

Variation and Syntax in Number Expression in Afro-Bolivian Spanish

Manuel Delicado-Cantero and Sandro Sessarego
Australian National University and University of Wisconsin-Madison

1. Introduction

This study investigates number agreement variation across the Determiner Phrase (DP) in Afro-Bolivian Spanish (ABS), an Afro-vernacular dialect proceeding from what was once a bozal language spoken in Los Yungas, Department of La Paz, Bolivia.

Descriptive articles about ABS have extensively been published during the last years by John Lipski, who analyzed qualitatively the differences encountered between this dialect and other Spanish varieties. This paper offers a novel examination of such phenomena in that it attempts to formalize them. Recently, several formal linguists have analyzed variation beyond the usual parametric inter-language domain. Under this new approach, intraspeaker variation becomes the core in the research, thus bringing previously disregarded phenomena –i.e., previously considered as E-language phenomena- to the fore (Adger and Trousdale 2007).

In order to proceed with an analysis of plural marking variation in Afro-Bolivian DP, it is crucial to provide a brief socio-historical overview of this Spanish contact variety, as well as, a description of its DP features, which make this language different from the rest of the other Spanish dialects.

Afro-Bolivian Spanish is supposed to be the oldest surviving Afro-Hispanic dialect in Latin America. Its speakers are believed to be the descendents of African slaves taken to the New World to work in Potosí silver mines during the 16th century, and subsequently, around the 18th century, employed in Los Yungas, tropical valley where they could better acclimatize and do agricultural work (Lipski 2006a,b).

Until 1952, when the Land Reform took place, Afro-Bolivians had been employed in Los Yungas as slaves in *haciendas*. After the Land Reform, the majority of the Afro-Bolivians remained in the region becoming the new owners of small land parcels that once belonged to the plantation, where they used to work in slavery. Even though Afro-Yungueños are nowadays free people and their life conditions improved during the last 60 years, their situation is far from being optimal, as the daily per-capita incomes, from growing and selling coffee and coca, do not achieve more than \$4 (Lipski 2005).

Until 1952 black peons were generally not allowed to attend school, several older members of these communities are therefore nearly or totally illiterate. However after that date, the *haciendas* system ended and basic public education began to arrive in Afro-Yungueño communities. The result of learning and studying Spanish through attending schools and the higher degree of mobility achieved when slavery ended provoked a gradual drop of the traditional dialect by Afro-Bolivians, so that some features of this vernacular have gradually been replaced by Highland Bolivian Spanish ones (Lipski 2007).

Due to this relatively recent contact with regional Bolivian Spanish, ABS is undergoing a change, consisting in the systematic substitution of stigmatized basilectal ABS features with more prestigious HBS ones (Lipski 2009). As far as the ABS plural marking system is concerned, this substitution is not random and the outcome of this situation is not the introduction of plural marking constructions in a

* We would like to express our gratitude to the audiences of the 2009 HLS at the Universidad de Puerto Rico and the 38th NWAV at the University of Ottawa for their comments on different versions of this paper. We also want to thank the two anonymous reviewers and the faculty members of the Department of Linguistics and the Spanish section at Swarthmore College for their feedback and suggestions. Usual disclaimers apply.

system that originally did not possess them. Rather, what can be observed is the transition from one system to another.

2. Locating variation

2.1. Data collection methodology

Traditionally, generative syntactic models have mainly been built on standard language data, on the basis of well-formedness judgments of a limited set of informants. This approach has proven very powerful in producing an impressive number of fine-grained generalizations, exactly because it could exclude from its analyses all variability complications due to performance (Barbiers 2009: 1608). On the other hand, such a methodology has often been criticized by sociolinguists, who instead based their observations on bigger corpora of naturalistic production data, and developed several techniques to study the ‘real vernacular’, the real language spoken by people when paying no metalinguistic attention to their speech (Labov 1972).

Recent studies in syntactic microvariation try to combine the formal and the sociolinguistic methods in order to develop more fine-grained, empirically-testable generalizations (Cornips and Poletto 2005). In conducting linguistic research of this kind, it is therefore crucial to gather both grammaticality judgments as well as naturalistic data. For this reason the informants who participated in the study were first interviewed and only later asked to answer grammaticality judgments from an oral questionnaire.

Data were collected during the summer of 2008 by means of questionnaires and through hours of sociolinguistic interviews in Los Yungas. For the purpose of the present study, we will discuss only tokens extracted from the speech of the most basilectal speakers of ABS, in an attempt to investigate the factors behind variable plural *-s* realization inside the DP.

The data consist of a total of 944 entries, extracted from three hours interview with the three eldest speakers residing in the little communities of Tocaña and Mururata, North Yungas. The informants were 84, 86 and 88 years-old. Participants were illiterate and spent all their life in Los Yungas. They are native speakers of the dialect who do not speak any other language spoken in Bolivia, such as Quechua or Aymara. As a result of slavery, they never had access to public education, and their mobility was always reduced to the *hacienda* plantation. For these reasons, their speech is the most conservative we could record. The interviews were conducted by letting the speaker talk about any topic of their liking and asking them follow-up questions, in line with the principle of Tangential Shift (Labov 1984:37). The goal was therefore to attempt to reduce the Observer’s Paradox (Labov 1972) as much as possible. Only later, usually after one or two days from the time of the interview, the same informant was asked for grammaticality judgments. This was done in order to not affect the results of the interview by telling the speaker the nature of the phenomena under analysis in advance.

