TREATMENT OF SYLLABLE-FINAL /s/ AS A FUNCTION OF
SOCIOLINGUISTIC VARIABLES IN THE SPANISH OF VALPARAÍSO AND
VIÑA DEL MAR, CHILE

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Abstract

This study examines the treatment of syllable-final /s/ in the Spanish spoken in Viña del Mar and Valparaíso, Chile and its relationship to the sociolinguistic factors of age, gender and socioeconomic status. The study analyzes 99 tokens that were obtained from 99 informants using an overhearing method, and examines the statistical significance of the aforementioned sociolinguistic factors in treatment of syllable-final /s/ by the informants. A chi-square analysis of the data revealed that socioeconomic status impacts /s/ treatment while age and gender do not.
Introduction to Study

This study aims to determine whether syllable-final /s/ weakening has a statistically significant relationship with the sociolinguistic variables of gender, age and socioeconomic status among native speakers of Spanish in Valparaíso and Viña del Mar, Chile. The particular interaction between these sociolinguistic factors and the Spanish of this region of Chile has not yet been researched. In this way, the present study seeks to provide further knowledge into the sociolinguistic study of Spanish generally, and to Chilean Spanish more specifically.

Although there has been no previous research done into the interaction of these three sociolinguistic variables and their influence on /s/ weakening in Chilean Spanish, there are of course studies aimed at sociolinguistic variables and their interaction with language generally, as well as syllable-final /s/ weakening in both Chilean and other dialects of Spanish. Studies done on Chilean Spanish and /s/ in various other Spanish dialects, as well as the ways in which sociolinguistic factors influence speech generally, can all serve as relevant sources of background information for this study.

The treatment of /s/ in syllable-final position is a topic that has been addressed by many studies. Hooper (1976) found that there are universally preferred syllable structures which are influenced by syllable constraints. The most universally desirable syllable is a CV syllable. Like many languages, Spanish prefers this syllable form; closed CVC syllables are marked in Spanish. In addition, Hooper found that there are inherently weak and strong positions within each syllable, and that some consonants and vowels are weaker than others. A weak consonant or vowel in a weak syllable position is prone to weakening processes such as aspiration and elision. Hooper found that /s/ is one of these weak consonants and that the syllable-final position is a weak position within the syllable. The syllable-final /s/ is weakened to attempt to remove the
consonant from the coda of a CVC syllable, bringing the syllable closer to the universally preferred CV form.

In addition to Hooper (1976), Dunlap (1991) also discusses the syllable-final /s/ in Spanish. The point is made that /s/, /n/, /l/ and /ɾ/ are the only consonants that are allowed to appear in syllable-final position without another consonant present in the coda. In addition, Dunlap maintains that these four consonants are subject to the widest variation in their phonetic realization. In order for these four phonemes and their allophones to be preserved when they appear in syllable-final position, they must be resyllabified and linked to the next syllable. As it pertains to /s/ specifically, this process is complicated by the fact that /s/ is forbidden in complex syllable onsets. Therefore, it must precede a vowel in order to be resyllabified. Dunlap’s findings argue that an /s/ in syllable-final position will only be preserved if it can be added to the onset of the syllable that follows it. If this syllable does not begin with a vowel, it is likely that the /s/ will weaken or disappear. Syllable-final /s/ will also weaken in pre-vocalic environments in the more progressive dialects of Spanish, namely those of Andalusia, the Caribbean and the Pacific coast of South America (Lipski, 1986b). In these dialects, a sentence like ‘Nosotros estamos más, estamos más acostumbradas a estar solas’ ‘we are more, we are more accustomed to being alone’ would become something like [nosót Øtam’Ø ## määØ ##, ñtámoh má:Ø kochtumbráØ htär solah ##]. In this example, the /s/ weakens (as expressed by Cepeda using the symbols [Ø] for deleted /s/ and [h] for aspirated /s/) in syllable-final position, in word-final position, before a vowel, and before a pause (which is indicated by the ## symbol) (Cepeda, 1990, p. 235).

The process of /s/ weakening is also supported from a mechanical standpoint. By measuring sound output, Widdison (1995) found that Spanish favors /s/ aspiration. His results indicated that /s/ aspiration in the syllable-final position occurs because the preserved [s] is
difficult to produce in this environment. His analysis determined that the mechanical effort to produce sound and the energy distribution throughout speech prefers uniformity. An aspirated /s/ is therefore produced in an attempt to decrease the mechanical energy used to produce the [s] and to level the distribution of sound. This finding is supported by Morgan, who asserts that the sibilant /s/ will elide before a vibrant (a mechanically demanding articulation) and become voiced before another voiced consonant (2007, p. 380). In general, all of these findings indicate that syllable-final /s/ is especially susceptible to weakening. However, it is a process whose “[...] frecuencia y contexto [...] varían mucho según [...] una gama de factores sociales” ‘frequency and context [...] vary greatly depending on [...] a variety of social factors’ (Morgan, 2007, p. 269).

It is apparent from the results of the preceding studies that syllable-final /s/ in Spanish weakens for a variety of reasons in a large number of Spanish dialects. This weakening occurs because the consonant /s/ in the syllable-final position is prone to deterioration. Although the origins of this phenomenon cannot be decisively concluded, they have often been linked to the historical study of Andalusian Spanish (see Lipski 1986a, Obaid 1973, Canfield 1967 & 1981, Terrell 1979, Moreno de Alba 1988).

