

The Locality of Agreement and the Structure of the DP in Maasai*

Hilda Koopman
University of California, Los Angeles

1. Introduction

The Spec-head configuration has been widely held to represent the canonical agreement configuration:

- (1) If Y agrees with XP, XP and Y are or have been in a Spec-head relation in the course of the derivation

There seems to be no general consensus over the question whether this is the only configuration leading to the spell-out of agreement or not. Chomsky (1995) argues that the standard view is incorrect: agreement should be captured not by Spec-head, but by Agree, which basically requires local c-command between the agreement bearing head and the triggering DP.

In this paper, I push what I will call the “strong agreement” hypothesis: the Spec-head agreement configuration in (1) is the only configuration leading to the spell-out of agreement. If the presence of agreement signals a local Spec-head relation in the course of the derivation, agreement provides important clues as to the history of the derivation, and therefore provides valuable theoretical insights. Section 2 discusses why Spec-head should not be abandoned in favor of Agree. In section 3, I will apply the strong agreement hypothesis to probe the syntax of the DP in (Kisongo) Maasai, an Eastern Nilotic language, with rich, asymmetric DP internal agreement patterns¹. This leads to new insights into the building blocks of DPs, DP internal derivations, and the treatment of agreement asymmetries in structural terms. Gender, number and Case, must be merged low in the structure of the DP. I will reach the conclusion that “simple” common nouns in Maasai or rather the DPs that contain them, are not of the general form D NP, but of the form D CP in Maasai. This will probably be true universally by extension. D never

* I would like to thank the organizers of the 2001 Texas Linguistic Society Conference on the Role of agreement in Natural Language for inviting me to be a key note speaker. Data on Kisongo Maasai (Eastern Nilotic) were collected during the 1999/2000 Field Methods class at UCLA, and can be accessed at <http://www.humnet.ucla.edu/linguistics/people/Koopman/Maasai/>. I would like to thank Saning’o Millinary Ngidongi for his help and patience. Parts of the analysis presented here were worked out in a UCLA seminar on the internal structure of DPs (winter 2001). Special thanks go to Dominique Sportiche.

¹ Sometimes, two types of agreements are distinguished, agreement (in clauses), and concord, i.e., agreement within DPs. I see no reason to distinguish these, and will treat concord as agreement.

combines with a NP complement directly, but always with a CP complement that embeds the head noun, a NP predicate. This proposal likens simple DPs in Maasai to relative clauses with a nominal predicate (“*the boy*”, = *the x such that he is a boy*, or “*who is a boy*”), and generalizes Kayne’s 1994 proposal for the structure of relative clause structures, and possessive/genitive constructions to all DPs.

2. The Status of Agreement

That agreement is sensitive to structure, and subject to locality, is uncontroversial. At issue is the relevant characterization of ‘local domain’, and the following hypotheses have been entertained:

- (2) a. agreement is triggered in a Spec-head configuration
- b. agreement is triggered in a local domain (a cycle, or a phase)
- c. agreement is triggered in a head-head configuration (i.e., agreement is a type of incorporation)

(2a) and (2b) assume there is some ‘copying’ or ‘matching’ of agreement features²; (2c) treats the copying itself as a type of head movement, i.e., in essence agreement is an incorporated pronoun (Taraldsen 1992, among others). The latter hypothesis may well handle single occurrences of subject verb agreement, or object agreement. It is not clear however how it can capture the fact that a single DP can trigger agreement on different heads³ or how it would extend to DP internal agreement. I will therefore not consider this option any further here. The Spec-head agreement hypothesis in (2a) has been abandoned in recent work by Chomsky (1998, 1999) in favor of the more permissive structural relation Agree. A particular head in need of agreement features sends out a Probe in a particular limited domain, (say a phase), and can agree with a DP if this DP has (active) matching features. Furthermore the Probe launcher must locally c-command the trigger. Agree is somewhat akin to Binding in this respect. Agreement often looks triggered by Spec-head, because of the independent interaction with EPP features, which may force the trigger to move.

It is important to determine whether the Spec-head or Agree hypothesis is correct, because of the potential implications for the form of syntactic structures and derivations. If the Agree proposal (2b) turns out to be correct, there is no need to adjust our current understanding of what syntactic representations and derivations look like. Agreement will continue to play the somewhat marginal role they play in current syntactic theory. However, if the Spec-head proposal

(2a) is correct, many standard analyses and structures cannot be maintained: derivations must be rich enough to account for agreement, and consequently the standard understanding of the

² A somewhat tangential question concerns the existence of an agreement head in the (narrow) syntax, or postsyntactic insertion of agreement morphemes, as argued in Halle and Marantz (1993). Though nothing depends on this for the present paper, I will assume that agreement is available for syntactic merger (i.e. there is no narrow syntax). Agreement is part of the structural “glue” that holds everything together. Furthermore, I assume that the connection between syntax and spell-out is direct, and not mediated by a level of Morphological structure at which certain processes may occur.

³ It might be possible that some cases of agreement might be better analyzed as pronominal incorporation or cliticization. This will not bear on the issues discussed in this paper.

history of derivations, and structures needs to be adjusted. That syntactic derivations must be considerably enriched, is of course a conclusion reached in much recent work (Kayne 1994, Sportiche 1997, Rizzi 1997, Cinque 1999, Koopman and Szabolcsi (2000), among many others). If the Spec-head hypothesis is correct, agreement must play a much more central role in linguistic argumentation, since it yields direct insight into the syntactic derivations. This paper can be seen in part as a plea to take agreement seriously.

2.1 Agree versus Spec-Head.

In the core cases of Spec-head, the triggering DP is or has visibly been, in a Spec-head relation with the agreement bearing head. The core cases for Agree are long distance agreement cases in which the agreement trigger appears to be structurally lower than the agreement carrying head. In this section, I first focus on cases in which Agree (2b) is not restrictive enough, and no fix seems to be available (section 2.1.1). I then turn to apparently problematic cases where Spec-head (2a) seems too restrictive (section 2.2.2). The latter cases can be brought in line by adopting analyses for these constructions that have been proposed on agreement independent grounds, and that seem to be superior on empirical grounds.

