

Subject pronoun expression in Yucatan Spanish¹

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Introduction

The Spanish of Yucatan has been consistently identified in the literature as a distinct variety of Mexican Spanish, primarily based on phonetic differences (Lope Blanch 1988; Michnowicz in press). Many of these features have been attributed, rightly or wrongly, to contact with an indigenous language, Yucatec Maya (Michnowicz in press; Klee 2009). Morpho-syntactic properties in Yucatan Spanish, including subject pronoun expression (SPE), have been much less studied (Michnowicz in press; Solomon 1999 is an important exception). As is widely known, Spanish is classified as a pro-drop language; the phrases *él vive* and *ø vive* “he lives” are both possible syntactic forms, and the use of an overt subject pronoun is dependent on a variety of language internal and discourse factors (see Otheguy & Zentella 2012 for a detailed overview, among many others). The present study seeks to contribute to the general body of literature pertaining to SPE by 1) providing an analysis of SPE in Yucatan Spanish overall; and 2) specifically examining the SPE patterns in both Maya-Spanish bilingual and Spanish monolingual speakers. As a contact situation between Spanish and a pro-drop indigenous language in Latin America, Yucatan Spanish presents a unique opportunity for studying the possible role of bilingualism and language contact on SPE. It will be shown that Yucatan Spanish overall coincides with SPE patterns reported for the rest of Mexico, but that bilingual (Maya-Spanish) speakers utilize significantly higher rates of overt pro, and their patterns of usage indicate distinct underlying semantic constraints with respect to coreference.

SPE is one of the most studied morpho-syntactic features in Spanish, and has been examined in a wide variety of dialects, both monolingual and in contact varieties (Abreu 2012; Barnes 2010; Bayley & Pease-Álvarez 1996; Cameron 1992, 1993; Carvalho & Child 2011; de Prada 2009; Erker & Guy 2012; Flores-Ferrán 2004, 2007; Orozco & Guy 2008; Otheguy & Zentella 2012; Otheguy, Zentella & Livert 2007; Shin & Otheguy 2009; Silva-Corvalán 1994; Torres Cacoullós & Travis 2010, 2011; Travis 2007, among others). Specifically, the use of overt pronouns, both in overall rate and in underlying grammatical constraints, has been shown to vary across dialects of Spanish, with ‘highland’ dialects generally showing lower rates of overt subject pronouns than some ‘lowland’ (particularly Caribbean) varieties (Otheguy & Zentella 2012; Otheguy, Zentella & Livert 2007; Orozco & Guy 2008, among others).

Language-internal constraints are the major factor in subject pronoun expression, and most studies of monolingual populations have not found a consistent role for social factors (Silva-Corvalán 2001). Some studies of bilingual speech, however, have reported an effect for several social factors, such as level of bilingualism, time in the bilingual environment, and gender (Otheguy, Zentella & Livert 2007; Otheguy & Zentella 2012; Abreu 2012; Shin 2013, among others). In particular, many studies report an increased rate of overt pro and/or a different ranking of grammatical constraints when Spanish is in contact with a non pro-drop language, such as English, presumably due to crosslinguistic influence (Otheguy & Zentella 2012, Otheguy, Zentella & Livert 2007, among others). In contrast, other researchers argue that varieties of Spanish in contact with other languages do not differ from monolingual varieties in terms of SPE patterns (Flores-Ferrán 2004; Travis 2007; Torres Cacoullós & Travis 2010, 2011).

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Even among those researchers who do find that bilingualism results in a change in SPE, there is debate regarding the reasons for that change. On the one hand, several scholars have interpreted the increase in overt pronoun rates and/or differences in underlying constraints as (indirect) transfer from the contact language to Spanish (Silva-Corvalán 1994; Otheguy & Zentella 2012; Shin & Otheguy 2009, 2013; Shin 2013; among others). Other scholars, however, have argued that increased pronoun rates and changes in underlying grammar are evidence of simplificatory processes that are triggered by bilingualism itself, whereby bilingual speakers lessen the cognitive load via the simplification of grammatical or discourse constraints (see Sorace 2004, 2005). Other studies distinguish simplification from convergence, a process through which the two languages in contact become more similar (de Prada 2009: 4).

The study of contact between two null subject languages, where presumably transfer of the pro-drop setting from one language to another is not a factor, can help to shed light on the processes at work in bilingual SPE patterns. In particular, in situations where two null subject languages are in contact, explanations based on simplification or convergence make different predictions (de Prada 2009). Specifically, a simplification explanation predicts an increase in SPE rates and/or a weakening of pragmatic constraints on SPE, while convergence predicts rates and patterns of usage that fall somewhere in between the two contact languages (de Prada 2009: 55). Some studies on SPE among bilinguals of two null subject languages, such as Spanish in contact with Greek (Margaza & Bel 2006) or Italian (Bini 1993), have found an increased use of overt pronouns suggestive of simplification. Other studies, consistent with convergence, have not reported an increase in pronoun rates, but have found differences in constraint rankings between monolinguals and bilinguals in areas where the two source languages differ (de Prada 2009 for Spanish-Catalan bilinguals). Regardless of the explanation (simplification or convergence), the underlying syntax of Spanish, which already allows both null and overt subject pronouns, is not altered. Instead, bilingual speakers may show a weakening or differences in hierarchy of the pragmatic constraints on SPE, in particular sensitivity to coreference (Silva-Corvalán 1994; Bayley & Pease-Álvarez 1996; Otheguy & Zentella 2012; Shin & Otheguy 2009; Shin 2013). The present study, which quantitatively studies SPE in two null subject languages, can contribute to the discussion on the role of bilingualism in SPE.