One of the most widely accepted theories among linguists about the weakening of /s/ in Latin American Spanish is the adoption of Andalusian phonological traits due to the large amount of contact that occurred when these particular Spaniards arrived in Latin America and colonized it. It is widely observed that the areas of Latin America that have these Andalusian traits are those in coastal regions which served as major ports for the Spanish during the colonial era (Lipski, 1986a, p. 29). The support for this theory is found in the frequency of /s/ weakening,
whether it is through aspiration or deletion, in the areas of Latin America that had the most contact with Andalusians during the colonial period.

The theory that Latin American weakening of /s/ is the result of the migration of this tendency from Andalusian Spanish is well supported by the widespread nature of this phenomenon in Andalusia. In Andalusia, syllable-final /s/ is retained in only 1.5% of cases, aspirated in 5% of cases, and deleted in all others according to Ranson’s 1993 study. Romero (1994-1995) argues that the prevalence of /s/ aspiration in the Andalusian dialect of Spanish is probably a result of the development of sibilants in Spanish during the Middle Spanish period, which occurred during the late 15th and early 16th centuries. It transformed the Spanish sibilant system so that the distinction was lost between voiced and voiceless sibilants, causing six phonemes to be consolidated into only three. The dental affricates /ʃ/ and /ʒ/ merged into /s/, which later lost its occlusive element and became dental /s/. For example, the Old Spanish word *dezir* ‘to say’ evolved from /dedzir/ into /detʃir/. The apical /s/ and /z/- i.e. those made with the tongue tip- simplified to alveolar /s/, meaning that words like *casa* ‘house’, which originally was /kaζa/, came to be /kasa/. Additionally, the /ʃ/ and /ʒ/ merged into alveopalatal /ʃ/ (Morgan, 2007, p. 284), meaning that words like *mugier* ‘woman’ (/muʒyer/) became (/muʃer/) (Moore, 2011, p. 1).

This period also divided the Spanish peninsula. In Castile, the three way distinction between dental /s/, apical /s/ and alveopalatal /ʃ/ was maintained and exaggerated. The dental /s/ was fronted to interdental /θ/ (whereby /detʃir/ above became /deθir/); the alveolar /s/ was retracted to the apicoalveolar /s/; and the alveopalatal /ʃ/ moved backwards to become velar /x/, meaning that the aforementioned example of /muʃer/ further evolved to become /muxer/. In Andalusia, however, apical and dental /s/ merged into one segment, the laminal /s/ (made with
the blade of the tongue), while /ʃ/ became /x/ (just as in Castile) and then later weakened to /h/ (/muher/) (Romero, 1994-1995, p. 258).

Without the distinction between apicoalveolar and dental /s/, Andalusia was actually further divided into two categories: the Andalusian “seseo” and the Andalusian “ceceo.” In regions of Andalusia that use “seseísmo,” there is a lack of the phoneme /θ/. Orthographically, <z,ce, ci> and <s> all represent the laminal phoneme /s/. In the “ceceo” variety of Andalusian Spanish, speakers of Middle Spanish opted for interdental /θ/ rather than laminal /s/ so there is a lack of the phoneme /s/, and /θ/ is the phonemic representation of orthographic <z,ce, ci> and <s>. This form of Andalusian Spanish was and continues to be highly stigmatized (Morgan, 2007, p. 285). The Andalusian migration theories say that the “seseo” form of Andalusian Spanish was the form of Spanish that was brought to the colonial world, as it was more commonly spoken in southern Spain at the time of colonization. These theories also cite the lack of distinction between /θ/ and /s/ that currently exists in former colonial territories as evidence that “seseo” was the form that migrated (Morgan, 2007, p. 285-286).

Romero (1994-1995) argues that it was during this time of sibilant consolidation that the Andalusian model of s-aspiration first emerged (p. 259). The aspiration of the syllable-final /s/ in particular also arose at this time. In the “seseista” speaking parts of Andalusia, the sibilant transformation caused the apical /s/ to be lost in favor of a laminal /s/, thereby weakening the tongue-tip gesture used to articulate /s/. The weakening effect caused a widespread reduction of /s/, especially in syllable-final position, which has already been established as the appropriate kind of environment for weakening processes to take place. (Romero, 1994-1995, p. 258-259). Reduction of syllable-final /s/, and /s/ in general, became common.
The tendency for the “seseista” variety of Andalusian Spanish to weaken /s/ in syllable-final position is supported by Romero (1994-1995). He found that the Andalusian informants in his study substituted syllable-final /s/ with the aspirated /s/ when it occurred word-internally, and that the syllable-final /s/ usually elided in absolute final position. Morgan (2007) also states that in dialects that display “seseo” the /s/ is aspirated when it appears in the syllable coda. This reduction and weakening migrated to Latin America, then, with the Spanish colonizers.

Among those societies especially prone to weakening /s/ in Latin America are Honduras, Panama, the Dominican Republic, El Salvador, Nicaragua, Venezuela, Ecuador, Cuba and Chile. “This distribution supports the theories that contact with port areas and major trade routes of the Spanish Main enhanced the transmission of weakening of /s/, since all these areas were important in the colonial era” (Lipski, 1986a, p. 40). Many studies of /s/ weakening in a variety of dialects of Latin American Spanish have found that this phenomenon is more widespread in some nations than others. In several dialects of Spanish in Latin America, /s/ weakening is very widespread, while in others the phenomenon is less common.