2.1.1 Problems for Agree: Support for the Spec-Head Agreement Hypothesis.

In his paper on Romance past participle agreement, Kayne (1989) shows that Romance participle agreement reduces to the locality of the theory of movement, in conjunction with a simple rule of subject-verb (=participle) agreement. DPs agree with the past participle only if the DP has undergone movement through the subject position of the participial projection, i.e., if it has been in a Spec-head relation with the relevant head. Objects that follow the participle do not trigger agreement because they have not been in a local Spec-head relationship with the past participle at any point in the derivation. Similar types of asymmetries have been argued to follow from the theory of movement in conjunction with the general Spec-head hypothesis (Koopman 1999, Hallman 1999). It is unclear how agreement asymmetries can be captured in Chomsky's Agree proposal: a postparticiple object in French occurs in the same phase as the participle under all current accounts, and it is therefore mysterious why the Probe of the participle must fail in this context. It is also unclear what UG machinery could be deployed to account for agreement asymmetries under an Agree account: no easy fix (as yet) seems available. Agree is simply not restricted enough to handle such cases.

Under the Spec-head agreement hypothesis, however, agreement patterns are not accidental, but fall out from the history of the derivation, i.e., they reduce to the theory of movement. Postverbal objects in French participial constructions do not agree with the participle, because they are not in the spec position of the participial phrase at any point in the derivation. It seems to me that this type of account for agreement asymmetries provides strong support for the Spec-head agreement hypothesis.

2.1.2 Agreement at a Distance and Spec-Head

Agree is tailored to handle cases of long distance agreement, as exemplified in there-insertion construction in English, or in DP internal agreement between a demonstrative and the head noun:

- (3) a. There seem to be many problems with agreement

- (4) b. There seems to be a problem with agreement
 a. these three large American dogs IDem [Num [A [A [N.]
 b. this large American dog.

The verb or demonstrative can simply send out a Probe and find the relevant agreement features under local c-command in a searchable domain. This is compatible with the standard analyses for these constructions, in which the DP associate is spelled out low in the structure (cf. (3)) and the noun remains low in the structure of the DP (cf., (4)). The Spec-head hypothesis clearly runs into problems here. However, these examples are only problematic, if it can be shown that there is indeed no local relation either at spell-out, nor at any point in the derivation. There are in fact quite strong arguments (independent from agreement) that the relevant local relation exists in the case of

(3). Such arguments also extend to the less-studied case of (4). For reasons of space, I will not be able to present a full analysis of the cases under discussion. I will just outline the type of solution that allows maintaining the Spec-head hypothesis.

First consider the classic problem of there-insertion constructions. It is unlikely that the triggering DP is in a high clausal spec position, unless a radically different analysis of *there*-insertion constructions is adopted and motivated. It is entirely conceivable, however, that at some point in the derivation, a local Spec-head relation does indeed hold. Suppose for example that the DP associate and *there* start out together, as convincingly argued in Moro 1997, and that the DP and *there* get separated in the course of the derivation, by predicate inversion of *there*.

- (5) a. Merge DP and there
 [problem_{sg} [there]
 b. Agree (Spec-head)
 [problem_{sg} [there]_{sg}
 c. Merge *be*,
 be [a problem_{sg} [there]_{sg}]
 d. Move predicate (predicate inversion)
 [there]_{sg} be [_ a problem_{sg} [~~there~~]_{sg}]
 etc.

In this type of analysis agreement can be established in a local Spec-head configuration at an early point in the derivation, with the triggering DP remaining low in the structure. *There* is not freely merged in Spec, IP of an existential sentence, as in the standard theory, but in fact is moved to Spec, IP by predicate inversion. Once in Spec, IP, it will continue to behave as any element occupying Spec, IP. The associate DP has the distribution of *there*, i.e., the predicate of *be*, or of the (complex) verb triggering predicate inversion. The ungrammatical string **there seems a problem to be* is not due to failure of inherent Case (Belletti 1988 and Lasnik 1992), nor to Merge over Move (Chomsky 1995). It should rather be explained in the same way as **this will a disaster be* is not derivable by preposing of the (remnant) nominal predicate⁴.

This type of solution is similar to Sportiche's proposal for Q-float (1987). Sportichian solutions have been proposed for a wide range of long distance agreement phenomena (clitic doubling (Uriegereka 1995), Postverbal subjects in Italian (Belletti 1995, 2001), right-dislocation

⁴Such strings are fine in Dutch, which has preposing of the nominal predicate independently.

in Italian (Cecchetto 1999), clitic doubling and pronominal binding in a series of papers (Kayne 2000, 2001), and Boeckx (2001 and this volume) for resumptive pronouns). Under the strong agreement hypothesis all cases of long distance agreement then are to be reanalyzed as arising at some early point in the derivation under a local Spec-head relationship.

Let us next turn to the problem of DP internal agreement. Despite the robustness of DP internal agreement patterns, there has been little general discussion on how these should be analyzed, and little or no integration of agreement in discussions and analyses of DPs more specifically. It is not difficult to see why: a first problem with *this big dog, these big dogs*, is that the agreement triggering element, the N, is a head, not a phrase. If this is correct, this type of agreement simply cannot be reduced to a Spec-head relation, i.e., a relation between a triggering phrase and a head. Recent developments, however, have shown that simple heads are in fact often (remnant) phrases Koopman and Szabolcsi (2000), Sportiche (1999), Mahajan (2000). Moreover, Androtsopoulou (1997), Cinque (2000), and Shlonsky (2000) quite successfully reanalyze N movement as remnant NP movement. If Ns are in fact small NPs, a Spec-head account can be envisaged.

The question then arises if it can be shown that the demonstrative is not in a Spec-head relation with the NP at any point in the derivation. Recent papers on the structure of DPs have argued for low merger of demonstratives or of determiners in certain languages (Bernstein 1997, Androtsopoulou 1997). If indeed, demonstratives can be merged lower than D, with subsequent movement into the D region, a Sportichian analysis is within reach for these cases as well.

- (6) a. Low merger + agreement:
 [dogs [these] ..
 b. attraction of *these* to D:
 [these D [.....[dogs] [..] .

In conclusion, Agree can handle long distance agreement, but Spec-head can too: analyses which make these agreement patterns compatible with Spec-head have been proposed independently. Moreover, agreement asymmetries strongly support the Spec-head agreement hypothesis. Of course, more complete analyses remain to be presented for the problematic cases. However, in so far as these seem independently motivated, there is every reason to pursue the hypothesis that UG contains a unique agreement configuration, at the current state of our understanding.

