The social meaning of a merger: The evaluation of an Andalusian Spanish consonant merger (*ceceo*)

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A B S T R A C T

This study analyzes the social evaluations of the Andalusian Spanish *ceceo* merger and its split, *distinción*. A matched-guise experiment was created by digitally manipulating spontaneous speech from twelve Western Andalusian speakers, varying only in syllable-initial [s̪] and [θ] for <s> and <z,ci,ce>, creating *ceceo* and *distinción* guises. Based on 221 listeners from Huelva and Lepe, Spain, mixed effects linear regression models found that speakers with *distinción* guises were evaluated as being of higher social status, more urban, and more formal than speakers with *ceceo* guises. Additionally, listeners' comments referred not only to the sounds and graphemes, but also to the merger itself and its social connotations. The implications are two-fold: (i) consonant mergers may be subject to more overt social evaluation than vocalic mergers; and (ii) a merger can acquire social meaning, and this meaning in turn, may promote its split. (Mergers, splits, sociolinguistic perception, language attitudes, Andalusian Spanish, sociophonetics, dialect levelling, *ceceo*, *distinción*)*

I N T R O D U C T I O N

Although phonetic mergers and splits have been fundamental to historical linguistics, dialectology, and sociolinguistics, there remain uncertainties regarding their social evaluations. It has been proposed that mergers and splits as part of the linguistic system lack social affect (Labov 1994:343, 2010:129). A growing body of research, however, suggests that there exist varying degrees of social awareness and/or social evaluations towards mergers and splits (Baranowski 2013; Hall-Lew 2013; Watson & Clark 2013; inter alia). Nevertheless, most of the literature informing our understanding of mergers and splits has examined English vowels (M. Gordon 2013:204). Thus, to further examine the social meaning of mergers and splits, the current study analyzes the social evaluations of a consonant merger and its split in Andalusian Spanish in two speech communities.

BACKGROUND

Mergers, splits, and social evaluation

The reversal of a merger has been disputed in the sociolinguistic literature under Garde's Principle, which states that 'innovations can create mergers, but cannot reverse them' (Garde 1961:38–39; Labov 1994:311), and Herzog's Principle, which states that 'mergers expand at the expense of distinctions' (Herzog 1965; Labov 1994:313). Both principles have received immense support in diachronic and synchronic accounts of mergers. Labov acknowledges that an individual may be able to reverse a merger (1994:347–48), but it is unlikely for a split to occur at the level of 'an entire speech community' (2010:121). If a split were to occur it would be due to language-external reasons such as an educational campaign or media influence (Labov 1994:345–48) or due to dialect contact (Hickey 2004:134; Thomas 2006:490). Recent studies, in fact, have demonstrated that with adequate dialect contact, a split is possible (Johnson 2010; Nycz 2013; Maguire, Clark, & Watson 2013; Yao & Chang 2016; Regan 2017b, 2020). As a split runs contrary to language-internal tendencies, it provides an ideal context to examine the social meaning of a merger.

Labov (1994:343) states, 'as a rule, mergers and splits have no social affect associated with them' and 'the evidence for the absence of social affect of splits and mergers is massive and overwhelming'. That is, non-linguists comment on words in which the merger is present, but not on the merger itself (Labov 1994:343–44). For example, a New Yorker with the COT-CAUGHT distinction may be stigmatized by a West Coast listener for their 'high back ingliding /oh/ in *lost* and *coffee*, but not for making the distinction between *cot* and *caught*' (Labov 1994:344). Thus, while speakers comment on 'surface structure' such as words or sounds within a word, 'differences in the phonological inventory—mergers and splits' are not subject to social attention nor 'carry social affect' (1994:344). In spite of the numerous studies on mergers, there has been little evidence of social awareness. For example, of Baranowski's (2007) 100 speakers in Charleston, none were aware of the COT-CAUGHT merger-in-progress. Although one speaker exhibited awareness of the FEAR-FAIR merger, one individual's awareness does not indicate a communal social evaluation of the merger (Labov 2010:128–29).

Recent studies, however, provide additional evidence of social awareness and social affect of mergers/splits. Production studies have documented speakers' awareness of mergers-in-progress such as 'Mary's' awareness of the COT-CAUGHT merger in San Francisco (Hall-Lew 2013:374) as well as four speakers who commented on the PIN-PEN merger in Charleston (Baranowski 2013:287). Based on these overt comments, Baranowski proposes that the PIN-PEN merger is an exception to Labov's claim as it is 'above the level of awareness' and 'subject to negative social evaluation' (2013:293). Similarly, perception studies have demonstrated implicit social evaluations of mergers/splits such as Watson & Clark's (2013) matched-guise study in Liverpool and St. Helen that found negative reactions to

guises with the NURSE-SQUARE merger. While not specifically investigating social evaluation, Hay, Warren, & Drager's (2006) study of the NEAR-SQUARE diphthong merger-in-progress in New Zealand found that social categories impacted whether or not listeners heard the merger. Similarly, Koops, Gentry, & Pantos (2008) found that listeners in Houston were implicitly aware that older speakers were more likely to have the PIN-PEN merger.

Furthermore, it has been proposed that social meaning attached to a merger could promote a split. Specifically, Maguire et al. (2013:234–35) claim that Herzog's Principle 'may be compromised when the merger involved is, or becomes heavily stigmatized'. As an example, they state that the split of the NURSE-NORTH merger in Tyneside English occurred due to an influx of immigrants with the distinction in the 1900s, in which the presence of the two-phoneme system led to the stigmatization of the merger (2013:235). Similarly, scholars have commented on the stigmatization of the *ceceo* merger in Andalusian Spanish as motivating its split into *distinción* (Moya Corral & García Wiedemann 1995; Villena Ponsoda 1996; Melguizo Moreno 2007; Lasarte Cervantes 2010; Regan 2017a, 2020).

Regional dialect levelling

Large-scale societal changes throughout Europe have catalyzed dialect levelling of traditional dialectal features in favor of supra-local features (Auer & Hinskens 1996; Hinskens, Auer, & Kerswill 2005; Britain 2009b). The changes from an agrarian, to industrial, to a post-industrial society resulted in increased dialect contact, mobility, education, and urbanization, contributing to dialect levelling (Hinskens et al. 2005:23–24). As Kerswill (2003:223) notes, regional dialect levelling involves both processes of geographic diffusion as well as levelling or 'the reduction of or attrition of marked variants' (Trudgill 1986:98). Kerswill (2003:231) suggests that local vocalic solutions are 'the order of the day', while consonants are subject to dialect levelling over larger regions.

While some posit that levelling occurs through short-term and then long-term accommodation (Giles & Powesland 1997), others propose that speakers avoid certain highly localized features to appear more modern or cosmopolitan, while still pertaining to their larger region (Foulkes & Docherty 1999:13–14; Watt 2002:57–58; Kerswill 2003:230). This has been documented in Andalucía, in which younger middle-class Andalusians with more formal education avoid certain traditional[1] Andalusian phonetic and phonological features in favor of supra-local Castilian features. This is particularly the case in syllable-initial position (i.e. preference for *distinción* over *ceceo* or for affricate [tʃ] over fricative [ʃ] for /tʃ/), while still maintaining Andalusian features in syllable-coda position (i.e. aspiration or elision of coda /s/), forming a new intermediate variety of Andalusian Spanish (Hernández-Campoy & Villena Ponsoda 2009:197–203; Moya Corral 2018:58; Villena Ponsoda & Vida Castro 2020:149). Villena Ponsoda & Vida Castro (2020:149, 177) indicate that the identity of the speakers of this

intermediate variety blends an 'orientation towards modern life, urbanization' and 'faithfulness to southern traditional community values'.

