VARIABLE NORMS IN THE PRODUCTION OF /ϴ/ IN JEREZ DE LA FRONTERA, SPAIN

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Abstract: This paper investigates the variable use of /θ/ in the urban speech in Jerez de la Frontera, traditionally considered to have a "*ceceo*" Andalusian dialect. It examines the relationship between phonetic and social factors that condition variable *ceceo* and connects them to the social changes undergone in Spain during the 30 years since the establishment of democracy. The speech samples of 21 native speakers from Jerez de la Frontera were analyzed. The results indicate that younger women are more aware of the /s/–/θ/ distinction than their male counterparts and that participants in contact with other social networks distinguish these segments much more frequently. In terms of linguistic factors influencing the choice of [s], preceding and following phonetic contexts also appear to motivate the choice but most importantly, orthography plays a fundamental role in the choice, implying that Jerez speakers adhere to national norms when they choose between [s] and [θ].

1. Introduction

While standard Castilian Spanish is known for adhering to the norm of the /θ/–/s/ distinction (i.e., use of /θ/ for orthographic *ci, ce,* and *z,* and /s/ for orthographic *s*) the majority of Andalusians, regardless of their level of education and social status, have traditionally been categorized as adhering to one of two alternative norms: *seseo* or *ceceo* (Dalbor, 1980; Alvar, 1996; Hualde, 2005). *Seseo* is defined as the categorical use of the voiceless alveolar fricative /s/ for all cases of orthographic *ci, ce, s,* and *z,* and *ceceo* is the categorical use of the voiceless interdental /θ/ in those orthographic contexts. Although recent work has reported on the variable use of /s/ in *seseo* dialects (Dalbor, 1980), very little is known about variable use of /θ/ in *ceceo* dialects (Villena Ponsoda, 1994, 1996a, 1996b, 1997; Villena Ponsoda et al., 1995). It has been shown that the variable use of /s/ in *seseo* dialects is conditioned by both phonetic and social factors, and the fact that /θ/ would not behave in similar ways in *ceceo* dialects would seem quite anomalous, given the sociolinguistic makeup of southern Spain. In fact, changes may be motivated by the different social and political situations in which Andalusians were raised. In order to understand the social situation of Spain and how it may affect linguistic variation, it is necessary to examine the events that may have helped influence the lives of the participants under study. People aged 60–70 years, i.e., born during the decade from 1938 to 1948, experienced the postwar period in their early years and lived most of their early adulthood under the dictatorial regime of Franco. It is of extreme importance to take this aspect into account, since the members of the other age group were born during the decade from 1968 to 1978, that is, at the very end

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of Franco's regime. They have lived their entire adulthood under democracy, in a period during which access to education has been normalized and raised to the standards of the rest of the European Union.

Thus, the motivation of this paper is twofold: first, it aims to fill the gap in the literature on Spanish *ceceo* dialects and to understand more about the social and phonetic factors that govern variable use of the voiceless interdental fricative in southern Spain; and second, it tries to explain the relationship between linguistic variation and the different social upbringing of the participants. The dependent variable to be studied here is syllable-initial production of the target phoneme /θ/. Since it has been attested that syllable-final /s/ and /θ/ in both *seseo* and *ceceo* dialects are subject to debuccalization and potential loss (i.e., [h] and [Ø], respectively; e.g., Gerfen, 2002; Penny, 2000), productions of /θ/ in coda position were not taken into account in the current analysis. Thus the two variants of /θ/ that were coded for the current study were [s̪] and [θ].

The present paper is organized as follows: the following section includes overviews of *ceceo* and *seseo* studies, of the social situation (especially in terms of education) in Spain both during Franco's regime and since 1975, and of studies of sociolinguistic approaches to gender variation and social networks. Next, the current study is presented: research questions, participants, data collection, data analysis, results, and discussion. Finally, conclusions will be drawn and future directions of research will be presented.

2. Previous research

2.1. The history of the sibilants: *Seseo*, *ceceo*, and distinction

Studies on *ceceo* have been primarily concerned with the historical evolution of the sibilants in the Iberian Peninsula and overseas in South America (Penny, 2000). In the fifteenth century, there were six sibilant phonemes in Spanish: voiceless and voiced dentoalveolar affricates /t͡s̪/ (spelled *z*) and /d͡z̪/ (spelled *c/ç*); voiced and voiceless apicoalveolar fricatives /z̪/ (spelled *s* in intervocalic position), and /s̪/ (spelled either *s* in syllable-initial and final position or *ss* in intervocalic position); and voiced and voiceless postalveolar fricatives /ʒ/ (spelled *j* or *g* before *e* or *i*) and /ʃ/ (spelled *x*). During the next three hundred years, these sounds underwent a series of innovations that resulted in the modern realizations of these sounds in present-day Spanish. First, the dentoalveolar affricates /t͡s̪/ and /d͡z̪/ lost their affrication and became fricatives /s̪/ and /z̪/. This caused a problem in the system, since these two new fricatives and the two apicoalveolar fricatives were very close in terms of articulation. Next, the voicing distinction disappeared and a new tripartite system took hold in Spanish: a dentoalveolar fricative /s̪/, an apicoalveolar fricative /s̪/, and a postalveolar fricative /ʃ/. While the apicoalveolar fricative /s̪/ remained in the same place of articulation, the other two phonemes moved from their original places of articulation. The dentoalveolar fricative /s̪/ became the interdental /θ/, and the postalveolar fricative /ʃ/ became the velar /x/. Although this is the system present in modern standard Spanish, the alveolar sibilants underwent a different evolution in the Andalusian dialects. In this region, /z̪/ and /s̪/ were more dental and became highly difficult to differentiate from /t͡s̪/ and /d͡z̪/ once these lost their affrication. The loss of voicing reduced the four aforementioned phonemes to just one: /s/. Interestingly, this sound also moved articulatorily and became an apico-dental [θ̪] in *ceceo* areas (e.g., Cádiz and most of Málaga), while in *seseo* areas (e.g., the city of Se-

ville and most of the Córdoba) it became a predorsal alveolar [s̪] that can also be found in many South American Spanish dialects. Although the historical development of these sibilants is somewhat clear, the status of the modern distribution in many Andalusian regions has yet to be fully explored.