Among the studies that examine this occurrence, there are notable examples of country-specific studies and others which offer a survey of /s/ weakening across dialects. Hundley’s 1987 study of coastal Peruvian Spanish is one example of a country-specific study. Hundley found that his nine informants deleted syllable-final /s/ in 26% of cases. This study specifically examined deletion or non-deletion, so the aspirated syllable-final /s/ was grouped with the preserved /s/. Nevertheless, as coastal Peruvian Spanish is considered by Lipski to be one of the more progressive dialects of Spanish (1986b), a rate of deletion of just over one quarter is notable.
Other examinations of /s/ weakening offer a broad look at the occurrence across dialects. For example, Terrell’s 1979 study examines the trend of syllable-final /s/ weakening in many countries. In his research, Terrell found that in the Spanish of Buenos Aires, Argentina 15% of the informants deleted syllable-final /s/. He also offered the average of 26% deletion in Caribbean dialects of Spanish. He defined Caribbean Spanish dialects as those of nations that are partially or fully bordered by the Caribbean Sea. In three of these Caribbean dialects, those of Puerto Rico, Venezuela and Panama, Terrell found that rates of deletion were higher than the Caribbean average. Overall informants in these three nations deleted syllable-final /s/ at rates of 29%, 35% and 50%, respectively.

Terrell’s 1979 study not only surveyed /s/ weakening in Latin America, it also examined this phenomenon in the middle class in Cuba. Specifically Terrell asserted that in Cuba, the process of /s/ weakening in all syllabic environments is “[…] socially and stylistically stratified, that is, the use of aspirated phones or the deletion of the phoneme is not obligatory and the phonetic output varies according to the socioeconomic class of the speaker and the social situation in which he finds himself” (Terrell, 1979, p. 599). He found that among the middle class Cuban informants he examined, 18% of the tokens were a preserved /s/, 61% were an aspirated /s/ and 21% were a deleted /s/. These results indicate that middle class Cuban speakers weaken /s/. Their preferred method of /s/ weakening is the aspirated /s/.

Lipski’s 1985 study adds to Terrell’s examination of the rates of /s/ weakening by including other nations. In this study Lipski had ten informants from each of the capital cities of Guatemala, Costa Rica, Honduras and El Salvador. He collected tokens of syllable-final /s/ in all syllabic environments from each of the informants. The results of the study concluded that Guatemalans were least likely to weaken syllable-final /s/. These informants preserved /s/ in 93%
of cases. They aspirated /s/ in 7% of cases and did not delete /s/ in any cases. Costa Ricans were the next least likely to weaken /s/. Ninety two percent of the Costa Rican tokens were a preserved /s/. Eight percent of the Costa Rican tokens were an aspirated /s/. There were no cases of deletion. Next least likely to weaken /s/ were Hondurans. Sixty three percent of the tokens collected in Honduras were a preserved /s/. Thirty four percent of the tokens were an aspirated /s/. Hondurans deleted /s/ in 2% of the tokens. El Salvador was the next least likely to weaken /s/ among the countries studied. They preserved /s/ in 54% of cases, aspirated /s/ in 44% of cases and deleted /s/ in 2% of cases. Nicaraguans were most likely to weaken /s/ among the countries studied. They preserved /s/ 13% of the time, aspirated /s/ 83% of the time, and deleted /s/ 4% of the time. The preceding information is represented in the table below.

Table 1. Summary of Lipski (1985) findings

<table>
<thead>
<tr>
<th>Country</th>
<th>% [s]</th>
<th>% [h]</th>
<th>% [Ø]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guatemala</td>
<td>93</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>92</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Honduras</td>
<td>63</td>
<td>34</td>
<td>2</td>
</tr>
<tr>
<td>El Salvador</td>
<td>54</td>
<td>44</td>
<td>2</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>13</td>
<td>83</td>
<td>4</td>
</tr>
</tbody>
</table>

Using the preceding studies as evidence, it can be concluded that /s/ weakening occurs in many dialects of Spanish in Latin America. However, these studies do not compare the rates of /s/ weakening as a function of sociolinguistic factors. In order to discover the relationship between /s/ weakening and sociolinguistic factors like age, gender and socioeconomic status, other studies must be examined.

Lynch (2009) studied the influence of sociolinguistic variables on Cuban Spanish. In his study, he examined two generations of middle class Cuban immigrants living in Miami, Florida. His study of /s/ weakening as a function of age found that older speakers were more likely to
weaken syllable-final /s/ through aspiration. The younger speakers showed much higher rates of sibilant retention (p. 774) and weakened syllable-final /s/ less often.

Similarly, Lipski (1986a) examined the effect of the sociolinguistic factor of socioeconomic status on /s/ weakening in Honduras. He found that weakening of /s/ is most common in lower socioeconomic classes. Those belonging to higher social classes “…make a distinct effort to pronounce the /s/ clearly in all environments” (Lipski, 1986a, p. 28). His study found that rates of /s/ weakening through aspiration or deletion were 27% in the high socioeconomic class, and rose to 62% by the time they reached the lower socioeconomic class.

If Terrell, Lynch and Lipski’s results are then compared to the results of Canfield (1967), it is clear that a trend emerges. Canfield found that in the Dominican Republic and Puerto Rico, the tendency to aspirate or delete /s/ in all syllabic conditions is a nearly universal phenomenon across socioeconomic strata (Canfield, 1967, p. 916) and age groups, with “…no significant difference in rates of weakening of /s/ among speakers of widely varying ages, ranging from pre-school to well over ninety years old” (Lipski, 1986a, p. 28). From these results, it can be concluded that not only is /s/ weakening a widespread phenomenon, but also that socioeconomic status and age influence the manifestation of /s/ in many Latin American dialects of Spanish. However, age and socioeconomic status are not the only sociolinguistic factors that have been found to have an impact on /s/ weakening in Spanish.

