of the language, the chronological changes can be approximately summarized as follow:

	15 <sup>th</sup> cent.	End of 16 <sup>th</sup> cent.	17 <sup>th</sup> cent.
<b>Grammarians</b>	Distinction	The phenomenon is extended and common	No distinction: articulatory levelling General phenomenon
<b>Rhymes</b>	Distinction [s]~[z], [ts]~[dz] and [ʃ]~[ʒ]	The merger is minor	<b>Beginning 17<sup>th</sup> cent.</b> The merger is general
<b>Graphemes</b>	Distinction <ss, s-> ~ <-s-> <c <sup>e,i</sup> , ç> ~ <z> <x> ~ <j, g <sup>e,i</sup> >	The confusion started	<b>Beginning 17<sup>th</sup> cent.</b> Confusion is a minor phenomenon

Table 6. Chronology of sibilant merger based on grammarians, rhymes, and graphemes.

#### 4. Chronological accounts: creation of new sounds

The sibilant merger in the sixteenth century resulted in two new sounds in Spanish, non-existent in other Romance languages: the interdental fricative voiceless [θ] (from the pair [ts]~[dz]) and the velar fricative voiceless [x] (from the pair [ʃ]~[ʒ]). These processes are named interdentalization and velarization, respectively.

Sources on the process of interdentalization are few as grammarians did not elaborate on this change. The first records are from the end of the sixteenth century. Venegas, in 1531, refers to this Greek sound [θ] as interdental; however, he does not relate it to the Spanish <ç>. López de Velasco, in 1582, compares the pronunciation of letter <ç> with the Greek <θ>; therefore, he was noticing some similarities. Cuesta, in 1589, is the first one to confirm an interdental fricative consonant very close to our modern [θ]; nevertheless, it was in its first stages and was not common. There are few records from the seventeenth century about this interdental sound; only Bonet, in 1620, relates an interdental pronunciation for [ʃ], which was perhaps close or equal to modern [θ]. The conclusion is that the interdental [θ], although it seemed to appear around the end of the sixteenth century, was not a common practice during the seventeenth century; it was still very far from the modern *distinción* or *ceceo*. See Fig. 1. for modern distribution.



Fig. 1. Spread of modern *distinción*, *seseo* and *ceceo*.

The velarization, according to written documentation, started to take place at the end of the sixteenth century while coexisting with the predominant palatal pronunciation of [ʃ]; in the seventeenth century, after a long period of concurrence, the shift from [ʃ] to [x] took place and succeeded in imposing itself as the norm. Grammarians such as Torquemada, López de Velasco and Oudin, from the sixteenth century, describe the letters <x>, <j> and <ge, i> with a back-throat pronunciation, denoting both palatal and almost velar pronunciation at that time. Writers such as Jiménez Patón and Correas, from the seventeenth century, report the velar pronunciation for [ʃ] and [ʒ] (Patón) and as an extension of the <h> in Andalusian (Correas). It is difficult to determine exactly when the velar [x] became standard, displacing the palatal articulation, as there are not that many documented indications.

Chronology of interdentalization, velarization and devoicing		
Creation of new phonemes and sounds		Loss of voiced sibilants
/θ/ and /x/		
Rhyme analysis	no conclusions	confusion was early in the north
Grapheme analysis		
Grammarians' sources		17th cent. confusion was common and wide spread
end 16 <sup>th</sup> cent.	phenomenon started	
• [ʃ] > [θ] 17 <sup>th</sup> cent.	still a minor phenomenon late distribution and generalization	
16 <sup>th</sup> cent.	starting phenomenon	
• [ʃ] > [x] mid 17 <sup>th</sup> cent.	phenomenon spread	

Table 7. Chronology of interdentalization, velarization, and devoicing.

### 5. Updated modern chronological accounts

Some discrepancies emerge concerning when the devoicing spread and consequently prompted other derivative phonetic changes. In general terms, the sibilant merger originated early in the north and its generalization was completed in the seventeenth century. Most of the earlier scholars maintain that it was a general phenomenon before the end of the sixteenth century. Menéndez Pidal (1940: 35) places it with the so-called ‘phonetic revolution’ at the end of the sixteenth century, based on literary works. Martinet believes its completion was in the sixteenth century. Alarcos (1950: 270) states that the lack of distinction between voiced/voiceless differentiated the Old Castile and Toledo norms during the first half of the sixteenth century, and that eventually the Castile norm was imposed on Toledo and the rest of the Spanish-speaking territories during the sixteenth century. Catalán (1957: 114) thinks that the devoicing of the affricates (and consequently the alveolars and palatals) was done in the last third of the sixteenth century. Penny (2000: 42) defends that the devoicing of the three pairs happened before the end of the Medieval Ages in some Castilian areas (in Cantabria and north of Burgos), and that from there it spread southwards until it became the norm in the second half of the sixteenth century. Cano Aguilar (1988: 238) describes the devoicing as a general phenomenon in the fifteenth century (or even before) and asserts that its regularization was not until the second half of the sixteenth century.

Other philologists delay the phenomenon to the seventeenth century. Among them, Cuervo (1987: 344) proposes that the merger between voiceless and voiced sibilants was not completed until the first half of the seventeenth century. A. Alonso (1951a: 38) also confirms that, although the devoicing was an old phenomenon in certain areas, its generalization and completion was much later; the devoicing was still in process at the end of the sixteenth century, and the voiceless sibilants were only consolidated in the seventeenth century.

On the other hand, based on more recent and comprehensive documentary studies, other authors suggest that the devoicing and deaffrication occurred much earlier than prior studies have suggested. Frago brings forth many textual examples of graphic confusion as early as the last quarter of the thirteenth century concluding that *seseo* was part of the Andalusia speech at the end of the fifteenth century (1992: 118). Kauffeld, gathering evidence from examples of confusion of <s> or <ss> for <ç, z> as early as

1398, indicates a considerable presence of *seseo* in both Seville and Cordoba from the fourteenth century onward and dates *seseo* as well-established throughout the south by the end of the fifteenth century (2016: 187). In addition, this author supplies us with early attestations of *seseo*, dating to 1544 and 1545, in the colonial New Spain corpus. Also, Parodi provides even earlier documentation of *seseo* in the Spanish of New Spain as early as 1523 (1976: 124)<sup>39</sup>. D. Alonso (1962: 141) explains that in the north the devoicing of sounds [z], [dz] and [ʒ] was advanced in the fourteenth and fifteenth centuries, but he does not say anything about its spread to the south.

The sibilant confusion was also evident in early colonial Spanish texts. The documentary record shows *seseo* as well-rooted in early American Spanish speech, appearing in the writings of people of all social classes and ethnic groups and indicating a complete graphic confusion in all positions within the word<sup>40</sup>. Furthermore, this confusion applies to both Indian and Creole writers, and to those Spaniards not originally from *seseo*-areas, which further confirms its strong hold in the speech practices of the area (Kauffeld 2016: 189).

