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The Emergence of Structured Variability in Morphosyntax

Childhood Acquisition of Spanish Subject Pronouns

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Spanish subject pronoun expression (e.g., *yo bailo ~ Ø bailo* 'I dance') has been so widely studied that Bayley et al. (2012) have recently called it the "showcase variable" of Spanish sociolinguistics. This description is due, in part, to the fact that the pronominal behavior of Spanish-speaking adults routinely demonstrates a hallmark feature of structured linguistic variation: While individuals and communities may vary widely in their overall rates of use of a particular variant—here, the use of a subject pronoun with a finite verb—patterns of usage reveal sensitivity to a shared set of conditioning factors (e.g., Cameron 1992, 1993; Carvalho and Child 2011; Claes 2011; Flores-Ferrán 2002; Holmquist 2012; Michnowicz, this volume; Orozco and Guy 2008; Otheguy and Zentella 2012; Otheguy, Zentella, and Livert 2007; Torres Cacoullos and Travis 2010, 2011). For example, throughout the Spanish-speaking world, subject pronouns are expressed more often a) when the referent of the verb is singular, b) when the referent of two consecutive grammatical subjects is different rather than the same, and c) with verbs conjugated in the imperfect rather than other TMA forms. Such trends in adult pronoun use are probabilistic in nature, and, from the perspective of variationist sociolinguistics, they are understood as the result of competing factors which contribute their

relative weight to the likelihood that a pronoun will or will not be used in a variable context.

Despite the widespread demonstration that the variable linguistic behavior of adults is highly systematic (e.g., Labov 1994), it is not yet well understood when and how children converge on probabilistic components of grammar. There is growing evidence that young children are similar to adults with respect to phonological variation. For instance, both adults' and children's patterns of -t/-d deletion in English are constrained by many of the same factors (e.g., Roberts 1997; Smith, Durham, and Fortune 2009). Less is known about the emergence of structured variability in morphosyntax during childhood. Given the special status of subject pronouns in sociolinguistics and the remarkable extent to which this linguistic variable is understood, it is an optimal tool for exploring the acquisition of systematic variability in morphosyntax.

The data for the current study consist of 2,508 verbs extracted from sociolinguistic interviews with 24 monolingual Spanish-speaking children, ages six to eight, in Oaxaca, Mexico. The children's pronominal behavior is compared to that of 19 adult Mexican immigrants in New York City (NYC), each whom was selected from the *Otheguy-Zentella corpus of Spanish in NYC*.[1] Results reveal both differences and similarities between adults and children. A striking difference is that the children used far fewer pronouns than the adults. The lack of pronouns was especially prevalent among the boys. The girls produced significantly higher rates of pronouns than the boys did, nearing adult-like rates by age eight. This finding is in keeping with the large body of literature reporting that girls acquire language more quickly than boys do (e.g., Eriksson et al. 2012; Locke, Ginsborg, and Peers 2002; To, Cheung, and McLeod 2013; among others).

Despite the children's relatively infrequent use of pronouns, their behavior demonstrates systematic patterns of variation that reflect an adult-like sensitivity to certain linguistic constraints. The most robust predictors of pronoun use for the adults and children alike were (1) *person/number of the pronoun*, followed by (2) *switch reference*. While several other factors that clearly condition adult pronoun use fail to predict the behavior of the children—*semantic class of the verb*, *clause type*, and *reflexivity*—results do indicate an emerging sensitivity among the children to the tense, mood, and aspectual properties of verbs (TMA).

Taken together, these results—both the low rate of pronoun use and sensitivity restricted to only the most robust conditioning factors—reflect a conservative learning pattern, whereby children introduce new forms into their discourse in a constrained fashion (Boyd and Goldberg 2012; MacWhinney 2004; Tomasello 2003). Additionally, the results indicate that the acquisition of adult-like patterns of morphosyntactic variation proceeds in a predictable sequence: The stronger the pattern among adults, the earlier it emerges in children.

ADULT SPANISH SUBJECT PRONOUN USE: TRENDS IN GRAMMATICAL PATTERNING

Most corpora gathered in the Spanish-speaking world show that finite verbs appear with subject pronouns in 20 to 40 percent of variable contexts. The proportion of verbs that appear with pronouns in a given data set, often referred to as the *pronoun rate*, varies depending on dialect, with higher rates found in the speech of Caribbean speakers than in that of Mainland Latin Americans (e.g., Otheguy and Zentella 2012; Shin and Otheguy 2013). Among Mainlanders, Mexican adults, whose rate is typically around 20 percent, are among the least frequent users of pronouns (Lastra and Martín

Butragueño, this volume; Michnowicz, this volume; Shin 2012, 134; Shin and Otheguy 2013). Several scholars have argued that, by themselves, pronoun rates are not the best source of data for comparing groups of speakers because they can vary according to genre (Travis 2007) and conversation topic (Flores-Ferrán 2010). Nevertheless, there is abundant evidence that pronoun rates are valid indicators of pronoun use patterns. Indeed, it has been argued that frequency of use of linguistic elements has an impact on mental grammars in general (Bybee 2010) and on developing grammars in particular (Lieven 2010). In addition, high rates of pronoun use appear to promote the emergence of novel structures. In the Dominican Republic, for instance, particularly high rates are accompanied by patterns rarely found elsewhere, such as *ello llueve* 'it rains' (Toribio 2000). Also, in NYC increased pronoun rates among Spanish–English bilinguals are accompanied by a diminished sensitivity to constraints that condition pronominal behavior (Otheguy and Zentella 2012). Furthermore, investigations of rates have revealed how social factors impact usage (Otheguy and Zentella 2012; Shin and Otheguy 2013). Thus, in the current study we view the pronoun rate as a relevant measure to compare adults and children and also to examine the influence of social factors, such as speaker gender, on children's pronoun expression.

While we maintain that rates of pronoun use constitute an important and revealing measure for comparing varieties of Spanish, we agree that it also crucial to investigate *patterns* of pronoun use (see Otheguy and Zentella 2012; Poplack and Levey 2010; Poplack, Zentz, and Dion 2012; Torres Cacoullos and Travis 2010, 2011). We focus on the following five patterns that have been found in studies of adult speakers of Spanish.

Person/number: Singular pronouns (*yo, tú, vos, usted, él/ella*) are expressed significantly more often than plural pronouns (*nosotros/nosotras, ellos/ellas*).[2] Also, *yo* and *tú* are more likely to be expressed than *él/ella*, with *yo* emerging as the most commonly expressed pronoun in some studies (Enríquez 1984, 191; Claes 2011; Orozco and Guy 2008, 76; Shin 2012), and *tú* the most common in others (Abreu 2009, 99; Ávila-Jiménez 1995, 1996; Cameron 1992, 233; Carvalho and Child 2011, 19; Cifuentes 1980–1981, 748; Erker and Guy 2012; Flores-Ferrán 2002, 2004; Otheguy and Zentella 2012).

Reference: Pronouns are expressed significantly more often when the referent of two consecutive grammatical subjects is different (i.e., *switch reference*) than when it is the same (e.g., Bayley and Pease-Alvarez 1996, 1997; Bentivoglio 1987; Cameron 1993, 1995; Claes 2011; Erker and Guy 2012; Flores-Ferrán 2004; Holmquist 2012; Ortiz López 2011; Otheguy and Zentella 2012; Otheguy, Zentella, and Livert 2007; Shin and Cairns 2012; Shin and Otheguy 2009; Silva-Corvalán 1994; Torres Cacoullos and Travis 2011).[3]

Tense/mood/aspect (TMA) morphology: The TMA combination that occurs with the highest rate of pronoun expression is the imperfect indicative (e.g., *bailaba*), possibly due to the more ambiguous person-marking morphology in the imperfect than in, for example, the present indicative or the preterit. That is, while the imperfect form *bailaba* can mean 'I used to dance' or 'he/she/it/you-formal used to dance', the preterit *bailé* can only mean 'I danced.' Most studies have shown that verb forms with ambiguous person morphology, such as the imperfect and the conditional, promote pronoun use, while unambiguous forms, such as the preterit, disfavor pronoun use (Abreu 2009, 2012; Bentivoglio 1987, 45; Claes 2011; Erker 2005; Erker and Guy 2012; Flores-Ferrán 2002, 2004; Hochberg 1986; Holmquist 2012; Hurtado 2005; Otheguy and Zentella 2012; Otheguy, Zentella, and Livert 2007; Prada Pérez 2009; Shin 2014; Travis 2007, but also see: Bentivoglio 1987; Carvalho and Child 2011; Orozco and Guy 2008, 75; Ranson 1991).[4]