There are a number of studies that have determined that language use differs according to gender, cultural values, social position and social mobility. In Japanese, for example, women and men use different pronouns to refer to themselves (Talbot, 1998, p.4, citing Romaine, 1994, p. 111). In Carib (an extinct language of the Caribbean) and Karajá (an indigenous language of the Amazon), different vocabularies are used depending on the speaker’s sex (Jespersen, 1922, p.
237, Talbot, 1998, p. 4-6). Trudgill (1974) found that among his informants in Norwich, England, men were more likely to use non-standard phonological forms, while women were more likely to use prestige forms. Although these studies largely examined gender’s role in other languages, the trend also exists in the Spanish-speaking world. In Latin America, the prestige of a particular manifestation of /s/ varies from culture to culture. In Honduras, /s/ weakening is associated with the less socially powerful groups, which would include descendants of African slaves, indigenous people and women (Lipski, 1986a, p. 29). Cepeda (1990) found that preservation of /s/, which is considered a prestige form (Obaid, 1973), varied across Chile depending on gender. Other than these particular findings, the study of gender’s impact on /s/ in Spanish has not been given much attention.

Generally and across many nations in Latin America, including most socioeconomic groups, age groups and gender groups, the /s/ tends to aspirate or disappear. This occurs in many syllabic environments. The phoneme /s/ is extremely vulnerable to weakening. In Chile, the weakening of /s/ is so common that many view a preserved /s/ as unusual (Obaid, 1973, p. 65).

The prevalence of utterance-final, word-final and syllable-final /s/-weakening in the form of aspiration or deletion is apparent and widespread in Chile. Just over half of the informants in Valdivia and Valparaíso, Chile studied by Cepeda were found to aspirate /s/ (1990, p. 232). Cepeda also found that the process of /s/ weakening was sociolinguistically bound. In Concepción, men favored an aspirated /s/ (56.1%) while women favored a preserved /s/ (54.4%). Meanwhile, in Valparaíso, both women and men favored an aspirated /s/ (58.0% and 51.1%, respectively). Her study did not examine the effect of age or socioeconomic status on the treatment of syllable-final /s/, as she thought the informant group was simply too homogenous in these areas to draw conclusions about the role of these particular variables. In addition to the
sociolinguistic findings of Cepeda, Obaid (1973, p. 65) found that pronouncing /s/ as [s] instead of [h] at the end of syllables and words is viewed as affectation across all regions of Chile. Obaid’s example of a Chilean teacher telling students “No se coman lah ese” for “No se coman las eses,” ‘do not eat the ‘s’” is a good example of the popular perception of this phenomenon (p. 60). It shows that prescriptively, /s/ should be maintained as the prestige form, but it is actually weakened by the very population—teachers— that would be expected to preserve it. Despite these findings, the existing research does not fully or adequately address the role that sociolinguistic variables like gender, age and socioeconomic status play in the behavior of /s/ in Chile.

It is apparent from the existing literature regarding the treatment of syllable-final /s/ in Chile that there is a gap. Clearly Chileans weaken /s/ through aspiration and deletion, as Spanish speakers do in many other Latin American countries. However, it is not known which Chileans do this or which of the two options is preferred by which groups. In that sense, the present study seeks to address the treatment of syllable-final /s/ in Chilean Spanish, and to determine which sectors of the society weaken /s/. This research seeks to determine if syllable-final /s/ weakening varies across age groups, genders and socioeconomic groups.
Informants and Procedures

Initially, the method for obtaining tokens of syllable-final /s/ employed a procedure similar to that found in Labov’s 1972 study, “The Social Stratification of (r) in New York City Department Stores.” In this study, Labov went to three different department stores, each of which represented a different socioeconomic class, determined on the basis of calculations of the prices of goods within the store. In each store, Labov examined a store map and found a department that was located on the fourth floor. He would then approach employees in each store and ask where that department was located. The expected response in each instance contained the words “fourth floor.” Labov questioned each informant two times. The first response given was natural speech, and the second (after Labov had asked the person to repeat him/herself) was deemed emphatic. In this way, Labov was able to collect four words containing /r/ from each of his 264 informants. The advantage to this form of data collection is that the words used in the response obtained are usually the same or similar, which allows for the desired phoneme to occur in the same syllabic and phrasal position (pre-pausal, pre-consonantal, etc.).

In my study, I initially began collecting data in a similar fashion. I would approach a Chilean by acting the part of a lost tourist, and ask where a street or place was located. The expected response to each of the questions contained at least one word with a word-final /s/, as this particular syllabic environment was found to be prone to weakening (Hooper 1976, Dunlap 1991, Widdison 1995). However, I quickly discovered that this method did not elicit natural speech from the informants. As I clearly did not resemble a native Chilean in either manner of appearance or accent, most respondents modified their speech to accommodate me. They slowed their rate of speech and enunciated /s/ very clearly. From the experience of listening to Chileans
using natural speech, I knew that I was not receiving good examples of what authentic Chilean Spanish should sound like. So, I decided to modify my data collection method.

For the purpose of examining Chilean Spanish in its most natural form, I determined that the best way to observe syllable-final /s/ was to overhear Chileans in conversational speech. By using this method, I could insure that the speaker was not modifying his/her speech to accommodate a Spanish language learner. The disadvantage to this method was that I did not receive a predictable response, and I was therefore unable to control which word the syllable-final /s/ was used in, nor the position at which it occurred within the phrase. There are instances of syllable-final /s/ located world-internally, word-finally and utterance-finally in the data. Furthermore, which specific position the token appeared in was not noted in the data collection.