Ceceo and distinción

Castilian and Andalusian Spanish differ in coronal fricative realizations due to distinct processes of merger of the four medieval Spanish sibilants ($/t^s/$, $/d^z/$, /s/, /z/). In Castilian Spanish, these sibilants were reduced into the voiceless interdental fricative /θ/ and the voiceless apico-alveolar fricative /s̱/ creating the norm known as *distinción* (Penny 2002:124–25). *Distinción* reflects a direct grapheme-to-phoneme correspondence of /θ/ for <z,ci,ce> and /s/ for <s>, giving rise to minimal pairs such as *casa-caza* 'house-hunt'. In Andalusian Spanish, the four medieval sibilants merged into dental /s̱/, phonetically realized either as *ceceo* or *seseo* (Penny 2000:118–19, 2002:124–25). *Ceceo* is realized as a voiceless dental fricative, represented as [s̱θ] (Penny 2000:118), [θˢ] (Villena Ponsoda 1996), or [θ̪] (Hualde 2005:153) as it is perceptually similar to, but normally less fronted than [θ]. *Seseo* is realized as a voiceless (predorso-)alveolar fricative [s̱] (Penny 2000:118; Hualde 2005:153). Andalusian speakers that produce *distinción* generally realize a (predorso-)alveolar [s̱] as opposed to a Castilian apico-alveolar [s̱] (Narbona Jiménez, Cano Aguilar, & Morillo-Velarde 1998:156). Although *distinción* has existed in northern Andalucía, it is not native to mid and southern Andalucía, but was brought into existence relatively recently through dialect contact and increased educational attainment (Narbona et al. 1998:155–60). In the mid twentieth century, traditional dialectology studies found that *ceceo* and *seseo* still predominated throughout Andalucía (Navarro Tomás, Espinosa, & Rodríguez-Castellano 1933; Alvar, Llorente, Salvador, & Mondéjar 1973[2]).

Sociolinguistic studies, however, in the cities of Granada (Moya Corral & García Wiedemann 1995; Melguizo Moreno 2007, 2009; Moya Corral & Sosiński 2015), Málaga (Ávila Muñoz 1994; Villena Ponsoda 1996; Villena Ponsoda & Requena Santos 1996; Lasarte Cervantes 2010; Molina-García 2019), Jerez de la Frontera (García-Amaya 2008), Huelva (Regan 2017a, 2020), and Lepe (Regan 2020) have demonstrated that *ceceo* is shifting to *distinción*. Similarly, studies in the cities of Sevilla (Santana Marrero 2016, 2016–2017; Gylfadottir 2018), Málaga (Villena Ponsoda 1996; Villena Ponsoda & Requena Santos 1996), and Granada (Moya Corral & Sosiński 2015) have indicated that *seseo* is yielding to *distinción*. These studies have found that the split of *ceceo* (and *seseo*) into *distinción* is led by younger speakers, those with more formal education, and women.

Although the majority of previous studies have analyzed coronal fricative production, there have been a few social perception[3] studies. Harjus (2017) conducted a perceptual variety linguistics analysis in Jerez and found that participants identified *ceceo* with their own locale, but did not associate *ceceo* with a lower social stratum. In Granada, Moya Corral & García Wiedemann (1995) conducted a matched-guise experiment with four guises: *distinción* and [tʃ] (for <ch>);

seseo and [tʃ]; *seseo* and [ʃ]; *ceceo* and [tʃ]. Listeners paired these recordings with four professions: *distinción* was most associated with the bank director, *seseo* and [tʃ] the bank teller, *seseo* and [ʃ] the taxi driver, and *ceceo* the doorman. Martínez & Moya Corral (2000) conducted another matched-guise experiment in Granada with three guises: *distinción*; *seseo*; *seseo* and [ʃ] (for <ch>). *Distinción* was evaluated as most prestigious, followed by *seseo*, and then *seseo* and [ʃ]. A potential confound in these studies is that coronal fricative evaluation was possibly influenced by the co-occurrence of /tʃ/ variation. Finally, while Santana Marrero's (2018:86) perception study in Sevilla analyzed global evaluations of Castilian and Andalusian Spanish, a few listeners explicitly commented, some positively and others negatively, on *seseo*.

Huelva and Lepe

Two nearby speech communities, the city of Huelva and the town of Lepe, were included in the study as it commonly is assumed that rural areas maintain traditional dialectal features and favorable attitudes toward these features. While there is a split of *ceceo* into *distinción* in both communities, this change is more advanced in Huelva due to earlier dialect contact (Regan 2020). Thus, following Britain (2009a), rather than focus on idealized notions of rurality or urbanity, this study aims to compare the attitudes of both communities focusing on social causes of change.

Both Huelva and Lepe have experienced significant changes since the 1950s when Alvar et al. (1973) collected their data demonstrating a predominant *ceceo* norm in both communities[4]. In Huelva, the largest catalyst for these changes was in 1964 when Huelva became home to one of Spain's largest industrial plants (*Polo Industrial*). Immigrants came from all over the province, especially from the north of the province (*la sierra de Aracena*) where *distinción* is the norm, and from other parts of Spain, for employment in the factories (Feria Toribio 1994; Ruiz García 2001). This immigration brought *distinción* speakers into the city of Huelva (Morillo-Velarde 1997:209). Consequently, Huelva's population increased from 83,648 to 147,808 inhabitants between 1950 (INE 1950) and 2011 (INE 2011). Prior to the industrial plant, Huelva had an agrarian and fishing economy. The city then passed through industrialization, but has recently become increasingly service-oriented. Specifically, in 2011, 74.5% were employed in service, 6.5% in agriculture, and 19.1% in manufacturing/construction (INE 2011). The educational attainment of Huelva's population also changed considerably from 1950 (INE 1950) (37.9% no studies; 60.1% primary; 1.3% secondary/professional; 0.7% university) to 2011 (INE 2011) (9.9% no studies; 12.7% primary; 57.5% secondary/professional; 20.0% university).

While Lepe is only 33 km west of Huelva, it has remained economically independent due to its strong agricultural sector (Feria Toribio 1994:190), resulting in an increase in population from 9,285 in 1950 (IECA 2016) to 26,538 in 2011 (INE 2011). Historically, Lepe has been a fishing and agricultural hub of the province,

but has essentially lost its fishing industry. While Lepe maintains its agricultural sector, it is increasingly service-oriented. In 2011, 54.0% were employed in service, 29.7% in agriculture, and 16.3% in manufacturing/construction (INE 2011). The educational attainment of Lepe's population changed drastically from 1960[5] (INE 1960) (78.2% no studies; 21.0% primary; 0.7% secondary/professional; 0.1% university) to 2011 (INE 2011) (14.3% no studies; 20.7% primary; 61.8% secondary/professional; 3.2% university).

In order to explore the social meaning of a merger and its split, the current study was guided by three research questions: (i) What are the social evaluations of *ceceo* and *distinción* in Western Andalucía? (ii) How do these evaluations vary by listener and speaker characteristics? and (iii) What differences in social evaluations exist between Huelva and Lepe?

METHODS

Stimuli

A matched-guise experiment (Lambert, Hodgson, Gardner, & Fillenbaum 1960) was created to examine the social perception of *ceceo* and *distinción*. Following Campbell-Kibler (2007), the stimuli were taken from informal sociolinguistic interviews conducted by the author during 2015 and 2016. While spontaneous speech sacrifices some control over the content of the excerpts, it allows for a more natural sociolinguistic perception of speech (Campbell-Kibler 2007:34), as read and spontaneous speech differ substantially.

Participants were recorded with a Marantz PMD660 solid-state digital recorder wearing a Shure WH20XLR Headworn Dynamic Microphone with a sampling rate of 44.1kHz (16-bit digitization). Twelve speakers were included (age range: 23-53, *M*: 33.6, *SD*: 9.7), balanced by speech community and gender: six (three men, three women) from Huelva capital (age: *M*: 34.0, *SD*: 10.9) and six (three men, three women) from Lepe (age: *M*: 33.2, *SD*: 9.4). All speakers had obtained at least secondary education. The stimuli included a two to six second clip of spontaneous speech from each speaker (see box A in the appendix). To ensure that listeners would hear the coronal fricative realizations, recordings were selected based on the following criteria: (i) a minimum of two <s> tokens and one <z,ci,ce> token; (ii) never more <z,ci,ce> tokens than <s> tokens (an equal number was allowed); and (iii) a minimum of three and a maximum of six fricatives. While the number of fricatives varied per speaker (*M*: 4.7, *SD*: 1.2), it was balanced by gender (*n* = 28 fricatives per gender) and grapheme: all women together had seventeen <s> (*M:* 2.8, *SD:* 0.8) and eleven <z,ci,ce> tokens (*M:* 1.8, *SD:* 0.8), all men together had eighteen <s> (*M:* 3.0, *SD:* 0.9) and ten <z,ci,ce> tokens (*M:* 1.7, *SD:* 0.5). As *ceceo* has been shown to correlate with other Andalusian features (Villena Ponsoda 1996), the clips selected avoided the following: /tʃ/ (as it varies between [tʃ] and [ʃ]); word-internal coda /l/ (as it varies between [l]

and [ɾ]); orthographic <ll> (as it varies between [j] and [ʎ] in Lepe). Clips containing [s] for coda /s/, as opposed to [h] or [Ø], were excluded as this variety presents coda /s/ aspiration or elision (Villena Ponsoda 2008). Thus, co-occurring phonetic features with *ceceo* or *distinción* were avoided in the selection of clips to reduce confounds. Finally, phrases with reference to occupation, socioeconomic status, or specific place were excluded.

