

# Inside the “Noun” in Maasai\*

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## 1. Introduction

In this paper, I will present an analysis of the simple “Noun” in Maasai (ɔldía “dog”) which yields new insights into the basic building blocks of DPs, the way these are combined, the movement processes that apply within DPs, and the agreement patterns that result. Simple nouns in Maasai are at least bi-morphemic, and according to standard practice would either be selected from the lexicon fully inflected, or be derived in the syntax through head movement. I will depart from standard practice and argue that Maasai Nouns are neither selected in their full forms, nor derived by head movement. Instead they are derived syntactically through (remnant) XP movement. This position is consistent with much recent work that has shown that head movement is either not an option allowed by UG, or is a severely restricted option (see section 2) and follows the line of research I pursued in previous work with Anna Szabolcsi (Koopman and Szabolcsi 2000). Since the analysis of agreement patterns plays an important role in the argumentation, I will spell out my assumptions about the theory of agreement in (section 3), and defend the Spec head analysis of agreement over Agree (Chomsky, 1998).

## 2. The rise and fall of head movement

The theory of head movement develops in the early eighties (Koopman 1984, Baker 1984, Travis 1983, among others). Given the general understanding of the structure and theory at that time, head movement must be a necessary mechanism of UG. Head movement is clearly distinct from phrasal movement, and cannot be reduced to it: head movement is simply the only available mechanism that allows the separation of the head from its dependents, regardless of the category of these dependents (DPs, PPs, CPs, small clauses, particles.), and to describe the movement distribution of heads local c-command).

In the early eighties, when the theory of head movement is developed and integrated in the theory, there are no VP internal subjects in simple sentences (Koopman and Sportiche, 1985, 1991, among others). Phrase structure is not binary branching: binary branching is introduced in Kayne 1984. X-bar theory does not yet generalize to functional heads: Stowell 1981 argues for integrating I into the X-bar schema, but the other functional categories, D and C do not enter into X-bar theory until the later part of the eighties (Abney 1986, Chomsky 1986). The internal structure of VP is poorly understood: VP shells are introduced by Larson in 1988, and developed for thematic structure (Hale and Keyser 1993). The architecture of the clause is not well

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understood: Pollock's influential study of the clausal structure in English and French, which gives rise to an explosion of work on the architecture of the clause, dates from 1989. The properties of scrambling have not been studied: detailed work on scrambling dates from the second half of the eighties (e.g. Den Besten and Webelhut 1986, 1991, Mahajan 1990) among others). There is no AgrO (Chomsky 1991, Mahajan, 1990, Koopman, 1987). There are no DPs (e.g. Abney, 1987, Longobardi 1994 and many others); The distribution of adverbs is not incorporated in the structure (Cinque 1999), nor is the finer structure of the left periphery understood (e.g. Rizzi 1996).

The distribution of heads together with the theory of head movement plays an important role in many of these developments. Heads provides evidence for head positions of course, but also for DP positions, since heads make Spec positions where DPs can appear available. Heads and their dependents thus provide important insight into the architecture of phrases. These very developments, however, also imperil head movement as an independent type of movement, not reducible to phrasal movement. As becomes clear over this period, the building blocks of syntax (=features) are smaller than what they are traditionally taken to be (=words). Given generalized X-bar theory, this leads to the presence of many tiny phrases. Given the omnipresence of movement, this leads to the existence of many remnant phrasal constituents, i.e. phrases that contain traces of moved out dependents. Remnant movement takes on more importance with the research program outlined in Kayne (1994). Remnant constituents often contain very little overt material, which makes it hard to distinguish them from heads. Hence the possibility that certain cases of separation of a head and its dependents should be analyzed as (remnant) phrasal movement, not as head movement. This leads naturally to a reconsideration of the theoretical status of head movement. In the second part of the nineties, this question gets addressed. Certain phenomena previously analyzed as involving head movement are argued to involve phrasal movement (Hallman, 1996, 2001 analysis of verb second in Germanic as remnant movement), Sportiche (1996, and 1998) proposes to analyze English affix hopping as remnant VP movement to T. Koopman and Szabolcsi 2000 show that certain complex verb formations traditionally analyzed as involving head movement simply cannot be so analyzed. Instead, a general (remnant) phrasal movement account is motivated and presented. K&S also show that inflectional morphology can be very nicely integrated into the derivations if analyzed as involving remnant XP movement. Brody 1997 argues that cases of head movement should either be analyzed in terms of his Mirror theory that takes the basic Spec head morphological structure as basic and projects syntactic complements from that structure, or as remnant phrasal movement (i.e. chain formation). Sportiche 1996, Mahajan 2000 argue that head movement is simply not an available operation in UG: if they are right, all cases of head movement have to be reanalyzed as phrasal (remnant) movement, or in a different fashion.

This paper continues this line of research. I adopt as working hypothesis that head movement is not an available analytical option, and I want to see where it leads when applied to a domain where head movement traditionally is king: namely the word. In particular, I will analyze the Maasai noun and the projection in which it is embedded, i.e. the DP. The analysis will be based on traditional tools of syntactic analysis (constituency, linear order and hierarchical order), as well as on agreement patterns. Agreement plays a central role in the argumentation. I therefore start with a discussion about the theory of agreement.

### 3. Agreement.

Central to the theory of agreement is the following question:

- (1) What is(are) the configuration(s) that leads/lead to the spell-out of agreement?

The following proposals are found in the literature.

- (2) Agreement is triggered in the following configurations:
- a. Spec head
  - b. Government
  - c. c-command (+locality)

I will not consider the possibility that a combination of the above is available (i.e. sometimes Spec head, sometimes government, sometimes c-command), for familiar reasons of language acquisition.

The Spec head configuration has been widely held to represent the canonical agreement configuration (Kayne 1989, Koopman, 1986, 1992, Chomsky 1991, Sportiche, 1986):

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

Government has often been argued for as well. In Koopman and Sportiche, 1986, 1991, we propose that Case assignment can be assigned either under Spec head or under government. These two are unified under Spec head in Chomsky 1991. Chomsky 1999 abandons Spec head in favor of Agree, a process that requires c-command between the agreement bearing head and a triggering DP that is local to it. If Agree is correct, the structural notion that underlies agreement is more akin to polarity licensing or binding. We were fooled in assuming Spec head in the first place: the surface Spec head configuration results from the presence of an EPP feature that induces movement to a Spec. This feature is independent from agreement.

In this section, I discuss why we should adopt the Spec head hypothesis over government and Agree. Section 3.1 contrasts Spec head and government, through a short discussion of Polinsky and Potsdam (2001), where a strong case for agreement under government is presented. I will suggest a way to capture the agreement configuration through Spec head agreement, appealing to clausal pied-piping. If this is correct, cases of government can be reanalyzed as involving Spec head. Section 3.2. contrasts Spec head and Agree and show that Agree cannot handle certain types of asymmetries that Spec head is well equipped for. Section 3.2.2 addresses long distance agreement, which superficially favors Agree over Spec head. However, I will argue that long distance agreement can in fact also be analyzed in terms of Spec head, if particular analyses of these constructions are adopted (predicate inversion Moro, 1997) which are well-motivated independently.

