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## **The functional structure of noun phrases:<sup>1</sup>**

### **A bare phrase structure approach**

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#### **1. Introduction**

The goal of this paper is to give a general overview of recent studies on the syntax of determiners, particularly in Romance, Germanic and Balkan languages, which can shed some light on general theoretic issues. In so doing, I will reconsider some proposals of mine as well as of other linguists in the light of the recent framework of bare phrase structure as developed by Chomsky (1993, 1995 and subsequent recent work).

The paper is organized in three sections. In Section 1., I present some general assumptions and some general hypotheses that will be motivated in the course of the paper. Section 2. deals with articles. Section 3. deals with demonstratives as well as other elements that may function as referential operators inside the noun phrase.

##### *1.1. Basic assumptions*

In the course of the paper, I will adopt a number of assumptions which are currently made in the literature and four additional assumptions that I have proposed in previous work of mine and in collaboration with Mila Dimitrova-Vulchanova.

The general framework is provided by Grimshaw's (1991) theory of functional projections which considers functional heads to be projected by the lexical head in a bottom-up fashion, without labels.<sup>2</sup> In this particular regard, Grimshaw's proposal is perfectly in line with Chomsky (1993, 1995) bare phrase structure approach. Notice, furthermore, that all the structures resulting from this work comply with Kayne's (1994) antisymmetric hypothesis.

The proposals developed here make use of the following minimal assumptions to account for a wide range of syntactic phenomena which arise in relation to so-called determiners in a number of languages including Romance, Germanic, and Balkan:

- (A1) The realization of a functional head is a last resort procedure.
- (A2) If a functional head is realized, then it is either a dependent morpheme or a weak<sup>3</sup> (free) morpheme.
- (A3) All the functional heads of an extended nominal projection share the same  $\phi$ -features
- (A4) The interpretation of a noun phrase at LF is done in its highest Specifier position (generally referred to as SpecDP, here referred to as SpecFP<sup>max</sup>).

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1. I thank Anna Cardinaletti and Guglielmo Cinque for comments and discussion and the audience of the first meeting of the joint project "For a cartography of functional categories" held at the Venice International University in January, 28-30 1999 for helpful comments. I also thank Elisabeth Pearce and an anonymous reviewer for pointing out some faults in the submitted version. The usual disclaimers apply.

2. For the projection of the arguments of the noun I assume Larson's (1988) proposal according to which the elements that satisfy the selectional requirements of lexical heads, including  $\theta$ -role assignment, are merged in a shell built by recursion of the label of the lexical head (NP-shell in this case). I have nothing to contribute to the NP-shell theory here. My contribution is limited to the syntax of so-called "determiners" and will only be relevant to the functional part of syntactic structure.

3. "Weak" in the sense of Cardinaletti and Starke (1999).

(A1) captures the empirical observation that we certainly do not find as many overt functional heads as are generally assumed to be projected in the structure. We will see in 3. that this assumption can be turned into the parametrized “Principle of economy of lexical insertion” (43) to account for a series of phenomena that can be described as the “doubly-filled XP filter”.

(A2) describes a group of properties that have often been noticed for functional categories and which can be summarized as in (1), adapted from Abney (1987:64f):

- (1) *General properties of functional heads*
  - a. They constitute closed lexical classes.
  - b. They are generally phonologically and morphologically dependent.
  - c. They can be sisters only to one kind of category.
  - d. They are usually inseparable from their sister projection.
  - e. They lack substantive content.

None of the properties in (1) is either necessary or sufficient to attribute functional status to a morpheme. Altogether they show a strong tendency which is captured in (A2). The assumption in (A2) states a strict correlation between semantics and its morpho-syntactic realization: A functional category is semantically “weak” in the sense that it only carries features such as number, gender, definiteness, case, which are shared by all other elements of the same class. As a consequence, a functional category is also morpho-syntactically “weak”. Given (A1), we expect that if and only if the conditions for the licensing of a covert functional head are not met, its realization will be morphologically minimal, either by means of an inflectional morpheme or by means of a free morpheme devoid of lexical content.

(A3) captures the fact that in the largest majority of cases, functional heads in the nominal structure appear to trigger, on the modifiers of the noun, agreement for all the  $\phi$ -features present on the head noun (including gender, number, and Case). If there were no sharing of such features, we would expect to find some modifiers agreeing for number only, some others for gender only, and others still for Case only. Furthermore, if the functional structure was made of different functional projections, each one specified for a single different feature, we would expect the hierarchy on the adjectives to be mirrored in different agreement specifications on the single adjectives. But this is never the case in the empirical domain studied here. From this observation, I conclude that in natural languages, functional heads which trigger agreement of modifiers with these  $\phi$ -features are copies of the  $\phi$ -features on the head noun. Since these features are visible elsewhere, it is often the case that they do not need to be overt.