3. Case Study: Maasai DPs.

The Spec-head agreement hypothesis provides a powerful analytical tool: if there is overt agreement, then a Spec-head relation must hold between the relevant trigger and the head at some point in the derivation. Agreement thus provides important clues as to the history of the derivation. In the following section, I will apply this tool to probe the syntactic structure of the DP in Maasai.

3.1 Decomposing the Maasai Noun.

A “simple” common noun in Maasai, i.e., the form used as the citation form, is in fact a complex structure with several overt morphemes and multiple asymmetric agreements⁵. Simple Ns, as the ones listed below, are used as the citation form⁶, as predicate nominals, and as DPs with a generic, indefinite, or definite interpretation, depending on the environment.

(7)	a sg.ms	l ms	ayé_ boy	ni sg.acc	‘a boy’
(8)	^ pl	l ms	ayó boy	k pl.acc	‘boys’
(9)	E sg.fem	N n (fem)	gíné kine	sg.acc	‘a (she) goat’
(10)	(^) pl	N n (fem)	gine> kine	dZi pl.acc	‘goats’

The nominal root, lexically specified for gender, is followed by number morphology. The spell-out of the number suffix is a complex matter, with particular suffixes and roots cooccurring. Most probably, the spell-out reflects a fusion of a (historical) noun class and a gender system. The nominal root is preceded by determiner-like elements *çl*, *En*, *ʔl* and *^n*. These can be further taken apart further into two “morphemes” (I will henceforth refer to morphemes as heads) that covary with gender and number (*ç* ‘ms.sg’, *E* ‘fem.sg’, *^* ‘pl.’) and gender (*l* ‘ms’, *n* ‘fem’) respectively. Each of these heads occurs independently. *ç* is part of the masculine relative pronoun, *E* is homophonous with 3rd person subject agreement (feminine gender is the unmarked form in Maasai), *^* occurs as a (productive) plural number suffix. *l* and *n* are part of demonstratives (demonstratives agree with masculine and feminine head nouns respectively), and are part of relative clause markers; *l* occurs in possessive constructions with a masculine possessed noun. These heads can be separated from the nominal root by the demonstrative roots, by certain quantifiers, and by high adverbs (see (41)) which shows that they are not nominal prefixes. The nominal root is flanked by tones that covary with Case, Number, and tonal class of the noun⁷. There are two Cases in Maasai: nominative Case, used for subjects of tensed sentences, and for the object of (the unique) P. All other nouns, including predicate nominals, citation forms, possessors and accusative DPs show up with non-nominative Case (referred to by Tucker and Mpaayei (1955) as accusative case, and glossed in the examples as such).

The simple noun consists of little pieces of structure that line up in the following order, and that form a phonological phrase. As a matter of convenience, gender, number and case are annotated with numbers (1=gender, 2=number, 3=case).

⁵ Nouns in Maasai fall into three distinct classes: proper names (*Toret*), pronouns, and common Ns òldíá ‘dog’, *alayéni* ‘boy’, *εηîné* ‘goat’. Proper names and pronouns do not have overt “determiners”, but common Ns do, and trigger slightly different agreement patterns. The discussion here is restricted to common nouns.

⁶ The citation form is identical to the predicate nominal form. Both carry non-nominative Case.

⁷For a table that includes the approximately 300 nouns in Tucker and Mpaayei (1955) Maasai English dictionary see Koopman (1999).

- (11) N: linear order of overt material (gender=1, number=2, Case=3)

2 _{number}		3 _[Case]	(Case)3
1 _{gender}	1 _{gender}	N _(gender)	-num

This

phonological word is made up of at least two syntactic constituents (3.5.2) :

- (12) Surface constituency:
 [{1,2}, {1}]....[[NP+2]+3]

Since number and gender are expressed in more than one position, agreement has applied at least twice within this structure. Moreover, the agreement is asymmetric: the leftmost head, call it Y, agrees in number and gender; the head in the second column (Z) only agrees in gender. This spell out should be treated as agreement rather than as spell-out of the gender head itself, since it also occurs as an agreeing C- like element in relative clauses, or as an agreeing morpheme in possessor constructions (with a masculine possessed nouns):

- (13) There is overt double agreement within the “Noun”
 Y₁₊₂ Z₁
 [gender and number] [gender]

Given the strong agreement hypothesis, it follows that some XP constituent and the agreeing heads are in a local Spec-head configuration at some point in the derivation.

Further questions arise: what exactly is the categorial status of Y and Z (section 3.1.1)? What other agreement patterns do we find in the Maasai DP (section 3.2)? What to make of the fact that Y agrees for both number and gender, while Z agrees only for gender? (see section 3.3).

3.1.1 On the Categorial Status of Y and X

The left peripheral heads Y and Z have both D-like properties, and properties which are not D-like, and the problem is how to reconcile these. The property that sets them apart from Ds as we know them is that there is no special semantics associated with them. These heads occur in all different types of DPs, citation forms, predicate nominals, indefinites, generics, definites, and within synthetic compounds (which look like relative clauses). This strongly suggests that they do not spell out (a high) D, but are merged quite low, low enough to occur in the common substructure of all the different types of DPs listed above. The heads also have some D-like properties. They occur in the left periphery, where Ds typically are found, they don't occur with proper names, and they can be absent in some limited contexts where bare nouns are often licensed:

- (14) a. **En- dokin** ‘thing’
 f.sg.f -thing
 b. **mE- ŋi tokin** ‘there is nothing’
 Neg-be-located thing

The proposal below, which is based on agreement, merges the Y and Z heads very low in the structure, hence the compatibility with different types of DPs, and moves them into the D periphery, hence their leftperipheral position at spell-out.