Having thus motivated Spec head, the way will be clear for the analysis of the structure of the “Noun” and the “DP” in Maasai. The DP in Maasai displays particular rich agreement patterns, and I will use the Spec head hypothesis as an analytical tool to make sense of the structure and derivations within DPs. (section 4).

### 3.1. Agreement under government?

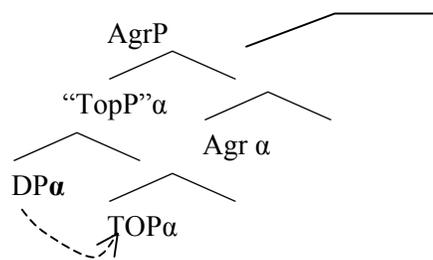
Polinsky and Potsdam (2001) present a strong argument in favor of government and against Spec head on the basis of an unusual agreement pattern in Tsez, a Nakh-Daghestanian language spoken in the Caucasus. Tsez is a head final SOV language, with an ergative-absolutive case system. Absolutive agreement is a prefix, showing up in a fixed position, with the absolutive DP to its left. From the examples presented in the paper, the following surface configuration seem to hold:

- (4)  $DP_{absi} \dots Agr_i [VP_{remnant} VP] T$

This surface order is compatible with the Spec head analysis of agreement, since the absolutive DP appears to be at least as high as the agreement. If the argument is an absolutive CP, it triggers absolutive agreement <sup>1</sup>. When this CP complement contains a leftperipheral topic DP, this DP topic triggers agreement instead. Polinsky and Potsdam establish unambiguously that the agreement-triggering topic is indeed contained within the complement CP: furthermore, neither covert raising nor a “shadow” pronoun in Spec, Agr seems to be empirically supported. They thus conclude that absolutive agreement cannot have been triggered under Spec head agreement. Instead government seems to fit the data well.

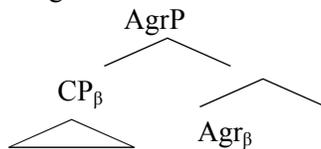
There is an alternative analysis for these data, however, which is compatible with the surface constituency, and Spec head. This analysis involves clausal pied-piping. As Polinsky and Potsdam show, only if the DP topic occurs in the left periphery of the clause does it trigger absolutive agreement. Occurrence in the left periphery is the core configuration for pied-piping. An embedded leftperipheral element is able to pied-pipe a constituent that contains it and cause some feature of a head to be satisfied under Spec head agreement (see Koopman and Szabolcsi 2000 for extensive discussion. The structures below abstract away from a finer analysis of the left periphery):

(5) a. Absolutive agreement with embedded Topic:



“Percolation” as Spec head:  
 1. Spec head agreement between DP and Top → Topα  
 2. Topα is head of TopP → TopP α (by projection)  
 3. TopP α agrees with Agr → Agr α.  
 Therefore DP triggers absolutive

b. Agreement with CP



Pending further research, I will assume that Tsez can be successfully reanalyzed as Spec head, given the availability of clausal pied-piping. This allows the triggering DP to be within the clausal complement, in the left periphery, while still being able to trigger agreement<sup>2</sup>.

Other cases of government, i.e. Agr DP order, with DP governed or in very close structural proximity to Agr, can also be reanalyzed as Spec head, with an additional step of movement resulting in the surface order. Quite generally then agreement under government seems reducible to agreement under Spec head, given pied-piping.

This leaves us with the question whether Spec head or Agree is the right structural notion.

<sup>1</sup> In many of the examples, the absolutive CP appears to follow the tensed verb, i.e. it seems to be extraposed.

<sup>2</sup> This leads one to find other cases of clausal pied-piping, i.e. partial wh-movement constructions for example (see Koopman, 2000, for an analysis of partial wh-movement as clausal pied-piping)..

It is important to try to answer this question, because of the potential implications for the form of syntactic structures and derivations. If Agree 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 its marginal and somewhat mysterious role. However, if the Spec head proposal is correct, many current analyses and structures simply cannot be maintained: derivations must be rich enough to account for agreement. 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 history of syntactic derivations.

### 3.2. Spec head versus Agree.

Under Spec head, the triggering DP is or has arguably been, in a Spec head relation with the agreement bearing head. If that configuration is not met, agreement is impossible. Agreement asymmetries of this type exist (Kayne, 1996, Koopman, 1993, 1999, Hallman, 1999). It becomes an important question if and how such asymmetries can be captured by Agree (section 3.2.1.). Under Agree, the agreement triggering DP appears to be (locally) c-commanded by an agreement carrying head, and it does not seem to either be or have been in a local Spec head configuration with the agreement carrying category. In order to argue for Agree it must be shown that no movement analysis can be given for long distance agreement: it becomes important to determine that Spec head indeed fails to hold at some point in the derivation. I will discuss some cases of long distance agreement in section 3.2.2: there is a well-motivated analysis for these constructions that is consistent with Spec head, which uses predicate inversion (Moro 1997). I will tentatively conclude that all cases of long distance agreement can indeed be analyzed under Spec head, and adopt Spec head as the null hypothesis. The analysis of agreement thus becomes analytically important, since it reflects a Spec head relationship at some point in the derivation.

#### 3.2.1. Agreement asymmetries.

In his paper on Romance past participle agreement, Kayne (1989) shows that Romance participle agreement reduces to the theory of movement, in conjunction with a simple rule of subject verb (=participle) agreement. The basic properties of past participle agreement in French can be illustrated with the following examples.

- (6)
- |    |                              |                      |           |  |
|----|------------------------------|----------------------|-----------|--|
| a. | Marie a                      | fait/*e              | la robe   | (agreement impossible)                     |
|    | Marie has                    | made                 | the dress |  |
| b. | <u>La robe</u>               | a                    | été       | <u>faite</u> /*fait (agreement obligatory) |
|    | The dress                    | has                  | been      | made                                       |
| c. | Marie l' <u>a faite/fait</u> | (agreement optional) |           |  |
|    | Marie la has made            |                      |           |  |

Kayne's proposal yields an elegant account for this distribution. In French, DPs agree with the past participle only if the DP has moved 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 are not in a local Spec head relationship with the past participle at any point in the derivation. NP-movement obligatorily triggers agreement because NP movement is forced to move through the Spec, PartP, and clitics and wh-phrases allow for a derivation that involves this Spec position, therefore accounting for the possibility of agreement, but also allows for a different escape route, therefore accounting for the possible absence of agreement. 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), and thus seem to bring strong support to the Spec head hypothesis.