The imperative, in stark contrast, lies at the other end of the pronominal spectrum. Imperatives are often excluded from variationist studies of pronoun expression because

linguists assume that they never occur with a subject pronoun (e.g., Claes 2011, 195). Out of 35 articles, we found only five in which results for imperatives were reported. Two studies that challenge the assumption that pronouns are categorically absent with imperatives are Enríquez's (1984, 201, 351) study of Spanish in Madrid and Carvalho and Child's (2011, 21) study of Spanish in Uruguay on the border with Brazil. In these studies, Spanish speakers expressed pronouns with imperatives at rates of 26 and 30 percent, respectively.[5] While the imperative indeed constitutes a variable context, that is, a context where either expression or omission is possible, three studies confirm the widespread impression that imperatives disfavor pronoun use more so than any other TMA form (Erker and Guy 2012, 540; Otheguy and Zentella 2012, 186; Shin and Montes-Alcalá 2014). To summarize, of all TMA combinations, the imperfect indicative is the strongest promoter of pronoun use, and the imperative the strongest promoter of omission.

Other linguistic predictors: Other variables that are known to influence pronoun expression include (a) clause type: coordinate clauses favor pronoun omission, while main clauses promote pronoun expression (Otheguy and Zentella 2012, Shin and Montes-Alcalá 2014); (b) semantic class: cognitive activity verbs like *creer* 'to believe' and *pensar* 'to think' favor pronoun use more than other types of verbs (Bentivoglio 1987, Otheguy and Zentella 2012, Posio 2011, Travis and Torres Cacoullos 2012), and (c) occurrence of reflexive pronouns: non-reflexive verbs promote pronoun expression more so than do verbs with reflexive pronouns (Abreu 2012; Bayley and Pease-Alvarez 1996, 1997; Carvalho and Child 2011; Otheguy and Zentella 2012).

Variable hierarchies: What is noteworthy beyond the findings that the same variables consistently impact adult subject pronoun expression is that the *hierarchy* of these variables is also often the same across communities. Such hierarchies rank the relative weight of conditioning factors in terms of their effect on the probability of pronoun use. The typical hierarchy of variables impacting adult Spanish subject pronoun expression is (1) *person/number*, followed by (2) *switch reference*, and (3) *TMA,* with other variables such as *semantic class* and *clause type* ranked lower (Abreu 2012, 5; Orozco and Guy 2008, 73; Otheguy and Zentella 2012; Prada Pérez 2009, 279; Torres Cacoullos and Travis 2011, 250).[6] This common hierarchy is depicted in figure 9.1.
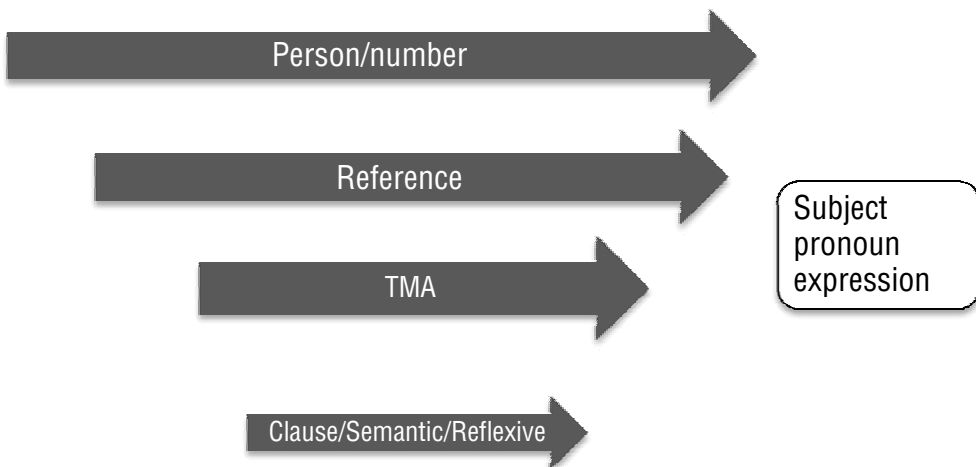

Figure 9.1 Hierarchy of linguistic predictors impacting adults' Spanish subject pronoun expression based on Otheguy and Zentella (2012, 160)

Figure 9.1 intentionally displays person/number as the most powerful constraint. It is followed by reference, then TMA, and then other variables such as clause, semantic, and reflexive. This particular hierarchy has been consistently demonstrated across communities, suggesting that it represents a pattern deeply entrenched in Spanish grammar: Adult speakers not only know that they can choose between expression and omission of subject pronouns, they also possess probabilistic knowledge that guides their choice and accounts for the specific distribution of forms in a given discourse. This knowledge can be characterized as "schemas," which Bybee (2001, 8, 40) describes as mechanisms guiding the use of forms and constructions in discourse. Schemas are not categorical, but are nonetheless systematic, and therefore result in clear, discernable patterns in usage (Bybee 2001, 64; Guy 2011, 2196).

In sum, the research on adult subject pronoun expression reveals consistent systematicity in probabilistic knowledge across communities, raising several questions for child language research.

1. Do children demonstrate the same systematicity in their variable use of subject pronouns?

2. What do similarities/differences between adults and children tell us about a) the grammar underlying subject pronoun expression and b) the development of variable morphosyntactic structures during childhood?

PREVIOUS RESEARCH ON GRAMMATICAL PATTERNING IN CHILD LANGUAGE

At present there is a dearth of research in language acquisition that examines the onset of structured variability in morphosyntax (cf. Kovac and Adamson 1981).[7] While this is largely true of Spanish subject pronouns, a preliminary picture has emerged. Most studies of child Spanish have focused on the alternation between overt (lexical and pronominal combined) and null subjects in the speech of children whose ages range from approximately one and a half to three years old (Austin et al. 1998, Bel 2003, Grinstead 2004, Paradis and Navarro 2003, Silva-Corvalán and Sánchez-Walker 2007). Children within this age range rarely produce subject pronouns; instead, their subjects tend to be lexical NPs or demonstratives. There is some evidence that pronoun expression increases between ages one and a half and three years (Bel 2003; Serratrice 2005; Valian and Eisenberg 1996), but even as late as early school age, children still produce many fewer pronouns than adults (Montrul and Sánchez-Walker, this volume; Ortiz López 2011, 432–437; Shin 2012). The scarcity of subject pronouns in young children's speech makes it difficult to assess the emergence of adult-like patterns of use. There is some indication that the person/number effect—where singular pronouns are favored over plurals—is operative in children's pronoun expression (Bayley and Pease-Alvarez 1996, 1997; Shin 2012). There is also evidence that Spanish–English bilingual children, ages eight to twelve, are similar to adults with respect to reference and TMA: Both switches in referent and verb forms with ambiguous TMA favor subject pronoun expression. Thus the pronoun use patterns of bilingual children, ages eight to twelve, appear to be constrained by person/number, reference, and TMA in much the same way that these variables constrain adult usage.

To summarize, we have evidence at this point that Spanish-speaking children's subject pronoun use displays some of the same trends that characterize adults' patterns. But little is known about the timing of the emergence of such patterns. Moreover, other factors known to affect adult pronoun expression, such as semantic class or clause type,

have yet to be examined in a monolingual child language context. The current study seeks to address this lacuna in the literature and, in turn, increase our understanding of the acquisition of variable aspects of grammar.

THE CURRENT STUDY

In this section we outline our methodology, data, and results of multivariate analyses exploring the impact of linguistic constraints on pronoun use.

