Adjectives in Spanish/English Code-Switching: Avoidance of Grammatical Gender in Bi/Multilingual Speech

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Abstract

The current study investigates DP-internal adjectives in Spanish/English code-switching (CS). Specifically, we analyze two concomitant phenomena that have been previously investigated; namely, the distributional frequency and placement of adjectives in mixed determiner phrases (DPs). A total of 1680 DPs (477 monolingual Spanish and 1203 Spanish/English DPs), extracted from sociolinguistic interviews with 62 consultants from Northern Belize, were quantitatively examined. This paper is the first of its kind to examine adjectives in the innovative Spanish/English CS variety of Northern Belize, an understudied context where bilingual CS has thrived among younger generations. The distributional and statistical analyses revealed that the avoidance of Spanish attributive adjectives and overt gender

marking is a distinguishing characteristic of mixed DPs but not monolingual Spanish DPs, a finding that supports Otheguy and Lapidus' (2003) adaptive simplification hypothesis. In terms of adjective placement, both the Matrix Language Frame model and the Minimalist approach to CS were able to account for mixed noun-adjective DPs, with the exception of a few cases that could only be predicted by the former model. The present analysis highlights the pivotal role that simplification and convergence play in code-switchers' optimization of linguistic resources in bi/multilingual discourse.

1. Introduction

In the present study, we examine two phenomena that have been previously investigated vis-à-vis adjectives in Spanish/English CS: namely, the frequency of adjectives and their placement in mixed DPs, comprising a Spanish determiner alongside an English-origin noun, and a pre-nominal or post-nominal adjective. We analyze these phenomena in novel data from Northern Belize, an understudied Central American/Caribbean context with a sociolinguistic profile that is singular in nature within the Spanish-speaking world. In Belize, Spanish has been in intense contact with English and Belizean Kriol for at least sixty years (Balam 2014, 2016c). Importantly, although Belize is an officially English-speaking country, it is Spanish that has risen as the majority language in recent decades (Balam 2016c); hence, presenting a language contact scenario that is markedly different from that of the U.S. context.

Since the pioneering works on Spanish/English CS in the U.S. (e.g., Aguirre 1976; Pfaff 1979; Poplack 1980; Timm 1975), adjectives in switched DPs have been of particular interest to scholars not only because of their seeming resistance toward language alternation, but also because their placement presents a conflict site in Spanish/English

discourse. As (1) exemplifies, whereas the position of attributive adjectives in Spanish is generally post-nominal, the opposite is true for English. The question that arises in bilingual speech, therefore, is whether Spanish or English word order is followed in mixed DPs.

Another pertinent question is whether modifiers in mixed noun-adjective DPs are realized in Spanish or English. In other words, is there a marked preference for Spanish or English modifiers, and if so, why does this occur? This is relevant given that whereas Spanish encodes adjectives with grammatical gender, English does not, as (1) shows.

(1) *Una* *casa* *pequeña*
A.SG.FEM house.SG.FEM small.SG.FEM
'A small house'

To date, several attempts have been made to explain if and how noun-adjective switches are constrained. Pfaff (1979, 306), for example, noted that mixing nouns and adjectives within noun phrases is highly restricted, given that these switches must match the surface word order of both the language of the noun and the adjective. According to Pfaff, a switched nominal phrase as in (2) would be ungrammatical given that the postposed Spanish adjective *chiquita* violates the surface word order requirement of the English head noun. Pfaff notes this restriction of structural parallelism holds for cases when the head noun is in English (e.g., *mi único* pleasure 'my only pleasure') and when both adjective and the head noun are in English (e.g., *el* next day 'the next day').

(2) *I went to the house *chiquita*
'I went to the small house.'

(Pfaff 1979)

Importantly, while attributive adjectives in Spanish may be prone to subtle differences in pragmatic interpretation depending on their position (for a semantic analysis of adjective placement in Spanish in relation to contrastive vs. non-contrastive meaning, see Klein-Andreu 1983; for relevant discussion, see Demonte 2008, 71), this is not the case with other adjective types such as determiner adjectives (e.g., ordinal adjectives, indefinite adjectives, etc.), which generally appear in prenominal position in both Spanish and English. As (3) and (4) illustrate, the ordinal adjective *second* and the indefinite adjective *other* typically appear in preposed position.

(3) *La* *segunda* *casa*

The.SG.FEM second.SG.FEM house.SG.FEM

'The second house'

(4) *Los* *otros* *alumnos*

The.PL.MASC other.PL.MASC students.PL.MASC

Given that many studies have shown that the most frequent type of switches in Spanish/English CS precisely involve determiner-noun constructions (e.g., Herring, Deuchar, Parafita Couto and Moro Quintanilla 2010; Pfaff 1979), a relevant empirical question is whether determiner adjectives constitute a more favorable context for DP-internal switches in comparison to attributive adjectives.

Although noun-adjective switches in Spanish/English CS have been investigated via the analysis of speakers' judgments (e.g., Cantone and MacSwan 2009; Sobin 1984; Stadthagen-González, Parafita Couto, Párraga, and Damian 2017), and naturalistic speech production (e.g., Otheguy and Lapidus 2003; Parafita Couto and Gullberg 2017), there is limited quantitative work on this phenomenon (for an overview of descriptive studies that have explored adjectives in Spanish/English CS, see Treffers-Daller 1994, 146). Extant

work primarily examines either distributional frequency (e.g., Otheguy & Lapidus 2003) or adjectival position (e.g., Cantone and MacSwan 2009; Parafita Couto and Gullberg 2017). The current study hopes to shed light on both adjectival frequency and position, as these interrelated phenomena provide further insight into how bi/multilinguals employ their linguistic resources in code-switched discourse.

