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Reanalysis and Hypercorrection Among Extreme /s/ Reducers

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Abstract
Western Nicaragua is an immensely understudied region, and it also represents one of the most advanced coda /s/-weakening dialects of Spanish. Coda /s/ is reduced nearly categorically before a following consonant, vowel, or pause, e.g. cesta ‘basket’ becomes [sehta], más ajo ‘more garlic’ becomes [mah aho], and misas ‘masses’ becomes [misa], respectively. These reductions result in a “breathy Spanish” with rates of reduction similar to extreme Caribbean varieties (Lipski 1994: 291). Given the nearly absolute weakening, this work investigates the present status of coda /s/ in the dialect through an exploration of (i) diachronic data to determine how [s] production has changed over time, (ii) synchronic comparisons with other /s/-reducing dialects, and (iii) [s] hypercorrections. I conclude that /s/-weakening has advanced over the past thirty years as rates of coda sibilance decrease and rates of deletion rise; that [s] in Nicaragua is not a linguistically conditioned, local variant due to its deviant behavior; and that [s] hypercorrections do occasionally emerge in formal tasks, suggesting a loosening of the association between underlying coda /s/ and surface sibilance. Based on these conclusions, I argue that sibilance serves as a social strategy to index education, power, and precision on a global scale, while linguistically, many Nicaraguan speakers are operating with underlying coda /h/ instead of /s/, which helps to account for the innovative behavior of the glottal stop. Not only does this work document a highly understudied language variety, it also elucidates the complex linguistic and social motivations for selecting a particular variant in a radical dialect.

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Reanalysis and Hypercorrection Among Extreme /s/ Reducers

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1 Introduction

The lenition of coda /s/ to [h] or ø affects approximately half of the Spanish-speaking world (Canfield 1981) and, with few exceptions (see Brown and Torres Cacoullos 2003, López Chávez 1977), advances in a relatively stable order across dialects. In less advanced dialects like Limeño Spanish, aspiration is common preconsonantally, e.g. mosca ‘fly’ as [mohka], but does not extend to the prevocalic environment, e.g. más alto ‘higher’ remains [mas alto] (Lipski 1994). Prepausally, retention of /s/ is the most common realization, e.g. pares ‘pairs’ as [pares]. On the other hand, in more radical aspirating dialects like Nicaraguan Spanish glottal frication occurs preconsonantally and prevocically, e.g. [mohka] and [mah alto], with full elision of /s/ prepausally, e.g. [pare] (Lipski 1994).

The most radical documented dialect is Dominican Spanish, with full deletion of coda /s/ serving as the norm in all of the aforementioned contexts, resulting in [moka], [ma alto], and [pare] for mosca, más alto, and pares, respectively. Deletion of /s/ is so thoroughly diffused a hypercorrection process has emerged among parts of the population: some speakers insert sibilance in innovative environments where it would not occur in any other dialect of Spanish. For example, the name Érika may be produced as [eriska] (Bullock et al. 2014), and okey ‘okay’ may result in [oskej] or [okejs] (Morgan 1998). Multiple linguists have suggested that a phonological reanalysis has occurred, and the hypercorrection process marks the loss of coda /s/ in speakers’ inventories (Terrell 1986, Núñez Cedeño 1988, 1989, 1994, Harris 2002).

Similar rates of /s/ reduction can be observed in Nicaraguan Spanish (henceforth NS), but unlike Dominican deletion, the most common realization in this dialect is glottal frication, often strengthened to glottal constriction before a stressed vowel (Chappell forthcoming a). Taking place in all coda /s/ environments in Nicaraguan Spanish, the reduced production is nearly categorical (Chappell forthcoming a), and speakers’ use of one “reduced” form, the glottal stop, actually increases in hyperarticulated, formal speech (Chappell forthcoming b). Given the advanced nature of the phonological reduction in NS paired with its use even in formal, hyperarticulated speech, what is the current status of coda /s/? Has a phonological reanalysis potentially taken place in the minds of some NS speakers?

In order to answer these questions, the present paper explores the behavior of coda /s/ in NS diachronically and synchronically with a focus on aberrant [s] productions. To better understand the effect of extreme /s/ reduction on the NS phonological system, three central questions guide the discussion that follows:

(i) How has the realization of /s/ evolved diachronically in NS?
(ii) How does sibilance in NS behave when compared with other /s/-reducing dialects?
(iii) Do hypercorrections occur in NS as they do in Dominican Spanish?