Guises were created by digitally manipulating the speech of speakers who produced both [s] and [θ] (or [s̪θ]). Most of these speakers produced *distinción*, while some varied between *distinción* and *ceceo*. Thus, each individual's fricatives were used to create one *ceceo* and one *distinción* guise per speaker (total of twenty-four guises) so that each individual's guises solely differed in fricative realizations. Only fricatives with a similar duration (ms) to the original fricative were spliced. When possible, the same phonetic context (previous and following vowels) for each spliced fricative was used. However, the same phonetic context was not essential as F2 onset frequency has not been shown to distinguish [s] and [θ] in Spanish or English (Jongman, Wayland, & Wong 2000; Martínez Celdrán & Fernández Planas 2007). Following Styler (2017:31), the desired tokens were spliced at zero crossings using Praat (Boersma & Weenink 2018). Splicing was conducted by selecting a desired intervocalic coronal fricative from another segment of the same speaker's speech. All intervocalic [s] or [θ] were segmented following the guidelines of Jongman et al. (2000:1255). The intensity (dB) of the newly selected fricative was adjusted to relatively match the fricative it would replace (taking into consideration that [s] should be several dB higher than [θ] and vice versa) prior to its insertion to avoid unnatural intensity differences. Once the new fricative was highlighted, both the start and end of selection were moved to the nearest zero crossing. At this point, the segment was copied. Before pasting it into the desired location, the cursor was moved to the nearest zero crossing at the start of the frication of the original fricative. The copied fricative was then inserted. Then the original coronal fricative was highlighted, the start and end of selection were moved to nearest zero crossing and the segment was deleted.

Once all guises were completed, each sound file was normalized for intensity in Praat (*Modify > Scale Intensity*) to bring all sound files to an overall range between 62–70 dB so that listeners would not have to change the volume. As intensity (dB) is a major acoustic cue for distinguishing [s] from [θ] (Behrens & Blumstein 1988; Jongman et al. 2000; Lasarte Cervantes 2012), clips were not adjusted more than 3 dB in order to preserve relative intensity differences between each fricative and following vowel. The resulting stimuli were checked by two native Andalusian speakers with training in phonetics. Both agreed that each guise sounded natural and they were easily able to identify *ceceo* versus *distinción* guises.

Experimental design

The guises were uploaded and organized into an online survey using Qualtrics (2005–2020). The two guises (*ceceo*, *distinción*) for each of the twelve speakers

were divided into two separate surveys balanced by variant and speaker gender/origin (see box B in the appendix). Following Barnes (2015), these two versions were branched so that each participant would be randomly assigned to one version. Consequently, listeners heard each voice only once. Splitting the experiment into two surveys reduced the time of completion and avoided voice recognition given each speaker's unique utterance.

There were twelve distractors from twelve additional speakers placed into each version, balanced by speaker gender/origin. The distractors did not include syllable-initial coronal fricatives. Each version of the survey was pseudo-randomized to ensure that listeners did not hear several *ceceo* or *distinción* guises back-to-back.

Upon consenting to the terms of the study, participants were told that they would hear two to five second recordings from twenty-four different speakers (see box C in the appendix). They were permitted to listen to each recording as many times as they chose and then had to respond to a series of questions. They were asked to wear headphones and listen to the recordings in a quiet place. After hearing each recording, the listeners had to rate each speaker on nine different questions (see box D in the appendix). The first six questions were a set of social characteristics based on a six-point Likert scale; an even number was implemented to avoid neutral responses following previous studies (Campbell-Kibler 2007; Walker, García, Cortés, & Campbell-Kibler 2014; Barnes 2015; Chappell 2016, 2018). For these social characteristics (only English scripts are provided here), they were asked 'This persons sounds…': (i) 'of low socioeconomic level'/'of high socioeconomic level'; (ii) 'with less studies'/'with more studies'; (iii) 'less masculine'/'more masculine' for male voices and 'more feminine'/'less feminine' for female voices; (iv) 'less friendly'/'more friendly'; (v) 'more rural'/'more urban'; and (vi) 'informal'/ 'formal'. There were also three multiple-choice questions. The first question of perceived occupation included: 'works in a bar/restaurant', 'works in construction', 'works in a store', 'works in the field', 'is an administrator', 'is a teacher', 'is a doctor/lawyer'. The second question of perceived age included: < 30, 30–40, 40–50, 50–60, > 60. Finally, perceived origin included: Huelva capital, Lepe, and *otro sitio* 'another place'. These questions were based on the author's participant observations and previous production findings in the region (Regan 2017b, 2020). Finally, after completing all twenty-four evaluations (twelve guises, twelve distractors), participants then answered basic demographic questions about themselves.

Implementation and participants

The survey was implemented online via a link. In winter/spring 2018 the link was sent to the author's social networks in Huelva and Lepe and posted on Huelva and Lepe Facebook pages. Additionally, *El Diario de Huelva*, a newspaper of the region, kindly promoted the study on their online edition. Upon clicking the link, potential participants were asked to consent to the terms of the study and confirm that they were both from Huelva or Lepe (or had at least lived half of their life

there) and were at least eighteen years old. Those who consented and confirmed their eligibility continued while skip logic took ineligible participants to the end of the survey, preventing their participation. Responses to each question were obligatory in order to continue. Only completed surveys were considered for analysis.

242 listeners completed the study. However, twenty-one participants were excluded from analysis for confusing the direction of the scales (i.e. selecting doctor/lawyer as perceived occupation and then the lowest education level) or selecting the same number for each six-point scale for each speaker. Thus, there were 221 participants (seventy-eight men, 143 women) between eighteen and sixty-seven years of age (*M*: 37.1, *SD*: 10.4), stratified by education levels (eleven primary education, eighteen secondary education, twenty-four *bachillerato*, thirty-seven professional training, 102 university degree, twenty-nine graduate degree) that were included in the analysis. 126 participants were from Huelva capital (forty-eight men, seventy-eight women) and ninety-five from Lepe (thirty men, sixty-five women).

Statistical analysis

Following Barnes (2015), perceived occupation was converted into a five-point scale based on occupational prestige scales in Spain (Carabaña Morales & Gómez Bueno 1996) and perceived age was converted into a five-point scale. Given the discrepancy between five and six-point scales, all values were centered on zero. A principle component analysis using the *princomp* function was conducted in R (R Core Team 2019) with all eight continuous dependent measures to assess the potential number of underlying factors, followed by a factor analysis using the *factanal* function. The dependent measures of perceived friendliness, masculinity/femininity, and age received high uniqueness scores. They were analyzed independently and it was found that only masculinity/femininity demonstrated significant results in mixed effects linear regression models. Thus, perceived friendliness and perceived age were disregarded and a new primary component analysis and factor analysis were run with the remaining six dependent measures. Based on the Eigen values and a scree plot, it was determined that there were three underlying factors. The first factor was a combined 'status' factor, loading perceived socioeconomic level, education level, and occupational prestige. The second factor loaded perceived urban-ness and formality. However, there were several differences between measures that were missed when combining urban-ness and formality into a single factor, therefore resulting in these measures being analyzed separately. The third factor loaded only perceived masculinity/femininity, which was removed from further analysis as the best mixed effects model (i.e. lowest AIC) only included the main effect for speaker gender. Thus, there were a total of three continuous dependent measures: status, urban-ness, and formality.

For each of these dependent measures a separate mixed effects linear regression model was created using the *lmer* function (Bates, Maechler, Bolker, & Walker

2015) and *lmerTest* (Kuznetsova, Brockhoff, & Christensen 2014) in R with two random intercepts of speaker and participant (listener) as well as the random slope of variant by participant. The independent variables tested in the various models included: variant (*ceceo*, *distinción*), speaker gender (male, female), listener gender (male, female), listener origin (Huelva capital, Lepe), listener education (1–5), listener age (eighteen to sixty-seven), and listener years lived away from Huelva/Lepe (zero to thirty). Listener years away serves as a limited proxy for geographic mobility. Listener education is a five-point scale based on educational levels: primary (1), secondary (2), *bachillerato*/professional formation (3), undergraduate degree (4), and graduate degree (5). All independent variables were tested in model construction with each social factor in interaction with variant. Three-way interactions between variant by listener origin by other social factors were tested to examine differences between communities. Within each model, non-statistically significant interactions with variant were removed from subsequent models. Estimated marginal means (Lenth, Singmann, Love, Buerkner, & Herve 2018) were used to conduct post-hoc analyses for interactions with more than two categorical levels.

