Morphosyntactic implications in Afro-Hispanic language: new data on creole pathways

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Introduction

In creole studies the notion of "simplification," while all-pervasive, rarely acquires an empirically grounded definition. In particular the manner in which Ibero-Romance verbal, nominal, and adjectival morphosyntax becomes transformed into creole paradigms such as those found in Palenquero, Papiamentu, Cape Verdean and São Tomé creole Portuguese has not been satisfactorily explained. Although all of these creole languages have eliminated Spanish and Portuguese morphological agreement in favor of invariant forms, occasional fossil remains of fully agreeing combinations suggest a gradual step-wise restructuring. One of the most significant obstacles in reconstructing the formation of Romance-derived creole languages and their implications for general theories of creolization is time depth: there is little reliable information on the earliest stages of creolization and restructuring, and there are no contemporary configurations containing enough remnants of the first stages of the "big bang" of creole formation to provide corroborative data. This is nowhere more evident than in the case of creoles arising from the contact between Spanish and a variety of African languages, of which the remaining specimens are few and of debatable origins. Only Palenquero and Papiamentu remain as survivors of what was probably a much richer set of contact varieties, and both of these Afro-Iberian creoles contain enough Portuguese elements to call into question their basis in Spanish, rather than being relexifications of a Portuguese-derived proto-creole.

There is considerable historical, literary, and folkloric evidence that the speech of Africans who acquired Spanish as a second language (known as *bozales*) existed over a large

enough territory and in some regions for sufficient time as to have produced at least significantly restructured varieties of "Afro-Spanish," if not fully developed creole languages. Many of the known linguistic features of *bozal* Spanish are typical of all learners of Spanish: unstable subject-verb and noun-adjective agreement, use of disjunctive object pronouns instead of clitics, confusion of *ser* and *estar,* misuse of common prepositions, and avoidance of grammatically complex sentences containing subordinate clauses. Other traits are found in Afro-Iberian creoles and probably represent the influence of African areal features: prenasalized consonants, paragogic vowels used to produce open CV syllables, *in situ* questions, double negation, and use of adverbial particles instead of verbal inflection for tense, mood and aspect.

There exist several isolated Afro-Hispanic speech communities throughout Latin America where traces of apparently post-*bozal* Spanish coexist with regional vernacular varieties. In most cases deviations from standard Spanish are limited to occasional lapses of agreement not found among monolingual Spanish speakers lacking the former *bozal* connection. In a few cases words or grammatical elements once found in *bozal* speech have survived, and in a very few instances regional vernacular dialects coexist with truly restructured post-*bozal* Afro-Hispanic varieties. By far the most striking instance of a post-*bozal* survival of restructured Afro-Hispanic language is found in some remote valleys of Bolivia (Lipski 2005, 2006, a, b; Angola Maconde 2000, 2003). In its most basilectal form—now confined to a tiny group of the oldest residents—this Afro-Bolivian dialect offers a blueprint for the formation of Afro-Hispanic contact language throughout the Americas.

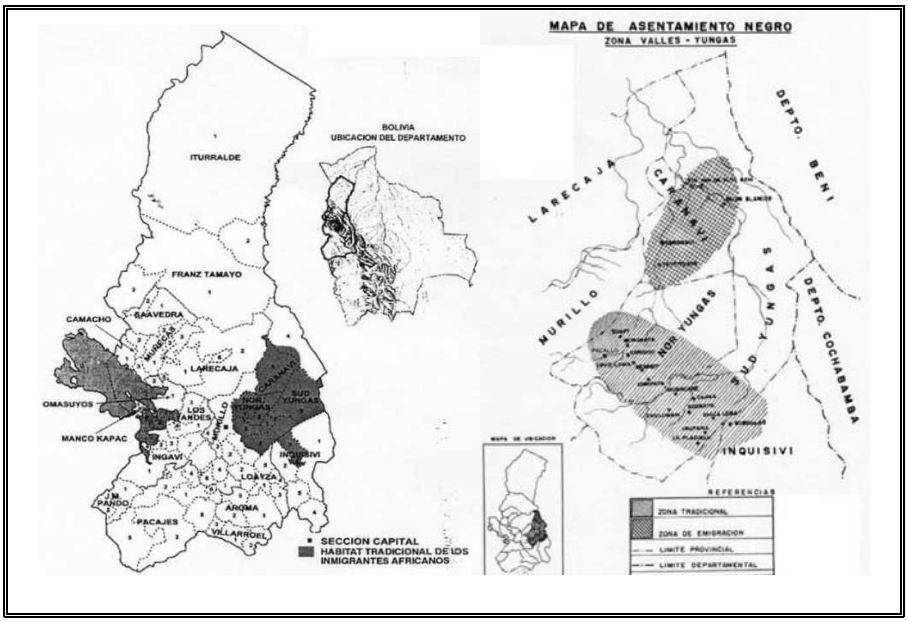
Afro-Bolivians in the Yungas

Highland Bolivia, known in colonial times as Alto Perú, then the Audiencia de Charcas, was the site of the earliest massive importation of African slaves in Spanish America, beginning in the

1530's. Ultimately, the population of African descent blended into the overwhelmingly mestizo population, and today only a tiny fraction of the national population is obviously of African origin. Most contemporary Afro-Bolivians live in scattered communities in the provinces of Nor Yungas and Sud Yungas, in the department of La Paz, to the northeast of the capital city. The Yungas are tropical valleys no more than a few thousand feet above sea level, surrounded by some of the most forbidding mountain terrain in all of South America, with peaks reaching more than 15,000 feet. In addition to the wrenching poverty of rural Bolivia, the torturous terrain, nearly vertical geography, lack of adequate roads and other infrastructure, and frequent mud and rock slides, has cut off the Yungas communities from the rest of Bolivian society. The region is principally inhabited by an Aymara-speaking indigenous population, while the remaining Afro-Bolivians live in scattered houses on the mountainsides, where they grow coca as a cash crop. As a result of the social and geographic isolation, residents of the Yungas communities have retained cultural and linguistic traits that have faded from more populated urban areas.

Currently, Afro-Bolivians in the Yungas occupy (usually as squatters) tiny parcels of land that once belonged to large haciendas, until the land reforms of 1952. The origin of the black population in the Bolivian Yungas is not known with certainty; the first official records (deaths, marriages, and other accounts) date from just after 1700. By the end of the 18th century the historical record is more substantial as regards black slaves on the *haciendas* of the Yungas and other central Bolivian regions. The regional African origins of modern Afro-Bolivians, are uncertain, although the Congo and Angola regions are the most likely. To this day the surnames Angola and Maconde (apparently of Kongo origin) persist in the Yungas. These surnames were given by ship captains and slave dealers, but typically approximate the coastal African areas from which the respective slaves were drawn. The communities harboring the greatest

proportion of Afro-Bolivians are all located in Nor Yungas province: Tocaña, Mururata, Chijchipa, Coscoma, Dorado Chico, and Khala Khala. In Sud Yungas province a significant Afro-Bolivian population is located in Chicaloma. The principal Nor Yungas communities are shown in the following maps:



Afro-Bolivian Spanish

All contemporary Afro-Yungueños speak rustic highland Bolivian Spanish (known locally as *castellano*), whose sociolinguistic features vary according to level of education and contact with other areas of Bolivia. All Afro-Bolivians who have remained in the rural Nor Yungas and Sud Yungas communities have learned at least some Aymara, although in the Nor Yungas groups studied here Aymara has clearly been acquired as a second language, and is used only when necessary outside of the Afro-Bolivian settlements. In addition, in the most traditional communities (especially Mururata and Chijchipa, but also Tocaña, Dorado Chico, and some of the smaller settlements), a restructured post-*bozal* Afro-Hispanic language survives alongside contemporary Spanish. Most older Afro-Yungueños in the Nor Yungas settlements

mentioned above have at least passive competence in the Afro-Bolivian dialect; an undetermined but evidently shrinking number (which does not exceed two hundred individuals) have total active fluency.

The Afro-Bolivian dialect differs from other highland Bolivian dialects in terms of segmental and suprasegmental phonology. More to the point, it differs from all other monolingual varieties of Spanish worldwide in the structure of DPs and VPs, both of which exhibit morphosyntactic reduction suggestive of the first stages of Afro-Hispanic restructured language. In essence, the principal morphosyntactic features of the basilectal Afro-Bolivian dialect are presented in Table 1. These significant grammatical features, together with a radically altered phonetic/phonological system, demonstrate that traditional Afro-Bolivian speech is not really a "dialect" of Spanish but rather a restructured semi-creole language, as different from Spanish as, e.g. some Asturian and Aragonese dialects.