It is unclear how these asymmetries can be captured under Agree. A post participle object in French certainly occurs in the same phase as the participle, and is locally c-commanded by the participle. It is therefore mysterious why the Probe of the participle must fail in this context. However, let us try to construct an Agree type account, and evaluate this proposal. Suppose we take the agreement failure with post-verbal DP to show that the phi-features of the DP are ‘invisible’ to the probe of the participle. This would follow if the features of the object have been fully checked below the participle, and hence are invisible to the Probe of the participle. Let us follow Chomsky (1998) and assume that the property called “Case<sup>3</sup>” (i.e. the property that defines the head of a A-chain), leads to full checking of the phi-features:

- (7) Participle launches a Probe that is not phi-complete (gender and number)  
It will agree with a DP whose phi-features have not been fully checked.  
Case will lead to complete checking of the phi-features on DP.

We now interpret the agreement patterns as reflecting the location of Case:

- (8) a. (Accusative) Case on post participial DPs is checked below the participle;  
b. (Nominative) Case is checked higher than the participle  
*obligatory agreement under A-movement*).
- c. i. (Accusative) Case is checked below the participle, (→ agreement is impossible)  
ii. (Accusative) Case is checked above the participle (→ agreement is obligatory).

(8a) requires the probe to be launched from a position higher than where (accusative) Case is merged (i.e. from the Participial Head position). (8b) is unproblematic, and compatible with the usual Case-triggered account for NP movement. (8c) results in optional agreement under wh-movement and clitic placement. (8ci) is parallel to (8a), but (8cii) is suspicious to say the least. If accusative Case can be merged above the participle, why then does this correlate with overt movement? Why isn’t participle agreement also optional with post participial DPs, with the participle simply raising higher than the Case position? However we turn it, the Agree account doesn’t seem to have any natural way to capture the real correlation of presence of agreement with overt movement only.

### 3.2.2. Long distance agreement: an argument in favor of Agree?

The strongest evidence for Agree could come from so-called long distance agreement. Long distance agreement is typically found in a number of constructions, existential constructions, dative nominative verbs, (impersonal) passives, and predicative constructions.

In addition, long distance agreement is also observed within the DP, as say agreement between a demonstrative and the head noun:

- (9) a. There seem to be many problems with agreement  
b. There seems to be a problem with agreement
- (10) a. these three large American dogs  
b. this large American dog.

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<sup>3</sup> “Case”, probably more adequately a D associated with specific interpretation (Dominique Sportiche, personal communication)

Under Agree, the T or D can simply send out a Probe and find the relevant agreement features in a local c-command domain, say a phase. This is compatible with the standard analysis for these constructions, in which the DP associate is spelled out low in the structure (cf (9)) or the noun remains low in the structure of the DP (cf (10)). The Spec head hypothesis runs into problems here, and solutions ranging from the early analyses that ordered agreement before subject lowering, to feature movement (Chomsky 1995) have been explored. These examples are only problematic for Spec head, however, if it can be shown that there indeed is no local relation, either at spell-out, or at any point in the derivation. It turns out that the relevant local relation does seem to hold in cases like (9), and I will suggest in section 4.7 that it might also hold in the less-studied case of (10). In the sections below, I briefly discuss English *there*-insertion, and a small sample of Icelandic long distance agreement patterns.

### 3.2.3. There-insertion: English

There is a set of possible solutions for English existential *there*-insertion constructions compatible with Spec head: the trigger and the head either are or have been in a local Spec head relation in the course of the derivation. Moro's (1997) analysis for *there*-insertion has this property. In this analysis, the associate and *there* start out together, with *there* the (nominal) predicate and the associate its subject. *There* and the associate are separated in the course of the derivation by predicate inversion, which raises *there* to the subject position, leaving the associate stranded. Predicate inversion accounts for the structural subject properties of *there*: rather than being merged in Spec, TP, *there* moves into that position. Since the associate and *there* are in a Spec head relation at the point of merge, or at a very early point in the derivation, agreement can be assumed to occur under Spec head:

- (11) a. *Merge DP and there*  
       [problem<sub>sg</sub> [there]]
- b. *Agree (spec head)*  
       [problem<sub>sg</sub> [there]<sub>sg</sub>]
- c. *Merge be,*  
       be [a problem<sub>sg</sub> [ there]<sub>sg</sub>]
- d. *Move predicate (predicate inversion)*  
       [there]<sub>sg</sub> be [<sub>α</sub>a problem<sub>sg</sub> [~~there~~]<sub>sg</sub>]  
       (raise subject, etc, agree, etc..) .

In this type of analysis, the triggering DP is stranded low in the structure<sup>4</sup>. The associate DP has the distribution of  $\alpha$ , i.e. the predicate of *be*, or of the (complex) verb triggering predicate inversion. *There* becomes a structural subject through predicate inversion, and raises through subject positions in the familiar way. The famous 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

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<sup>4</sup> It is not quite clear how low the associate is exactly, since the associate seems to receive an inherent focus reading (Moro, 1997), it might have moved somewhat. If that is correct, this would allow treating the data discussed in Cardinaletti 1997 and Chomsky 1995 under c-command of the associate, rather than by feature movement (Chomsky) :

- (i) there entered three men without PRO introducing themselves  
 (ii) \* there seemed to each other to be several man in the room

Move (Chomsky 1995), but to raising of *there* raises through the subject position (Moro 1997, p 121). An alternative derivation is not available either: the small clause constituent containing  $\alpha$ , which contains the associate, cannot surface to the left of *be*<sup>5</sup>.

This general type of solution is similar to Sportiche’s proposal for Q-float (1987), and has been explored for a wide range of long distance agreement phenomena (clitic doubling Uriegereka 1995, Post verbal subjects in Italian, Belletti (1995, 2001), rightdislocation in Italian (Cecchetto, 1999), clitic doubling and pronominal binding in a series of papers (Kayne 2000, 2001), and Boeckx (2001) for resumptive pronouns. If the Spec head hypothesis is correct, all cases of long distance agreement must be analyzed as arising at some point in the derivation under a local spec head relationship. Existential *there* constructions are but one specific configuration in which a predicate and the associate are in a Spec head relation at a very early point in the derivation.

### 3.2.4. Icelandic.

Icelandic has many long distance agreement configurations: dative nominative constructions (quirky subject constructions), passives constructions, expletive constructions, and predicative constructions. While a full discussion of agreement is beyond the scope of the present paper, my more modest goal here is to show that a Moro type analysis extends naturally to Icelandic existential constructions, and brings out a clear parallel with long distance agreement in predicative constructions.

Predicate adjectives, nominals and participles in Icelandic agree with their subjects in gender, number and case. The data below are given in abstract form; they are based on Andrews, 1982)

- (12) a. *They* (m.pl.nom) are *rich* (m.pl.nom)  
 b. I believe *them* (pl.acc) (to-be) *rich* (pl.acc)  
 c. *They* (pl.nom) are *believed* (pl.nom) to be *rich* (pl.nom)  
 d. I say *them* (acc.pl) to be *believed* (acc.pl) to be *rich* (acc.pl)

These patterns straightforwardly follow from NP-movement.