Another focus of attention has been the description of both *seseo* and *ceceo* with regard to standard Castilian Spanish, which is the dialect taught in schools, heard on television,[1] etc. (Menéndez Pidal, 1952; Navarro Tomás, 1963; Stewart, 1999; Zamora Vicente, 1967). Stewart comments on this issue in her book *The Spanish Language Today*:

> The national television broadcasting company, Radio Televisión Española (RTVE), brought out its own style guide in 1985 under the supervision of V. García Yebra of the RAE with a prologue by Fernando Lázaro Carreter, much of which is a repetition of the advice currently available in other style with very little relating specifically to the spoken language. However, with regional broadcasting, the question soon arose of how to express spoken norms for those channels which chose not to adopt the prestige norm of Castile. Canal Sur Televisión, based in Seville and serving all eight provinces of the autonomous community of Andalusia first brought out its own style guide in 1991 in which it seeks to allay feelings of linguistic insecurity which might be felt by its broadcasters. For example, Canal Sur advises its broadcasters not to imitate the pronunciation of Valladolid, given that not only is Andalusian not an inferior variety of Spanish but rather the one of majority use. It urges them to guard against hypercorrect pronunciation with the reminder that there is no difference between /b/ and /v/ and rarely one between /ll/ and /y/. While newscasters should not play up *andalucismos*, they should not avoid them either in the interests of a supposedly neutral Spanish. Andalusian should be seen as a repository of many fine turns of phrase of, on occasion, more distinguished ancestry than the standard Spanish equivalent. The guide is a model of tolerance of language variety. It rejoices in the wide variety of accents and only proscribes a limited number of pronunciation variants on account of their stigmatization, for example, metathesis of /l/ and /r/, *branquear* for *blanquear* (Stewart, 1999, p. 64).

Considerable emphasis has also been given to the fact that although many speakers in Andalusia do not speak the Castilian dialect, they distinguish between /θ/ and /s/. The distinction between /θ/ and /s/ has been observed in educated speakers of province capitals such as Granada and Almería as well as in rural areas of Almería, Jaén, Córdoba, and Huelva (Alonso, 1951; Menéndez Pidal, 1952; Catalán, 1957; Lapesa, 1957).

Probably the most extensive description of the sibilants produced in Andalusia is the one provided by Navarro Tomás (1944), who relies on his ear and innumerable palatograms to reach these descriptions. Dalbor (1980) accounts for the confusion that speakers seem to have with regard to the production of the allophones of /θ/ and /s/. This confusion between

[1] Although there does not seem to be a written norm for national and local programs, news presenters try to distinguish between /θ/ and /s/. It seems that the only station that encourages giving the news in an Andalusian variety is the regional TV station Canal Sur 2.

the productions of sibilants has been previously reported in the literature (i.e., Alonso, 1951; Lapesa, 1957; Navarro Tomás, 1944), and Dalbor elaborates on them by relying on his own perception of native pronunciation, and on a number of recordings of casual interviews and radio and TV programs in Granada and Seville. Although he points out an interesting aspect of both *seseo* and *ceceo*, his data do not come from one specific social network or speech community. He picks up on what he hears in the city, not taking into account any kind of modern sociolinguistic approach to the problem.

González-Bueno (1993) also deals with the inconsistency of *seseo* in Seville and analyzes the distinction between /θ/ and /s/ that she found in that city. Again, the author, a native of Seville, relies on different personal judgments to explain the distinction between these sounds as well as to elaborate on the confusion that Dalbor (1980) had highlighted in his article. This is not an empirical study but rather a personal approach to a phenomenon, relying on the Spanish a native speaker from Seville would be exposed to (e.g., radio, TV). In this context, González-Bueno mentions famous Andalusian politicians and celebrities who adopt this behavior: while some (e.g., journalists working on national TV and radio) master the distinction between /s/ and /θ/, others (e.g., flamenco singers) try to unsuccessfully distinguish between /s/ and /θ/, and others (e.g., politicians, businessmen) keep the more traditional *ceceo* or *seseo* depending on their native dialect. She also mentions a number of personal experiences that reflect the prescriptivism still alive in schools and universities across Andalusia, where, for example, both *ceceo* and *seseo* are discouraged when students read out loud.

Villena Ponsoda (1994, 1996a, 1996b, 1997; Villena Ponsoda et al., 1995) has carried out a number of studies on /s/ and /θ/ in the city of Málaga under the *Proyecto V.U.M.* (*Proyecto de investigación del Sistema de Variedades Vernáculas Malagueñas*). The focus of his studies has been on the speech of urban and suburban Málaga. He provides a descriptive account of the fricative sounds and in particular of [θ] as produced in the varieties of Spanish spoken there. Additionally, Obaid (1973) describes the inconsistency of fricatives, but his paper is not only limited to Andalusian sibilants but also to the behavior of these sounds in other dialects.

To my knowledge, Carbonero et al. (1992) is the only sociolinguistic study of the speech of Jerez de la Frontera. The study presents *seseo* and *ceceo* as two aspects of the same phonological process and the authors describe this process as a dephonologization—in other words, a loss of the distinction that is maintained in Castilian Spanish. Therefore, *seseante* or *ceceante* speakers do not distinguish between two phonological units and produce only one, either [s] or [θ]. Regarding the aforementioned confusion between these two sounds, the authors add that the number of minimal pairs (i.e., *casa* 'house' and *caza* 'hunt', or *poso* 'dregs' and *pozo* 'well') constitutes a very small percentage of the general lexicon in Spanish, and that the availability of synonyms (i.e., *hogar* 'home' for *casa* 'house') helps to avoid confusion.

The population sample in Carbonero et al. included a total of 54 participants who completed a sociolinguistic interview, a specific questionnaire of grammatical problems, and a second questionnaire that included vocabulary constituted by 60 lexical entries from the *ALEA* (*Atlas lingüístico y etnográfico de Andalucía*, also *Linguistic ethnographic atlas of Andalusia*). With regard to the analysis, the authors indicate that while they were listening to the taped interviews, they annotated all those phonetic phenomena that could be different

from the Castilian (standard) pronunciation, which were then analyzed according to sociocultural level, age, and sex of the informants.

One of the purposes of the study was to find level of acceptance for the use of a number of linguistic phenomena under study (e.g., aspiration of /s/, aspiration of Castilian /x/, *seseo* and *ceceo*, neutralization of syllable-final /r/ or /l/). Although all these phonetic realizations were divided in different questions, when the authors requested their participants to rate the acceptance of use for both *seseo* and *ceceo,* they did not split these phenomena. They report that for both of them the acceptance rate is very high (.91), but according to the way the question was asked, it is hard to say which one has higher or lower acceptance, or if both phenomena were accepted equally. In the study, the rate of acceptance of both *seseo* and *ceceo* provided by the participants was presented according to three different social factors: sociocultural level, sex, and age. The acceptance index according to the participants' sociocultural levels shows some difference: educated=.88, average=.85, and working class=1. Although both phenomena are highly accepted, the most educated participants did not rate *seseo* and *ceceo* as high as those with the least amount of education (the working-class group in the Carbonero et al.'s study). With regard to gender, the levels of acceptance of both *seseo* and *ceceo* were .96 for women and .86 for men. The category for age was divided in three different groups: first, second, and third generation, for which the rates of acceptance for both *seseo* and *ceceo* were .83, .95, and .95 respectively.