Table 1: Systematic grammatical differences between Afro-Bolivian Spanish and other Spanish varieties worldwide (including the local non-Afro Bolivian dialects):

- Suspension of grammatical gender in nouns and adjectives. Only remnants of the Spanish masculine gender are used: *lu mujé* `the women'; *tudu lu gente* `everyone'; *lu taza di cajué* `the cup of coffee'
- Invariant plurals; nouns do not take the normal Spanish plural form: *lu persona mayó* `the older people'; *lu mujé* `the women'; *lu patrón* `the landowners'
- "Bare plurals," marking plural /s/ (if at all) only on the first element of the noun phrase: *esoh fiesta* `those parties'; *algunoh cosa* `some things'
- Elimination of definite articles in subject position (required in other Spanish dialects): *perro ta flojo [los perros están flojos]* `dogs are worthless'; *patrón huasquiaba mujé* `the landowners beat the women'; *nube ta bien rojo [las nubes están bien rojas]* `the clouds are very red'
- Restructured subject pronoun system, including no formal-familiar 2nd person distinction and no masculine-feminine distinction in the 3rd person: *yo, oté, ele* (masculine and feminine), *nojotro, otene, eyuh* (masculine and feminine)
- placement of object clitics between auxiliary verbs and infinitives: *yo va ti decí* ``I'm going to tell you'; *¿por qué no viene mi mirá* `why don't you come see me?'; *¿quién va ti bañá?* `who is going to bathe you?
- Non-inverted questions: *¿cuánto hijo pue oté tiene?*`How many children do you have?'; *¿ande pue oté viví?* `where do you live?'; *¿Andi pue oté ta trabajá?* `where are you working?'
- Use of the Spanish 3rd person singular as invariant verb form for all persons and numbers in each tense: *nojotro tiene[tenemos] jrutita* `we have fruit'; *yo no conoció [conocí] hacienda* `I never knew the haciendas'; *yo miró[miré] jay* `I saw it'
- Constructions based on invariant *ta(ba)* + INFINITIVE instead of conjugated verbs: *¿quién ta comprá?* `who is buying [coca]?'; *¿andi pue tía ta i?* `where are you going, ma'am?'; *eje taba mirá* `she was looking'; *eje perro ta ladrá* `that dog is barking'
- Elimination of the prepositions *a* and *en*: *yo nació [en] Mururata* `I was born in Mururata; *nojotro va [al] trabajo* `we're going to the work site'

Unlike *bozal* Spanish varieties in Cuba and Puerto Rico, Afro-Bolivian Spanish was never in contact with other creole languages, nor with languages of relatively recent immigration, such as Chinese or Arabic. Long-standing contact with Aymara is not responsible for the restructuring of Afro-Yungueño speech; at best a few lexical items bear the imprint of this contact situation. Among other surviving Afro-Hispanic speech communities, there is no systematic suspension of subject-verb agreement, which sheds no light on the origins of the early Afro-Hispanic verb phrase. Nor are there monolingual natively spoken Spanish dialects in which gender and number concord is suspended in noun phrases. The Afro-Bolivian data therefore serve as a crucial test case as a survival of an actually occurring Afro-Hispanic contact language.

Implicational relationships in the Afro-Bolivian VP and DP

Afro-Bolivian speech makes its greatest contribution to the reconstruction of early *bozal* Spanish contact dialects in the restructured DPs and VPs, since it is here that we observe patterns that deviate from all other contemporary and historically documented varieties of Spanish. Given the gradual displacement of the traditional Afro-Bolivian dialect by modern Bolivian Spanish over the past three generations, there is considerable morphosyntactic variation across generations and as a factor of exposure to standard Spanish. There are also regional isoglosses radiating outward from a geographical locus where the most basilectal variety is spoken. Only in Mururata and Chijchipa does the full form of the basilectal variety survive. In nearby Tocaña and more distant Dorado Chico and other Nor Yungas communities only a diminished subset of creoloid features are found. Even in communities where the traditional dialect is still spoken, there is a clear post-creole continuum when speakers of the Afro-Yungueño dialect seek approximations to contemporary Spanish. It is not always the case that discrete code-switching

between the two grammatical systems occurs, although some younger more educated speakers can switch consistently and dramatically between the basilectal variety and contemporary highland Bolivian Spanish. For most older Afro-Bolivians, there is a cline ranging from the basilectal dialect to modern Spanish. For some speakers the full range of grammatical agreement of modern Spanish is not attainable, and even when attempting to speak contemporary Spanish some instances of invariant plurals or lack of noun-adjective concord slip in. Both the regional and generational variation are systematic enough as to reveal unidirectional implicational relationships. These implicational relations both define a post-creole continuum and, conversely, suggest a hierarchy of non-canonical Spanish elements in terms of their status during creolization. Ranging from the most creole-like features to the least, the Afro-Yungueño implicational patterns are as follows, where VP features come first, followed by DP features, as in Table 2:

Table 2: Afro-Bolivian DP and VP implicational relationships

TRAIT		**EXAMPLE**
Invariant 3 s. verb forms for 1 s.	>>	*yo* ***va*** *trabajá* `I am going to work'
Invariant 3 s. verb forms for 1 pl.	>>	*nojotro* ***va*** *trabajá* `we are going to work'
Invariant 3 s. verb forms for 3	>>	*eyu(s)* ***va*** *trabajá* `they are going to work'
Invariant plural article *lu(s)*	>>	***lu(s)*** *mujé* `the women'
Lack of gender concord in adjective suffixes	>>	***esos*** *fiesta* `those parties'
Bare plurals	>>	***algunos*** *cosa* `some things'
Invariant plurals		*lu(s)* ***patron*** `the landowners'

In other words speakers who exhibit a given trait will also use all the traits found lower on the chart (e.g. those who say *yo* ***va*** *trabajá* will also say *nojotro* ***va*** *trabajá*, ***lu(s)*** *mujé, lu(s) patrón*), while features higher on the chart will be absent (e.g. there are speakers who say *lu(s) patrón* but not *lu(s) mujé, eyu(s)* ***va*** *trabajá, nojotro* ***va*** *trabajá*, etc.). Within each category—DPs and VPs—the implications shown in the chart are quite robust, although not exceptionless. There is, however, some crossover between the two categories, which are neither totally independent nor

fully integrated into a single implicational scale. In general the first basilectal feature to disappear in partially decreolized Afro-Yungueño Spanish is the invariant verb, while invariant plurals and suspended noun-adjective concord can linger into the closest approximations to modern Spanish. For purposes of analysis, therefore, the restructured DP and the restructured VP will be treated separately. The interplay of morphosyntactic strategies, features, and dialect variation is best captured within the framework of Optimality Theory, in essence a metastructure for evaluating the results of competition among fundamentally incompatible constraints.

Pluralization in partially decreolized Afro-Yungueño DPs

All Romance languages have inherited from Latin the morphosyntactic system of marking plural DPs via a plural morpheme at the end of every nominal/adjectival element in the DP: determiner, noun, adjectives, modulo specific irregular forms. In some varieties of Spanish in which word-final /s/ is frequently aspirated or deleted there is a tendency to delete plural /s/ in multi-word DPs if the first /s/ is phonetically realized. Poplack (1980a, 1980b) analyzes Puerto Rican data in which the presence of a preceding null plural realization (i.e. deleted plural /s/) results in a strong preference for a null plural realization in the immediately succeeding element in the same plural DP. Thus in a DP such as *las cosas bonitas* `the beautiful things' if the first /s/ is deleted there is a high probability that the second and third /s/ will also be deleted, etc. Epiphenomenally this appears to be similar to the vernacular Brazilian and Angolan Portuguese and Afro-Yungueño Spanish bare plural marking; indeed Scherre (1998a, 1998b, 1998c, 1998d, 2001) dwells on the similarities between the two systems. The main point of convergence is the effect of preceding elements in the linear string on the realization or deletion of the plural marker /s/. In reality, although similar combinations may arise in Puerto Rican Spanish and vernacular Brazilian and Angolan Portuguese the underlying processes are quite distinct. In Puerto Rican

Spanish, as in other /s/-reducing Spanish dialects, effacement of final /s/ is a purely PHONETIC process of reducing syllable-final consonants. Syllable- and word-final /s/ are aspirated or deleted in all but the most artificially monitored styles irrespective of the possible grammatical function of the final /s/. Poplack's data show almost no difference in 3-element plural DPs (e.g. *las cosas bonitas*) on the deletion of the third plural /s/ whether the second /s/ has been deleted (*las cosa bonita*) or the first two (*la cosa bonita*); this is because in both cases the overriding Puerto Rican tendency to eliminate final /s/ in unmonitored speech is the foremost factor. Only in cases where the first two plural /s/ in 3-element plural DPs are realized as [s] is there a marked tendency to retain the third /s/; however given the overwhelming tendency not to realize final /s/, any discourse in which the first two final /s/ are realized as [s] is probably an artificial style, which would then motivate the retention of successive instances of /s/. As for the low probability of combinations such as Ø-S- Ø, this stems from the existence of a general process of final /s/-weakening. Since this process uniformly affects all instances of /s/ in the appropriate phonetic context there is no reason to expect a break in the middle of a sequence of final /s/'s, unless there exceptional pragmatic reasons for suddenly inserting an [s]. In a string of plural /s/ associated with a single DP, one sometimes observes a "strong start" articulation in which the first /s/ in the string receives an exceptionally strong articulation; this effect has been quantitatively demonstrated in Poplack's data. The final /s/ in a chain of plural /s/'s may also be singled out for a stronger articulation, especially if in phrase-final/prepausal position. This cuts across all /s/-reducing Spanish dialects and underscores the bracketing effects of first and last positions in a discourse string, positions of prominence all observed in child language and in many phases of second-language acquisition and language disorders.

The stripping of plural /s/ in vernacular Brazilian and Angolan Portuguese on the other hand is a MORPHOLOGICAL process and not the end result of a phonetically-motivated weakening chain [s] > [h] > Ø. Neither Brazilian nor Angolan varieties of Portuguese have systematic processes of /s/-aspiration in syllable-final positions. Final lexical /s/ is sometimes deleted in colloquial Brazilian Portuguese, especially in the first-person plural verbal desinence *–mos*. Word-internal syllable-final /s/ is not affected, except in the common pronunciation of *mesmo* `same, even' as *memo,* in both Brazil and Angola. The assignment of plural /s/ to the first element of a plural DP is consequently not the result of the interplay of phonetic factors but rather a deliberate morphosyntactic strategy of marking plural only once in the DP, in this case at the very beginning. There are no documented cases in non-contact Romance varieties of a consistent strategy of pluralization in which the plural morpheme is only attached to the first element (usually a determiner) of the DP, with null plural morphemes on the remaining elements. Circumstantially, then the Afro-Yungueño/Afro-Portuguese first-and-only plural /s/ is more closely aligned with vernacular (Afro-) Brazilian and Angolan Portuguese rather than with /s/-reducing Spanish dialects. This in turn suggests a non-Romance source for Afro-Yungueño plural stripping. The fact that this combination occurs consistently only in Spanish and Portuguese varieties formed in contact with West African languages scores another circumstantial point, although not yielding a definitive conclusion.