PARTICIPANTS

The participants in this study were 24 monolingual, Spanish-speaking children in Oaxaca, Mexico. We interviewed 10 boys and 14 girls, whose ages ranged from six to eight years old (average age = 7;4). For purposes of comparison, the study also included a control group of 19 adults (10 men, 9 women) selected from the *Otheguy-Zentella corpus of Spanish in NYC*. The 19 adults included in the present study were all first-generation Mexicans living in NYC at the time of their interview. Their average age was 33 years old, and their average age of arrival in the United States was 22 years old. As we will show in the subsection on results below, the adults' rate of pronoun expression was 21 percent. This rate is consistent with recent studies of adult Mexicans living in Mexico. Lastra and Butragueño (this volume) report a rate of 21.8 percent in Mexico City, and Michnowicz (this volume) reports a rate of 20 percent in Yucatan. The almost identical rates in NYC and Mexico suggest that pronoun use among the adult Mexicans in NYC is representative of adult Mexican pronoun use in general, a finding that bolsters our confidence that the NYC adult Mexicans constitute an appropriate control group for our study of Mexican children.

DATA: SOCIOLINGUISTIC INTERVIEWS AND VARIABLE SUBJECT PRONOUN EXPRESSION

Sociolinguistic interviews following procedures outlined by Labov (1984) were conducted with both the adults and children. In addition, the children were asked to retell their favorite stories, to make up original stories, and to narrate *Frog, where are you?*, a picture book often used in research on child language. Variable pronominal contexts—where the presence or absence of a pronoun is possible—were identified in the transcribed interviews.[8] To illustrate, consider example (1), produced by a Mexican girl, age 6;5. The absence of a pronoun is signaled by Ø in the Spanish excerpt and by pronouns in parentheses in the English gloss. Relevant contexts are in boldface.

(1) … *primero vino aquí mi hermano … y, y luego yo porque **yo nací** hasta el último. **Ø Tengo** dos hermanos. 109*[9]

     '… first my brother came here … and, and later I because **I was born** last. **(I) have** two brothers.'

Example (1) includes two variable contexts, one in which the pronoun *yo* was expressed (*yo nací),* and the other in which it was not (*tengo*). Either option, expression or omission, is possible in both cases. In other words, the speaker could have said *porque nací,* leaving out *yo*. Likewise, the speaker could have said *Yo tengo dos hermanos*.

Not all contexts are variable like the ones in example (1). For instance, the use of subject pronouns referring to inanimate entities is so rare that it makes sense to exclude these cases. Similarly, overt subject personal pronouns do not typically appear with meteorological verbs (*llueve* 'it rains'), nor in subject-headed relative clauses (e.g., *Vi a*

la niña que estaba sentada al lado tuyo 'I saw the girl that was sitting by your side' would rarely occur as *Vi a la niña que **ella** estaba sentada al lado tuyo* 'I saw the girl that she was sitting by your side.'). Contexts such as these, where there is little variation, were excluded from the study. For an in-depth discussion of contexts in Spanish that allow both pronoun expression or omission and those in which such variability is rare, see Otheguy and Zentella (2012, 45–67).

UNRECOVERABLE REFERENTS

In an effort to examine variable contexts only, cases in which the intended referent was unrecoverable were excluded from the study. Such unrecoverable referents are common in child language (See Barriga Villanueva 2002, 177). Consider example (2), in which a girl, age 7;4, retells the story of *The Beauty and the Beast*.

(2)   *Y entonces la Bella estaba cantando así, y viene su caballo, y le dice "¿Qué pasó? ¿Dónde está papá?" Y s-, y, y él, y él, y ella este se f-, **se, Ø lo cargó**, y él se fue por el camino equivocado, y estaba en el castillo. Y le dije, y ella le dijo "Papá no obedeció." Y, y **Ø dejó** su sombrero allí en la puerta. Y entonces este, **Ø creyó** que se lo habían comido, y entró al castillo y todos la vieron y dijeron "qué bonita."* [203]

'And then Belle was singing like this, and her horse comes, and says "What happened? Where is papa?" And s- and, and he, and he, and she um lef-, Ø **carried him** and he went down the wrong path, and was in the castle. And I said, and she said "Papa didn't obey." And Ø **left** his?her? hat there at the door. And then um, Ø believed that they had eaten him, and entered the castle and everyone saw her and said "how pretty."'

The speaker's intended referent is unclear at several points in (2). Who carried whom? Did Bella carry the horse? And who left a hat at the door? The listener cannot be entirely sure of the referent. In our data set of children's speech there were a total of 361 such cases, and they were excluded from further analyses for two reasons. First, they demonstrate nearly categorical behavior; pronouns were omitted in 99 percent of the unrecoverable contexts. In other words, there were almost no cases of expressed subject pronouns with unidentifiable referents. The second reason is that we cannot code verbs with unrecoverable referents for the relevant predictor variables. For example, if the referent is unclear, it is impossible to code for a switch in referent. After excluding contexts of little to no variation, the data extraction process yielded a total of 2,150 verb tokens produced by the children. The control data set consisted of 8,319 produced by the adults.

RESULTS: PRONOUN RATES

OVERALL PRONOUN RATES

As shown in table 9.1, the control group of adult Mexicans expressed subject pronouns at a rate of 21 percent, a rate that is commensurate with the range found in studies of Mexican adults in Mexico (Lastra and Martín Butragueño, this volume; Michnowicz, this volume). By comparison, the children, with a pronoun rate of 9 percent, produced pronouns very infrequently. Such a rate has never been reported for adult Spanish.

Table 9.1 Rates of SPP expression in Mexican adults and children

Adults (NYC)		Children	
N Vbs	% SPP	N Vbs	% SPP
8,319	21%	2,150	9%

PRONOUN RATES AND SEX

The data reveal a clear difference between boys and girls with respect to rates of pronoun use: The rates for the girls in the study are significantly higher, $t(2148) = 2.56$, $p < .01$.[10] Figure 9.2 illustrates this result below.

Given that the children in general have considerably lower pronoun rates than their adult counterparts, the girls' pronominal behavior can be viewed as more adult-like than that of the boys. This difference is consistent with a general trend in the language acquisition literature that girls outpace boys in terms of achieving adult-like linguistic behavior (e.g., Eriksson et al. 2012) In addition, and with respect to previous studies of pronoun use among Spanish speaking children, the results in figure 9.2 corroborate those reported by Bayley and Pease-Alvarez (1996, 1997) as well as Shin (2006). Each of these studies also observed higher rates of pronouns among girls.
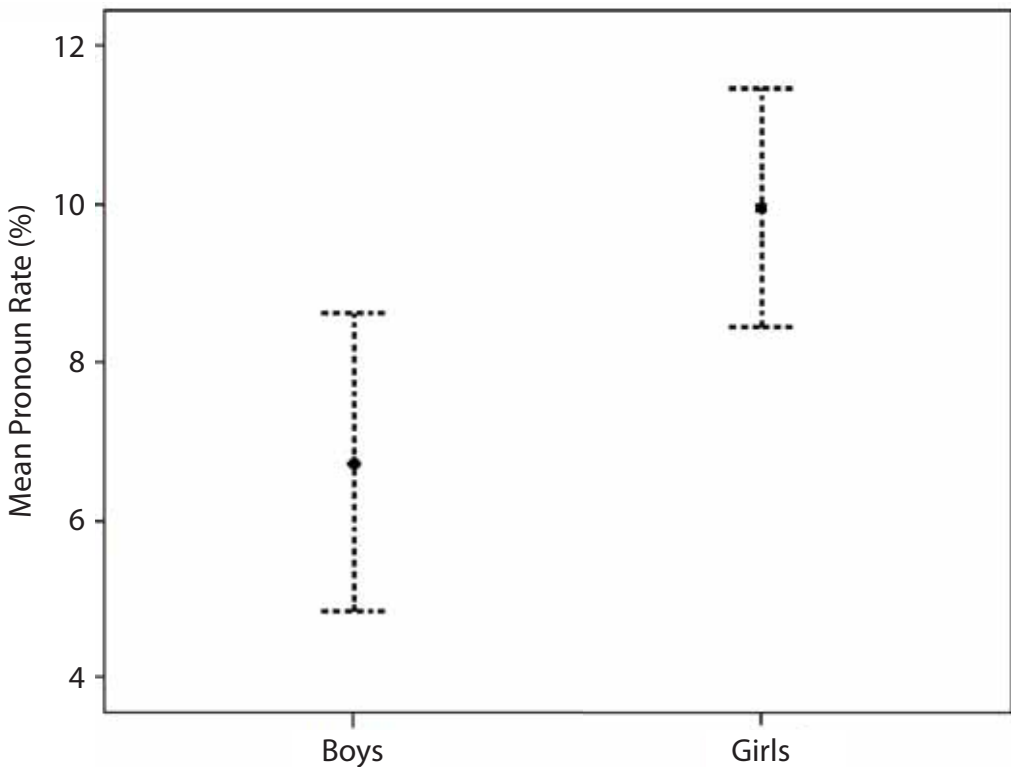
Figure 9.2 Mean pronoun rates by sex