The study reports almost identical indexes (for both males and females) for the production of *ceceo* .47, and *seseo* .44, and .09 for distinction. Regarding sociocultural level, *seseo* correlates with the higher sociocultural groups, while *ceceo* increases in the speech of the less educated ones. Surprisingly, the authors report that the younger generation (participants 18–30 years old), and the older generation (participants older than 45), show a higher production of *ceceo* (.50 and .53 respectively), while among the intermediate generation (participants 30–45 years old), *seseo* predominates. These results do not seem to be totally consistent with the discussion provided, since they indicate that there is still a higher distinction between /s/ and /θ/ in the first generation, a factor they attribute to the lack of prestige of *ceceo.* In the same way, they did not find marked distinctions between males and females regarding their preference for either *seseo* or *ceceo*; with respect to distinction, they indicated that this is a little higher for females than males (.04 vs. .14 respectively), but in fact, where there is no distinction, women lean towards *seseo.* Carbonero et al. conclude their report on this phenomenon indicating that

> seseo and ceceo are divided in a clear social way; popular speakers are *ceceantes*, while cultivated ones are mostly *seseantes*, those in middle level, as their name indicates, are divided between one and the other. It would be easy to reach the conclusion that culture is equivalent to *seseante*, but it would be a false generalization and besides it would show the prejudice that has existed in Andalusia and out of it before the *ceceante* speaker as a reflex of ignorance. We only want to show that the modality in Jerez is divided almost equally between *ceceantes* and *seseantes* with a symbolic representation of distinction between *s* and *z.* (p. 25, translation mine)

Melguizo (2006) tries to fill the gap in sociolinguistic approaches to *ceceo* that did not take into account the rural migrations to the main Spanish cities that have been taking place for the last 30 years in Spain. She investigates the *ceceo* still produced by a group of Granada immigrants coming from the rural area of Pinos Puente. The focus of this article was the change undergone by these participants who went from a mainly *ceceante* rural area to Granada, a provincial capital where *seseo* and distinction between /s/ and /θ/ are favored. After running a regression analysis, the author concludes that birthplace, marital status, education level, and exposure to the media favor the change from /θ/ to /s/.

In sum, it can be said that the sibilant system of southern Spanish varieties has received a great amount of attention in the literature. However, the speech community of Jerez de la Frontera is relatively understudied and according to the most recent studies *seseo* is part of the speech in this region. Additionally, few studies have attempted to investigate the variation that abounds from a social networks perspective. The present study is designed to work within this later framework of sociolinguistic variation in a attempt to understand more precise patterns that underlie the modern distribution.

2.2. The social situation in Spain during Franco's regime and after his death

The studies previously mentioned have taken into account neither the social difficulties brought to the daily lives of Spaniards during the postwar years, nor the progress experienced since Franco's death in 1975 with the succeeding transition into a democracy in 1978. Among the many social differences of both periods, I will focus on the education system itself, as well as on the gender roles that Franco's regime imposed on Spanish men and women through the education system.

Those who lived the postwar years under Franco's dictatorship experienced a clearly biased educational system, in which the role of women as mothers of large families was emphasized. Women were hindered from working outside the home and from pursuing academic achievements. Enders & Radcliff (1999) indicate that while women were not forbidden to attend Spanish universities, they were somewhat discouraged as their academic pursuits may conflict with the role as mothers:

> while women were not excluded from the university, Francoist educational discourse made it difficult to integrate a university education into female identity without raising problematic tensions among female students. In other words, while the regime did not try to prevent women from pursuing an education, it did try to undermine their identity as scholars. (pp. 6–7).

Education, seen as a way of indoctrination for many societies in the twentieth century, did not have better luck in Spain during the last decades of the nineteenth century and the beginning of the twentieth century. According to O'Malley (1995), both the church and the conservative elements of society tried to control the educational system, setting the standards for the education Spaniards received in those years. This association resulted in a poor primary school system, and a secondary and private education system that was "totally elitist" (p. 32). This author also states that the Second Republic (1931–1936) was the only "real period of advance" (p. 33) for education in Spain, an advancement later suppressed after the Civil War (1936–1939) and that would remain until the

late 1960s, when innovative and progressive ideas with regard to education appeared in a proposal that would later be known as the "*Alternativa,*" a document where in its official version of 1974, the term e*scuela pública* ('public school') appeared for the first time. These democratic pursuits, still in a dictatorial regime, were engendered by the imminent end of the administration (i.e., Franco was aging and the organizations for democratic change were, although illegal, more and more noticeable everyday). Spanish citizens started benefiting from social policies already in Franco's regime. The non-contributive pensions program for people over the age of 70 (now 65) started in 1963, the reform of social security by which members' contributions began to be linked to real incomes was established in 1972, and the reforms making education mandatory and free of charge for children between the ages of 6 and 14 (now extended to 16), all became a reality before 1976 (Guillén, 1992). Although these progressive policies were important social advancements, the establishment of the constitution in 1978 brought a completely new reality with the inclusion of civil rights (e.g., the right to equality, freedom of religious liberty, etc.), political rights (freedom of speech, assembly, association, etc.), and socio-economic rights (the right to work, the right to education). All these rights were necessary to establish a society that would treat both men and women with equality; at least the law would enforce that premise.

Democracy has also brought other factors that have completely changed the Spanish reality, such as the universalisation of health-care coverage in 1989, which has improved the life quality of Spaniards by giving them access to any medical assistance they might need. This has incredibly changed the social map of Spain. Indeed, as early as 1984 (six years after the establishment of the Constitution and only nine after the end of the dictatorial regime with Franco's death), Tezanos (1984, p. 19), in a sociological study, describes the social changes brought by the democratic system in only one generation as almost "science-fiction." For instance, with regard to degrees of illiteracy, Tezanos reports that in 1981 (six years after the death of Franco) the number of illiterate people over the age of ten in Spain reached 2,044,661, in addition to 5,947,378 who had never studied at all. He also indicated that for females between 55 and 64 years of age, the illiteracy rate was 10.44%, and 21% for females older than 65. On the other hand, if we think about illiteracy in Spain nowadays, the change of trend appears more drastic. As reported by the Instituto Nacional de Estadística (INE 2000), the degree of illiteracy is still higher in women than in men, it only reaches 4.3% of the adult population (both males and females). The report also indicates that in spite of the fact that illiteracy has been reduced in recent years, there are still more than a million illiterate people in Spain. If we think about the numbers reported by Tezanos (1984), there has been an enormous reduction of illiteracy in 23 years.

With regard to educational and work differences between men and women, the latter group—previously disadvantaged during Franco's era—has not only become an important part of the workforce, but has now overtaken men in Spanish universities. In this respect, Arranz (2004) indicates that Spanish universities are suffering a process of feminization and reports that while in the academic year 1979–80, women accounted for only 26% of the approved doctoral dissertations, this figure reached 39% in 1983–84 (CIDE 1988). She also indicates that another highly significant step in Spanish college education took place in 1998, when for the first time, the number of female students enrolled in doctoral classes was slightly higher than the number of males (50.4%). Arranz also studied the presence of women

in Spanish universities and although she found a higher presence, she also reported an interesting finding regarding the number of female professors. The INE reports that, although a considerable amount of new faculty positions were occupied by women during 1993 to 1998, there is no tendency that indicates that women are still working in the humanities. In the same vein, Arranz reports discrimination against women with regard to the appointments of full professorships, in which Spain does not even reach the European average of 9%. At the time when Arranz's article was published (2004), the ratio of male to female full professorships was 9 to 1.