<b>Sibilant Devoicing Development: Chronological Interpretations</b>		
<b>Frago Gracia (1992-3)</b>	There are graphic confusions in the last quarter of the 13th cent. End of the 15th cent. <i>seseo</i> in Seville, Cordoba and the south.	<b>13th cent.</b>
<b>Kauffeld (2011, 2016)</b>	14th cent. onward <i>seseo</i> in Seville and Cordoba. End of the 15th cent. <i>seseo</i> was general in Andalusian dialect.	
<b>D. Alonso (1962)</b>	Devoicing was normal in the north during 14th and 15th cent.	<b>14th cent</b>
<b>Penny (2000)</b>	<ul style="list-style-type: none"> <li>• Devoicing happened before the end of Middle Ages in the north (Cantabria and Burgos).</li> <li>• 2nd half of the 16th cent. devoicing was the norm.</li> </ul>	<b>15th cent.</b>

<sup>39</sup> “Me parece que no solo puede adelantarse [...] en medio siglo la fecha del ensordecimiento, sino que además es posible sostener que éste y el *seseo* coexistieron desde los primeros años en que se introdujo el castellano en América” (Parodi 1976: 124).

<sup>40</sup> See Cock (1969) and his studies on *seseo* in New Granada from 1550-1650.

<b>Cano Aguilar (2004)</b>	It was a regular phenomenon in the 15th cent.; however, it was widespread in the second half of the 16th cent.	 <b>16th cent.</b>
<b>Martinet (1951-52)</b>	16th cent. it is a widespread phenomenon.	
<b>Alarcos (1950)</b>	<ul style="list-style-type: none"> <li>• 1st half of the 16th cent. there was opposition in the <b>Toledo</b> norm</li> <li>• 1st half of the 16th cent. there was <b>no</b> opposition in the <b>Castile</b> norm.</li> <li>• Throughout the 16th cent. the Castile norm became widespread.</li> </ul>	
<b>Catalán (1957)</b>	Devoicing was general in the last third of the 16th cent.	
<b>Bradley et al. (2006)</b>	Elimination of voiced sibilants by the 1580s.	
<b>Menéndez Pidal (1940)</b>	By the end of 16th cent. devoicing is generalized.	 <b>17th cent.</b>
<b>Lloyd (1987)</b>	End of 16th cent.	
<b>Cuervo (1987)</b>	It was not common until the first half of the 17th cent.	
<b>A. Alonso (1951a, 1955)</b>	Devoicing was happening at the end of the 16th cent. but it was widespread in all the territories in the 17th cent.	

Table 8. Sibilant devoicing development according to researchers.

However, when it comes to date the development of interdentalization ([θ]) and velarization ([x]), most authors agree. Corpus analysis, grammarians' attestations, and traditional studies postulate that they are late phenomena, which did not generalize until the second half of the seventeenth century or later, with their origins at the end of the sixteenth century. Alarcos (1950: 272) suggests that the interdentalization of [ʃ] was complete in the second part of the seventeenth century approximately. Lapesa (1981: 373) posits that the interdental articulation was practiced in the north in the second half of the sixteenth century, while in Toledo and other areas the levelling was not completed until the first third of the seventeenth century. Lloyd (1987: 531) indicates that, although there is evidence of an early interdental pronunciation for the letter <ç> from the first years of the sixteenth century, its generalization did not consolidate until the beginning of the eighteenth century. Likewise, Cano Aguilar (1988: 240) places this phenomenon at the

end of the seventeenth century or even at the beginning of the eighteenth century. A. Alonso (1955: 336) proposes that the *ceceo* and the *distinción* were not common until the middle of the eighteenth century, although there were some early traces in the mid sixteenth century.

Turning to velarization, Lapesa (1981: 379) considers that the imposition of the velar [x] was not effective until the first third of the seventeenth century after a long period of coexistence with the palatal [j]. Alarcos (1950: 271) dates this late phenomenon to the seventeenth century. Kiddle (1975: 74) specifies that the modern sound [x] becomes general after 1660. Lloyd (1987: 544) indicates that it was during the middle and end of the sixteenth century when [x] was spread, and it was in the middle of the seventeenth century when it became a general practice. Cano Aguilar (1988: 239) implies that this occurred in the first decades of the seventeenth century.

Bearing in mind that the first signs of devoicing and its expansion did not all develop simultaneously, at the same rate or with the same origin, we can make some conclusions about the sibilant merger and devoicing. See Table 9.

General conclusions regarding the sibilant merger and development				
	14th cent.	End 15th cent.	End 16th cent.	Beginning 17th cent.
<b>Traditional-Prior Studies</b>	---	---	General phenomenon	Devoicing was generalized.  No one made the distinction in speech.
<b>Recent Documentary Studies</b>	Some graphic confusions  Devoicing in the north	Devoicing was normal  <i>Seseo</i> general in Seville, Cordoba and the south	It was a widespread phenomenon but was not general in all areas of the Spanish-speaking peninsula.	

Table 9. Conclusions regarding the sibilant merger and development.

### 6. Tracking Old Spanish Sibilants: Judeo-Spanish

It is always of great interest to philologists to analyze Judeo-Spanish as a record of many medieval phonetic changes that took place in Old Spanish. While those changes transitioned to what is today modern Spanish, some of them were preserved in Judeo-Spanish as it was the language spoken by those Spanish Jews expelled from Castile-Leon in 1492. Cut off from the Iberian Peninsula, they carried various peninsular dialects from their regions of origin (Aragon, Castile, Catalonia, etc.) to their new surroundings. Most Sephardis took the road east towards the land of the Ottoman Empire and settled in major cities: Istanbul, Salonica, Izmir, Sofia, Monastir, Sarajevo and others, some of which became Sephardic centers. In contact with other languages, such as Turkish, Serbo-Croatian, Bulgarian and Greek, their language underwent a process of koineization in which Castilian turned out to be dominant, and this koine became the *lingua franca* of the Mediterranean Jewish world, used for business, at the synagogue, in education and in general community life (Bürki 2013: 336). Their language, well-kept by minority groups, is still used, mostly in songs, prayers, and selective media sources. The survival of Judeo-Spanish shows unprecedented historical value to study language variation in the fifteenth century.

Unlike modern Spanish, Judeo-Spanish has kept three pairs of sibilants from medieval Spanish in the pronunciation of both fricatives and affricates. The voiced sound [z], pronounced differently from the voiceless [s], is used when <s> is in intervocalic position as in *casa* /káza/ ‘house’, *beso* /bézo/ ‘kiss’. This is the case in modern Portuguese, e.g. *casa* /z/ ‘house’ versus *cassa* /s/ ‘gauze’; and in French, e.g. *poisson* /s/ ‘fish’ versus *poison* /z/ ‘poison’. Some scholars argue that the neutralization between sounds [s] and [z] is regular in some varieties of Judeo-Spanish, as it happens in Polish Judeo-Spanish (Bürki 2014: 113). Judeo-Spanish /s/ and /z/ are phonemes, meaning they have a contrastive value and can differentiate word meaning.

	voiceless	voiced	voiceless	voiced
	alveolar		(pre)palatal	
<b>fricative</b>	/s/ e.g. <i>abras-so</i>  'hug'	/z/ e.g. <i>beso</i>  'kiss'	/ʃ/ e.g. <i>debasho</i>  'under'	/ʒ/ e.g. <i>ojos</i>  'eyes'
<b>affricate</b>			/tʃ/ e.g. <i>chiko</i>  'small'	/dʒ/ e.g. <i>yente</i>  'people'

Table 10. Judeo-Spanish sibilants.