AGE AND SEX

The results do not show evidence of a main effect for age, $F (3, 2147) = 1.4$ $p < .23$. However, a Repeated Measures Analysis of Variance (RM-ANOVA) reveals evidence

of a significant interaction between age and sex, F (5, 2145) = 6.5, p < .001. Consider figure 9.3 below, which plots the mean pronoun rates for boys and girls by age group. It shows that in all three groups girls have higher pronoun rates than boys. However, while pronoun rates among the girls uniformly increase with age, this is not the case for the boys. Examining each age group separately, we find the following: The lowest rates of pronoun use for each sex are observed among the six-year-olds. In fact, among six-year-old boys, we observe the categorical absence of subject pronouns. Rates then increase among the seven-year-olds, with the boys shifting from categorical to variable behavior and the girls increasing their rates marginally. A substantial divergence then emerges among eight-year-olds. Whereas the girls continue to display an increase in pronoun rates alongside an increase in age—their rate of 16 percent brings them in close proximity to the 21 percent of the adults cited above—the eight-year-old boys demonstrate a *decrease* in their frequency of pronoun use compared to the seven-year-olds. In summary, the data demonstrate that pronoun rates steadily increase with age among the girls in the study. Among boys, while one might suggest that a shift from categorical to variable behavior coincides with an increase in age, it is not the case that rates continue to climb as the boys get older.
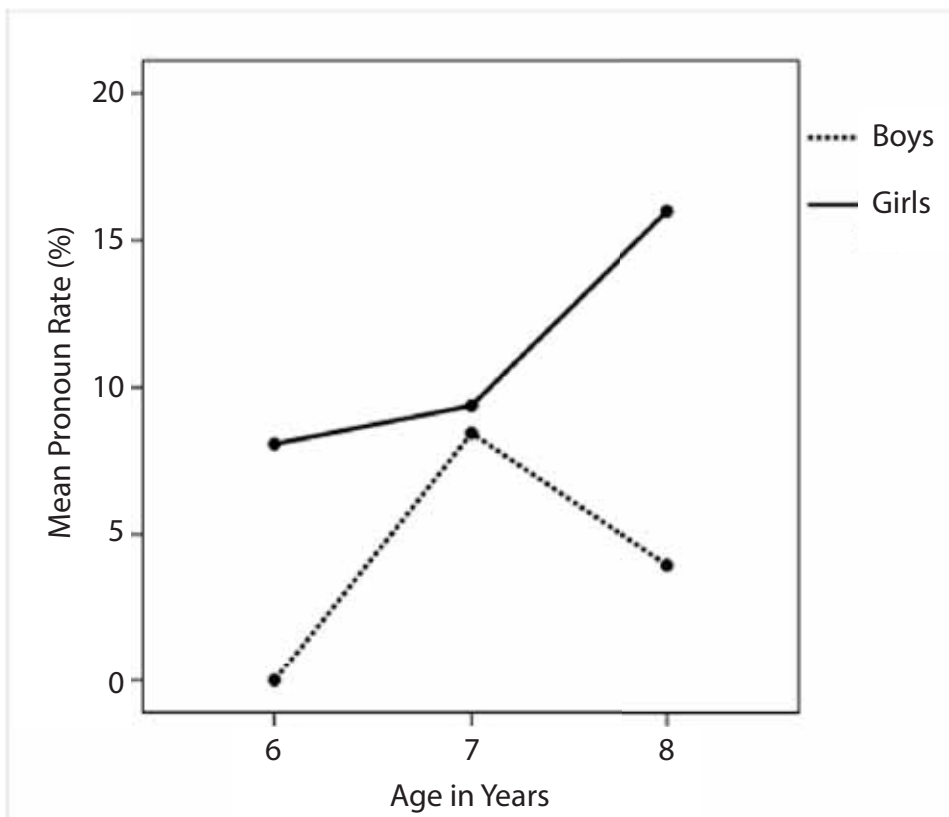

Figure 9.3 Mean pronoun rates by sex and age

SUMMARY OF PRONOUN RATE RESULTS
Results demonstrate that the children, ages six to eight, express far fewer subject pronouns than adults do. There is also evidence that girls advance more quickly than boys do towards adult-like behavior.

RESULTS: LINGUISTIC CONSTRAINTS ON PRONOUN USE

Even though the children in this study express relatively few subject pronouns, it is still possible that their usage is guided by the same schemas guiding adult usage. To test this hypothesis, each verb was coded for the six linguistic variables discussed above: person, reference, TMA, clause type, semantic class, and reflexive, described in detail here:

1. *Person/number* included five factors: 1sg (*yo*, 'I'), 2sg (*tú*), 3sg (*él/ella* 'he/she'), 1pl (*nosotros/nosotras*, 'we'), and 3pl (*ellos/ellas*, 'they').[11]

2. *Reference* included two factors: same and switch reference. Recall that these contexts are operationalized here in terms of the relationship between two consecutive grammatical subjects. Reference to the same referent across subjects is considered "same reference," while a change in reference is considered "switch reference."

3. *TMA* included eight factors: simple present indicative (*bailo*), preterit (*bailé*), imperfect (*bailaba*), future (*bailaré* or *voy a bailar*), conditional (*bailaría*), subjunctives (*baile, bailara*), perfect compounds (*he bailado, había bailado, habré bailado*), imperative (*baila*).

4. *Clause type* included three factors: main, subordinate, and coordinate clauses.

5. *Semantic class* included three factors: mental/estimative (*creer*), stative (*ser, estar*), and external activity verbs (*bailar, cantar, caminar*).

6. *Reflexive* included two factors: verb occurs with a reflexive pronoun (*me bañé*), verb does not occur with a reflexive pronoun (*creo*).

Two logistic regression analyses—one for the children and one for the adults—were performed using presence/absence of the subject pronoun as a dependent variable and the six variables listed above as independent predictor variables. Logistic regression is a type of multivariate analysis that examines the relative contribution of each predictor variable on the dependent variable. For discussion of the advantages of multivariate analysis, see Guy (1993, 237–238) and Otheguy and Zentella (2012, 130). The results of logistic regression analyses run in SPSS provide a WALD statistic (See Otheguy and Zentella 2012, 158–161), used here to construct variable hierarchies, which rank predictor variables in order of highest to lowest WALD value. The higher the value, the stronger the constraint. The column with the title *p* tells us whether or not each variable reaches statistical significance as a predictor of pronoun use, with two asterisks indicating significance at the <.01 cut-off value, and one asterisk indicating significance at the <.05 cut-off value, while *ns* means "non-significant."

The hierarchy presented on the left panel of table 9.2 shows that the ranking for the Mexican adults is person, reference, TMA, clause, semantic, and, finally, reflexive. This ranking is mostly consistent with Otheguy and Zentella's (2012, 182) ranking for recent arrivals to NYC hailing from Latin American mainland countries (Colombia, Ecuador, and Mexico).[12] The results for the children, presented on the right panel of table 9.2, show evidence of an emerging adult-like system. The two variables that are ranked the highest for the adults, person and reference, significantly impact the pronoun expression of the children and also appear in the same order in their constraint ranking. The third variable, TMA, does not reach significance for the children; nevertheless, as we will see below, the strongest factors within the TMA variable—the imperfect and the imperative—are significant predictors of pronoun use among the children.

