

Subject Pronoun Expression and Priming Effects among Bilingual Speakers of Puerto Rican Spanish

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1. Introduction

One of the most researched aspects of the Spanish language is the optional expression of subject personal pronouns (SPPs). Though some researchers and even some Spanish textbooks claim that overt SPPs are only used in contexts of contrast or emphasis (c.f. Montrul & Rodríguez Louro, 2006; Knorre, et al., 2009; Rothman, 2009), studies of actual usage of SPPs have shown that no one factor can explain all uses of overt SPPs, nor are overt SPPs used all the time in any one context. Factors that have been found to influence SPP expression include verb semantics, discourse connectedness, and person and number, among others (e.g., Ranson, 1991; Morales, 1997; Avila-Shah, 2000; Hurtado, 2005; Lapidus & Otheguy, 2005; Orozco & Guy, 2008).

Another factor that recent studies have shown to relate to the use of overt SPPs is priming (Flores-Ferrán, 2002; Cameron & Flores-Ferrán, 2004; Travis, 2005b; Travis, 2007). Priming is a psycholinguistic process found to occur in the production of many languages in the domains of syntax and the lexicon (e.g., Bock, 1986; Branigan, Pickering, Liversedge, Stewart, & Urbach, 1995; Bock & Griffin, 2000; Branigan, Pickering, Stewart, & McLean, 2000; Chang, Dell, Bock, & Griffin, 2000; Pickering, Branigan, Cleland, & Stewart, 2000; Gries, 2005; Szmrecsanyi, 2005). The process consists of the repetition of an element or linguistic structure that has been recently experienced, and it functions in “production, comprehension, connection and interaction” (Tannen, 1987, p. 574).

The following examples, taken from the present study, help to show how this process relates to the use of SPPs in Spanish.

(1) *yo bueno alguna vez yo estaba caminando por campus y yo estaba hablando en inglés y alguien me dijo* “did you just get off the boat?” *y yo me he quedao así o sea me lo dijeron a mi cara, y yo me quedé-* “ah porque tienes un acento bien raro”. *y yo me quedé así.*¹ (11, F, 23)²

‘I well one time I was walking around campus and I was talking in English and someone said to me, “Did you just get off the boat?” and I was like this, I mean, (they) said it to my face, and I was- “Ah, because (you) have a really weird accent.” And I was like this.’

In (1), overt *yo* is followed by more overt expressions of *yo*, while in (2), null *ella* is followed by more null SPPs.

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¹ In this and subsequent examples taken from the data of the study, the verbs are underlined and the subjects in question are in bold; null subjects are indicated with ‘Ø’ in Spanish and parentheses in English. Examples are taken verbatim from the data and have not been modified; transcription conventions are loosely based on Du Bois, Schuetze-Coburn, Cumming and Paolino (1993).

² Parentheses following examples from the data indicate participant number, sex and age at the time of data collection.

(2) *mi amiga eh: empez- como Ø estaba no despe- no desesperada pero Ø estaba buscando.. amor pero pero Ø no podía conseguir so Ø empezó a a hacer match.com y Ø se encontró con un muchacho bien bien noble...* (15, M, 32)

‘My friend eh start- like (she) was not desp- not desperate but (she) was looking for love but but (she) couldn’t find (it) so (she) started to to do match.com and (she) found a very very noble guy...’

Travis (2007) underscored the importance of understanding the role of priming in the production of language, noting the following:

The significance of the finding that priming has an effect on language use across genres of spontaneous discourse must be highlighted. . . . [T]his has profound implications for our view of grammar, as it indicates that the grammar of discourse is developed on-line, as a response to and deriving from what precedes. (p. 132)

In effect, understanding the role of priming in speech impacts our understanding of the production of language itself.

In a foundational theoretical study of SPP priming, Cameron and Flores-Ferrán (2004) listed several characteristics of the phenomenon related to findings from their previous respective studies (Cameron, 1994; Flores-Ferrán, 2002). According to these authors, SPP priming is systematic and is moderated by other discourse factors, such as switch-reference, since it affects both coreferential and non-coreferential contexts. They found equal effects for priming in San Juan and Madrid Spanish, even though the two varieties differ in frequency of expression of the SPPs. The effects of priming have also been documented among Puerto Ricans living in New York City (Flores-Ferrán, 2002). Among these speakers, an overt SPP was most likely to have been previously mentioned as another overt SPP, meaning that when an overt SPP was produced, it was statistically probable that the following mention of the same subject would also be overt.