The Afro-Hispanic marking of /s/ only on the first element of plural DPs embodies a denial of fundamental Romance patterns, while the variable use of plural /s/ in these same dialects suggests that other factors can override the tendency to mark only the first element of the DP. The fact that in these dialects plural /s/ either occurs only on the first element or on all relevant elements—but not, for example, only on the last element, or on the first and last of a 3+

element DP—is also indicative of a grammatical constraint rather than simple coincidence. In the case of Ibero-Romance plural /s/ as manifested in Afro-Yungueño Spanish and Afro-Portuguese dialects, several widely applicable constraints are in play and in potential conflict with one another. First is faithfulness of the output to the input, in this case the full realization of agreement of the feature [plural] across all constituents of a plural DP. In complete opposition to this constraint is the refusal to mark any agreement features, i.e. the total lack of agreement in a DP. More often found in the dialects in question is a strategy of marking plural /s/ **once and only once** in the DP. This constraint in turn interacts with widely observed alignment principles, in this case aligning the plural /s/ on the leftmost available anchoring point in the DP. In non-contact varieties of Spanish and Portuguese faithfulness constraints take precedence over either alignment or singly marking plural, resulting in the prototypical Ibero-Romance plural DP configurations. In Afro-Yungueño Spanish, the constraint **SinglyExpressed (plural)** as proposed e.g. by Stemberger (2001) takes precedence over all faithfulness constraints. As a first approximation—to be subsequently revised—an appeal will be made to alignment constraints, via the constraint **Align-L pl. /s/** which places the plural /s/ on the leftmost available position within the plural DP. According to this approach, a plural DP such as *los guagua joven* `the young children' instead of modern Spanish *los guaguas jóvenes* would be derived as in Tableau 1:

Tableau 1

los guaguas jóvenes	**Align-L pl. /s/**	**SinglyExpressed (plural)**	**FAITH(pl)**
lus guaguas jóvenes		!*	
☞ lus guagua joven			*
lus guaguas joven		!*	*
lus guagua jóvenes	!*	*	*

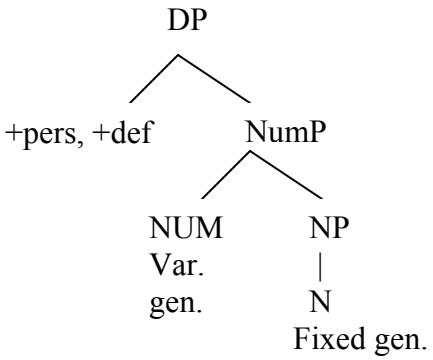
The syntactic basis for left-alignment of plural /s/

Although this analysis produces the correct surface forms, it begs the question of **why** these singly-marking strategies occur in the first place. There is of course no definitive answer forthcoming, since the origins of these Afro-Iberian dialects are shrouded in the mists of several centuries of undocumented evolution, but the general directions are clear enough. The single expression of plural is a pan-African trait spanning nearly every language and linguistic subfamily known to have come into contact with Spanish and Portuguese. In the Bantu languages plural DPs are signalled via a series of prefixes, which vary according to the nominal class, attached to the stem noun. The prefix is an integral part of the noun, and there are enough different prefixes, quite dissimilar amongst themselves, as to preclude the notion of a canonical "plural" prefix. Other African language families employ different strategies, often preposing (as in Yoruba) or postposing (as in the Fongbe group) the third-person plural subject pronoun to indicate pluralization. Pluralization is signaled at most once in the DP; when other discourse markers suffice for semantic interpretation, the plural pronoun *cum* plural marker is not used. A strategy in which plural is marked once in a plural DP is broadly consistent with African languages known to have intersected with Spanish and Portuguese, despite the many individual differences among these languages. Indeed Guy (2004:131) also suggests a pan-African source for bare plurals in Brazilian Portuguese, although without indicating why any plural marking at all is found in language inherited from speakers of African languages in which no similar morphological structures existed.

Left-alignment of the plural /s/ cannot be attributed solely to African languages; instead this alignment reflects both discourse considerations and syntactic structures. From a discourse perspective front-loading of semantic features is a common strategy and one that can be readily

grasped by speakers of a wide variety of languages. From a syntactic standpoint, the lack of plural marking across the entire DP is a case of impoverished agreement in the extended projection of the DP, in this case the embedded DP (noun and adjective(s)). Under the usual Spec-head agreement the morphological features (in this case for number) should percolate to all elements c-commanded by the determiner. There are other cases in syntax of impoverished agreement in extended projections; Samek-Lodovi (2002) has postulated that "agreement within local projections is never poorer than agreement within their extended projections." According to Grimshaw (1991:37-39; 1997), in the DP features percolate up from the noun to the determiner. The marking of plural on the determiner but not on the accompanying DP is not consistent with the usual structure of the DP/NP, but does support extended DP models in which number and variable or purely grammatical gender are projected from a NUMBERPHRASE (NumP), between the DP and the NP (e.g. Di Domenico and De Vincenzi 1995): This is a more ramified version of models such as Ouhalla (1991) which postulate a single AGREEMENTPHRASE AgrP between the NP and the DP.[1]

(1)



In this phrase structure the usual Spec-head agreement will attach number features to the determiner, but if this feature does not percolate to the extended projection (the NP), then the vernacular Brazilian/Angolan Portuguese and Afro-Yungueño Spanish singly-marked plural DP

configuration results. By using the constraint **EXTAGR** (agreement across the extended projection: an agreement head H and a DP must agree on feature *f* within the extended projection of H) sugggested e.g. by Samek-Lodovici (2002), the relevant leftmost alignment of [plural] emerges as a purely syntactic phenomenon, the result of interaction between Spec-Head agreement within the NumP (producing plural marking on the determiner) and agreement across the entire extended projection (including the NP), which when satisfied produces the normal Spanish and Portuguese multiply-marked plural DP. It is the high ranking of the constraint **SINGLYEXPRESSED (plural)** that accounts for the non-optimal nature of extended agreement in these dialects. This solution eliminates the need for stipulative alignment constraints and highlights the nature of contact-induced grammatical restructuring as the result of imperfectly acquired agreement systems, as shown in the revised Tableau 2, where the generic **FAITH(pl)** has been replaced by the more specific **AGR(pl)**,which requires Spec-Head agreement between the determiner and the noun (but not necessarily the following adjective):

Tableau 2

los guaguas jóvenes	**SINGLYEXPRESSED (plural)**	**AGR(pl)**	**EXTAGR$_{NUM}$**
lus guaguas jóvenes	!*		
☞ lus guagua joven		*	*
lus guaguas joven	¡*		*
lus guagua jóvenes	!*	*	

The same analysis holds for plural DPs not headed by a determiner, e.g. Afro-Bolivian *personah mayó* `older people' (modern Spanish *personas mayores*). In these DPs, which contain null determiners, the feature [plural] appears on head noun but extended agreement to the adjectival phrase does not occur.

Grammatical gender in partially decreolized Afro-Yungueño Spanish

An analysis based on the interplay of agreement within a single projection, extended agreement, and either single expression of a feature or the total lack of agreement features is also possible for the expression of grammatical gender in the Afro-Bolivian DP. In the basilectal form, there is no gender concord at all within the DP. The patrimonial Spanish masculine articles *el* (singular) and *lu(s)* (plural) as well as other determiners (possessives and demonstratives) derived from Spanish masculine forms combine with nouns that are grammatically masculine and feminine, and neither preposed nor postposed adjectives agree in gender with the head noun. Examples of this basilectal configuration are: *nuestro cultura antigo [nuestra cultura antigua]* `our old culture'; *algunos enfermedá [algunas enfermedades]* `some illnesses'; *todito eso hierba, mezclao [toditas esas hierbas, mezcladas]* `all those herbs, mixed together'; *[la] nochi entero [entera]* `all night long'; *con sebo de vaca negro [negra]* `with tallow from a black cow'; *los hombre con camisa blanco [camisas blancas]* `the men with white shirts.' A simple analysis in which NOFEAT is ranked higher than AGR(GENDER) and all other agreement patterns accounts for all basilectal Afro-Yungueño DPs. Of more interest are Afro-Bolivian DPs that partially agree in gender. Some combinations appear to be of the "mix and match" variety and result from the coexistence of a now rapidly fading basilectal grammar and contemporary Bolivian Spanish, with full gender and number agreement. The most frequently recurring configurations is similar to stripped plurals, in that gender is signaled on the first element (usually a determiner) but not on pre- or post-nominal adjectives or predicate adjectives: *con la gente antigo [antigua]* `with the traditional folks'; *esa casa chico [chica]* `that small house'; *había una curva ancho [ancha]* `there was a broad curve'; *esa gente era malo [mala]* `those people were bad'; *con la cabeza bien bañadito [bañadito]* `with the hair well washed';

una jornada completo [completa] `a full day's work'; *la gente era vivo [viva]* `the people were smart.' No instances have been observed of gender marking on postnominal adjectives or predicate adjectives but not on prenominal adjectives or determiners. Once more this apparent left-alignment of grammatical gender marking is a consequence of the phrase structure in (1), in which gender marking is present on the determiner through Spec-head agreement but does not percolate to the extended projection, as in Tableau 3:

Tableau 3

una curva ancha	**SINGLYEXPRESSED (gender)**	**AGR(gender)**	**EXTAGR$_{GEN}$**
una curva ancha	!*		
☞ una curva ancho			*
un curva ancho	¡*	*	*
un curva ancha		¡*	*