As has been mentioned before, these changes have drastically changed the level of education accessible to women, but there are still problems regarding their access to the workforce as well as their income. As Currie et al. (2000) mention, "Now that most women receive some form of education, the continuation of low earnings for women is a new issue" (p. 361). She mentions that in 1999 in Europe, the nations with the lowest percentage of women in the workforce were Spain (32.3%), Italy (36.1%), and Greece (38.5%). Currie et al. indicate that according to the European Union in 2000, 95% of the women in Spain who were not looking for a job mentioned that they could not work outside the home because of their family duties. Indeed, the unemployment rate for women in 1999 in Spain (21.6%) is double that of men (10.4%). Much has been achieved since 1938, when a married woman needed her husband's permission to work outside the home (Cousins, 2005, p. 61), but still the problem is not solved.

Thus, given this background, it can be stated that the modern political situation is quite different from what existed only 30 years ago. This difference may also have social consequences, and if so, there is reason to believe that it may be reflected in modern speech norms. The present study was motivated by this insight, as one of its primary objectives was to obtain a deeper understanding of the gender and age differences that occur in the speech of Jerez de la Frontera Spanish. Keeping this in mind, the following section will review some of the influential works that have studied the relationship between language and gender from a sociolinguistic standpoint.

2.3. Variation and gender

Labov (2001) addresses the gender paradox and suggests that women are both conservative and innovative in terms of linguistic variation and change. Although the scope of his study is beyond mine (gender applicability to multilingual as opposed to multidialectal communities and whether it is methodological or real), Labov makes a statement that has direct implications for this study. He indicates that women, in spite of all the advancements in modern society, are still the "major caretakers of children," as well as remaining "a secondary status group" (p. 262).

Regarding change from above, Labov postulates that women are still very concerned about guaranteeing social mobility for their children and this may be behind the adoption of prestige norms, and moreover, they are the only ones expected to pass on these norms. Regarding change from below, Eckert (1989) indicates that women depend more than men on tools that allow them to highlight their identity. In her study of students in a high school in Michigan, she found that young women, regardless of social group, made greater use of innovative variants than did young men. Although these innovative variants

were not prestigious, they allowed the women to feel more integrated in the groups, Eckert concluded.

Another important consideration in understanding the linguistic behavior of speakers involves social networks. Milroy (1980) investigated the speech of three poor working-class communities in Belfast: Hammer, Ballymacarrel, and the Clonard. She tried to integrate herself within the community, presenting herself as a "friend of a friend"—a useful strategy that allowed her to study the correlation between the degree of integration of the participants and their speech patterns. Each participant received a network strength score (between 1 and 5) based on the person's knowledge of other people in the community, in the workplace, and at recreational activities. Milroy also measured a number of linguistic variables and found a correlation between a high network-strength score and the use of vernacular (non-standard) forms. For men, belonging to a tight-knit social network was directly related to the use of vernacular forms. Women who belonged to less dense social networks produced less vernacular forms. This was not always the case however; women in areas of high unemployment used the non-standard form of /a/ as in *hat*. Milroy attributed this to the females' having jobs outside the home. These women lived together in the same area, worked together in similar jobs, and thus belonged to a dense and multiplex network.

In sum, previous studies on both *seseo* and *ceceo* state that these phenomena are characteristic of Andalusian Spanish and that both developed from the evolution of the sibilants that started in the fifteenth century (Penny, 2000). While distinction between [θ] and [s] has been observed by cultivated speakers, *seseo* and *ceceo* do not have the same prestige; the latter has the least prestige and is normally corrected in educational institutions, especially when students read out loud (Dalbor, 1980; González-Bueno, 1993). On the speech of Jerez de la Frontera, Carbonero et al. (1992) report no striking differences between *seseo* and *ceceo* in this particular dialect. With regard to Franco's regime and the situation of Spain nowadays, there are important differences with regard to civil rights, access to education, and work opportunities for both men and women. Although this situation is not still completely equal, enormous gains have already been achieved by Spanish people. Finally, the sociolinguistic literature shows that the analysis of social networks has proven efficient in previous sociolinguistic approaches to a number of different communities (e.g., Milroy, 1980), and in the same way, it could be beneficial to study the speech of Jerez de la Frontera, a city of approximately 200,000 people that is socially stratified.

3. The current study

3.1. Research questions

The impetus for this is study is recent work showing that /θ/ is not used categorically in southern Spain (Dalbor, 1980; González-Bueno, 1993). In particular, Carbonero et al. (1992) have shown that [s] is used by Jerez speakers for orthographic representation *s*. This may indicate that one of two norms is encroaching on Jerez. That is, the use of [s] may be governed by *seseo* norms from Seville, the capital of Andalusia, which is only 100 kilometers from Jerez. If this were the case, we would expect to see [s] used regardless of orthographic context. However, the use of [s] might be governed by the national pressure to dis-

tinguish /θ/ and /s/ in the appropriate orthographic contexts. Recent developments in the education system, and especially since the death of Franco in 1975, may be contributing to this change. Finally, this study is motivated by the need to consider social networks, employment history, education, and gender as important factors in the use of one or another variant of a given sociolinguistic variable. The following two research questions guide the current study:

1) What social and phonetic factors govern the variable use of the voiced interdental /θ/ in the dialect spoken in Jerez de la Frontera, Spain?

2) Have recent sociocultural developments in modern Spain affected gender and age distinction of this variable?

3.2. Participants and data collection

There were 21 participants in this study: 5 females between the ages of 60 and 70 (*M*=63, *SD*=4.12), 5 males between 60 and 70 (*M*=66, *SD*=3.67), 6 females between 30 and 40 (*M*=37*, SD*=2.16), and 5 males between 30 and 40 (*M*=37*, SD*=3.08). All participants were family members who shared a common social network (8 lived on the same street). All participants were married and, except for one younger female (30–40 years old), both husband and wife participated in the study.

Among the older participants (*n*=10, ages 60–70), there are a number of social differences that need to be taken into account. First of all, two of them (a married couple) have a higher social status and although they see the rest of their family very often, their higher income allows them to be in contact with other social networks in the city: bankers, artists, politicians, etc. The other 8 participants present a rather uniform group in terms of income and contact with social networks: they belong to the middle class and have almost no contact with people outside their family. With regard to level of education of the members of this group, 7 members (all 5 males plus 2 females) had between 0 and 6 years of formal education, while 3 females who came from a wealthier background had actually finished high school during the postwar years. Despite this, all the men worked until they retired, while their spouses had never been employed. All 5 women remained in their respective households taking care of their children.

