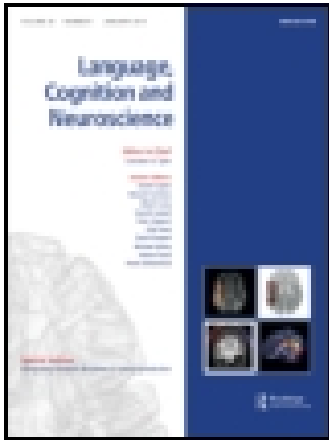


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## From 'more' to 'less': Spanish, Palenquero (Afro-Colombian creole) and gender agreement

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The present study examines gender agreement in the Spanish-lexified creole language Palenquero. Palenquero and Spanish share largely cognate lexicons while Palenquero morphosyntax is in many respects a proper subset of Spanish, e.g. lacking grammatical gender. Experimental data are presented for traditional speakers, heritage speakers and school-trained L2 Palenquero speakers. Traditional speakers produced no instances of gender agreement, 'corrected' many instances of gender agreement in repetition tasks, and rejected a high proportion of gender agreement in acceptability judgements. L2 Palenquero speakers frequently introduced gender agreement in naming tasks, 'corrected' many genderless Palenquero stimuli to Spanish-like feminine configurations, and accepted a large number of gender-agreeing items in judgement tasks. Heritage speakers patterned closer to L2 speakers than to L1 speakers in correcting fewer gender-agreeing stimuli and accepting more gender-agreeing stimuli in judgement tasks. These preliminary results suggest that L2 and heritage speakers cannot fully suppress the Spanish elements responsible for gender agreement.

**Keywords:** gender agreement; grammatical gender; Palenquero language; heritage language; Spanish language

### Introduction

Many languages that morphologically mark grammatical gender on nouns also include gender agreement on determiners and adjectives. The morphological and syntactic mechanisms responsible for agreement putatively represent a net increase in complexity over gender-less languages. Van Berkum (1997, p. 117) observes that:

The frequency with which gender must be retrieved from the mental lexicon clearly imposes a considerable real-time demand on a speaker [...] Non-native speakers of gender languages will readily appreciate this demand. But most native speakers will hardly be aware that it exists at all; to them, gender agreement usually comes for free.

But does it? And if so, how can a system that stymies L2 learners be so 'easy' for native speakers? The present report describes the first stages of a research venture designed to examine the trade-off between two factors: the on-line construction of adjective–noun agreement as opposed to the automatization of gender agreement. This goal is approached through the study of bilingual speakers of two lexically cognate languages, one of which exhibits gender agreement and the other of which does not. Particular attention is directed at L1 speakers of the gender-agreeing language who are acquiring the genderless language as L2. The line of reasoning is that when switching from the gender-agreeing L1 to the genderless L2, the persistence or absence of gender agreement in cognate items can be taken as an indirect measure of the

cost differential between producing morphosyntactic agreement and suppressing the carryover of obligatory agreement to the L2. Although the project is still in its infancy, preliminary findings suggest that the latter factor may embody a measurable production cost.

### The representation of grammatical gender

Research has yielded varying insights into the production and processing of grammatical gender, depending on the language, the modality (speaking, reading, listening, errors and tip-of-tongue phenomena), the experimental tasks and the selection of participants. The present study takes as a point of departure the widely-referenced model of lexical access of Levelt, Roelofs, and Meyer (1999) and subsequent studies, in which syntactic information, including gender, is stored at the lemma level. There is as yet no consensus as to whether gender information is automatically available upon selection of a lexical-phonological node (e.g. Caramazza & Miozzo, 1997) or whether there is some competition in selection prior to accessing the phonological form (e.g. Paolieri et al., 2010a, 2010b, 2011). In principle, if syntactic nodes are activated simultaneously with gender information (Levelt et al., 1999), then particularly in the case of shared cognates transfer between languages with different mechanisms for effecting gender agreement could produce L1-like agreement patterns in L2 (and possibly vice versa). Parallel syntactic activation in bilinguals potentially allows for

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extreme cases in which a syntactic structure existing in the L1 and with no counterpart in the L2 (e.g. gender agreement across noun phrases and predicate adjectives) is nonetheless transferred to the L2. For such transfer to occur there would have to be a motivation for the retrieval of the L1 syntactic information while actively using the L2; lexical cognates could provide such a bridge.

The study of cross-linguistic transfer between a language with grammatical gender and a language lacking gender has largely been limited to conceptual assignment of gender (e.g. Kousta, Vigliocco, & Vinson, 2008) or fortuitous phonological similarity (Scheutz & Eberhard, 2004), since for languages that are both lexically and morphologically distinct, transfer of specific agreement patterns is presumably unlikely. The question has yet to be posed as to what could be transferred when the first language has grammatical gender and the second language contains substantially THE SAME WORDS, but without gender agreement. The present study presents a first attempt at addressing this question.