2. Pro-drop in Yucatan Spanish and Maya

Despite considerable work on SPE in general, very little research has focused specifically on the contact situation in Yucatan. Solomon (1999) presents results from 12 young speakers from Valladolid, Yucatan, who displayed a rate of 19% overt pro, not substantially different from rates in other mainland varieties (see Otheguy et al. 2007; Otheguy & Zentella 2012; Table 3 below for a cross-dialectal comparison). Significant factors conditioning the use of overt pro in Valladolid were ambiguous verb forms; singular verbs; switch reference; lower education; and female gender (p. 250). Solomon also found the type of narrative to be an important predictor, with conflict/contrast narratives promoting increased use of explicit pronouns (p. 234). Solomon (1999) did not include language background as a variable, but she did report the results of an earlier study (Solomon 1996), in which bilingualism was not a significant factor with respect to SPE, although she notes that constraint rankings were “not investigated systematically” (p. 225) and were based on a small number of subjects and tokens. Following recent methods in the study of SPE (e.g., Tagliamonte 2012; Torres Cacoullos & Travis 2010), the present investigation will present a more detailed examination of bilingual constraints and patterns of underlying grammar.

Yucatec Maya (along with other Mayan languages) is a pro-drop language in which independent personal pronouns optionally appear in emphatic/contrastive contexts, such as topic or focus (Solomon 1999; Gutierrez Bravo 2011; Skopeteas & Verhoeven 2012). In addition, Mayan languages also display two sets of person-agreement markers, traditionally referred to as Set A and Set B (Bolles & Bolles 1996; Norcliffe 2009a, b; Skopeteas & Verhoeven 2012). As is common in ergative languages, Maya distinguishes between transitive subjects (marked with Set A) and intransitive subjects and direct objects (marked with Set B) (Norcliffe 2009a, b). Set A markers are preverbal clitics. Before a vowel initial verb, a glide is epenthesized (noted in parentheses in Table 1). Set B markers are verbal suffixes (Norcliffe 2009a :13). The agreement markers are obligatory in most cases, except in some instances of agent focus (Skopeteas & Verhoeven 2012; see also Andrade 1955), while a co-referent NP may optionally occur.

Dependent Agreement Markers					Independent Pronouns	
Set A		Set B				
	Singular	Plural	Singular	Plural	Singular	Plural
1st person	in(w)	k(...-o'n)	-en	-o'n	téen	to'n
2nd person	a(w)	a(w)...-e'x	-ech	-e'x	t'eech	te'x
3rd person	u(y)/y	u(y)...-o'b	ø/-ih	-o'b	leti'	leti'o'b

Table 1. Dependent Agreement Markers and Independent Personal Pronouns in Maya. Adapted from Norcliffe (2009a: 13, 71)

That the independent personal pronouns are optional, while the agreement markers (marked as erg) are (generally) obligatory, can be seen in the following example adapted from Solomon (1999: 225).

Overt *Ts'o'ok u* *k'uchul* *leti'*
 perf erg3 arrive she

Null *Ts'o'ok u* *k'uchul* *ø*
 perf erg3 arrive

“(She) has arrived”.

The existence of optional, independent tonic pronouns to mark emphasis, topic, or focus has led most scholars to classify Maya as pro-drop.² In fact, Maya displays very low rates of overt personal pronouns (less than 1% in Solomon 1999: 225, although with a very small pilot sample of 105 tokens). This number, however, is in line with studies of other Mayan languages (Dubois 1987, Quizar 1994). Thus, any increase in SPE rates among bilingual speakers in Yucatan is not likely to be due to direct transfer from Maya to Spanish (see discussion in section 3 below).

Based on previous research, the principal research questions for the study are as follows:

- 1) What are the overall patterns of SPE in Yucatan Spanish (both the rate of explicit pro and the grammar underlying its use)?

² Norcliffe (2009a, b) argues that the obligatory Set A agreement markers can function as resumptive pronouns, which could argue against a traditional pro-drop analysis in certain contexts. Either way, the importance for the present discussion lies in the fact that overt, tonic pronouns function in much the same way in both Maya and Spanish – to indicate contrast or emphasis.