3.2 More on Agreement and Linear Order within the Maasai DP

Before turning to the analysis of the simple N, it is helpful to present a more complete picture of DP internal agreement on numerals, adjectives, possessive constructions, and relative clauses⁸. Dependents on the right of the head noun always fully agree in Case and number and gender. Dependents on the left of the triggering category always agree in gender and number.⁹ Numerals and APs are postnominal and are ordered as follows:

$$(15) \quad Y_{1,2} \ Z_1 \ \dots \ NP_{1,2,3} \ \text{Num}_{1,2,3} \ \text{AP}_{(1),2,3}^*$$

DP possessors are preferably in rightperipheral position within the DP, preceded by a two headed possessive morpheme; the left part agrees with the possessed noun in gender, number¹⁰ and Case,; the rightpart (X) agrees in gender and number, with the possessor which itself is non-nominative (see Appendix A for paradigms).

$$(16) \quad \text{DP possessors (} W \text{ is probably some D)}$$

$$Y_{1,2} \ Z_1 \ \dots \ NP_{(1),2,3} \ \dots \ W_{1,2,3} \ X_{1,2} \ \text{DP}_{(\text{poss})1,2,3(\text{acc})}$$

Pronominal possessors involve a possessive morpheme, and basically show the same agreement pattern as adjectives (agreement with the possessed head noun in number, Case and gender (see Storto this volume). Gender shows up on W, tonal Case and Number agreement on the left and right edge of the pronoun, and a number agreement suffix shows up on the right edge of the pronoun. The pronominal possessor seems to have incorporated and fused with X:

$$(17) \quad \text{Pronominal possessors:}$$

$$Y_{1,2} \ Z_1 \ NP_{1,2,3} \ \dots \ W_{1,2} \ \text{poss pron}_{2,3} \ (\text{Num}_{1,2,3}) \ (\text{AP}_{1,2,3}^*)$$

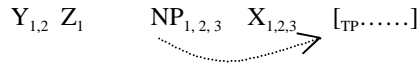
(Affirmative) relative clauses also show a special complex head (W +X) that agree in number, gender and Case with the head of the relative clause (and not with the extraction site) (See Appendix B):

$$(18) \quad \text{Relative clauses:}$$

⁸ For detailed description, see Epstein (1999). I leave demonstratives and quantifiers out of the discussion.

⁹ And maybe also for Case in the possessive construction: the tonal analysis involved in Case marking in this particular environment needs to be more fully worked out.

¹⁰ Due to tonal opacity, and length of segments, it is difficult to determine that W agrees with the possessed N in number. However, since this agreement does show up overtly with pronominal possessors in (17), I conclude.



3.3. Accounting for agreement: simple DPs.

Thus far, the following combinations of features characterize DP internal agreement patterns in Maasai¹¹:

- (19) a. 1 (gender)
- b. 1,2 (gender and number)
- c. 1,2,3 (gender, number and Case)

The following agreement patterns do not occur in Maasai:

- (20) a. * 3 (pure Case agreement)
- b. * 2 (pure singular number agreement) (sg)
- c. * 1, 3 gender and Case agreement

Furthermore, some heads only agree for 1, or for 1,2, other heads show full 1,2,3 agreement. Surely one would like to find out why this state of affairs holds. Is there any internal logic as to why certain heads only agree for gender, or for gender and number while others must fully agree for gender, number and Case? I will suggest a structural account starting with the simple noun (oldia).

Suppose gender, number and Case are decomposed into the following hierarchy (see also Sportiche (1996) for arguments based on reconstruction):

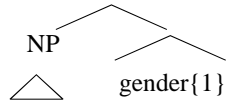
- (21) Case > Num > Gender > NP
- 3 2 1

NP must combine overtly with each head through phrasal movement. With each little cycle of derivations the NP grows bigger, gathering its features and morphology (cf., Koopman and Szabolsci 2000): NPs are “grown” through merge and move. In this view, agreement asymmetries reflect the level at which agreement is established. If agreement is established with a small phrase, it will only show agreement in the features that are available at that point in the derivation. If agreement is established with a bigger phrase, agreement will reflect the features available at that point in the derivation.

Let’s us examine some snapshots of the derivation. A more complete, but still simplified derivation is put together in section 3.4. At a very early point in the derivation, NP merges with gender, and NP moves to Gender:

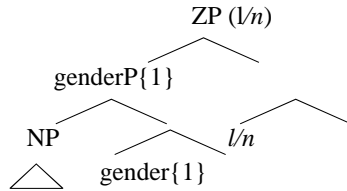
- (22) Merge: NP gender, Move NP to {1} →
- GenderP{1}

¹¹ The discussion below is a slight simplification. 2 (number agreement might obtain for plural number; 2+3 agreement (number and Case agreement) occurs with one class of adjectives; this class of adjectives does not carry subject agreement either when used as the main predicate.



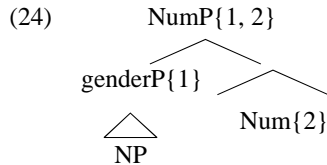
At this point of the derivation, a small piece of structure, *genderP*, is floating around. Any head that attracts *GenderP* to its Spec will agree in gender features only, since this is all that is available. As shown above, then second head *Z*, (*l/n*) agrees in gender only. Hence, it follows that this a head is in a Spec-head relationship with the structural piece in (22) in the course of the derivation.

(23) Agreement in gender (*Z*):



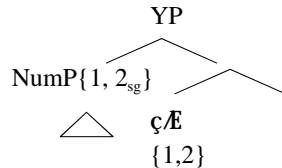
Thus *l/n* spell out a head that is merged very low in the structure.

In the next cycle, Number is merged. *GenderP* extract from the Specifier of the projection containing *l/n* and moves to *NumP* (the alternative, pied-piping *l/nP* to Number P will yield the wrong surface order).

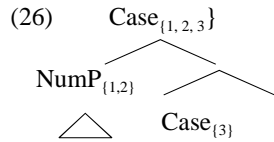


This configuration includes the necessary information to express the rather complex rules governing the spell-put of number suffixes. These rules can be handled within the framework of spell-out rules formulated by Halle and Marantz 1993. Any head that attracts *NumP* can in principle agree for *Num* only (in the case of plurals) or for (singular) Number and gender, given that *genderP* is in the Spec position of *NumP*, and hence can agree with *NumP*. The leftmost head within the DP, *Y*, agrees in gender and number. Hence *NumP* is in Spec *YP* at some point in the derivation, i.e., *Y* is merged quite low in the structure, but higher than *X*.

(25) Agreement in Number and gender on *Y*.