Responses on acceptability judgment tasks rely at least in part on explicit, prescriptive notions held by the speakers (Cornips and Poletto 2005). One way of diminishing this effect which proved successful according to experimental methods described in Labov (1984) is to ask for grammaticality judgments in an indirect way. Thus, to discover whether or not a variable was present in the community, both direct and indirect questions were asked to elicit the target forms.

2.2. Number features in ABS

Let us start by analyzing the various pluralization strategies encountered in ABS as have been reported in the literature (Lipski 2009) and as observed during our fieldwork. In traditional ABS, number can be marked on determiners of all types (possessives, demonstratives, articles, quantifiers and numerals, see (1)). As a rule, the nominal and the adjectival stems remain bare, so that plural marking is non-redundant. Observe the following examples:

- (1) a. Mis buen amigo mayó
 My.pl good.Ø friend.Ø old.Ø.
 ‘My good old friends’
 b. Ejes buen amigo mayó
 This.pl good.Ø friend.Ø old.Ø.
 ‘These old good friends’

As shown in these examples, ABS presents determiners which are able to convey the plural interpretation to the noun they modify.

Besides these strategies, which belong to the core basilectal grammar of ABS, our corpus reveals several additional patterns, which are not limited to the marking of plurality on the first DP element in the lineal order. In fact, due to fairly recent contact with Standard Spanish, several elements of the DP (nouns, adjectives, quantifiers, etc.) may also carry *-s* marking, generating a wide range of DP combinations with and without number marking (2):

- (2)
- | | | |
|-----------|---------|-------------|
| a. Mucho | hombre | boliviano |
| Many.Ø | man.Ø | Bolivian.Ø |
| b. Muchos | hombre | boliviano |
| Many.pl | man.Ø | Bolivian.Ø |
| c. Muchos | hombres | boliviano |
| Many.pl | man.pl | Bolivian.Ø |
| d. Muchos | hombres | bolivianos |
| Many.pl | man.pl | Bolivian.pl |
- ‘Many Bolivian men’

In summary, several DP plural marking strategies are available in traditional ABS. Plural inflection may occur on the determiner alone (D-s+N); moreover quantifiers and numerals may indicate plurality due to their inherent plural semantics without the *-s* suffix. Therefore, nouns and adjectives are not marked by plural morphology in the traditional dialect as numerical interpretation is conveyed by D.

Finally, due to recent contact with Standard Spanish, suffixational *-s* can sometimes be found also on nouns, and adjectives, where it plays an inflectional role; it can also be encountered on *lu(s)* and on quantifiers, where it does not mark plurality vs. singularity. In fact, the singular counterpart of *lu(s)* is *el/la*, while quantifiers, when combined with countable nouns, already convey a plural reading.

2.3. Syntax matters: quantitative evidence

Following the model in Poplack (1980) on Puerto Rican Spanish (PRS), our data were analyzed using GoldVarbX program (Sankoff, et. al. 2005), which calculates probabilities for the application of a given rule. Here, as in Poplack (1980) the different phonological realizations of final *-s* encountered [s, z, h, ʰ] were considered together and contrasted with the null realization [Ø] to investigate the constraints on plural *-s* realization. We must acknowledge, though, that the tokens presenting [h, ʰ] realizations (only 21 out of 944 tokens) were scarce, indicating that the phenomenon is more constrained by syntactic factors than just phonological ones.

We differentiated between inflectional and morphemic instances of final *-s*. In fact, in a dialect like ABS in which final *-s* might be weakened and deleted due to phonological processes (Lipski 2009:65), it is crucial to understand to which extent phonology is contributing to *-s* omission on the DP elements.

According to the Functional Hypothesis developed from Kiparsky’s *distinctness condition* (Kiparsky 1972: 195), phonological elements loaded with a morphological plural value (e.g. *casa-s* ‘house-s’) should be more resistant to deletion than elements free from this charge, like cases of final *-s* in monomorphemic words (e.g. *mes* ‘mounth’). Our results indicate that the rate of *-s* omission is higher for inflectional than for morphemic instances of *-s* (see Table 1), thus confirming that phonological factors are playing only a limited role. Such a claim is also clearly supported by the occurrence of plural forms like *lu dictador* [los dictadores] ‘the dictators’, *lu varón* [los varones] ‘the males’ without the *-e* of the Spanish plural morpheme.

Grammatical status	Percentage of deletion
Inflection	64% (N=532)
Morpheme	30% (N=412)

Table 1. Percentage of (s) Deletion by Grammatical Status in ABS

Once excluded from the analysis all the morphemic tokens, we ran, as in Poplack's work, a variable analysis of the following factor groups: Grammatical Category, Following Phonological Segment and Following Stress.

Grammatical category		Following phonological segment		Following stress	
Adjective	.65 (N=47)	Vowel	[.53](N=121)	Weak	[.51](N=230)
Noun	.55 (N=313)	Pause	[.49] (N=61)	Heavy	[.50](N=302)
Determiner	.38 (N=172)	Consonant	[.47](N=350)		

Table 2. Contribution of Grammatical Category, Following Phonological Segment and Following Stress to the Deletion of Plural (s) in ABS (Log likelihood = -287.688, Significance = 0.007, N=532)

Grammatical Category was the most significant factor group, with a Range of 27. Adjectives seem to be the grammatical category showing the highest rate of deletion, followed by nouns and determiner. As for Following Phonological Segment and Stress, neither stress nor phonological context was selected as significant factors. Moreover, while a weak following stress seems to slightly favor deletion, following phonological segment present a different order of factors, with vowels favoring rather than disfavoring the phenomenon. These findings provide further evidence of the fact that ABS *-s* plural marking variation is syntactic rather than phonological.