While firm conclusions regarding underlying representations are difficult to reach when analyzing speakers’ productions, this paper provides the first examination of the data in NS.

2 Linguistic Factors Conditioning the Reduction

While spatial considerations prevent a detailed discussion of the numerous studies conducted on /s/ reduction (see Chappell 2013), four linguistic factors have emerged in the literature as the most significant predictors of coda /s/ reduction: phonological context, following stress, word length, and frequency. Phonological context consistently conditions /s/ reduction across dialects, and mul-

*I am especially thankful to Rebeka Campos-Astorkiza, Terrell Morgan, and Scott Schwenter, whose thought-provoking comments on this topic helped me to more thoroughly develop these ideas. Any mistakes in the paper are mine alone.
tiple authors have confirmed the tendency for /s/ aspiration to occur with a following consonant (Cedergren 1973, Dohotaru 1998, Ma and Herasimchuk 1971, Tennant et al. 2008, Vallejo-Claros 1970). Prepausally, however, aspiration is not the norm. Rates of aspiration plummet before a pause, and /s/-retention and deletion rates tend to rise dramatically in this environment, with differing rates of retention or deletion depending on the dialect (Terrell and Tranel 1978, Dohotaru 1998).

While prepausal realizations do vary by dialect, dialectal differences are most notable prevocally at the word boundary. In dialects with more extreme reduction, /s/-weakening occurs before both a following consonant and a following vowel (Dohotaru 1998, Tennant et al. 2008), while more conservative dialects only show reduction preconsonantally (Lipski 1999). In the more extreme dialects with prevocalic /s/ reduction at the word boundary the stress of the following vowel conditions the reduction; deletion is less likely with a following stressed vowel (Alba 1982, López Morales 1980, Poplack 1979) while retention of /s/ is more likely preceding a stressed vowel (Dohotaru 1998, Terrell 1979).

Word length has been shown to influence the reduction as well, with longer words undergoing higher rates of lenition (Dohotaru 1998, Ruiz-Sánchez 2004, Terrell 1979). The importance of word length has been explained in terms of time constraints, with a durational shortening of individual units in longer words in Spanish (Méndez Dosuna 1985). Lexical accessibility has also been called upon to explain this factor. The first segments are the most crucial for the listener to be able to access a lexical unit’s meaning, and the importance of each segment decreases as more preceding phonological information about the word is available to the listener (File-Muriel 2007).

Finally, several studies have indicated a tendency for [s] to be retained the most between high-frequency word pairs (Cedergren 1973, Ma and Herasimchuk 1971), which suggests the /s/ reduction process may be slowed if high-frequency strings are stored in the mind as a single chunk (Bybee 2001). This pattern can be explained with the resyllabification rules of Spanish. At the lexical level, a word-final /s/ is in coda position, e.g. [to.mas] Tomás ‘Thomas’. At the postlexical level, on the other hand, the /s/ is resyllabified to onset position whenever it is followed by a vowel, e.g. [to.ma.si] Tomás y ‘Thomas and’. If these high-frequency strings are, in fact, stored in the mind as a single unit, and in these strings coda /s/ is resyllabified to onset position, the /s/ no longer falls within the reduction environment. Consequently, /s/-weakening between high-frequency strings may be delayed.

3 Reanalysis in the Dominican Republic

As noted in section 1, Dominican Spanish represents the single most advanced /s/-reducing dialect, with deletion serving as the most common coda /s/ realization (Alba 1982, Núñez Cedeño 1980). For example, Dominican Spanish speakers could realize estas pasas ‘these raisins’ as [etah pasah], but the more likely realization would be [eta pasa] (Morgan 2000:79). While this reduction process is thoroughly diffused throughout all social classes, deletion typifies popular speech but is a stigmatized feature, particularly in more formal settings.