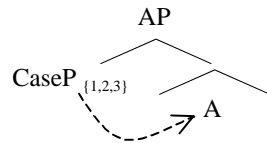
In the next cycle, Case is merged; Case attracts *NumP*:



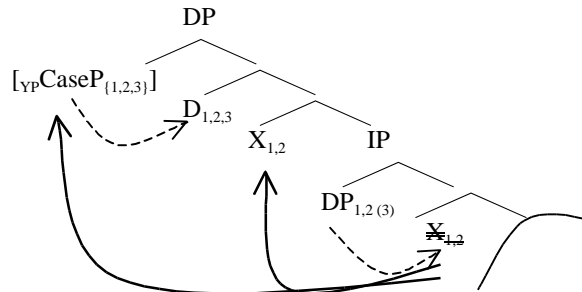
Via Spec-head agreement, NumP agrees with Case, hence any head in a local relationship with CaseP will also agree in gender, number and Case. This structure yields the right input for the spell-out of the Case tonology, a purely tonal matter: leftboundary or rightboundary tone on NumP, or both, depending on the tonal class and Case. CaseP is embedded under any type of D, hence the different types of contexts with which the noun is compatible (3.1.1). Though it might seem surprising to project Case within the DP, it, will, beyond the morphology, straightforwardly account for the agreement patterns on dependents (cf., also Sportiche, 1998).

We now understand all agreements in Case, number and gender as arising from a local Spec-head relationship with CaseP, with subsequent local movements of CaseP (or any category that embeds CaseP to a position high within the DP where it is ultimately pronounced. (The following representations are partial, and just serve to illustrate the agreement triggering configurations. Any analysis in which the triggering XP is in a Spec-head relationship with the head will yield the desired effect; dotted lines indicate agreement)

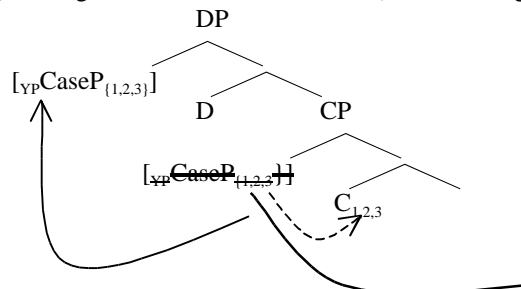
(27) Agreement on Adjectives:



(28) Agreement in genitive constructions: (in the spirit of Kayne 1994)



(29) Agreement in relative clauses: (a head-raising analysis a la Kayne 1994)



In essence, then, the agreement patterns reflect the derivation. This yields a direct explanation for the observed asymmetries. Heads will agree with what is visible to them. Once constructed, individual pieces of structures do not vary as to what is visible.

In a nutshell:

- Gender agreement reflects agreement with GenderP;
- Number agreement reflects a local Spec-head relation with NumP (with GenderP in Spec of NumP, hence with gender and number visible)
- Case agreement reflects agreement with CaseP, with NumP in Spec, CaseP, hence with gender, number and Case visible.
- Heads lower than CaseP cannot agree for Case, because Case is not yet present at this point in the derivation
- All heads higher than CaseP will fully agree in gender, number and Case, because this piece of configuration is visible.
- Pure Case agreement is not attested, simply because of the configuration: CaseP always shows gender, number and Case.
- Pure gender agreement is not attested on any of the high heads, because GenderP is embedded within NumP;

3.4 *Putting the Pieces Together...*

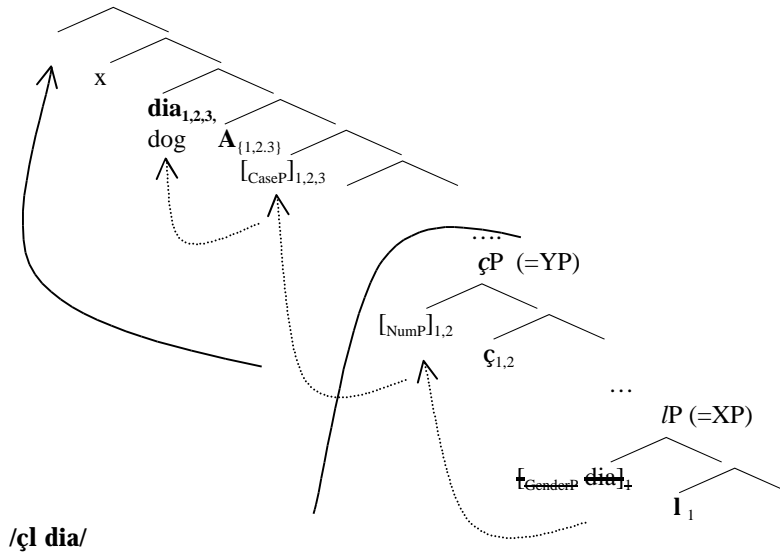
We now have several isolated pieces of structures, a hierarchy of merger, and multiple movements. Each piece presents the right configuration for spell-out, and allows for a transparent syntax/PF interface. The next step is to put these pieces together into a (somewhat simplified) derivation and concentrate on the derivational history. We know from the YX..N Num A order now that some apparently deeply embedded piece of structure ends up in the leftperiphery at spell-out, and that the CaseP that contains the head noun comes to be pronounced in a high position within the DP. CaseP and the constituent containing (Y+X) $\circ l$ move independently to different landing sites, not as a single constituent. Material that occurs high in the DP (cf., certain adverbs) occurs between the Y+X and NP. (see (41) below.)¹²

In this derivation, there are two types of movements:

- (30)
- a. successive local movements of the gradually bigger constituent containing the N to a position higher than adjectives, but lower than the landing site for the $\circ l$ (=YP) constituent;
 - b. an apparently single movement of the YP constituent containing $\circ l$ to the left periphery of the DP (into the D region).

¹² For simplicity, the growth of NumP is not shown. Incorporating NumP in the derivation goes beyond the scope of the present paper; it will lead to the view developed in Koopman and Szabolsci (2000), in which XP and YP are small DP cycles/phases, and a small series of movement applies in each cycle.

(31) *Simplified structure:” Overt material is boldfaced.*



I would like to propose that the first type of movement is equivalent to subject raising (NP-movement), with the CaseP landing in a clausal-like subject like position within the DP. In this view, it comes as no surprise that the noun triggers multiple agreements: this is a well established property of NP movement. Note that this account differs from the standard account which attributes the high position of the noun to N to D raising (Longobardi 1994, 2001). The NP movement account seems superior in the way it handles agreement: it reduces to Spec-head, and the locality of movement (see section 3.4.2 for a further argument that shows that the CaseP is in a NP-like position, and not in a D-like head position.)