Scant quantitative research on adjectives in naturalistic speech may relate to the overall low frequency of noun-adjective switches in bilingual corpora (Myers-Scotton 2002, 132; Treffers-Daller 1994). We know that in general noun-adjective switches in Spanish/English CS are infrequently produced (Parafita Couto and Gullberg 2017; Pfaff 1979; Poplack 1980). Notably, Otheguy and Lapidus (2003) underscore that this low frequency of Spanish adjectives alongside English nouns may relate to bilinguals' deliberate attempt to avoid gender marking in CS, an argument that has only been tested with data from New York Spanish/English bilinguals.

Otheguy and Lapidus observe that in an effort to adaptively simplify the Spanish gender assignment system in CS, bilinguals avoid switching in contexts that require overt gender marking (e.g., Spanish adjectives in DP-internal contexts). This is in line with the notion that "[i]n simplificatory changes, cost savings are produced by eliminating, diminishing, and automatizing or reducing to general rule, elements that would otherwise require individual storage" (Otheguy and Lapidus, 2003, 212). In their study on gender assignment in New York Spanish, Otheguy and Lapidus found that 95% (454/477) of their loanwords (i.e., English-origin nouns), extracted from interviews, occurred without adjectives. In Spanish DPs, however, a significantly smaller proportion (i.e., 76%, 379/497) occurred without adjectives. Thus, CS was found to disfavor the incorporation of adjectives, as this is a context where grammatical gender is encoded in Spanish.

In more recent research on noun-adjective switches, a related issue that has been investigated is how to best account for the grammaticality of mixed adjectival constructions (e.g., for Spanish/English CS: Stadthagen-González, Parafita Couto, Párraga, and Damian 2017; for Papiamento/Dutch CS: Pablos, Parafita Couto, Boutonnet, de Jong, Perquin, de Haan, and Schiller in press; for Welsh/English CS: Parafita Couto, Boutonnet, Hoshino, Davies, Deuchar, and Thierry 2017). This has been addressed by comparing the predictions made by two influential models that make different predictions regarding adjective placement; namely, the Matrix Language Frame (MLF) model (Myers-Scotton 1993, 2002) and the Minimalist approach to CS (as proposed by MacSwan 1999; Cantone and MacSwan 2009).

The MLF is a theoretical model that was proposed to account for intra-sentential CS, or switching that occurs within sentential boundaries. Its fundamental assumption is that in classic CS, there is an identifiable Matrix Language (ML) and an Embedded Language (EL). The critical grammatical elements in bilingual constituents, such as system morphemes (e.g., grammatical gender and number markers), come from the ML (Myers-Scotton, 2002; Myers-Scotton and Jake 2013). In contrast, the EL is the language whose sole function is to contribute content morphemes (e.g., nouns, verbs, and adjectives) and/or 'EL islands' (i.e., EL noun phrases that follow EL grammar in otherwise ML discourse, as in *un* big challenge 'a big challenge') to the ML in switched discourse.

The MLF predicts that late outsider system morphemes (e.g., finite verb morphology) and word order in bilingual clauses are determined by the ML (Jake, Myers-Scotton, and Gross 2002; Myers-Scotton 1993, 2002). Thus, in bilingual clauses, noun-adjective order should be consistent with the bound morphology of finite verbs, which determines the ML. The MLF predicts that in cases where the ML is Spanish, post-nominal adjective placement should prevail. In contrast, in

bilingual clauses where English is the ML, pre-nominal adjective placement should be attested.

The Minimalist approach to CS (henceforth MAC), on the other hand, makes a different prediction. Grounded on the Chomskyan (1995) tradition, the MAC asserts that no CS-specific constructs or principles are necessary to account for CS phenomena. MacSwan (2005, 5) describes the MAC as a constraint-free approach in the sense that "Nothing constrains codeswitching apart from the requirements of the mixed grammars." As it relates to noun-adjective switches, Cantone and MacSwan (2009) suggest that it is the language of the adjective that determines DP-internal word order.

Following Cinque (2005), Cantone and MacSwan (2009) assert that a Universal Base underlies adjectives, with adjectives universally preceding the noun. In their view, differences in word order between the Universal Base and the noun-adjective surface word order in some languages such as Spanish and Italian result from strong features and overt movement of the noun to a position above the adjective (for relevant discussion, see Vanden Wyngaerd, 2016). Consonant with previous studies (e.g., Aguirre 1976; Chan 2003; Wentz and McClure 1976), Cantone and MacSwan's analysis suggests that in CS it is the language of the adjective that determines word order in DP-internal contexts.

Some scholars have examined the contrasting predictions of the MLF and the MAC. Parafita Couto, Deuchar and Fusser (2015), for instance, analyzed adjectival constructions in Welsh/English CS. They examined data from the *Siarad* corpus, an elicitation task, and an auditory judgment task. Among other findings, Parafita Couto et al.'s analysis of 137 examples of mixed noun-adjective DPs from the *Siarad* corpus revealed that the MLF model accounted for 94.1% of the corpus data, whereas the MAC had a lower level of accuracy (i.e., 73%). The analysis of 168 mixed adjectival constructions from elicited speech revealed that the MLF predicted 100% of

the data, whereas the MAC predicted only 83% of the data. Overall, their data suggest that the MLF is able to more accurately account for noun-adjective switches than the MAC (but see Vanden Wyngaerd 2016, for Dutch/French intuitional data).