As perceived origin was a three-way categorical dependent variable (Huelva, Lepe, *otro sitio*), a separate multinomial logistic regression model was fitted to the listeners' evaluations of speaker origin using the *multinom* function in the *nnet* package (Venables & Ripley 2002). *Z*-scores and *p*-values were calculated manually.

R E S U L T S

Each model demonstrates a significant main effect for variant (*ceceo* vs. *distinción*) and several significant interactions between variant and other independent variables. The results for each mixed effects linear regression model are presented in Table 1, displaying the estimate, standard error (*SE*), *t*-value, and *p*-value. Positive estimates indicate a higher evaluation, while negative estimates indicate a lower evaluation. Larger estimates in either direction from zero indicate a stronger effect of the main effect or interaction. Marginal R-squared (R^2m) values and conditional R-squared (R^2c) values are listed for each model to assess the goodness-of-fit of the variation per measure (Nakagawa & Schielzeth 2013).

The perceived status model demonstrates a main effect of variant, in which speakers with *distinción* guises had higher perceived status than speakers with *ceceo* guises. The interaction between variant and speaker gender (Figure 1A) indicates that while both male and female speakers are perceived as having lower status with *ceceo* guises than with *distinción* guises, female speakers with *ceceo* guises are perceived as even lower status than male speakers with *ceceo* guises. The interaction between variant and listener origin (Figure 1B) indicates that Huelva listeners perceive *distinción* guises higher in status and simultaneously perceive *ceceo* guises lower in status than Lepe listeners.

The perceived urban-ness model demonstrates a main effect of variant indicating that speakers with *distinción* guises were perceived as more urban than speakers

TABLE 1. *Summary of mixed effects linear regression models for* PERCEIVED STATUS, PERCEIVED URBAN-NESS, *and* PERCEIVED FORMALITY; *speaker and listener as random intercepts and listener by variant as random slope;* n = 2,652 *for each regression. Reference levels are* ceceo *for variant,* female *for speaker gender,* female *for listener gender, and* Huelva *for listener origin.*

Predictor	Estimate	SE	t-value	p-value
PERCEIVED STATUS (R^2m: 0.23, R^2c: 0.52)				
(Intercept)	−0.50	0.15	−3.24	**
Variant = *distinción*	1.01	0.05	19.81	***
SpeakerGender = male	0.04	0.21	0.18	0.86
ListenerOrigin = Lepe	0.13	0.06	2.21	*
Variant:SpeakerGender	−0.12	0.05	−2.58	**
Variant:ListenerOrigin	−0.25	0.07	−3.58	***
PERCEIVED URBAN-NESS (R^2m: 0.27, R^2c: 0.47)				
(Intercept)	−0.63	0.11	−5.61	***
Variant = *distinción*	1.35	0.08	16.16	***
SpeakerGender = male	0.12	0.14	0.88	0.40
ListenerOrigin = Lepe	0.18	0.09	1.98	*
ListenerGender = male	0.02	0.10	0.20	0.84
Variant:SpeakerGender	−0.18	0.06	−3.11	**
Variant:ListenerOrigin	−0.54	0.12	−4.65	***
ListenerOrigin:ListenerGender	−0.15	0.15	−0.98	0.33
Variant:ListenerGender	−0.21	0.13	−1.66	0.10
Variant:ListenerOrigin:ListenerGender	0.41	0.20	2.06	*
PERCEIVED FORMALITY (R^2m: 0.15, R^2c: 0.45)				
(Intercept)	−0.85	0.20	−4.18	***
Variant = *distinción*	1.21	0.17	7.19	***
SpeakerGender = male	0.11	0.16	0.68	0.51
ListenerAge	0.01	0.004	2.71	**
ListenerOrigin = Lepe	0.10	0.09	1.09	0.28
ListenerYearsAway	−0.01	0.008	−1.69	0.09
Variant:SpeakerGender	−0.21	0.06	−3.68	***
Variant:ListenerAge	−0.009	0.004	−2.03	*
Variant:ListenerOrigin	−0.23	0.09	−2.65	**
Variant:ListenerYearsAway	0.02	0.008	2.07	*

Note: * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$.

with *ceceo* guises. The interaction between variant and speaker gender (Figure 1C) indicates that while male and female *distinción* guises were perceived as equally urban, female *ceceo* guises were perceived as less urban (more rural) than male *ceceo* guises. The variant by listener origin interaction (Figure 1D) indicates that Huelva listeners perceived speakers with *distinción* guises as being more urban and simultaneously perceived speakers with *ceceo* guises as being less urban than Lepe listeners. Finally, a three-way interaction between variant, listener origin, and listener gender (Figure 1E) indicates that Huelva women perceived *distinción* guises as more urban and *ceceo* guises as less urban as compared to Lepe women.
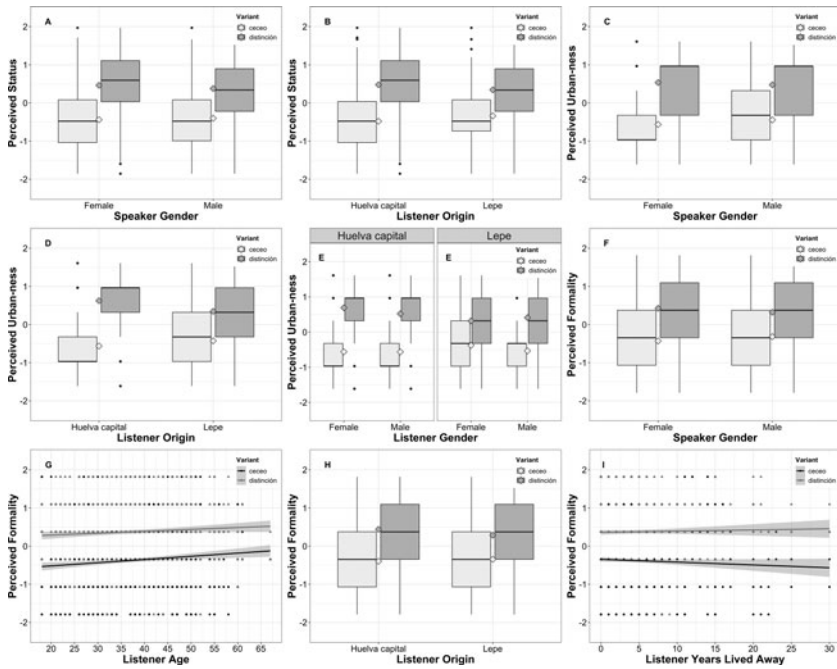
FIGURE 1. PERCEIVED STATUS: variant by speaker gender (A), variant by listener origin (B); PERCEIVED URBAN-NESS: variant by speaker gender (C), variant by listener origin (D), variant by listener origin by listener gender (E); PERCEIVED FORMALITY: variant by speaker gender (F), variant by listener age (G), variant by listener origin (H), variant by listener years lived away (I). *Note*: Positive numbers indicate a higher rating for each measure (i.e. higher status, more urban/less rural, more formal) while negative numbers indicate a lower rating (i.e. lower status, less urban/more rural, less formal). Figure 1 was created with *ggplot2* (Wickham 2013).

The perceived formality model demonstrates a main effect of variant indicating that speakers with *distinción* guises were perceived as more formal than speakers with *ceceo* guises. The interaction between variant and speaker gender (Figure 1F) demonstrates that female speakers with *distinción* guises were perceived as more formal than male speakers with *distinción* guises while in turn, female speakers with *ceceo* guises were perceived as less formal than their male counterparts. The interaction of variant by listener age (Figure 1G) indicates that although younger speakers perceived all guises as less formal than older speakers, they evaluated *ceceo* guises as even more informal. The variant by listener origin interaction (Figure 1H) indicates that Huelva listeners perceived speakers with *distinción* guises as more formal and *ceceo* guises as less formal than Lepe listeners. The interaction of variant by listener years lived away (Figure 1I) indicates that listeners with more years lived away evaluated speakers with *distinción* guises as more formal and speakers with *ceceo* guises as less formal than those with fewer years away.

Table 2 displays the best-fit multinomial logistic regression for perceived origin[6]. The main effect of variant indicates that listeners were more likely to perceive speakers with *ceceo* guises as being from Lepe than from Huelva. The variant by listener origin interaction indicates that Lepe listeners were more likely than Huelva listeners to perceive speakers with *ceceo* guises as being from Lepe than from Huelva. However, Huelva listeners were more likely to perceived speakers with *distinción* guises as being from Huelva than Lepe listeners. That is, Lepe listeners demonstrated greater variation in perceiving speakers with *distinción* guises as being from Huelva and Lepe. Figure 2 presents a mosaic plot (a visualization of a contingency table) demonstrating that perceived origin varies by variant and listener origin.