Judeo-Spanish also kept the distinction between the Old Spanish prepalatal sibilant sounds [ʃ] and [ʒ] in words such as *jabón* [ʃaβón] ‘soap’, *deshó* [defó] ‘to leave’, *trusheron* [truféron] mod. *trajeron* ‘to bring, brought,’ and *muzer* [muzér] ‘woman’, *fijo* [fiʒo] ‘son’. In Spanish, these two sibilants converged in the voiceless [ʃ], which shifted its point of articulation further back becoming a velar fricative sound [x], or an uvular fricative [χ] in the north-central variety and an aspiration [h] in the south, merging with the aspiration descending from Latin initial f-. Due to the geographical proximity, Moroccan Judeo-Spanish closely follows Spanish evolution and they also speak pronouncing the velar sound [x].

In Judeo-Spanish, the prepalatal affricates /tʃ/ and /dʒ/ maintained their phonological value, and the voiced sound [dʒ] survived in words such as *yente* mod. *gente* ‘people’, *yuntos* mod. *juntos* ‘together’, while it was lost in Spanish.

As in the Castilian variety, Judeo-Spanish lost the dento-alveolar affricate pair [ts] and [dz]. This pair changed to the alveolar fricatives [s] and [z], respectively, in words such as *sinco*, *cinco* [sínko] ‘five’, *senar*, *cenar* [senár] ‘to have dinner’ (following the same tendency of the Andalusian *seseo* of the south) and *casa* [káza] ‘house’. Although Judeo-Spanish kept six of the seven medieval Spanish sibilants, their distribution in the spoken language was slightly different than that of medieval Castilian of the fifteenth century. These six sounds [s], [z], [ʃ], [ʒ], [tʃ] and [dʒ] were kept and spoken in the Judeo-Spanish variety, but not in the same phonetic contexts as Old Spanish. See summary in Fig. 2.

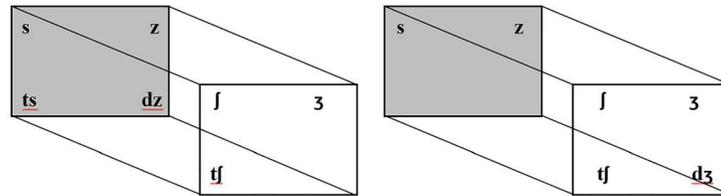


Fig. 2. Old Spanish and Judeo-Spanish Sibilants

Following the Andalusian variety, Judeo-Spanish maintained two of the four dento-alveolar and alveolar medieval sibilant sounds dropping the affricates [ts] and [dz]; but keeping the voiced distinction between [s] and [z], without any further merger into just a single phoneme /s/ as in Andalusian *seseo*, and without evolving into the two resulting fricative phonemes of the Castilian *distinción* between /s/ and /θ/. Castilian speakers distinguish words such as *casa/caza* ‘house/hunting’, *caso/cazo* ‘case/pan’ and *laso/lazo* ‘straight/bow’ as minimal pairs.

examples	calça	fizo	co <u>ssa</u>	ca <u>sa</u>
sounds 14 <sup>th</sup> cent.	[ts]	[dz]	[s]	[z]
16 <sup>th</sup> cent.		[ʃ]		[ʒ]
17 <sup>th</sup> cent.			[ʃ]	[ʒ]
			[s]	[z]
			<u>Andalusian seseo</u>	

examples	calça	fizo	co <u>ssa</u>	ca <u>sa</u>
sounds 14 <sup>th</sup> cent.	[ts]	[dz]	[s]	[z]
16 <sup>th</sup> cent.		[ʃ]		[ʒ]
		[s]		[z]
			[s]	[z]
			<u>Judeo-Spanish</u>	

Fig. 3. Andalusian *seseo* and Judeo-Spanish [s] and [z].

Although Judeo-Spanish underwent important linguistic changes in recent centuries, linked to geopolitical circumstances, Sephardis succeeded

in keeping their vernacular language, with their first major signs of literary creativity in the eighteenth century. Today, it is an almost obsolete minority language, but with great sociolinguistic value and a key role in diachronic philology.

Far from sustaining a chauvinistic Iberianism, the Sephardis developed cross-ethnic language relations in their Mediterranean settlements; nevertheless, they surprisingly preserved their tight traditions, identity, and old language in complex and finely graded forms of hybridism. Their ability to cross cultural borders while still maintaining cohesion as a minority group stands out as particularly remarkable. In decline, the Sephardis share the fate of other diasporic minorities. The seduction of assimilation and the advent of modernity have contributed to the erosion of the bonds of the Sephardic collective identification and, consequently, their language.

### **7. Tracking sibilant development: overview of other Romance Languages**

It is worth noting here that Romance languages do not derive from classical Latin, but from everyday colloquial ‘vulgar’ (or popular) Latin, carried by Roman soldiers, merchants, and slaves into the conquered provinces of the Empire. This version became the common tongue in the Mediterranean with striking resemblances to modern Italian. The political decentralization of the later Empire allowed regional variations and the formation of dialects that eventually drifted apart, becoming mutually unintelligible and resulting in new languages. Nevertheless, these languages kept strong similarities in grammar, vocabulary, and pronunciation. One of these commonalities can be reconstructed by the evolution of sibilant consonants.

Geographically close Romance languages like Portuguese, French, and Italian differ from Spanish in maintaining voiced sibilants alongside the unvoiced. The drastic change affecting Old Spanish sibilants during the course of the sixteenth century did not occur in other sister languages. Besides, the emerging interdental sound [θ] (from pair [ts]~[dz] with its advancement of the point of contact to between the teeth), and the velar [x] (from pair [ʃ]~[ç] with its retreat to the velar area) developed only in Spanish.

Taking these pairs into account, the main contrasts of sibilant consonants can be summarized in general terms with the following representative examples:

a) The pair of voiced and unvoiced fricative alveolar phonemes /s/~/z/ was kept in most Romance languages, mainly represented graphically by <s>; /s/ originated as Latin *s* or *ss* in all positions and /z/ as intervocalic -s- or *s* preceded by a voiced consonant. French evolved to a silent sound in word final position <-s>. Portuguese developed an unvoiced prepalatal [ʃ] in coda and in word final position, and a voiced prepalatal [ʒ] in intervocalic position.

The changes *NS* > *s* [z] and *PS, RS* > *ss* [s] occurred very early in Latin as is attested in numerous Roman inscriptions and by the concordance with Modern Romance. In the case of *ns*, the loss of the *n* was balanced by a closing of the preceding vowel (as in Portuguese *mês*). Compare examples in Table 11.