(1) foto [fósto], [fotos] ‘photograph’
aquí [aski], [akis] ‘here’
siete [sjéste], [sjétés] ‘seven’
¡ókey! [óskêj], [okéjs] ‘O.K.’ (Morgan 1998:81)

The hypercorrections observed in Dominican Spanish point to a phonological restructuring among many speakers (Lipski 1994:239). Because coda /s/ deletion occurs almost categorically in Dominican production, parts of the population appear to have lost the underlying segment in their phonological system, making fósforo ‘match’ /fóforo/ in the lexicon of most Dominican speakers (Bullock et al. 2014). However, it is widely recognized that full deletion of coda /s/ is stigmatized throughout the Spanish-speaking world (Lafford 1986), while the retention of sibilance is uniformly viewed as the prescriptively ‘correct’ variant. It is this stigma associated with null realizations
of /s/ that has led to a quantitative and qualitative hypercorrection phenomenon (Janda and Auger 1992). The examples in (1) demonstrate that while Dominican speakers attempt to approximate the coda sibilance found in Standard Spanish, the norma culta (Morgan 2000) is not always within their reach, and they frequently miss the target of Standard Spanish norms (Harris 2002:97).

In spite of the irregularities involved in coda [s] production among Dominican speakers, Núñez Cedeño (1988) argues that the phenomenon is rule governed, and is neither “caótica ni arbitraria” ‘chaotic nor arbitrary’. Based on his native speaker intuitions, he explains that verde ‘green’ could not occur as *versde or canto ‘song’ as *canto as the phenomenon is restricted to open syllables. This is not to say that these productions represent missing gaps in the data but rather that they are disallowed hypercorrections.

Morgan (1998) supports Núñez Cedeño’s (1988) argument that [s]-insertion is rule-governed in the first quantitative study exploring the insertion process, demonstrating that insertion is much more likely in certain environments than it is in others. While the insertion is blind to part of speech, found in adverbs, pronouns, prepositions, verbs, nouns, determiners, and adjectives, it is more common word-finally than word-internally (Bullock et al. 2014, Morgan 1998). Both word-finally and word-internally, the phenomenon is most likely to occur before a voiceless stop (Bullock and Toribio 2009, 2010, Bullock et al. 2014). Bullock and Toribio (2009) propose that phonetic misperception may be driving the insertion before voiceless consonants. Speakers seem to have misparsed the friction caused by glottal abduction in the production of a voiceless stop as an indicator of a preceding fricative. In other words, the glottal abduction has caused speakers to misperceive [T] as [hT], which, in turn, is viewed as a variant of [st].

Most recently, Bullock et al. (2014) go so far as to claim that Dominican Spanish speakers do have access to underlying /s/ but simply choose to suppress it for social reasons. Based on a statistical analysis of lexical [s] (sibilance in anticipated environments) and inserted [s] (sibilance in innovative environments), they find lexical [s] is most likely word internally before voiceless stops. Inserted [s], on the other hand, is most likely at the word boundary before voiceless stops. While Bullock et al. use their results to refute the notion of a phonological reanalysis, the evidence could alternatively be used to support a reanalysis for many speakers. While lexical [s] is produced most word internally and inserted [s] is produced most word finally, both are most likely before a voiceless stop, suggesting that the process is primarily conditioned by the following segment.

Why, then, is inserted [s] more common at the word boundary? In an earlier work, Bullock and Toribio (2009) point to an example of [s] insertion phrase-initially with [st]ampeco ‘neither’, which actually violates the phonotactics of Spanish, as a /sC/ cluster is a disallowed complex onset in modern Spanish. To account for the common insertion of [s] in absolute word-final environments and, in some cases, phrase initially, they propose that in addition to social purposes, sibilance also serves as a marker to redundantly indicate phrasal boundaries (Bullock and Toribio 2009, 2010). If sibilance is inserted to mark phrasal boundaries, it stands to reason that sibilance may also be used to mark other boundaries, i.e. word boundaries. Accepting this line of reasoning, the predominance of [s] insertion at the word boundary does not necessarily prove that there is a distinction between lexical and inserted [s] in the minds of Dominican Spanish speakers. Rather, a variable rule of [s] insertion may be at work, with sibilance insertion more likely (i) with a following voiceless stop and (ii) at word and phrasal boundaries.

