

THE NOTION OF THE PLURAL IN PUERTO RICAN SPANISH:¹ COMPETING CONSTRAINTS ON (s) DELETION

Introduction

The variability of syllable-final and word-final (s) in Puerto Rican Spanish is a well-documented phenomenon. Word-final (s) may appear in monomorphemes: *mes* 'month,' as the second person singular marker: *hablas* 'you speak,' and as the plural marker: *los juegos* 'the games.' Standard Spanish marks plurality redundantly across the noun phrase, so that there will be as many copies of the plural marker as there are items in a sentence modifying a plural noun, as in (1):

- (1) *Tienen muchos juegos de esos pintados en el suelo diferentes*
'They have a lot of different games like that painted on the ground' (C. T. #80)²

Puerto Rican Spanish (s) is variably subject to two weakening processes, aspiration and deletion, so that a phrase such as *las cosas bonitas* 'the pretty things' can also be realized [lah 'kosah bo' nitah] or [la 'kosa bo' nita]. The latter variant is apparently equivalent to the singular *la cosa bonita*, leading to potential ambiguity.

As early as 1903, Marxuach, in a description of Puerto Rican Spanish, remarked: "The only thing we have to say regarding the determiner is that it

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² Initials and numbers are the code assigned to the informant and the location on tape of his or her utterance.

is very difficult to distinguish plurals from singulars in our pronunciation [p. 22].³ So frequent is the [∅] variant that Matluck (1961) states that “the only Puerto Rican Spanish /s/ which neither disappears nor is aspirated is initial /s/. In syllable-final position it is aspirated, in absolute final position, it is completely eliminated [p. 334].” Years before, in his monumental work, Navarro-Tomás had already recognized the inherent sociolinguistic variability of (s): “Final /s/ is generally aspirated in Puerto Rico over all social classes and regions. Educated people give this aspirated /s/ a fairly regular form, while the uneducated submit it to variants of pronunciation [1948, p. 69].” In spite of its suppression, however, “the awareness of this deleted /s/ remains entirely [p. 73].”

In other words, although the plural marker might disappear some or most of the time, the notion of the plural remains alive in Puerto Rican Spanish, and the phenomenon of deletion does not appear to impede communication among native speakers. The object of this paper is to investigate the various factors constraining deletion versus retention of the plural marker, as well as the factors responsible for disambiguation in the case of marker deletion. The understanding of processes by which languages undergo lenition and deletion of elements with a heavy functional load, as well as the mechanisms by which they compensate for these deletions, is an issue of importance to general linguistic theory.

Quantitative studies of (s) in other Caribbean dialects confirm that, in spite of potential ambiguity, the [∅] realization is the preferred variant (Cedergren, 1973; Terrell, 1976; Ma and Herasimchuk, 1968). In a study of style shifting in Puerto Rican Spanish (Poplack, 1979, ch. 3.3), undertaken in part to investigate the claim (made in Rosario, 1965, p. 36) that some (s) is reinserted in cases of ambiguity and in formal speech, 1268 tokens of (s) before a vowel—which we will see to be the most favorable environment for retention—were analyzed. The results revealed [∅] to be by far the preferred variant. What is more, (s) did not appear to be subject to style shifting for the lower-class speakers in the sample: From the most careful to the most casual speech style, (s) was consistently deleted 50% of the time. In a phonological environment more favorable to deletion, these figures would undoubtedly have been higher. As they stand, they suggest that factors other than stylistic ones are at play in constraining (s) retention.

Furthermore, results of a plural discrimination test (Poplack 1979, Appendix C) revealed, first, that less than half the informants were consistently able to identify occurrences of [s] as a plural marker, providing further testimony to its infrequency. Second, the results showed that no speaker was able to identify the [∅] realization of the plural once an NP was extracted from the larger discourse context. These results run counter to claims that vowel tensing, vowel lengthening, or lengthening of following consonant are

³ Translation mine, in this and following quotes.

compensatory processes for deletion (Navarro-Tomás, 1966; Matluck, 1961; Rosario, 1965; Cedergren, 1976; Milán, 1976), at least as far as Puerto Rican Spanish is concerned. Even if these phonetic processes show up instrumentally, interpretation of them does not appear to be part of these speakers' perceptive competence, or they would have no trouble disambiguating stimuli with [∅] plural realizations.