Latin	Spanish	Portuguese	French	Italian	English Cognate
SANUM [s]	sano [s]	são [s]	sain [s]	sano [s]	sane ‘healthy’
PASSATUM [s]	pasado [s]	passado [s]	passé [s]	passato [s]	past [s]
BASIARE [s]	besar [s]	beijar [ʒ]	baiser [z]	baciare [tʃ]	--- ‘to kiss’
PENSARE [s] (PESARE)	pesar [s]	pesar [z]	peser [z]	pesare [z]	pensive
MENSEN [s]	mes [s]	mês [ʃ]	mois	mese [z]	menstrual [s]
PRORSA [s]	prosa [s]	prosa [z]	prose [z]	prosa [z]	prose

Table 11. Examples of [s] and [z].

b) The affricate pair /ts/~/dz/ presents more variations. Romance languages did not develop the interdental Spanish sound [θ], but they frequently resulted in a voiced fricative sound [s] as in the Andalusian *seseo* variation.

These two phonemes essentially originated from Latin combinations *CE, CI, TE, TI*, and sporadically from *DE, DI, GE, GI*. The voiced sound [dz] occurred mainly in intervocalic position or preceded by a voiced consonant like *n* or *r*.

In the initial position or after consonants, the letter <c> from *CE, CI* survives with different pronunciations: palatal [tʃ] in Italian and alveolar [s] in Portuguese and French. In the intervocalic position, Portuguese and French voice it to [z], spelling it <z> and <s> respectively. In the final position, we find <-z> pronounced as prepalatal [ʒ] in Portuguese; in French <-ix> or <-is> with a silent consonant.

Latin *c* was pronounced with [k]; however, over the course of time, and in combination with [e] and [i], the tongue made contact further forward than before other vowels, resulting in a more palatal pronunciation, coming to palatal [tʃ], which is the modern Italian pronunciation as in *noce* [nótʃe] ‘nut’ (Latin NUCEM). The other three languages carried the process further: in Portuguese and French, the pronunciation went from [tʃ] to [ts] to the alveolars [s] or [z]; similarly, in Andalusian Spanish it went to [s]. Old Spanish shared dento-alveolar [ts] with Old French and Old Portuguese (Bowman 1980: 33).

In modern Spanish, the Latin combination *CE*, *CI* and *TE*, *TI* resulted in the interdental sound [θ] (and in [s] in *seseo*), with the graphemes <ce, ci> and <z>. The regular development of *TE*, *TI* was [z] in Portuguese represented by <z> and sometimes with <ç>, pronounced [s] (confused with *ce*, *ci*); [ts] or [dz] in Italian with the grapheme <zz>; and [s] in French (from Old French [ts]) with various spellings <c>, <ç>, <ss>, and <s> (which could be [z] between vowels as *poison* or silent at the end of a word as *puits*, *palais*) (Bowman 1980: 141). See Table 12.

Latin	Spanish	Portuguese	French	Italian	English Cognate
CENTUM [k]	ciento [θ], [s]	cento [s]	cent [s]	cento [tʃ]	cent
CIVITATEM [k]	ciudad [θ], [s]	cidade [s]	cit�� [s]	citt�� [tʃ]	city
COCINAM [k]	cocina [θ], [s]	cozinha [z]	cuisine [s]	cucina [tʃ]	kitchen
DICERE [k]	decir [θ], [s]	dezir [z]	dire	dire	diction ‘to say’
PLACERE [k]	placer [θ], [s]	prazer [z]	plaisir [z]	piacere [tʃ]	pleasure
MARTIUM [ti]	marzo [θ], [s] O. Sp. mar��o	mar��o [s]	mars [s]	marzo [dz]	March
TRISTITIA [ti]	tristeza [θ], [s]	tristeza [z]	tristesse [s]	tristezza [ddz]	--- ‘sadness’
PISCEM, PICE [k] *PISCIONEM	pez [θ], [s]	pez [z]	poisson [s] poix	pece [tʃ]	pitch
CRUCEM [k]	cruz [θ], [s]	cruz [z]	croix	croce [tʃ]	cross
RADICEM [k]	ra��z [θ], [s]	raiz [z]	racine [s]	radice [tʃ]	radish ‘root’

Table 12. Examples of the origins of [θ].

c) The fricative alveopalatal pair /ʃ/~/ʒ/, lost in Spanish, was kept in other Romance languages with a palatal or alveolar articulation of some sort. After the devoicing, it become a velar sound [x] in Spanish, written with <j> or <ge, gi >. The pair sources were Latin x, PSE, PSI, SSE, SSI and C'L, G'L, LI, IO, IU, respectively; nevertheless, in some Spanish popular words, there is an anti-etymological /x/ spelt with <j> from the fusion with Arabic *shin* as in *jabón* 'soap'.

The prepalatal sound [ʃ] derived from intervocalic Latin x gave Italian double [ss] written as <ss> (but [ʃ] for <sce>, <sci>); Portuguese [ʃ] for <x> or [s] for <ss>; and French [s] for <s(s)>. The Latin groups PSE, PSI, SSE, SSI had similar solutions; in French, we have a voiced prepalatal [ʒ] for <ge>.

The Latin combination C'L, resulting from the fall of an unstressed vowel, has a regular development in Romance, giving palatal solutions. It becomes <lh> [ʎ] in Portuguese, <cchi> [k:j] in Italian, and <il(le)> [i:j] in French. Spanish and Portuguese also palatalized the Latin group G'L as in *teja* 'tile'; the exceptions are mainly related to ecclesiastical words which show semi-developments such as *regla* 'rule' or *siglo* 'century'.

The Latin group LI developed into <lh> [ʎ] in Portuguese, <gli> [ʎ] in Italian, and <il(l)> [i:j] in French. In dialectal Spanish, for words written with <ll>, there is a lateral pronunciation [ʎ] as in Portuguese and Italian, for instance in *batalla* 'battle'. In other words, LI gives the same results as C'L in all but Italian, where it becomes <cchi> [ki] (Bowman 1980: 84).

Finally, the Latin group IO, IU, survives in Italian as affricate [dʒ] spelled <g(e, i)->, and in Portuguese and French as fricative [ʒ] spelled <g-> or <j->. In Spanish the Latin initial I- (as well as initial GE-, GI-, and DE-, DI-) shows three developments: before *e* and *a* the result is palatal [j], spelled <y> as in *ya* (< iam) 'already', *yema* (<gemmam) 'gem'; if that vowel is unstressed, then the sound falls as in *hermano* (< germanum) 'brother'; and before *o*, *u*, the result is the velar sound [x] written as <j>.