- (13) *They*<sub>nom.pl</sub> T<sub>nom.pl</sub> seem [~~*they*~~<sub>nom.pl</sub> to be ~~*they*~~<sub>nom.pl</sub> believed<sub>nom.pl</sub> [~~*they*~~<sub>nom.pl</sub> *rich*<sub>nom.pl</sub>]
- 

It must be assumed that case, number, and gender morphology is merged low within the structure of DPs in Icelandic (see also the discussion of Maasai below). Case, however, seems to be “checked” in the usual position, and defines the head of the A-chain. Long distance agreement in existential constructions shows the same patterns, but rather than raising the subject, it is the predicate that inverts and raises under Moro’s proposal:

- (14) Expl<sub>nom.pl</sub> are ~~*there*~~<sub>nom.pl</sub> believed<sub>nom.pl</sub> ~~*there*~~<sub>nom.pl</sub> to have been [[several people<sub>nom.pl</sub> ~~*there*~~<sub>nom.pl</sub>] in the room

Expletive constructions pattern like predicative constructions, which is captured under the predicate inversion analysis.<sup>6</sup>

<sup>5</sup>Such surface strings are fine in Dutch, which has “preposing” of the nominal predicate  $\alpha$  independently.

<sup>6</sup> In Icelandic, contrary to English, the associate seems to be able to raise. In the present analysis this must be analyzed as raising of the small clause predicate that includes the associate, and clear parallels with

Under Spec head, all cases of apparent long distance agreement should be analyzable either as the result of a local Spec head relation at some stage in the derivation, with subsequent further movement. The domain of agreement therefore can only be what is expected from a movement account: any potential agreement-carrying category between the head of the A-chain and the tail through which A-movement has taken place.<sup>7 8</sup>

- (15) a. [DP<sub>i</sub> ..... ~~DP<sub>i</sub>~~ Pred<sub>i</sub>  
+Case.
- b. [Pred<sub>i</sub> ..... [DP<sub>i</sub> ~~Pred<sub>i</sub>~~]  
+Case

It remains to be determined in future research if all cases of long distance agreement can be so analyzed. It will be crucial here to present a Spec head analysis for dative nominative verbs: this analysis should provide insights in the well-known but unexplained typological variation in this area (Icelandic versus German versus French).

### 3.2.4. Agreement within DPs

There hasn't been much work on DP internal agreement. Often, DP internal agreement is set aside as a different phenomenon from verbal agreement, called "concord". It is not difficult to see why this would be so. In *this big dog, these big dogs*, the agreement-triggering element is traditionally considered to be the Noun, i.e. a head and not a phrase. If this is correct, this type of agreement cannot be reduced to a Spec head relation, but looks like a head-head relation. However, given recent developments, simple heads often turn out to be (remnant) phrases Koopman & Szabolcsi 2000, Sportiche 1999, Mahajan 2000. Androtsoupoulou 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, and I will pursue this account. Agreement within DPs reflects Spec head agreement. I return to agreement within the English DP in section 4.7, based on the insights about DP internal structure and agreement from Maasai.

### 4. Maasai DPs.

The Spec head agreement hypothesis provides a very powerful analytical tool. Indeed, agreement provides important clues as to the history of the derivation, since it reflects a Spec head configuration at some point in the derivation. In the following section, I will use this tool as a probe into the syntactic structure of the DP in Maasai.

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same sized nominal predicate constructions are expected. This issue remains to be explored in future research.

<sup>7</sup> Alternatively, a remnant predicate movement account, where the DP has first been extracted from the predicate and the remnant predicate inverts:

- b. [~~DP<sub>i</sub>~~ Pred<sub>i</sub>].....DP<sub>i</sub> [~~DP<sub>i</sub>~~ ~~Pred<sub>i</sub>~~]  
+Case

<sup>8</sup> This type of analysis predicate that the associate will remain low, or more precisely, the associate should have the distribution of the category that contains it. If that category undergoes movement, this movement should be reflected in the general distribution of that category.

#### 4.1. Decomposing the Maasai noun.

A “simple” common noun in Maasai, the form used as the citation form, is a complex structure. It is composed of several overt morphemes and it displays asymmetric agreement patterns<sup>9</sup>. Simple Ns, as the ones listed below, are used as the citation form<sup>10</sup>, as predicate nominals, and as DPs with a generic, indefinite, or definite interpretation, depending on the environment.

(16)	a	l	ayé	ni	‘a boy’
	sg.ms	ms	boy	sg.acc	
(17)	i	l	ayô	k	‘boys’
	pl	ms	boy	pl.acc	
(18)	ε	ŋ	gíné		‘a (she) goat’
	sg.fem	n (fem)	kine	sg.acc	
(19)	(ĩ)	ŋ	gĩnè	dʒĩ	‘goats’
	pl	n (fem)	kine	pl.acc	

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 co-occurring. 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 ɔl, en, il and in. These can be further decomposed, and importantly, they can be separated from the nominal stem in certain contexts, as we will see below.

- ɔl, en, il and in can be further decomposed into two “morphemes” (I will henceforth refer to morphemes as heads) that covary with gender and number (ɔ ms.sg<sup>11</sup>, ε fem.sg, i pl) and gender (l (ms)/n (fem) respectively). Each of these heads occurs independently. ɔ is part of the masculine relative pronoun; ε is homophonous with 3<sup>rd</sup> person subject agreement (feminine gender is the unmarked form in Maasai), i occurs as a (productive) plural number suffix. l and n are gender agreement heads that are part of demonstratives (demonstratives agree in gender with the head noun), and n is part of the feminine relative clause marker; l occurs in possessive constructions with a masculine possessed noun, the spell-out of feminine agreement here is silent.
- ɔl, en, il and in can be separated from the nominal root by demonstrative heads, certain quantifiers, and by high adverbs (see (51)). This shows that they are not prefixes attached to the noun. The nominal root is flanked by tones that covary with Case, Number, and tonal class of the noun<sup>12</sup>. There are two Cases in Maasai: nominative Case, used for subjects of tensed sentences, and for the object of (the unique) P, and non-nominative Case that shows up on all other nouns, including predicate nominals, citation forms,

<sup>9</sup> Nouns in Maasai fall into three distinct classes: proper names (*Toret*), pronouns, and common Ns (*ɔldĩa* ‘dog’, *alayéni* ‘boy’, *eykĩne* ‘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.

<sup>10</sup> The citation form is identical to the predicate nominal form. Both carry non-nominative Case.

<sup>11</sup> ɔ alternates with a due to the interaction with rounding harmony (Kristin McCreary 2001).

<sup>12</sup> For a table that includes the approximately 300 nouns of Tucker and Mpaayei (1955) Maasai English dictionary see Koopman 1999b.



(23) a.  $\epsilon\text{n-}$  dokin ‘thing’  
 f.sg.f -thing

b.  $\text{m}\epsilon\text{-}$  tii 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. Implied in this analysis is the existence of different types of Ds: all constituents showing X and Y in the left periphery are DP structures of some kind.