This placed a large limitation on the present study. Previous research into syllabic constraints (see Hooper 1976, Dunlap 1991) found that the weakening of /s/ may be more likely to occur in certain syllabic environments, although these studies were limited to less progressive dialects of Spanish (Lipski, 1986b). Lipski defined a progressive dialect of Spanish as one with high degrees of linguistic innovation and rapid rates of language change (1986b, p. 140). With the exception of these progressive dialects, an /s/ is more likely to be preserved when it precedes a vowel, due to resyllabification (Hooper, 1976). This finding may not be particularly relevant, though, because /s/ weakening occurs in all environments except word-initially in Chilean Spanish (Morgan, 2007, p. 269). The present study examined a variety of syllable-final /s/ tokens in the above mentioned syllabic environments and does not note the environment of the /s/, with the exception that all tokens collected are /s/ in syllable-final position. Therefore, the study cannot address whether the findings of these previous studies of the importance of location
within the word or utterance also hold true in Chile. Nevertheless, it does attempt to address whether treatment of /s/ in any and all syllabic environments is sociolinguistically bound.

The table that follows outlines the locations at which the data were collected. In total, nine locations were included. The table includes a brief description of each location, as well as the sociolinguistic groups, defined in terms of age, gender and socioeconomic status that were expected to frequent each location. In all of these locations, I sat inconspicuously or pretended to be walking by or shopping. I would overhear conversations among people around me and jot down the first two instances of syllable-final /s/ per informant. Using a numerical system based on the three different sociolinguistic variables of interest, I also noted the informant’s gender, age and socioeconomic status. Over the course of about three weeks of observation, I obtained 198 tokens of syllable-final /s/ from 99 different informants.

Table 2. Location of Data Collection

<table>
<thead>
<tr>
<th>Location</th>
<th>Description</th>
<th>Expected SES</th>
<th>Expected Age</th>
<th>Expected Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cerro Esperanza</td>
<td>Urban Neighborhood</td>
<td>Middle Class</td>
<td>All age groups</td>
<td>Both Males &amp; Females</td>
</tr>
<tr>
<td>Ruben Castro</td>
<td>University Building</td>
<td>Middle Class</td>
<td>Mostly under 25</td>
<td>&quot;</td>
</tr>
<tr>
<td>Cerro Artillería</td>
<td>Touristic Overlook</td>
<td>Lower Class</td>
<td>All age groups</td>
<td>&quot;</td>
</tr>
<tr>
<td>Metro Train</td>
<td>Mode of Transportation</td>
<td>Middle Class</td>
<td>All age groups</td>
<td>&quot;</td>
</tr>
<tr>
<td>Central Plaza</td>
<td>Central City Plaza</td>
<td>Upper Class</td>
<td>Mostly 25 and above</td>
<td>&quot;</td>
</tr>
<tr>
<td>Valparaíso Street</td>
<td>Commercial Thoroughfare</td>
<td>Upper Class</td>
<td>Mostly 25 and above</td>
<td>&quot;</td>
</tr>
<tr>
<td>Artisan Fair</td>
<td>Touristic Craft Fair</td>
<td>Lower Class</td>
<td>All age groups</td>
<td>&quot;</td>
</tr>
<tr>
<td>Colectivo</td>
<td>Shared Taxi</td>
<td>Middle Class</td>
<td>All age groups</td>
<td>&quot;</td>
</tr>
<tr>
<td>Portales Cove</td>
<td>Public Beach</td>
<td>Middle Class</td>
<td>All age groups</td>
<td>&quot;</td>
</tr>
</tbody>
</table>
In my groupings of informants, there were 49 females and 50 males (see Graph 1 below). Among all of the informants, 35 were perceived to be under 25 years old, 34 were perceived to be between 25 and 50 years old, and 30 were perceived to be over 50 years old (see Graph 2 below). The age group determination was made based on a visual appraisal of each informant. Socioeconomically, 23 informants were perceived to be of the lower class, 61 were perceived to be middle class, and 15 were perceived to be upper class (see Graph 3 below). Class was determined based on observation of profession (the task the person was performing at the time, i.e. working in a pharmacy, shop, department store, fruit market, etc.), physical appearance (whether the person appeared well-dressed, i.e. suit and tie, or less well-dressed, i.e. low quality clothing or disheveled appearance), and geographic location of the informant at the time the relevant tokens were recorded (i.e. demographics associated with the part of town).

The following graphs (1-3) provide a visual representation of the number of informants in each group.

Graph 1. Informant Data by Gender
Graph 2. Informant Data by Age

Graph 3. Informant Data by Socioeconomic Status (SES)
After gathering and examining all 198 tokens, it became apparent that some of the sociolinguistic groups did not contain enough informants for a statistical analysis of the allophones chosen. In light of this information, it was determined that groupings should be combined to allow for an accurate statistical test to be performed. The age groups were consolidated so that each informant was in either the above age 50 group or the under age 50 group. The SES groups were also combined so that lower and middle class informants were grouped into one SES group (labeled “lower”), while higher class informants comprised the other group. The gender groups remained the same. By combining these groupings, enough data from each group was collected to accurately perform a statistical analysis. The following graphs visually illustrate the new breakdowns of the two groups that were changed.