In addition to Likert-scale and multiple-choice selections, there was an optional open-comment question for each guise ('Anything else that occurs to you about this person?'). These comments are presented per guise type in Table 3.

For *ceceo* guises, listeners demonstrated high metalinguistic awareness and even used the terminology[7] *ceceo*. Many explicitly referenced graphemes such as <z> or the phoneme z, referring to /θ/: "this use of the z", "a continual use of the phoneme z", "the people of Lepe we pronounce the z". The rest of the comments tend to fall into three larger categories: dialect recognition, negative intelligibility, and positive social affect. Many associated *ceceo* with Lepe such as: "clear Lepe *ceceo*", "the *ceceo* of this person and the accent tell me that she is from Lepe". Others acknowledged it could be of Huelva, but specifically "Torrejón" (one of Huelva's poorest neighborhoods) or "*del barrio*". Other listeners remarked several negative social connotations towards intelligibility such as: "uncultured (fem.)", "she is very crude speaking", "I have had difficulties in understanding this person". Some of the harsher comments (i.e. *inculta*, *basta*) are directed to female speakers. Finally, listeners also gave positive social affect comments such as: "easy-going (masc.)", "he's an entrepreneurial man", "I see a pleasant person". Notably, these three comments were for male speakers. Taken together, these comments are similar to folk dialectology findings (Niedzielski & Preston 1999:366) in which linguistic forms lacking institutional prestige are valued higher in solidarity and lower in status.

For *distinción* guises, there was explicit reference to the presence of orthographic <s> and the phoneme /s/, many times indicating that it is not a local pronunciation such as "the S that she pronounces isn't characteristic of our area", "by the way of pronouncing the S I wouldn't say that he's lepero", "he *sesea* [verb] more than expected to be from Huelva". However, one listener aptly commented that the speaker is "from the center of the city of Huelva", a middle and upper-middle class neighborhood where *distinción* is most common in the city (Regan 2017a). Other comments included positive status characteristics such as: "she appears more a TV or radio presenter", "her profession could be a civil servant", "she has a job working face-to-face with the public and adapts her speech so that it's less affected. She distinguishes s and c". These comments inference pressures of the linguistic market (Sankoff & Laberge 1978). Furthermore, the last comment

TABLE 2. *Best-fit multinomial logistic regression model fitted to* PERCEIVED ORIGIN *based on variant and listener origin;* n = 2,652. *Reference levels are* Huelva *for perceived origin,* Huelva *for listener origin, and* ceceo *for variant.*

Perceived origin	Coefficient				SE				p-value			
	Int.	Variant = *Distinción*	List. Origin = Lepe	Variant: List. Origin	Int.	Variant = *Distinción*	List. Origin = Lepe	Variant: List. Origin	Int.	Variant = *Distinción*	List. Origin = Lepe	Variant: List. Origin
Lepe	1.50	−3.18	0.57	0.80	.10	0.14	0.17	0.21	***	***	***	***
Otro sitio	−0.97	−2.37	−0.33	1.51	.17	0.27	0.32	0.43	***	***	0.31	***
					Residual Deviance: 3407.55, AIC: 3423.55							

Note: * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$.
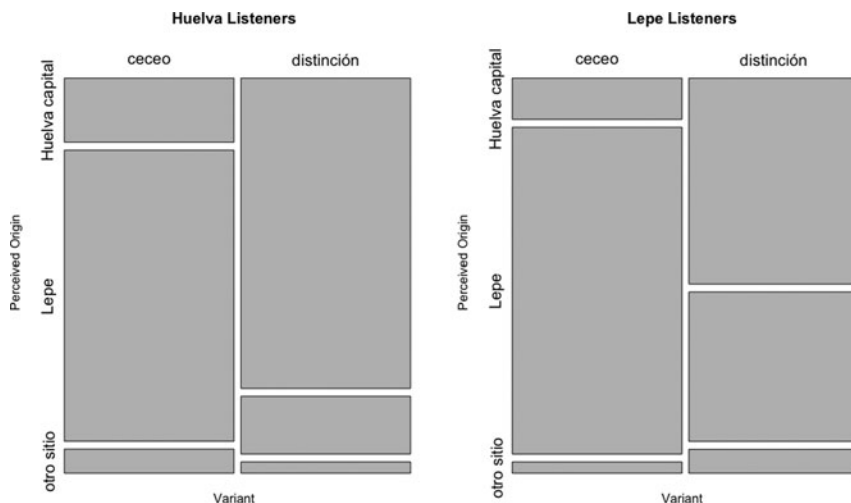
FIGURE 2. Mosaic plot of variant by listener origin for perceived origin.

explicitly stated that the speaker distinguishes between <s> and <c>, referring to *distinción*.

At the completion of the study, participants were given the option to leave final comments. In example (1), a Huelvan gives his thoughts on linguistic variation throughout the province.

(1)
1   Hay muchos acentos o dejes dentro de la provincia de Huelva. Es característico el deje
2   de los pueblos costeros como Ayamonte, Isla Cristina y Lepe. En la sierra de Huelva
3   generalmente se pronuncia mejor y también se entiende más. En pueblos de la comarca
4   del Condado es donde peor se suele hablar o, mejor dicho, peor se pronuncia,
5   ya que su cercanía a Sevilla influye mucho. En Huelva capital se suele hablar
6   sin deje y con una pronunciación casi perfecta de las "c" y las "s" que también
7   se da en la sierra.

1   'There are many accents or intonations within the province of Huelva. It's distinctive the accent
2   of the coastal towns like Ayamonte, Isla Cristina, and Lepe. In the mountain range of Huelva
3   generally one pronounces better and also one understands more. In towns of the
4   Condado region is where one tends to speak worse, or better said, one pronounces worse,
5   as its closeness to Sevilla influences it a lot. In the city of Huelva, one tends to speak
6   without accent and with an almost perfect pronunciation of the "c"'s and the "s"'s, which also
7   occurs in the mountain range of Huelva.'

(47-year-old male, Huelva)

He refers to the coastal towns as having distinctive accents, the areas most known for *ceceo* (lines 1 and 2), and claims that in *la sierra* (northern part of the province) is where one speaks better (lines 2 and 3). Conversely, *la comarca del Condado* is where people 'speak/pronounce worse' (lines 3 and 4). The listener states that

TABLE 3. *Listener comments on individual speakers per guise type (P = participant).*

Ceceo guises	*Distinción* guises
Aunque no se denota mucho su acento pero el ceceo es claro de nuestra localidad Lepera 'Although one doesn't denote a lot her accent, but the ceceo is clearly of our Lepe locality' (P3, Lepe)	*La S que pronuncia no es característica de nuestra zona* 'The S that she pronounces isn't characteristic of our area' (P3, Lepe)
Claro ceceo lepero 'Clear Lepe ceceo' (P3, Lepe)	*Por la forma de pronunciar la S no diría que es Lepero* 'By the way of pronouncing the S I wouldn't say that he's lepero' (P3, Lepe)
Tiene mucho ceseo 'He has a lot of ceseo' (P6, Lepe)	*Me da la sensación de que está forzando el acento a la hora de hablar* 'I get the feeling that she is forcing the accent at the hour of speaking' (P6, Lepe)
He tenido dificultades para entender a esta persona 'I have had difficulties in understanding this person' (P6, Lepe)	*Me parece que es una turista* 'It appears to me that she's a tourist' (P16, Lepe)
Destaca el ceseo 'The ceseo stands out' (P6, Lepe)	*Parece más presentadora de televisión o radio que maestra* 'She appears more a TV or radio presenter than a teacher' (P34, Lepe)
Es un hombre emprendedor 'He is an entrepreneurial man' (P16, Lepe)	
El ceceo de esta persona y el acento me dicen que es de Lepe 'The ceceo of this person and the accent tell me that she is from Lepe' (P18, Lepe)	*Miarma* 'Miarma' [informal reference to *sevillano/as*] (P60, Lepe)
Campechano 'easy-going (masc.)' (P38, Lepe)	*Su profesión puede ser funcionaria* 'Her profession could be a civil servant' (P91, Lepe)
Inculta 'Uncultured (fem.)' (P38, Lepe)	*Deportista* 'Athlete/athletic' (P97, Lepe)
Al igual que el anterior no me parece vulgar, solo que las personas de Lepe pronunciamos la z, de acuerdo con la modalidad andaluza perfectamente aceptada 'The same as the previous one, it doesn't appear vulgar to me, only that the people of Lepe we pronounce the z, according to the perfectly accepted Andalusian modality' (P52, Lepe)	*Tiene un trabajo de cara al público y adapta su habla para que sea menos afectada. Distingue s y c* 'She has a job working face-to-face with the public and adapts her speech so that it's less affected. She distinguishes s and c' (P103, Lepe)
	Admira su ciudad 'Admires her city' (P104, Huelva)

Continued

Table 3. Continued.