In light of the above data, we are faced with a paradox. On the one hand, we have evidence that the [∅] realization of the plural morphophoneme predominates; on the other, informants were unable to correctly interpret this [∅] realization within the context of the simple NP alone. Yet, if the potential ambiguity caused by deletion of (s) does not in fact result in ambiguity, of which we have no evidence at present, what are the disambiguating factors? If an NP string contains no morphological trace of the plural (and there are almost 1000 such strings in my corpus), the disambiguating factors must be other than morphological or elsewhere than in the NP.

Several sorts of constraints may potentially affect plural (s) deletion: the grammatical function of the token within the string, the nature of the following phonological segment and following stress, the position of the token within the string, the number of preceding plural markers, if any, and what I am here referring to as functional factors.

For the purposes of this discussion, a “functional hypothesis” will be equated to Kiparsky's “distinctness conditions”: That is, there is a tendency for semantically relevant information to be retained in surface structure (1972, p. 195). Following a functional hypothesis, we would expect certain phonological processes to be blocked in those environments where their application would wipe out morphological distinctions on the surface. Conversely, in those environments where other types of disambiguating information are present, lessening the “functional load” of these distinctions, we might expect the phonological processes to apply more often. Thus Labov *et al.* (1968, p. 130) found a higher rate of /t,d/ deletion in monomorphemic types like *mist* than in past tense forms like *missed*, leading them to postulate that deletion rules would operate more frequently in monomorphemes than if the element to be deleted was itself a morpheme.

The Puerto Rican data I report on here, however, provide evidence to the contrary. As can be seen in Table 3.1, there is more (s) deletion in plural forms like *cosas* than in monomorphemic forms like *mes*. These results suggest that the constraints governing marker deletion are more complex than those that have been examined in the literature.

Other studies of functional constraints on deletion (Terrell, 1975a; Guy and Braga, 1976) have limited themselves to the examination of surface features of the sentence to explain this phenomenon. I suggest that semantic, syntactic, and morphological features, both within and outside the NP, must be taken into account in order to explicate the processes of deletion and disambiguation. In other words, if one is examining the effect of functional

TABLE 3.1
*Percentage of (s) Deletion by
 Grammatical Status*

Grammatical status	Percentage of deletion
Inflection	68% (N = 6439)
Monomorpheme	54% (N = 4028)

factors on marker deletion, treating a token like *plantas* in (2a) as a noun with no preceding plural information (cf. Terrell, 1975a) is tantamount to classifying *plantas* in (2b) as unmodified.

- (2) a. *un grupo de plantas*
 'a group of plants'
 b. *varias plantas*
 'several plants'
 c. *las plantas*
 'the plants'

Although there is no possibility of plural disambiguation in the NP *plantas* in (2a) other than that of morphologically inflecting the noun, the fact that it is preceded by *un grupo de* informs the listener that the following segment will be plural. If the functional hypothesis holds true, one might expect a greater rate of deletion from a token such as this than from one with no preceding information at all. Similarly, the type of information conveyed within the NP by *varias* in (2b) is different in nature from that conveyed by *las* in (2c). Even if the marker were deleted from the former, no ambiguity could result, because *varia(s)* is understood as meaning "several." If it were deleted from the latter, the string could be interpreted as having a singular meaning.

I therefore made a distinction between morphological and nonmorphological disambiguation. In the morphological disambiguation factor group, items were coded for stem vowel change or additional information outside the NP. This factor group tests the hypothesis that there will be differential probabilities of deletion among the utterances in (3):

- (3) a. *los reyes*
 'the kings'
 b. *las reinas*
 'the queens'
 c. *las reinas mandan*
 'the queens command'

Even if both markers are deleted from the NP in (3a), the stem vowel changes on both the determiner and the noun adequately convey the plural information (cf. pl. [lo 'xeje] and sg. [el xej]). However, if both markers are deleted from (3b), ambiguity with the singular ([la 'xeina]) may result. If such a string is accompanied by a verb in concord with the subject, as in (3c), any realization of the morphophoneme {n} other than phonetic zero sufficiently disambiguates the number of the NP.