The younger participants (*n*=11, ages 30–40) enjoyed a completely different social upbringing. Among the males, the participant with the least amount of education had between 7 and 10 years of formal education, 3 had finished high school, and 1 had finished college (earning a degree in engineering). With regard to the females, 1 had between 7 and 10 years of formal education, 4 had finished high school, and 1 had finished college (receiving a degree in tourism). In this group, all 5 men have paying jobs, and 4 out of the 6 females also have paying jobs, while only 2 of them have decided to stay at home. One of them never had a job, and the other one decided to quit her job when she started having children. With regard to social networks, 3 males have no contact with other social networks and 2 of them are in contact with others. For the females, 4 of them have no contact with other social networks, while 2 of them are in contact with other social networks.

In terms of data collection for the current project, all participants were recorded in 30-minute sociolinguistic interviews. The interview included questions that included topics re-

lated to daily life (e.g., marital status, working experience), personality characteristics (e.g., creativity, fears, hopes for the future), family (e.g., descriptions, relations), the city of Jerez de la Frontera (e.g., its past, present, and future, and its political situation), vacations, and movie retellings. Participants were interviewed individually and all agreed to take part in the study. The interviews lasted between 30 and 40 minutes; participants were never stopped and they answered each question for as long as they wanted. The interview data were recorded into a Sony HI-MD MZ-RH1 minidisc recorder using a Shure WH20 head-mounted microphone. The sound files were digitally transferred into .wav format and analyzed with the acoustic analysis software Praat. For every interview, the first 100 tokens of syllable-initial target /θ/ produced after the first five minutes of conversation were extracted and coded as either [s] or [θ].

3.3. Analysis

With regard to the analysis of social factors that underlie variable pronunciation of /θ/, it was hypothesized that the two age groups used in this study would adhere to very different sociolinguistic norms, since the members of the generational groups under study here were raised in two very different political and social atmospheres.

Regarding the codification of the dependent variable, which for this study was the production of syllable-initial target /θ/ (theoretically categorical for this southern Spanish dialect), two variants were identified: [s] versus [θ]. A series of independent linguistic variables were included in the present study, since they have been shown in previous work on Spanish variation to govern the use of variant sibilant production (see, for example, Ruiz-Sánchez, 2004). The factor groups that were used as the independent variables for this study are listed in Table 1.

Six independent social factors were also established: social network, education, employment history, age, gender, and socioeconomic status. All variables were coded according to the information provided by the participants in the questionnaire. The criteria to code for social network was binary, while some of them did not have contact with members of other social networks (i.e., retired participants that spend most of their time with their family members), others reported that they were in contact with members from other social networks on a daily basis (i.e., participants with jobs in nearby towns or whose jobs required them to visit other cities, travel to Seville, Madrid, and other capitals). Education was coded according to the number of years of formal education, and four categories were taken into account: 0–6 years of schooling, 7–10 years of schooling, high school, and college. Participants reporting no formal education or very little were included in the 0–6 years of schooling group. With regard to the employment history, I took into account the fact that all the older males were retired and since I wanted to keep this category binary, I divided this factor in two: those who were never employed, and those who currently or previously had a job. For the age factor, participants were divided in two groups: those with ages 60 to 70 belonged to the older group, while those with ages 30 to 40 belonged to the younger group. Gender was also coded (male vs. female) and socioeconomic status was taken into account (middle income vs. higher income). Although only 2 participants belonged to the higher-income group, I thought it necessary to include this distinction. It is due to their exceptional economic situation that they can travel extensively and be in contact with other social networks. Still, these

two participants reported in their questionnaires that they were very close to the rest of the family and that they normally visited each other frequently.

Social factors	Linguistic factors
1. *Social network*	7. *Orthographic representation*
Out	c
In	s
2. *Education*	z
University	8. *Word position*
High School	Monosyllabic
7–10 years	Word-initial
0–6 years	9. *Stress*
3. *Employment history*	Stressed syllable
Employed	Unstressed syllable
Never employed	10. *Preceding context*
4. *Age*	Phrase-initial
60–70	Consonant
30–40	Vowel
5. *Gender*	11. *Following vowel*
Female	a
Male	e
6. *Socioeconomic status*	i
Higher income	o
Middle income	u
	12. *Morphosyntactic category*
	Noun
	Determinant
	Adjective
	Verb
	Adverb
	Pronoun
	Preposition

Table 1. Factor groups

Additionally, there were six independent linguistic factors that were considered: orthographic representation, word position, stress, preceding phonetic context, following phonetic context, and morphosyntactic category. First of all, the orthographic representation of words containing /s/ or /θ/ was taken into account: *c, s,* or *z*. Then, the position of /s/ or /θ/ within the word was also taken into account: if the word was monosyllabic, if the /s/ or /θ/ appeared in word-initial position of a polysyllabic word, or if /s/ or /θ/ appeared in the middle of the word. Stress was also considered, and it was coded as stressed or unstressed depending on the type of syllable where /s/ or /θ/ appeared. The context preceding either /s/ or /θ/ was also considered, with three options for coding: phrase-initial, when /s/ or /θ/ was in word-initial position at the start of a turn; consonant, if /s/ or /θ/ was preceded by one; and vowel,

if /s/ or /θ/ was preceded by one. Additionally, the vowel following /s/ or /θ/ was coded: /a, e, i, o, u/. Finally, the morphosyntactic category of the word containing /s/ or /θ/ was also considered: noun (e.g., *casa* 'house'), determiner (e.g., *su* 'his/her'), adjective (e.g., *azul* 'blue'), verb (e.g., *saltar* 'to jump'), adverb (e.g., *solamente* 'only'), pronoun (e.g., *nosotros* 'we'), or preposition (e.g., *sin* 'without').

4. Results

The data in Table 2 show the overall distribution of use for the two variants of the sociolinguistic variable under study. As can be seen, 26.8% of the overall tokens containing syllable-initial /θ/ were pronounced with the variant [s]. This suggests that the Jerez dialect is not a categorically *ceceo* dialect, since /θ/ was not categorically pronounced as [θ] in all expected contexts. Figure 1 shows the distribution of [θ] and [s] for the 100 tokens analyzed after the first five minutes of the sociolinguistic interview.