- 2) Are there differences in SPE patterns between Spanish monolinguals and Maya-Spanish bilinguals? If so, how do differences pattern vis-à-vis previous studies on SPE in contact?

4. Methodology

4.1 Coding and the envelope of variation

The first 100 tokens per speaker that were included within the envelope of variation were extracted from the corpus and coded for analysis, for a total of 1985 tokens³. The envelope of variation included all finite verbs that *could* appear with an overt subject pronoun, whether or not a subject pronoun was actually present. Verbs in contexts where a subject pronoun would not be possible were excluded from analysis (see Otheguy & Zentella 2012 for details). Since the primary goal of this chapter is to analyze possible differences in SPE among monolingual and bilingual speakers of Yucatan Spanish, no attempt was made to address every possible factor reported in previous studies. Instead, the most common and/or important variables from previous studies were chosen. These variables include five language internal/discourse factors (Person/number of the verb; Tense, Mood and Aspect of the verb (TMA); Reflexivity; Verb Class; and Coreference); and three language external (social) factors (Language group, Age, and Gender). Factors were generally coded following Otheguy & Zentella (2012), with some modifications as noted below.

Language internal/discourse factors

1. Person/number of the verb: Studies have consistently shown that person and number, as well as definiteness (for 2sg forms), are significant factors in SPE (Abreu 2012; de Prada 2009; Bayley & Pease-Álvarez 1997; Cameron 1993; Otheguy & Zentella 2012, among many others). In general, singular forms favor pronoun expression, while plural forms disfavor overt pronouns. Dialects differ with respect to definiteness in 2s forms. For example, Cameron (1993) found that while 2s-indefinite favors overt pronouns in Puerto Rico, in Madrid the same form prompts a null pronoun. Following these previous studies, verb tokens were coded for person (1st, 2nd, 3rd), number (singular, plural), and definiteness (definite, indefinite) (Otheguy & Zentella 2012: 252-253). Preliminary analyses showed low token counts of *usted/ustedes* forms, causing these forms to behave erratically in the Rbrul runs. Therefore, *usted/ustedes* forms were excluded from the final analysis. Finally, the distinction between definite and indefinite forms was only coded for 2sg forms⁴ (Otheguy & Zentella 2010:255).
2. TMA: Some previous studies have argued for a functional effect for TMA, whereby increased ambiguity in verbal conjugations is compensated for by increased pronoun rates (see Hochberg 1986), but more often the result is mixed (Orozco & Guy 2008). Verbs were initially coded as one of ten TMA possibilities: present indicative, preterit indicative, imperfect indicative, periphrastic future, future indicative, conditional, present subjunctive, past subjunctive, commands, and perfect forms. In preliminary analyses, low token counts for many of the TMA designations, as well as similar patterning among some TMA classes, led to the final analysis collapsing these categories into *more distinctive* vs. *less distinctive*, based on shared identity between 1sg and 3sg forms. Thus verbs in the imperfect, conditional, present subjunctive and past subjunctive were coded

³ One speaker, 226, only produced 85 tokens of possible SPE in his interview, due to the topics of discussion. A majority of his finite verbs were impersonal *se* constructions, and therefore excluded from study.

⁴ Initial coding revealed that indefinite 3pl verbs were categorically realized with a null pronoun in the present data. These verbs were therefore excluded from the analysis (cf. Holmquist 2012, among others).

as *less distinctive*; all other verbs were coded as *more distinctive* (see Orozco & Guy 2008).

3. Reflexivity: Previous studies have found reflexivity to influence SPE, with reflexive verbs co-occurring less frequently with overt pronouns (Abreu 2012; Carvalho & Child 2011; Otheguy & Zentella 2012). This effect is presumably due to the extra referential information encoded by the reflexive pronoun that makes disambiguation by an overt pronoun less necessary. Verbs were coded as *reflexive* or *non-reflexive*. As in Otheguy & Zentella (2012: 253-254), both semantic reflexives (*me baño*) and structural (non-semantic) reflexives (*me voy*) were coded as *reflexive*.
4. Verb class: Following the simplified classification in Erker & Guy (2012: 535), verbs were coded as *stative*, expressing non-dynamic states and including verbs such as *ser*, *estar*, and *tener*; *mental* verbs, which includes both verbs of mental activity (*pensar*, *entender* and *aprender*) as well as estimative verbs (*creer*, *considerar*); or *external activity* verbs, which includes all verbs that do not fit in the other categories (*estudiar*, *ir*, *salir*, *comprar*). Previous studies have generally found that *mental* verbs favor more overt pro than *external activity* verbs, and some studies have also found a significant effect for *stative* verbs (Orozco & Guy 2008). Based on initial analyses that showed no significant differences between mental and stative verbs, these categories were combined.
5. Coreference: Previous research has found a strong effect for coreference, with overt pronouns being favored in cases of a switch in reference from the previous verb. Following a simplification of the categories in Otheguy & Zentella (2012: 259), tokens were coded as *No Switch* when the target verb had the same referent as the trigger verb, as in “...no *me voy*. *Me quedo aquí*...” “...I don’t go. I stay here...” (231F). In the initial analyses, two levels of switch reference were distinguished: *Complete Switch* when the referent of the target verb was different from that of either the subject or object of the preceding verb, as in “...*me di cuenta de que no solamente no ha hecho casi nada*...” “I realized that not only has he done almost nothing...” (232M); and *Coreferent with Object (CoObject)* when the subject of the target verb was the same as the object of the trigger verb (direct object, indirect object, or object of a preposition), as in “...ayer *les dijo a los muchachos que ellos comían ‘mac’ [vorazmente; con las manos]*...” “...yesterday he told the boys that they were eating ‘mac’ (voraciously; with their hands)...” (225F). In the overall analysis however, the difference between *Complete Switch* and *CoObject* was not significant, and therefore was combined as *Switch* for the analysis. There were important differences, however, when the language groups were run separately, as seen in Table 6 below. Finally, verbs were coded as *First Token* when no previous referent could be identified.