#### 4.3. 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 clauses<sup>13</sup>. 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<sup>14</sup>. Numerals and APs are found post-nominally and are ordered as follows:

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

DP possessors are preferably in the rightperipheral position within the DP, preceded by a two headed possessive morpheme. The leftmost part agrees with the possessed noun in gender, number<sup>15</sup> and Case, the rightmost part (X) agrees in gender and number, with the possessor which itself is non-nominative (see Appendix A for paradigms).

(25) *DP possessors (W is probably some D)*  
 $Y_{1,2} Z_1 \dots NP_{(1),2,3} \dots W_{1,2,3} X_{1,2}, DP_{(\text{poss})1,2,3(\text{acc})}$



Pronominal possessors involve a possessive morpheme, and show the same agreement pattern as adjectives (agreement with the possessed head noun in number, Case and gender (see Storto 2001). 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:

(26) *Pronominal possessors:*  
 $Y_{1,2} Z_1 NP_{1,2,3} \text{ W}_1\text{-poss pron}_{2,3} \text{ (Num}_{1,2,3}) \text{ (AP}_{1,2,3}^*)$



<sup>13</sup> For detailed description, see Mellisa Epstein 1999. Demonstratives and quantifiers are left out of the discussion here.

<sup>14</sup> 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.

<sup>15</sup> Due to tonal opacity, and short segments, it is difficult to determine if W agrees with the possessed N in number. However, since this agreement does show up overtly with pronominal possessors in (17), I tentatively conclude it does so in this case as well.

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

- (27) Relative clauses:  
 $Y_{1,2} \ Z_1 \ NP_{1,2,3} \ X_{1,2,3} \ [TP \dots \dots]$
- 

#### 4.4. Accounting for agreement: simple DPs.

Thus far, the following combinations of features characterize DP internal agreement patterns in Maasai<sup>16</sup>:

- (28)
- |          |                         |
|----------|-------------------------|
| 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:

- (29)
- |           |                                     |
|-----------|-------------------------------------|
| 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 gender (1), or for gender and number (1,2), while other heads show full gender, number and case (1,2,3) agreement. Surely one would like to find out why this state of affairs hold. 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? Is there any explanation for impossible agreement patterns? I would like to suggest that there is a purely structural account for these facts, and illustrate this with partial derivations of the simple “noun” (*oldia*).

The first step is to decompose gender, number and case into the following hierarchy (see also Sportiche 1998 for arguments in favor of this hierarchy based on reconstruction):

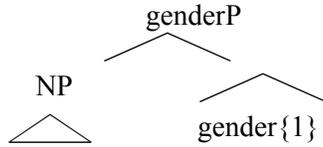
- (30)
- |        |       |          |    |
|--------|-------|----------|----|
| Case > | Num > | Gender > | NP |
| 3      | 2     | 1        |    |

NP combines overtly with each head through phrasal movement: “words” are “grown” through merge and move (cf. Koopman and Szabolsci, 2000). Agreement asymmetries simply reflect the structural configuration at the point of agreement. A head will only show agreement with the features that are locally available at that particular point in the derivation.

Let’s us take some “snapshots” of the derivation, pursuing this logic (see section 3.4. for a more complete though still simplified derivation is presented in section 3.4.) At a very early point in the derivation, NP merges with gender, and NP moves to Spec, genderP. Gender has no phonological expression:

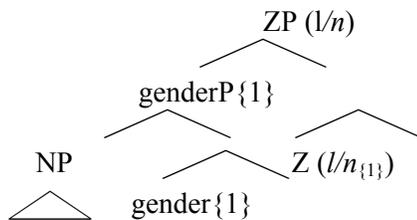
- (31) Merge: NP and gender, Move NP to genderP{1} →

<sup>16</sup> 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.



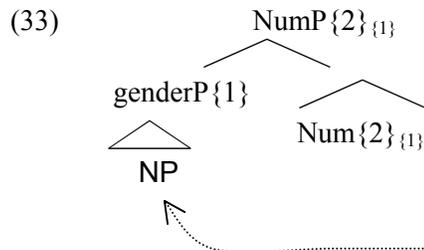
At this point in the derivation, there is a small piece of structure floating around, e.g. *genderP*. A head that attracts *genderP* to its Spec will agree in gender features only, since this is the only available feature at this point. This is the case for the head *Z (l/n)* (*o l dia*), which agrees in gender only. This follows if *Z* is in a Spec head relationship with the structure in (31) in the course of the derivation.

- (32) Agreement in gender: (*genderP* in Spec, *ZP* triggers gender agreement, annotated with subscript {1}, on *Z*)



In other words, *l/n* spells out a head *Z* that is merged very low in the structure.

In the next cycle, Number is merged. *GenderP* extracts from the Spec *ZP*, and moves to Spec, *NumP* (the alternative, pied-piping *l/nP* to Number *P* yield the wrong surface order). *GenderP* agrees with *Num*, yielding the subscript {1} on *Num*<sup>17</sup>. As a result of agreement, *Num* now carries two features, gender and number. Since *Num* is the head of *NumP*, *NumP* carries gender and number:



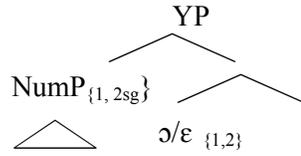
This configuration contains necessary information for the rather complex spell-out rules of number morphology. These spell-out rules follow the elsewhere condition, as discussed in Halle and Marantz 1993.

Any head that attracts *NumP* with the representation in (33) will agree for Number and gender. This is the case for the leftmost head *Y*. Therefore, *NumP* must be in Spec *YP* at some point in the derivation<sup>18</sup>. *Y* is merged quite low in the structure, but higher than *X*.

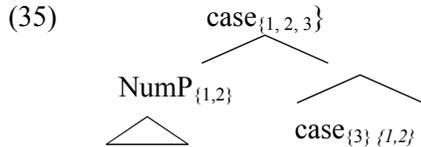
<sup>17</sup> I gloss over finer details: gender and number agreement is transparent when Number is singular; it is unclear if it is present when Number is plural, since surface forms are quite opaque here.

<sup>18</sup> Extraction of *NumP* requires a round of remnification, which is skip over here.

(34) Agreement in Number and gender on Y.



In the next cycle, case is merged; case attracts NumP:

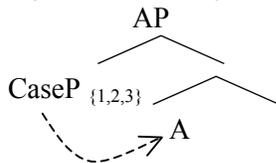


Via Spec head agreement, NumP agrees with case, and triggers, {1,2} agreement. Any head in a Spec head relation with CaseP will agree in gender, number and Case. This structure yields the right input for the spell-out of the Case tonology, which is a purely tonal affair, with leftboundary and/or rightboundary tone on NumP, depending on the lexical tonal class and Number and Case (see Koopman, 1999). CaseP is merged below any kind of D, hence the different types of contexts with which the noun is compatible (3.1.1).