In light of these findings in previous work, we analyzed predictions regarding adjectives in DP-internal contexts by examining naturalistic speech data from Northern Belize bi/multilinguals. The aim of the present analysis was twofold. Firstly, we tested Otheguy and Lapidus' (2003) adaptive simplification hypothesis, which posits that in CS the use of Spanish adjectives is avoided in an effort to promulgate simplification of the Spanish gender system in bilingual speech. Secondly, we analyzed the contrasting predictions made by the MLF and the MAC regarding word order in noun-adjective switches to determine whether one model was able to better account for adjective placement.

This paper is divided as follows. In section 2, the sociolinguistic context under study is described. In section 3, the methodology employed in this investigation is outlined. In section 4, we present results. Lastly, in section 5, we discuss findings in relation to predictions and hypotheses in antecedent work, and we offer concluding remarks.

2. Northern Belize

Northern Belize, where Spanish (the language of the majority) is in intense contact with English (the official language) and Belizean Kriol (the country's lingua franca), offers fertile ground to examine CS phenomena, especially given the positive social conditions that underlie hybrid language practices. Since the 1840's, different degrees of bi/multilingualism have been present in Northern Belize. Today, younger generations of Maya/Mestizos[1] not only identify with bilingual CS, but they generally have positive

attitudes towards this language practice (Balam 2013, 2015, 2016c; Balam and Prada Pérez 2017).

In contrast to the U.S. Hispanophone context, where monoglot purism has been historically privileged, the Northern Belize context is one where bi/multilingualism has been embraced and promoted, not only in the mass media but in institutionalized efforts (e.g., the national language policy) as well (Balam, 2016c). Therefore, Northern Belize allows us to study the dynamic nature of Spanish/English CS in a community not characterized by prevailing, pejorative attitudes towards CS and bi/multilingualism. Bhatia and Ritchie (2016) rightly remind us that the study of CS oftentimes faces methodological problems, especially when it is examined in contexts where this practice is regarded as deviant. Thus, in order to have a better understanding of the structural limits and possibilities of intra-sentential CS, it is of paramount importance that we study this sociocultural phenomenon in contexts where CS is tacitly accepted and embraced (for relevant discussion, see Lakshmanan, Balam, and Bhatia 2016).

In light of the positive social conditions that underlie CS in Northern Belize, there is the possibility of productivity and innovation in noun-adjective switches. We know that it is more likely for dense and innovative CS practices to arise in communities where CS is valued and positively perceived (Muysken 2013, 714). Previous work on Spanish/English CS in Northern Belize (Balam 2015, 2016a) has revealed the use of novel kinds of bilingual light verb constructions (e.g., *No he hecho* learn *asé* cook *nada* 'I haven't learnt how to cook anything'), which have not been documented in other Spanish/English bilingual communities. We could surmise, therefore, that given the radical morphosyntactic patterns in bilingual verb constructions, Northern Belize Spanish/English CS may also exhibit structural innovation in the use of DP-internal adjectives in CS. Alternatively, it may be the case that

adjectives in CS are simply resistant to cross-generational change and/or linguistic innovation, an issue we explore here.

The present investigation is the first of its kind to analyze adjectives in the understudied Spanish/English CS variety spoken in Northern Belize. This paper, therefore, contributes not only to our understanding of CS variation across Spanish/English communities in the Spanish-speaking world, but it enriches our understanding of linguistic outcomes in a context where hybrid language practices have been an accepted norm for generations.

3. Methodology

3.1 Purpose

Endeavoring to provide a more detailed insight into the frequency and placement of adjectives in bilingual DP-internal contexts, we first examined Otheguy and Lapidus' (2003) contention that the use of gender-marked Spanish adjectives is avoided in bilingual speech. Secondly, we analyzed the contrasting predictions made by the MLF and the MAC regarding word order in noun-adjective switches (for further details on predictions, see section 3.2). To this end, we examined a total of 1680 DPs (477 monolingual Spanish DPs and 1203 Spanish/English DPs). Tokens were manually extracted from sociolinguistic interviews with 62 bi/multilinguals (ages 14 to 99) from Orange Walk, Northern Belize. Interviews were conducted by the first author, a native Belizean code-switcher, whose hybrid language practices were essential in the collection of naturalistic speech data that were representative of the Spanish/English CS variety of Northern Belize (for further details on consultants and sociolinguistic interviews, see Balam 2015, 2016b, 2016c).

3.2 Data and Analysis

All sentential contexts with DPs comprising a Spanish determiner, a noun and a modifier were extracted from the 62

interviews and orthographically transcribed for further quantitative analysis. Tokens (n = 1680) were individually coded for mode (monolingual Spanish versus bilingual); age group (1: ages 14 – 17; 2: ages 18 – 20; 3: ages 21 – 40; 4: ages 50 – 99); adjective type (canonical adjective vs. quantifier); gender marking (overt, null, no); and DP type (mixed DP containing an English island or non-canonical word order, mixed DP containing a noun-adjective switch, monolingual Spanish DP). For DP type, the inclusion of 'EL islands' was essential to examine the relative frequency of mixed noun-adjective switches (e.g., *el* gate *grande*) in relation to mixed DP constructions where the adjective was not switched (e.g., *el* big gate 'the big gate'). As grammatical gender was central to our study, monolingual English or Kriol DPs, which lack grammatical gender, were excluded from the analysis.

To test Otheguy and Lapidus' (2003) adaptive simplification hypothesis, gender marking was examined in monolingual Spanish (n = 477) and mixed Spanish/English DPs (n = 1203). Both datasets included DPs with canonical adjectives (e.g., *una mariposa negra* 'a black butterfly', etc.) and other adjective types such as numbers (e.g., *las cuatro esquinas* 'the four corners'), ordinal adjectives (e.g., *la primera piedra* 'the first stone') and indefinite adjectives (e.g., *los otros estudiantes* 'the other students'). To analyze morphological gender marking, we distinguished among adjectives with canonical gender morphemes (e.g., *negra* 'black'), null gender marking (e.g., *buen* 'good'), and the absence of canonical gender marking (e.g., *joven* 'young').