External (social) factors

1. Language group: Participants were coded as either monolingual Spanish-speakers or bilingual Maya-Spanish speakers. Care was taken to select only speakers that could reasonably be considered fluent in Maya, based on self-reporting, family background and the language(s) spoken by their parents.
2. Age: Age has occasionally been shown to have an effect on SPE (Orozco & Guy 2008). In the present study, speaker age was coded and run as a continuous variable.
3. Gender: As speaker gender has been shown to affect SPE in some varieties (Bayley & Pease-Alvarez 1997; Carvalho & Child 2011; Otheguy & Zentella 2012; Shin 2013), this factor was also coded as an independent variable.

4.2 Speakers

Data for the present study come from a corpus of sociolinguistic interviews of Yucatan Spanish, collected by the author. From that corpus, 20 speakers that best represented a balance between monolingual Spanish-speakers and *fluent* bilingual Maya-speakers were chosen for this initial analysis, with 10 fluent Maya-speakers and 10 monolingual Spanish-speakers⁵. The subject pool overall is also balanced for gender, although within language groups perfect balance was not achievable, given the primary concern in the present study with language background. For the same reason, speaker age groups are not well differentiated, and age ranges from 19-76, with a mean age of 47. Speaker details are given in Table 2⁶.

Maya-Spanish Bilinguals				Spanish Monolinguals			
Speaker	Age	Gender	Occupation	Speaker	Age	Gender	Occupation
231	24	Female	Domestic	221	22	Female	Student
215	24	Female	Domestic	233	37	Female	Administration
222	57	Female	Domestic	227	49	Female	Lawyer
213	65	Female	Housewife	228	53	Female	Housewife
234	19	Male	Domestic	235	69	Female	Housewife
106	40	Male	Maintenance	225	72	Female	Housewife
226	44	Male	Anthropologist	230	25	Male	Business
211	50	Male	Maintenance	219	42	Male	Lawyer
210	54	Male	Construction	232	67	Male	Retired business
220	65	Male	Maintenance	224	76	Male	Business

Table 2. Speaker demographic information.

4.3 Data Analysis

The data were analyzed by means of a mixed effects logistic regression with Speaker as a random factor, fitted to the data with Rbrul (Johnson 2012). Rbrul is a front end for R (R Core Team 2013) that provides Varbrul-type analyses while addressing some of the shortcomings of that software. Specifically, Rbrul allows for continuous variables (as in the factor *age* here) and mixed-effects models, with both fixed factors and random factors. For the statistical analysis, the binary dependent variable was *presence or absence* of an overt subject pronoun. Independent variables were the linguistic and social factors outlined in section 4.1 above. As indicated, Speaker was included as a random factor in the model. A mixed-effects model with Speaker as a random factor “can still capture external effects, but only when they are strong enough to rise above the inter-speaker variation” (Johnson 2009: 365). Especially with a smaller subject pool, the mixed-effects analysis provides extra confidence that the results are not due to one or two extreme outliers skewing the data (Drager & Hay 2012)⁷.

5. Results

After recoding to remove invariant cases, 1940 tokens were left for the analysis. In the present study, an overt subject pronoun was expressed in 19.7% (382/1944) of all possible cases.

⁵ Based on self-identification and family history; most of these speakers also show second language features in their Spanish, such as the lack of gender agreement, suggesting that Maya was their first language (see Michnowicz 2012). Speakers identified as passive Maya-speakers were excluded from this study.

⁶ The two anonymous reviewers point out that the inclusion of one Maya speaker with higher education (speaker 226) could have an effect on the results. This speaker produced an overt pronoun rate of 22.4%, very close to the overall average for Maya-speakers in the study (23.9% - see table 11). In this case, education does not seem to have had a large effect on SPE for this speaker.

⁷ In the present data, a fixed effects analysis produced the same results, but with a smaller p-value for *Language Group*.