The nonmorphological disambiguation factor group accounts for plural information conveyed semantically or syntactically. This includes

Shared or cultural knowledge:

- (4) a. *yo mi(s) hijo(s) le(s) digo*
 'I tell my kids' (C. T. #40)
 b. *arroz con habichuela(s)*
 'rice and beans'

Lexical plurality:

- c. *un par de cosa(s)*
 'a couple of things'

Syntactic plurality:

- d. *Eran persona(s) como que adivinaban*
 'They were the people who, like, told the future' (D.F. #82)
 e. *Hablan con muerto(s)*
 'They talk to the dead' (L. S. #41)

Instrumental in correct disambiguation of (4a) is the shared knowledge that the speaker has several children. Similarly, both speaker and hearer know that the dish in (4b) contains more than one bean. The token in (4c) is modified by semantically plural elements. A token may also obey certain syntactic rules that convey plurality: An unmodified noun immediately following a verb (4d) or certain prepositions (4e) is understood as plural. Cases of anaphoric plural referents, either in the string preceding the one in question, or within the larger context, were also included in this factor group.

The Sample

The data I will report on here consist of 6439 tokens of plural (s) collected from tape-recorded interviews of 18 adult speakers of Puerto Rican Spanish. Fourteen are residents of a single block in a predominantly Puerto Rican neighborhood in North Philadelphia. Data for these informants are part of a larger body of material I collected during a year-long study, which

included informal interaction with the informants as well as interviews. The interviews were conducted in Spanish, using an interview schedule adapted to suit the needs of this community.⁴ Because reading skills were not highly developed, the interview contained no formal elicitation devices such as word lists and reading texts. Instead, it concentrated on childhood games, customs, recipes, and other cultural aspects of the Puerto Rican community. The resulting speech is generally quite informal in style. All of the informants were first-generation Puerto Ricans, most of whom claimed to speak no English, although some had been in the United States for over 20 years.

The informants belonged to the poorest sector of the working class, were for the most part unemployed at the time of the interview and were largely restricted to their immediate area of residence. Many of them had never been in the downtown Philadelphia area, although it was easily accessible by public transportation. They constituted a closed and homogeneous community, quite isolated from “mainstream Philadelphia,” differing in this respect from the Puerto Rican community in New York.

The remaining four informants, included here for purposes of comparison were natives of Las Piedras, Puerto Rico, who had never left the island.⁵ The island Puerto Ricans were of a somewhat higher socioeconomic class than the Philadelphians, and their interviews were shorter and more formal in style than those used for the main body of the study.

The Analysis

Each occurrence of plural (s) in the data was coded for what previous studies (e.g., Ma and Herasimchuck, 1968; Cedergren, 1973; Terrell 1975a, 1976) have indicated to be relevant distinctions of grammatical category, following phonological segment, and following stress. In addition, each token was coded for the functional information discussed in relation to (3) and (4). Within each functional factor group—morphological and nonmorphological—two factors accounted for the presence of the type of disambiguating information in question as opposed to its absence. This system of coding made it possible to account for the amount, as well as the type, of disambiguating information relating to each token: Only morphological, only nonmorphological, both, or no possibility of plural disambiguation other than by inflecting some element of the NP. Following a functional hypothesis, we might expect greater probabilities of deletion in the presence of more disambiguating factors.

Each token was also coded for its position in the NP string and for the number and position of preceding plural markers, if any. Coding tokens as

⁴ This interview schedule was adapted from the one developed for the Philadelphia community by the Project on Linguistic Change and Variation.

⁵ Data for these informants were collected by Pedro Pedraza.

string members automatically assigns a different status to items that are accompanied by disambiguating information and those that are not. In (5a), a NP string with three slots, or three possibilities for plural marking, *bonitas* is coded as an adjective in third position in the string. If the realization of the string were (5b), *bonitas* would also be coded as having two preceding plural markers; if the (s) were deleted, as in (5c), *bonitas* would be coded for no preceding markers. Similarly, *cosas* is coded as a noun in second position in the string, with the appropriate preceding plural markers; and *las*, as a determiner in first position, with nothing preceding it.