Given that determiner adjectives may be overtly gender-marked, it was important to determine whether Otheguy and Lapidus' (2003) contention also extends to these elements that have a modifying function in DP-internal contexts. Recall that Otheguy and Lapidus (2003) argue that lexical contexts, which could potentially serve as gender carriers, should not be favored in bi/multilingual speech. Thus, both non-canonical

adjectives (e.g., determiner adjectives) and canonical adjectives should be disfavored. Alternatively, it may be that determiner adjectives are favored in CS due to their cross-linguistic congruence in terms of surface word order (Pfaff 1979).

The bilingual dataset included mixed noun-adjective DPs (n = 125), as in (5), where there was a language switch between the nominal and adjectival element(s), and where Spanish and English differed in terms of adjective placement (i.e., pre- or post-nominal preference for Spanish versus pre-nominal preference for English). It also included switches containing determiner adjectives, where Spanish and English generally do not differ in terms of position (n = 1078), where the position of the adjective is pre-nominal for both languages (e.g., *el único* reason 'the only reason'; *los otros* students 'the other students').

(5) *Era un* nest *grandotote dice ella…*

'It was a very big nest she says…'

Following previous work (Herring et al. 2010; Parafita Couto et al. 2015; Parafita Couto and Gullberg 2017), only mixed noun-adjective DPs were taken into consideration for the analysis of predictions from the MLF (Myers-Scotton 1993, 2002) and the MAC (Cantone and MacSwan 2009). Contrasting predictions from these two models were evaluated in terms of accuracy, which refers to the percentage of data that is in line with the predictions of each theory vis-à-vis noun-adjective switches that should occur or not. For example, the MAC would not predict '*una casa* big' given that the language of the adjective (in this case English) would require the placement of the modifier to be pre-nominal and not post-nominal. On the other hand, the MLF would predict this mixed noun-adjective DP in bilingual clauses where the bound morphology of the finite verb belongs to Spanish (post-nominal) rather than English (pre-nominal).

In the current study, in line with Otheguy and Lapidus (2003) and Parafita Couto et al. (2015), we do not distinguish between borrowings and switches, a distinction that remains controversial (Gardner-Chloros 2009; Gardner-Chloros and Edwards 2004; Stammers and Deuchar 2012; for an overview of the contentious debate on borrowing vs. code-switching, see Poplack's (2018, p.141-156) most recent empirical work on loanwords, nonce borrowings and code-switches in the Ottawa-Hull French Corpus). Our main concern here was to provide further insight into the frequency and placement of adjectives in DP-internal contexts, irrespective of their status as borrowings or switches.

For the statistical analyses of the data, the toolkit Language Variation Suite (for details on this software program, see Scrivner and Díaz-Campos 2016) was employed to conduct a non-parametric test, namely a conditional inference tree, to examine the relationship among significant factors examined in the current study. In addition, a multinomial regression analysis was carried out to examine which contexts favored overt gender marking.

In the following section, we present the results from these analyses.

4. Results

We first outline main patterns in the overall distribution of DPs containing adjectives in both monolingual Spanish and switched discourse. Subsequently, we present the results from the non-parametric and parametric tests. In section 4.2, we take a closer look at DPs containing noun-adjective switches in light of the predictions by the MLF and the MAC.

4.1 Adjectives in monolingual Spanish versus mixed noun-adjective DPs

First and foremost, it was essential to determine whether gender marking in mixed noun-adjective DPs reflected pre-existing patterns found in monolingual Northern Belizean Spanish. In other words, it was important to establish that the infrequent use of gender-marked adjectives in switched DPs was not due to speakers' infrequent use of gender-marked adjectives in general.

Table 1 below shows the distribution of adjectives in monolingual Spanish DPs. Notably, the vast majority of adjectives in monolingual Spanish discourse were overtly gender-marked (e.g., *este hombre enmascarado* 'this masked man', *la cultura hispana* 'the Hispanic culture', etc.), whereas adjectives with null gender marking (e.g., *un mal espiritu* 'a bad spirit', *mi primer trabajo* 'my first job', etc.) were the most infrequent.

Table 1. Noun-adjective DPs in monolingual Spanish discourse

	N	%
Adjective w/ overt gender marking	324	67.9
Adjective w/ null gender marking	18	3.8
Adjective w/ no gender marking	135	27.3
Total	477	100

In contrast, the incorporation of gender-marked adjectives in Spanish/English DPs was clearly infrequent. Table 2 below shows the distribution of mixed DPs containing EL islands, mixed DPs with non-canonical word order, and mixed DPs with noun-adjective switches. The data revealed that there was a marked preference (88.8%) for the production of mixed DPs containing English islands (e.g., *un* white dress 'a white dress', *los* bright colors 'the bright colors', etc.). On the other hand, the use of overtly gender-marked adjectives in mixed noun-

adjective DPs (e.g., *un* nest *grandotote* 'a really big nest', *el único* problem 'the only problem', etc.) was clearly disfavored (7.8%).