### The possible cost of gender agreement

Many studies have examined the production and processing of syntactic dependencies, some of which have been shown to carry a cost (e.g. Hagoort, Brown, & Osterhout, 1999, p. 276 for relative clauses). To date, only scant evidence explicitly targeting possible costs of gender agreement – which is a type of syntactic dependency – has been reported (e.g. Laine, Vainio, & Hyönä, 1999; Portin & Laine, 2001; Portin et al., 2008). The idea that producing gender-agreeing configurations might involve some type of cost not present in languages lacking grammatical gender is not without precedent. In terms of inflectional morphology such as gender agreement, cognitive cost may be reflected in delayed and piecemeal acquisition of more complex configurations (e.g. Thomas & Gathercole, 2007). Within the scheme of agreement morphology, Spanish gender agreement is relatively transparent, consisting primarily of repetition of the (suffix) morphemes /-o/ (m.) and /-a/ (f.). Spanish-speaking children acquire full gender agreement before the age of five (e.g. Lew-Williams & Fernald, 2007; Mariscal, 2009; Pérez-Pereira, 1991), and adult speakers generally do not deviate from full agreement. L2 Spanish speakers, on the other hand, struggle to achieve native-like gender agreement.

Linear and syntactic distance between head noun and modifier are key variables in Spanish sentence processing (for monolingual speakers cf. Alemán Bañón, Fiorentino, & Gabriele, 2012; O'Rourke & Van Petten, 2011). Data from semi-creole Afro-Bolivian Spanish (Lipski, 2011a, 2011b) and Chota Valley (Afro-Ecuadorian) Spanish (Lipski, 2008; Sessarego, 2013, p. 71), both of which encapsulate traces of previous Spanish-recessive

bilingualism, reveal that predicate adjectives – which can be separated from subject nouns by an arbitrarily long syntactic span – are less susceptible to gender agreement than immediately post-nominal adjectives. This may constitute indirect evidence of processing/production costs associated with syntactic dependencies that are not confined to a single noun phrase.

The ability to process gender in a L2 has also been shown to correlate with overall L2 proficiency as well as age of acquisition (e.g. Hopp, 2013; Portin, Lehtonen, & Laine, 2007). This could indicate a cost associated with gender inflexion, at least for less proficient L2 speakers. The differences between the successful L1 production of gender agreement and the obstacles faced by L2 learners foreshadow the relative predominance of structure-building (the successive attachment of agreement morphemes across determiner phrases and predicate adjectives) vs. automatization (repetition of previously acquired modifier-noun combinations).

### Automatisation of agreement

Among bilinguals, especially second-language learners, an obligatory grammatical process found only in the L1 (e.g. the 'procedural knowledge' of Ullman, 2004) may carry over as 'excess automatization to a typologically similar L2 lacking this process: 'the first language requires the implementation of an automatic procedure that is difficult to switch off when speaking the L2', with the resulting errors found more frequently in spontaneous speech than in edited written production (Antón-Méndez, 2011, p. 319). Truscott and Sharwood Smith (2004, p. 14) regard L1 morphosyntactic intrusions during L2 production as the result of competition between L2 and L1 configurations, with the latter having a higher 'resting level' (i.e. ingrained automatization due to prolonged usage). Ideally the most effective way to determine the degree of automatization (the resting level) for the production of gender agreement would be to 'turn off' agreement. Naturally, an integral component of language such as grammatical gender cannot be voluntarily deactivated, but given the proper combination of languages and an appropriate population of bilinguals it may be possible to indirectly assess the real-time cost (if any) associated with gender agreement vs. the suppression of agreement.

### The Palenquero language

Palenquero is an Afro-Iberian creole language spoken in San Basilio de Palenque, a community of around 3000 residents in northern Colombia, formed in the seventeenth century (probably between 1655 and 1674: Navarrete, 2008; Schwegler, 2011a, 2012) when enslaved Africans fled from the port of Cartagena and established fortified communities in rural regions to the south. Most of the

Palenquero lexicon is cognate with local vernacular Spanish (Cásseres Estrada, 2005) and Spanish and Palenquero share SVO word order, post-nominal adjective placement, head-first subordinate clauses and prepositional phrases (Schwegler, 2013a, 2013b; Schwegler & Green, 2007 and the references therein). Although sharing highly cognate lexicons, Spanish and Palenquero are not mutually intelligible. Crucially, the relative position of Palenquero modifiers – within determiner phrases and predicate adjectives – is identical to Spanish, but unlike Spanish, Palenquero has no grammatical gender. Adjectives are invariant and, when cognate with the corresponding Spanish forms, are derived from Spanish masculine variants, typically ending in *-o*. As verified in extensive recorded interviews by the author, traditional Palenquero speakers almost never exhibit feminine gender agreement and heritage speakers only occasionally do so (Friedemann & Patiño Rosselli, 1973, p. 139; Lipski, 2011a; Schwegler & Green, 2007, p. 294).

### Why Palenquero?

Palenquero-Spanish bilingualism provides an environment for studying the possible production cost associated with gender agreement. In order to speak Palenquero without interference from Spanish, the bilingual speaker in effect has to reduce an ALREADY ACQUIRED paradigm (e.g. *buen-o* [m.s.], *buen-o-s* [m.pl.], *buen-a* [f.s.], *buen-a-s* [f.pl.] ‘good’) down to only one of its members (*bueno*) and at the same time SUSPEND an ALREADY ACQUIRED syntactic mechanism (agreement). Given rather unusual sociolinguistic circumstances in which a previously shunned creole language is now being revitalised (Lipski, 2011a, 2012a, 2012b; Moniño, 2012; Pfleiderer, 1998; Schwegler, 2011b, 2011c), San Basilio de Palenque presents a cohort of young L1 Spanish speakers who are acquiring the lexically cognate but genderless Palenquero as L2, in effect going from ‘more’ to ‘less’ in an environment that is susceptible to experimental research. This is the most propitious group to study, since traditional speakers do not exhibit Spanish-like gender agreement in Palenquero, thereby masking any costs associated with either gender agreement production or the suppression of agreement. There is also a substantial group of heritage Palenquero speakers who today are actively using a language that they had downgraded and even avoided for much of their lives and who exhibit some of the same patterns as L2 speakers.