3. Formal syntactic analysis

3.1. Minimalist syntactic variation

The study of language variation seems at first to be at odds with formal linguistic analyses that strive to hypothesize principles and generalizations based on Universal Grammar. Nevertheless, in the Principles and Parameters paradigm, several attempts were made to capture dialectal and inter-speaker variation, exploring the notion of parametric variation and, in the last decade, fine-graining it to include so-called "micro parameters" (Barbiers et. al. 2002; Kayne 1996, 2000; among others).

Language intra-speaker variation, on the other hand, has long been excluded from formal linguistic analyses. However, during the last years, several scholars have taken into account variation beyond the usual parametric inter-language domain (Kroch 1989; Henry 2005; Pintzuk 2003; Adger and Smith 2005; Adger 2006, and others). Intra-speaker variation becomes the core of linguistic research, bringing previously disregarded phenomena –considered as belonging to E-language - to the fore (Adger and Trousdale 2007).

Within the one-hour interview period, we attest that speakers freely alternate between forms with different agreement within the same sentence, thus highlighting the relevance of this phenomenon, beyond a mere E-language accident. For these reasons, an account of number agreement based on a minimalist model in line with Adger's works seems very adequate to describe the syntax of number in ABS DPs¹.

In the most recent formulations of the Minimalist Program (Chomsky 2001, 2004, 2007), syntactic derivations are viewed as strictly dependent on feature valuation and checking. The distinction between interpretable and non-interpretable features, though controversial, has proven very useful. Several features have an interpretation at LF, thus they are semantically-interpretable features. Other features, however, lack such semantic import and are present to trigger the necessary merger or agreement operations during the derivation. Adger and Smith (2005) argue for characterizing syntactic variation in terms of (un)interpretable features. Given this theoretical assumption, the framework admits several phonological outputs for a given semantic interpretation. Certain uninterpretable

¹ The purpose of this article is the syntactic account of DP agreement variation. While sociolinguistic factors are undoubtedly at play, a more fine-grained variationist study is outside the scope of this study. Preliminary analyzes on the role of social factors in the development of nominal and verbal inflection have been conducted by Sessarego (2009a,b) and Sessarego & Gutiérrez-Rexach (in preparation).

features may be present in one category but absent in another. Since they are uninterpretable, they would have no semantic repercussion, thus being equally legitimate for a convergent derivation.

Therefore, variation is reduced to the specification of the uninterpretable features in a derivation (Adger and Smith 2005: 161). As expected, syntax per se remains invariable or “perfect” (Brody 2003), given that variation is located only in the lexical component. Variation will occur when one item or another enters the numeration and takes part in a syntactic derivation. Several (social) factors may affect the outcome: ease of lexical access (probably linked to frequency of use), speaker-hearer relationships, social identity, etc. (Adger and Smith 2005: 164). Such (variable) underspecification for gender and number is what we observe when analyzing the ABS DP.

3.2. (Un)interpretability and valuation

Within the minimalist framework, agreement/concord is conceived as the result of processes which do not necessarily require movement but just a configurational feature checking/erasing or matching/valuation mechanism (Chomsky 2000, 2001; Picallo 2008). Interface requirements mandate the elimination of all uninterpretable features by the end of the derivation (Chomsky 2000: 95, Chomsky 2001: 12, Chomsky 2007: 18).

Recent studies on agreement operations (Frampton and Gutmann 2000; Pesetsky and Torrego 2007) have proposed a notion of agreement which consists of ‘feature sharing’ in line with the view of agreement as a case of feature unification, common in HPSG (Pollard and Sag 1994). Within the probe-goal theory of the syntactic computation, the operation Agree can be formally defined as follows:

- (3) Agree (Pesetsky and Torrego 2007:4)
- (i) An unvalued feature F (a *probe*) on a head H at syntactic location α ($F\alpha$) probes its c-command domain for another instance of F (a *goal*) at location β ($F\beta$) with which to agree.
 - (ii) Replace $F\alpha$ with $F\beta$, so that the same feature is present in both locations.

If a goal is valued for F , replacing the token-value of the probe with the value of the goal results in an instance of valued F substituting for the specification of the unvalued probe. A valued F may now serve as the goal for some ulterior operation of Agree triggered by an unvalued, higher instance of F serving as a new probe. The result is that a single feature F will be shared by several positions, and the process could iterate further.

This type of operation Agree is in line with Pesetsky and Torrego (2007), who argue against Chomsky’s (2001) Valuation/Interpretability Biconditional assumption, whereby a feature F is uninterpretable iff F is unvalued. The elimination of this biconditional assumption allows lexical items to come from the lexicon with features that display two combinations of properties not countenanced by the Minimalist Inquiries (Chomsky 2000) / Derivation by Phase (Chomsky 2001) approach: (i) uninterpretable but valued; and (ii) interpretable but unvalued. Therefore, the types of features encountered in the system are now those reported as follows:

- (4) Types of features
- | | |
|---|---------------------------------------|
| uF <i>val</i> uninterpretable, valued | iF <i>val</i> interpretable, valued |
| uF [] uninterpretable, unvalued | iF [] interpretable, unvalued |

An element drawn from the lexicon with a valued feature will be specified as $u(ninterpretable)F(eature)[val]$ if the feature is interpretable and as $i(nterpetable)F(eature)[val]$ if the feature has an interpretation at LF. A feature of the same kind that has not participated in Agree and is not already valued is annotated (where relevant) by an empty pair of brackets: uF [] (or iF []) and, after the Agree operation takes place, it turns into $uF[val]$ (or $iF[val]$). On the other hand, an element coming from the lexicon without a specification for such a feature, will be annotated as $no-F$ [], and it will not be able to act as a probe for Agree operations of that particular kind.