As a dividend, this analysis can also be applied to Helvécia semicreolized Portuguese, which also exhibits some lapses in gender concord, although not nearly as frequently as in Afro-Yungueño Spanish: *terra meu [minha terra]* `my land'; *tia cego [cega]* `blind aunt'; *umas coisa necessários [umas coisas necessárias]* `some necessary things'; *muita coisa caro [muitas coisas caras]* `many expensive things'; *o meu vida [a minha vida]* `my life' (Baxter 1997, Baxter and Lucchesi 1993, Baxter et al.1997, Lucchesi 1998, Naro 1998, Perl 1998). This dialect exhibits many of the same traits as Afro-Yungueño with respect to gender marking, i.e. a cline ranging from no agreement to full agreement, suggestive of a process of decreolization. In cases of partial gender marking, gender is more likely to be marked prenominally than postnominally; Baxter et al. (1997:23) referring to adjective phrases combined with locative constructions in Helvécia Portuguese note that "not a single instance of an adjective marked for agreement and postposed to the locative was found in the data base." Similar configurations are also

documented for Angolan Portuguese, although quantitative data are not available. Some literary examples are:

> *[eu] vai no meu terra [minha terra], siô* `I'm going to my land, sir' (Rocha 1933:82)
> *Perdi meu [minha] mulher* `I lost my wife' (Granado 1940:211-212)
> *Eu vais no [na] fortaleza levar este cinco sordado* `I am going to take these five soldiers to the fort' (Maio 1947:91)
> ... *isso é o rapaz e os mulher [as mulheres]* `that is the boy and the women (Maio 1947:95)

The appearance of plural before gender concord during decreolization: gender marking

In Afro-Yungueño Spanish—and judging by published examples also in Helvécia and Angolan Portuguese—gender agreement is suspended more frequently than number agreement, and in an implicational fashion. In other words whereas an Afro-Bolivian speaker may produce combinations such as *esos hierba [esas hierbas]* `those herbs,' *algunos enfermedá [algunas enfermedades]* `some illnesses,' *luh persona mayó [las personas mayores]* `the adults,' in which number is marked (albeit only on the first element) but in which there is no gender marking, there are no observed configurations such as **esa hierba* for plural *esas hierbas*. From the perspective of restructuring under imperfect language acquisition and subsequent decreolization, this indicates that number features are acquired before gender features, and that in decreolization number features will spread to extended projections before gender features. This is not surprising in view of the fact that grammatical number marks a semantically prominent distinction (one versus many), whereas in Ibero-Romance grammatical gender concordance is almost always semantically empty. Even with semantically feminine nouns such as *mujer* `women,' *yegua* `mare,' *gallina* `hen,' the feminine gender markers attached to determiners and adjectives in the DP serve no semantic function. Only in cases of epicene gender—very rare in Spanish and even less frequent in the daily discourse of the Bolivian Yungas and almost always identifiable through other discourse markers—does grammatical gender marking on determiners

and adjectives serve to distinguish the gender of the noun: *el/la agente* `the agent (m./f.), *el/la estudiante* `the student (m./f.).

Experimental studies demonstrate that processing of grammatical gender in the absence of conceptual/biological information about the sex of the object is more costly; i.e. the processing of gender in *la casa* `the house' requires more processing time than for *la mujer* `the woman' (e.g. Vigliocco and Franck 1999).[2] The predominance of number over gender has been well documented cross-linguistically in first- and second-language acquisition as well as language impairments (e.g. Carminati 2005, De Vincenzi 1999a; Di Domenico and De Vincenzi 1995; Eberhard 1997), and the Afro-Bolivian data bear out this hierarchy in terms of contemporary decreolization. Moreover there is much cross-linguistic experimental evidence that production of grammatical gender in bare nouns requires additional processing time (e.g. Cubelli et al. 2005 for Italian; also Schriefers and Jescheniak 1999). In other words grammatical gender information is selected by the speaker whether or not "needed" for the utterance about to be produced. This occurs independently of the phonological form of the word, i.e. whether or not one of the canonical *–o/-a* endings found in Spanish, Portuguese, and Italian is present. Cubelli et al. (2005:52) analyze this result as "reflecting a competitive lexical selection due to an abstract grammatical gender feature rather than to the morphological or phonological similarity of [the relevant nouns]." In addition (p. 53) "[...] to produce a given noun, the corresponding lexical-semantic and lexical-syntactic representations, specifying meaning and grammatical properties respectively, have to be selected before accessing its phonological form [...] the selection of semantic and grammatical features is conducted independently and [...] the selection of the lexical form of a given noun is achieved only when competition at both semantic and

syntactic levels has been resolved." They postulate that the semantic information is selected before the syntactic information.

By extension of the experimental findings on the increased processing required for grammatical gender, eliminating the grammatical gender category consequently eliminates the need for gender selection, and produces a more efficient ("faster") processing strategy. De Vincenzi (1999b) provides Italian experimental data that indicate that "number information is used in an earlier stage of antecedents identification (where syntactic information is used), while gender information is used at a later stage (where lexical and semantic information are used)" (p. 551). She also suggests that while number heads an autonomous syntactic projection, gender never does so, not even in the case of variable gender. Finally, Caramazza et al. (2001) provide cross-linguistic information that production and processing of determiners is complicated by the necessity to retrieve gender and number information; "determiner selection in a given langauge occurs at the same point for *all* determiners, even though some of them could be selected earlier. In the case of Spanish, even though masculine determiners could be selected early, they are nevertheless selected at the same late point as feminine determiners" (p. 223). Many of the L_2 Italian data on the acquisition of grammatical gender presented in Chini (1995) reinforce these observations. Basilectal Afro-Yungueño Spanish reduces this complexity by effectively eliminating gender marking.

The psycholinguistics of number marking

The processing of grammatical number, on the other hand, is not symmetric; there is experimental evidence suggesting that whereas plural is a semantically and syntactically marked category, words lacking a plural affix are not semantically singular but rather UNMARKED for number (e.g. Berent et al. 2005). This hypothesis is supported by the Afro-Yungueño preference

for invariant plurals of the sort *(luh) mujé* `the women,' *luh varón* `the men' even in the most decreolized forms of the dialect. Rather than representing a mismatch between semantic and syntactic features—a configuration that should augment rather than reduce production and processing difficulty—the bare plural is an unmarked form, whose plural reference can easily be extracted from the preceding plural determiner or from the surrounding discourse.

The preceding paragraphs have presented an analysis of depleted gender and number agreement in the Afro-Bolivian DP from two perspectives: morphological alignment plus single expression of a morphosyntactic feature, and a tradeoff between local and extended syntactic feature percolation. The question arises of which approach more adequately accounts for the *bozal* Spanish and Portuguese data. Based on available data on creolization and decreolization of Spanish and Portuguese, the answer is that both approaches combine to model Afro-Yungueño Spanish and related Afro-Portuguese linguistic behavior. Lack of expression of morphosyntactic features, i.e. total lack of agreement or NOFEAT, is a concomitant of all second-language acquisition of Spanish, Portuguese, and other languages with affixes for grammatical categories such as gender and number. It is a particularly likely constraint to take first place under the unfavorable learning conditions found in slave concentrations such as plantations and mines. The competing constraints requiring full agreement (maximum redundancy, therefore maximal assurance that semantic information is being transmitted) versus no agreement (minimal allomorphy, minimal redundancy, maximal "laziness") are logical consequences of the circumstances surrounding the acquisition of Spanish and Portuguese under the difficult conditions of slavery or European colonization of Africa. Single expression of number is consistent with all West and Central African languages, while left alignment of plural /s/ is both

an ideal production and parsing strategy for second-language speakers of Spanish and Portuguese and a syntactic consequence of the phrase structure of the Ibero-Romance DP.

It is probably the case that during the earliest stages of acquisition of Spanish and Portuguese by *bozales*, when only the barest rudiments of the noun phrase had been learned and in which functional categories such as the DET—and consequently functional projections such as DP—had not yet been acquired, that linear processing strategies such as alignment were the foremost motivators for the constraints. This would hold even for speech communities such as the Afro-Yungueños in which a dialect containing the restructured DP is spoken monolingually, i.e. not in decreolizing contact with standard Spanish or Portuguese. In subsequent decreolizing environments providing contact with the full syntactic form of the Spanish and Portuguese DP, the parameterizing of constraints allowing for local or extended agreement of morphosyntactic features is a more appropriate model. Single marking of gender is even more closely associated with second-language acquisition since as has been noted grammatical gender in Ibero-Romance provides almost no crucial semantic information. It is the case that even in early stages of L_2 acquisition in which the full structure of the DP has not yet been acquired, learners frequently encounter the repeated syntagmatic combination of DETERMINER+NOUN, with no more than two or three determiners (definitive article, indefinite article, and perhaps a possessive or demonstrative) of a single gender associated with the noun in question. Gender marking in Spanish and Portuguese determiners is entirely transparent (*-o* or *-e* for masculine, *-a* for feminine) except for the extremely frequent Spanish definite article *el* and the equally common indefinite articles *un/um*. Accompanying adjectives on the other hand do not form a closed set but rather an open-ended set of items not all of which share the canonical morphological endings for masculine and feminine.