Latin	Spanish	Portuguese	French	Italian	English Cognate
AXEM [ks]	eje [x] O. Sp. [ʃ]	ixo [ʃ]	essieu [s]	asse [ss]	axis
BASSIARE [ssi]	bajar [x] O. Sp. [ʃ]	baixar [ʃ]	baisser [s]	abassare [ss]	--- 'to descend'
RUSSEUM [sse]	rojo [x] O. Sp. [ʃ]	roxo [ʃ]	rouge [ʒ]	rosso [ss]	russet 'red'
OCULUM [k'l]	ojo [x] O. Sp. [ʒ]	olho [ʎ]	oeil [i:j]	occhio [k:j]	oculist
TEGULAM [g'l]	teja [x] O. Sp. [ʒ]	telha [ʎ]	tuile [il]	tegola [g]	tile
REGULAM [g'l]	regla, reja [x] O. Sp. [ʒ]	relha [ʎ]	O. Fr. reille, grille [i:j]	griglia [ʎ]	rail
FOLIAM [li]	hoja [x] O. Sp. [ʒ]	folha [ʎ]	feuille [i:j]	foglia [ʎ]	foliage, tinfoil
JOCUM [io]	juego [x] O. Sp. [ʒ]	jûgo [ʒ]	jeu [ʒ]	giuoco [dʒ]	joke 'game'
JUVENEM [iu]	joven [x] O. Sp. [ʒ]	joven [ʒ]	jeune [ʒ]	giovane [dʒ]	juvenile
GENTEM [g]	gente [x] O. Sp. [dʒ]	gente [ʒ]	gent [ʒ]	gente [dʒ]	gentile

Table 13. Examples of the origins of [x].

d) The palatal affricates [tʃ]~[dʒ] had various developments and sources depending on the languages. In Spanish, the sibilant sound [tʃ] was not affected (neither was [s]); the voiced correspondent [dʒ] devoiced and merged with the solution for [ʃ], [x], losing its phonemic contrast; today [dʒ] is an allophone of [j] as in un *yate* 'a yacht'. [tʃ] originated from the Latin groups CT, FL, PL and C'L (when preceded by a consonant as *macho* < MASCULUM) or from confusion with [ts], and is spelled as <ch>. Many words like *fruto* 'fruit', *respeto* 'respect' show semi-learned development, others like *acto* 'act', *contacto* 'contact', etc., are Latinisms; in both cases there was no palatalization.

Old French [tʃ] developed from CA when initial or preceded by an unstressed vowel that dropped early, and also from PI. Old French [dʒ] came from many Latin groups: GA when initial or preceded by an unstressed

vowel, from *ca*, from the suffix *-ATICU*, from *BI*, *MI*, *MNI*, and *VI*, from initial *G-*, *J-* *DI-* or *GI-* and from *R'G*, *RDI*, *NGI*, and *RGI*. During the thirteenth century, the French sibilants underwent simple changes that have survived to this day: [tʃ] became [ʃ], [dʒ] became [ʒ], and [ts] became [s]; it was a regular deaffrication process. With few exceptions, [s] came to be silent before consonants and at the end of a word; and when linked in speech to a following word beginning with a vowel, it becomes voiced [z] as in *les arbres* ‘the trees’ (Bowman 1980: 8).

Unlike Old (and modern) Spanish and Old French, Portuguese did not develop the palatal unvoiced [tʃ]; nor did it develop the voiced [dʒ], although it kept the contrast between fricatives [ʃ] and [ʒ]. Italian developed both affricates: [tʃ] spelled <ce, ci> from Latin *ce*, *ci*, and [dʒ] spelled as <ge, gi> from *ge*, *gi*, *de*, *di*, and *io*, *iu*. Compare examples in Table 14.

Latin	Spanish	Portuguese	French	Italian	English Cognate
NOCTEM [kt]	noche [tʃ]	noite [it]	nuit	notte [tt]	nocturn(al)
CANEM [k]	can [k]	cão [k]	chien [ʃ]	cane [k]	canine
VACCAM [k]	vaca [k]	vaca [k]	vache [ʃ]	vacca [kk]	--- ‘cow’
RABIAM [bi]	rabia	raiva	rage [ʒ]	rabbia [bb]	rage
CLAMARE [kl]	clamar, llamar [χ], /j/	chamar [ʃ]	clamer [kl]	chiamara [ki]	clamor, claim
FLAMMAN [fl]	flama, llama [χ], /j/	chama [ʃ]	flame [fl]	fiamma [fi]	flame
FACIE *FACIA [ki]	haz [θ], [s]	face [s]	face [s]	faccia [tʃ]	face
DULCE [ke]	dulce [θ], [s]	doce [s]	douce [s]	dolce [tʃ]	dulcet
DIURNU [di]	diurno [di]	diurnu [di]	jorn [ʒ]	giorno [dʒ]	diurnal, journal
DIURNALE [di]	jornal [x] O. Sp. [ʒ]	jornal [ʒ]	journal [ʒ]	giornale [dʒ]	diurnal, journal
JOCARE [io]	jugar [x]	jogar [ʒ]	joer [ʒ]	giocare [dʒ]	to joke ‘to play’
JUDAEU [iu]	judío [x]	judeu [ʒ]	juif [ʒ]	giudeo [dʒ]	Jew

Table 14. Examples of palatalization.

This summary is a glimpse of the development of sibilants in Romance languages. Many other omissions (such as *seseo* in Catalan and in the non-Romance Basque; and the recently discovered *seseo* in center areas of the Peninsula<sup>41</sup>) have been left out due to the short extension of this paper.

### **8. Stabilizing the language: the RAE's graphic standardization of sibilants**

In 1713 with the creation of the Royal Spanish Academy, abbreviated RAE, and its later publications of the *Dictionary of Authorities*, *DRAE*, (1726-39), *Orthography* (1741), and *Grammar* (1771), a strong effort emerged to standardize the language according to the Castile-Madrid norm as the prestige variety. The RAE started as a royal institution responsible for overseeing the Spanish language with their motto: 'to clean, fix and give splendor'. Its main purpose was to fix the voices and vocabularies of the Castilian language with propriety, elegance and purity. The RAE began by establishing orthographic rules, which have undergone continued adjustments and several reforms since the eighteenth century.

During the sixteenth and seventeenth centuries, the graphic system was basically the same as Alfonso X's, with oppositions such as <c> or <ç> and <z, -s-> and <-ss-, x> and <g, j>, even though such pairs had been reduced to one phoneme in the pronunciation. One of the first rules, in 1726, was to eliminate the *cedilla*, <ç>, and distribute the use of <ce, ci > and <za, zo, zu> as in modern Spanish. This letter was kept in French and Portuguese; nevertheless, in proper names such as *Açores*, *Curaçao* or *Alençon*, the Spanish spellings are Azores, Curasao, and Alenzón. In 1763, the double <-ss-> disappeared, being replaced by the single <s> as in *esse* 'that' > *ese*, *tuviessa* 'had' > *tuviese*. In 1815, the letter <x> was allocated to the sound combinations [ks] and [gs], as in Latin, (i.e. *examen*, *exención*); the new velar sound [x] is written with <j> as in *caxa* 'box' > *caja*, *lexos* 'far' > *lejos*, together with the letters <ge, gi> for those cases with etymological Latin GE, GI, as *gente* 'people', *género* 'gender', etc. Words such as México, Oaxaca, versus Méjico, Oajaca, etc., accept both spellings for complex historic-political reasons<sup>42</sup>. This was the last graphic change to end the distinction between voiced and unvoiced sibilants,

<sup>41</sup> See Vázquez Balonga (2015: 201-207)

<sup>42</sup> Véase Junco, *La jota de Méjico y otras danzas* (1967).

which stopped being a common practice in speech two centuries before (Lapesa 1981: 423).