- (5) $uF[val].....uF[val]....uF[val].....uF[val]... \times no-F$ []

Therefore, if we postulate that an unvalued uninterpretable feature may be present in certain elements but absent in others, and that variation is the result of lexical differences in the feature specification of certain items, it follows that contrasts in overt syntax will be the result of differences in the computation of varying specifications, as expected in the previous section.

3.3. *Underspecification of Num in ABS DP*

3.3.1. *Previous accounts on ABS DP*

ABS DPs show (variable) underspecification for gender and number. ABS has been classified by Lipski (2006c: 9) as a case of “DP impoverished agreement”. While in standard Spec-Head agreement processes, a certain feature should percolate to all elements m-commanded (Chomsky 1986) by the head, in cases of “impoverished agreement”, concord can be limited to some of them. Within the GB framework, DP features are claimed to percolate up from the noun to the determiner (Grimshaw 1991, 1997). Thus, in this agreeing relation, the relevant feature is transmitted downwards from the head to all the elements m-commanded by it.

Lipski (2006c) adopts this model to explain ABS number agreement processes. Looking at data from several speakers, he noticed that no case of post-nominal number concord is found unless pre-nominal elements agree. Our data, when analyzed cross-generationally, are generally in line with those reported by Lipski. However, an important difference can be noticed in the speech of several basilectal informants. In fact, the most traditional speakers present almost a complete lack of plural *-s* marking not only on the definite plural article *lu*: also strong and weak quantifiers tend to lack such morpheme (6):

- (6)
- a. Mucho viajero(s)
Many.Ø traveler(s)
'Many travelers'
 - b. Todo las cosa
All.Ø the.pl thing.Ø
'All the things'

Cases like these seem to violate the pre-nominal to post-nominal percolation order (Grimshaw 1991, 1997), unless we postulate that quantifiers are elements external to the DP, and then we argue in favor of a different mechanism for the checking of the number feature in languages where they agree in gender and number with N, like Standard Spanish.

Additionally, the feature-percolation account of agreement runs into problems when compared with data from other Romance varieties in which post-nominal adjectives may agree with N and disagree with D (cf. Pomino and Stark 2008 for Fassano Ladin). Alternatively, one might propose a system with one or more agreement projections inside DP and with the relevant displacement operations applied to agreeing elements so that they enter into a spec-head relation (Sportiche 2002, Koopman 1997). This type of approach would be problematic too in that the number of internal agreement projections required would not be limited, and would most likely be established on an ad-hoc basis. It also runs against recent minimalist ideas supporting the elimination of Agreement projections (Chomsky 2004). Therefore, a more adequate model to account for the data encountered in ABS may be designed by adopting the minimalist assumptions on the operation Agree (Frampton and Gutmann 2000; Pesetsky and Torrego 2007) and on the variable lexical item specification for uninterpretable features (Adger and Smith 2005), which we have already provided.

3.3.2. *Crosslinguistic evidence*

This striking effect of mismatch in agreement is not restricted to ABS². As Corbett (2000) indicates, other languages, such as the Papuan language Amele, show optional morphological

² Another case is Cape Verdean Creole. Baptista (2007) shows that plural number marking in Cape Verdean Creole is highly associated with animacy, in that human NPs will tend to carry overt *-s*. However, our data show that such a factor does not apply in ABS, where variation is present in all types of DPs. An anonymous reviewer mentioned the possibility of context as the main factor behind agreement variation, as has been argued for

agreement on the N and rather it is expressed on D (Corbett 2000: 137). Other languages include Arafundi (Papua), where, as reported by Corbett (2000: 137), linguist William Foley found no overt agreement on nouns.

Brazilian Portuguese is another clear example of mismatch in overt concord in the DP (Braga 1977; Guy 1981; Scherre and Naro 1998, 2006; Magalhães 2004; Simioni 2007). Magalhães (2004) studies the syntax of underspecified DPs and posits a derivation based on Chomsky's Agree. Similar results are drawn from Carvalho's (2006) study of Uruguayan Spanish in contact with Portuguese, once again with decreasing morphological expression of [num], as in ABS. The same effect is reported for Uruguayan Portuguese.

3.4. *Number and features*

Unlike gender (Carstens 2008), number is generally considered an interpretable feature (Zamparelli 2008). Number makes a clear semantic contribution to the interpretation of nouns. It is therefore an interpretable feature with a proper phrasal projection, NumP. It has generally been assumed that number specification originates in the Num head and is subsequently copied onto other items via agreement/concord (Ritter 1991; Franceschina 2005; Picallo 2008).

Being an interpretable feature, a derivation will need to carry it both to PF and LF; however, what may not be present is a multiplication of uninterpretable [num] features, which is exactly where variation may arise. By supplying interpretable number in the one category where it must be, syntax may do without their uninterpretable equivalents in other categories, therefore accounting for the emergence of morpho-syntactic variants with the same semantic interpretation. In fact, this complies with Ortman's (2000) *Principle of Economic Plural Marking*, which states that there is no more than one realization of [+pl] within the DP. This is supported by several languages (see previous section), among them, Hungarian, Quechua, Basque, Kurdish, Turkish and Tsova-Tush (Ortman 2000:251-253).