Travis (2007) investigated structural priming of the first person singular SPP *yo* across two genres, narratives and conversation, and in two varieties of Spanish, New Mexican and Colombian, and found priming to affect both genres and both varieties; its effects were of a shorter duration, however, in the Colombian data, which consisted of spontaneous conversational interaction. Though the varieties differed with regard to rate—Colombian speakers expressed the SPP with half of the verbs analyzed, while New Mexican speakers expressed them in their narratives only one-third of the time—the difference appeared to be related to genre type and demonstrated the need for more research on different types of speech.

Although significant research has been devoted to SPP expression by bilinguals, and how priming is related to it, rather less attention has been paid to Puerto Rican bilingual SPP expression in places other than the northeastern United States, probably because there are higher numbers of Puerto Ricans in that region. The purpose of this paper is to analyze the use of overt SPPs by Puerto Rican bilinguals in another area of the United States, where there is no cohesive Spanish-speaking community and no regular migration of Spanish speakers. It is hypothesized that, as evidence of priming has been found in many languages, including Spanish, as described above, it should affect these speakers as well. If effects of priming are found in varieties of Spanish not previously investigated, more evidence will be provided that priming is a universal process, which would lend further support to the view that language may be created as it is used. Specifically, the paper addresses the following questions:

- (1) Do Puerto Rican heritage speakers of Spanish show effects for priming as it relates to SPP expression?
- (2) If Puerto Rican heritage speakers of Spanish show effects for priming, are the effects similar to those reported for other varieties of heritage or bilingual Spanish?

2. Methodology

This study compared two participant groups that differed in location and language use. The first group, composed of bilingual speakers of Spanish and English, was living in northern Florida³. There were five men and five women, each of them with at least one Puerto Rican parent. The ages of these participants ranged from 19 to 42. A monolingual Spanish group was also included, in order to establish a baseline for comparison to the bilinguals. These speakers, six women and four men, were living in Isabela, Puerto Rico, and they did not use English at all in their daily lives or claim to know it. Their ages ranged from 27 to 64.

All participants completed a six-page language background information form in their dominant language; it contained both open-ended questions and rating scales. The document served to collect demographic information, as well as have the participants rate their proficiency in both Spanish and English, to ensure they truly belonged in the group into which they had been placed.

The data for the study were collected through sociolinguistic interviews that lasted an average of one hour each. The researcher conducted the interviews with the bilingual speakers with whom she was acquainted, while a Puerto Rican native Spanish speaker conducted the rest, as well as all of the interviews with the monolingual group, which was composed of his family members and friends of the family. In this way, it was hoped that each participant would speak as naturally as possible.

A ten-minute portion of each interview was selected for analysis, beginning at the thirty-minute mark. All sites for the optional expression of SPPs were extracted from this portion. Each token was then coded according to the form of the previous mention of that same subject: null, overt, lexical, or no previous mention. A limit of 10 previous clauses in the discourse was established for finding the previous mention (Flores-Ferrán, 2002; Travis, 2007). Once the bilingual interviews had been listened to, an additional category was added for that group: previous mention in English. Though the interviews were in Spanish, and the interviewer never switched to English, the bilinguals occasionally code-switched to English. This was obviously not a resource available to the monolinguals and was therefore not a category for that participant group.

An additional factor group took into account what was termed “interspeaker priming” effects, in other words, SPPs that could have represented repetitions of the interlocutor’s SPPs. For this factor group, there were four categories: an SPP that occurred after the interviewer had used an overt SPP; an SPP that occurred after the interviewer had used a null SPP; an SPP that occurred after the interviewer had not used an SPP; and an SPP that appeared somewhere other than after the interviewer’s turn.