Graph 4. Informant Data by Age

In the new age groupings, 69 of the informants belonged to the under age 50 group. Thirty informants belonged to the over age 50 group.
In the new SES groupings, 84 informants belonged to the lower SES group. Fifteen informants belonged to the higher SES group.
Results

The results will show SES, gender and age examined individually to determine whether each of these sociolinguistic variables is a statistically significant predictor of the chosen allophone of syllable-final /s/ among the informants. A chi-square analysis was done to test each data set for statistical significance at the recommendation of C. Klein (personal communication, April 12, 2011). Since the individual preference of an informant was found to change from token 1 to token 2 in many cases, the determination was made that only one token should be examined per informant. The first instance of syllable-final /s/ used by each informant was chosen in the belief that this would be an accurate predictor of each informant’s preferred allophone.

Each token collected was determined to be either 1) maintained [s], 2) aspirated [h] or 3) deleted [Ø]. In total, 87% of the tokens were determined to be weakened through either aspiration or deletion. Thirteen percent were determined to be preserved. The tokens were then analyzed using a chi-square analysis to determine whether the sociolinguistic factors of gender, age and socioeconomic status had a statistically significant impact on the treatment of syllable-final /s/. Socioeconomic status proved to be the only significant predictor of the informant’s chosen allophone.
In Graph 6, it can be seen that of the total of 99 tokens of syllable-final /s/ collected from 99 informants, 10, or 10.10%, were determined to be preserved [s]. Forty-six tokens, or 46.46%, were determined to be an aspirated [h]. Forty-three tokens, or 43.43%, were determined to be deleted [Ø]. This indicates that Spanish speakers from Valparaíso and Viña del Mar, Chile display a tendency to weaken /s/ (through aspiration or deletion). These findings confirm the earlier research of Hooper (1976), Dunlap (1991), Widdison (1995), Lipski (1986a & 1986b), Obaid (1973) and Canfield (1967), among others.
Series 1: Socioeconomic Status in Relation to the Phonetic Realization of Syllable-Final /s/

The following graphs and tables examine the treatment of /s/ based on the informant’s socioeconomic status (SES).

Table 3. SES and Treatment of Syllable-Final /s/: Crosstabulation

<table>
<thead>
<tr>
<th>Allophone</th>
<th>[s]</th>
<th>[h]</th>
<th>[Ø]</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>6</td>
<td>38</td>
<td>40</td>
<td>84</td>
</tr>
<tr>
<td>Higher</td>
<td>4</td>
<td>8</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>46</td>
<td>43</td>
<td>99</td>
</tr>
</tbody>
</table>

Table 3 shows the majority of tokens from lower SES informants display weakening of syllable-final /s/, with a fairly even distribution between aspiration and deletion. This translates to 45.24% of lower SES informants weakening syllable-final /s/ through aspiration, while 47.62% weaken syllable-final /s/ through deletion. Only 7.14% of lower SES informants preserve syllable-final /s/, demonstrating that this is not the preferred allophone. Among the higher SES informants, a preference for /s/ weakening is also displayed through aspiration; the majority of the tokens (8 of 15, or 53.33%) were determined to be an aspirated /s/. Four, or 26.67%, of the total tokens collected for this group, were determined to be a preserved /s/. Twenty percent of the tokens (3 of 15) were determined to be a deleted /s/. Therefore, higher SES informants are most likely to aspirate /s/, and show an equal preference between full preservation of /s/ and deletion of /s/.
The graph below provides a visual representation of the data presented in Table 3. The data is reflected in percentages.

Graph 7. SES and Treatment of Syllable-Final /s/

These data indicate that /s/ weakening is indeed a universal phenomenon in the dialect of Spanish under consideration. The data also indicate that SES may shape the particular outcome that /s/ weakening displays. Specifically, while aspiration tends to be favored by both SES groups, weakening through aspiration and deletion are given nearly equal preference in the lower SES group, while full preservation of /s/ is much more prevalent than deletion in the higher SES group.
In order to determine whether SES is statistically significant in relation to the treatment of syllable-final /s/ in this dialect of Spanish, a chi-square analysis was conducted. The results of this test are presented in Table 4 below.

Table 4. Chi-Square Analysis: SES in Relation to the Treatment of Syllable-Final /s/

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>7.218</td>
<td>2</td>
<td>.027</td>
</tr>
</tbody>
</table>

This table shows a value of .027 for the “Pearson Chi-Square” test. Any value less than .05 is considered statistically significant. Therefore, it is determined that socioeconomic status is a statistically significant predictor of the allophone of /s/ in syllable-final position chosen by Spanish speakers in this region of Chile. These results indicate that the distribution seen in Table 3 and Graph 7 above are reliable indicators of predictable differences in the treatment of /s/ as a function of SES.
Series 2: Gender in Relation to the Treatment of Syllable-Final /s/

The following tables and graphs examine the treatment of /s/ based on the informant’s gender.

Table 5. Gender and the Treatment of Syllable-Final /s/: Crosstabulation

<table>
<thead>
<tr>
<th>Allophone</th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>[s]</td>
<td>[h]</td>
<td>[Ø]</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (Female)</td>
<td>4</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>2 (Male)</td>
<td>6</td>
<td>24</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>46</td>
<td>43</td>
</tr>
</tbody>
</table>

Table 5 shows that both male and female informants tend to weaken syllable-final /s/. Among females, nearly equal preference is shown for aspiration and deletion, with 22 tokens, or 44.90%, aspirated and 23 tokens, or 46.94%, deleted. Preservation is strongly disfavored among females, with only 4 tokens, or 8.16%, of preserved /s/. Among males, weakening is also favored, with aspiration given a slight preference over deletion. Twenty- four tokens, or 48%, were aspirated /s/. Deletion accounts for 20 tokens, or 40%. Like females, males also disfavor preservation, with only 6 tokens, or 12%, of tokens displaying preserved /s/. 
The graph below provides a visual representation of the data presented in Table 5. The data is reflected in percentages.