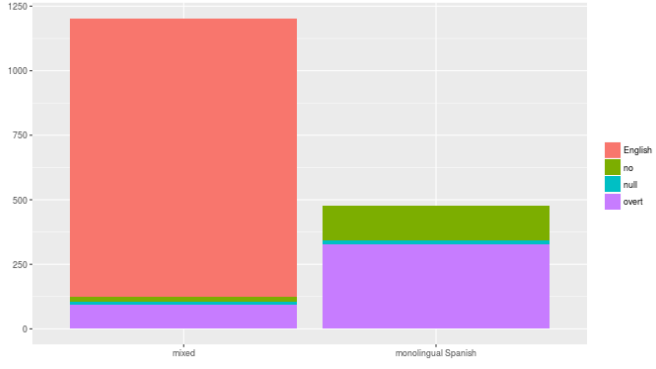
Table 2. Noun-Adjective DPs in bilingual discourse

Type of Mixed DP	N	%
Mixed DPs with English islands (n = 1078)	1069	88.8
Mixed DPs with non-canonical word order	9	0.8
Mixed noun-adjective DPs (n = 125)		
Spn adj with overt gender marking	94	7.8
Spn adj with null gender marking	12	1.0
Spn adj with no gender marking	19	1.6
Total	1203	100

* Spn = Spanish; adj = adjective

Results highlight two main patterns. Firstly, in CS, adjectives are incorporated in 'EL islands' (in Myers-Scotton's (1993, 2002) terms)) rather than mixed noun-adjective constructions. Thus, in Spanish/English DPs, adjectival switches in DP-internal contexts are infrequent (10.4% versus 88.8% containing EL islands). Secondly, it is only in monolingual Spanish DPs that there is a clear preference for overt gender marking (see Figure 1).

Figure 1. Gender marking in mixed and monolingual Spanish DPs



Noteworthy of pointing out is that the low token frequency of noun-adjective switches is particularly striking when compared to previously investigated CS structures in Northern Belize. Mixed noun-adjective DPs are infrequently produced in comparison to other CS structures from the same sample (see Balam 2016a, 2016b); namely, determiner-noun switches (e.g., *el* river 'the river') and bilingual light verb constructions (BLVCs), where the switch occurs between the Spanish light verb *hacer* and the fully inflected English lexical verb (e.g., *él hace* own *un* island 'he owns an island'). While consultants from the present sample reveal extensive use of CS involving determiner-noun (n = 4739) and '*hacer* + V' switches (n = 1750), the token frequency of mixed noun-adjective DPs (n = 125) constitute only a small proportion of the dense intra-sentential CS that characterizes the Northern Belize Spanish/English CS variety.

Important to note is that in this small sub-set of mixed noun-adjective DPs, the use of overtly-marked canonical adjectives was highly infrequent. Overall, there were only 23 attributive adjectives in the mixed noun-adjective DPs data set. Of these, only six adjectives were overtly gender-marked (e.g., *un* nest

grandotote ‘a very huge nest’, *mi* hobby *favorito* ‘my favorite hobby’, *un* plastic *blanco* ‘a white plastic’, etc.).

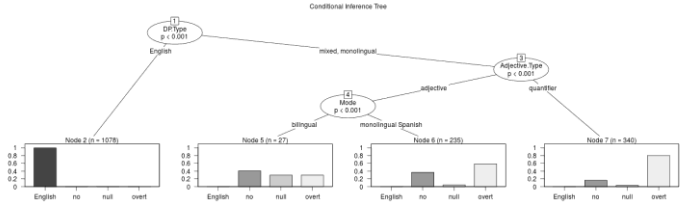
The most frequently used gender-marked adjectives were determiner adjectives. These adjectives included *mismo* ‘same’ (n = 22); *mismos* ‘same$_{plural}$’ (n = 10); *otro* ‘another’ (n = 14); *otros* ‘other’ (n = 14); *mío* ‘of mine’ (n = 11); and *único* ‘only’ (n = 8). Collectively, these determiner adjectives comprised 84% (79/94) of cases in which mixed noun-adjective DPs contained overtly gender-marked adjectives; suggesting that the use of canonical, gender-marked attributive adjectives is highly marked in Spanish/English CS.

While this sub-set of determiner adjectives was also used in monolingual Spanish DPs, it only accounted for 17% (83/477) of the data (i.e., *mismo* ‘same’ (n = 26); *mismos* ‘same$_{plural}$’ (n = 8); *otro* ‘another’ (n = 31); *otros* ‘other’ (n = 7); *mío* ‘of mine’ (n = 4); *único* ‘only’ (n = 7)), a markedly lower proportion than what was attested in Spanish/English mixed DPs. Thus, the overwhelming use of overtly gender-marked determiner adjectives was a salient pattern of bilingual noun-adjective DPs.

A non-parametric, exploratory analysis was conducted to have an insight into the relationship among the variables examined in the present study. The conditional inference tree allows us to better visualize the partitioning of a dependent variable by independent factors (see Figure 2). In this tree model, the terminal modes represent the relative frequency of the dependent variable whereas *p*-values indicate factor significance (Scrivner and Díaz-Campos 2016, 11). The tree model reveals that DP Type is the most significant factor, splitting DPs into (i) English DPs (i.e., DPs containing English islands or non-canonical word order’) and (ii) mixed (noun-adjective DPs) and monolingual Spanish DPs. Mixed and monolingual DPs are further differentiated according to Adjective Type, with Mode showing an effect on the production of adjectives in bilingual versus monolingual

Spanish discourse. The bar plots show that overt gender marking is particularly favored in the production of monolingual Spanish adjectives and lesser so in bilingual speech, a pattern that is in line with Otheguy and Lapidus' (2003) contention. Age group was not selected as a significant factor, which suggests that younger and older consultants do not markedly differ in their use of adjectives in monolingual versus bi/multilingual speech.