- (5) a. *la(s) cosa(s) bonita(s)*
 b. *la[s] cosa [s] bonita* —
 c. *la[∅] cosa[∅] bonita* —

The data were analyzed using the VARBRUL 2 program (Sankoff, 1975), which calculates probabilities for the application of a given rule. Since I am here concerned with plural marking, and since the aspirated variant of (s) cannot be said to lead to ambiguity, [s] and [h] were considered together in investigating the constraints on marker deletion. I have therefore bypassed the aspiration stage of the weakening process ([s → h]) and am examining constraints on the deletion rule [s,h → ∅].⁶ Factor probabilities vary between 0 and 1, with figures higher than .5 favoring, and figures lower than .5 inhibiting rule application. The figure .5 itself has no effect on the rule. The higher the figure, the greater the contribution to rule application; thus comparisons can easily be made between various factors and factor groups.

Results

Figures for grammatical, phonological, and stress factor groups basically confirm the findings of other studies, as can be seen in Table 3.2.

TABLE 3.2
Contribution of Grammatical Category, Following Phonological Segment, and Following Stress to the Deletion of Plural (s)^a

Grammatical category		Following phonological segment		Following stress	
Adjective	.69	Pause	.65	Weak	.56
Noun	.57	Consonant	.47	Heavy	.44
Determiner	.26	Vowel	.37		

^a Input probability = .65.

⁶ All orthographic instances of “S” should therefore be taken to mean “marker.”

Of the grammatical factors, adjectives favor marker deletion whereas determiners favor retention, an effect also found in studies of other Hispanic dialects (Cedergren, 1973, p. 46; Ma and Herasimchuk, 1968, p. 692; Terrell 1976, p. 13). Of the phonological factors, a following pause is most favorable to deletion. The results for the phonological factor group differ from those found for Panamanian Spanish, where deletion was shown to be independent of environmental constraints (Cedergren 1973, p. 46). However, following pause showed a similar effect in Terrell's study of formal Puerto Rican Spanish (1975b, p. 12), although in that same study, deletion was found to occur more in prevocalic than in preconsonantal position. The results reported here are undoubtedly somewhat skewed by the fact that [s] and [h] were treated together. When they are analyzed separately, following consonant is shown to be a favorable environment for aspiration (Cedergren, 1973; Terrell, 1975b; Poplack, 1979), which in this study was considered an instance of retention. Ma and Herasimchuk's study of vernacular Puerto Rican Spanish is not directly comparable, as they consider following consonant and pause as one category.

Following weak stress favors deletion somewhat, whereas following heavy stress favors retention of some marker. These figures could be due to the interaction of determiner and stressed vowel, in which environment (s) has been shown to be almost categorically realized [s] in Puerto Rican Spanish (Terrell 1975b, p. 30, Ma and Herasimchuk, 1968, p. 692).

When we look at the figures for the functional and position factor groups, however, the results appear somewhat less predictable. Table 3.3 indicates that functional factors have a small but regular effect on deletion, in a direction confirming a functional hypothesis. Presence of additional plural information, whether morphological or nonmorphological, favors deletion somewhat, whereas absence of additional information favors retention.

However, functional factors overall affect deletion less than any other factor group studied, except following stress. This can be seen by comparing the range of figures in Table 3.2 with the figures in Table 3.3.

The purpose of the functional group is to ascertain the effect of functional factors on the elimination of redundancy. Though the functional factors have a lesser effect than the others, the ranking of factors within the functional groups is clear. Additional plural information favors marker dele-

TABLE 3.3
Contribution of "Functional" Factors to the Deletion of Plural (s)

"Morphological" disambiguating information	"Nonmorphological" disambiguating information		None
	None	None	
.57	.43	.59	.41

tion, whereas when the only possibility for plural marking is inflectional, within the NP itself, a marker tends to be retained. This is a tendency, but it is a rather weak one. Terrell found that speakers of Cuban Spanish consistently avoided suppressing all morphological trace of the plural (1975b, p. 436). This is not the case in Puerto Rican Spanish. I have encountered almost 1000 examples of NP strings containing two to three elements, with no morphological marker at all. Moreover, the deletion rate from a given token is even higher when it is preceded by two zeros (94%) than when it is preceded by one (82%).