Graph 8. Gender in Relation to the Treatment of Syllable-Final /s/

These data indicate that /s/ weakening does in fact occur in the Chilean Spanish examined. The data also indicate that gender may not shape the particular manifestation of /s/ weakening, i.e., aspiration or deletion. Specifically, while both genders weaken /s/, and females show a slight preference for deletion while males show preference for aspiration, in both cases the distribution is fairly equal. In addition, both genders also disfavor preservation.
In order to determine whether gender is statistically significant in relation to the treatment of syllable-final /s/ in this dialect of Spanish, a chi-square analysis was performed. The results of that test are presented in Table 6 below.

Table 6. Chi Square-Tests: Gender in Relation to the Treatment of Syllable-Final /s/

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>.686$^a$</td>
<td>2</td>
<td>.710</td>
</tr>
</tbody>
</table>

This table shows a value of .710 for the “Pearson Chi-Square” test. Any value less than .05 is considered statistically significant. Therefore, it is determined that gender is not a statistically significant predictor of the allophone of /s/ in syllable-final position chosen by Spanish speakers in this dialect. The distribution seen in Table 5 and Graph 8 above shows that both genders tend to treat /s/ in a similar way, which contrasts with Cepeda’s (1990) findings in Concepción, Chile in that Cepeda found that women are most likely to preserve /s/ (54.4%) while men are most likely to aspirate /s/ (56.1%). As we would expect, however, these findings also concur with what Cepeda found in Valparaíso, Chile, namely that both men and women favor /s/ weakening.
Series 3: Age in Relation to the Treatment of Syllable-Final /s/

The following tables and graphs examine the treatment of /s/ based on the informant’s age.

Table 7. Age in Relation to the Treatment of Syllable-Final /s/: Crosstabulation

<table>
<thead>
<tr>
<th>Allophone</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>[s]</td>
<td></td>
</tr>
<tr>
<td>[h]</td>
<td></td>
</tr>
<tr>
<td>[Ø]</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>Under 50</td>
<td>6</td>
</tr>
<tr>
<td>Over 50</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10</td>
</tr>
</tbody>
</table>

Table 7 shows that among those informants under age 50, /s/ weakening is preferred. Thirty-three tokens, or 47.83%, were an aspirated /s/. Nearly equal preference is given to deletion, with 30 tokens, or 43.48%. Preservation is strongly disfavored, accounting for only 8.70% of the tokens (6 of 69) collected from informants under age 50. Among those informants over age 50, weakening of /s/ is also favored. Equal preference is given to both aspiration and deletion, with each accounting for 13 tokens, or 43.33%. Like the informants under age 50, preservation is also disfavored, with only 4 tokens, or 13.33%, demonstrating preservation of /s/.
The graph below provides a visual representation of the data presented in Table 7. The data is reflected in percentages.

Graph 9. Age in Relation to the Treatment of Syllable-Final /s/

These data indicate that /s/ weakening is in fact a common phenomenon across age groups in the dialect of Spanish under consideration. The data also indicate that age does not shape the particular outcome that /s/ weakening will display, i.e., aspiration or deletion. Specifically, informants under age 50 as well as informants over age 50 are likely to give nearly equal preference to both aspiration and deletion.
In order to determine whether age is statistically significant in relation to the treatment of syllable-final /s/ in this dialect of Spanish, a chi-square analysis was conducted. The results of this test are presented in Table 8 below.

Table 8. Chi-Square Test: Age in Relation to the Treatment of Syllable-Final /s/

<table>
<thead>
<tr>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>.536</td>
<td>2</td>
<td>.765</td>
</tr>
</tbody>
</table>

This table shows a value of .765 for the “Pearson Chi-Square” test. Any value less than .05 is considered statistically significant. Therefore, it is determined that age is not a statistically significant predictor of the allophone of /s/ in syllable-final position chosen by Spanish speakers in this region of Chile. The distribution seen in Table 7 and Graph 9 contrasts with Lynch’s (2009) findings, in which it was found that in middle-class Cubans living in Miami, the younger generation was much more likely to preserve /s/, while the older generation was likely to weaken /s/ through aspiration.
Discussion

Although this study found that socioeconomic status is a significant predictor of how an informant will treat syllable-final /s/, the amount of data is simply not large enough to draw legitimate conclusions at a more fine-grained level of detail regarding this phenomenon. Primarily, the size of the sample limits the study because the sociolinguistic groupings were not of equal size. Before consolidating the groups into only two groups per sociolinguistic variable rather than the originally established three groups for SES and age, some of the sub-groupings did not contain any informants when applied to [s] vs. [h] vs. [Ø]. This is not helpful when conclusions are trying to be made based on these groupings. The groups would need to be much larger and have similar numbers of informants. By including larger numbers in each group and more tokens, a more thorough study and more accurate conclusions could be reached about the treatment of syllable-final /s/ in this dialect of Spanish. For a future study similar to this one, it would therefore be helpful to have more informants and equal numbers of informants across all sociolinguistic groups.

The expansion of the present study would also be valuable because it would allow for the original three groupings for age and SES to be maintained. By expanding the number of informants examined and allowing for these three groupings, it may produce statistical significance in a group that was not seen in this study, such as age. It would also be valuable in allowing for the examination of the interaction between SES and age and SES and gender, as well as age and gender. The determination could be made whether pairing these factors predicts an informant’s chosen allophone.