For more than a decade ethno-education programmes have included classes in the Palenquero language, and the respective teachers have engaged in intensive linguistic activism as part of the campaign to revitalise the traditional language (Lipski, 2012a; Moniño, 2012). The teachers, although relatively young, are native speakers of Palenquero who have augmented their knowledge with metalinguistic introspection and consultation with scholars

and traditional speakers. These teachers are highly popular and respected community leaders and all students have taken Palenquero language classes with one or more of them and attempt to emulate their speech. Given their prominent role in shaping the language of the youngest generations, current and former Palenquero language teachers merit a separate classification in the following analyses. In terms of observed usage of both Spanish and Palenquero, traditional speakers and Palenquero language teachers can be classified as balanced bilinguals. Given the decline in use of Palenquero during the second half of the 20th century no traditional speaker is truly Palenquero-dominant.

San Basilio de Palenque also presents challenges for psycholinguistic research. Most potential participants have little or no literacy and although the language teachers often exhibit self-conscious behaviour when speaking Palenquero, school students receive no metalinguistic commentary on Spanish or Palenquero since grammar is never discussed explicitly and deviations from accepted Palenquero usage are not corrected. Moreover, students are unfamiliar with experimental tasks of any sort. In a community where no doors are closed (goats) freely enter all dwellings and intrude in ongoing conversations, research techniques must be adapted to this ecological reality. As of this writing, some initial experiments have been completed after considerable trial and error in an environment in which no antecedent research provided guideposts.

### Experiment 1: picture-describing

Picture-based tasks are used widely as probes into lexico-semantic structure (e.g. Glaser, 1982; Gollan, Montoya, Fennema-Notestine, & Morris, 2005), since the grammatical properties of the language(s) are activated (Cubelli, Lotto, Paolieri, Girelli, & Job, 2005; Paolieri et al., 2010a, 2010b, 2011), and in bilingual tasks incongruencies between the languages yield competition, with the results reflecting the level of L1 inhibition (Morales, Paolieri, & Bajo, 2011). A picture-describing experiment was conducted to determine if Spanish-like feminine gender agreement could be observed in Palenquero (the Palenquero default form for adjectives and determiners is often identical to the corresponding Spanish masculine form, making it impossible to probe for masculine gender agreement).

Hatzidaki, Branigan, and Pickering (2011, p. 128) observe that activation of features such as agreement from the non-source language may be stronger in contexts where speakers have to use both languages and also when the non-source language is dominant (cf. also Bernardini & Schlyter, 2004; Hermans, Bongaerts, de Bot, & Schreuder, 1998). Both of these conditions obtain in the case of L2 and some heritage Palenquero speakers. It was

hypothesised that if Spanish gender agreement cannot be fully suppressed by L2 Palenquero speakers, they would introduce at least some feminine gender agreement (in *-a*) in Palenquero determiners and adjectives modifying nouns whose Spanish cognates are grammatically feminine. Traditional speakers who learned Palenquero as a first language as well as the metalinguistically sensitive Palenquero language teachers should exhibit little Spanish-like feminine agreement, although the high activation level of Spanish prompted by the large number of cognates might result in some carryover of gender agreement. Heritage speakers are expected to show greater inter-speaker variability.

## Method

### Participants

Ten traditional speakers of Palenquero (age 60 to 80+), 10 L2 Palenquero speakers aged 18–21 who had received Palenquero language classes in school and who did not come from Palenquero-speaking households, 10 heritage Palenquero speakers and all 4 teachers (mid 30's to late 40's) who were teaching Palenquero language classes at the time. All were recruited by the author with the help of the teachers. Given the latitude with which the definition of heritage speakers has been applied (e.g. Montrul, 2011, p. 592; Cabo & Rothman, 2012, p. 450; Polinsky, 2011, p. 306) as well as the varying personal histories, this group is naturally more diverse. For the purposes of the present study, all individuals classified as heritage Palenquero speakers range in age from the early 40's to around 60. The number of traditional participants was capped at 10 because of the high incidence of uncorrected cataracts and other visual problems among older community residents, which makes visually-oriented tasks impossible to perform. All participants were compensated for their time.

### Materials

The stimuli consisted of 35 photos of natural objects and people found in the community. The slides included both singular and plural objects, 19 of which are cognate with grammatically feminine nouns in Spanish and which would exhibit feminine gender agreement, e.g. yellow flowers (Sp. *flores amarillas*), a red church (Sp. *iglesia*

*roja*), a yellow house (Sp. *casa amarilla*), a fat woman (Sp. *mujer gorda*), a very thin woman (Sp. *mujer flaca*), an open door (Sp. *puerta abierta*) and a black hen (Sp. *gallina negra/prieta*).