Of those explicit pronouns, 88% (337/382) appear in preverbal position, with only 12% (45/382) occurring post-verbally. Given the overwhelming preference for preverbal pronouns in the present data, the rest of the analysis will focus only on “overt” vs. “null”, without taking into account the position of the pronoun with respect to the verb.

The explicit pronoun rate of 19.7% places Yucatan Spanish firmly in-line with other mainland varieties, with a rate virtually identical to that of Mexicans in other studies (both in Mexico City and New York), Spaniards in Madrid, as well as that reported in Solomon (1999) for Yucatan Spanish. Despite the presence of substantial phonetic/phonological differences in Yucatan Spanish (Lope Blanch 1988; Michnowicz in press), it is interesting to note that overall Yucatan patterns with the rest of the country with respect to SPE.

Country/Region	% Overt pronouns
San Juan, Puerto Rico (Cameron 1993)	45%
Dominicans in NYC (Otheguy, Zentella & Livert 2007)	41%
Barranquilla, Colombia (Orozco & Guy 2008)	36%
Chipilo, Mexico (Veneto-Span bilinguals) (Barnes 2010)	26%
Colombians in NYC (Otheguy, Zentella & Livert 2007)	24%
Mexico City (Lastra & Butragüeno, this volume)	
Madrid (Cameron 1993)	21%
Yucatan overall (present study)	20%
Yucatan (Solomon 1999)	19%
Mexicans in NYC (Otheguy, Zentella & Livert 2007)	19%

Table 3. % overt pronouns across varieties

Comparing rates of pronoun expression can be useful, but SPE rate is also affected by a variety of factors that make direct comparisons across studies difficult. Therefore, numerous researchers have indicated the usefulness of comparing the relative importance of each variable across varieties – i.e. the constraint hierarchy, which represents the underlying grammar (see Tagliamonte 2012; Poplack & Tagliamonte 2001; Silva-Corvalán 2001; de Prada 2009; Torres Cacoullos & Travis 2010). In Table 4 are presented the significant factors for various studies. For ease of comparison, I have only included factors common to all studies⁸.

Mainland speakers in NYC (Otheguy, Zentella & Livert 2007)	Barranquilla, Colombia (Orozco & Guy 2008)	San Juan, Puerto Rico (Claes 2011)	Yucatan speakers (present study)
1. Person/number	1. Person/number	1. Person/number	1. Person/number
2. Coreference	2. TMA	2. TMA	2. TMA
3. TMA	3. Coreference	3. Coreference	3. Coreference
4. Reflexivity			4. Reflexivity

⁸ Note that different studies employ different methods to establish constraint hierarchies. Otheguy et al. (2007: 789) employed Wald coefficients, Orozco & Guy (2008) used the order of selection in Varbrul, and Claes (2011) and the present study both used factor weight range. The comparability of these methods across studies clearly warrants further investigation, but what is striking is the overall similarity in hierarchy regardless of method. Thanks to Naomi Shin for her advice regarding methods and comparisons.

Table 4. A comparison of significant constraint hierarchies across varieties

The order of importance for linguistic factors has been found to be largely consistent across studies and dialects, as seen in Table 4. All of the studies shown found the person and number of the verb to be the primary factor, followed by either coreference or TMA. Reflexivity ranks low in the two studies that included this variable. This consistency across studies and regions has been argued to indicate that, while surface realizations of pronoun rates may differ, the grammar underlying SPE in each of these varieties is essentially the same (Cameron 1993; Travis 2007; Torres Cacoulios & Travis 2010).

Following is the best complete multivariate mixed-effects model as produced by Rbrul. The analysis found a total of five variables that significantly constrain SPE in Yucatan Spanish: person/number, TMA, coreference, reflexivity, and language background. For purposes of space and comparison across studies, only factor weights (rather than logodds, also produced by the software) are reported here. The factor weights reflect the relative favoring/disfavoring of overt pro for a given factor, with weights over .5 generally favoring overt pro, weights below .5 generally disfavoring, and weights around .5 being relatively neutral. Taking the internal linguistic variables in order of importance, we will now examine each variable separately.

Factor	Factor Weight	Tokens	% Overt	p-value	Range (fw)
Person/Number				2.87e-30 ⁹	54
1s	0.74	872	28%		
2s - definite	0.63	80	21%		
3s	0.62	281	21%		
3p	0.50	213	15%		
2s - indefinite	0.33	136	8%		
1p	0.20	358	5%		
TMA				6.01e-13	30
Not distinctive	0.65	239	36%		
Distinctive	0.35	1701	17%		
Coreference				3.72e-08	19
Switch	0.59	948	23%		
First token	0.51	33	18%		
No switch	0.40	959	17%		
Language				0.00689	16
Maya-Spanish	0.58	947	23.5%		
Spanish only	0.42	993	16%		
Reflexivity				0.0188	12
Non-reflexive	0.56	1709	20.5%		
Reflexive	0.44	231	14%		
Gender				0.527	4
Male	[ns]	971	22%		
Female		969	18%		
Verb class				0.515	2
Mental/Stative	[ns]	729	22%		
External		1211	18%		
Age				0.727	
Continuous +1	[ns]				
Speaker (random)	Std. Dev. 0.374				

Deviance: 1675.9745 df: 15 intercept: -1.568 grand mean: 0.197

Table 5. Results of Rbrul mixed-effects one-level multivariate analysis; Factors favoring overt pro; All speakers; Speaker as random factor

Internal Factors

Person/Number

⁹ These p-values are presented in scientific E notation. Thus 2.87e-30 = 0.0000000000000000000000000000287.