3.5. *Syntactic analyses*

Taking into consideration the methodology and assumptions indicated in the previous sections, we propose the following account for syntactic representation of number features and valuation in ABS DPs:

- (7) Account for variation:
1. Full redundancy [inum:] on Num and valued on N
 2. Only D: [inum:] on Num, no-F on N, N-to-n-to-Num, feature valued on D after Agree

The syntax of full redundancy represents the situation found in Standard Spanish, where number agreement is always overtly represented. Consider now the following syntactic tree:

Palenquero in the literature. In fact, Schwegler (2007) argues that in Palenquero number valuation is purely contextual and not syntactic because the usual marker *ma* may be absent, leading to total number underspecification which is resolved in the context. The case of ABS is arguably different. When an overt D is present, plurality is always conveyed in such a functional element. When D is not overt (e.g. bare nouns), the covert determiner encodes a variety of type-shifting functions (*à-la Partee*). Bare nouns in ABS seem to obey certain specific syntactic and pragmatic constraints, which ultimately determine the semantic interpretation of their unpronounced D-categories. A fine-grained analysis of such constructions is beyond the scope of the present study; please refer to Gutiérrez-Rexach & Sessarego (2010) for a more detailed account. Our assumptions agree with Zribi-Hertz and Glaude's (2007) feature deficiency principle. The variation found in ABS is dependent on the syntactic features inside the DP.

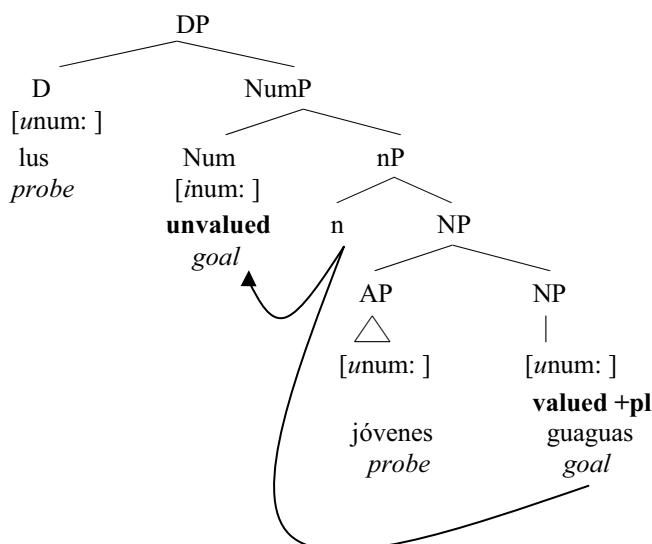


Figure 1. Syntactic tree with full redundancy

This analysis is based on Bernstein (1993), and especially Picallo (2008: 57). We locate $[inum]$ on Num, and not on N in Spanish (cf. also Pesetsky and Torrego (2007: 264, fn 1), who argue for the interpretability of $[num]$ on Num in Spanish on the basis of *pluralia tantum* nouns).

As indicated above, valuation and interpretation do not necessarily go hand in hand. Following Picallo (2008), we propose that, while $[num]$ is interpretable on Num, but valued on N. As a result, since probes are always unvalued (Picallo 2008: 53), we obtain the necessary c-command relation between Num and N, such that the unvalued category can probe for a goal, the N, and establish feature sharing. The same structural relation is established between the probe D and the goal N, resulting in the overt expression of agreement on the former (remember that feature sharing allows for multiple agree; cf. also Hiraiwa 2001).

On the other hand, notice that N-to-n-to-Num movements are not justified on the basis of morphological richness. As Carstens (2001: 154) and Alexiadou (2001: 223), among others, have demonstrated, raising of N to Num is not prompted by number feature checking, but rather by other mechanisms such as EPP or categorial features.

Postnominal APs are represented following Demonte (2008: 25, 27). To account for the agreement between As and N, notice that we need to circumvent the fact that there is no possible c-command from A out of the AP. One possibility could be to resort to a different operation, Concord (Carstens 2000; Demonte 2008), which does not depend on c-command. Arguably, such a move is undesirable, since it eliminates any generalization of agreement. A more promising answer is found in Danon (2008), who suggests Agree between the maximal projections AP and NP along with feature sharing. Finally, it could also be the case that As carry a value themselves from the Numeration, like N does. Thus, A would not be a probe but a goal too³. We leave this issue open for future research.

As opposed to full redundancy, the syntactic representation for extreme economy, that is overt number marking only on D, produces the following tree:

³ We want to thank Jason Kandybowicz and Donna Jo Napoli (pc) for their feedback on this possibility.

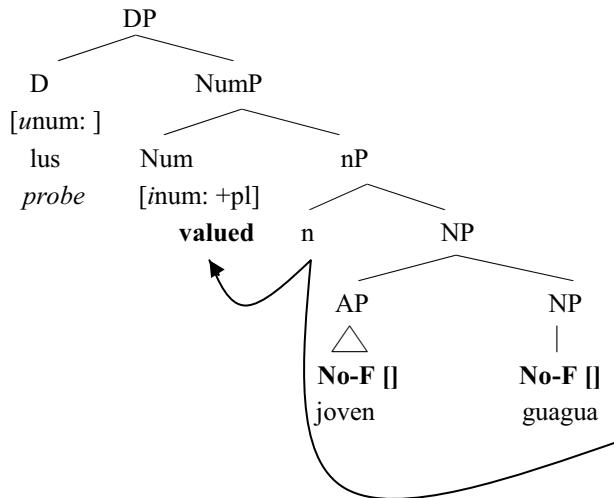


Figure 2. Syntactic tree with D-marking

The main difference is that we posit the absence of number features for either A or N. As a consequence, there is no need –or indeed any viability– for probing. As can be seen, Num still carries valued $[inum:]$ from the Lexical Array/Numeration (Picallo 2008), which allows us to maintain this constant, thus making it more economical and general. In any case, the number feature is nevertheless interpreted once in the chain, as needed (Brody 1997). It is overtly marked on D, which is still an active probe. We assume that the valued Num is affixed to D to ensure the materialization of $[+pl]$ in Spanish in the morphology component since there is no lexical item in Num to host morpheme $-s$ in PF (especially under a Distributed Morphology type of analysis). The nature of N movement deserves the same explanation as in the previous tree.