### Procedure

The stimuli were presented on a portable computer, in a variety of indoor and outdoor settings as per the availability of the participants. Participants were instructed (in Palenquero) by the author to describe the pictures in as much detail as possible, using only Palenquero. There was no time limit for the responses. The latitude in response format and allowed time reflects a preliminary attempt to observe potential gender agreement in Palenquero under conditions more closely resembling naturalistic speech and less likely to alert participants to the specific research variable. All responses were digitally recorded.

## Results and discussion

Since respondents were simply instructed to describe what they saw, many responses contained only the noun without determiners or adjectives that might reveal gender agreement. Table 1 displays the results for responses that contained adjectives and/or determiners. The dependent variable is the proportion of Spanish-like feminine gender marking in Palenquero adjectives modifying nouns cognate with Spanish grammatically feminine items. The initial hypotheses were supported: traditional speakers and Palenquero language teachers introduced no feminine gender agreement, while L2 and heritage speakers did use some feminine gender marking, albeit at relatively modest rates.

In this small sample there were no notable differences in gender marking between animate (e.g. women, girls, hen) and inanimate (e.g. church, flower, house) stimuli (found to be a relevant factor for some L2 Spanish speakers, e.g. Alarcón, 2009), nor between nouns ending in the canonical feminine desinence *-a* (e.g. *iglesia* 'church', *gallina* 'hen'), which might be priming gender agreement in *-a*, and nouns without recognisable feminine gender marking (e.g. *flor* 'flower', *leche* 'milk'). Despite the small sample size a repeated-measures analysis of variance on the arcsine-transformed proportions of

Table 1. Feminine gender marking in Palenquero for 19 picture stimuli.

|                   | Traditional ( <i>N</i> = 10) | Heritage ( <i>N</i> = 10) | Teachers ( <i>N</i> = 4) | Young L2 ( <i>N</i> = 10) |
|-------------------|------------------------------|---------------------------|--------------------------|---------------------------|
| # total responses | 190                          | 190                       | 76                       | 190                       |
| # with adjective  | 61                           | 78                        | 41                       | 51                        |
| # fem. agreement  | 0                            | 5                         | 0                        | 23                        |
| % fem. agreement  | 0                            | 6.4                       | 0                        | 45                        |



feminine-marked modifiers to total modifiers revealed a main effect for group:  $F(3, 30) = 8.29, p < .001$ . A post-hoc Tukey test confirms that only the L2 group exhibited significant differences with respect to the others: L2-traditional ( $p < .001$ ), L2-heritage ( $p = .002$ ), L2-teachers ( $p = .01$ ). Not significant were traditional-heritage ( $p = .98$ ), traditional-teacher ( $p = 1.00$ ) and heritage-teacher ( $p = .99$ ).

### Experiment 2: synthesised stimuli: acceptability + repetition

All descriptions of Palenquero grammar concur that the language exhibits no grammatical gender; in principle native speakers should reject stimuli containing Spanish-like gender agreement while the acceptability judgements of L2 speakers should correlate inversely with the ability to suppress gender agreement when speaking Palenquero. In practice, probing for metalinguistic judgements in Palenque is not so straightforward. Previous observations (Lipski, 2013; *in press, a, in press, b*) have shown that in tasks in which participants are asked to classify stimuli as all-Spanish, all-Palenquero or mixed, Palenquero speakers – even those who do not mix Palenquero and Spanish – frequently accept as ‘all Palenquero’ putatively mixed utterances. Possible reasons include resignation in the face of perceived community-wide language erosion, a desire to please visiting researchers and simple inattentiveness or indifference. Bearing in mind these limitations, a second experiment compared passive acceptance and active production of Spanish-like feminine gender agreement. The experiment combined aspects of speeded-grammaticality judgement (e.g. Bader & Meng, 1999; Felser, Sato, & Bertenshaw, 2009) and elicited repetition (Azuma & Meier, 1997; Clyne, 1972; Meijer & Fox Tree, 2003; Treisman, 1965). Previous work (e.g. Gullberg, Indefrey, & Muysken, 2009, p. 34; Marslen-Wilson, 1973, 1985; Miller & Isard, 1963; Vinther, 2002) has shown that in sentence repetition tasks, respondents’ errors frequently reflect their own grammars, i.e. what they WOULD HAVE SAID instead of what was actually said.

Given the aforementioned unreliability of language classification, it was hypothesised that traditional Palenquero speakers would accept Spanish-like feminine gender agreement at a higher rate than Palenquero language teachers, but participants from both groups would spontaneously ‘correct’ some feminine gender (*-a*) marking to Palenquero gender-invariant (=Spanish masculine *-o*) forms during repetition. If L2 Palenquero speakers cannot fully suppress Spanish gender agreement, then they should exhibit higher rates of acceptance of feminine gender agreement, retain Spanish-like feminine gender during repetition, and even ‘correct’ cognate Palenquero gender-invariant forms to Spanish-like feminine forms. On the other hand if the on-line construction of gender-agreeing

configurations carries a greater production cost than the suppression of agreement, then the ‘relief’ provided by a genderless but cognate language should result in little or no carryover of Spanish-like agreement by L2 speakers. Heritage speakers might well span the range between traditional and L2 Palenquero speakers, depending on individual linguistic histories.