(A1) through (A3) are often implicit in the literature. Here they will be kept in the most general formulation. No difference will be made between Agr heads and other functional heads, including D. All of them will be labelled as F, a welcome result in a framework which aims to economy.<sup>4</sup>

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4. In this respect, it is more general than the assumption made in Chomsky (1995:240) which takes D together with C and T a part from other functional heads and attributes semantic content to them. I have nothing to say about T. In this paper I will not attempt any claim on C either. However, I envisage a parallel treatment of D and C, as often implied in the literature.

(A4) is necessary if D (from now on  $F^{max}$ ) is maintained as devoid of substantive content, at the same time capturing the well-known facts which have led a large tradition of linguistic research to attribute semantic content to the article. The underlying idea is that the apparent effects of the referential properties of the article can be derived by the assumption, due to Campbell (1996), of an empty operator which functions like a demonstrative and is in the same position as a demonstrative when the definite article is in  $F^{max}$ .

### 1.2. Hypotheses

The previous assumptions will allow the formulation of two very general hypotheses on the categorial status of determiners:

- (H1) Among determiners, only articles are functional heads (and appear in  $F^{max}$ ).
- (H2) Demonstratives as well as other maximal projections carrying referential features must check their referential features in  $SpecFP^{max}$  at some level of representation.

(H1) derives from assumptions (A1)-(A2) generally extended to all functional categories in the noun phrase including articles. Such an extension is not only welcome from the theoretical point of view in that it does not need to make any distinction among nominal functional heads, but it can capture the empirical observation that articles display a very different syntactic behaviour across languages. In particular, articles may be missing or, when present, may be inflectional morphemes (enclitic) or can be considered as dummies (proclitic or free morphemes with no semantic value). In section 2., I will show that a definite article in some languages is inserted on syntactic grounds regardless of the referential properties of the noun phrase. Cross-linguistic variation is found as to the cases in which insertion of the article (a last resort procedure) is necessary for a given language.

According to (H2), demonstratives behave like modifiers of a particular kind. Differently from articles they provide semantic referential features to the noun phrase. Notably, they are not the only elements that can contribute referential features to the noun phrase; a well-known example of this kind are prenominal possessives in English. In section 3., it is shown that demonstratives are XPs across languages, they are not directly merged in  $FP^{max}$  but are merged lower in the structure and further moved to  $SpecFP^{max}$  to check their referential features. This property is shared by other modifiers of the noun, such as possessive adjectives, personal pronouns, proper names, among others. Cross-linguistic variation is found as to the stage of the derivation in which the referential modifier (be it a demonstrative or another element) moves to  $SpecFP^{max}$ .<sup>5</sup>

In the course of the paper, I will argue that the term “determiner” is spurious. It is a jargon term to refer to elements which are often, but not always, found at the leftmost position in the noun phrase, apparently in complementary distribution with one another in well-studied languages.

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5. I disregard the case of possessive clitics inside the noun phrase as spurious. Clitics or weak pronouns are special elements which have both maximal and minimal status. It is their maximal status which is accounted for in this paper. More work needs to be done to account for the position they end up in due to their the minimal status. Nothing here is against the hypothesis that they occupy a functional head as the result of movement.

In languages, such as Modern Greek, Rumanian, Hebrew, or Welsh (cf. Brugè and Giusti (1996) and Brugè (this volume)), articles and demonstratives are not (or not always) in complementary distribution and the demonstrative is not (or not always) the leftmost element in the noun phrase. Elsewhere I have also argued against the unification of quantifiers with other determiners. In particular, I have argued that quantifiers are never in the position where determiners can be found. They are either lexical heads merged above  $FP^{max}$  or adjectival phrases in a functional specifier of the noun phrase. For a syntactic account of quantifiers in Germanic and Romance cf. Giusti (1991a, 1991b, 1991c, 1993, 1997), in Bulgarian cf. Dimitrova-Vulchanova and Giusti (1996), in Bosnian cf. Giusti and Leko (1995). For reasons of space, I will limit my concern here to the study of  $FP^{max}$ .