This spelling reform in the eighteenth century eliminated <ç, ss> and <x> (for [x]); however, the orthography has never differentiated between the Castilian system and the *seseo* and *ceceo* variants. Because the graphic distinction between <s> and <z/ce, ci> does not have a phonemic contrast in *seseo* dialects, misspellings are common. On the other hand, writers who want to parody rural *ceceo* speakers will use an orthographic z instead of s to indicate the interdental articulation as in *zi*, *zeñor* [θí θeɲór] instead of *sí*, *señor* [sí seɲór] ‘yes, sir’. See Table 15.

orthography	<i>distinción</i>	<i>ceceo</i>	<i>seseo</i>
cocer ‘to boil’	[koθér]	[koθér]	[kosér]
coser ‘to sew’	[kosér]	[koθér]	[kosér]
censura ‘censure’	[θensúra]	[θenθúra]	[sensúra]
sincero ‘sincere’	[sinθéro]	[θinθéro]	[sinséro]

Table 15. Examples of *distinción*, *ceceo*, and *seseo*.

By 1815 the orthography became fixed as in modern Spanish. Later changes have been reduced to accentuation and minor instances. Throughout its history, RAE has mostly kept a conservative approach with a faithful respect for etymology and unity. Still, since 2012, RAE has shown some incipient flexibility in keeping up with the times and accepting *estadounidismos* as part of the Spanish lexicon. Including the Spanish of the United States as one of the Spanish-speaking varieties and giving the country its own Language Academy in 1973 came after a long-fought battle against RAE traditionalism. This accommodation entails a prosperous future for the country that will soon have the most Spanish-speakers.

Although its origins were based on Castile Spanish, today the RAE works to guarantee a common standard across many countries in accordance with its founding goal: making sure that the changes do not break the essential unity it enjoys throughout the Spanish-speaking world. Since 1992, the RAE and the other twenty-one language Academies have collaborated in producing the Dictionary of the Spanish Language, adding, deleting, or modifying words according to language changes in all geographical varieties of Spanish.

### 9. Conclusions

The evolution of the Old Spanish sibilants distinguished the two principal linguistic varieties of Spanish, Peninsular and American, and characterizes Spanish versus other Romance languages. After considerable vacillation, the sibilant merger that started in the north of the peninsula extended towards the south and was completed by the end of the seventeenth century. Nevertheless, the Madrid prestige-court variant imposed in the south overlapped some other tendencies that today define the Andalusian dialects. Whereas some parts of Andalusia use only [θ] and say *zí*, *zeñor* [θí θepór], other parts, together with the whole of Spanish America (and other peninsular Romance languages), only use [s] and say *sine* [síne] for *cine* ‘cinema’. Castilian Spanish with its apicoalveolar [ʃ] clearly distinguishes the consonants [θ] and [s] as in *cien* ‘hundred’ and *sien* ‘temple’. In this respect, the southern region offers a close parallel with Portuguese, Catalan, Galician, and French.

We have concluded that the similarities in pronunciation between the sibilant pairs threatened their distinction, with devoicing being the first step in their neutralization. As a result, three solutions emerged to continue that opposition: the Castilian opposition of [θ]~[s], the Andalusian leveling in [s] (for *seseo*), and the later creation of the velar [x]; with both [θ] and [x] being unique in Romance. The new Castilian system attained rapid prestige and overthrew the Seville *seseo* speech; however, it was the latter that made its way to transatlantic territories. It is still an enigma for scholars to justify how and why this non-conformist Castilian practice, distant from communal and Court norms, flourished and imposed itself.

Without indulging in philological abstractions, my purpose here has been to clearly illustrate the primary causes for the sibilant system’s transformation, development, and ultimate stabilization under a comprehensive chronological framework backed by recent research. The historical complexity of this phenomenon raises as many questions as it solves. Nevertheless, the goal here has been to facilitate the reader’s exploration of the topic from a descriptive perspective. The sibilant reorganization in late medieval and early modern Spanish is a fundamental topic for understanding the famous northern/southern dialect split in the Iberian Peninsula and its implications for the development of Spanish in the American colonies.

## REFERENCES

- Alarcos Llorach, Emilio. 1991 [1950]. “Fonología diacrónica del español.” In *Fonología española*. Madrid: Gredos.
- . 1988. “De nuevo sobre los cambios fonéticos del siglo XVI”. In *Actas del I Congreso Internacional de Historia de la Lengua Española*, ed. by M. Ariza, A. Salvador & A. Vindas. Madrid: Arco Libros. 47-59.
- . 1951. *Gramática Estructural*. Madrid: Gredos.
- Aleza Izquierdo, Milagros and Enguita Utrilla, José (coords.). *La lengua española en América: norma y usos actuales*. Valencia: Universitat de Valencia, 2010.
- Alonso, Amado. 1967 [1955]. *De la pronunciación medieval a la moderna en español I y II*. Madrid: Gredos.
- . 1967b. “La base lingüística del español americano”. *ELTH Estudios Lingüísticos. Temas hispanoamericanos*: 7-60
- . 1951a. “Cronología de la igualación c-z en Española.” *Hispanic Review* 19: 37-58, 143-164.
- . 1951b. “Cómo no se pronunciaban las ç y z antiguas.” *Hispania* 34 (1): 51-53.
- . 1949. “Examen de las noticias de Nebrija sobre Antigua pronunciación española.” *Nueva Revista de Filología Hispánica* 3: 1-82.
- Alonso, Dámaso. 1972. “Temas y problemas de fragmentación fonética peninsular”. *Obras completas 1. Estudios lingüísticos peninsulares*. Madrid: Gredos. 13-290.
- . 1962. “Ensondecimiento en el norte peninsular de alveolares y palatales fricativas.” In *Enciclopedia lingüística hispánica I (suplemento)*, eds. M. Alvar et al. Madrid: CSIC.
- Alvar, Manuel. 1983. “A vueltas con el seseo y ceceo.” In *Introducción plural a la gramática histórica*, ed. Francisco Marcos Martín. Madrid: Cincel.
- Álvarez Nazario, Manuel. 1987. “Orígenes del español en Puerto Rico”. In *Actas del I Congreso Internacional sobre el español de América I*, ed. H. López Morales et al. Madrid: Arco Libros. 33-46.
- Blanco, Marta. 2006. *Aproximación a la cronología de las transformaciones funcionales de labiales y sibilantes del español*. Santiago de Compostela: Univ. Santiago de Compostela.