Ceceo guises	*Distinción* guises
Veo una persona agradable 'I see a pleasant person' (P68, Lepe)	*Podría pertenecer también a Málaga, ya que el habla es parecida al onubense* 'He could also be from Málaga, as their speech is similar to that spoken in Huelva (P139, Huelva)
Del Torrejón 'Of Torrejón' [neighborhood] (P71, Lepe)	
Cecea 'She cecea' [verb] (P103, Lepe)	*Podría ser estudiante* 'She could be a student' (P151, Huelva)
Ese uso de la z de este y otros hablantes pertenecen a la zona de El Condado 'That use of the z of this and other speakers belongs to El Condado area' (P106, Huelva)	*Sesea más de la cuenta para ser de Huelva* 'He *sesea* more than expected to be from Huelva' (P169, Huelva)
En realidad esta persona puede ser tanto de un entorno rural como de un entorno urbano pero de barrio. En los barrios de la capital es fácil encontrar gente con un nivel de estudios medio y con dificultad para expresarse así como con un uso continuo del fonema z 'In reality this person can be as much from a rural environment as an urban environment, but one of neighborhood. In the neighborhoods of the capital [Huelva] it's easy to find people with an average level of studies and with difficulty in expressing oneself, just as with a continual use of the phoneme z' (P106, Huelva)	*De la zona Centro de Huelva* 'Of the city center of Huelva' (P176, Huelva) *Las "S" muy remarcadas para darle intensidad al diálogo* 'The "S"'s very highlighted/stressed in order to give intensity to the dialogue' (P217, Huelva) *Podría ser andevaleña pero vive en Huelva* 'She could be andevaleña [person from the Andévalo, central part of province of Huelva], but lives in Huelva' (P238, Huelva)
Es muy basta hablando 'She is very crude speaking' (P197, Huelva)	
Muy basta hablando 'Very crude (fem.) speaking' (P197, Huelva)	

Huelva capital speaks without an accent and has a near perfect pronunciation of 'c' and 's' (as does *la sierra*), referencing graphemes and/or phonemes for producing *distinción* (lines 5 and 6). In this characterization of speech of different areas, one observes the semiotic processes of iconization and erasure (Irvine & Gal 2000).

In example (2), a Huelvan provides her thoughts on the presence of *ceceo* in Huelva.

(2)
1   Sólo informar que tanto yo, como mis padres y abuelos somos de Huelva capital y
2   que aunque hay gente en la capital que cecea, creo que es más por algún tipo de
3   acento heredado de sus padres o abuelos que pudieran ser de la provincia,
4   pero que el choquero sin influencias lingüísticas de otro lugar no suele cecear.

1   'Only to inform that I as well as my parents and grandparents are from the city of Huelva and
2   that although there are people in the city that *cecea*, I believe it's more due to some type of
3   inherited accent from their parents or grandparents who could've been from the province,
4   but the *choquero* without linguistic influences of another place doesn't tend to *cecear*.'

(41-year-old female, Huelva)

Although no one in her family speaks with *ceceo,* she recognizes that *ceceo* is present in the city, but believes it is due to an 'inherited accent' given by someone's parents or grandparents that are from the province (lines 2 and 3). While the construction of the *Polo Industrial* in 1964 brought workers with *ceceo* from nearby coastal towns, it also brought many workers with *distinción* from the north of the province and the rest of the Spain. Fractal recursivity and erasure (Irvine & Gal 2000) are observed in her characterization of fricative norms by separating those with family born in provincial towns from the *choqueros* (lines 3 and 4), the colloquial gentilic for Huelva capital (the official gentilic is *onubense*). While this insight overlooks previous accounts that *ceceo* was the norm in the city of Huelva (Navarro Tomás et al. 1933; Alvar et al. 1973) before mass immigration due to the *Polo Industrial*, meaning that *choqueros* did and some still do produce *ceceo*, it also demonstrates an awareness that the current dominant norm in the city is *distinción* while *ceceo* is now more associated with nearby towns.

In example (3), a Huelvan provides his historical account for the current linguistic situation.

(3)
1   Hay que tener en cuenta que en Huelva se encuentra en una zona predominantemente ceceante
2   (la costa), pero que ha recibido mucha migración del resto de la provincia,
3   principalmente Andévalo y la sierra que son seseantes o diferenciantes.

1   'One must take into account that Huelva is located in a predominantly *ceceante* area
2   (the coast), but that it has received a lot of migration from the rest of the province,
3   principally the Andévalo and the mountain range of Huelva that are *seseantes* or differentiators.'

(24-year-old male, Huelva)

He situates Huelva in its larger dialect region, historically a *ceceante* area (Navarro Tomás et al. 1933:233; Alvar et al. 1973) (lines 1 and 2). However, he notes the city of Huelva has received mass migration from the Andévalo (central part of the province) and *la sierra*. He explicitly labels them as *seseantes* (historical norm in the Andévalo) or differentiators, referring to *distinción* (historical norm in *la sierra*) (line 3). Thus, he infers that immigrants with *distinción* and even those with *seseo* changed the city's linguistic landscape through dialect contact, while the surrounding coastal area remains *ceceante*.

Other listeners addressed social connotations associated with *ceceo*. In example (4), a Lepera addresses the attitude that *ceceo* is associated with lower socioeconomic status.

(4)
1   Me gustaría añadir que el acento o ceceo no implica un nivel sociocultural bajo,
2   por desgracia, nuestro prejuicio nos lleva a pensar lo contrario.

1   'I would like to add that the accent or ceceo doesn't imply a low sociocultural level,
2   unfortunately, our prejudice leads us to think the contrary.'

(28-year-old female, Lepe)

Although she states that simply because someone speaks with *ceceo* 'doesn't imply that they are from a low sociocultural level', she acknowledges that stereotypes still lead many to make such judgments.

This association between 'low sociocultural level' and *ceceo* is addressed further by a Huelvan in example (5).

(5)
1   El tema del ceceo es controvertido. En principio puede sonar a nivel sociocultural bajo,
2   pero no tiene que ver. Muchas veces es simplemente la forma de hablar que
3   uno ha escuchado en casa, aunque a mí, personalmente no me gusta. Cuando no
4   se cecea en los ejemplos que he escuchado, me gusta llamarlo "andaluz estándar".

1   'The theme of *ceceo* is controversial. In principle it can sound like low sociocultural level,
2   but it doesn't have to do with it. Many times, it's simply the form of speaking that
3   one has heard at home, although to me, personally I don't like it. When one doesn't
4   *cecea* in the examples that I have heard, I like to call it "standard Andalusian".'

(35-year-old male, Huelva)

He recognizes the association of *ceceo* with a 'low sociocultural level' (line 1), but suggests that it is not necessarily a correct assumption (line 2). However, in line 3 he states that he does not like *ceceo* and prefers the examples without *ceceo* (i.e. those with *distinción*). Finally, he refers to the examples of speakers who produce *distinción* as 'standard Andalusian' (line 4), showing a preference for the new intermediate Andalusian variety (Moya Corral 2018; Villena Ponsoda & Vida Castro 2020). Consequently, Table 3 and examples (1)–(5) demonstrate high metalinguistic awareness regarding *ceceo* and *distinción*: geographical and social distribution, diachronic changes, and social connotations.

DISCUSSION AND CONCLUSION

The main effect of variant for perceived status, urban-ness, and formality indicate that Huelva and Lepe listeners associated *distinción* with more overt prestige than *ceceo*, supporting previous matched-guise studies in Granada (Moya Corral & García Wiedemann 1995; Martínez & Moya Corral 2000). Specifically, speakers with *distinción* were perceived as being of higher status, more urban, and more

formal than speakers with *ceceo*. These perception findings mirror the production studies throughout Andalucía in which speakers from higher socioeconomic levels, with more formal education, from urban areas, and of more professional occupations favor *distinción* (Ávila Muñoz 1994; Moya Corral & García Wiedemann 1995; Villena Ponsoda 1996; Melguizo Moreno 2007; Lasarte Cervantes 2010; Regan 2020).