Figure 2. Conditional inference tree showing the relationship among factors examined



To further examine factors that favored overt gender marking, a fixed-effect multinomial regression was conducted. Table 3 illustrates the results for the regression model ($p < 0.000$), which included Age Group, Adjective Type and DP Type as independent factors. For the dependent variable, overt gender marking was chosen as the base value. Note that given the overwhelming prevalence of English islands in DP Type, these tokens were excluded from the regression in order to focus on the comparison between overt, null, and no gender marking across monolingual Spanish versus mixed noun-adjective DPs.

According to the results, both Adjective Type and DP Type exert a significant effect on the realization of overt gender marking. As their coefficient estimates are negative (-1.142296 and -1.415007, respectively), quantifiers are significantly disfavored by no gender marking ($p = 0.000$) and null gender marking ($p = 0.000$). With respect to DP Type (-1.119183), monolingual DPs are disfavored by null gender marking ($p = 0.014$). This finding is consonant with the conditional

inference tree (see Figure 2), which shows that overt gender marking is significantly favored in the context of adjectives, particularly in monolingual Spanish.

Table 3. Coefficients of a generalized linear fixed-effects model with an R2 of 0.05701

	Estimate	Std Error	t-value	p-value
No (Intercept)	-0.609377	0.365836	-1.6657	0.0957708
Null (Intercept)	-0.958225	0.594131	-1.6128	0.1067840
No: Adjective Type = quantifier	-1.142296	0.201996	-5.6551	1.558e-08
Null: DP Type = monolingual	-1.119183	0.457896	-2.4442	0.0145179
Null: Adjective Type = quantifier	-1.415007	0.420618	-3.3641	0.0007679

In summary, the distributional analysis revealed that mixed DPs containing English islands were the most frequent type of DP-internal adjectival construction in bilingual speech. Importantly, the marked preference for overt gender marking was only attested in monolingual Spanish DPs. The non-parametric test confirmed that quantifiers (but not canonical adjectives) and monolingual Spanish adjectives in particular favored overt gender marking.

In the following section, we turn our attention to mixed noun-adjective DPs and pay closer attention to these switched constructions in relation to predictions from the MLF and the MAC.

4.2 Mixed noun-adjective DPs

We focus here on the 125 mixed noun-adjective DPs. Table 4 shows the distribution of these DPs in terms of adjective placement. Adjectives overwhelmingly occurred in pre-nominal position, an expected pattern given that the vast majority of modifiers in mixed noun-adjective DPs comprised determiner adjectives that typically appear pre-nominally.

Table 4. Adjective placement in mixed noun-adjective DPs

	N	%
SPN Adj + ENG N	100	80
ENG N + SPN Adj	25	20
Total	125	100

In terms of the predictions by the MLF (Myers-Scotton 1993, 2002) and the MAC (Cantone and MacSwan 2009), the data revealed that both models were able to account for the noun-adjective switches in the Northern Belize corpus (see Table 5). When considering adjective placement, either the language of the adjective (i.e., MAC) or the language of the finite verb in the sentential context where the mixed noun-adjective construction occurred (i.e., MLF) correctly predicted adjective placement. Certainly, both models' accurate predictions may have to deal with the type of mixed noun-adjective switches that were most frequent, a point we return to in the Discussion section.

Table 5. Mixed noun-adjective DPs according to predictions from theoretical models

	MAC		MLF	
	N	%	N	%
SPN Adj + ENG N	100	100	100	100
ENG N + SPN Adj	25	100	25	100
Total	125	100	125	100

Given that there were no marked differences in terms of accuracy vis-à-vis the predictions of the MLF and the MAC, noun-adjective DPs with non-canonical order were further examined. Recall that the vast majority of mixed DPs in Northern Belize bi/multilingual speech comprised English islands (see Table 2). There was also a small percentage of exceptional mixed DPs with non-canonical word order. In total, there were 9 cases (i.e., 0.8% of total number of mixed DPs). In these mixed DPs, there was a disparity between the language of the adjective and word order, as in *un* teacher strict 'a strict teacher', where the attributive adjective occurred in a non-canonical position (post-nominal rather than pre-nominal). As Table 6 shows, these exceptional DPs were accounted for by the MLF (Myers-Scotton 1993, 2002), as Spanish was the predominant matrix language in the Northern Belize corpus. The MAC (Cantone and MacSwan 2009), on the other hand, which posits that the language of the adjective determines word order, does not predict these examples.

Table 6. Mixed DPs with non-canonical word order

Spanish/English Mixed DP	Predicted by the MAC	Predicted by the MLF
el boy *más* young	X	✓
un friend girl	X	✓

un teacher strict	X	✓
un pick-up red	X	✓
un color red	X	✓
un Spanish standardized	X	✓
un experience really fun	X	✓
un issue very familiar	X	✓
un person organized	X	✓

Examples (6) – (9) below reveal that the language of the finite verb in the bilingual clause is able to account for the post-nominal position of the adjective in the mixed DP. In each of these nine cases, although the adjective is realized in English rather than Spanish, the word order employed is that of Spanish. Cantone and MacSwan's (2009) analysis suggests that the language of the adjective should determine word order in DP-internal contexts. Clearly, in these cases, the post-nominal position of the English adjective violates English syntax. The language of the adjective, therefore, does not account for word order in these mixed DPs.

(6) *Él es un* teacher strict…

'He is a strict teacher...'

(7) …*pero no quisiera hablar un* Spanish standardized…*abandonar mi* variety *de* spanish

'…but I wouldn't want to speak a standard variety of Spanish...abandon my variety of Spanish.'