The decreolization Afro-Yungueño verb paradigm

The Afro-Yungueño verbal system is also characterized by a depleted agreement system, but without considerations of extended projections or alignment. In the most basilectal form, the Afro-Bolivian verb adopts an invariant form derived from the Spanish 3rd person singular. This provides independent evidence that the 3s form is the maximally unmarked Spanish verb, rather than the infinitive, as has sometimes been claimed. There is additional evidence for this claim (Bybee 1980:166f.; 1985). The 3s form is the most frequent mismatched variant in Spanish and Portuguese child language, and predominates in nearly all vestigial and second-language varieties of these languages, including Angolan Portuguese, the Spanish of Equatorial Guinea, the Spanish as learned by native speakers of a wide variety of languages, and vestigial Spanish as spoken by transitional bilinguals in the United States, Trinidad, the Philippines, and elsewhere. The Spanish infinitive, on the other hand, is a marked form, statistically less frequent than most conjugated forms, and not frequently used as an invariant verb in child language, second language acquisition, language attrition and language impairment. When bare infinitives are used as invariant verbs in Spanish- and Portuguese based pidgins (e.g. as found in early *bozal* texts from Portugal and Spain), it is probably the case that the infinitive was "injected" into the proto-pidgin mix by native speakers of Spanish or Portuguese who used a centuries-old European stereotype of the infinitive as the "simplest" and most "infantile" verb form (Lipski 2002). The triumph of the 3s form in Afro-Yungueño Spanish therefore does not represent a higher ranking for particular morphosyntactic features over others (e.g. 3s as somehow the most highly ranked configuration) but as in the case of the basilectal DP, the total absence of features, as in Tableau 4:

Tableau 4

Comer (1 sg. P.)	NOFEAT	FAITH (p/n)
Yo como	¡*	
☞Yo come		*
Yo comemos	¡*	*
Yo comen	¡*	*

In this tableau the faithfulness constraint requiring subject-verb agreement in person and number is functionally irrelevant; the anti-agreement constraint NOFEAT always outranks it, and it is shown here only to demonstrate the radical difference with respect to standard Spanish.

The appearance of the 1st person singular: the first step in decreolization

Many Afro-Bolivians exhibit partial subject-verb agreement when speaking the traditional dialect. The first conjugated form to emerge is almost always the first person singular; thus a speaker may say *yo soy* `I am,' *yo trabajo* `I work,' while also saying *nojotro trabaja* `we work,' *`otene eh* `you (pl.) are.' Within contemporary syntactic theory, there have been proposals to rank the first and second person verbal forms over third person forms (e.g. Silverstein 1985) based on cross-linguistic comparisons across a wide range of languages. In the case of Afro-Yungueño Spanish and vernacular Brazilian Portuguese, this hierarchy must be refined to not only favor the first person over the remaining forms, but the first person singular even over the first person plural. Early child language in both Spanish and Portuguese also favors the 3s as the unmarked form. For Portuguese, Simões (1976:47) and Simões and Stoel-Gammon (1979) document such combinations as *eu gosta* `I like,' *eu viu* `I saw.'

In both Brazilian Portuguese and the Afro-Yungueño Spanish dialect, grammatically marked second person forms have disappeared: Brazilian Portuguese uses *você/vocês* for the familiar second-person, while basilectal Afro-Yungueño Spanish uses only *oté/otene* for all second-person referents. Thus from a morphological perspective there are only two person

markings: first person and the remainder (including semantically second- and third-person referents). A constraint **FAITH(1-S)** is needed to discriminate between the obligatory subject-verb agreement in the Afro-Yungueño sociolects in which **yo come* `I eat' is unacceptable but *nojotro come* `we eat,' *otene come* `you (pl.) eat,' etc. are grammatical (the lowest-ranked general faithfulness constraint is not shown here):

Tableau 5

Comer (1 sg. Pr.)	FAITH(1-S)	NOFEAT
☞Yo como		*
Yo come	¡*	
Yo comemos	¡*	*
Yo comen	¡*	*

Tableau 6

Comer (1 pl)	FAITH(1-S)	NOFEAT
nojotro como		¡*
☞nojotro come		
Nojotro comemos		¡*
Nojotro comen		¡*

The preference for agreement in the first person singular form is not surprising, given both the frequency of this combination and the uniquely personal nature of first-person reference. This is evidenced in Spanish and to a lesser extent in Portuguese by the number of verbs that have irregular forms only in the first-person singular (present indicative).

The third stage in the decreolization of the Afro-Yungueño verb phrase is the lack of agreement only with third-person plural verb forms: *eyu(s) come* `they eat,' but not *\*nojotro come* `we eat' or **yo come* `I eat.' This represents the generalization of the faithfulness constraint FAITH(1-S) to all first person forms: FAITH(1). Given the weak pronunciation of word-final consonants, in this case final /n/ which distinguishes the third-person plural from the third-person singular (this /n/ is routinely velarized in highland Bolivian Spanish and is partially

or totally effaced—usually leaving a nasalized vowel as residue—in rapid or colloquial speech) some Afro-Bolivian speakers who do not exhibit other grammatical traits of the dialect in their daily speech produce combinations like *eyus come* `they eat,' *ellos trabaja* `they work,' which suggests that in this dialect cluster such a configuration may actually be a stable attractor rather than a transitional stage in the decreolization process.

In the acrolectal form of the dialect, whose verb system is identical to that of standard Spanish, the first faithfulness constraint becomes generalized to affect all person-number combinations: FAITH(P/N), thereby disallowing any non-agreement between subject and verb. This constraint totally dominates NOFEAT, which now becomes redundant since it is never operative; this is the exact opposite of the basilectal configuration. The implicational relationships found in contemporary Afro-Yungueño Spanish and which are indicative of decreolization are best described as the gradual introduction of a high-ranked subject-verb agreement constraint, first very specific (requiring agreement only in first-person singular forms), then becoming gradually generalized to eventually encompass the full person-number spectrum. The use of a ranked-constraint model provides a ready metalanguage to describe the successive stages of acquisition of this dialect.

Comparative data from vernacular Brazilian Portuguese also confirm the notion that the use of an invariant 3 s verb form for the first person singular is the most "creole-like" combination, and the first to adopt morphological agreement during decreolization. This basilectal configuration in which all person/number combinations, including the first person singular (1 s) take the invariant (3s) verb form is not found in any variety of vernacular Brazilian Portuguese, where use of the 3s as invariant verb is restricted to the first-person plural and third-person plural (e.g. *nós trabalha [trabalamos]* `we work', *êles trabalha[m]* `they work'). Guy

(2004:132) notes that in vernacular Brazilian Portuguese even in cases where third person singular verb forms are used instead of 3 pl., in irregular verbs and verbs whose preterite forms are considerably different from the present forms (e.g. *fez-fizeram, falou-falaram, é-são*) subject-verb agreement rates are much higher than with regular verbs. Guy speculates that this differential behavior is a leftover from a fully creolized language once spoken in Brazil, in which no subject-verb agreement existed: "Subsequently, speakers who were in contact with standard Portuguese would have learned agreement in the way that is typical of second-language learners: acquire the most obvious features first. It would be highly salient to a standardizing learner that a plural verb form like *fizeram* occurs with a plural subject in place of singular *fez*, but rather obscure that *comem* is required instead of *come*." This proposal is consistent with the notion that gradual decreolization is a function of parsing and processing strategies, as well as of greater exposure to the target language under evolving sociolinguistic conditions.

In Helvécia semicreole Portuguese—and in the contemporary dialect only infrequently—the first person singular can take a 3 s verb form: *io sabi [eu sei]* `I know,' *io fas [eu faço]* `I do'. This is the only known natively-spoken[3] Portuguese variety in which the combination of 1 s subject and 3s verb occurs, marking this configuration as the most "creole-like." Baxter (1997) notes that the first person singular is the first subject-verb agreement pattern to emerge during decreolization of the Helvécia dialect.

In Spanish there are no irregular finite verbs—in the preterite or other tenses—that drop the final syllable, as in Portuguese *fiz, fez*, etc. (this does occur in some 2nd person singular imperatives, such as *haz* from *hacer*, *di* from *decir*, *pon* from *poner*). As a result there are fewer observable correlations in mesolectal speakers between retention of subject-verb agreement and highly irregular verbs. Basilectal speakers of Afro-Bolivian Spanish simply use the 3rd person

singular for nearly all verbs, while the rapid shift to a standardized school-room Spanish in just over a single generation was too rapid to produce a smooth cline of variable agreement such as found in Brazil. The "decreolization" of the traditional Afro-Bolivian dialect is not occurring gradually and informally as was the case for the putative (semi)creolized Afro-Portuguese dialect of colonial Brazil but rather is suffering rapid displacement and loss under very different sociolinguistic conditions. That there is any variable behavior at all, for example as regards 1st person singular vs. the remaining forms, is a tribute to the tenacity of the non-inflected morphology of the traditional Afro-Yungueño dialect.

Partial decreolization of the auxiliary verbs *ir* and *ta*

An additional complication is found in the grammars of some mesolectal Afro-Yungueño speakers, who effect most cases of subject-verb agreement when there is a single main verb, but suspend agreement on auxiliary verbs, particular *ir* in the periphrastic future combination *ir (a)* + INFINITIVE, and in *estar* + GERUND progressive combinations.[4] Examples include:

¿de qué nojotro pobre va [vamos a] viví? `What are we poor folks going to live on?'
lo que nojotro ta [estamos] hablando este rato `What we're talking about right now'
qué día yo va í [voy a ir] `what day I'm going to go'
eyo va[van a] leé, nojotro va [vamos a] leé `they are going to read, we are going to read'

This is best handled by a constraint such as ***WkAgr** (no weak agreement in syntactically/prosodically weak elements) e.g. as per Vogel (2002).