If CaseP indeed is in a clausal-like subject at spell-out, then the DP must contain a clausal like constituent, i.e. the structure is D CP/IP (see 3.5 for additional distributional evidence). The head noun originates within the IP. It now becomes natural to think of the noun as starting out as a nominal small clause predicate, with its variable, *x*, as subject:

(32) D [CP/IP [Case]] [... [.. Y.. [..X [x NP]]]]

This raises a problem though: the predicate NP distributes like a subject, and undergoes NP movement. This suggests predicate inversion (Moro 1997) is at work within this structure. (see section 3.5.3 for more discussion of predicate inversion in Maasai). By predicate inversion, the NP raises to the subject position of say a silent *be*, from where it undergoes subject raising to the structural “subject” position:

(33) [D [CP/IP [Case]] [... [.. Y.. [..X [NP_i..”be” [x ~~NP_i]]]]]]~~

agreement, object clitics, and aspect/tense and include an impressive number of verbal extensions (applied-suffixes, passives, middles, causatives, etc.). Given the elements it contains, the raised constituent is at least a remnant AgrSP, occupying a position preceding the subject. Since focused constituents precede the preposed predicate, we can safely assume that the movement targets FinP (Rizzi 1997):

- (37) a. Fin [DP_{i(nom)} T [AgrSP t_i AgrS-(AgrO) [V...]] →
 b. [_{FinP} t_i AgrS-(AgrO)V-..] Fin [DP_{i(Nom)} T []

This is parallel to the suggestion above that the placement of *ol* above is basically like the placement of a (remnant) predicate), with the noun in a clausal-like subject position.

- (38) [t_i O_{Agr-I-..}] D/C/Fin [dia_i (Case)]

As mentioned previously, it is difficult to determine if YP moves to CP (FinP) because predicates move there, or because it is an A' - pronoun.

3.5.2 Adverbs

Adverbs in Maasai are few and can be easily listed. Most of the Cinque's (1997) adverbs are expressed as verbs.

- (39) naji: mentioned a few hours ago
 duoo mentioned this morning
 ηole: yesterday
 nari sometime ago
 apa long time ago
 o i usual

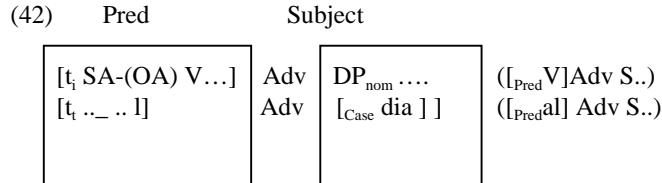
These adverbs occur in an interesting position: they immediately follow the predicate and precede the nominative marked subject:

- (40) [SA- PredP] Adv [DP(nom)]
 ε- á s o i eη- kèraí
 3sg do usually f.sg child.sg.nom
 Usually a child does this

Exactly the same adverbs can also occur within DPs (see also Tucker and Mpaayei 1955: 18). They follow the X (l/n), cause the appearance of an (epenthetical) vowel with consonant initial adverbs (Epstein 1999), and precede the CaseP. They don't agree in Case nor in Number.

- (41) a. a- l- apa- ayeni
 sg.m- m. long ago boy.acc
 'the boy we mentioned long ago'
 b. ì- l- o i ayok
 pl.m -m usual boy.pl.acc
 'The usual boys'

The parallel placement of these adverbs in clauses and DPs is quite striking. It brings support for the idea that the CaseP is in a subject position within the DP; Indeed, if the high position should be explained by N to D movement, parallel to V to C movement, the head noun should precede, rather than follow the Adverb.



Finally, if these adverbs are actually higher than the “subject” position, the absence of agreement is easy to understand.

3.5.3 Predicate Inversion.

In order to explain how the NP predicate came to end up in a subject position, we stipulated that predicate inversion applies obligatorily within the clause with the nominal predicate. This is a quite natural proposal: nominal predicate construction often allow predicate inversion (*this book is the cause of the riots, the cause of the riots is this book* (Moro, 1977)). Numerous proposals in the recent literature appeal to predicate inversion within DPs (Kayne 1994, den Dikken 1998, Bennis, Corver, and den Dikken 1997, Hoekstra 1999, among others). Not suprisingly, Maasai DPs also has predicate inversion in possessive construction (see Storto this volume and (28)). Predicate inversion in nominal copular constructions in clauses exhibits a unique, and hitherto undescribed pattern: predicate inversion depends on the definiteness of the predicate. If the predicate is indefinite, the usual pattern show up. The predicate carries non-nominative Case, and distributes like a predicate; the copula is silent with 3rd person, subject agreement is absent, and the entire NP predicate raises and as a result precedes the nominative subject:

- (43)
- | | | | |
|------------|--------------|--------|--------------------|
| àldákítárì | ελε | tùḡani | |
| a- l- | dakítarì | ε- | λε- tùḡani |
| m.sg-m | doctor (acc) | sg. | m.this person(nom) |
- This man is a doctor

However, if the predicate is definite, predicate inversion must apply. The (3rd person) DP argument (*this person*) shows up in the predicate position carrying non-nominative Case, and the semantic predicate (*the doctor*) shows up with nominative Case, signaling that predicate inversion has obligatorily applied.

- (44)
- | | | |
|-----------------|------------|---------------------------|
| ελε | tùḡani | àldákítárì |
| This person.acc | doctor.nom | This person is the doctor |
- (45)
- | | |
|--------|------------------------|
| nìně | àldákítárì |
| he.acc | m.sg.-m. doctor.sg.nom |

It remains to be seen why predicate inversion can be triggered by definiteness.

4. Conclusion

In this paper I have argued that the Spec-head agreement hypothesis should be pursued in its strongest form. I have used the Spec-head agreement hypothesis and applied it as an analytical tool to an agreement rich domain, the DP in Maasai. This study yields quite interesting results: all DPs which contain common Nouns in Maasai contain the clausal structure D CP, and are basically relative clauses. The head noun, the NP predicate, originates inside a small clause within the relative clause, and moves to a subject position (spec position) through predicate inversion. Case, number and gender are hierarchically organized, and are merged low within the structure of the DP. Asymmetric agreement follows from the configurations: heads that are in a Spec-head relation with a NP will show agreement for only those features which are present at that stage of the derivation. All agreement within DP is due to local “NP” movement, with the CaseP eventually attracted to a clausal position. The morphemes at the left edge are heads that are merged low in the structure, which get moved into the D region.