Variants	***n***	**%**
[s]	563/2100	26.8%
[θ]	1537/2100	73.1%

Table 2. Overall distribution of [s] and [θ]

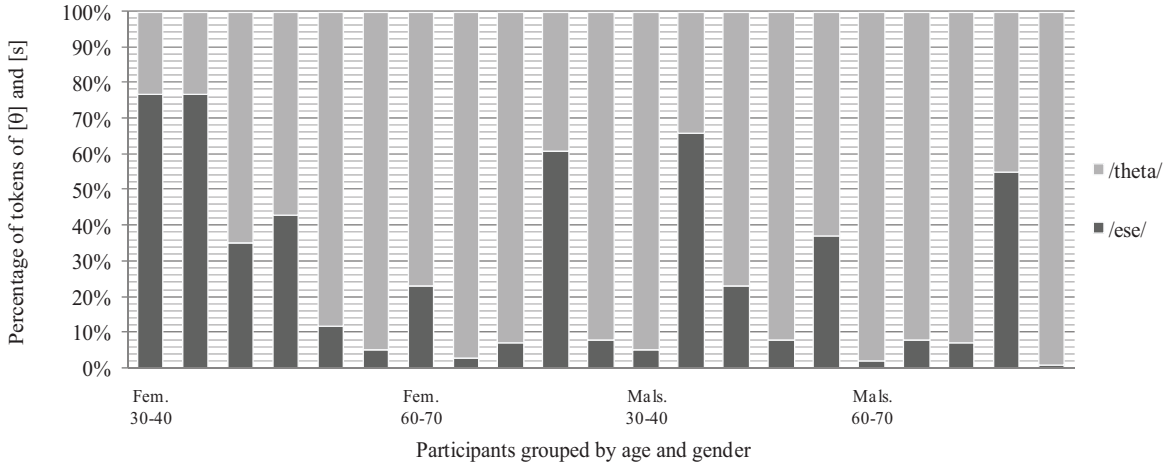

Figure 1. Percentage of [θ] and [s] production across participants (grouped by age and gender)

The results in Table 3 were extracted from the regression analysis performed by Goldvarb X on the total of 2100 tokens. Of the six independent extralinguistic variables, all were selected as significant: social network, education, gender, employment history, socio-

economic status, and age. Of the six independent linguistic variables examined in this study, three were selected as significant: orthographical representation, preceding phonetic context, and following vowel. In addition to orthographic representation, all six social variables were selected as the most significant predictors in the choice of [s]. The variables relating to preceding and following phonetic context were chosen as the least significant predictors of [s]. The three variables that were not selected in the model were morphosyntactic category, stress, and word position.

The most significant predictor of variable use of /θ/ in this analysis was social network. Speakers belonging to the same social network used [s] with a frequency of 12.7%, while out-of-network speakers used [s] with a considerably higher frequency of 62.2%. The second most significant predictor was orthographic representation: orthographic *s* favored pronunciation of [s] in 32.9% of the cases analyzed. Next, speakers with greater degrees of education (i.e., university, high school, and 7–10 years of primary schooling) favored [s] (54.5%, 38.0%, and 23.8%, respectively), while speakers with minimal education (i.e., 0–6 years of schooling) favored [θ]. In terms of gender differences, females used [s] with a greater frequency (31.9%) than did males (21.2%). Referent gender proved to be the most significant predictor of variable use of *le* in this multivariable analysis. With regard to employment history, those who have been employed favor the use of [s] (30.4%) more than those who have never been employed (17.8%).

Although only two linguistic variables are selected in this analysis, and a crucial property that they share is that both refer to the phonetic context in which the /θ/ variable is produced. First, phrase-initial segments and segments preceded by a consonant favor the use of [s] (43.4% and 29.8% respectively), while segments preceded by a vowel favor [θ] (25.5%). In terms of the following vowel [e] and [a] favor the use of [s] (24.8% and 28.6%, respectively), while [o], [i], and [u] are shown to disfavor production of [s] (35.8%, 23.5%, and 27.6%, respectively).

The only striking factor that does not seem to behave as would be expected is age. While the percentage of production of [s] in the speech of the younger participants [30–40] doubles the percentage in the speech of the older age group [60–70], the weights indicate that it is the latter the group that favors the production of [s]. Based on this discrepancy, it was suspected that there may have been a possible interaction between employment and age. Out of the eleven women in that were interviewed for the current sample, seven were unemployed and five belonged to the older age group [60–70]. Since this type of interaction may have obscured the results, the factors sex, age, and education were coded together, and later run with the rest of the factors in the regression. The results of this regression analysis (performed by Goldvarb X) are shown in Table 4.

Of the six independent extralinguistic variables, social network; sex, age, and education (coded as one factor); and socioeconomic status were selected as significant. Employment history was not part of the model. Of the six independent linguistic variables examined in this study, three were selected as significant: orthographical representation, preceding segment, and following vowel. The three linguistic variables that were not selected in the model were morphosyntactic category, stress, and word position.

Factors selected by GoldVarb	**weight**	***n***	**%**
1. *Social network*			
Out	.84	377/600	62.2%
In	.34	190/500	12.7%
2. *Orthographic representation*			
s	.65	531/1610	32.9%
c	.12	29/440	6.5%
z	.08	3/50	6.0%
3. *Education*			
University	.81	109/200	54.5%
High school	.61	266/700	38.0%
7–10 years	.53	105/500	23.8%
0–6 years	.28	83/700	11.9%
4. *Gender*			
Female	.64	351/1100	31.9%
Male	.34	212/1000	21.2%
5. *Employment history*			
Employed	.61	456/1500	30.4%
Never employed	.25	108/600	17.8%
6. *Socioeconomic status*			
Upper class	.66	116/200	58%
Middle class	.48	447/1900	23.5%
7. *Age*			
60–70	.61	175/1000	17.5%
30–40	.40	388/1100	35.3%
8. *Preceding segment*			
Phrase-initial	.69	36/83	43.4%
Consonant	.58	82/275	29.8%
Vowel	.48	445/1742	25.5%
9. *Following vowel*			
e	.57	149/601	24.8%
a	.55	112/391	28.6%
o	.49	112/313	35.8%
i	.44	169/719	23.5%
u	.43	21/76	27.6%

Note: Input: .159 (p=.026)

Table 3. Factors influencing choice of [s]

Factors selected by GoldVarb				weight	*n*	%
1. *Social network*						
Out				.84	377/600	62.2%
In				.34	190/500	12.7%
2. *Orthographical representation*						
s				.65	531/1610	32.9%
c				.12	29/440	6.5%
z				.08	3/50	6.0%
3. *Sex, age, and education*						
male	60–70	0–6 years		.32	73/500	14.6%
male	30–40	University		.69	66/100	66%
male	30–40	High school		.45	65/300	21.7%
male	30–40	7–10 years		.40	8/100	8.0%
female	60–70	7–10 years		.52	92/300	30.7%
female	60–70	0–6 years		.28	10/200	5.0%
female	30–40	University		.89	43/100	43%
female	30–40	High school		.74	201/400	50.2%
female	30–40	7–10 years		.24	5/100	5.0%
4. *Preceding segment*						
Phrase-initial				.69	36/83	43.4%
Consonant				.58	82/275	29.8%
Vowel				.48	445/1742	25.5%
5. *Following vowel*						
a				.55	112/391	28.6%
e				.56	149/601	24.8%
i				.44	169/719	23.5%
o				.49	112/313	35.8%
u				.43	21/76	27.6%
6. *Socioeconomic status*						
Higher income				.66	116/200	58%
Middle income				.25	447/1900	23.5%

Note: Input: .158 (p=.028)

Table 4. Factors influencing choice of [s]

The most significant predictor of variable use of /θ/ in this analysis was social network. Speakers belonging to the same social network used [s] with a frequency of 12.7% (*weight*=.34), while speakers in contact with out-of-network speakers used [s] with a considerably higher frequency of 62.2% (*weight*=.84). The second most significant predictor was orthographic representation, and orthographic *s* favored pronunciation of [s] in 32.9% (*weight*=.65) of the cases analyzed. The same pronunciation for orthographic *c* and *z* was only 6.5% (*weight*=.12) and 6.0% (*weight*=.08), respectively.