- Boyd-Bowman, Peter. 1980. *From Latin to Romance in Sound Charts*. Washington D.C.: Georgetown U. P.
- . 1973. *Patterns of Spanish Emigration to the New World (1493-1580)*. Buffalo NY: Council of International Studies.
- . 1968. *Índice geobiográfico de cuarenta mil pobladores españoles de América en el siglo XVI. Tomo II*. México: Editorial Jus.
- . 1964. *Índice geobiográfico de cuarenta mil pobladores españoles de América en el siglo XVI. Tomo I*. Bogotá: Instituto Caro y Cuervo.
- Bradley, Travis and Delforge, Ann Marie. 2006. In *Historical Romance Linguistics*, ed. Randall Gess and Deborah Arteaga. Amsterdam: John Benjamins. 19-52.
- Bürki, Yvette and Romero, Elena (eds). 2014. *La lengua sefardí: aspectos lingüísticos, literarios y culturales*. Berlín: Frank & Timme. 109-123.
- . 2013. “The status of Judeo-Spanish in the Ottoman Empire.” In *A Political History of Spanish: the making of a language*, ed. José del Valle. Cambridge: Cambridge University Press. 335-349.
- Cabrera Morales, Carlos. 1992. “Las sibilantes medievales: reflexiones sobre los problemas de desonorización”. *Medievalia* 11: 1-18.
- Cano Aguilar, Rafael. 2004. “Cambios en la fonología del español durante los siglos XVI y XVII.” In *Historia de la lengua española*, ed. Cano Aguilar. Barcelona: Ariel.
- . 1988. *El español a través de los tiempos*. Madrid: Arco Libros.
- Catalán, Diego. 1956-57. “El ceceo-zeceo al comenzar la expansión atlántica de Castilla.” *Boletim de filología* 16: 305-34.
- . And Reinhardt, Karl J. trans. 1957. “The End of the Phoneme /z/ in Spanish”. *Word* 13 (2): 283-322.
- Chomsky, Noam, and Morris Halle. 1968. *The Sound Pattern of English*. New York: Harper & Row.
- Clements, George N. 1985. “The geometry of phonological features.” *Phonology Yearbook* 2: 225-252.
- Cock, Olga. 1969. *El seseo en el Nuevo Reino de Granada 1550-1650*. Bogotá: Instituto Caro y Cuervo.
- Cover, Thomas and Thomas, Joy. 2006. *Elements of Information Theory*. 2nd ed. Hoboken, NJ: Wiley-Interscience.

- Cuervo, Rufino José. 1987 [1895]. "Disquisiciones sobre antigua ortografía y pronunciación castellanas." In *Obras. III*. Bogotá: Instituto Caro y Cuervo. 344-476.
- Danesi, Marcel. 1977. "The case of *andalucismo* re-examined." *HR XLV*: 181-193.
- Domínguez Caparrós, José. 2014. *Métrica española*. Madrid: UNED.
- Dworkin, Steven N. "Some thoughts on Dialectology and Spanish Historical Linguistics." *Studies in Hispanic And Lusophone Linguistics* 1 (1): 190-195.
- Espinosa, Aurelio M. 1935. *Arcáismos dialectales: la conservación de s y z sonoras en Cáceres y Salamanca*. Madrid: Anejo XIX de la Revista de Filología Española.
- Frago Gracias, Juan Antonio. 1999. *Historia del español de América*. Madrid: Gredos
- . 1993. *Historia de las hablas andaluzas*. Madrid: Arco Libro.
- . 1992. "El seseo: orígenes y difusión Americana." In *Historia y presente del español de América*, ed. César Hernández Alonso. Valladolid: Junta de Castilla y León.
- . 1989. "¿Sólo gritas en el edificio del reajuste fonológico?" *LEA* 11: 125-143.
- Galmés de Fuentes, Álvaro. 1965. "Resultados de -LL- y -LY-, -C'L- en los dialectos mozárabes." *RLIR* 29: 60-97.
- . 1962. *Las sibilantes de la Romania*. Madrid: Gredos.
- Gavel, Henry. 1929. *Grammaire Basque I*. Bayonnne: Imprimerie du Courier.
- Gess, Randall and Arteaga, Deborah (eds). 2006. *Historical Romance Linguistics*. Amsterdam: John Benjamins.
- Gil Arrando, M. Consuelo. 1986. "Contribución al estudio lingüístico del español del siglo XVII." *Cauce Revista de Filología* 9: 39-60.
- Goldsmith, John A. 1998. *On Information Theory, Entropy, and Phonology in the 20th Century*. Paper presented at the Royaumont CTIP II Round Table on Phonology in the 20th Century.
- González Ollé, Fernando. 1987. "Primeras noticias y valoraciones del andaluz." *Boletín Real Academia Española* 67: 347-387.
- Guitarte, Guillermo. 1992. "Cecear y palabras afines." In *Actas del Congreso Internacional de Historia de la Lengua Española. Tomo I*. Madrid: Pabellón de España. 127-164.

- . 1987. “Cecear por gracia.” In *Actas del VII Congreso de la Asociación de Lingüística y filología de America Latina. Tomo I*. Santo Domingo, R. D.: UNPHU. 127-141.
- Gurevich, Naomi. 2011. “Lenition”. *Faculty Research and Creative Activity* 10. [http://thekeep.eiu.edu/commdis\\_fac/10](http://thekeep.eiu.edu/commdis_fac/10)
- Hall, T. A. 2001. *Distinctive Feature Theory*. Berlin: de Gruyter.
- Harris-Northall, Ray. 1992. “Devoicing, Affrication and Word-Final –z in Medieval Spanish”. *Hispanic Linguistics* 4: 245-274.
- Hume, Elizabeth and Mailhot, Frédéric. 2013. “The Role of Entropy and Surprisal in Phonologization and Language Change.” In Alan Yu (ed.), *Origins of Sound Patterns: Approaches to Phonologization*. Oxford: Oxford University Press. 29-49.
- Jakobson, Roman, & Morris Halle. 1956. *Fundamentals of Language*. The Hague: Mouton.
- Junco, Alfonso. 1967. *La jota de Méjico y otras danzas*. México: Ed. Jus.
- Kania, Sonia. 2016. “Diachronic perspectives on varieties of Spanish pronunciation: seseo and yeísmo.” In *Diachronic Applications of Hispanic Linguistics*, ed. Eva Núñez Méndez. Newcastle, U.K.: Cambridge Scholars Publishing.
- Kauffeld, Cynthia. 2016. “Andalusian Spanish: a Diachronic Survey of its Origins and Footprints in the Americas.” In *Diachronic Applications of Hispanic Linguistics*, ed. Eva Núñez Méndez. Newcastle, U.K.: Cambridge Scholars Publishing.
- . 2011. *Andalusian Spanish: A Linguistic Study of 14th- and 15th-century Texts from Sevilla and Córdoba*. New York: Hispanic Seminary of Medieval Studies.
- Kiddle, L. B. 1975. “The Chronology of the Spanish Sound Change š > x”. In *Studies in honor of Lloyd A. Kasten*. Madison: Hispanic Seminary of Medieval Studies. 73-100.
- Kunz, Marco. 2014. “El judeoespañol polaco.” In *La lengua sefardí: aspectos lingüísticos, literarios y culturales*, ed. Yvette Bürki et al. Berlín: Frank & Timme. 109-123.
- Lapesa, Rafael. 1981 [1942]. *Historia de la lengua española*. Madrid: Gredos.
- . 1957. “Sobre el seseo y el ceceo andaluces”. In *Estructuralismo e Historia. Miscelánea Homenaje a A. Martinet*. Laguna: Univ. de la Laguna.