The structure of a DP containing a N is not D NP, but rather the structure Kayne (1994) has proposed D CP, with a nominal small clause:

(46) Simple DP (Maasai):

$$[_D [_{CP} [_{IP} \text{Adv “subject” AP} [_{\text{“Agrs”}} t_i \text{ x } [t_i \text{ y } [_{\text{NSC}} \dots \text{NP}]]]]]]$$

[x boy]

While this proposal may appear weird at first, it is in fact quite natural, and even expected. In the standard view, D takes a NP complement (*the boy*). The parallelism between clauses and DPs is expressed by the fact that there are a number of functional projections within DP that are parallel, though not identical, to the functional projections in a clause (cf., Longobardi 1994, 2001)

(47) D .. D(gencase)... Num... NP

As far as the semantics is concerned, the N functions as a predicate with a variable x (an “external argument”) bound by the determiner. Kayne (1994) proposes that relative clauses, possessor constructions, constructions like *a hell of a doctor*, basically contain clausal structures, with D taking a CP/IP complement. This led to much interesting and insightful work on the internal structure of DPs, with vastly improved empirical coverage. However, it also leads to a mixed view: some DPs have a clausal constituent in them (a constituent that is also found in sentences and that expresses possession); some DPs have a full clause in them (relative clause). Others contain no clause, though they contain some predicative element (D NP). This seems doubly curious. First, if D can combine with a CP that contains a copula constructions, (possessive constructions, *a hell of a doctor*), this CP should also be able to contain the equivalent of a nominal copula construction (*he is a boy, it is a boy*). Under the proposal in this paper, there is no such gap: D simply never combines with a NP complement headed by a common noun, but always with a clausal complement (=CP) which in turns contains a NP predicate. Second, if D can combine with CP or with NP, we expect D to be able to combine with any category. Yet, Kayne

(1994) is forced to state that *the* cannot combine with a DP complement. The proposal in this paper suggests that D in fact always takes a CP complement, and never a NP complement.

Appendix A: possessor constructions.

- (48) --possessed W-X possessor:
 --X agrees with possessor in number (and sg gender)
 --W agrees with possessed in gender, number and case
- Accusative, nominative agreement with singular possessor: h (High)
 - Nominative agreement with plural possessor: hl (High Low)
 - accusative agreement with plural possessor: lh (Low High)
- o → a / --(C) a
- (49)
- | | | | |
|----|-----------------|----------------------|-----------------|
| a. | <i>m.acc.sg</i> | <i>m.acc.sg-m.sg</i> | <i>m.acc.sg</i> |
| | oldíà | l- á | layéni |
| | ol-díà | l- o | l-aye-ni |
| | dog | | boy |
| b. | <i>m.acc.pl</i> | <i>m.acc.sg-m.sg</i> | <i>m.acc.sg</i> |
| | ildíàin | l-á | layéni |
| c. | <i>m.nom.sg</i> | <i>m.nom.sg-m.sg</i> | <i>m.acc.sg</i> |
| | oldíà | l-á | layéni |
| d. | <i>m.nom.pl</i> | <i>m.nom.sg-m.sg</i> | <i>m.acc.sg</i> |
| | ildíàin | l-á | layéni |
- (50)
- | | | | |
|----|-----------------|----------------------|-----------------|
| a. | <i>f.acc.sg</i> | <i>f.acc.sg-m.sg</i> | <i>m.acc.sg</i> |
| | enkíné | á | layéni |
| | goat | | boy |
| b. | <i>f.acc.pl</i> | <i>f.acc.pl-m.sg</i> | <i>m.acc.sg</i> |
| | inkínèzì | á | layéni |
| c. | <i>f.nom.sg</i> | <i>f.nom.sg-m.sg</i> | <i>m.acc.sg</i> |
| | enkínè | á | layéni |
| d. | <i>f.nom.pl</i> | <i>f.nom.pl-m.sg</i> | <i>m.acc.sg</i> |
| | enkínèdzì | á | layéni |
- (51)
- | | | | |
|----|-----------------|--------------------|-----------------|
| a. | <i>m.acc.sg</i> | <i>m.acc.pl-pl</i> | <i>m.acc.pl</i> |
| | oldíà | l- aá | layó `k |
| | ol-díà | l- oo | l-aye-uk |
| | dog | | boy |
| b. | <i>m.acc.pl</i> | <i>m.acc.pl-pl</i> | <i>m.acc.pl</i> |
| | ildíàin | l-aá | layó `k |
| c. | <i>m.nom.sg</i> | <i>m.nom.pl-pl</i> | <i>m.acc.pl</i> |
| | oldíà | l-áa | layó `k |
| d. | <i>m.nom.pl</i> | <i>m.nom.pl-pl</i> | <i>m.acc.pl</i> |
| | ildíàin | l-áa | layó `k |
- (52)
- | | | | |
|----|-----------------|--------------------|-----------------|
| a. | <i>f.acc.sg</i> | <i>f.acc.pl-pl</i> | <i>m.acc.pl</i> |
| | enkíné | aá | layó `k |
| | goat | | boy |

b.	f.nom.sg	<i>f.nom.sg-pl</i>	<i>m.acc.pl</i>
	enkínè	áa	layó `k
c.	<i>m.acc.sg</i>	<i>m.acc.sg-f.sg</i>	<i>f.acc.sg</i>
	alayéni	l-ε	nkínè
	boy	goat	
d.	<i>m.acc.sg</i>	<i>m.acc.sg-fsg</i>	<i>f.acc.sg</i>
	alayéni	l-ε	nkínè
	boy	goat	
e.	<i>m.acc.sg</i>	<i>m.acc.pl-pl</i>	<i>f.acc.sg</i>
	alayéni	l-óo	nkinejí
	boy	goat	

Appendix B: (affirmative) relative clauses.

- (53) --Linear order: head N X TP
 --X agrees with the head Noun in Case, number and gender. (Case of the entire DP, not of the relativization site)
ms: o (sg) /oo (pl) *fem:* na, (sg), naa(pl)
nom: h(sg) hl (pl)
acc l (sg) lh (pl)
- o → a / (C) a
- (54) alayéni ò lò
 boy.acc ms.sg.acc go
 ‘(I saw) the boy who will go’
- (55) aláyèni ó lò
 boy.nom ms.sg.nom go
 ‘the boy who will go (is ...)’
- (56) alayòk áá tanapá ènâ kéraí
 boy.pl.acc ms.pl.acc past-carry this child.nom
 ‘Í saw the boys this child carried’
- (57) aláyòk áá tanapa ènâ kéraí
 boy.pl.nom ms.pl.nom past-carry this child.nom
 ‘the boys this child carried (came)’
- (58) enkínè nà lò
 goat.acc f.sg.acc go
 ‘(I saw) the goat who will go’
- (59) enkíně ná lò
 goat.nom f.sg.nom go
 ‘the goat who will go (is ...)’