Regarding the third factor selected (i.e., sex, age, and education coded together), the regression showed that older women with 7–10 years of schooling (n=3) used [s] with a frequency of 30.7% (*weight*=.52), and younger women with high school education (n=4) used [s] with a frequency of 50.2% (*weight*=.74). Younger women and men with college educa-

tion (*n*=1 in each group) also show frequencies of 43% (*weight*=.89) and 66% (*weight*=.69) respectively. For both males and females speakers with minimal education produce [s] with a lower frequency.

The fourth and fifth factors were linguistic variables. A crucial property that these two variables share is that both refer to the phonetic context in which the /θ/ variable was produced. First, phrase-initial segments and segments preceded by a consonant are produced with [s] with a frequency of 43.4% (*weight*=.69) and 29.8% (*weight*=.58), respectively. Segments preceded by a vowel, however, are produced with [s] with a frequency of 25.5% (*weight*=.48). In terms of the following vowel, [e] and [a] follow [s] with a frequency of 24.8% (*weight*=.56), and 28.6% (*weight*=.55), respectively. The remaining vowels [o], [i], and [u] followed [s] with frequencies of 35.8% (*weight*=.49), 23.5% (*weight*=.44), and 27.6% (*weight*=.43), respectively.

The last factor selected in the model was socioeconomic status. Those participants with a higher income produce [s] with a frequency of 58% (*weight*=.66), while those with a middle income produce [s] with a frequency of 23.5% (*weight*=.25).

5. Discussion

The first result worth highlighting deals with the use of [s] in Jerez Spanish. It should be recalled that this dialect has traditionally been referred to as a *ceceo* dialect, implying that the voiceless interdental [θ] should be used in all phonetic contexts that correspond to orthographic *s, c*, and *z.* This is not the case, however, and this was reported in Table 1, where it was shown that 26.8% (563/2100) of all tokens were produced with the voiceless alveolar [s]. The fact that [s] is used with this unexpected frequency implies that when speakers use it, they adhere to one of two prestige norms. That is, if they use [s] in all orthographic *s, c*, and *z* contexts, then it could be claimed that Jerez speakers adhere to Seville norms, where *seseo* is known to be more generalized. However, if speakers show a preference for [s] in contexts that correspond to orthographic *s* only, then a different pattern would emerge, since it is the national standard to use [s] in these contexts only. The data from Table 4 resolve this issue clearly; since it was reported there that orthographic *s* rendered a predictive weight of .65 in the multivariate analysis. Orthographic *c* and *z,* however, yielded minimal predictive weights (.12 and .08 respectively). Thus, it can be concluded that although the interdental [θ] was used more frequently by speakers interviewed for this current project, those that used [s] did so by adhering to the national standard. *Seseo* does not appear to have entered the Jerez speech community under study, in spite of the fact that it originates from Seville, a city located only 100 kilometers from Jerez.

This last result would seem to contradict the findings reported by Carbonero et al. (1992), who stated that "both phonological solutions are equally distributed, with an index of .47 for *ceceo* and .44 for *seseo,* and a very reduced .09 for distinction" (p. 24, my translation). Although a possible solution could be that the participants in Carbonero et al.'s study are very different from those reported here, the authors include three educational levels (i.e., highly educated, middle, and popular), as well as three generations (i.e., first, second, and third). Within these distributions for education and age, the participants in my study should be comparable in some regard. It is not totally clear why discrepancies would arise in the results reported here and those reported in Carbonero et al.'s study. Most importantly, Carbonero et al.'s use of the term *seseo* is striking, because it implies a categorical use of [s]. This

tendency was not evidenced in any of the speakers interviewed in the current study. Carbonero et al.'s study compared percentages of production, and may have missed important generalizations by not considering the complex of factors that contribute to the use of the sociolinguistic variable under question. Thus, the use of multivariate analysis has proven more effective in determining which factors contribute to the use of [s] or [θ].

In terms of social factors, this study presents a considerably more detailed description than Carbonero et al. (1992), and the variable coded for social network appears as the most relevant factor for the production of [s]. Indeed, this is rather consistent with previous research on social networks (Milroy, 1980). The network analyzed is that of a family whose members live very close to one another and see one another frequently. Although half of them belong to the older group of speakers [60–70] and do not have contact with people belonging to other social networks, there are two members of this group (a married couple, J and MJ) who belong to a higher socioeconomic class and participate in other social networks as well. It seems that participants with a middle income background that now enjoy a higher income have more opportunities to be in contact with other social networks. Although J and MJ do not distinguish in all possible occasions, they produce [s] much more often than their co-participants from the same age range.

We also recall that this couple owned a construction company that was run by the husband. Now, although retired from business (like the rest of participants between 60 and 70 years in this study), both husband and wife are considerably wealthier than the other 8 participants from the same age range, and this is the reason why I grouped them as having a higher income. MJ shows more occurrences of [s] than her husband, J. One hypothesis for this behavior is that although MJ has always been a housewife like all other females from her age range, her economic situation likely allows her to be in contact with people belonging to other social networks that distinguish between /s/ and /θ/. During the interview, MJ talked about the recent acquisition of a house in golf course next to her daughter's house which included all types of possibilities for social interaction with younger professionals (e.g., with her daughter and son-in-law). Indeed, she mentioned that her neighbors were younger, and that most of them worked for real estate agencies and banks. On the other hand, her husband, who produces more instances of [s] than the other males in the same age range, mentioned that he did not like this new house they had bought and that he felt very uncomfortable among all these younger people. He mentioned that although the house's location may be very appropriate for his daughter (a lawyer) and his son-in-law (an engineer), he felt out of place living there, a feeling not shared by his wife.

The number of older participants in contact with other social networks (n=2) contrasts with the participants in the younger group (30–40), where 4 participants are in contact with people from other social networks. Interestingly, these 4 younger speakers (2 females and 2 males) have the highest production of [s] (and consequently, the lowest of [θ]), but still the two younger females have a much lower production of [θ] than their male counterparts. An aspect that shows how contact with other social networks may influence the use of [θ] for [s] lies in the following small case study. One of the younger female speakers in the sample, who has a college education but has quit her job to stay at home and take care of her children, produced [θ] for the most part during the interview. As soon as I presented her with a question about her previous job, however, she started to distinguish between [s] and [θ]. Interestingly, when I switched topic and started talking about other topics besides her job and the people that worked with her, she reverted to the almost categorical use of [θ]. Although this

is just a small example of a remnant of a past pattern of accommodation, it seems that as the present model shows, contact with people from other social networks contributes to distinction between [s] and [θ].