### Method

#### Participants

Twelve traditional Palenquero speakers, 14 heritage Palenquero speakers, 15 younger school-trained L2 Palenquero speakers and all 6 current or former Palenquero language teachers. Six of the traditional speakers, nine of the heritage speakers, five of the L2 speakers and four of the teachers had participated in the picture-naming task, conducted a year previously. All were compensated for their time.

#### Materials

Most nominally mixed Palenquero-Spanish utterances extracted from spontaneous speech contain a variety of departures from ‘canonical’ Palenquero grammar and often more than one, which makes it difficult to assess the contribution of individual grammatical elements to acceptability judgements. In order to overcome this obstacle, deliberately manipulated stimuli were created in which Spanish-like gender agreement could be selectively introduced into otherwise all-Palenquero utterances. Initially two Palenquero language teachers were recruited, but despite several rehearsals the teachers’ attempts at producing putatively deviant utterances in a naturalistic style were marred by disfluencies. After many trials with available Spanish text-to-speech programmes a single female voice from Cepstral Swift Talker® ([www.ceps-tral.com](http://www.ceps-tral.com)) was chosen. Each stimulus was individually modified with PRAAT software (Boersma & Weenink, 1999–2005), to produce utterances that while recognisably non-Palenquero were not so alien-sounding as to impede intelligibility. In all 105 stimuli were created, of which 30 were taken to represent all-Palenquero as described in linguistic studies and 75 contained a single nominally Spanish element (including ‘conjugated’ verbs agreeing with subjects, preverbal object clitics, Spanish subject pronouns, preverbal negation and pronominal possessives, none of which occur in Palenquero). The acceptability of the Palenquero segments was verified by one of the Palenquero language teachers. Each stimulus utterance was immediately followed by a beep. The stimuli were randomised and loaded onto a portable computer; all participants listened to all stimuli. Among the stimuli were 22 instances of Spanish-like feminine gender agreement (adjectives and articles ending in *-a*) on cognate lexical

Table 2. Rates of acceptance of Palenquero stimuli ( $N = 22$ ) with Spanish-like feminine gender agreement.

|                       | Traditional ( $N = 12$ ) % | Heritage ( $N = 14$ ) % | Teachers ( $N = 6$ ) % | Young L2 ( $N = 15$ ) % |
|-----------------------|----------------------------|-------------------------|------------------------|-------------------------|
| Overall               | 52.7                       | 74.7                    | 52.5                   | 72.1                    |
| Pred.adj. ( $N = 5$ ) | 51.7                       | 81.4                    | 66.7                   | 74.7                    |
| N + adj. ( $N = 8$ )  | 64.6                       | 85.7                    | 52.1                   | 73.3                    |
| DET+ N ( $N = 19$ )   | 42.5                       | 60.7                    | 38.3                   | 64.0                    |

items embedded in Palenquero utterances (a complete list is given in [Appendix 1](#)). For the purposes of this experiment the remaining items were fillers.

### Procedure

Participants were told that they would hear a synthetic voice that did not belong to anyone from the community, and in fact had not been produced by a human being (although SwiftTalker® is based on sampled human voices). They listened to the stimuli over noise-cancelling headphones. For each stimulus respondents were asked to state whether the utterance was ‘good’ Palenquero (no definition of acceptability was offered) by quickly responding ‘yes’ or ‘no’ upon hearing the beep at the end of the stimulus, and then to repeat the sentence exactly as they had heard it, whether or not they had found it to be acceptable. Repetition was not allowed and participants were timed out if they did not respond within two seconds after the beep. Gratifyingly, despite the author’s initial misgivings, all participants readily responded to the synthetic stimuli without objection. Stimuli and responses were recorded on separate channels of a digital recorder.

### Results and discussion

[Table 2](#) provides the results of the acceptability task.

Although some participants strayed off task or did not repeat the stimuli after giving the acceptability judgement, most of the responses were usable. Traditional speakers and Palenquero language teachers patterned together in accepting roughly half of the feminine gender-agreeing stimuli while heritage and L2 speakers both clustered around the 75% acceptance level. For the proportion of Spanish-like feminine gender agreement stimuli accepted

as ‘good’ Palenquero a main effect for group was found:  $F(3, 43) = 4.98, p = .005$ . A post-hoc Tukey test confirmed significant differences between L2 speakers and traditional speakers ( $p = .01$ ) and between L2 speakers and Palenquero language teachers ( $p = .03$ ). There were no significant differences between teachers and heritage speakers ( $p = .16$ ), between teachers and traditional speakers ( $p = .98$ ), between L2 and heritage speakers ( $p = .80$ ) or between traditional and heritage speakers ( $p = .1$ ). An explanation of the high rate of acceptance of decidedly un-Palenquero feminine gender agreement warrants more discussion than is possible here. Rates for traditional speakers were inflated by a few participants who uncritically responded ‘yes’ to all stimuli, while some teachers may have interpreted ‘acceptable’ as referring to combinations actually heard in the community (albeit by less proficient speakers). The lack of prosodic prominence of gender markers (consisting of vowels in unstressed word-final syllables) may also have been a factor; the matter awaits further study. Since respondents were not asked to critique the stimuli it is not possible to entirely rule out distracting elements other than gender agreement that may have provoked negative judgements.