In addition to the number of informants and tokens examined, it would be helpful to describe the data in more phonological detail. Although Chilean Spanish is considered to be a progressive dialect in which syllable-final /s/ is weakened in pre-vocalic as well as pre-pausal,
pre-consonantal and word-final environments, it would be helpful to take note of the phonological environments during the collection of tokens. Hooper (1976), Dunlap (1991) and Widdison (1995) found that where the /s/ occurs in the syllable is important when determining which allophone will be used. Although Morgan (2007) and Lipski (1986b) found that in Chilean Spanish, treatment of syllable-final /s/ tends to be less constrained by the phonological environment, it would be beneficial to take note of where the /s/ occurs so that the determination could be made if one method of weakening (aspiration or deletion) is preferred over the other in certain phonological environments. This notation could also help determine if the dialect of Spanish being examined is in fact progressive. In a future study similar to this one, it would therefore be helpful to take note of the phonological environment in which the syllable-final /s/ occurs.

In addition to the modifications proposed to the current study, expanding upon it would also be beneficial in adding to the sociolinguistic study of syllable-final /s/ treatment in Chile. An interesting way in which the present study could be expanded would be to determine common perceptions of /s/ weakening among Chileans. Obaid (1973) determined that weakening of syllable-final /s/ in Chile is commonplace and stated that preservation of /s/ may be considered affectation. An area for further study could examine whether preservation of /s/ is in fact a prestige form. It could further discuss how Chileans view someone who preserves /s/ versus someone who weakens /s/ and if Chilean speakers are making a conscious decision to use one allophone over another in order to be associated with a certain socioeconomic group.

Another interesting expansion would be to examine how popular perceptions of /s/ treatment have changed historically. An examination could be made of when /s/ weakening became part of the Chilean dialect and whether or not the sectors of society that weaken syllable-
final /s/ have changed over time. This study would attempt to determine whether times of political upheaval and great social change have influenced this phenomenon (e.g., the overthrow of Allende and Pinochet’s regime). A study could be conducted that compiled data from archived newsreels, radio broadcasts and personal interviews which could identify the type of Chileans, specifically their socioeconomic status and political affiliation, that have weakened syllable-final /s/ historically.
Conclusion

This study has analyzed 99 tokens of syllable-final /s/ collected using an overhearing method in nine locations across Valparaíso and Viña del Mar, Chile. It has compared them against trends for each of the distinct sociolinguistic groupings for socioeconomic status, gender and age (see results above). This study has determined that socioeconomic status is the only sociolinguistic factor among the three examined that has a significant correlation with the informant’s treatment of syllable-final /s/ in the dialect of Spanish spoken in this region of Chile. Based on the analysis presented (see Table 3 and Graph 7), it can be said that a person belonging to the lower SES group (the lower class and middle class) is much more likely to weaken /s/ through deletion than someone belonging to the higher SES group (the upper class). Over 47% of the lower SES informants delete syllable-final /s/, compared to only 20% of the higher SES informants. It can also be concluded that someone belonging to the higher SES group is much more likely to preserve /s/ than a person belonging to the lower SES group. Over 26% of higher class informants preserve syllable-final /s/, compared to only 7.14% of lower SES informants. Higher SES and lower SES informants show a similar preference for aspiration, with over 45% of lower SES informants aspirating /s/ and over 53% of higher SES informants aspirating /s/.

The findings of the present study are congruent with previous research done into treatment of syllable-final /s/ both generally and sociolinguistically. In the general studies of /s/ authored by Canfield (1967, 1981), Dunlap (1991), Hooper (1976), Hundley (1986, 1987), Lipski (1985, 1986a, 1986b), Moore (2011), Moreno de Alba (1988), Morgan (2007), Obaid (1973), Piñeros (2001), Romero (1994-1995) Terrell (1979) and Widdison (1995), this weak consonant is determined to be difficult to produce and prone to weakening. Generally, /s/ in syllable-final position is found to be weakened in all of these studies. The findings of the present
study support the conclusions made by the aforementioned authors. The phoneme /s/ is found to be weakened by the informants in this study in nearly 87% of cases. Therefore, it can be said that the present study supports the claim that /s/ is prone to weakening.

There are a variety of studies that examine the role of sociolinguistic variables in speech enumerated in this study. The works of Cameron (2005), Cepeda (1990), Jespersen (1922), Labov (1972), Lipski (1986a), Lynch (2009), Ranson (1993), Romaine (1994), Talbot (1998) and Trudgill (1974) all found that sociolinguistic variables influence speech in a variety of ways. The present study supports those claims in the case of SES, but offers no further support when it comes to the role of gender and age. This can be said since SES proved to be a statistically significant predictor of the allophone chosen, while gender and age did not.

When it comes to SES specifically, the studies of Labov (1972) and Lipski (1986a) determined that socioeconomic status influences the way a person speaks. Lipski’s examination of Honduran Spanish found that /s/ weakening is more likely to occur in the lower social strata, while preservation was more likely to occur in the higher SES group. These findings are congruent with the present study. The present study supports this argument by finding that socioeconomic status is a significant predictor of the chosen allophone of syllable-final /s/ in Valparaíso and Viña del Mar, Chile. Specifically, lower SES informants are less likely to preserve /s/ than higher SES informants, and they are also more likely to delete /s/ than their higher SES counterparts. Both SES groups show similar likelihood of aspirating /s/.

The present study expands upon the research of many authors into /s/ weakening. It supports the argument that syllable-final /s/ is prone to weakening in many dialects in Latin America. This study also expands on the sociolinguistic study of Spanish. It determines that
socioeconomic status is a reliable predictor of the allophone of syllable-final /s/ that will be chosen by an informant in Valparaíso and Viña del Mar, Chile.
References