Table 9.2 Predictors of SPP use for Mexican adults and children

Adults (N Vbs = 8270), R^2 =.16			Children (N Vbs = 2150), R^2 = .13		
Variables	**Wald**	**p**	**Variables**	**Wald**	**p**
1. Person	334.05	**	1. Person	63.22	**
2. Reference	152.68	**	2. Reference	31.80	**
3. TMA	149.90	**	3. TMA	10.31	ns
4. Clause	39.22	**	4. Clause	5.79	ns
5. Semantic	30.32	**	5. Reflexive	1.89	ns
6. Reflexive	27.41	**	6. Semantic	.80	ns

The impact of the factors within each variable is analyzed by examining the probability of pronoun use expressed as an *Exp(B)* value. Exp(B) values above 1.0 indicate that a factor promotes pronoun use, whereas values below 1.0 indicate that a factor promotes pronoun omission. The further away from 1.0, the stronger the factor. So, a factor with an Exp(B) value of 2.0 is a stronger promoter of pronoun use than a factor with a value of 1.5. Conversely, a factor with a value of .2 is a stronger promoter of omission than a factor with a value of .5. Exp(B) values are used to generate constraint hierarchies *within* each variable by ranking each factor in order of the strongest to weakest promoters of pronoun use. For example, the constraint hierarchy for person (table 9.3) shows that the person factor that most strongly promotes pronoun use among both adults and children is 1sg. This means that *yo* is more likely to be expressed than, for example, *tú* or *él/ella.* At the opposite pole is 1pl, the person factor that most strongly disfavors pronoun use. This means that *nosotros* is less likely to be expressed than *yo, tú, él/ella,* or *ellos/ellas.* We also report the range, which is useful for assigning different degrees of predictive strength to variables in different groups of speakers (Otheguy and Zentella 2012, 165; Tagliamonte 2012, 127). Ranges are calculated for each variable by subtracting the Exp(B) value of the strongest disfavoring factor from the value of the strongest favoring factor. In the current paper we only examine the constraint hierarchies for the top three variables, person, reference, and TMA. In tables 9.3 and 9.4, we present the constraint hierarchies for person and reference.

Table 9.3 Constraint hierarchy for person among Mexican adults and children

Adults				Children			
Factor	**N vbs**	**Exp(B)**	**p**	**Factor**	**N vbs**	**Exp(B)**	**p**
1sg	4009	2.39	**	1sg	401	2.89	**
3sg	1122	2.29	**	2sg	111	2.05	*
2sg	1226	.91	ns	3sg	1113	.89	ns
3pl	1224	.64	**	3pl	380	.45	**
1pl	689	.32	**	1pl	145	.42	*
Range		2.07		*Range*		2.47	

Table 9.4 Constraint hierarchy for reference among Mexican adults and children

Adults				Children			
Factor	N vbs	Exp(B)	p	Factor	N vbs	Exp(B)	p
Switch	4604	1.46	**	Switch	979	1.62	**
Same	3666	.69	**	Same	1171	.62	**
Range		*.77*		*Range*		*1.00*	

As demonstrated by the hierarchies in tables 9.3 and 9.4, not only are person and reference significant for both adults and children, the trends demonstrated within the variables are nearly identical. For both, 1sg pronoun *yo* is the most likely to be expressed. Also, the generalization that singular pronouns are more likely to be expressed as compared to plural pronoun holds for both adults and children. In other words, for both children and adults, plural pronouns *ellos/ellas* and *nosotros/nosotras* are likely to be omitted. With respect to reference, we see the same effect for adults and children: Switch reference promotes pronoun presence while same reference promotes pronoun absence. It is also worth noting that the children's ranges between the top and bottom factors in both person and reference are larger than the adults' ranges. This is further evidence suggesting that the children have approximated adult-like competence with respect to these two variables.

Although TMA is not significant for the children in terms of the WALD statistic associated with the variable as a whole (see table 9.2), table 9.5 illustrates that several factors within the variable do constrain the children's pronominal behavior, providing further evidence of an emerging adult-like pattern.

Table 9.5 Constraint hierarchy for TMA among Mexican adults and children

Adults				Children			
Factor	N vbs	Exp(B)	p	Factor	N vbs	Exp(B)	p
Imperfect	1257	2.60	**	Imperfect	343	1.94	*
Conditional	54	2.08	*	Conditional	5	1.38	ns
Subjunctive	343	1.75	**	Perfect	41	1.38	ns
Preterit	1786	1.34	*	Preterit	928	1.22	ns
Perfect	350	1.28	ns	Present	676	1.17	ns
Present	4072	1.09	ns	Future	37	1.02	ns
Future	233	.69	ns	Subjunctive	66	.69	ns
Imperative	175	.08	**	Imperative	54	.26	*
Range		*2.52*		*Range*		*1.68*	

Five TMA factors are significant among the adults: The imperfect, conditional, subjunctive, and the preterit all promote pronoun expression, while the imperative promotes pronoun omission. As in previous studies of adult Spanish, the TMA combination that is the strongest promoter of pronoun use here is the imperfect, while the one that is the strongest deterrent to pronoun use is the imperative. Only two TMA factors

are significant among the children, but it is noteworthy that those two factors, the imperfect and the imperative, are identical in rank and direction to the adult data. In other words, the factor hierarchy within TMA is similar to variable hierarchy presented in table 9.2, where the strongest predictors of usage among adults, and crucially *not* the weaker ones, are those that appear to emerge first in the child data.

DISCUSSION

This study of subject pronoun expression in the speech of monolingual Spanish-speaking children, ages six to eight, provides three major findings. First, children in this age group produce far fewer subject pronouns than adults do. Second, girls advance more quickly than boys in the acquisition of adult-like pronoun rates. Third, the children's patterns of usage provide evidence of an emerging grammar, similar in structure to that of the adults. In this discussion section we address each of these three findings.

The children's comparatively low pronoun rate suggests that the crosslinguistic underproduction of subject pronouns found among very young children acquiring Catalan, Italian, Spanish, and Portuguese (Grinstead 2004, Valian 1991, Valian and Eisenberg 1996) persists into early school age. This finding, which is corroborated by the results for monolingual Mexican children studied by Montrul and Sánchez-Walker (this volume), has important implications for the study of child language, as it demonstrates that some parts of a child's grammar take a rather long time to develop. Furthermore, there is growing evidence that variability in the input has an effect on child language development: The more variable a structure is in the adult variety of a language, the longer it takes for children to master (Miller 2012; Miller and Schmidt 2010, 2012). In adult Spanish, subject pronouns are more often omitted than expressed. The implication of the relative scarcity of overt pronouns in adult speech is that positive evidence in the input is rather limited. This decreases the available data upon which children can formulate hypotheses regarding how and when to use pronouns. Our study suggests that, rather than inserting pronouns haphazardly, or liberally overusing pronouns initially, children are instead decidedly conservative in their pronominal behavior. They appear to postpone regular use of pronouns until they have acquired a richer understanding of how to use these forms appropriately. This behavior is consistent with a substantial body of evidence demonstrating that children are conservative language learners.

A second important finding in our study is that between ages six and eight girls outpace boys in the progression towards adult-like rates of pronoun use. As girls get older their pronoun rates increase. By age eight, the girls in our study used pronouns with a frequency similar to that found in adult Mexican Spanish. This finding complements the large body of literature reporting that girls proceed more quickly than boys in all aspects of language development (e.g., Eriksson et al. 2012; Locke, Ginsborg, and Peers 2002; To, Cheung, and McLeod 2013; among others). Furthermore, given that the girls achieve adult-like pronoun expression rates at age eight, our study lends support to the observation that this age represents a major milestone in the childhood acquisition of referring expressions (Shin and Cairns 2012, 31).