The same pattern is evident here as in previous studies; we see that singular verbs co-occur with expressed pronouns 19.5% of the time, versus only 10% average for plural verbs. First person plural verbs were accompanied by an expressed pronoun the least (4.7%), while pronouns accompanying 1st person singular occurred the most (28.2%). Finally, 2s-indefinite (8% overt) contrasts with 2s-definite (21% overt). Solomon (1999:250) also found that indefinite-tú disfavored overt pro in Valladolid, Yucatan (factor weight = 0.36).

TMA

Lending general support to functional explanations of SPE, verb tenses/moods that can be considered “less distinctive” were produced with more overt pronouns (36% average), compared to the “more distinctive” tenses/moods, which averaged 17% overt pro. A more detailed analysis of the intersection of TMA and Person/Number is required to comment further on questions of functional compensation in Yucatan Spanish.

Coreference

Consistent with previous studies (Otheguy & Zentella 2012, many others), in the present data a switch in subject favored higher rates of overt SPE (22.8%), while continuity of reference (No switch) produced lower rates of overt pro (16.7%). First tokens also showed similar low rates of overt SPE (18.2%).

Reflexivity

As in previous studies, reflexive verbs significantly disfavor overt pro, 14% vs. 20.5% overt for non-reflexives.

Verb class

While not a significant factor in the present study, results are consistent with other studies, with speakers using higher rates of overt pro with stative and mental verbs (22.1%), compared with lower rates for external action verbs (18.2%).

Social factors

Gender

Men produced higher rates of SPE than women, although this factor was not significant in the multivariate mixed model. This result conflicts with the findings of Shin (2013) and Otheguy & Zentella (2012), who found that women were leading the increase in overt pro in NYC, as well as Solomon (1999), who found that women used more overt pro in Valladolid, Yucatan. Possible explanations for this discrepancy will be addressed in the discussion.

Age

Regarding speaker age, no real pattern of overt pro is discernible, and age was not a significant variable in the analysis¹⁰. Individual speaker pronoun rates range from a low of 8% (22 year old, female, Spanish monolingual) to a high of 37% (19 year old, male, Maya-Spanish bilingual).

¹⁰ Speaker age was also not found to be significant in additional analyses with speakers divided into distinct age groups (18-39; 40-60; 60+).

Language Group

Language group does play a significant role in determining SPE, with Maya-Spanish bilinguals producing significantly more overt pro than Spanish monolinguals. It is important to note, however, that both language groups produced overt pronoun rates that do not differ greatly from previous reports on Mexican Spanish (Otheguy et al. 2007; Otheguy & Zentella 2012). Instead, what we see here is that within the norm of pan-Mexican Spanish, Maya-speakers produced overt pro at the higher end of the range, while monolingual Spanish-speakers produced overt pro at the lower end. Interestingly, the Maya-speakers produced overt pro at a rate approaching that of the Veneto bilinguals in central Mexico, another situation of contact between two pro-drop languages (Barnes 2010; see Table 5).

Given that language group was a significant factor in the overall mixed model detailed above, separate analyses were conducted for each language group, including only the factors found to be significant in the overall model. The results of these analyses are presented in Table 6. As noted previously, initial analyses distinguishing *Complete Switch* and *CoObj* did find significant differences based on language group. Therefore, these two levels are kept separate in the individual language analyses. First, with the exception of Reflexivity (only significant for Maya-speakers), each language group shares the same set and order of significant factors, with Person/Number being the strongest factors in constraining SPE for both groups. There are, however, differences in the relative importance of other factors across language groups. For Spanish-speakers, TMA and Coreference are approximately equal with respect to their influence on SPE (range of 32 and 31, respectively). On the other hand, for Maya speakers TMA is substantially more important than Coreference (range of 28 vs. 17, respectively). Thus Maya-speakers are not attributing the same importance to Coreference as do Spanish-speakers, suggesting that these bilinguals and monolinguals may not share all of the pragmatic constraints on SPE. Additionally, *Reflexivity* was not a significant factor for the Spanish group, while the Maya group did assign it lesser importance compared to other factors (range = 14).