These perceptions, however, were influenced by listener and speaker characteristics. Regarding variant by speaker gender interactions, female *ceceo* guises were perceived as lower status, less urban (more rural), and less formal than male *ceceo* guises. However, female *distinción* guises were perceived as more urban and formal than male *distinción* guises. These findings provide insight into the motive of why women have led the split of *ceceo* into *distinción* throughout Andalucía (Moya Corral & García Wiedemann 1995; Villena Ponsoda 1996; Melguizo Moreno 2007; García-Amaya 2008; Regan 2020) as well as why 'women adopt prestige forms at a higher rate than men' in a 'change from above' (Labov 1990:213, 2001:274). Specifically, women adopt *distinción* as they are evaluated more negatively than their male counterparts when using the traditional Andalusian feature *ceceo*. This supports the notion that women use more institutionally prestigious supra-local features as a result of being evaluated more negatively than their male counterparts when using less overtly prestigious or highly localized features (E. Gordon 1997; Eckert & McConnell-Ginet 1999; Chappell 2016). This provides another example where women's linguistic behavior is 'not a matter of self-promotion, but of avoidance' of particular stigmatized features (E. Gordon 1997:47). That is, as Chappell (2016:372) claims, women's adoption of a more prestigious variant may be 'less of an option and more of a social necessity'. However, as gender interacts with other social factors (Eckert 1989; Labov 1990) and that 'within gender group' differences may be more important (Eckert 1989:254; Eckert & McConnell-Ginet 1999:193), these findings should be explored further.

The variant by listener age interaction for perceived formality revealed that younger speakers evaluated *ceceo* as less formal than older speakers, indicating that younger listeners assign greater formality differences between the two norms than older listeners. These results reflect apparent-time production data (Villena Ponsoda 1996; Regan 2020) in which younger generations are more likely to produce *distinción* as well as perception data (Lasarte Cervantes 2012) in which younger speakers are more adept at discriminating between fricative realizations. The interaction between variant and listener years lived away demonstrates that listeners who have spent more years away evaluated *distinción* guises as more formal and *ceceo* guises as less formal than those with few to no years away. Thus, as Huelvans and Lepero/as become more mobile, presumably resulting in increased dialect contact, this affects their attitudes towards *ceceo* and *distinción*.

Listener origin by variant interactions indicated several differences between communities. Huelva listeners evaluated *distinción* guises as being of higher status, more urban, and more formal than Lepe listeners. Similarly, Huelva listeners evaluated *ceceo* guises as lower status, less urban (more rural), and less formal than Lepe listeners. The three-way interaction between variant, listener origin, and

listener gender also indicated that Huelvan women evaluate *distinción* as more urban and *ceceo* as less urban than Lepe women. For perceived origin, Lepe listeners were more likely to perceive speakers with *ceceo* guises as being from Lepe, while Huelva listeners were more likely to perceive speakers with *distinción* guises as being from Huelva. These results complement recent production data (Regan 2020) in which Huelva is more advanced in the split of *ceceo* into *distinción* than Lepe. Listeners appear to be aware of these differences. However, Huelva listeners, perhaps through processes of iconization, fractal recursivity, and erasure (Irvine & Gal 2000), assume that *ceceo* is from Lepe and *distinción* is from Huelva. Lepe listeners, on the other hand, demonstrate awareness that *distinción* is also present in their community. It is proposed that Huelva and Lepe may not differ in overall language attitudes, but rather in the rate of change in language attitudes, mirroring their rates of acquisition of the split of *ceceo*. While societal changes have occurred in both communities, their distinct historical and socioeconomic developments resulted in more educational attainment and earlier dialect contact in Huelva, which may explain the nuanced differences in language attitudes between communities. Thus, understanding 'causal social processes' in these communities is more insightful than focusing on rural-urban idealizations (Britain 2009a:224).

The quantitative evaluations and the qualitative comments indicate that *ceceo* has moved beyond a local dialectal feature and has acquired indexical values (Silverstein 2003). As Eckert (2008:462) posits, previous studies (Labov 1963; Zhang 2005; Johnstone & Kiesling 2008) demonstrated that linguistic variables that previously distinguished geographic dialects 'can take on interactional meanings based in local ideology'. It appears that *ceceo* is another case of a traditional dialectal feature passing through semiotic processes of ideology. While it originally only served as a dialect marker, it has acquired a constellation of social meanings within an *indexical field* (Eckert 2008) (Figure 3).

Sociolinguistic theory of mergers and splits

As large-scale societal changes have promoted dialect levelling of traditional features throughout Europe (Auer & Hinskens 1996; Hinskens et al. 2005), the current study demonstrates that they have also changed language attitudes towards certain traditional dialectal features. In Huelva and Lepe the changes in educational attainment, economies, and dialect contact have provided the adequate social context for *ceceo* to become stigmatized, which has served as a motivation for its split. Thus, the results support Maguire et al.'s (2013:234–35) claim that sociolinguistic awareness and stigmatization may promote the split of a merger.

Given the social meaning attached to *ceceo*, it is not surprising that many Andalusians avoid this localized feature in favor of supra-local *distinción*, while still maintaining other Andalusian dialectal features in syllable-coda position, forming a new intermediate Andalusian variety (Villena Ponsoda 2008; Hernández-Campoy & Villena Ponsoda 2009; Moya Corral 2018; Villena Ponsoda & Vida Castro 2020).
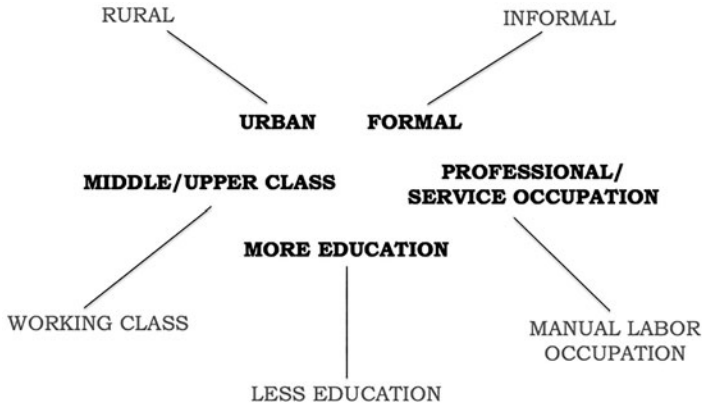
FIGURE 3. Non-exhaustive preliminary indexical field of *ceceo* (gray) and *distinción* (black). Note: It is important to recognize that a *ceceante* speaker is not these labels (i.e. they are not less educated nor more rural than *distinción* speakers), but rather that these social characteristics reflect the implicit language attitudes of both communities.

Furthermore, the national Spanish media routinely characterize the Andalusian variety as being unintelligible, vulgar speech, or inherently funny, among other insulting and unfounded stereotypes (León-Castro 2016:1589–93). Thus, given the stigmatization of a localized feature like *ceceo*, Andalusians wanting to avoid these stereotypes may opt for *distinción*. This lends support to the notion that speakers avoid certain highly localized dialectal features to appear more cosmopolitan, while still using other dialect features to maintain their regional identity (Foulkes & Docherty 1999; Watt 2002; Kerswill 2003; Villena Ponsoda & Vida Castro 2020).

The current study supports previous findings (Hay et al. 2006; Koops et al. 2008; Baranowski 2013; Hall-Lew 2013; Maguire et al. 2013; Watson & Clark 2013) that speakers and listeners may have social awareness and evaluations of mergers and splits. However, the findings suggest a difference between the perception of a Spanish fricative merger and English vocalic mergers. As Kerswill (2003) proposes, there may be differences between consonants and vowels in cases of levelling. The quantitative findings indicate that listeners have strong implicit social evaluations regarding *ceceo* and *distinción*, while the metalinguistic comments indicate that listeners possess a high degree of sociolinguistic awareness towards *ceceo* and *distinción*. That is, different from vocalic mergers in which only a few speakers or listeners comment on the sounds as part of specific words without direct reference to the structural property of the merger, these speakers in fact discuss the sounds themselves, including references to the phonemes and graphemes as well as utilize terminology regarding the merger and its split. Furthermore, listeners in examples (4) and (5) overtly connect social evaluations with the use of *ceceo* while listeners in examples (1)–(3) directly discuss the geographic variation of *ceceo*, *seseo*, and *distinción* in the province as well as the diachronic changes due to dialect contact from immigration.

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These differences in social awareness[8] and evaluations between a Spanish fricative merger and English vocalic mergers may be due to the sociolinguistic salience of *ceceo*. Here sociolinguistic salience is defined as 'the level of awareness that speakers have of the variable, which in turn is connected to the social meanings that become attached to its variants' (Llamas, Watt, & MacFarlane 2016:2). Several scholars propose that highly salient features are prone to dialect levelling in situations of dialect contact (Trudgill 1986; Erker 2017). Here salience is not due to extreme acoustic realizations (Podesva 2006), but rather due to frequency (Bardovi-Harlig 1987) and orthography (Trudgill 1986:11).