Perceptual factors may help explain the insertion process, with the glottal abduction required in the production of a voiceless stop contributing to the misperception of [h] for /s/ before /p t k/ word internally and word finally (Bullock and Toribio 2009). Bolstering the [h] misperception claim of Bullock and Toribio (2009), Morgan (1998) demonstrates that in addition to [s], [h] may be inserted as well, e.g. “la[h] Torre del Homaje, primera[h] torre[h] construida....” ‘the Homenaje tower, the first tower built...’ (Morgan 1998:88). Morgan attributes this aspiration to a socially motivated insertion: coda [h] is associated with Puerto Rican speech (Terrell 1981), which is considered a more prestigious variety than Dominican speech, while deletion is more representative of Dominican speech (Morgan 1998). Dominicans seem to be inserting [s] and [h] in innovative environments for similar social reasons. While [s] represents the prestige associated with Standard Spanish, aspiration represents the prestige associated with Puerto Rican Spanish, and an approximation of these varieties serves as an attempt to distance the speaker from stigmatized Dominican features.
4 The Case in Nicaragua

The debuccalization of /s/ in Nicaragua “occurs to a greater extent… than in any other Central American variety” (Lipski 1994:291). The “nearly absolute” (Lipski 1984:177) reduction of coda /s/ in all contexts sets the stage for a potential reanalysis of the underlying segment, similar to what has been observed in Dominican Spanish. When the conservative, underlying variant hardly ever occurs at the surface level and is almost categorically aspirated in all environments, it follows suit that speakers may begin to lose the association between the underlying segment and the surface production, particularly for those with limited access to education.

I claim that some members of the Nicaraguan population have reanalyzed coda /s/ as /h/ based on three key pieces of evidence. First, coda /s/ reduction is advancing in Nicaragua, and in coda position [h] is employed nearly categorically, with sibilance surfacing only among the very educated speakers in formal tasks. Secondly, in the rare cases when coda [s] is produced, it displays anomalous behavior. Finally, occasional hypercorrections similar to the process in the Dominican Republic occur in Nicaragua as well. While the Nicaraguan reduction is less extreme, making this proposal somewhat more controversial, I conclude that positing coda /s/ as coda /h/ for many Nicaraguan speakers helps to explain the aberrant coda /s/ patterns in the dialect. Each piece of evidence is discussed in detail in the following sections.

4.1 Extension of the Reduction

First, a comparison of Lipski’s data collected in the early 1980s (1984) and Chappell’s (2013) data collected in 2011-2012 should enable a diachronic study of /s/ retention and reduction rates. Lipski’s data set and my own should be analogous, as both entail recordings of casual conversations among three social classes as determined by education level of the speaker. The comparison detailed below indicates that the already advanced reduction in Nicaraguan Spanish is becoming even more extreme through an extension of deletion and decrease in sibilance.

As Lipski (1984) noted 30 years ago, the reduction was nearly categorical preconsonantally, e.g. casco ‘helmet’ as [kahko], and only varied in word-final, intervocalic positions, e.g. los otros ‘the others’, in which (i) sibilance, (ii) aspiration, and (iii) deletion could be observed. More recently, Chappell (forthcoming a) documents a great deal more diversity in the word-final, prevocalic environment in NS, as outlined between the poles of sibilance and elision in Table 1 below.

<table>
<thead>
<tr>
<th>Sibilance</th>
<th>Sib. + Glottal constriction</th>
<th>Glottal constriction</th>
<th>Glottal frication (Aspiration)</th>
<th>Elision</th>
</tr>
</thead>
<tbody>
<tr>
<td>[s]</td>
<td>[s?]</td>
<td>[ʔ] : Creaky voice</td>
<td>Voiceless [h] ; Voiced [ɦ]</td>
<td>ø</td>
</tr>
</tbody>
</table>

Table 1: Rican /s/ variants from least (left) to most (right) reduced from Chappell (2013).

In order to make this comparison as direct as possible, the discussion below will focus on the extremes of the reduction phenomenon: sibilance and deletion. It is difficult to know how Lipski (1984) operationalized his ‘aspiration’ category, which has been a thorny concept in the literature. To illustrate the lack of consensus, Cedergren (1973) conflates glottal constriction and elision into a single category in her analysis, while Terrell (1979) views glottal constriction as a type of aspiration, combining the two. Chappell (forthcoming a), on the other hand, considers glottal constriction a separate realization altogether. Sibilance and deletion, however, are less controversial variants in the literature and a comparison of these two poles allows for a more accurate assessment of the data sets. First, Lipski’s results for sibilance and deletion rates of prevocalic /s/ in casual conversations in the early 1980s are presented below in Table 2.
In terms of deletion—the most innovative, most reduced variant—Lipski’s data show that in the early 1980s, Nicaraguan speakers only deleted /s/ in casual conversations with 2.2%-8.2% frequency before an unstressed vowel and with 2.1-13.1% frequency before a stressed vowel, depending on social class. Only the lowest social class reaches deletion rates of 13.1% before a stressed vowel, whereas retention rates for all social classes are above 20% in the same environment.