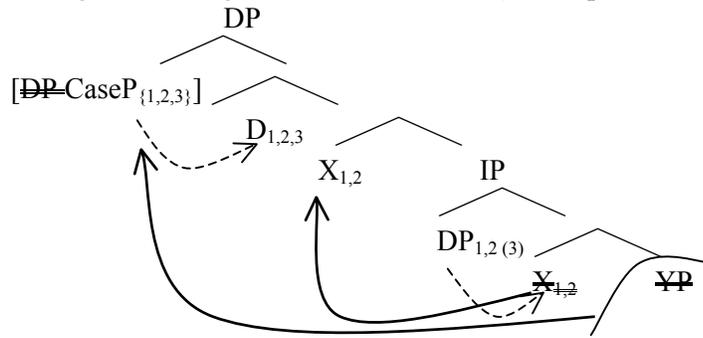
Merging case within the DP might seem surprising, but pays off well. It will yield a straightforward account for the position where case is spelled out, and it will capture the further agreement patterns within the DP. Maasai is basically like Icelandic in this respect, with case morphology merged low within the DP, and showing up on all dependents higher than case.

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 serve to illustrate the agreement triggering configurations; dotted lines indicate agreement)

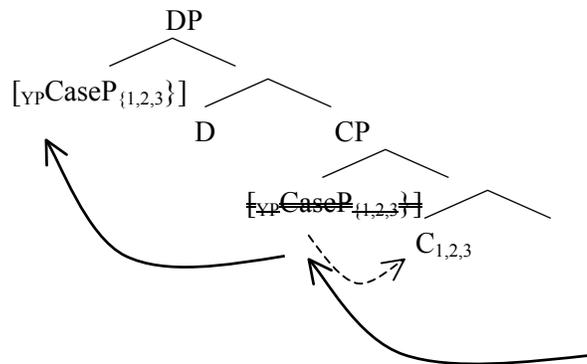
(36) Agreement on Adjectives:



(37) Agreement in genitive constructions: (in the spirit of Kayne 1994))<sup>19</sup>



(38) Agreement in relative clauses: (assuming a head-raising analysis a la Kayne 1994, and CP pied-piping to Spec, DP)<sup>20, 21</sup>



In essence, then, the agreement patterns reflect the derivation. This yields a direct explanation for the observed asymmetries: heads will agree with what is locally “visible” to them, i.e. what is in their Spec position. 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 structure is moving around.

<sup>19</sup> The use of head movement here is consistent with the few cases in which Koopman and Szabolcsi (2000) allow head movement: overt head to silent head, silent head to silent head, and silent head to overt head (see K&SZ, 2000, p. 4)

<sup>20</sup> This derivation for genitives and relative clauses is slightly simplified, and abstracts away from the fact that we need to assume the presence of a D like head Z on top of YP, below the subject position (this head attracts the predicate *ol*).

<sup>21</sup> See Appendix B: The Case agreement is with the case of the entire relative clause, not with the extraction site. Absence of agreement on the root D can be seen as a doubly filled C filter effect.

- Pure Case agreement is not attested, simply because of the configuration: in Maasai 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.

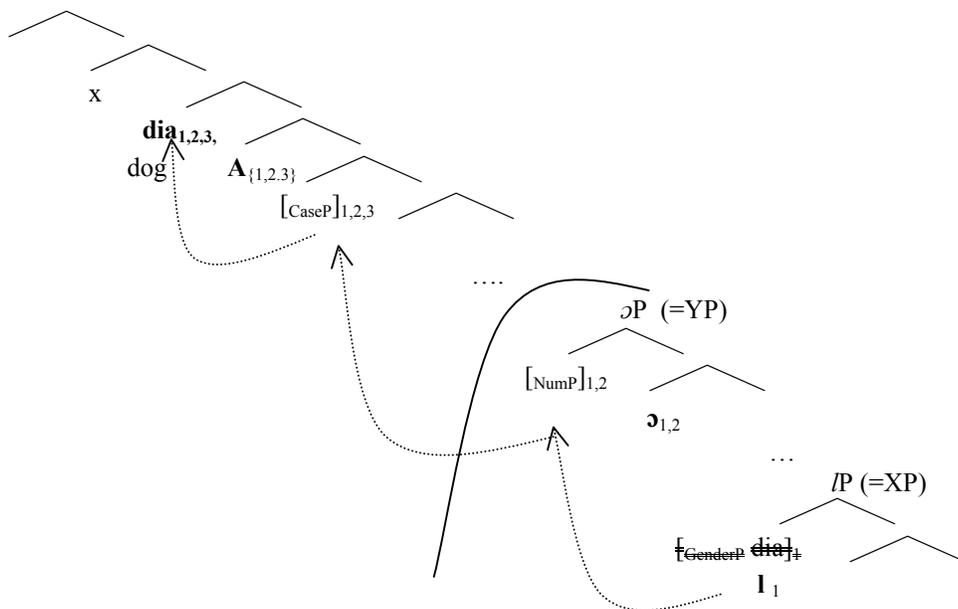
#### 4.5. Putting the pieces together....

We now have several isolated pieces of structures, a hierarchy of merger, and multiple movements. Each piece presents the right configuration for local spell-out, and allows for a transparent syntax/PF interface. Let me put these pieces together into a (somewhat simplified) derivation and concentrate on the history of the derivation and the types of movements. From the surface order *YX N Num A*, we can conclude that some 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. Material that occurs high in the DP (cf certain high adverbs) occurs between the Y+X and NP. (cf. section 4.6.2. for further discussion):

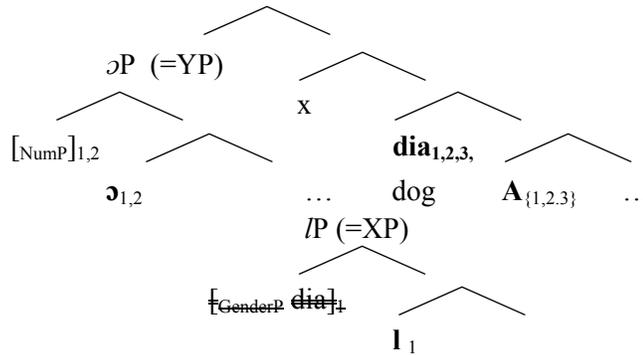
- (39) a. a- l- apa- ayeni  
 sg.m- m. long ago boy.acc  
 'the boy we mentioned long ago'
- b. i- l- ofi ayok  
 pl.m -m usual boy.pl.acc  
 'The usual boys'

Therefore, CaseP and the constituent containing (Y+X) *ɔl* move independently to different landing sites, not as a single constituent.

(40) *Simplified derivation ( up to the point where x is merged) .*



(41) x attracts YP: (leads to correct linear order [oldia] :



There are two types of movements in this derivation:

- (42) a. successive cyclic local movements of the gradually growing constituent containing NP to a position higher than adjectives, but lower than the landing site for the  $\mathcal{D}$  (=YP) constituent;  
 b. an apparently single movement of the YP constituent containing  $\mathcal{D}$  to the left periphery of the DP (into the D region).