Tableau 7

ir a comer (1-s)	*WKAGR	FAITH(1-S)	NOFEAT
☞yo va comé		*	
yo voy comé	¡*		*
yo vamo comé	¡*	*	*
yo van comé	¡*	*	*

Additional manifestations of decreolization

The aforementioned grammatical subsystems represent the most robust stages in the progression from the basilectal dialect, in which morphological agreement is nonexistent, to contemporary Spanish, with full agreement in VPs and DPs. There are additional configurations which, while not as consistently represented in the community as the examples displayed in the preceding sections, also demonstrate the gradual increase in morphological cohesion in the direction of full agreement systems. There are, for example, speakers who exhibit first person singular and plural subject-verb agreement in the present tense, but use invariant forms in the preterite and imperfect: *yo trabajo* `I work' but *yo trabajó* `I worked,' etc. The privileged position of the present tense as regards full subject-verb agreement is also consistent with the prominence of the present tense as the most frequent in ordinary discourse, as well as the first tense to be mastered in both first and second language acquisition. Baxter (1997:281) also proposes the acquisitional order *person-number in present tense > person-number in preterite* for the Helvécia Portuguese dialect. For Afro-Bolivian speakers who exhibit the assymetrical behavior between past and present tenses, the constraint NOFEAT disallowing any subject-verb agreement has been refined to NOFEAT-PAST, in which subject-verb agreement is suspended in the past tenses but not in the present:

Tableau 8

comer (1-s-Past)	NOFEAT-PAST	FAITH (1)
comí	¡*	
☞comió		*
comimos	¡*	
comieron	¡*	*

Further discussion: the Gradual Learning Algorithm during decreolization

The acquisition, shift, and deterioration of language is marked by many symmetries. Early work on aphasia and other forms of catastrophic language loss, e.g. by Jakobson (1971) postulated that in polyglot individuals suffering from traumatic aphasia, competence in specific languages would be impaired in the reverse order of acquisition, with ancedotal evidence from polyglot aphasiacs who reverted back to the language of early childhood. Work on language erosion, in particular the speech of the last generation of "semi-speakers," also suggests some symmetry with first language acquisition, in that grammatical structures and configurations that are the last to emerge in child language are frequently the first to erode among semi-speakers (e.g. Dorian 1981). In the realm of creole language studies, decreolization has usually been viewed as a continuously varying set of approximations to the acrolect—a contemporary form of the lexifier language. Implicational scales of the sort demonstrated in Afro-Bolivian Spanish are frequently found during decreolization, although in many instances the individual elements of the implicational scale are more disparate than the regular progressions found in Afro-Bolivian speech, e.g. gradually adding more subject-verb agreement or number and gender agreement within the DP. Lacking in accounts of decreolization are detailed descriptions of the creolization process, since despite the fact that as pointed out by Bickerton (1981) the birthplace and sometimes even the birthday of creole languages are usually known, there are few reliable data on the early stages of creole formation. The Optimality Theory analysis of the Afro-Bolivian data suggests a significant degree of symmetry between decreolization and the formation of creole or semicreole languages. In both scenarios speakers start out with maximally undifferentiated morphological systems, characterized by the undominated constraint NOFEAT. This constraint, which disallows subject-verb and adjective-noun agreement, is subsequently

subordinated to increasingly specific agreement constraints, all with independent psycholinguistic motivation, in terms of semantic content, processing requirements, and overall frequency.

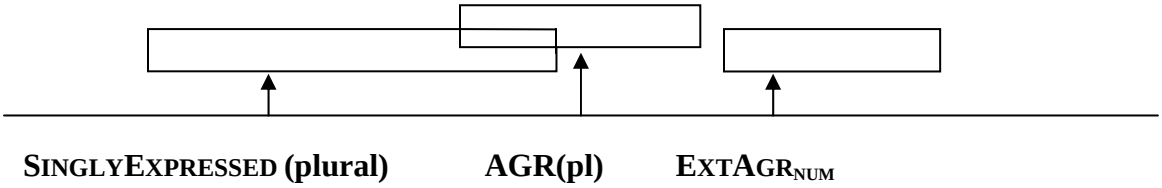
The distribution of partially agreeing DPs and VPs in the contemporary dialect is consistent with the Gradual Learning Algorithm (e.g. Boersma 1997, Boersma and Hayes 2001; also Tesar and Smolensky 1998). For example in describing bare plural DPs in Afro-Yungueño Spanish in Tableau 2, the constraints are ranked:

(2)

SINGLYEXPRESSED (plural) >> AGR(pl) >> EXTAGR$_{NUM}$

In the decreolizing dialect there is some overlap between the first two constraints, giving rise not only to the prototypical bare plural *lus guagua joven* but also to combinations like *lus guaguas joven*. There is however no overlap between the last two constraints; one never hears combinations like **(lus) guagua jóvenes.* This can be shown as in Figure 1

Figure 1



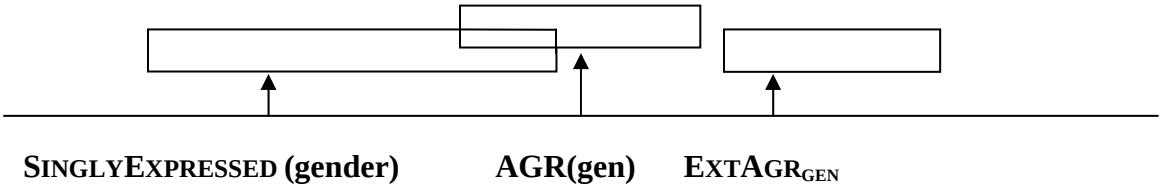
These data support the notion that some constraints can overlap in part of their ranges, while others must be strictly ordered. If in fact AGR(pl) and EXTAGR$_{NUM}$ also overlapped, then by transitivity all three constraints would be effectively unordered, and all "mix and match" combinations would be expected to occur. The prediction made from Figure 1 is borne out in practice: speakers either produce classic bare plurals with /s/ marked only on the determiner, or

they produce combinations of the sort *lus guaguas joven*, but none of the other permutations that would be in principal allowed if the three constraints all overlapped one another.

The next step in the post-creole continuum, currently represented by the greatest number of contemporary speakers of Afro-Bolivian Spanish, is the elimination of the constraint SINGLYEXPRESSED(PLURAL)—or equivalently its demotion to a very subordinate position. With the elimination of the requirement that plurality be marked only once in a DP, the way is clear for variable number agreement between the head noun and the following adjective; in other words, the constraint AGR(pl) requiring agreement between the determiner and the head noun can now begin to overlap with $\text{EXTAGR}_{\text{NUM}}$, requiring that the following adjective also agree in number with the determiner and head noun. This allows for the variable production by the same speaker of *lus guaguas joven* and *lus guaguas jóvenes,* variation that occurs in many idiolects. Eventually these constraints are replaced by general morphological faithfulness, a strictly dominant constraint in contemporary Spanish worldwide, which allows for no deviation from full expression of morphological agreement under any circumstances.

An identical scenario accounts for the gradual acquisition of gender concord in the DP during decreolization of the Afro-Bolivian dialect in the direction of contemporary Spanish. As shown in Tableau 3, the first step in the direction of full gender concord is the use of a feminine determiner, as in *una curva ancho* `a wide curve,' mid-way between the basilectal *un curva ancho* with no agreement, and *una curva ancha* in contemporary Spanish, with full agreement across the extended projection. Speakers who alternate between *un curva ancho* and *una curva ancho*, i.e. realizing Spec-Head agreement in the DP, never produce combinations such as **un curva ancha*. The first step in decreolization of gender concord is therefore as represented in Figure 2:

Figure 2



Once more, the constraint requiring agreement across the extended projection does not overlap with the constraint requiring only Spec-Head agreement, a configuration that would also overlap with the single expression of gender and create all possible permutations in the DP, including the non-occurring **un curva ancha*. However, once single exponence of gender is dropped during decreolization, the remaining two constraints can begin to overlap, and speakers will produce both *una curva ancho* and *una curva ancha*.

The decreolization data from Afro-Yungueño Spanish are consistent with the Gradual Learning Algorithm, with some modifications allowing for the circumstances of pidgin and creole language formation. We asssume an initial learners' state in which NOFEAT, i.e. the absence of morphological features, dominates all other faithfulness constraints. This assumption is supported by data from child language in Ibero-Romance languges, in which verbal, nominal, and adjectival morphology develops gradually. It is also consistent with creolization of Spanish in contact with a broad spectrum of West and Central African languages, none of which inflects nouns and adjectives with morphological suffixes, and in none of which are there special morphological distinctions for masculine and feminine gender. Speakers of these languages seeking immediate accommodation within Spanish would gravitate towards the statistically most frequent verb forms (3rd person singular), the unmarked number (singular), the unmarked gender (masculine), and a definite article that combined the prevailing suffix *–o* associated with

masculine gender and the initial consonant /l/ found in four out of the five Spanish definite articles; whence *lu*. This is the configuration that characterizes the basilectal form of the dialect to this day. According to OT-based learning algorithms, confrontations between "winning" forms in the speakers' grammars—in this case dominated by NOFEAT—and actually occurring forms in the target language eventually result in constraint reranking. In theories based on stepwise Constraint Demotion (e.g. Tesar and Smolensky (1998) each collision between speakers' data and received input from the target language results in constraint demotion, until the two grammars coincide. Such an approach may be adequate to handle normal cases of first language acquisition, in which the speakers—children—are reacting to the grammatical output of adult native speakers of the target language. It may hold in an attenuated fashion in second-language acquisition in a controlled classroom environment, or in immersion situations, whether formally structured or informally opportunistic, since the learner is exposed almost exclusively to the fully formed adult grammar. In the typical decreolization situation, however, speakers usually receive more input from fellow decreolizers than from speakers of the acrolect. Each learner's input contains considerable variability of grammatical data, not the true "free variation" that forms the basis for canonical applications of the Gradual Learning Algorithm, but rather a series of L_2 idiolects. Under such circumstances the true "winning candidate" of the acrolect is partially masked by the "noise" represented by the surrounding decreolizing idiolects, so that immediate constraint reranking is not a viable scenario. The Gradual Learning Algorithm is based on the notion of gradual perturbations of the probability space associated with each constraint, eventually resulting in rankings that coincide with that of the target grammar.