More recently, I found that the percentages of sibilance and deletion are distributed somewhat differently. The frequency with which these two variants occurred among speakers with three different levels of education is illustrated below in Table 3.1

<table>
<thead>
<tr>
<th></th>
<th>s#V′</th>
<th></th>
<th>s#V</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[s]</td>
<td>ø</td>
<td>[s]</td>
<td>ø</td>
</tr>
<tr>
<td>Upper class</td>
<td>27.7</td>
<td>2.1</td>
<td>7.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Middle class</td>
<td>29.0</td>
<td>5.3</td>
<td>4.8</td>
<td>6.8</td>
</tr>
<tr>
<td>Lower class</td>
<td>22.6</td>
<td>13.1</td>
<td>1.6</td>
<td>8.2</td>
</tr>
</tbody>
</table>

Table 2: /s/ retention and reduction (%) in word-final position among three social classes in Nicaragua before a stressed (s#V′) and unstressed (s#V) vowel (from Lipski 1984:175).

I observed an average deletion rate of 37.2% of all word-final, intervocalic tokens, demonstrating a dramatic leap in reduction from the data collected in the early 1980s, which showed a 6.2% average rate of deletion. In fact, deletion is a much more common variant in recent interviews among all classes than sibilance, which was the far more common realization in Lipski’s older data. This is no longer the case. With the exception of the highest class, sibilance production is decreasing before a stressed vowel in favor of other variants. These trends indicate that /s/-reduction may be advancing over time in NS, and deletion is now more frequent than it was in the 1980s.

4.2 Aberrant Behavior of [s]

The most telling aberrant behavior of sibilance in NS is the common occurrence of previously unattested variants. When sibilance is produced in more formal speech, it is often accompanied by glottal closure, resulting in a hybrid production of [sʔ] in over 30% of all coda /s/ tokens in reading and image identification tasks (Chappell 2013). This high-frequency frication followed by a period of glottal closure is illustrated below in Figure 1.

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1 Two NS speakers were excluded from this table to avoid skewing the data, as their productions were markedly different from the other 34 NS speakers in casual conversations. One participant had worked in a call center and had detailed knowledge of Standard Spanish, and the second participant had lived in the United States for several years, spending time with Mexicans and other /s/-retaining speakers. The 34 speakers that remain all have more typical rates of /s/-variant production for NS.

2 Four tokens of sibilance followed by glottal constriction occurred but were excluded from this table.
Figure 1. Production of *museos altos* ‘tall museums’ with coda /s/ [sʔ] production.

In addition to production differences, sibilance and sibilance followed by glottal closure are also conditioned by different linguistic factors. In a statistical analysis of the coda /s/ variants in NS, Chappell (2013) finds that sibilance followed by glottal closure is significantly more likely (p<.001) than the other coda /s/ variants before a stressed vowel, e.g. [masʔ áldo], but following vowel stress was not a significant predictor of sibilance alone, e.g. [mas álto]. Like sibilance followed by glottal constriction, glottal constriction alone was also significantly more likely (p<.001) than the other variants in this environment, e.g. [maʔ álto]. Chappell (forthcoming a) argues that glottal closure serves as a fortition strategy in strong prosodic environments, whereas sibilance alone does not. Sibilance, both on its own and in the hybrid [sʔ] production, appears to be more socially conditioned than it is linguistically. Bolstering the social motivation of [s] is the fact that sibilance emerges almost exclusively in formal tasks like reading exercises (Chappell forthcoming b) and, as noted above, is not conditioned by following stressed vowel, which is the case in other /s/-reducing dialects of Spanish (Dohotaru 1998, Terrell 1979). The use of sibilance more for socially motivated rather than linguistically motivated purposes parallels the situation in the Dominican Republic, in which sibilance is utilized to index a particular identity even though it is highly atypical in quotidian Dominican speech.