- (60) inkinedzi naá tanapá ènâ kéraí
 goat.pl.acc f.pl.acc past-carry this child.nom
 '(I saw) the goats this child carried'
- (61) inkinedzi naá tanapá ènâ kéraí
 goat.pl.nom f.pl.nom past-carry this child.nom
 'the goats this child carried (were..)'

References

- Androutsopoulou, A. (1977). On remnant DP-movement in modern Greek. MA Thesis, UCLA.
- Belletti, A. (1988). The Case of unaccusatives. *Linguistic Inquiry* 19, 1-34.
- Belletti, A. (2001). Postverbal subject in Italian. ms, University of Sienna.
- Bennis, H., N. Corver & M. den Dikken. (1997). Predication in nominal phrases. *Journal of Comparative Germanic Linguistics* 1, 85-117.
- Bernstein, J. (1997). Demonstrative and reinforces in Romance and Germanic languages. *Lingua* 102, 87-113.
- Boeckx, C. (2001). Resumptive Pronouns as Derivational Residues. WCCFL.
- Cecchetto, C. (1999). A comparative analysis of left and right dislocation in Romance. *Studia Linguistica* 53, 40-67
- Chomsky, N. (1995). *The Minimalist Program*. Cambridge, Mass: MIT Press.
- Chomsky, N. (1998) Minimalist Inquiries: The Framework. MIT Occasional Papers in Linguistics, 15, MITWPL, Cambridge, Mass.
- Chomsky, N. (1999). Derivation by Phase. ms, MIT.
- Cinque, G. (1999). *Adverbs and functional projections: A cross-linguistic perspective*. New York: Oxford University Press.
- Cinque, G. (2000). On Greenberg's Universal 20 and the Semitic DP. Paper presented at the workshop on the antisymmetry theory, Cortona.
- Dikken, M. den. (1998). Predicate Inversion in DP. In A. Alexiadou & C. Wilder (eds.), *Possessives, predicates and movement in the Determiner Phrase*, 177-214. Amsterdam: John Benjamins.
- Epstein, M. (2000). Noun Phrases in Maasai. ms., UCLA.
- Halle, M. and A. Marantz. (1993). Distributed Morphology and the pieces of inflection. In K. Hale and S. J. Keyser (eds.), *The view from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, 11-76. Cambridge, MA: The MIT Press.
- Hallman, P. (1997). Reiterative Syntax. In J. Black and V. Motapanyane (eds.), *Clitics, pronouns, and movement*, 87-131, Amsterdam: John Benjamins.
- Hallman, P. (1999). The structure of agreement failure in Lebanese Arabic. Proceedings of WCCFL 19, 179-190
- Hoekstra, T. (1999). Parallels between Nominal and Verbal Projections. In D. Adger et al. (eds.), *Specifiers*, 163-187. New York: Oxford University Press.
- Kayne, R. (1989). Facets of Roamnce Past Participle Agreement. In P. Benincà (ed.), *Dialect Variation and The Theory of Grammar*, 85-103. Dordrecht: Foris Publications.
- Kayne, R. (1994). *The antisymmetry of syntax*. Cambridge, MA: The MIT Press.
- Kayne, R. (2000). *Parameters and Universals*. New York.: Oxford University Press.
- Kayne, R. (2001). Pronouns and their antecedents. ms, University of New York.

- Koopman, H. (1999a). The Internal and External Distribution of Pronominal DPs. In K. Johnson and I. Roberts (eds.), *Beyond Explanatory Adequacy: Essays in Honor of Osvaldo Jaeggli*, Kluwer Academic Publishers.
- Koopman, H. (1999b). Tonal patterns on Maasai Nouns.
http://www.humnet.ucla.edu/linguistics/people/Koopman/Maasai/maasai_nouns
- Koopman, H. and Szabolcsi A. (2000). *Verbal Complexes*. Current Studies in Linguistics 34, Cambridge, MA: The MIT Press.
- Lasnik, H. (1992). Case and expletives: Notes towards a parametric account. *Linguistic Inquiry* 23, 381-405.
- Longobardi, G. (1994). Reference and Proper Names. *Linguistic Inquiry* 25, 609-665.
- Longobardi, G. (2001). The Structure of DPs. In Baltin, M. and C. Collins (eds), *The Handbook of Contemporary Syntactic Theory*, 562- 604. Malden and Oxford: Blackwell Publishers.
- Mahajan, A. (2000). Against Head Movement. Glow Newsletter.
- Moro, A. (1977). *The Raising of Predicates. Predicative Noun Phrases and the Theory of Clause Structure*, Cambridge: Cambridge University Press.
- Payne, D. (1997c). Semantic role and argument structure in the Maasai "external possession" construction." Proceedings of the 1997 23rd Meetings of the Berkeley Linguistics Society.
- Rizzi, L. (1997). On the fine structure of the left-periphery. In L. Haegeman (ed.), *Elements of Grammar*, 281-337. Dordrecht: Kluwer Academic Publishers. [Also in Rizzi, L. 2000. *Comparative Syntax and Language Acquisition*, London: Routledge].
- Shlonsky, U. (2000). The form of Semitic noun phrases: an antisymmetric, non N-movement account. Ms., University of Geneva.
- Sportiche, D. (1988). A Theory of Floating Quantifiers and its Corollaries for Constituent Structure. *Linguistic Inquiry* 19, 425-451
- Sportiche, D. (1994). Adjuncts and Adjunction. Key note address at LSRL, UCLA.
- Sportiche, D. (1997). Reconstruction and constituent structure. Class lectures and lectures presented at MIT and various other places. .
- Storto, G. (this volume). Agreement patterns in Maasai Possessive DPs.
- Taraldsen, K. (1992) Agreement as Pronoun Incorporation. Paper presented at the GLOW.
- Uriagereka, J. (1995). Aspects of the Syntax of Clitic Placement in Western Romance. *Linguistic Inquiry* 26, 79-123.