From both a usage-based framework (Bybee 2001) and an exemplar theory framework (Pierrehumbert 2001; Foulkes & Docherty 2006), syllable-initial coronal fricatives are highly frequent, which provides listeners with an infinite number of exemplars. For example, Regan's (2017b:292–98) analysis of spontaneous speech from twelve Lepe speakers for a selected four-minute clip of continuous speech from sociolinguistic interviews produced an average of 94.8 (*SD*: 25.4) syllable-initial fricatives per speaker. Thus, as listeners hear the speech of others, the social information of the speakers are accumulated and indexed to the stored exemplars (Foulkes & Docherty 2006; Hay et al. 2006). This allows listeners to associate *ceceo* and *distinción* with certain social characteristics, particularly with dialect contact allowing for the existence of the merger and the split in the same speech communities. In contrast, the COT-CAUGHT or PIN-PEN vowels are less frequent in spontaneous speech and thus provide fewer exemplars for English speakers to associate social meaning. This is not to say that English vocalic mergers do not possess social meaning, but rather that there are degrees of salience (Barnes 2015) mediated by the number of exemplars each linguistic variable presents to the listener.

The role of orthography cannot be underestimated in the social awareness and evaluations of *ceceo* and *distinción*. As Labov (1994:345) notes, 'the school system would logically be the major instrument for a social program to reverse mergers', as seen in a few lexical splits (Wyld 1936; Abdel-Jawad 1981; Lin 2018). Different from vocalic mergers, prescriptive Peninsular Spanish presents a direct grapheme-to-phoneme correspondence for coronal fricatives. Given *distinción* is the official norm that is taught in the school systems throughout Andalucía, the current results reflect a type of 'standard language culture' (Milroy 2001:535) or 'standard language ideology' (Lippi-Green 2012:67) that gives overt prestige to the prescriptive grapheme-to-phoneme correspondence. This could possibly be a main reason for differences between consonants and vowels (Kerswill 2003), at least for mergers and splits. That is, there may be a more direct correspondence between graphemes and phonemes for consonants than for vowels (particularly for languages with a large vowel inventory like English). Thus, with a closer grapheme-to-phoneme correspondence, speakers are more able to produce splits and listeners more able to perceive sociophonetic differences between mergers and splits. As orthography and education go hand in hand, this is a principle mechanism of change in the production and perception of the *ceceo* merger and its split, particularly as Huelva and Lepe have seen notable increases in educational attainment.

Future studies should continue to examine the social perceptions of mergers and splits, particularly non-vocalic and non-English examples to increase our cross-linguistic understanding of the social awareness and evaluations of mergers and splits. The results of the current study have shed light into the 'social motivation of a sound change' (Labov 1963). The implications are two-fold: (i) consonant mergers/splits may be subject to more overt social evaluation than vocalic mergers/splits due to frequency and orthography; and (ii) a merger can acquire social meaning, and this meaning in turn, may motivate its split.

APPENDIX: EXPERIMENT DETAILS

A: Stimuli phrases, B: Experimental design, C: Instructions, D: Screenshot of the survey questions per guise

A

1. Sí es un sitio que está muy bien para jóvenes para hacer cosas
2. Es muy complicado responder a eso, porque te dan ganas de decir, venga, esto no sirve para nada
3. Impresionante, es preciosa, una ciudad preciosa y una vida que tiene
4. Pues toda esa avenida, donde está el cuartel de la Guardia Civil, todo eso todo eso
5. No solamente con la gente que conocí al nivel internacional, sino
6. Yo no sé, hace poco ahora unos cinco seis años antes de la crisis
7. Empezaron a hablar de mí y decían cosas que son las cosas que yo les digo
8. Y a veces noticias que salen y que se equivocan
9. Se supone que es por la adoración a la Virgen, pero aquí no se está adorando a nadie porque la mayoría va a hacer eso, de fiesta
10. También puede hacer cosas más grandes, eso puede invertir económicamente, aquí, es más, se puede hacer cosas, pero…
11. Eso es lo que dice la gente, también la gente no sabe
12. Y se estaba construyendo, se estaba empezando a construir y la gente y las casas estaban baratísimas, entonces

B

Block	Speaker	Gender	Version A	Version B
	1	female	*distinción*	*ceceo*
	2	female	*ceceo*	*distinción*
1	3	male	*ceceo*	*distinción*
	4	female	[distractor]	[distractor]
	5	male	[distractor]	[distractor]
	6	male	[distractor]	[distractor]
	7	male	*ceceo*	*distinción*
	8	male	*distinción*	*ceceo*
2	9	female	*distinción*	*ceceo*
	10	female	[distractor]	[distractor]
	11	male	[distractor]	[distractor]
	12	female	[distractor]	[distractor]
	13	female	*ceceo*	*distinción*
	14	female	*distinción*	*ceceo*
3	15	male	*distinción*	*ceceo*
	16	male	[distractor]	[distractor]
	17	female	[distractor]	[distractor]
	18	male	[distractor]	[distractor]
	19	male	*distinción*	*ceceo*
	20	male	*ceceo*	*distinción*
4	21	female	*ceceo*	*distinción*
	22	male	[distractor]	[distractor]
	23	female	[distractor]	[distractor]
	24	female	[distractor]	[distractor]

Note: Block order remained fixed, but speaker guises were randomized within each block.

C

Las instrucciones

Algunos estudios recientes de la psicología social han demostrado que se puede inferir mucho sobre una persona sólo por escuchar su manera de hablar. Vas a escuchar a 24 personas. Cada grabación dura entre 2-5 segundos. Escucha las grabaciones tantas veces como quieras. Debes responder a las preguntas después de cada grabación.

Debes estar en un lugar sin ruido y ponerte los auriculares para poder escuchar bien cada grabación. El estudio durará 15 minutos. No lo pienses demasiado, debes usar tus primeras intuiciones.

Siguiente

D

▶ 0:00 / 0:05 ◀) ⁝

Esta persona suena…

	1 2 3 4 5 6	
De nivel socioeconómico bajo	○ ○ ○ ○ ○ ○	De nivel socioeconómico alto
Con menos estudios	○ ○ ○ ○ ○ ○	Con más estudios
Menos masculina	○ ○ ○ ○ ○ ○	Más masculina
Menos simpática	○ ○ ○ ○ ○ ○	Más simpática
Más rural	○ ○ ○ ○ ○ ○	Más urbana
Informal	○ ○ ○ ○ ○ ○	Formal

¿A qué crees que se dedica esta persona?

¿Qué edad crees que tiene?

¿De dónde crees que es?

Huelva capital

Lepe

otro sitio (indica dónde)

¿Algo más que se te ocurre de esta persona?

NOTES

[1]*Traditional Andalusian feature* refers to the historical variant most associated with this variety, recognizing that Andalusian speakers may use other variants.

[2]See Print 1580, Map 1705.

[3]For forced-choice identification tasks and AX perception experiments on Andalusian coronal fricatives, see Lasarte Cervantes (2012), Gylfadottir (2018), and Molina-García (2020). Of note in Molina-García's (2020:428) lexical decision forced-choice task is that in a final open-comment section, a listener explicitly stated that one speaker (who produced *distinción*) distinguished between words with '-s- or -z-' while the words of the other speaker (who produced *ceceo*) all sounded like '-z-'.

[4]Even as late as the mid 1980s, Mendoza Abreu (1985) found that *ceceo* was the norm in Lepe.

[5]Lepe does not have specific education INE census data until 1960.

[6]Listeners did not accurately distinguish the origin of speakers (*Huelvan speakers*: Huelva 42.7%, Lepe 53.8%, other 3.5%; *Lepero/a speakers*: Huelva 41.7%, Lepe 52.5%, other 5.8%).

[7]Speakers and listeners in previous studies have also utilized the terminology *ceceo* (Harjus 2017:7; Regan 2020:223; among others) and *seseo* (Gyldafottir 2018:34–35; Santana Marrero 2018:86) indicating social awareness of these mergers across Andalucía.

[8]As Gylfadottir (2018:41) suggests, differences in social awareness of vocalic mergers versus consonant mergers may also be due to 'broad phonetic differences' in which consonants, particularly fricative mergers like *seseo*, require a more precise articulation in which a subtle change in articulation can lead to the perception of another consonant more so than subtle changes in articulation for vowels.

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