4. Conclusion

This study offers a formal approach to variable number agreement within the DP in Afro-Bolivian Spanish. Findings do not pretend to be categorical; on the other hand, they allow us to argue that variation is a component of human languages and can be formalized. The goal is to characterize the elements of variation in a systematic fashion, as computationally determined by differences in the specification of lexical items and by restrictions on syntactic operations.

The great improvement of the Minimalist Program on previous theoretical frameworks is its capability of accounting for alternation between forms (Adger 2006). As has been shown, the minimalist approach proposed can account for all the number agreement configurations encountered in the ABS Determiner Phrase by postulating the presence/absence of uninterpretable unvalued number features on the different components inside the DP. Different derivations, with diverging feature specifications, produce equally convergent derivations which will ultimately differ only in their phonic outcome, while their semantic interpretation is maintained unaltered. The variable presence of the number features on the affected categories –A and N– accounts for their different morphological marking.

The results indicate that syntactic rather than phonological processes play the main role in regulating number variation in ABS. The data also strongly indicate that we are not dealing with many parallel grammars constantly alternating in the speech of the informants. The model proposed here argued in favor of a single grammar (Brody 2003). In this way variability is reduced to the alternation of morphological doublets (Kroch 1994) and to the selection of lexical items (Adger and Smith 2005), which depending on their specification for uninterpretable features can result in different overt combinations with the same semantic interpretation, thus in keeping with Brody's (1997) *Radical Interpretability* and Ortmann's (2000) *Principle of economic plural marking*.

From a theoretical perspective, this work sheds some light on the linguistic constraints regulating number agreement in an Afro-Hispanic vernacular approximating to a more prestigious Spanish

dialect; in doing so it also proposes an empirically-testable framework to account for variable plural –s marking across the many vernaculars which present such a phenomenon.

References

- Adger, David. 2006. Combinatorial Variability. *Journal of Linguistics* 42: 503–530.
- Adger, David. and Trousdale, Graeme. 2007. Variation in English syntax: theoretical implications. *English Language and Linguistics* 11.2: 261-278.
- Adger, David and Smith, Jennifer. 2005. Variation and the minimalist program. In Leonie Cornips and Karen P. Corrigan (eds.): *Syntax and Variation. Reconciling the Biological and the Social*, Amsterdam/Philadelphia: Benjamins. 149–178.
- Alexiadou, Artemis. 2001. Adjective syntax and noun raising: Word order asymmetries in the DP as the result of adjective distribution. *Studia Linguistica* 55.3: 217-248.
- Baptista, Marlyse. 2007. On the syntax and semantics of DP in Cape Verdean Creole. In Marlyse Baptista and Jacqueline Gueron (eds.): *Noun Phrases in Creole Languages. A multi-faceted approach*. Amsterdam/Philadelphia: Benjamins. 61-105.
- Barbiers, Sjef. 2009. Locus and limits of syntactic microvariation. *Lingua* 119: 1607-1623.
- Barbiers, Sjef, Cornips, Leonie, and van der Kleij, Susanne (eds.) 2002. *Syntactic Microvariation*. Amsterdam: Meertens-Instituut. www.meertens.knaw.nl/books/synmic/
- Bernstein, Judy. 1993. *Topics in the syntax of nominal structure across Romance*. Ph.D. dissertation, CUNY.
- Braga, Maria Luiza. 1977. *A concordância de número no sintagma nominal no triângulo mineiro*. Master's dissertation, Rio de Janeiro, Pontifícia Universidade Católica, Departamento de Letras e Artes.
- Brody, Michael. 1997. Perfect chains. In L. Haegeman (ed.): *Elements of grammar*, Dordrecht: Kluwer Academic Publishers. 139-167.
- Brody, Michael. 2003. *Lexico-logical form*. Cambridge, MA: MIT Press.
- Carstens, Vicky. 2000. Concord in Minimalist Theory. *Linguistic Inquiry* 31.2: 319-355.
- Carstens, Vicky. 2001. Multiple Agreement and Case-Deletion: Against Φ -(In)Completeness. *Syntax* 4: 147-163
- Carstens, Vicky. 2008. DP in Bantu and Romance. In Cécile de Cat and Katherine Demuth (eds.): *The Bantu–Romance Connection*. Amsterdam/Philadelphia: Benjamins. 131-165.
- Carvalho, Ana Maria. 2006. Nominal number marking in a variety of Spanish in contact with Portuguese. In Timothy L. Face and Carol A. Klee (eds.): *Selected Proceedings of the 8th Hispanic Linguistics Symposium*. Somerville, MA: Cascadilla Proceedings Project. 154-166.
- Chomsky, Noam. 1986. *Barriers*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2000. Minimalist inquiries. In Roger Martin, David Michaels and Juan Uriagereka (eds.): *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*. Cambridge, MA: MIT Press. 89-156
- Chomsky, Noam. 2001. Derivation by phase. In Michael Kenstowicz (ed.): *Ken Hale: A life in language*, Cambridge, MA: MIT Press. 1–52.
- Chomsky, Noam. 2004. Beyond Explanatory Adequacy. In Adriana Belletti (ed.): *Structures and Beyond. The Cartography of Syntactic Structure Vol 3*. Oxford: OUP. 104-131.
- Chomsky, Noam. 2007. Approaching UG from below. In Uli Sauerland and Hans-Martin Gärtner (eds.): *Interfaces + recursion = language? Chomsky's minimalism and the view from syntax-semantics*. New York: Mouton de Gruyter. 1-29.
- Corbett, Greville G. 2000. *Number*. Cambridge, UK: Cambridge University Press.
- Cornips, Leonie and Poletto, Cecilia. 2005. On standardising syntactic elicitation techniques (part 1). *Lingua* 115: 939–957.
- Danon, Gabi. 2008. Definiteness spreading in the Hebrew construct state. *Lingua* 118.7: 872-906.
- Demonte, Violeta. 2008. Meaning-form correlations and adjective position in Spanish. Ms. Universidad Autónoma de Madrid. www.uam.es/personal_pdi/filoyletras/vdemonte/adjective.pdf
- Frampton, John and Gutmann, Sam. 2000. Agreement is Feature Sharing. <http://www.math.neu.edu/ling/pdffiles/agrisfs.pdf>
- Franceschina, Florencia. 2005. *Fossilized second language grammars*. Amsterdam/Philadelphia: Benjamins.
- Grimshaw, Jane. 1991. Extended projection. Manuscript, Brandeis University.
- Grimshaw, Jane. 1997. Projection, heads, and optimality. *Linguistic Inquiry* 28: 373-422.
- Gutiérrez-Rexach, Javier & Sessarego, Sandro. 2010. On the nature of bare nouns in Afro-Bolivian Spanish. *40th Linguistic Symposium on Romance Languages (LSRL40)*, University of Washington, Seattle, Washington (USA), March 2010.
- Guy, Gregory R. 1981. *Linguistic variation in Brazilian Portuguese: Aspects of the Phonology, Syntax and Language History*. University of Pennsylvania Press.
- Henry, Alison. 2005. Idiolectal variation and syntactic theory. In Leonie Cornips and Karen P. Corrigan (eds.): *Syntax and Variation. Reconciling the Biological and the Social*, Amsterdam/Philadelphia: Benjamins. 109–122.