The third factor to appear in the regression in order of importance was the combination of sex, age, and education. According to the model, four groups of participants favor the use of [s] over [θ]. They are: older females with 7–10 years of education (*n*=3), younger females with high school (*n*=3), a younger male with college education and a younger female also with college education. Interestingly, all participants in this group have the highest levels of education in their respective age groups, that is: 7–10 years of schooling for people between ages 60–70, and high school and college education for people between ages 30–40. Although there are two main groups of females in the study favoring the production of [s], it is of interest to examine what these two groups of females have in common and what makes them different. Although they all belong to the same family network, there are 3 older females with 7 to 10 years of formal education that had a different upbringing from the 2 other females in the group and from all 5 older males in the study. These females were born between 1945 and 1950, during the hardest years of the postwar period. It is only a privileged group of people that lived under very different circumstances that could receive 7–10 years of education, compared to the majority of Spaniards that experienced a very difficult situation and who could not have access to formal education. Indeed, two of these three females were sisters and reported no difficulties during the postwar times, as their father was a businessman and owned his own brick factory. The other female with 7–10 years of schooling reported that her father held an administrative position at a wine cellar in the city and that her upbringing was also very comfortable. Although 7–10 years of education may not seem much in comparison to modern education standards, where college education is more accessible, this was certainly an accomplishment in the late 1950s, especially for females who, as it was mentioned before, were encouraged by the official government at the time to stay at home and become mothers. In contrast, in 1972, when the Spanish government made education free and obligatory, only 8 years of formal education were required for every Spaniard, and now in 2008, 10 are required. I will not venture to establish equivalence between 7–10 years of schooling in the 1950s and nowadays, but according to the data, it seems that educated women are continuing the trend, which would explain why younger women with high school and college education also favor [s]. Although the model shows an interesting array in which the highest degree of education (university) would favor [s] the most for both genders (.89 for the female with college education, and .69 for the male with college education), unfortunately there are only two participants with those characteristics, and a higher number would be necessary to establish some kind of pattern.

In the same way, the speakers with the least amount of formal education (0–6 years) disfavored the use of [s] independently of their age and gender. The correlation between [s] and education level seems to be the result of the high increase of education standards implemented by Spaniards in the last 30 years. As was reported in Tezanos (1984) and Arranz (2004), illiteracy numbers have changed drastically, and while most of the older participants in my sample had very little formal education, all the younger participants had at least 10 years of formal education. In any case, I am not presenting a correlation between illiteracy and *ceceo*, but reality in present-day Spain undeniably shows that formal teaching relies on the distinction between [s] and [θ] from Castilian Spanish (González-Bueno, 1993). Distinction between these two sounds is normally encouraged in primary school and high school,

and given the drastic change regarding obligatory education that exists between these two generations, this result seems very appropriate.

In terms of phonetic factors included in the predictive model, two were selected as the most significant in contributing to the use of [s] or [θ]. These were preceding and following phonetic contexts. This result is quite telling, as it shows that, in terms of linguistic factors that condition the use of [θ] or [s], the surrounding phonetic context is most influential. Other linguistic factors such as stress, word position, and morphosyntactic category, do not appear to influence the choice. With regard to preceding phonetic context, it is clear that phrase-initial and post-consonantal position favor the production of [s]. The following vowels /e/ and /a/ slightly favor [s], [o] is neutral, and /i/ and /u/ slightly disfavor. These results may seem anomalous at first, since /a/ and /e/ do not seem to form a natural class, as opposed to /o/, /i/, and /u/. In terms of vowel height, both /a/ and /e/ are considered non-high in the Spanish vowel system, and the fact that they pattern together would indicate that there is some underlying phonetic motivation behind the change that is occurring in Jerez speech. The specific phonetic motivation for the preference of [s] will not be considered here, though, since it is not the principal focus of the current paper. Thus, the issue of why low and mid vowels would prefer [s] as opposed to [θ] remains open to future investigation.

6. Conclusion and future directions

Approaching the production of *seseo* and *ceceo* from the perspective of social network theory seems to be the most appropriate way to begin to understand the full scope of sociolinguistic variation in modern Andalusian Spanish, especially if we consider the number of inhabitants in Jerez de la Frontera (around 200,000). Carbonero et al. (1992) tried to sample the entire city with only 54 interviews, and their samples corresponded to people belonging to very different social networks with very different practices. This would probably explain the fact they did not find remarkable differences between men and women regarding their preference for either *seseo* or *ceceo.* Moreover, in a city of these dimensions, one must take into account the level of stratification, and in this sense, the analysis of a very small number of speech samples from people who have no relationship with one another does not seem to be the best approach for explaining linguistic phenomena.

This study has shown that those women that could study in the 1950s and that had a more privileged upbringing favor the use of [s], just like younger women with high school and college education. The main difference between these two groups of women lies in the fact that the members of the second group were born in a very different society. Going to school for them was not something out of the ordinary, but an obligation financed and encouraged by the government. Interestingly, men do not seem to favor [s]; only one male with college education broke this pattern and favored this production. Although more data are necessary to draw further assumptions, especially from men with college education, there is a remarkable difference between the innovative linguistic behaviors of women with regard to [s] production, versus the conservatism of men with regard to *ceceo.*

Although the first factor selected by GoldVarb X was contact with other social networks, employment was not. In a further version of this study, it would be interesting to look at the correlations of these factors separately, as well as with education. The results indicate that both males and females with the same education, and in contact with other social networks due to work impositions, do not behave in the same way with regard to the variable

use of [θ], being women the ones who favor [s] over [θ]. Although this is also the case for older women with 7 to 10 years of formal education, the main difference between both groups is that members of the latter had never been employed. Indeed, the introduction of women into the workplace may be influencing the production of [s]; future research should consider the full impact of this social change.

In terms of noteworthy findings, this investigation has shown that the speakers of Jerez are adopting Madrid norms by using [s] in contexts corresponding to orthographic *s*. This seems to be the result of an access to higher education, where distinction between [s] and [θ] is encouraged. An analysis that takes social networks into account seems to be the most appropriate for this type of change. The results also indicate that a multivariate analysis is a better approach for analyzing both *seseo* and *ceceo* productions than just accounting for percentages of different groups of people that have nothing in common with each other, except for the fact that they live in the same city. The current research design has granted us unique access into the complex of factors that govern the use of [s] and [θ] in southern Andalusian Spanish. Results of this nature should motivate future work on this region of Spain, since it appears that the social changes that have occurred in the past 30 years have had an important impact on the linguistic makeup of the area. Undoubtedly, a larger sample size of both groups would offer more insight in this respect.

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