The third finding relates to our primary research question: Do children use subject pronouns in a systematically variable way? We conclude that the answer to this question is yes, on the basis of two findings. First, the two most powerful constraints on adult subject pronoun use, person/number and reference, are similarly operative in the children's speech. Second, while TMA does not, as a variable, make a significant contribution to the logistic regression model of the child data, significant results do emerge for specific factors *within* the variable, namely, the TMA factors of the *imperfect* and

imperative. Together, these results clearly indicate the presence of structured variability, and strongly suggest that the developmental sequence of pronoun use follows directly from the patterns found in adult language: The strongest predictors among adults are the first to emerge among children.[13]

This study raises several challenging questions, the first of which relates to the issue of directionality: Does the adult pattern trigger the developmental sequence, or is the developmental sequence the very source of the adult pattern? And then, what sustains its transmission and use across generations? Are there inherent functional, psychosocial, or cognitive advantages to the hierarchy of constraints routinely reported for this "showcase variable"? Consensus on this issue remains elusive. What does seem to be clear is that the study provides evidence of children's acute sensitivity to probabilistic information in variable linguistic input in general and to patterns of morphosyntactic variation in particular. Indeed, it is rather unlikely to be mere coincidence that the first indications of structured variability among children are found in the effects of the strongest constraints on adult behavior. It is much more likely that this pattern emerges because the children are making direct use of adult behavior to tune the settings of the variable components of their own grammar. Future research might aim to make this case truly compelling, by substituting control data such as ours with a direct analysis of the input that children receive in their own individual speech communities.

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NOTES

1. The corpus was developed at the Graduate Center of the City University of New York (CUNY) with support from the National Science Foundation (BCS 0004133), Professional Staff Congress of CUNY (62666-00-31), and a CUNY Collaborative Grant (09-91917).

2. Pronoun omission is more common than expression, with two exceptions: The polite form *usted* tends to have especially high rates of expression, ranging between 76 percent expressed in Madrid (Enríquez 1984, 191) and 88 percent in Buenos Aires (Barrenechea and Alonso 1977, 338). Likewise, impersonal *uno* can reach rates of 85 percent expressed (Cameron 1992, 233).

3. The impact of topic continuity on pronoun expression has also been investigated by examining co-reference with a preceding object, as well as the impact of intervening clauses (e.g., Abreu 2009, Balasch 2008, Bayley and Pease-Alvarez 1997, Hurtado 2005, Travis and Torres Cacoullos 2012).

4. Not all scholars agree that the TMA effect has to do with ambiguity. Some argue that in natural discourse true ambiguity is rare, and thus there is no need for pronouns to help disambiguate reference (Ávila-Shah 2000, 242; Travis 2007, 118). An alternative explanation has been offered by Silva-Corvalán 2001 (161–163), who posits that the imperfect promotes pronoun expression, not because of morphological ambiguity, but rather because of the backgrounding function associated with it (See also Bayley and Pease-Alvarez 1997, 363; Torres Cacoullos and Travis

2011, 253). Recently, Shin (2014) tested Silva-Corvalán's hypothesis, and finding no support for it, she concludes that the TMA effect is related to the avoidance of ambiguous reference.

5. Enríquez (1984, 351) found 19 cases of expressed *tú* out of 73 imperative contexts. Cantero Sandoval (1978, 264) notes that some imperative + pronoun constructions, such as *pon tú que*, are repeated so often that they become fixed expressions.

6. Abreu's results for her monolingual, but not bilingual, participants follow this hierarchy. Person is excluded from Hurtado (2005) and Torres Cacoullos and Travis (2010, 2011), as their data are restricted to specific grammatical persons. In Claes (2011) and Orozco and Guy (2008), reference is ranked lower than TMA, presumably because reference is operationalized differently than in other studies.

7. Almost all variationist child language research to date has investigated phonological (Cameron 2010; Chevrot, Beaud, and Varga 2000; Díaz-Campos 2005; Foulkes and Docherty 2006; Foulkes, Docherty, and Watt 1999; Roberts and Labov 1995; Romaine 1978) and morphophononological (Guy and Boyd 1990; Labov 1989; Roberts 1997; Smith, Durham and Fortune 2009) phenomena. See Nardy, Chevrot, and Barbu (2013) for an overview. What we have learned so far is that some (morpho) phonological patterns emerge early in child development; others emerge late. For example, Roberts (1997) found that many of the constraints on variable (-t/-d) deletion typically found among adult English speakers were evident in the speech of three- and four-year-old children. Nevertheless, -t/-d deletion patterns with "semi-weak" verbs, such as 'slept' and 'told', do not emerge until adolescence (Guy and Boyd 1990).

8. In the case of third-person referents there are, of course, a variety of NP types that could be used in subject position. In the children's data there were 989 expressed lexical NP subjects, which, following much of the literature on Spanish subject pronoun expression, were not included in the current study. Nevertheless, we agree with an anonymous reviewer that analyses of all types of third-person referents could shed light on how the use of referring expressions develops during childhood. Lexical NP subjects have been studied by Dumont (2006) in a study of adult New Mexican Spanish, as well as Geeslin and Gudmestad (e.g., 2010, 2011) in their research on second language acquisition.

9. The number at the end of each example refers to the identification number given to the participant.

10. The exclusion of a potential outlier among the male sample amplifies the main effect of this variable, increasing the difference in rates between the sexes from 3.2 percent (9.9 vs. 6.7) to 4 percent (9.9 vs. 5.9).

11. Cases of *usted*, *ustedes* (both 'you-formal') and *uno* ('one') were excluded from the current study due to the scarcity of these forms in the children's data.

12. Here the ranking of Semantic and Clause is reversed. In Otheguy and Zentella's (2012, 182) analyses of newcomers from Mainland Latin America, Semantic (which they call 'Lexical') is ranked higher than Clause.

13. Geeslin, Linford, and Fafulas's study (this volume) suggests that the same generalization applies to second language acquisition. The strongest predictors of pronoun expression among adult native speakers of Spanish are the first to emerge during both first and second language acquisition.

REFERENCES

Abreu, Laurel. 2009. "Spanish subject personal pronoun use by monolinguals, bilinguals, and second language learners." PhD diss., University of Florida.

———. 2012. "Subject pronoun expression and priming effects among bilingual speakers of Puerto Rican Spanish." In *Selected Proceedings of the 14th Hispanic Linguistics Symposium*, edited by Kimberly Geeslin and Manuel Díaz-Campos, 1–8. Somerville, MA: Cascadilla.

Austin, Jennifer, María Blume, David Parkinson, Zelmira Núñez del Prado, and Barbara Lust. 1998. "Interactions between pragmatic and syntactic knowledge in the first language acquisition of Spanish null and overt pronominals." In *Theoretical analyses on romance languages,* edited by José Lema and Esthela Treviño, 36–47. Amsterdam/Philadelphia: John Benjamins.

Ávila-Jiménez, Bárbara. 1995. "A sociolinguistic analysis of a change in progress: Pronominal overtness in Puerto Rican Spanish." *Cornell Working Papers in Linguistics* 13:25–47.

———. 1996. "Subject pronoun expression in Puerto Rican Spanish: A sociolinguistic, morphological, and discourse analysis." PhD diss., Cornell University.

Ávila-Shah, Bárbara. 2000. "Discourse connectedness in Caribbean Spanish." In *Research on Spanish in the US*, edited by Ana Roca, 238–251. Somerville: Cascadilla Press.

Balasch, Sonia. 2008. "La conectividad discursiva en el discurso interactivo." In *Selected Proceedings of the 10th Hispanic Linguistics Symposium*, edited by Joyce Bruhn de Garavito and Elena Valenzuela, 300–311. Somerville, MA: Cascadilla Proceedings Project.

Barrenechea, Ana María, and Alicia Alonso. 1977. "Los pronombres personales sujetos en el español hablado en Buenos Aires." In *Estudios sobre el español hablado en las principales ciudades de América*, edited by Juan M. Lope Blanch, 333–49. México: Universidad Nacional Autónoma de México.

Barriga Villanueva, Rebeca. 2002. *Estudios sobre el habla infantil en los años escolares ... un solecito calientote.* Mexico City: El Colegio de México.

Bayley, Robert, Norma L. Cárdenas, Belinda Treviño Schouten, and Carlos Martin Vélez Salas. 2012. "Spanish dialect contact in San Antonio, Texas: An exploratory study." In *Selected Proceedings of the 14th Hispanic Linguistics Symposium*, edited by Kimberly Geeslin and Manuel Díaz-Campos, 48–60. Somerville, MA: Cascadilla.