- Hiraiwa, Ken. 2001. Multiple Agree and the Defective Intervention Constraint in Japanese. *MIT Working Papers in Linguistics* 40: 67-80.
- Kayne, Richard. 1996. Microparametric syntax: some introductory remarks. In James R. Black and Virginia Motapanyane (eds.): *Microparametric Syntax and Dialect Variation*. Amsterdam/Philadelphia: Benjamins. ix-xxviii.
- Kayne, Richard. 2000. *Parameters and Universals*. New York: Oxford University Press.
- Kiparsky, Paul. 1972. Explanation in phonology. In Stanley Peters (ed.): *Goals of linguistic theory*. Englewood Cliffs, NJ: Prentice-Hall. 189-227.
- Koopman, Hilda. 1997. The Spec Head Configuration. In Edward Garrett and Felicia Lee (eds.): *Syntax at Sunset, UCLA Working Papers in Syntax and Semantics* 1. 37-65.
- Kroch, Anthony. 1989. Reflexes of grammar in patterns of language change. *Language variation and change* 1: 199-244.
- Kroch, Anthony. 1994. Morphosyntactic Variation. In K. Beals et al. (eds.): *Papers from the 30th Regional Meeting of the Chicago Linguistics Society: Parasession on Variation and Linguistic Theory*. 180-201.
- Labov, William. 1972. *Language in the Inner City*. Philadelphia: University of Pennsylvania Press.
- Labov, William. 1984. Field Methods of the Project on Linguistic Change and Variation. In John Baugh and Joel Sherzer (eds.): *Language in Use*, Englewood Cliffs: Prentice Hall. 84-112.
- Lipski, John. 2005. Nuevas fronteras de dialectología afrohispanica: los Yungas de Bolivia. *Proceedings from Conferencias sobre la lengua y cultura del mundo de habla hispana*. Kyoto: Universidad de Estudios extranjeros. 53-72.
- Lipski, John. 2006a. Afro-Bolivian language today: the oldest surviving Afro-Hispanic speech community. *Afro-Hispanic Review* 25.1: 179-200.
- Lipski, John. 2006b. El dialecto afroyungueño de Bolivia: en busca de las raíces el habla afrohispanica. *Revista Internacional de Lingüística Iberoamericana* 3.2: 137-166.
- Lipski, John. 2006c. Afro-Bolivian Spanish and Helvetia Portuguese: Semi-creole parallels. *Papia* 16: 96-116.
- Lipski, John. 2007. Afro-Bolivian Spanish: The survival of a true creole prototype. In Magnus Huber and Viveka Velupillai (eds.): *Synchronic and Diachronic Perspectives on Contact Languages*. Amsterdam/Philadelphia: Benjamins. 175-198.
- Lipski, John. 2009. *Afro-Bolivian Spanish*. Madrid: Iberoamericana/Vervuert.
- Magalhães, Telma M.V. 2004. A valoração de traços de concordância dentro do DP. *DELTA* 20.1: 149-170.
- Ortmann, Albert. 2000. Where plural refuses to agree: feature unification end morphological economy. *Acta Linguistica Hungarica* 47. 1-4: 249-288.
- Pesetsky, David and Torrego Esther. 2007. The syntax of valuation and the interpretability of features. In S. Karime et al. (eds.): *Phrasal and Clausal Architecture: Syntactic derivation and interpretation*. Amsterdam/Philadelphia: Benjamins. 262-294.
- Picallo, Carme. 2008. Gender and Number in Romance. *Lingue e Linguaggio* 1: 47-66.
- Pintzuk, Susan. 2003. Variationist Approaches to Syntactic Change. In Brian D. Joseph and Richard D. Janda (eds.): *The Handbook of Historical Linguistics*. Malden, MA: Blackwell. 509-528.
- Pollard, Carl and Sag, Ivan A.. 1994. *Head-driven phrase structure grammar*. Chicago: University of Chicago Press.
- Pomino, Natascha and Stark, Elisabeth. 2008. Adnominal Adjectives in Romance. Where Morphology seemingly meets Semantics. In Maria Teresa Espinal, Manuel Leonetti and Louise McNally (eds.): *Proceedings of the IV Nereus International Workshop*, Konstanz: Arbeitspapiere des Fachbereichs Sprachwissenschaft. 113-136.
- Poplack, Shana. 1980. Deletion and disambiguation in Puerto Rican Spanish. *Language* 56.2: 371-385.
- Ritter, Elizabeth. 1991. Two functional categories in phase structure. In S. Rothstein (ed.): *Perspectives on Phrase Structure: Heads and licensing*. San Diego, CA: Academic Press. 37-62.
- Sankoff, David, Tagliamonte, Sali, and Smith, Eric. 2005. *Goldvarb X: A Variable Rule Application for Macintosh and Windows*. Department of Linguistics, University of Toronto.
- Scherre, Maria Marta and Naro, Anthony. 1998. Sobre a concordância de número no português falado do Brasil. In Giovanni Ruffino (org.): *Dialettologia, geolinguística, sociolinguística. Atti del XXI Congresso Internazionale di Lingüística e Filologia Romanza*. Tübingen: Max Niemeyer Verlag. 509-523.
- Scherre, Maria Marta and Naro, Anthony. 2006. Mudança sem mudança: a concordância de número no português brasileiro. *SCRIPTA* 9.18: 107-129.
- Schwegler, Armin. 2007. Bare nouns in Palenquero. A fresh consensus in the making. In Marlyse Baptista and Jacqueline Gueron (eds.): *Noun Phrases in Creole Languages. A multi-faceted approach*. Amsterdam/Philadelphia: Benjamins. 205-222.
- Sessarego, Sandro. (2009a). On the evolution of Afro-Bolivian Spanish subject-verb agreement: Variation and change. In *Sintagma*, 21, 107-119.
- Sessarego, Sandro. (2009b). Gender agreement variation in the Afro-Bolivian Determiner Phrase: The Interplay of Social and Linguistic Factors. In *Revista Iberoamericana de Lingüística*, 4, 135-146.
- Sessarego, Sandro & Gutiérrez-Rexach, Javier (in preparation). A minimalist approach to gender agreement in the Afro-Bolivian DP: Variation and the specification of uninterpretable features. In *Folia Linguistica*.