Although many respondents proved to be quite adept at accurately repeating utterances that they had just judged as unacceptable, there were numerous ‘corrections’ of Spanish-like feminine forms to Palenquero gender-invariant forms. [Table 3](#) provides the results.

As predicted, traditional speakers changed many feminine endings in  $-a$  to Palenquero gender-invariant  $-o$  while L2 speakers rarely did so. Heritage speakers patterned closer to L2 speakers. Palenquero language teachers patterned closer to traditional speakers when modifiers were immediately adjacent to the head noun,

Table 3. Rates of feminine ( $-a$ ) to invariant ( $-o$ ) shifts for Palenquero stimuli ( $N = 22$ ) with feminine gender agreement.

|                        | Traditional ( $N = 12$ ) | Heritage ( $N = 14$ ) | Teachers ( $N = 6$ ) | Young L2 ( $N = 15$ ) |
|------------------------|--------------------------|-----------------------|----------------------|-----------------------|
| Overall% $-a > -o$     | 29.9% (79)               | 13.3% (41)            | 15.9% (21)           | 6.7% (22)             |
| Pred. adj. ( $N = 5$ ) | 31.7%                    | 10.0%                 | 13.3%                | 6.7%                  |
| N + adj. ( $N = 8$ )   | 31.3%                    | 5.4%                  | 37.5%                | 4.2%                  |
| DET + N ( $N = 9$ )    | 44.2%                    | 10.7%                 | 25.0%                | 5.3%                  |

but closer to heritage speakers for predicate adjectives. This may reflect the fact that although the teachers are metalinguistically self-conscious, at no point in their lives was Palenquero the dominant language. For the overall proportion of  $-a \gg -o$  shifts a main effect for group was observed:  $F(3, 43) = 6.88, p < .001$ . A post-hoc Tukey test revealed significant differences between L2 and traditional Palenquero speakers ( $p < .001$ ) as well as between traditional and heritage speakers ( $p = .02$ ). Teachers did not differ significantly from traditional speakers ( $p = .24$ ), from heritage speakers ( $p = .96$ ) or from L2 speakers ( $p = .37$ ), perhaps because as a group the teachers were exceptionally skilled at exact repetition.

The stimuli also contained twenty NOUN + ADJECTIVE combinations cognate with grammatically feminine items in Spanish but in which the Palenquero ended in  $-o$ , which in Spanish would correspond to masculine gender (a complete list is given in Appendix 2); some L2 and heritage Palenquero speakers shifted the adjectives in  $-o$  to Spanish-like  $-a$  during repetition as shown in Table 4.

In this small sample, a main effect for group was found:  $F(3, 43) = 4.01, p = .01$ . A post-hoc Tukey test revealed significant differences between L2 speakers and traditional speakers ( $p = .03$ ) and between L2 speakers and teachers ( $p = .03$ ). There were no significant differences between traditional speakers and teachers ( $p = .95$ ), between teachers and heritage speakers ( $p = .39$ ) or between heritage and L2 speakers ( $p = .38$ ).

Despite the small sample size, the behaviour of modifiers appears to be modulated by linear proximity to the head noun and possibly also by grammatical function. The intimate relation between determiners and head nouns is reflected in the lower rates of acceptance of Spanish-like feminine gender agreement in determiners by traditional Palenquero speakers and language teachers (Table 2). Immediately post-nominal adjectives are also susceptible to chunking (e.g. *muhé bieho* ‘old woman’), and both teachers and traditional speakers rejected feminine gender agreement at relatively high rates. Gender-agreeing predicate adjectives, which can be separated from their head nouns by arbitrarily long strings, provoked lower rates of rejection. This differential treatment is greatly attenuated among heritage Palenquero speakers and disappears among L2 speakers, who proved to be

relatively insensitive to feminine gender marking in the acceptability task. The data in Table 3 suggest that traditional speakers and Palenquero language teachers correct DET + N and N + ADJ combinations more readily than gender-agreeing predicate adjectives; once more heritage and L2 speakers show low sensitivity to Spanish-like gender marking. Table 4 shows that L2 Palenquero speakers introduce Spanish-like feminine gender marking more often in linearly adjacent combinations (DET + N and N + ADJ) than in predicate adjectives, which can be further removed from the head noun.

## General discussion

### *Spanish gender is not fully suppressed*

The results of the preliminary experiments suggest that ‘less’ is not always preferred to ‘more’: L2 Palenquero speakers and some heritage speakers are not simply overlooking Spanish-like gender marking in Palenquero, they are actively using the morphosyntactic mechanisms responsible for gender agreement in Spanish. Less proficient L2 and heritage Palenquero speakers do not completely suppress Spanish gender agreement in production while balanced bilinguals exhibit a greater suppression of Spanish. Carryover of Spanish-like gender agreement is most frequent when modifier and head noun are immediately adjacent (Table 4), which is consistent with automatization of agreement. At the same time L2 speakers and most heritage speakers accept gender-agreeing stimuli at a higher rate than balanced bilinguals (Table 2), although gender-agreeing determiner + noun combinations show rejection rates somewhat closer to those of fluent bilinguals. L2 and heritage Palenquero speakers have not simply acquired the ‘wrong’ grammar (with feminine gender agreement), since all can and do produce at least some gender-invariant constructions given time for reflection, e.g. when prompted for language samples or translations from Spanish.