Other factor groups, identified from the studies mentioned above and other previous work, were included in the study, though they are not the focus of this paper⁴. Discourse connectedness was included in order to measure the effects of reference relations; it was coded for at various levels, from level one (most connected), at which the subject in question shares its referent with the previous subject in the discourse and its verb shares the same tense, aspect and mood as the previous verb, to level eight (least connected), at which both the referent and the discourse topic differ from those of the previous clause. Verb class was coded for by classifying the semantic content of each verb as cognition, volition, state, possession, communication, *estar* used to introduce quotes, or other. Person and number; co-occurrence with a reflexive verb; verb tense, aspect and mood; potential morphological ambiguity of the verb; tense and mood continuity; and clause type were also coded for in the original study.

Once all the available SPPs (null or overt) had been extracted, various cases were excluded. These exclusions included nonfinite verb forms, because there were very few of them that occurred with overt SPPs, and truncated verbs, since it was impossible to know what the complete utterance would have been. However, the two categories were included as previous mentions for tokens included in the analysis, since they were pronounced and occupied the slot of subject, thus potentially performing a priming function. The discourse marker *tú sabes* was also excluded, due to the fact that this *tú* is not

³ It is crucial to note that these speakers were not part of, nor living near, the Orlando Puerto Rican community described in Lamboy (2010).

⁴ See Abreu (2009) for a full description of these factor groups and their coding.

subject to reference relations as are subjects of verbs not functioning as discourse markers (cf. Travis, 2005a). After exclusions, 1051 SPPs remained for the bilinguals, and 1200 for the monolinguals.

The data were analyzed using Goldvarb X (Sankoff, Tagliamonte, & Smith, 2005), a statistical program that carries out multivariate analyses and is therefore able to consider the conditioning effects of multiple linguistic factors at once. The analysis provides factor weights related to the factor in question that may range from 0 to 1 (Tagliamonte, 2006, p. 145). Factor weights above .50 indicate that the application value is favored in that context, while factor weights below .50 indicate that the application value is disfavored. Furthermore, Goldvarb provides a hierarchy of constraints, in which it is possible to see the ranking of the factors involved, according to the magnitude of effect indicated by the range value. The bilingual and monolingual data were considered in separate statistical runs.

3. Results

Results are presented here in stages. First, the two groups' overall rates of the use of overt SPPs by person and number will be compared and then priming effects are considered for the two groups.

Table 1 shows the frequency of use of overt SPPs by the bilinguals and monolinguals. The first column lists the pronoun in question, while the "% Overt" columns give the rate of overt pronouns in that category. Percentages are given in addition to the raw numbers, as each participant group yielded different numbers of total SPPs.

Table 1. Rate of expression of overt SPPs by person and number

SPP	Bilinguals % Overt	N	Monolinguals % Overt	N
<i>yo</i>	59	306	50	239
<i>tú</i>	65	28	56	44
<i>tú</i> (nonspecific)	60	24	54	30
<i>usted</i>	-	-	60	3
<i>él/ella</i>	57	117	31	108
<i>nosotros</i>	8	10	19	15
<i>ustedes</i>	40	2	41	9
<i>ellos/ellas</i>	31	26	10	5
<i>ellos</i> (nonspecific)	9	4	5	4
Total	49	515	38	457

As can be seen above, the bilinguals' frequency of use of the overt SPPs was as expected, based on previous research reporting higher rates of explicit SPPs than those of monolinguals (e.g., Flores-Ferrán, 2004; Otheguy & Zentella, 2007): in the present study, they used overts more often than the monolinguals, at an overall rate of 49%.

However, simply arriving at the overall frequency of use of the overt pronouns does not take into account the factors that play a role in constraining subject expression. Therefore, a multivariate analysis of the data was undertaken. Table 2 presents the results of this analysis for the bilinguals for the factor group of priming. The factor weights are given, indicating the probability that the overt SPP will occur in that context, in conjunction with the other factors included in the analysis. The remaining three columns to the right give the percentage of overt pronouns in the context, the number of overt tokens, and the total portion of the data that they represent. Recall that a weight greater than .50 generally means that the constraint favors the overt expression of the SPP, while a weight under .50 indicates that the constraint disfavors the use of the overt pronoun. Goldvarb selects significant factor groups in a step-up/step-down analysis; the probability level for the study was set at $p < .05$. The range value indicates the strength of the constraint.