Bayley, Robert, and Lucinda Pease-Alvarez. 1996. "Null and expressed pronoun variation in Mexican-descent children's Spanish." In *Sociolinguistic variation: Data, theory, and analysis*, edited by Jennifer Arnold, Renee Blake and Brad Davidson, 85–99. Stanford: Center for the Study of Language and Information.

———. 1997. "Null pronoun variation in Mexican-descent children's narrative discourse." *Language variation and change* 9:349–371.

Bel, Aurora. 2003. "The syntax of subjects in the acquisition of Spanish and Catalan." *Probus* 15:1–23.

Bentivoglio, Paola. 1987. *Los sujetos pronominales de primera persona en el habla de Caracas*. Caracas: Universidad Central de Venezuela.

Boyd, Jeremy, and Adele E. Goldberg. 2012. "Young children fail to fully generalize a novel argument structure construction when exposed to the same input as older learners." *Journal of Child Language* 39(3):457 481

Bybee, Joan. 2001. *Phonology and language use.* Cambridge: CUP.

———. 2010. *Language, usage and cognition*. Cambridge: CUP.

Cameron, Richard. 1992. "Pronominal and null subject variation in Spanish: constraints, dialects, and functional compensation." PhD diss., University of Pennsylvania.

———. 1993. "Ambiguous agreement, functional compensation, and nonspecific tú in the Spanish of San Juan, Puerto Rico, and Madrid, Spain." *Language Variation and Change* 5:305–34.

———. 1995. "The scope and limits of switch-reference as a constraint on pronominal subject expression." *Hispanic Linguistics* 6/7:1–27.

———. 2010. "Growing up and apart. Gender divergences in a Chicagoland elementary school." *Language Variation and Change* 22(2):279–319.

Cantero Sandoval, Gustavo. 1978. "Observaciones sobre la expresión innecesaria de los pronombres personales sujeto en el español de México." *Anuario de Letras* 16:261–264.

Carvalho, Ana M., and Michael Child. 2011. "Subject pronoun expression in a variety of Spanish in contact with Portuguese." In *Selected Proceedings of the 5th Workshop on Spanish Sociolinguistics*, edited by Jim Michnowicz and Robin Dodsworth, 14–25. Somerville, MA: Cascadilla Press.

Chevrot, Jean-Pierre, Laurence Beaud, and Renata Varga. 2000. "Developmental data on a French sociolinguistic variable: Post-consonantal word-final /R/." *Language variation and change* 12:295–319.

Cifuentes, Hugo. 1980–1981. "Presencia y ausencia del pronombre personal sujeto en el habla culta de Santiago de Chile." *Boletín de Filología de la Universidad de Chile* 31:743–752.

Claes, Jeroen. 2011. "¿Constituyen las Antillas y el Caribe continental una sola zona dialectal? Datos de la variable expresión del sujeto pronominal en San Juan de Puerto Rico y Barranquilla, Colombia." *Spanish in Context* 8(2):191–212.

Díaz-Campos, Manuel. 2005. "The emergence of adult-like command of sociolinguistic variables: A study of consonant weakening in Spanish-speaking children." In *Selected Proceedings of the 6th Conference on the Acquisition of Spanish and Portuguese as First and Second Languages*, edited by David Eddington, 56–65. Somerville, MA: Cascadilla Proceedings Project.

Dumont, Jenny. 2006. "Full NPs as subjects." In *Selected Proceedings of the 9th Hispanic Linguistics Symposium*, edited by Nuria Sagarra and Almeida Jacqueline Toribio, 296–296. Somerville, MA: Cascadilla Proceedings Project.

Enríquez, Emilia V. 1984. *El pronombre personal sujeto en la lengua española hablada en Madrid.* Madrid: Consejo Superior de Investigaciones Científicas.

Eriksson, Mårten, Peter Marschik, Tiia Tulviste, Margareta Almgren, Miguel Pérez Pereira, Sonja Wehberg, Ljubica Marjanovič-Umek, Frederique Gayraud, Melita Kovcevic, and Carlos Gallego. 2012. "Differences between girls and boys in emerging language skills: Evidence from 10 language communities." *British Journal of Developmental Psychology* 30:326–343.

Erker, Daniel. 2005. "Functional compensation for morphological ambiguity in New York City Spanish." MA thesis, University of New York.

Erker, Daniel, and Gregory Guy. 2012. "The role of lexical frequency in syntactic variability: Variable subject personal pronoun expression in Spanish." *Language* 88(3):526–557.

Flores-Ferrán, Nydia. 2002. *A sociolinguistic perspective on the use of subject personal pronouns in Spanish narratives of Puerto Ricans in New York City.* Munich: Lincom-Europa.

———. 2004. "Spanish subject personal pronoun use in New York City Puerto Ricans: Can we rest the case of English contact?" *Language Variation and Change* 16:49–73.

———. 2010. "*¡Tú no me hables!* Pronoun expression in conflict narratives." *International Journal of Sociology of Language* 203:61–82.

Foulkes, Paul, and Gerard Docherty. 2006. "The social life of phonetics and phonology." *Journal of Phonetics* 34:409–438.

Foulkes, Paul, Gerry Docherty, and Dominic Watt. 1999. "Tracking the emergence of structured variation– Realisations of (t) by Newcastle children." *Leeds Working Papers in Linguistics and Phonetics* 7:1–23.

Geeslin, Kimberly, and Aarnes Gudmestad. 2010. "Exploring the roles of redundancy and ambiguity in variable subject expression: A comparison of native and non-native speakers." In *Refereed Proceedings from the 12th Hispanic Linguistics Symposium*, edited by C. Borgonovo, M. Español-Echevarría, and P. Prevost, 270–283. Somerville, MA: Cascadilla Press.

———. 2011. "Using sociolinguistic analyses of discourse-level features to expand research on L2 variation: Native and non-native contrasts in forms of Spanish subject expression." In *Selected Proceedings of the 2009 Second Language Research Forum: Diverse Contributions to SLA*, edited by L. Plonsky and M. Schierloh, 16–30. Somerville, MA: Cascadilla Press.

Grinstead, John. 2004. "Subjects and interface delay in child Spanish and Catalan." *Language* 80(1):40–72.

Guy, Gregory. 1993. "The quantitative analysis of linguistic variation." In *American Dialect Research*, edited by Dennis R. Preston, 223–249. Amsterdam: John Benjamins.

———. 2011. "Variability." In *The Blackwell companion to phonology, Vol. 4*, edited by Marc Van Oostendorp, Colin J. Ewen, Elizabeth V. Hume, and Keren Rice, 2190–213. Malden, MA: Wiley-Blackwell.

Guy, Gregory, and Sally Boyd. 1990. "The development of a morphological class." *Language Variation and Change* 2:1–18.

Hochberg, Judith. 1986. "Functional compensation for /-s/ deletion in Puerto Rican Spanish." *Language* 62:609–621.

Holmquist, Jonathan. 2012. "Frequency rates and constraints on subject personal pronoun expression: Findings from the Puerto Rican highlands." *Language Variation and Change* 24:203–220.

Hurtado, Luz Marcela. 2005. "Syntactic-semantic conditioning of subject expression in Colombian Spanish." *Hispania* 88(2):335–348.

Kovac, Ceil, and Hugh Douglas Adamson. 1981. "Variation theory and first language acquisition." In *Variation omnibus*, edited by David Sankoff and H. Henrietta Cedergren, 403–410. Edmonton: Linguistic Research, Inc.

Labov, William. 1984. "Field methods of the project of linguistic change and variation." In *Language in use: Readings in sociolinguistics*, J. Baugh and J. Scherzer, 51–72. Englewood Cliffs: Prentice Hall.

———. 1989. "The child as linguistic historian." *Language Variation and Change* 1:85–97.

———. 1994. *Principles of linguistic change: Internal factors.* Mass: Blackwell.

Lieven, Elena. 2010. "Input and first language acquisition: Evaluating the role of frequency." *Lingua* 120:2546–2556.