Spanish monolinguals					Maya-Spanish bilinguals				
factor	fw	N	%	R	factor	fw	N	%	R
Person/Number				57	Person/Number				53
2s - definite	0.74	37	32%		1s	0.77	414	35.5%	
1s	0.71	442	21%		3s	0.62	143	22%	
3s	0.63	138	20%		3p	0.56	129	18%	
3p	0.44	81	10%		2s - definite	0.49	30	13%	
2s - indefinite	0.35	77	8%		2s - indefinite	0.32	51	10%	
1p	0.17	180	3%		1p	0.24	172	6%	
TMA				32	TMA				28
Not Distinctive	0.66	130	31%		Notdistinctive	0.64	107	41%	
Distinctive	0.34	825	14%		Distinctive	0.36	832	21%	
Coreference				31	Coreference				17
Complete Switch	0.69	462	21%		CoObject	0.57	65	32%	
No Switch	0.42	441	11%		Complete Switch	0.55	359	25%	
CoObject	0.38	52	10%		No Switch	0.40	515	21%	
Reflexivity (NS)				10	Reflexivity				14
Non Reflexive	[ns]	847	17%		Non Reflexive	0.57	823	25%	
Reflexive	[ns]	108	12%		Reflexive	0.43	116	15.5%	
Speaker (random)	Std. Dev. 0.326				Speaker (random)	Std. Dev. 0.372			
Deviance: 745.814 df: 11 intercept: -1.825 grand mean: 0.163					Deviance: 905.959 df: 11 intercept: -1.438 grand mean: 0.236				

Table 6. Results of separate Rbrul runs by language group; Speaker as random factor. All factors significant at $p < 0.05$.

An examination of the constraint ranking, that is the order of factors within a factor group (see Tagliamonte 2012), reveals additional differences. First, one of the areas shown to vary across varieties of Spanish is the treatment of 2nd person singular definite vs. indefinite pronouns (Cameron 1993). Here, both groups disfavor overt pro with 2s-indefinite (8% and 10%, respectively), but differ with respect to 2s-definite. For Spanish-speakers, 2s-definite favored more overt pro (32%), while for Maya-speakers, 2s-definite disfavored explicit pronouns (13%), behaving very similarly to 2s-indefinite. Thus, definiteness in 2s address is an important factor for Spanish monolinguals, but not for the bilingual group, representing a possible simplification in the bilingual grammar¹¹.

The other major difference between language groups is found in the constraint ranking for Coreference. For Spanish-speakers, the order of constraints is CompleteSwitch > NoSwitch > CoObject¹². NoSwitch and CoObject, both cases of continuity, behave similarly in disfavoring overt pro. For Maya-speakers, however, the order is CoObject > CompleteSwitch > NoSwitch. The two factors that favor overt pro for bilinguals, CoObject and CompleteSwitch, differ in their discourse continuity, and the Maya group employs infelicitous overt pronouns 32% of the time when the subject is co-referent with an immediately preceding object, as in “...*cuando estás con la mamá o un papá así, ellos hablan en maya* (speaker 234). Thus, while it appears that the bilingual Maya-speakers have fully acquired the fundamental distinction in Spanish between CompleteSwitch and NoSwitch, they fail to apply the pragmatic rules disfavoring overt pro in the presence of a coreferential object. In fact, an examination of the frequency for CoObject suggests that a large part of the bilinguals’ overuse of overt pro stems from the failure to follow monolingual pragmatic constraints in this context – although they also produced almost twice as many overt pronouns in cases of NoSwitch as did monolinguals. This finding supports research by Shin & Otheguy (2009) and Shin (2013) that reports that shifting bilingual speakers in New York can lose their sensitivity to pragmatic constraints on coreference. This possibility will be further addressed in the discussion.

DISCUSSION

First, as a whole, Yucatan Spanish does not differ greatly from other mainland varieties, including the rest of Mexico, either with regard to rates or underlying constraints. The significant constraints are primarily language internal, and include person/number and TMA of the verb, coreference and reflexivity, with the patterns for each factor largely agreeing with the findings of previous work.

Regarding social factors, language group was the only significant constraint, with Maya-speakers producing higher rates of overt pro than monolingual Spanish-speakers (23.5% vs. 16%). Thus the present results lend weight to studies that have found an effect for bilingualism on SPE (Otheguy et al. 2007; Otheguy & Zentella 2012; Shin & Otheguy 2009; among others). In particular, following the distinction between simplification and convergence outlined in de Prada (2009), the significant increase in overt pro for bilinguals can be interpreted as supporting

¹¹ Detailed study of 2nd person definiteness in Maya is required to distinguish between simplification and transfer from Maya. To my knowledge, this research does not yet exist.

¹² Due to low token counts for *First Token* once the data was split for language group, this level was removed from these analyses.

a simplification strategy on the part of bilinguals (Sorace 2004, 2005), rather than a transfer per se from one language to another or convergence between the two languages¹³.