- Lass, T. S., Szigetvári, P., & Zuraw, K. 2008. "Lenition, weakening and consonantal strength: tracing concepts through the history of phonology." In *Lenition and Fortition*, ed. Brandão de Carvalho, J., Scheer, T. & Ségéral, P. Berlin: Mouton de Gruyter. 9-92.
- Lloyd, Paul M. 1993 [1987]. *Del latín al español. I. Fonología y morfología históricas de la lengua española*. Madrid: Gredos.
- . 1987. *From Latin to Spanish*. Philadelphia: American Philological Society.
- Malkiel, Yakov. 1971. "Derivational Transparency as an Occasional Co-Determinant of Sound Change: A New Causal Ingredient in the Distribution of '-ç-' and '-z-' in Ancient Hispano-Romance". *Romance Philology* 25 (1): 1-52.
- Martinet, André. 1974. *Economía de los cambios fonéticos*. Madrid: Gredos.
- . 1955. *Économie des changements phonétiques*. Berne: A. Francke.
- . 1952. "Celtic Lenition and Western Romance Consonants." *Language* 28 (2): 192-217
- . 1951. "The Unvoicing of Old Spanish Sibilants." *Romance Philology* 5: 133-156.
- Martínez Celdrán, Eugenio. 1992. "Un mismo parámetro fonético en el fondo de la lenición protorromance: la duración". In *Estudios filológicos en homenaje a Eugenio de Bustos Tovar II*, eds. J. A. Bartol Hernández et al. Salamanca: U. de Salamanca. 621-640.
- Menéndez Pidal, Ramón. 1962. "Sevilla frente a Madrid. Algunas precisiones sobre el español de América." In *Miscelánea homenaje a André Martinet: Estructuralismo e historia III*. La Laguna. 99-165.
- . 1940 [1904]. *Manual elemental de gramática histórica española*. Madrid: Espasa Calpe.
- . 1919. *Documentos lingüísticos de España I, Reino de Castilla*. Madrid: Centro de estudios históricos.
- Moreno de Alba, José. 2007. *Introducción al español americano*. Madrid: Arco Libros.
- Noll, Volker. 2005. "Reflexiones sobre el llamado andalucismo del Español de América." In *El español en América: aspectos teóricos, particularidades, contactos*, ed. Volker Noll et al. Madrid: Iberoamericana-Vervuert. 95-111.

- Oviedo, Gonzalo Fernández de. 1959 [1532]. *Historia general y natural de las Indias*. Madrid: Ediciones Atlas.
- Parodi, Claudia. 1976. "Para el conocimiento de la fonética castellana en la Nueva España: 1523. Las sibilantes." *Actas del III Congreso de la Asoc. de Lingüística y Filología de América Latina*. San Juan: U. de Puerto Rico. 115-125.
- Pascual, Jose Antonio. 1988. "Notas sobre las confusiones medievales de las sibilantes." *LEA* 10: 125-131.
- Penny, Ralph. 2002. *A history of the Spanish language*. Cambridge: Cambridge University Press.
- . 2000. *Variation and Change in Spanish*. Cambridge: Cambridge University Press.
- . 1993. "Neutralization of Voice in Spanish and the Outcome of the Old Spanish Sibilants: A case of phonological change rooted in morphology". *Hispanic Linguistic Studies in Honor of F. W. Hodcroft*, ed. David Mackenzie & Ian Michael, 75-88. Oxford: Dolphin.
- Pensado, Carmen. 1993. "El ensordecimiento castellano: ¿un fenómeno extraordinario?" *Anuario de lingüística hispánica* 9: 195-230.
- Pharies, David. 2015. *A brief history of the Spanish language*. Chicago: University Chicago Press.
- Quilis, Antonio. 1993. *Tratado de fonética y fonología españolas*. Madrid: Gredos.
- Rosenblat, Angel and Tejera, M. J. 2002. *El español de América*. Caracas: Biblioteca Ayacucho.
- Rousselot, Jean. 1901. "Synthese Phonetique." *La Parole* 11: 641-647.
- Serrano, Abraham E. 1982. *Estudio de teoría ortográfica del español vol 2*. Murcia: Editum.
- Shannon, Claude. 1948. "A mathematical theory of communication." *The Bell System Technical Journal*, 27: 379-423, 623-656.
- Thurneysen, Rudolf. 1946. *A Grammar of Old Irish*. Dublin: The Dublin Institute for Advanced Studies.
- Tuten, Donald N. 2003. *Koineization in Medieval Spanish*. Berlin: Mouton de Gruyter.
- Vázquez Balonga, Delfina and Sánchez Prieto Borja, Pedro. 2015. "¿Seseo en el centro peninsular?" *Revista de Historia de la lengua española*, 10: 201-207.

- Veiga Rodríguez, Alexandre. 1988. “El rasgo fónico tensión y los procesos protohispánicos de lenición consonántica.” In *Actas del I Congreso Internacional de Historia de la Lengua Española I*, eds. M. Ariza et al. Madrid: Arco Libros. 193-208.
- . 1988b. “Reaproximación estructural a la lenición proto-romance”. *Verba* 15: 17-78.
- Zamora Vicente, Alonso. 1967. *Dialectología española*. Madrid: Gredos.
- Zampaulo, André. 2013. “Sibilant Dissimilation in the History of Spanish: An Information-Theoretic Approach.” In *Selected Proceedings of the 15th Hispanic Linguistics Symposium*, ed. Chad Howe et al. Somerville, MA: Cascadilla Press. 172-178.
- Zygis, Marzena, Susanne Fuchs et al. 2012. “Phonetic explanations for the infrequency of voiced sibilant affricates across languages.” *Laboratory Phonology* 3.2: 299-336.

#### Abbreviations

mod.	modern
ca.	abbreviation for Latin <i>circa</i> , approximately
Cat.	Catalan
Lat.	Latin
med.	Medieval
O. Fr.	Old French
O. Sp.	Old Spanish
*	Vulgar Latin, not recorded or documented
< >	letters, graphemes
[:]	semicolon indicates a long sound
[ ]	sounds, allophones: variations of a phoneme with no contrastive value. E.g. [s] and [z] in modern Spanish are allophones of the phoneme /s/, e.g. <i>hasta</i> [ásta] and <i>asma</i> [ázma].
[s̺]	IPA. Apicoalveolar fricative voiceless consonant sound; dialectal in north of Spain.
//	indicates phonemic transcription, a broader transcription than phonetic transcription. Symbols contained within have contrastive value, e.g. /s/, /z/ as <i>sip</i> /sip/ and <i>zip</i> /zip/ in English.