Table 2. Results of variable rule analysis for the factor group of priming among bilinguals⁵. N=515/1051

Factor Group	Factor Weight	% Overt	N	% of Data
Priming				
Previous mention of referent was in English	.80	74	26	3
Previous mention was overt	.66	68	256	36
Previous mention was null	.31	28	101	34
<i>Range</i>	<i>49</i>			

Though their rates of use of the overt SPPs differed, both the monolingual and the bilingual groups showed effects for priming. Among the monolinguals, when the previous mention of the same referent had been overt, the factor weight was .65; when the previous mention had been null, the overt SPP was disfavored, at .40. Priming was ranked fourth for the monolingual group, with a range value of 25, as shown in Table 3.

Table 3. Relative strength of factors to the probability of overt SPP expression among all participants; range values only

Monolinguals		Bilinguals	
Factor Group	<i>Range</i>	Factor Group	<i>Range</i>
1 Person & number	58	1 Intraspeaker priming	49
2 Discourse connectedness	32	2 Person & number	41
3 Verb TAM	31	3 Verb class	28
4 Intraspeaker priming	25	4 Discourse connectedness	23
5 Reflexive verbs	18	5 Polarity	18
Verb class	n.s.	6 Clause type	14
Clause type	n.s.	7 Tense continuity	9
Tense continuity	n.s.	Reflexive verbs	n.s.
Polarity	n.s.	Verb TAM	n.s.

p<0.05; n.s. = not significant

Among the bilinguals, the factor group for priming obtained the largest magnitude of effect, as demonstrated by the range value of 49. Overt SPPs were strongly favored, with a factor weight of .80, when the previous mention occurred in English (and was, therefore, obligatorily overt). Example 3 shows this usage by the bilinguals, in which each instance of *I* is followed by overt *yo*.

(3) *I've been* around places *que yo sé que si Ø no tenía a Dios en mi vida I would have been* dead. So *yo sé que existe un Dios*. (18, M, 42)

'I've been around places that I know that if (I) didn't have God in my life I would have been dead. So I know that a God exists [*lit.* exists a God].'

Overt SPPs were also favored when the previous mention had been in the form of an overt SPP, as demonstrated in example 1 above, in which overt *yo* is repeated. However, when the previous mention had been a null SPP, as in (2), the overt SPP was disfavored, with a factor weight of .31.

There were two other factors in this group that could not be included in the multivariate analysis, due to interactions with other factor groups: first mention and lexical previous mention. The proportion of first mentions that were produced as overt SPPs by the bilinguals was 51% (N=106), and this kind of previous mention represented 20% of the data. When the previous form was lexical, the following pronoun was overt 39% of the time (N=29); these contexts comprised 7% of the data in this category.

⁵ The reader is referred to the original study (Abreu, 2009) for the full results of the multivariate analyses of both the monolingual and bilingual data.

These findings match the monolinguals' results fairly closely; they expressed 46% of first mentions (N=128) and 28% of pronouns with a previous lexical form (N=19).

Flores-Ferrán's (2002) study of Puerto Ricans living in New York City included participants who were born in New York as well as participants who were born in Puerto Rico. For those participants, weights assigned to priming were very similar to those in the present study: in Flores-Ferrán's study, when the previous mention was overt, the following pronoun tended to be overt as well, with a factor weight of .64. When the previous mention was null, a following overt pronoun was disfavored, with a weight of .37. When there was no previous mention, overt pronouns were very slightly favored, at .54 (p. 70). Therefore, the tendencies identified in the data of the present study confirm what has been found previously for other Puerto Rican bilinguals.

This study also examined the potential effects of pronouns produced by an interlocutor. The factor group could not be included in the multivariate analysis, due to low numbers of tokens, but the frequencies are worth a closer look. They are presented in Table 4.

Table 4. Rates of expression of overt SPPs for interspeaker priming among bilinguals

Factor	% Overt	N	% of Data
Occurred in 1 st clause after interviewer used overt SPP	75	12	<2
Occurred in 1 st clause after interviewer's turn; interviewer did not produce SPP	51	21	4
Occurred elsewhere	48	472	92
Occurred in first clause after interviewer used null SPP	46	13	3

Again, the numbers of tokens are small, and thus the finding is not quantitatively significant, but a trend appears: when the interlocutor used an overt subject pronoun, the participant also tended to use an overt SPP (whether the same one or a different one) in the response, as shown below in (4).