Two findings in the present data deserve further comment. First are the differences in sensitivity to coreference between the two language groups. As discussed above, coreference as a whole appears to be more active for monolinguals than for bilinguals. A comparison of ranges indicates that coreference is only a little more than half as strong of a constraint for the Maya bilinguals (range = 17 vs. 31 for Spanish monolinguals). So, while coreference is a significant factor for both groups, it is attributed much greater importance by the monolingual group. Likewise, within coreference, monolingual speakers essentially treat any coreference as the same, regardless of whether the target is coreferent with a preceding subject (NoSwitch) or a preceding object (CoObj) - both conditions significantly disfavor overt pro. Bilingual speakers, on the other hand, treat CoObj as if it were a complete switch.

In failing to recognize the coreference provided by a preceding object, the Maya bilingual speakers demonstrate a decreased sensitivity to coreference, a result also found for Spanish-English bilinguals in NYC (Shin & Otheguy 2009; Shin 2013). Shin & Otheguy (2009: 128-130), while not distinguishing between complete and partial switches, found that NY born speakers produced significantly higher pronoun rates in some situations of continuity than did recent immigrants. Shin & Otheguy (2009) refer to this as the loss of sensitivity to coreference on the part of bilingual speakers in NYC, where the target of language shift is English, a language that does not have the same syntactic or pragmatic constraints on SPE as Spanish. In the case of Yucatan, where the target of language shift is Spanish, it seems more appropriate to talk about the failure to completely acquire the same sensitivity to coreference as monolinguals. Shin (2006; 2012) found that sensitivity to coreference takes a long time to master in L1 child acquisition of Spanish. It seems reasonable, therefore, to propose that the fluent Maya speakers in the present study - who likely acquired Spanish (at least early on) from other L1 speakers of Maya - have not acquired the same pragmatic constraints regarding coreference as monolingual speakers. A similar argument has been made for the persistence of contact-induced traits in Yucatan Spanish phonology (Michnowicz in press, 2012, 2011, 2009; Michnowicz & Carpenter 2013). Here, the pattern for coreference among bilinguals could be taken as evidence of simplification, both in the sense of Sorace (2005), as well as in the sense of tendencies toward overgeneralization common in (Spanish) second language acquisition (see Lubbers Quesada 2014 for an overview), with overt pronouns appearing more often when the subject is not coreferent specifically with a preceding subject.

Likewise, Shin (2013) found that women are leading the change toward increased pronoun use in NYC, and attributes this finding to both social network ties and the general trend for women to show increased sensitivity to language change. In Yucatan, while gender was not a significant predictor, the trend is reversed. Men produced more overt pro than women, a result that also differs from Solomon (1999). This difference may be due to the number of speakers/tokens analyzed (see section 2 above), or possibly to differences between Valladolid and western Yucatan. Likewise, the result that men produce more overt pro, which at first blush seems to contradict Shin (2013), is likely due to the different contexts in which bilinguals in NYC and in Yucatan exist. In NYC, the trend is toward more pronoun use, in keeping with the

¹³ Although following Norcliffe's (2009a,b) argument that the Set A markers are indeed pronouns, identifying the process at work becomes less clear, and could in that case be considered (partial) transfer and/or convergence. Future study on the Maya pronominal system as well as the acquisition of Spanish by Maya speakers is needed. For now, most of the evidence points towards simplification resulting in a weakening of discourse-pragmatic constraints.

patterns of the language to which speakers are shifting (target = English). In Yucatan, on the other hand, although speakers are shifting from one pro-drop language to another, the target is a monolingual variety of Spanish, and it is the pragmatic constraints of that language that must be learned by shifting bilinguals. Thus although the specific position of women with respect to overt pro differs in the two communities, the trend of women leading the change in SPE patterns is the same. In other words, it is the *target* that differs (more pronouns in NYC; less pronouns in the monolingual variety in Yucatan), not the trend for women to lead in the move towards that target.

Summary and conclusions

The present study investigated SPE among monolingual and bilingual speakers in Yucatan, Mexico. Of the factors analyzed, a total of five were found to significantly constrain SPE: person/number of the verb, TMA, reflexivity, coreference and language group. For the linguistic/discourse factors, results support the findings of previous studies. Monolingual and bilingual speakers were found to differ significantly with respect to overall pronoun rate, and also regarding the importance attributed to coreference. Maya-Spanish bilinguals gave less importance to coreference and definiteness overall, and differed from monolinguals specifically in how they treated coreference with a preceding object (CoObj) and in the patterns of definiteness. It was proposed that bilinguals have failed to acquire monolingual pragmatic/semantic norms regarding coreference and definiteness, and instead have simplified the discourse rules that govern the use of overt pronouns.

The subject pool for this study was relatively small, and although the results for language group were robust with the mixed-effects model employed giving us additional confidence in the results, future studies should incorporate more speakers. In particular, transitional speakers (i.e., passive Maya speakers representing the next phase in the shift to Spanish) should be included, to better understand the ways in which constraints on SPE are acquired in cases of shift to Spanish. Likewise, SPE should be studied in more bilingual contexts in which Spanish (or another null subject language) is the target, as one would expect different patterns for social factors depending on the direction of shift.

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