### 4.3 Hypercorrections

The final piece of evidence supporting the unhinging of the underlying representation of /s/ and its surface-level production comes from Chappell’s (2013) image-identification task, in which NS speakers were shown a picture and asked to describe it in their own words. Throughout the recording session, one female speaker inserted sibilance at the word boundary where no underlying /s/ existed, again mirroring the hypercorrection phenomenon in the Dominican Republic. I initially thought these occasional insertions were simple production errors, but the female speaker in question produced three back-to-back productions of [ok.seββos] for *observo* ‘I observe’ as she identified a series of images, shown below in Figure 2.
The repetition of the [s] insertion suggests that it is not simply a one-time production error, but rather an extension of [s] to serve a social purpose. Although no underlying coda sibilant exists in the environment of observo, the production of coda sibilance continues to index a formal, educated, and hyperarticulate identity while the linguistic motivation for this coda sibilance is limited. Paralleling the most frequent Dominican Spanish [s] insertions, these NS insertions take place at the word boundary, suggesting that there may be a predictable diffusion of [s] insertions for advanced speakers who have undergone a reanalysis of coda /s/; [s] insertion may occur first at word and phrase boundaries and eventually extend to word-internal contexts.

Supporting this NS speaker’s partial access to coda /s/ is the fact that the speaker in question never once utilized coda sibilance in her hour-long, sociolinguistic interview but greatly exaggerated her coda [s] productions, whether lexical or inserted, in more formal situations. For example, within the same short sentence, “Observo unas islas” ‘I see some islands’ both the underlined onset <s> and coda <s> were produced with sibilance. The duration of the onset [s] is 84 ms while the final [s] is 400 ms. While some final lengthening is expected phrase-finally in different dialects of Spanish (Rao 2010), it is unlikely to more than quadruple. The argument that sibilance is incorporated purposefully in NS to index a sophisticated identity is corroborated by these exaggerated coda [s] productions. Like Dominican Spanish speakers, NS speakers harness the social meaning attached to sibilance and extend it to new contexts to create a desirable social identity and potentially to mark phrasal boundaries.

### 4.4 The Underlying Representation

Based on the distribution of the realizations, the aberrant behavior of [s] in NS, and the hypercorrections outlined above, I posit that certain speakers have reorganized the phonological system of NS, operating with an underlying coda /h/ instead of the standard coda /s/. This explanation follows several authors (Terrell 1986, Núñez Cedeño 1988, 1989, 1994, Harris 2002) who have argued that the extreme state of /s/ deletion in Dominican Spanish has led to the loss of /s/ in coda position among less educated speakers. At the same time, the speakers recognize the international social prestige of sibilance and use this prestige to fill a social role: coda [s] is produced to increase formality and construct a precise, educated identity. The same process seems to apply in NS. An unhinging of underlying coda /s/ and surface-level sibilance has taken place, and the role of coda [s] has become more socially driven than linguistically driven. Instead of marking the underlying /s/, sibilance is a social strategy for these speakers and a phrase-marking strategy that may or may not be associated with an underlying segment.

Based on the data provided above, I propose the following division between linguistically
motivated and socially motivated variants, shown below in (2).

(2) **Linguistically motivated**  
\[ /h/ \]  
/ʔ/ [h] [ɦ] θ  

**Socially motivated**  
/s/ as marker of prestige

My reanalysis proposal involves a single underlying form, glottal frication, with other glottal productions and deletion as allophones. Next to it, [s] is shown as a social phenomenon that falls outside of the coda /h/ category. This proposal is not without its consequences, and one major consequence entails the restructuring of several aspects of the Spanish phonological system. First, the newly proposed coda /h/, e.g. [ba.ha] *vas a* 'you go to', merges with the existing /h/ in onset position, e.g. [hi.ra.fa] *jirafa* 'giraffe'. Secondly, following the reanalysis /s/ appears only in onset position, e.g. [sa.po] *sapo* 'toad'. Essentially, this proposal involves the inversion of /h/ and /s/ syllable structure. Whereas in Standard Spanish, /h/ only occurs in onset position and /s/ may occur in onset or coda position, the tables have turned. Following the reanalysis, /s/ now exclusively occurs in onset position, while /h/ may occur in onset or coda.