(8) …*pues para mí fue un* experience really fun

‘Well, for me, it was a really fun experience.’

(9) *Y después me llevaron en un* pickup…red…

And then they took me (to the hospital) in a red pickup truck.’

It must be emphasized that in a few cases, a pause or a filler did precede the adjective, as in (9), which may suggest the presence of an unintended switch. It may be argued that the post-nominal position of adjectives in these cases may not necessarily reflect fluid, grammatical CS. Nonetheless, five examples were clear cases of fluid CS, where there was no truncation and/or repair phenomena attested in the mixed DP.

In summary, the Northern Belize data revealed that there are certain noun-adjective constructions that are more frequently used, and both gender marking and adjective type play important roles. While both the MLF and the MAC were able to account for the data in the present corpus, there were a few cases that the MAC failed to account for. In the ensuing section, we further discuss the implications of the present study’s findings in relation to our understanding of Spanish/English noun-adjective switches in intra-sentential CS.

5. Discussion and conclusion

The present study analyzed two general predictions regarding adjectives. First, we tested the adaptive simplification hypothesis, which postulates that bilinguals avoid grammatical contexts in CS that require gender marking (Otheguy and Lapidus 2003); hence, resulting in the low frequency of overtly gender-marked noun-adjective DPs. Secondly, we examined whether the MLF (Myers-Scotton 1993, 2002) and the MAC (Cantone and MacSwan 2009) were able to both account for adjective placement in noun-adjective switches.

Results revealed that most adjectival constructions in CS were DPs containing EL islands (i.e., 88.8%). Mixed noun-adjective DPs containing gender-marked Spanish attributive adjectives were noted for their very low frequency, a finding that offers support to Otheguy and Lapidus' (2003) adaptive simplification hypothesis. Notably, determiner adjectives rather than attributive adjectives comprised the vast majority of adjectives in mixed noun-adjective constructions (i.e., 84%). In terms of the predictions made by the MLF and MAC, the data revealed that both theoretical approaches were able to successfully account for noun-adjectives switches produced by the Northern Belize sample. Consonant with Parafita et al.'s (2015) findings, the Northern Belize data point in the direction of the relative superiority of the MLF in terms of word order predictions in mixed noun-adjective DPs. There was a very small percentage of the data that could only be accounted for by the MLF (i.e., 0.8%).

Findings from the present analysis are in line with studies that have also found that noun-adjective switches in DP-internal contexts are infrequent in Spanish/English CS (Otheguy and Lapidus 2003; Pfaff 1979; Parafita Couto and Gullberg 2017; Poplack 1980). In the case of Northern Belize, while there has been a radical cross-generational increase in the token frequency of determiner-noun (Balam 2016b) and '*hacer* + V' switches (Balam 2016a), this is not the case with mixed noun-adjective constructions. This strongly suggests that even under the most positive historical and sociolinguistic conditions for CS to thrive, adjectival phrases simply do not constitute a favorable context for Spanish/English CS. Whereas innovative morphosyntactic forms of BLVCs may emerge across time and rapidly evolve in terms of syntactic complexity (for details, see Balam 2015, 2016a), 'mixing adjectives and nouns within the NP [remains] strictly limited' (Pfaff 1979, 306), even among prolific code-switchers.

It is crucial to note that the very low frequency of gender-marked adjectives was a pattern attested in Spanish/English CS

but not monolingual Spanish discourse, which highlights that it is particularly in CS that gender marking is disfavored. This confirms Otheguy and Lapidus' (2003) contention regarding the frequency of Spanish adjectives in CS. In this regard, results suggest that the deliberate avoidance of grammatical gender in CS can be analyzed as "[a] strategy employed by bilinguals to lighten the cognitive load [in bilingual speech] and increase communicative efficiency" (Montes-Alcalá and Lapidus Shin 2011, 136).

This cognitive load, possibly incurred by word order differences between Spanish and English, play a primary role in the production of adjectival constructions in CS. Given the difference in the position of attributive adjectives between Spanish and English, attributive adjectives constitute a more unfavorable context for switching than determiner adjectives. Note that for attributive adjectives, the lack of congruence between adjectives in Spanish and English occurs at the syntactic and morphological levels. Thus, both word order differences and the fact that adjectives are gender carriers disfavor noun-adjective switches, as these bilingual constructions present greater structural conflict in the process of syntactic derivation in code-switched speech.

Spanish/English data from Northern Belize and the U.S. Hispanophone context reveal that the drive to establish structural parsimony takes precedence across sociolinguistic contexts (Bullock and Toribio 2004). Supporting evidence for this view comes from recent research. In their analysis of determiner-noun and determiner-noun-adjective switches in three language pairs (i.e., Spanish/English, Welsh/English, Papiamento/Dutch), Parafita Couto and Gullberg (2017) found that the most frequent type of determiner-noun-adjective constructions are precisely constructions containing English islands (e.g., *un* white dress 'a white dress'), consonant with the Northern Belize data. In contrast, mixed noun-adjective DPs containing gender-marked adjectives were infrequent in CS.

Collectively, these data reveal that CS is more than just the seamless combination of languages as discrete systems (as conceptualized by models such as the MLF and MAC). CS reflects the natural and skillful meshing of linguistic resources to achieve parsimony. The infrequent production of mixed noun-adjective constructions, and the avoidance of gender marking in mixed discourse are indicative of convergence, a key mechanism through which bi/multilinguals optimize their linguistic resources in CS (for relevant discussion, see Muysken 2013). The preference for unmarked options (i.e., preposed adjectives; no gender marking) can also be analyzed as indicative of this process, which ultimately seeks to establish structural parsimony in bi/multilingual speech (Bullock and Toribio 2004).