- Simioni, Leonor. 2007. A concordância de número no DP: propostas minimalistas. *Estudos Lingüísticos* XXXVI.1: 117-125.
- Sportiche, Dominique. 2002. Movement, agreement and case. www.linguistics.ucla.edu/people/sportich/papers/mac.pdf
- Zamparelli, Roberto. 2008. On the interpretability of ϕ -features. In Cécile de Cat and Katherine Demuth (eds.): *The Bantu–Romance Connection*. Amsterdam/Philadelphia: Benjamins. 167–199.
- Zribi-Hertz, Anne and Glaude, Herby. 2007. Bare NPs and deficient DPs in Haitian and French. In Marlyse Baptista and Jacqueline Gueron (eds.): *Noun Phrases in Creole Languages. A multi-faceted approach*. Amsterdam-Philadelphia: John Benjamins. 265-298.

Selected Proceedings of the 13th Hispanic Linguistics Symposium

edited by Luis A. Ortiz-López

Cascadilla Proceedings Project Somerville, MA 2011

Copyright information

Selected Proceedings of the 13th Hispanic Linguistics Symposium
© 2011 Cascadilla Proceedings Project, Somerville, MA. All rights reserved

ISBN 978-1-57473-442-3 library binding

A copyright notice for each paper is located at the bottom of the first page of the paper.
Reprints for course packs can be authorized by Cascadilla Proceedings Project.

Ordering information

Orders for the library binding edition are handled by Cascadilla Press.
To place an order, go to www.lingref.com or contact:

Cascadilla Press, P.O. Box 440355, Somerville, MA 02144, USA
phone: 1-617-776-2370, fax: 1-617-776-2271, sales@cascadilla.com

Web access and citation information

This entire proceedings can also be viewed on the web at www.lingref.com. Each paper has a unique document # which can be added to citations to facilitate access. The document # should not replace the full citation.

This paper can be cited as:

Delicado-Cantero, Manuel and Sandro Sessarego. 2011. Variation and Syntax in Number Expression in Afro-Bolivian Spanish. In *Selected Proceedings of the 13th Hispanic Linguistics Symposium*, ed. Luis A. Ortiz-López, 42-53. Somerville, MA: Cascadilla Proceedings Project. www.lingref.com, document #2474.