The purpose of the position group is to examine the phenomenon of redundancy characteristic of Standard Spanish plural marking, the effect of position of the token within the string, and presence and position of preceding markers, if any. Figures for this group indicate that there is indeed a tendency toward local redundancy, but which functions somewhat differently than the standard copying rule: Presence of a plural marker before the token favors marker retention on that token, whereas absence of a preceding marker favors deletion. The greatest effect is produced when a marker immediately precedes the token, as becomes clear when Tables 3.4A and 3.4B are compared.

TABLE 3.4A
Contribution of Position of Token in NP String and Presence of Preceding Marker to the Deletion of Plural (s)

Position of token in string	3	2	1
Marker preceding token			
Absent	.71	.58	
Present	.40	.43	
None possible			.36

TABLE 3.4B
Contribution of Position of Token in NP String and Presence of Immediately Preceding Marker to the Deletion of Plural (s). (S = [s] and [h])

Position of token in string	3	2	1
Marker(s) preceding token			
∅∅__	.73		
S∅__	.68		
∅__		.52	
S__		.44	
∅S, SS__	.40		
None possible			.24

Table 3.4A shows that markers tend to be retained when preceding markers were also retained, and when the token is in first position in the string. But the table does not show the effect of position of the preceding marker with regard to the token: When preceding S, ØS, SS, and SØ are treated as a single category, they appear to have the same disfavoring effect on deletion (between .40 and .43).

Table 3.4B, on the other hand, shows that the differential effect on deletion is actually due to the presence of a marker in the slot immediately preceding the token: ØS, SS, and S continue to disfavor deletion (contributions .40 and .44, respectively), while Ø and SØ favor it. The most favorable context for marker deletion is precisely when the two preceding markers have already been deleted. This is exactly the opposite effect from what was found by Guy and Braga for Brazilian Portuguese, a language that marks plurality on the NP and the VP in much the same way as Spanish. It also runs counter to any functional claim.

Moreover, the results reported here are not specific to the Puerto Rican community in the continental United States, and should not be interpreted as resulting from immigrants' contact with and influence from English. This may be seen by comparing their behavior, as reported in the preceding discussion, with that of the subsample of Puerto Ricans who never left the island. Table 3.5 shows that the island group in fact has an even higher deletion rate than the Philadelphia Puerto Ricans.

TABLE 3.5
Contribution of Phonological and Grammatical Factors to the Deletion of Plural (s) for Philadelphia and Island Puerto Ricans

Grammatical category		Following phonological segment		Following stress		Place of residence	
Adjective	.64	Pause	.64	Weak	.52	Puerto Rico	.54
Noun	.56	Consonant	.44	Heavy	.48	Philadelphia	.46
Determiner	.32	Vowel	.40				

Discussion

The results point to an apparent contradiction. On the one hand, Puerto Rican speakers are tending toward elimination of redundancy, as evidenced by the figures in Table 3.3. On the other hand, redundancy is favored, or at best, not taken into account, in the data for the position group. One marker leads to more, and deletion of a marker leads to further deletions, resulting in

a tendency toward concord on the string level. In other words, if a plural is going to be realized, the tendency will be for it to be realized on the first element; if it is not realized on the first element, subsequent developments will not tend to rectify this in a functional way. What follows might either be all markers or all zeros, so that a sequence like ØØS turns out to be virtually nonexistent. (Out of 136 cases of strings with the sequence ØØ preceding the token, a marker was retained on the final token in only 8 instances—6% of the time.) This would seem to tie in with Martinet's application of the theory of least effort: "Concord is redundancy, and contrary to what could be expected, redundancy results as a rule from least effort: people do not mind repeating if mental effort is thereby reduced [1962, p. 55]."