In the experiments traditional speakers spontaneously shifted many gender-agreeing stimuli to gender-invariant forms. These speakers have clearly automatized Spanish gender agreement, although occasional production of gender agreement mismatches in Spanish may reflect a somewhat lower level of entrenchment (Lipski, 2011a,

Table 4. Rates of invariant ( $-o$ ) to feminine ( $-a$ ) shifts for Palenquero stimuli ( $N = 20$ ) lacking feminine gender agreement and cognate with Spanish feminine items.

|                       | Traditional ( $N = 12$ ) | Heritage ( $N = 14$ ) | Teachers ( $N = 6$ ) | Young L2 ( $N = 15$ ) |
|-----------------------|--------------------------|-----------------------|----------------------|-----------------------|
| % $-o > -a$           | 0.8% (2)                 | 6.4% (18)             | 1.7% (2)             | 8.7% (26)             |
| Pred.adj. ( $N = 5$ ) | 0%                       | 1.4%                  | 0%                   | 6.7%                  |
| N + adj. ( $N = 9$ )  | 5.6%                     | 8.7%                  | 3.7%                 | 13.3%                 |
| DET+ N ( $N = 6$ )    | 0%                       | 1.2%                  | 0%                   | 14.4%                 |



p. 10; Schwegler, 2011c, p. 457). Traditional speakers never introduced feminine gender into Palenquero when describing pictures or repeating gender-invariant stimuli, which indicates successful inhibition of Spanish. The experimental data do not directly address the question of whether this reflects a higher resting level of the gender-invariant Palenquero forms or an inherent cost of gender agreement in Spanish.

The high level of activation of Spanish during the production of Palenquero is a function of the very large component of shared lexical cognates. However the appearance of gender agreement beyond the noun phrase (e.g. predicate adjectives) is reflective of a higher level of transfer than would be predicted by usage-based models predicated on frequently co-occurring combinations such as ARTICLE + NOUN and NOUN + ADJECTIVE (e.g. Bybee, 2006, 2011; Hopper, 1987). Spanish inflectional elements – here exemplified by feminine gender agreement – do not replace equivalent Palenquero structures by substantially different combinations but simply add the morphosyntactic infrastructure responsible for gender agreement to the Palenquero phrase structure. This is possible due to the combination of significantly cognate lexicons and the fact that as regards gender agreement Palenquero phrase structure is a properly contained subset of Spanish.

#### *Code-switching as a possible explanation*

One possible alternative interpretation suggested by a reviewer is borrowing or code-switching, since in some previous research Spanish morphosyntactic incursions in Palenquero have been called code-switching (de Friedemann & Patiño Rosselli, 1983, p. 185; Schwegler, 1996, t. I, p. 45, 1998; 2011c, p. 449; Schwegler & Morton, 2003, p. 121). All instances of L1 transfer can be regarded (perhaps metaphorically) as ‘chronic, involuntary code-switching’ (Truscott & Sharwood Smith, 2004, p. 14). However, the results reported here do not support the hypothesis that L2 Palenquero speakers’ variable insertion of Spanish-like morphological agreement is cognate-triggered code-switching (Broersma, 2009; Broersma & de Bot, 2006; Kootstra, van Hell, & Dijkstra, 2010), in which speakers are usually aware of changing languages. For example, material immediately preceding and following instances of Spanish-like agreement in Palenquero does not depart from Palenquero morphosyntax, unlike in most cognate-triggered code-switching, where some surrounding material can be carried along. The ‘agreeing’ items themselves retain the uniquely Palenquero phonetic traits that often separate them from their Spanish counterparts, e.g. prenasalised stops and prevocalic /l/ < Spanish /t/: (P. *ngolo* < Sp. *gordo* ‘fat’; P. *kalo* < Sp. *caro* ‘expensive’). Although Palenquero speakers may employ Spanish and Palenquero in the same conversation, in general they do not engage in intra-sentential

code-switching such as typifies many US Latino bilinguals (e.g. ‘Sometimes I’ll start a sentence in Spanish *y termino en español*’; Poplack, 1980), and when presented with such code-switched stimuli in experiments, regard such behaviour as unnatural (documented in Lipski, 2013, in press, b).

It is also unlikely that incursions of Spanish-like agreement in Palenquero are integrated borrowings (since no speaker produces them consistently in lieu of the corresponding gender-invariant Palenquero forms) or ‘nonce borrowings’ (e.g. Poplack, Wheeler, & Westwood, 1989; Sankoff, Poplack, & Vanniarajan, 1990), since the latter typically involve the temporary filling of a lexical gap rather than the application of a morphological process from another language. Finally, there is no evidence that Palenquero speakers are decreolizing, i.e. bringing Palenquero grammar closer to Spanish by gradually replacing creole elements by the corresponding Spanish forms (Schwegler, 2001, 2011c, p. 463; confirmed by Lipski, 2013, in press, b).

#### **Conclusion**

The appearance of Spanish-like gender agreement in the speech of L2 and heritage Palenquero speakers can be described heuristically as the intermittent failure to ‘turn off’ cognate Spanish items and the corresponding syntactic projections responsible for gender agreement. If the findings reported here are borne out by additional research, it could be concluded that whatever ‘cost’ might be associated with the on-line production of gender agreement is at least partially offset by the ingrained nature of agreement. This is evidenced both by the almost complete lack of gender agreement errors by adult native Spanish speakers and by the carryover of (feminine) gender agreement into Palenquero by L2 speakers. In this sense, natively acquired and automatised gender agreement does indeed almost ‘come for free’ (van Berkum, 1997, p. 117).