I would like to propose that the first type of movement is to be equated with subject raising (NP-movement), with the CaseP landing in a clausal-like subject like position within the DP. If this is correct, it is not surprising that the noun triggers agreement again and again: 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). In section 3.4.2., I will present further support for the fact the CaseP is occupying a structural IP-like subject-like position, and not a D.

If CaseP is indeed in a clausal-like subject at spell-out, then the DP must contain a clausal like constituent, i.e. the structure must be D CP/IP (see 4.6. for additional distributional evidence). The head noun must originate somewhere within the “IP”. Given the clausal perspective, it is quite natural to think of the noun as starting out as a nominal small clause predicate, with its semantic variable, merged as the subject of the predicate nominal.

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

This raises an apparent problem though: the predicate NP ends up in “subject” position, and structurally behaves as undergoing NP movement (as shown by agreement). This suggests that predicate inversion (Moro 1997) is at work within this structure. By predicate inversion, the NP raises to a subject position (for convenience assume a silent *be*), from where it undergoes NP movement to the structural “subject” position:

(44) [ D [CP/IP [Case ] [ ... [ .. Y.. [ ..X [NP<sub>i</sub>..”be” [x ~~NP~~]]]  
 NP-movement predicate inversion



#### 4.6.2. Adverbs

There are few adverbs in Maasai:

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

Most of Cinque's (1997) adverbs are expressed as verbs, or in the verbal morphology. These adverbs occur in an interesting position: they immediately follow the predicate but precede the nominative marked subject:

- (50) [SA- PredP] Adv [DP(nom)]  
 è - ás ofi eη - kèraí  
 3sg do usually f.sg child.sg.nom  
 'Usually a child does this'

Exactly the same adverbs also occur within DPs (see also Tucker and Mpaayei, 1955, p.18). They follow the X (I/n), cause the appearance of an (epithetical) vowel with consonant initial adverbs (Epstein, 1999), and precede the case-marked noun. They don't agree in case, gender or number.

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

This parallel placement in clauses and DPs is striking, and seems to offer further support for the presence of a clausal constituent within the DP, with the case marked N in a clausal structural subject position equivalent to the head of an A-chain. Indeed, if the high position were due to standard N to D movement, parallel to V to C movement, the head noun should precede, rather than follow the Adverb.

- (52) Pred Subject
- |    |                                      |     |                                |                                    |
|----|--------------------------------------|-----|--------------------------------|------------------------------------|
| a. | $[t_i \text{ SA-(OA) V} \dots]$      | Adv | $\text{DP}_{\text{nom}} \dots$ | $([\text{PredV}] \text{Adv S}..)$  |
| b. | $[t \dots \text{ } \dots \text{ I}]$ | Adv | $[\text{Case dia } ] ]$        | $([\text{Predal}] \text{Adv S}..)$ |

Furthermore, the fact that these adverbs are actually higher than the "subject" position makes it very easy to understand why these adverbs do not agree with the noun. They are merged higher than the subject position and T, and they are therefore never in a Spec head relationship with the CaseP.



fundamentally the same: the D is merged high, and some agreeing triggering constituent raises to Spec, DP, and triggers agreement on the D locally. The difference between English and Maasai reduces to whether predicate inversion or subject raising applies. The following simplified derivation illustrates this basic idea:

- (57) 1. Movement to subject position  
*predicate inversion (Maasai):*  
 $\text{dog (sg) } x_{\text{sg}} \text{ } \cancel{\text{dog}}_{\text{sg}} \text{ (Maasai)}$   
*NP mvt (subject raising)*  
 $x_{\text{(sg)}} \text{ } \cancel{\text{dog}}_{\text{sg}} \text{ dog}_{\text{sg}} \text{ (English)}$
2. NP-mvt (*Maasai and English*)  
 $\text{dog}_g \text{ big } \cancel{\text{dog}}_{\text{(sg)}} \text{ } x_{\text{sg}} \cancel{\text{dog}}_{\text{sg}} \text{ (Maasai)}$   
 $x_{\text{sg}} \text{ big } \cancel{\text{dog}}_{\text{(sg)}} \text{ } \cancel{\text{dog}}_{\text{sg}} \text{ dog}_{\text{sg}} \text{ (English)}$
3. NP-mvt to Spec, IP (*Maasai and English*)  
 $\text{dog}_{\text{sg}} \cancel{\text{dog}}_{\text{sg}} \text{ big } \cancel{\text{dog}}_{\text{(sg)}} \text{ } x \cancel{\text{dog}}_{\text{sg}} \text{ (Maasai)}$   
 $x \text{ } \cancel{\text{dog}}_{\text{sg}} \text{ big } \cancel{\text{dog}}_{\text{(sg)}} \text{ } \cancel{\text{dog}}_{\text{sg}} \text{ dog}_{\text{sg}} \text{ (English)}$
4. Movement to Spec, CP/DP (*boldfaced positions contain overt material*)  
*Predicate inversion to Spec, DP (Maasai):*  
 $x \cancel{\text{dog}}_{\text{sg}} \text{ D } \textbf{dog}_{\text{sg}} \cancel{\text{dog}}_{\text{sg}} \textbf{big} \cancel{\text{dog}}_{\text{(sg)}} \text{ } \cancel{\text{dog}}_{\text{sg}} \text{ (Maasai)}$   
*subject mvt to Spec, DP (English)*  
 $x \textbf{the} \text{ } \cancel{\text{dog}}_{\text{sg}} \textbf{big} \cancel{\text{dog}}_{\text{(sg)}} \text{ } \cancel{\text{dog}}_{\text{sg}} \textbf{dog}_{\text{sg}} \text{ (English)}$

Whether the subject extracts from the nominal small clause or the predicate must be a matter of crosslinguistic variation, but seems to be symmetric, either the predicate moves, or the subject: in all cases, the landing site seems to be identical, a subject position. The final step, 4, is particularly interesting: here we see that again English raises the variable (the underlying subject NP), whereas Maasai raises the predicate. This can be understood in terms of the final output: in both cases, what is attracted to Spec, CP/DP is the constituent with the variable x. This strongly suggests that the motivation for this movement is intimately tied to the interpretation of the DP: what seems to be relevant is the fact that the variable is attracted to Spec, DP.