The acceptance of an underlying /h/ can help explain the behavior of glottal frication in relation to glottal constriction. Both variants lack an oral gesture entirely, both maintain the same place of articulation (glottal), and both appear in a complementary environment: glottal constriction is a fortition primarily employed before a stressed vowel, and glottal frication is more likely before a following unstressed vowel (Chappell 2013). The glottal constriction fortition strategy is supported by the overt correction of a child’s atypical velar production with glottal constriction, shown below in (3):

(3) Child: [lo.ʔoxotɾoh]  
*los otros* ‘the others’  
Adult: “No se dice [lo.ʔoxotɾoh], se dice [lo.ʔo.tɾoh].’  
‘You don’t say [lo.ʔoxotɾoh], you say [lo.ʔo.tɾoh].’  
(López Alonzo, personal communication, May 15, 2014)

Such an explicit correction with glottal constriction instead of sibilance illustrates the extent of the reduction to a glottal gesture even in careful, hyperarticulated speech, casting doubt on the presence of an underlying /s/. If /s/ is the underlying form and all glottal realizations are reductions of /s/, why is glottal constriction, a ‘reduction’ of /s/, being used as a fortition strategy? It is counterintuitive to argue that the glottal stop simultaneously represents both a reduction and a fortition.

Another way to visualize this reanalysis is through a hypo-hyperarticulation continuum, shown below in (4).

(4)  
\[ θ \] \------------------------/h/\-------------------------------[ʔ]  
\[ hypoarticulation \] \------------------------/h/\-------------------------------[ʔ]  
\[ hyperarticulation \]

The continuum above summarizes the relationship among the variants: in strong environments and formal settings glottal constriction will be incorporated to strengthen the /h/, while deletion will appear in weaker environments and in casual situations. Sibilance may be employed as well, but it comes from beyond these dialect-internal linguistic options. /s/ is a global, prescriptive, external, socially-motivated realization for the dialect, much like [s] in Dominican Spanish.

## 5 Conclusion

Based on (i) increasing rates of /s/ reduction and the near-categorical reduction of /s/ in coda position, (ii) the aberrant behavior of [s] in NS, suggesting its purpose is more social than linguistic, and (iii) the occurrence of speaker hypercorrections, I have argued that a reanalysis of the phonological system seems to be at work in NS. When speakers are exposed to reduced /s/ nearly exclusively in coda position in their input, a generalization of the input may result in /h/ as the underly-
ing representation of what is /s/ in other dialects. Positioning this reanalysis helps to explain the relationship between the glottal variants, and the strange behavior of [s] is attributable to the fact that it is inserted for social prestige rather than being linguistically governed.

This work has increased our knowledge of an understudied, radical dialect of Spanish and has contributed to the fields of phonology and sociolinguistics. However, this argument is not without its faults. The proposal that speakers operate with underlying coda /h/ instead of coda /s/ is bold, and it is not appropriate for all speakers in the community. Just like the community of speakers in the Dominican Republic, more educated speakers of NS are most likely to maintain a correlation between the underlying /s/ and sibilance, as this idea is regularly reinforced in prescriptive settings and in formal speech. Signs of a phonological reanalysis at the surface level are unlikely for these individuals, but this does not prevent the existence of restructuring for other speakers.

Another basic problem inherently tied to this line of reasoning is the use of production data to make conclusions about speakers’ underlying representations. Without the ability to peer directly into NS speakers’ minds, there is no clear way to determine the underlying representation without some degree of controversy. I believe the data presented here provide a compelling argument in favor of the /h/ reanalysis for some NS speakers, but additional production and perception data would help to shed light on the true nature of the speakers’ phonological inventories.

This paper has explored the phonological effect of extreme coda /s/ reduction in NS, but a great deal of work has yet to be done. The next step involves an extension of the research to Puerto Rican Spanish speakers to determine the phonological inventory of the isolated and less educated in the country. Given the similarities between NS and Puerto Rican Spanish, including similar rates of aspiration and deletion alongside the utilization of glottal constriction in strong environments, it is possible that a parallel coda /s/ reanalysis could be observed among certain segments of the population in Puerto Rico. If three separate dialects (the Dominican Republic, Nicaragua, and Puerto Rico) follow a similar trend, involving (i) the unhinging of the phonological /s/ with the surface [s] and (ii) the reappropriation of [s] as a marker of social prestige and not a marker of an underlying segment, a uniform path for socially motivated [s] could be identified.

References


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