The initial state is represented as in Tableau 9, and the results after Mark Cancellation in Tableau 10:

Tableau 9

los guaguas jóvenes	NOFEAT	SINGLYEXPRESSED (plural)	AGR(pl)	EXTAGR$_{NUM}$
√ lus guaguas jóvenes	!*	*		
☞ lu guagua joven		*	*	*

Tableau 10

los guaguas jóvenes	NOFEAT	SINGLYEXPRESSED (plural)	AGR(pl)	EXTAGR$_{NUM}$
√ lus guaguas jóvenes	!*	*		
☞ lu guagua joven		*	*	*

In this configuration there is a considerable mismatch between the learner's non-agreeing DP, the "winner" in this featureless grammar, and the actually occurring target form. In the adjustment phase (Tableau 10), NOFEAT will start its demotion, not in a single discrete step but rather in terms of probability, giving rise to the variation of the sort *lu guagua joven* and *lus guagua joven*, as in Tableau 11:

Tableau 11

los guaguas jóvenes	NOFEAT	SINGLYEXPRESSED (plural)	AGR(pl)	EXTAGR$_{NUM}$
√ lus guaguas jóvenes	¡*→			
☞ lu guagua joven			←*	←*

A similar gradual acquisition process accounts for decreolization of gender concord, and for the decrolization of subject-verb agreement.

The Gradual Learning Algorithm provides a formal framework in which the gradual decreolization of Afro-Bolivian Spanish can occur, namely the stepwise shifting of constraints across partially overlapping probability ranges. The formal model itself cannot account for the speed—or lack thereof—of decreolization. In Bolivia, simple exposure to contemporary Spanish does not produce the rapid acquisition of the acrolect as occurs, for example, in first language acquisition, thus rendering an "immediate gratification" model such as Constraint Demotion unattractive as an alternative. In both creole formation and decreolization, issues of attitude and

identity enter into consideration; speech communities have many reasons for maintaining distinctive patterns that deviate from accepted supraregional norms, and some have suggested (e.g. McWhorter 2000) that the stabilization and survival of creole languages is itself a manifestation of cultural resistance. Afro-Bolivians express clear ambivalence regarding their traditional speech patterns; while most feel that such language is "incorrect," they also identify strongly with their beleaguered black communities, all of which places conflicting demands on the acquisition of contemporary Spanish grammar. The level of ambivalence can be quantitatively expressed as coeficients of "plasticity" in formal models such as the Gradual Learning Algorithm, but the facts behind the numbers are ultimately of greater importance in understanding the sociolinguistic reality of this speech community.

Further discussion: but is is really decreolization?

Some linguists have challenged the notion of a post-creole continuum in the sense of De Camp (1971), Bickerton (1973, 1975), Rickford (1987), and others. Baker (1990, 1997) has asserted that being in contact with the original lexifier language is not an automatic condition for decreolization. Rather than immediately seeking to learn "correct" versions of the superstrate language, emerging creole speakers seek to create a "medium for interethnic communication": "with specific reference to slave plantation societies [...] slaves did not aspire to acquire the language of the plantation owner as such. Their aim was to communicate, particularly with their fellow workers. The most readily available lexical source for the MIC among a multilingual workforce was that of the language to which they were all exposed in the workplace, that of the plantation owner" (Baker 1997:96). This conclusion is supported by historical records from several creole languages, which suggest that some sort of continuum between the basilectal creole language and the lexifier language may have existed from the outset, with no directional

"decreolization" taking place subsequently. At the same time it is necessary to contemplate changes in attitudes and opportunities for acquiring a more "standard" version of the lexifier language in POST-slavery speech communities. In the case of the traditional Afro-Yungueño dialect, at least two centuries of being surrounded by predominantly monolingual Aymara speakers, beginning towards the end of the slavery period in Bolivia, allowed for the partially creolized Spanish to survive as an enclave. At the same time the conditions of virtual slavery that permeated the *hacienda* environment in the Yungas until the land reforms of 1952 provided Afro-Bolivians with few incentives for "improving" their command of the landowners' language. After 1952 came educational opporunities and a sense of pride in literacy and being "civilized" (the Afro-Bolivians' own term), and a closer approximation to national norms became both feasible and desirable within the Afro-Yungueño communities. It is therefore not contradictory to refer to the situation in contemporary Afro-Bolivian Spanish as decreolization, since a cline from essentially no morphological agreement among the oldest speakers to nearly full agreement among younger more educated speakers, together with the implicational relationships described above, offer strong evidence in favor of recent decreolization.

Conclusions

Do the Afro-Bolivian data represent the final stages in the decreolization of an earlier Palenquero-like Spanish creole or the remnants of a stable restructured but not creolized variety of Spanish that co-existed with highland Bolivian Spanish since its inception? A glance at the radically simplified VP and DP of the basilectal Afro-Yungueño dialect suggests that a full-fledged creole once existed here. On the other hand the known historical and demographic data do not offer the conditions typically associated with creolization. Afro-Bolivians never lived in maroon communities nor were totally cut off from native speakers of Spanish to the extent that

might facilitate the formation of a creole language. And although Afro-Yungueño Spanish has co-existed with Aymara-influenced varieties for several centuries and has absorbed many Aymara elements, the qualitative differences between Aymara-Spanish interlanguage and Afro-Yungueño Spanish are significant enough to render it unlikely that Afro-Yungueño speech is simply a replica of the L_2 Spanish spoken by Afro-Bolivians' Aymara neighbors.

Whether or not a true Afro-Hispanic creole once existed in Bolivia, the Afro-Bolivian data represent the consolidation of *bozal* Spanish into a stable restructured variety fueled by considerations of processing simplicity. The contemporary speech community exhibits clear signs of decreolization, gradually bringing the Afro-Yungueño grammar into alignment with Spanish in a series of steps that reflect the relative markedness of Spanish agreement features. This represents a tradeoff between increased processing requirements and a closer approximation to the national linguistic standard; the latter has been the stronger factor since the arrival of widespread public education in the Afro-Yungueño communities.

References

Angola Maconde, Juan. 2000. *Raíces de un pueblo: cultura afroboliviana*. La Paz: Producciones CIMA, Embajada de España, Cooperación.

_____. 2003. Los Yungas: enclave africano. *Raíces: Revista Boliviana de la Fundación de Afro Descendientes* 1(1).3-9.

Baker, Philip. 1990. Off target? *Journal of Pidgin and Creole languages* 5.107-119.

_____. 1997. Directionality in pidginization and creolization. *The structure and status of pidgins and creoles*, ed.Arthur Spears and Donald Winford, 91-109. Amsterdam and Philadelphia: John Benjamins.

Baxter, Alan. 1997. Creole-like features in the verb system of an Afro-Brazilian variety of Portuguese. *The structure and status of pidgins and creoles*, ed.Arthur Spears and Donald Winford, 265-288. Amsterdam and Philadelphia: John Benjamins.

Baxter, Alan and Dante Lucchesi. 1993. Procesos de descrioulização no sistema verbal de um dialeto rural brasileiro. *Papia* 2.59-71.

Baxter, Alan, Dante Lucchesi, and Maximiliano Guimarães. 1997. Gender agreement as a "decreolizing" feature of an Afro-Brazilian dialect. *Journal of Pidgin and Creole Languages* 12.1-57.

Berent, Iris, Steven Pinker, Joseph Tzelgov, Uri Bibi, Liat Goldfarb. 2005. Computation of semantic number from morphological information. *Journal of Memory and Language* 53.342-358.

Bernstein, Judy. 1993. The syntactic role of word-markers in null nominal constructions. *Probus* 5.5-38.

Bickerton, Derek. 1973. The nature of a creole continuum. *Language* 49.640-669.

_____. 1975. *Dynamics of a creole system*. Cambridge: Cambridge University Press.

_____. 1981. *Roots of Language*. Ann Arbor: Karoma.

Boersma, Paul. 1997. How we learn variation, optimality, and probability. *Proceedings of the Institute of Phonetic Sciences of the University of Amsterdam* 21.43-58.

Boersma, Paul and Bruce Hayes. 2001. Empirical tests of the Gradual Learning Algorithm. *Linguistic Inquiry* 32.45-86.

Bybee Hooper, Joan. 1980. Child morphology and morphophonemic change. *Historical morphology*, ed. Jacek Fisiak, 157-88. The Hague: Mouton.

Bybee, Joan. 1985. *Morphology: a study of the relation between meaning and form*. Amsterdam: John Benjamins.

Caramazza, Alfonso, Michele Miozzo, Albert Costa, Niels Schiller, F.-Xavier Alario. 2001. A crosslinguistic study of determiner production. Emmanuel Dupoux, ed., *Language, brain, and cognitive development: essays in honor of Jacques Mehler*, 209-226. Cambridge: MIT Press.

Carminati, Maria Nella. 2005. Processing reflexes of the feature hierarchy (person > number > gender) and implications for linguistic theory. *Lingua* 115.259-285.

Chini, Marina. 1995. *Genere grammaticale e acquisizione: aspetti della morfologia nominale in italiano L2*. Milano: Francoangeli.

Cubelli, Roberto, Lorella Lotto, Daniela Paolieri, Massimo Girelli, Remo Job. 2005. Grammatical gender is selected in bare noun production: evidence from the picture-word interference paradigm. *Journal of Memory and Language* 53.42-59.

De Camp, David. 1971. Towards a generative analysis of a post-creole continuum. *Pidginization and creolization of languages*, ed. Dell Hymes, 349-370. Cambridge: Cambridge University Press.