It could also point to a stage of variation in which deletion has advanced so far that Puerto Rican Spanish (s) is now seen less as a morphological marker than as a phonological entity which undergoes well-defined rules of weakening and elision in certain environments, and is retained in others (e.g., in word-initial position), and which is capable of being later reintroduced through learned channels, as by upper class speakers in formal speech.

As I have already mentioned, although there were numerous strings containing no morphological indication of the plural, there do not seem to be any instances where the NOTION of the plural is absent. There is no evidence that communication is being hindered at present. But if deletion rates increase and spread to contexts that are now comparatively conservative, a time might come when Puerto Rican Spanish will reorganize its system of morphological plural marking. Evidence I have been collecting suggests it would not be unreasonable to expect it to go the way of Modern French, and limit plural marking to the determiner alone. Recall that the first element in the string is the most highly loaded element, and that the first position seems to behave differently from the others (as shown in Tables 3.2 and 3.4B).

The determiner, which usually occurs in first position, has the lowest deletion rate of all grammatical factors. First position is also consistently the most conservative environment with regard to deletion, regardless of the grammatical category of the item in this position. For example, plural (s) is deleted far less frequently from nouns in first position (with a probability of .30) than in any other (.57).

Added to this is the fact that the masculine plural determiner undergoes a stem vowel change (*el* → *los*), which indicates plurality even when (s) is deleted. Standard Spanish marks gender redundantly across the NP, as it does number, but instances of gender reassignment I have been collecting, which are now numerous enough not to be written off as performance errors, may result in the masculine plural determiner taking over as the plural marker in the NP. Occurring in such intimate environments as between determiner and noun, and between noun and adjective, we find examples of gender reassignment within the simple NP, such as

- (6) a. *chorizo buena*
 'good sausage' (P. O. #43)
 b. *unos habichuelas*
 'some beans' (O. J. #287)
 c. *los peleas*
 'the fights' (J. T. #565)
 d. *las castigos*
 'the punishments' (L. T. #142)

The reassignment goes in both directions: A masculine modifier may modify a feminine noun, as in (6b), and a feminine modifier may modify a masculine noun, as in (6a), but of the examples collected so far, 70% go in the direction of masculine marking on feminine nouns.

This phenomenon parallels developments in Modern French. In a determiner system consisting of the four elements in (7), the (s) dropped from the Old French plurals *les* and *las*, and they fell together into modern [le] which does not carry a gender distinction. One would expect that some variation in gender assignment preceded such a change.

- (7) *le* (m., sg.) *la* (f., sg.)
les (m., pl.) *las* (f., pl.)

Deletion of (s) is an ancient and widespread process, attested as early as Archaic Latin. There is some evidence of (s) reinsertion during the classical period, but it was subsequently lost altogether in the eastern Romance languages, although it was retained in Old French and Old Spanish.

Puerto Rican Spanish (s) is presently at a stage of variation that might also resolve itself in total deletion of this inflection. Through an examination of the factors affecting this process at a point in time at which several variants are still available, I have attempted to shed light on the mechanisms of disambiguation in the case of marker deletion. I have demonstrated that functional considerations play a small but regular role in the retention of a plural marker: There is a greater tendency toward deletion when it is possible to convey plurality other than inflectionally (Table 3.3).

However, we have also seen that, overall, functional factors affect marker deletion less than any other factor group studied, with the exception of following stress, a result that is not readily interpretable. Whether this is the case because (s) deletion in Puerto Rican Spanish has not yet advanced far enough to call functional factors into play remains to be investigated. The results of this study, moreover, indicate that the problems raised by these competing constraints on (s) deletion cannot be resolved conclusively by examining the noun phrase alone. Answers to these questions may also reside in another area of linguistic structure, such as the verb phrase. A functional study of variability in verbal marking should allow us to draw

clearer conclusions about deletion and disambiguation in Puerto Rican Spanish.⁷

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⁷ Such a study has in fact been completed (Poplack, 1979, 1980) since the analysis reported in this chapter was carried out (1977), with the result that plural marking in the NP appears to be a process that is interdependent with verbal (n) marking. The aforementioned studies also contain further analysis of the material presented here.