In view of the cultural backdrop, the small samples sizes and the moving target represented by the rapidly evolving sociolinguistic profile of San Basilio de Palenque, the data and the analyses must be regarded as exploratory. Experimental inquiries in a dynamic and often chaotic field setting cannot be directly compared with highly controlled laboratory studies (e.g. Green, 2011), but the potential insights into spontaneous language behaviour may counterbalance the inexorably large component of uncertainty that accrues to the procedures described above.

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- Appendix 1. Palenquero synthesised stimuli containing Spanish-like feminine gender concord; feminine gender-marked items in italics (Experiment no. 2)**
- a. kwando é mini *primera* kasa lo ke konosé hwe kasa mi ‘When he came the first (f.) house he saw was my house’
- b. Changáina a sendá *ngola* ‘[the] woman is fat (f.)’
- c. kwando mamá mi taba *biba* suto aseba bibí Katahena ‘when my mother was alive (f.) we lived in Cartagena’
- d. i ablaba *una* palabra malo nunca nu ‘I never said a bad (f.) word’
- e. ele ta nda mindo *una* sebesa ‘he is giving me a (f.) beer’
- f. i tan kasá ku muhé *blanka* nu ‘I won’t marry a white (f.) woman’
- g. Palenge a ten tiela *bwena* pa suto sembrá ‘Palenque has good (f.) land for us to plant’
- h. koká lo ke suto asé prepará é mu *bwena* ‘the coconut candy that we make is very good (f.)’
- i. i ta miná *una* kasa blanco ‘I see a (f.) white house’
- j. *esa* muhé asé ñamá Paula ‘that (f.) woman’s name is Paula’
- k. i ablaba *una* palabra *mala* nunca nu ‘I never said a (f.) bad (f.) word’
- l. i tan ablá bo *una* kusa ‘I will tell you something (f.)’
- m. muhé a sendá *ngola* ‘[the] woman is fat (f.)’
- n. i ta miná un kasa *blanka* ‘I see a white house (f.)’
- o. masamola mamá mi hweba mu *sabrosa* ‘My mother’s corn stew is very tasty (f.)’
- p. i tan kasá ku muhé *kolorá* nu ‘I won’t marry a white (f.) woman’
- q. ma hende asé kelaba ku boka *abieta* ‘People stood with their mouth open (f.)’
- r. i ta miná *una* kasa *blanka* ‘I see a (f.) white (f.) house’
- s. Palenge a ten tierra *bwena* pa suto sembrá ‘Palenque has good (f.) land for us to plant’
- t. e muhé *ngola* kelé bibí Katahena ‘that fat (f.) woman wants to live in Cartagena’
- u. awe i a ten ke asé *mucha* kusa ‘today I have to do many (f.) things’
- v. i a ten ke bae andi *esa* niña ‘I have to go to that (f.) girl’s house’
- Appendix 2. Palenquero synthesised stimuli containing invariant adjectives in –o cognate with Spanish feminine forms in –a; target items in italics (Experiment no. 2)**
- a. ma hende asé kelaba ku boka *abieta* ‘People stood with their mouth open’
- b. I tan kasá ku muhé *blanko* nu ‘I won’t marry a white woman’
- c. Palenge a ten tiela *bweno* pa suto sembrá ‘Palenque has good land for us to plant’
- d. Kwandi mamá mi taba *bibo* suto aseba bibí Katahena ‘when my mother was alive we lived in Cartagena’
- e. Mazamola mamá mi hweba mu *sabroso* ‘My mother’s corn stew is very tasty’
- f. i a komblá *un* kasa pa ané ‘I bought a house for them’
- g. suto a dependé ri rasa *kanoso* ‘we descend from a grey-haired race’
- h. i ta miná *un* kasa *blanko* ‘I see a (f.) white (f.) house’
- i. ele ta nda mindo *un* sebesa ‘he is giving me a beer’
- j. i tan ablá bo *un* kusa ‘I will tell you something’

k. Palenge a ten tierra *bweno* pa suto semblá ‘Palenque has good land for us to plant’

l. E monasito *ngolo* kelé bibí Katahena ‘that fat girl wants to live in Cartagena’

m. i ta miná ke puetta ta *selao* pokke ma hende a salí ‘I see that the door is closed because the people have left’

n. abwela mi hwe ma *bieho* ke ma numan’ele ‘my grandmother is older than her brothers’

o. bo a hayá muhé *seloso* bo a ta bien malao ‘you found a jealous woman, you are really tied down’

p. i ablaba un palabra *malo* nunca nu ‘I never spoke a bad word’  
q. aola ma hende a ta ma *abieta* pokke hende a bay Katagena trabahá ‘now people are more open because they are going to work in Cartagena’

r. masamola mamá mi hweba muy *sabroso* ‘my mother’s corn stew was very tasty’

s. i a kelé kumé yuka *sankochao* ku keso ‘I want to eat boiled cassave with cheese’

t. ma kaya ri Palenge hwe *bueno* pa ma moto lentrá nu ‘the streets in Palenque aren’t good for motorcycles to enter’