Speakers' overwhelming use of English islands in bi/multilingual discourse reveals that rather than simply seamlessly combining grammars and/or lexicons, with one system unequivocally dominating the other, code-switchers capitalize on semantic and syntactic congruence to facilitate CS (Sebba 1998). In our data, speakers' optimization of congruence between their linguistic systems is most evident in the use of determiner adjectives. Although quantifiers play a modifying role, their position within the DP does not differ between Spanish and English. Speakers capitalize on this structural alignment between Spanish and English determiner adjectives, and this explains why quantifiers such as *mismo, mismos,* and *otro* are the adjectives that are most frequently used in mixed noun-adjective switches. In Bullock and Toribio's (2004) terms, this is indexical of convergence or an enhancement of structural similarities between speakers' linguistic systems.

It must be highlighted, however, that it is not the case that adjectives on a whole are infrequent in bilingual speech. Specifically, Spanish adjectives with overt gender marking are highly disfavored. Nonetheless, when adjectives are

incorporated into mixed noun-adjective DPs, there is a general tendency for them to appear in Spanish rather than English.

Code-switching does not occur at the expense of a reduction or loss in terms of adjectival modification. In fact, consultants from the present sample capitalized on English adjectives in mixed DPs containing English islands, a pattern of language use that evinces the strategic use of their linguistic resources. This is noteworthy given that our consultants were Spanish-dominant bi/multilinguals. This pattern of structural parsimony, therefore, represents a more universal pattern involving adjectives in bi/multilingual speech, which emphasizes the important role that convergence plays in CS (Balam 2016b, 2016c).

While the endorsed conceptualization of CS is that it involves the combination of two discrete grammars or lexicons that remain autonomous in bilingual speech (Gardner-Chloros and Edwards 2004), scholars are now endorsing the notion that CS is a more fluid, complex, and dynamic phenomenon that allows speakers to manipulate their linguistic resources in such a way that what takes precedence is linguistic creativity and structural parsimony rather than the separation and/or maintenance of two independent systems (e.g., Balam 2016b; Lakshmanan, Balam, and Bhatia 2016; Gardner-Chloros 2009). This is particularly evident in Spanish/English noun-adjective switches, where we find that the avoidance of Spanish adjectives and the avoidance of overt gender marking are a defining characteristic of mixed noun-adjective constructions. The masculine/feminine gender distinction is only suspended in bilingual speech but not in monolingual Spanish DPs (Balam 2016b; Montes-Alcalá and Lapidus Shin 2011; Otheguy and Lapidus 2003), where overtly gender-marked adjectives are frequently used.

This view is more in line with current work that challenges the conceptualization of CS "as clearly distinct systems normally deployed separately, but occasionally deployed in close,

alternating succession" (Otheguy, García, and Reid, 2015, p.282). Otheguy, et al. instead propose the notion of *translanguaging*, which they contend is the practice in which speakers deploy their full linguistic repertoire (i.e., their respective individual idiolects) without regard for language labels and boundaries, as defined either politically or socially (but see MacSwan's (2017) *integrated multilingual model* which acknowledges the bilingual system as single, but with shared grammatical resources and language-specific differentiation).

We must point out that while overtly gender-marked adjectives seem to be disfavored across Spanish/English contact situations, there are patterns which appear to be context-specific. In the Northern Belize data, there were exceptional mixed DPs that only the MLF could predict, in which the language of the adjective did not predict word order (see Table 6). It is not clear how this word order may have emerged. As an anonymous reviewer aptly suggests, at the surface level, we can have English elements that appear as adjectives in postnominal position (e.g., the seats available). While these cases involve reduced relative clauses, a completely different phenomenon, they may have nonetheless provided a template for the non-canonical word order attested in these exceptional mixed DPs.

There were other exceptional DPs, however, that were not found in the Northern Belize corpus. In Poplack's (1980) data, there were cases where a Spanish adjective followed English rather than Spanish word order in the DP (e.g., 'I got a lotta *blanquito* friends 'I got a lotta whitey friends'). Examples such as these were not attested in our data. These differences show that bi/multilinguals who speak the same language pair sometimes build semantic and syntactic congruence in CS in different ways. Importantly, these exceptional patterns in noun-adjective DPs may be due to matrix language differences.

More research is necessary to elucidate the role of the matrix language in the production of mixed noun-adjective DPs. A comparison between Spanish-dominant and Kriol-dominant bi/multilinguals in Belize could provide further insight into the effect that Kriol as a matrix language has on the language and placement of adjectives in mixed noun-adjective DPs. It may be that asymmetrical patterns may be found not only across bilingual communities (for previous comparative work that has shown asymmetrical patterns in the use of determiners in mixed DPs, see Blokzijl, Deuchar, and Parafita Couto 2017), but even within the same community as well.

The present study has presented novel data from a postcolonial Central American/Caribbean context where English does not have the high sociocultural status it has in the U.S. Hispanophone context; hence, enriching our knowledge of linguistic outcomes in a community where bilingual CS is unmarked and embraced by its speakers. More research in other Spanish contact situations is needed to confirm whether overtly gender-marked adjectives are indeed highly disfavored in CS, and to determine whether exceptional mixed DPs reveal patterns that are specific to different communities or whether adjective placement patterns are the same across Spanish/English communities in the Spanish-speaking world.

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Notes

[1] We use the term 'Maya/Mestizos' to refer to Northern Belizeans who speak Northern Belizean Spanish natively. Although speakers from the younger generation have no proficiency in Yucatec Maya, some of them nonetheless identify as Maya/Mestizos (Balam, 2015, p.100).