De Vincenzi, Marica. 1999a. Differences between the morphology of gender and number: evidence from establishing coreferences. *Journal of Psycholinguistic Research* 28.537-553.

_____. 1999b. Differences between the morphology of gender and number: evidence from establishing coreferences. *Journal of Psycholinguistic Researc*h 28.537-553.

Di Domenico, E., De Vicenzi, M. 1995. Gender and number in the retrieval of pronoun antecedents: differences in use and representation. Nash, L. Tsoules, F., Zribi-Herts, A.

(eds.), *Actes du deuxième colloque `Langues et grammaire', Paris 8 juin 1995*, pp. 95-109.

Domínguez, Alberto, Fernando Cuetos, Juan Segui. 1999. The processing of grammatical gender and number in Spanish. *Journal of Psycholinguistic Research* 28.485-498.

Dorian, Nancy. 1981. *Language death: the life cycle of a Scottish Gaelic dialect*. Philadelphia: University of Pennsylvania.

Eberhard, Kathleen M. 1997. The marked effect of number in subject-verb agreement. *Journal of Memory and Language* 36.147-164.

Granado, António Coxito. 1940. *Mucandas ou cartas de Angola (vulgarizaçao popular colonial angolana)*. Lisbon: Imprensa Baroëth.

Grimshaw, Jane. 1991. Extended projection. Manuscript, Brandeis University.

_____. 1997. Projection, heads, and optimality. *Linguistic Inquiry* 28.373-422.

Guy, Gregory. 2004. Muitas línguas: the linguistic impact of Africans in colonial Brazil. *Enslaving connections: changing cultures of Africa and Brazil during the era of slavery*, ed. José C. Curto and Paul E. Lovejoy, 125-137.

Harris, James. 1983. *Syllable structure and stress in Spanish*. Cambridge: MIT Press.

_____. 1991. The exponence of gender in Spanish. *Linguistic Inquiry* 22.27-62.

Jakobson, Roman. 1971. *Studies on child language and aphasia*. The Hague: Mouton.

Lipski, John. 1995. Blocking of Spanish /s/-aspiration: the vocalic nature of consonantal disharmony. *Hispanic Linguistics* 6/7.287-327.

_____. 2002. `Partial' Spanish: strategies of pidginization and simplification (from Lingua Franca to `Gringo Lingo'). *Romance phonology and variation*, ed. Caroline Wiltshire and Joaquim Camps, 117-143. Amsterdam: John Benjamins.

_____. 2005. Nuevas fronteras de dialectología afrohispánica: los Yungas de Bolivia. *Conferencias sobre la lengua y cultura del mundo de habla hispana*, 53-72. Kyoto: University of Foreign Studies.

_____. 2006. Afro-Bolivian language today: the oldest surviving Afro-Hispanic speech community. *Afro-Hispanic Review* 25(1).179-200.

_____. a. Afro-Yungueño speech: the long-lost "black Spanish." *Spanish in Context*, in press.

_____. b. El dialecto afroyungueño de Bolivia: en busca de las raíces el habla afrohispánica. *Revista Internacional de Lingüística Iberoamericana*, in press.

Lucchesi, Dante. 1998. A constitução histórica do português brasileiro como um processo bipolarizador: tendências atuais de mudança nas normas culta e popular. Sybille Grosse, Klaus Zimmermann (eds*.), «Substandard» e mudança no português do Brasil*, 73-99. Framkfurt am Main: TFM.

Maio, Augusto. 1947. *No coração da Africa negra*. Lisbon: Editorial L. I. A. M.

McWhorter, John. 2000. *The missing Spanish creoles: recovering the birth of plantation contact languages*. Berkeley: University of California Press.

Naro, Anthony. 1998. O uso da concordância verbal no português *substandard* do Brasil: atualidade e origens. Sybille Grosse, Klaus Zimmermann (eds.), *«Substandard» e mudança no português do Brasil*, 139-151. Framkfurt am Main: TFM.

Ouhalla, J. 1991. *Functional categories and parametric variation*. London: Routledge.

Perl, Matthias. 1998. Português popular brasileiro (PPB) e *español popular caribeño* (EPC): L2, resultado do substrato ou semi-crioulo? Sybille Grosse, Klaus Zimmermann (eds.), *«Substandard» e mudança no português do Brasil*, 415-430. Framkfurt am Main: TFM.

Picallo, M. C. 1991. Nominals and nominalization in Catalan. *Probus* 3.279-316.

Poplack, Shana. 1980a. The notion of the plural in Puerto Rican Spanish: competing constraints on /s/ deletion. William Labov, ed., *Locating language in time and space*, 55-67. Philadelphia: University of Pennsylvania Press.

_____. 1980b. Deletion and disambiguation in Puerto Rican Spanish. *Language* 56.371-385.

Rickford, John. 1987. *Dimensions of a creole continuum*. Stanford: Stanford University Press.

Ritter, E. 1993. Where's gender? *Linguistic Inquiry* 24.795-803.

Rocha, Hugo. 1933. *Bayete: crónicas africanas do atlântico ao índico*. Pôrto: Oficinas Gráficas de "O Comércio do Pôrto."

Samek-Lodovici, Vieri. 2002. Agreement impoverishment under subject inversion: a crosslinguistic analysis. Gisbert Fanselow, Carloine Féry (eds.), *Resolving conflicts in grammar.* Linguistische Berichte Sonderheft 11.49-82. Originally posted as ROA 431-1200.

Scherre Maria Marta Pereira. 1998a. Sobre a influência de três variáveis relacionadas na concordância nominal em português. *Padrões sociolingüisticos: análise de fenômenos variáveis no português falado na cidade de Rio de Janeiro*, ed. Giselle Machline de Oliveira e Silva, Maria Marta Pereira Scherre, 85-117. Rio de Janeiro: UFRJ, Departamento de Lingüística e Filologia.

_____. 1998b. Sobre a influência de variáveis sociais na concordância nominal. *Padrões sociolingüisticos: análise de fenômenos variáveis no português falado na cidade de Rio de Janeiro*, ed. Giselle Machline de Oliveira e Silva, Maria Marta Pereira scherre, 239-264. Rio de Janeiro: UFRJ, Departamento de Lingüística e Filologia.

_____. 1998c. Sobre a concordância de número no português falado do Brasil. Giovanni Ruffino, ed., *Atti del XXI congresso internazionales di Linguistica e Filologia Romanza*,

sezione 5: dialettologia, geolinguistica, sociolinguistica, 509-523. Tübingen: Max Niemeyer.

_____. 1998d. Variação da concordância nominal no português do Brasil: influência das variáveis posição, classe gramatical e marcas precedentes. Sybille Grosse, Klaus Zimmermann (eds.), *«Substandard» e mudança no português do Brasil*, 153-188. Framkfurt am Main: TFM.

_____. 2001. Phrase-level parallelism effect on noun phrase number agreement. *Language Variation and Change* 13.91-107.

Schriefers, H. and J. Jescheniak. 1999. Representation and processing of grammatical gender in language production: a review. *Journal of Psycholinguistic Research* 28.575-600.

Silverstein, M. 1985. Hierarchy of features and ergativity. Muysken, P., van Riemsdijk, H. (eds.), *Features and projections*, 163-232. Dordrecht: Foris.

Simões, Maria Cecília Perroni. 1976. Descrição do sistema verbal de uma criança brasileira com dois anos. *I Encontro Nacional de Lingüística, conferéncias*, 45-55. Rio de Janeiro: Pontifícia Universidade Católica de Rio de Janeiro, Departamento de Letras.

Simões, Maria Cecília Perroni and Carol Stoel-Gammon. 1979. The acquisition of inflections in Portuguese: a study of the development of person markers on verbs. *Journal of Child Language* 6.53-67.

Stemberger, Joseph Paul. 2001. Overtensing in Optimality Theory. ROA 477-1101.

Tesar, Bruce and Paul Smolensky. 1998. Learnability in Optimality Theory. *Linguistic Inquiry* 29.229-268.

Vigliocco, Gabriella and Julie Franck. 1999. When sex and syntax go hand in hand: gender agreement in language production. *Journal of Memory and Language* 40.455-478.

Vogel, Ralf. 2002. Dialectal variation in German 3-verb clusters: looking for the best analysis. ROA 501-0202.

Notes

[1] A number of other researchers have made similar proposals regarding the internal structure of the Ibero-Romance DP, too numerous and diverse to be reviewed here. Picallo (1991) for example posits a GenderPhrase GenP between the NP and NumP, since gender is expressed directly on the noun stem and plural markers are attached outside of gender markers. Bernstein (1993) offered the alternative suggestion of a WordMarkerPhrase, using "word markers" in the sense of Harris (1983, 1991). Ritter (1993) in turn argued that in Romance languages, gender features reside in the functional head Num, together with the noun's number specification.

[2] There are dissenting viewpoints, however. For example Domínguez et al. (1999) report experimental findings that suggest that in Spanish "gender information is accessed more straightforwardly than number in an inflected word" (p. 495). See also De Vicenzi 1999a, 1999b; Di Domenico and De Vicenzi 1995).

[3] In vernacular Angolan Portuguese, spoken as a second language, the combination of 1 s subject and 3s verb is more common (Lipski 1995), as it is in other second-language varieties, such as the Spanish of Equatorial Guinea (Lipski 1985).

[4] This constraint particularly affects combinations involving *ir* and *estar* as auxiliary verbs. Few trustworthy examples of *haber* + past participle perfective constructions are found in the Afro-Yungueño corpus, since these verb forms, although extremely frequent in highland Bolivian Spanish (where they often replace the simple preterite much as in contemporary Spain), are rarely used in the traditional dialect.