(4) I: *Qué significa 'latino,' e 'hispano' porque yo nunca he entendido muy bien-
11: Latina para mí yo pienso en mexicana Mexican-American. (11, F, 23)*

I: 'What does *latino* mean and *hispano* because I have never understood very well-
11: *Latina* for me I think Mexican, Mexican-American.'

The lowest proportion of overt SPPs in this context occurred after the interlocutor had produced a null SPP. This pattern held not only for questions addressed to the participants, but also for statements in which the other lexical items produced by the interviewer were not repeated, suggesting that the phenomenon goes beyond a simple interview effect.

A similar trend emerged in the monolingual data. A more fine-grained analysis was possible, due to the higher number of tokens, as demonstrated in Table 5, though this finding is not quantitatively significant. Nonetheless, the highest number of overt SPPs occurred after the interviewer had used the same overt SPP, and the lowest number of overt SPPs occurred when the interviewer had used a different null SPP.

Table 5. Rates of expression of overt SPPs for interspeaker priming among monolinguals

Factor	% Overt	N	% of Data
Occurred in 1 st clause after interviewer used same overt SPP	74	14	2
Occurred in 1 st clause after interviewer used different overt SPP	70	16	2
Occurred in 1 st clause after interviewer; interviewer did not produce SPP	48	24	4
Occurred elsewhere	37	387	88
Occurred in first clause after interviewer used same null SPP	31	12	3
Occurred in first clause after interviewer used different null SPP	24	4	1

While the results of the study for the most part confirm previous work in related areas, they add to our knowledge about priming, as will be discussed further below. Additionally, directions for future research will be outlined.

4. Discussion

Recall that the research questions at the heart of this study related to the effects of priming on bilingual SPP use, and whether further evidence could be found to support the idea of the universality of the process of priming. Clearly, based on the data presented here, priming does affect the speech of both monolinguals and bilinguals, though the results are not completely comparable. This is due to the fact that, as described above, priming was coded slightly differently for the bilinguals, and different factors were included in the analysis for the two groups. However, overall trends are similar, suggesting that priming is indeed a universal process that affects people managing one or two language systems, occurring both within a language and crosslinguistically. Crosslinguistic priming effects were demonstrated by the bilinguals' use of overt Spanish SPPs following code-switching to English. Furthermore, the data suggest possible effects for priming also instigated by the pronouns produced by an interlocutor. As described above, the factor group could not be included in the multivariate analyses, but the percentages presented show that the phenomenon merits further investigation.

The fact that overt pronouns tend to be followed by overt coreferential pronouns appears to contradict what some studies have repeatedly proclaimed: "The native use of overt pronominal subjects in most dialects of Spanish is limited to environments in which the subject pronoun has a switch-reference quality" (Rothman, 2009, p. 955). The effects found for priming here and in previous work support the notion instead that speakers often produce language that is unplanned and frequently reproduce structures they have recently encountered, which reflects the emergent properties of language.

Furthermore, previous research examining code-switching in studies where participants are led to use both English and Spanish spontaneously have reported that native speaker judges have found some bilinguals' use of overt SPPs questionable or pragmatically odd (e.g., Toribio, 2004; Montrul & Rodríguez Louro, 2006). The overt SPPs in question were generally produced after switches into English, which, as shown in the present study, is a context in which bilinguals tend to produce overt SPPs. Therefore, future studies utilizing spontaneous speech produced by bilinguals should take into account potential crosslinguistic priming effects, as recently highlighted by Travis (2005b) and Cacoullos and Travis (2010), as the methodology employed could be at least partially related to the results obtained from the data.

In summary, the results of this study confirm what has been found previously: that priming does occur in bilingual speech. The fact that priming does operate in different speech varieties strongly suggests that it indeed is a universal process. The findings here and in other studies point to the reality that what we say, or even what we hear, can influence what we say next. This shows the importance of the view that language is created as it is used.

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