Locke, Ann, Jane Ginsborg, and Ian Peers. 2002. "Development and disadvantage: Implications for the early years and beyond." *International Journal of Language and Communication Disorders* 37(1):3–15.

MacWhinney, Brian. 2004. "A multiple process solution to the logical problem of language acquisition." *Journal of Child Language* 31(4):883–914.

Miller, Karen. 2012. "Not all children agree: Acquisition of agreement when the input is variable." *Language Learning and Development* 8(3):255–277.

Miller, Karen, and Cristina Schmitt. 2010. "Effects of variable input in the acquisition of plural in two dialects of Spanish." *Lingua* 120(5):1178–1193.

———. 2012. "Variable input and the acquisition of plural morphology." *Language Acquisition: A Journal of Language Development* 19(3):223–261.

Nardy, Aurélie, Jean-Pierre Chevrot, and Stéphanie Barbu. 2013. "The acquisition of sociolinguistic variation: Looking back and thinking ahead." *Linguistics* 51(2):255–284.

Orozco, Rafael, and Gregory R. Guy. 2008. "El uso variable de los pronombres sujetos: ¿Qué pasa en la costa Caribe colombiana?" In *Selected Proceedings of the 4th Workshop on Spanish Sociolinguistics,* edited by Maurice Westmoreland and Juan Antonio Thomas, 70–80. Somerville, MA: Cascadilla Proceedings Project.

Ortiz López, Luis. 2011. "Spanish in contact with Haitian Creole." In *Handbook of Hispanic Sociolinguistics*, ed. Manuel Díaz-Campos, 418–445. Malden, MA: Blackwell.

Otheguy, Ricardo, and Ana Celia Zentella. 2012. *Spanish in New York: Language contact, dialectal leveling, and structural continuity.* Oxford: Oxford University Press.

Otheguy, Ricardo, Ana Celia Zentella, and David Livert. 2007. "Language and dialect contact in Spanish in New York: Towards the formation of a speech community." *Language* 83:770–802.

Paradis, Johanne, and Samuel Navarro. 2003. "Subject realization and crosslinguistic interference in the bilingual acquisition of Spanish and English: What is the role of the input?" *Journal of Child Language* 3(2):371–93.

Poplack, Shana, and Stephen Levey. 2010. "Contact induced grammatical change: A cautionary tale." In *Language and space: An international handbook of linguistic variation. Volume I,* edited by Peter Auer and Jürgen Erich Schmidt, 391–419. Berlin: Mouton De Gruyter.

Poplack, Shana, Lauren Zentz, and Nathalie Dion. 2012. "Phrase-final prepositions in Quebec French: An empirical study of contact, code-switching and resistance to convergence." *Bilingualism: Language and Cognition* 15(2):203–225.

Posio, Pekka. 2011. "Spanish subject pronoun usage and verb semantics revisited: First and second person singular subject pronouns and focusing of attention in spoken Peninsular Spanish." *Journal of Pragmatics* 43(3):777–798.

Prada Pérez, Ana de. 2009. "Variation in subject expression in Western Romance." In *Romance linguistics,* edited by Sonia Colina, Antxon Olarrea, and Ana M. Carvalho, 267–84. Amsterdam: John Benjamins.

Ranson, Diana L. 1991. "Person marking in the wake of /s/ deletion in Andalusian Spanish." *Language Variation and Change* 3:133–152.

Roberts, Julie. 1997. "Acquisition of variable rules: A study of (-t,d) deletion in preschool children." *Journal of Child Language* 24:351–372.

Roberts, Julie, and William Labov. 1995. "Learning to talk Philadelphian: Acquisition of short a by preschool children." *Language, Variation, and Change* 7:101–112.

Romaine, Suzanne. 1978. "Postvocalic /r/ in Scottish English: Sound change in progress?" In *Sociolinguistic patterns in British English*, edited by Peter Trudgill, 144–157. Baltimore MD: University Park Press.

Serratrice, Ludovica. 2005. "The role of discourse pragmatics in the acquisition of subjects in Italian." *Applied Psycholingusitics* 26:437–462.

Shin, Naomi Lapidus. 2006. "The development of null vs. overt subject pronoun expression in monolingual Spanish-speaking children: The influence of continuity of reference." PhD diss., City University of New York.

———. 2012. "Variable use of Spanish subject pronouns by monolingual children in Mexico." In *Selected Proceedings of the 14th Hispanic Linguistics Symposium, edited by* Kimberly Geeslin and Manuel Díaz-Campos, 130–141. Somerville, MA: Cascadilla Proceedings Project.

———. 2014. "Grammatical complexification in Spanish in New York: 3sg pronoun expression and verbal ambiguity." *Language Variation and Change* 26, 303–330.

Shin, Naomi Lapidus, and Helen Smith Cairns. 2012. "The development of NP selection in school-age children: reference and Spanish subject pronouns." *Language Acquisition: A Journal of Developmental Linguistics* 19(1):3–38.

Shin, Naomi Lapidus, and Cecilia Montes-Alcalá. 2014. "El uso contextual del pronombre sujeto como factor predictivo de la influencia del inglés en el español en Nueva York." *Sociolinguistic Studies* 8(1):85–110.

Shin, Naomi Lapidus, and Ricardo Otheguy. 2009. "Shifting sensitivity to continuity of reference: Subject pronoun use in Spanish in New York City." In *Español en Estados Unidos y en otros contextos de contacto: Sociolingüística, ideología y pedagogía*, edited by M. Lacorte and J. Leeman, 111–136. Madrid: Iberoamericana.

———. 2013. "Social class and gender impacting change in bilingual settings: Spanish subject pronoun use in New York." *Language in Society* 42(4):429–452.

Silva-Corvalán, Carmen. 1994. *Language contact and change: Spanish in Los Angeles.* Oxford: Oxford University Press.

———. 2001. *Sociolingüística y pragmática del español*. Washington DC: Georgetown University Press.

Silva-Corvalán, Carmen, and Noelia Sánchez-Walker. 2007. "Subjects in early dual language development: A case study of a Spanish–English bilingual child." In *Spanish in contact: Policy, social, and linguistic inquiries*, edited by Richard Cameron and Kim Potowski, 3–22. Amsterdam/Philadelphia: John Benjamins.

Smith, Jennifer, Mercedes Durham, and Liane Fortune. 2009. "Universal and dialect-specific pathways of acquisition: Caregivers, children, and t/d deletion." *Language Variation and Change* 21:69–95.

Tagliamonte, Sali. 2012. *Variationist sociolinguistics: Change, observation, and interpretation.* Malden, MA/West Sussex: Wiley-Blackwell.

To, Carol K. S., Pamela S.P. Cheung, and Sharynne McLeod. 2013. "A population study of children's acquisition of Hong Kong Cantonese consonants, vowels, and tones." *Journal of Speech, Language, and Hearing Research* 56:103–122.

Tomasello, Michael. 2003. *Constructing a language*. *A usage-based theory of language acquisition.* Cambridge, Mass: Harvard University Press.

Toribio, Almeida Jacqueline. 2000. "Setting parametric limits on dialectal variation in Spanish." *Lingua* 10:315–341.

Torres Cacoullos, Rena, and Catherine E. Travis. 2010. "Variable *yo* expression in New Mexico: English influence?" In *Spanish of the U.S. southwest: A language in transition*, Susana Rivera-Mills and Daniel Villa Crésap, 189–210. Madrid: Iberoamericana/Vervuert.

———. 2011. "Testing convergence via code-switching: priming and the structure of variable subject expression." *International Journal of Bilingualism* 15(3):241–267.

Travis, Catherine. 2007. "Genre effects on subject expression in Spanish: Priming in narrative and conversation." *Language Variation and Change* 19:101–135.

Travis, Catherine, and Rena Torres Cacoullos 2012. "What do pronouns do in discourse? Cognitive, mechanical, and constructional factors in variation." *Cognitive Linguistics* 23(4):711–748.

Valian, Virginia. 1991. "Syntactic subjects in the early speech of American and Italian children." *Cognition* 40:21–81.

Valian, Virginia, and Zena Eisenberg. 1996. "The development of syntactic subjects in Portuguese-speaking children." *Journal of Child Language* 23:103–128.