#### 4.8. Conclusion.

In this paper, I have presented an analysis of the simple common “Noun” in Maasai and the structure of the DP. I have argued that Maasai Nouns are neither selected in their full forms, nor derived by head movement: their surface forms are derived syntactically through (remnant) XP movement. The syntactic input is the only relevant piece of information for the spell-out of the different building blocks, where the particular selection of the phonological form can be seen as a particular tight form of selection. Agreement patterns play a central role in the discussion. For this reason, I first argued why Spec head should be adopted over Agree (Chomsky, 1998): Spec head provides an explanation for agreement asymmetries, and is able to handle some recalcitrant cases of long distance agreement quite beautifully. Only by applying the Spec head hypothesis rigorously did some quite surprising characteristics of the structure of the Maasai DP become apparent. All Maasai DPs with common Nouns contain a clausal structure D CP/IP, and are relative clause-like. The head noun, the NP predicate, originates within a nominal small clause, with its external argument, the variable x, syntactically projected as its subject. The nominal predicate 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. Agreement patterns follow from Spec head and movement. Asymmetric agreement follows from the derivations: heads that are in a Spec head relation with a NP will show agreement only for those features which are present at that particular stage of the derivation. Heads that are merged higher will agree with all features that are locally visible in their Spec position. All agreement within DP is due to local “NP” movement, with the CaseP eventually attracted to a clausal subject position. The structure of a DP containing a N is not D NP, but rather D CP/IP (Kayne 1994), with a nominal small clause, a structural subject position where the CaseP ends up being pronounced:

(58) Simple DP (Maasai):

$$[(D) [_{CP/IP} Adv \text{ “subject” } AP [ \text{ “AgrS” } t_i \ x \ [t_i \ y \ [_{NSC} .x. NP] ] ] ]$$

$$[ \ x \ boy \ ]$$

This analysis brings out a striking parallelism between clauses and DPs in Maasai, and seems to yield insight into agreement properties in English DPs as well.

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)

(59) D .. D(gencase)... Num... NP

As far as the semantics are 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*, contain a 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 curious 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 or reduced clause in them (relative clause). Others contain no clause, though they contain the nominal predicate (D NP). However, if D can combine with a CP/IP that contains a copula constructions, (possessive constructions, *a hell of a doctor* constructions ), this CP/IP should also be able to contain the equivalent of a nominal copula construction (*he is a boy, it is a boy*). Given 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 can contain a nominal small clause, with the external argument of the noun syntactically projected.

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## Appendix A: possessor constructions.

(60)--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

- |      |    |   |                                      |   |
|------|----|---|--------------------------------------|---|
| (61) | a. | <i>m.acc.sg</i><br>oldià<br>ol-dia<br>dog | <i>m.acc.sg-m.sg</i><br>l- á<br>l- o | <i>m.acc.sg</i><br>layéni<br>l-aye-ni<br>boy  |
|      | b. | <i>m.acc.pl</i><br>ildíain                | <i>m.acc.sg-m.sg</i><br>l- á         | <i>m.acc.sg</i><br>layéni                     |
|      | c. | <i>m.nom.sg</i><br>oldià                  | <i>m.nom.sg-m.sg</i><br>l-á          | <i>m.acc.sg</i><br>layéni                     |
|      | d. | <i>m.nom.pl</i><br>ildíain                | <i>m.nom.sg-m.sg</i><br>l-á          | <i>m.acc.sg</i><br>layéni                     |
| (62) | a. | <i>f.acc.sg</i><br>enkíné<br>goat         | <i>f.acc.sg-m.sg</i><br>á            | <i>m.acc.sg</i><br>layéni<br>boy              |
|      | b. | <i>f.acc.pl</i><br>inkínèdzí              | <i>f.acc.pl-m.sg</i><br>á            | <i>m.acc.sg</i><br>layéni                     |
|      | c. | <i>f.nom.sg</i><br>enkínè                 | <i>f.nom.sg-m.sg</i><br>á            | <i>m.acc.sg</i><br>layéni                     |
|      | d. | <i>f.nom.pl</i><br>inkínèdzì              | <i>f.nom.pl-m.sg</i><br>á            | <i>m.acc.sg</i><br>layéni                     |
| (63) | a. | <i>m.acc.sg</i><br>oldià<br>ol-dia<br>dog | <i>m.acc.pl-pl</i><br>l- aá<br>l- oo | <i>m.acc.pl</i><br>layó `k<br>l-aye-uk<br>boy |
|      | b. | <i>m.acc.pl</i><br>ildíain                | <i>m.acc.pl-pl</i><br>l-aá           | <i>m.acc.pl</i><br>layó `k                    |
|      | c. | <i>m.nom.sg</i><br>oldià                  | <i>m.nom.pl-pl</i><br>láa            | <i>m.acc.pl</i><br>layó `k                    |
|      | d. | <i>m.nom.pl</i><br>ildíain                | <i>m.nom.pl-pl</i><br>láa            | <i>m.acc.pl</i><br>layó `k                    |
| (64) | a. | <i>f.acc.sg</i><br>enkíné<br>goat         | <i>f.acc.pl-pl</i><br>aá             | <i>m.acc.pl</i><br>layó `k<br>boys            |
|      | b. | <i>f.nom.sg</i><br>enkínè                 | <i>f.nom.sg-pl</i><br>áa             | <i>m.acc.pl</i><br>layó `k                    |
|      | c. | <i>m.acc.sg</i>                           | <i>m.acc.sg-f.sg</i>                 | <i>f.acc.sg</i>                               |

	aláyéni	l-ε	nkínè
	boy		goat
e	<i>m.acc.sg</i>	<i>m.acc.sg-fsg</i>	<i>f.acc.sg</i>
	aláyéni	l-ε	nkínè
	boy		goat
f.	<i>m.acc.sg</i>	<i>m.acc.pl-.pl</i>	<i>f.acc.pl</i>
	aláyéni	l-óo	nkinejí
	boy		goat

## Appendix B. (affirmative) relative clauses.

- (65) --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)

<i>ms:</i>	o (sg) /oo (pl)	fem:	na, (sg), naa(pl)
<i>nom:</i>	h(sg) hl (pl)		
<i>acc</i>	l (sg) lh (pl)		

--o → a / ( C ) a

- (66) aláyéni ò lò  
 boy.acc ms.sg.acc go  
 ‘(I saw) the boy who will go’

- (67) aláyèni ó lò  
 boy.nom ms.sg.nom go  
 ‘the boy who will go (is ...)’

- (68) aláyók aá tanapá ènâ kèràí  
 boy.pl.acc ms.pl.acc past-carry this child.nom  
 ‘(I saw) the boys this child carried’

- (69) aláyòk áa tanapá ènâ kèràí  
 boy.pl.nom ms.pl.nom past-carry this child.nom  
 ‘the boys this child carried (came)’

- (70) enkínè nà lò  
 goat.acc f.sg.acc go  
 ‘(I saw) the goat who will go’

- (71) enkíně ná lò  
 goat.nom f.sg.nom go  
 ‘the goat who will go (is ...)’

- (72) inkinedzì naá tanapá ènâ kèràí  
 goat.pl.acc f.pl.acc past-carry this child.nom  
 ‘(I saw) the goats this child carried’

- (73) inkínèdzì      náa      tanapá    ènâ kèràí  
goat.pl.nom    f.pl.nom past-carry this child.nom  
'the goats this child carried (were..)'