## 2. Articles

### 2.1. phonologically dependent

In the languages displaying a morphologically free article, such as Romance (except Rumanian) and Germanic (except Scandinavian), the form of this element is phonologically dependent on the context inside the noun phrase. This dependency is not displayed with respect to elements which are external to the noun phrase. I will take this as evidence for the functional status of the article in the extended nominal projection, assuming that a functional head entertains a privileged relationship with an immediately higher functional head (which necessarily belongs to the same extended projection) and with the immediately lower specifier.

The definite article in Italian is never enclitic on any element which is not part of the noun phrase. It is either proclitic on the following nominal element (2b) or enclitic on a preposition (3b):

- |     |    |                                |     |                          |
|-----|----|--------------------------------|-----|--------------------------|
| (2) | a. | Mangi[a lo] scorfano.          | cf. | *Mangi[allo] scorfano.   |
|     |    | [(s)he] eats the scorpion fish |     |                          |
|     | b. | Mangia l'arrosto               | cf. | *Mangia il/lo arrosto.   |
|     |    | [(s)he] eats the roast [beef]  |     |                          |
| (3) | a. | Ha parlato [a lo]redana.       | cf. | *Ha parlato[allo]redana  |
|     |    | [(s)he] talked to Loredana.    |     |                          |
|     | b. | Ha parlato [allo] scolaro.     | cf. | *Ha parlato[alo] scolaro |
|     |    | [(s)he] talked to the pupil    |     |                          |

In the Central-Italian variety of the central Marches (Ancona), “raddoppiamento sintattico”<sup>6</sup> is very limited if there is any at all.<sup>7</sup> In particular, no reduplication of the following consonant is found between the verb *mangia* and its object in (2a/b) or between the preposition *a* and the following proper name in (3a). However, when the definite article is preceded by a preposition, the resulting form has a geminate consonant suggesting that something different from prosodic rules has applied. Let’s assume that in (2b), (3b) we have a case of head incorporation. In (2a) the article (a

6. For a phonological account of “Raddoppiamento sintattico” cf. Chierchia (1986).

7. I am not referring to the dialect spoken in that area, which tends to degeminate consonants and would not show the relevant contrast in (3), but to the pronunciation of Standard Italian in that area.

nominal functional head) cannot incorporate on the verb. In (3a) the proper name cannot incorporate onto the preposition because it is not a functional head, as we will argue in 3.4. below.

This suggests that the definite article is a functional head in the extended projection of the noun phrase. It is the highest, unless a monosyllabic preposition is present.<sup>8</sup> Although this is not the place to make a point on the functional vs. lexical status of prepositions in Italian, it is plausible to assume that a subset of the monosyllabic prepositions in Italian have the function of case markers, as also argued for by Cardinaletti and Starke (1999). This function can also be claimed for the definite article.<sup>9</sup> It is conceivable that the articulated preposition is not formed by incorporation of the article into a higher P violating the Mirror Principle but it is a unique element realizing Case as well as all other  $\phi$ -features of the noun in  $F^{max}$ .

## 2.2. *morphologically dependent*

The strongest evidence in favour of the morphological dependency of the article is that in some languages the article is enclitic. This is found in some Balkan languages such as Rumanian, Albanian and Bulgarian, and in all Scandinavian languages represented here by Norwegian:<sup>10</sup>

- |     |    |            |         |
|-----|----|------------|---------|
| (4) | a. | Rumanian:  | băiatul |
|     | b. | Albanian:  | djali   |
|     | c. | Bulgarian: | momčeto |
|     | d. | Norwegian: | gutten  |
|     |    |            | boy-the |

The first studies on this topic (cf. Dobrovie-Sorin (1987), and Grosu (1988) for Rumanian, Hellan (1985), and Taraldsen (1990) for Scandinavian) have taken for granted that the article is inserted in D and the N moves to D to obtain encliticization. A hypothesis of N-to-D movement at Spell-Out for all cases in (4) predicts that in these languages, the presence of the enclitic article implies that the head noun is found at the leftmost side of the noun phrase when the enclitic article is inserted. But this is often not the case, as argued for in detail in Dimitrova-Vulchanova and Giusti (1998).

In a late principles-and-parameters framework (cf. Chomsky and Lasnik 1993), the obvious revision of that hypothesis was to assume that the noun, already inflected with the article, checks the D-features by movement to D. This was the position taken by Dimitrova-Vulchanova and Giusti (1998) who reduce the variation across languages to the different level of representation where this movement applies combined with the requirement that a specifier must be in a Spec-Head relation with a head which already contains the  $\phi$ -features of the noun.

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8. Cf. Rizzi (1988) for a detailed description of prepositions in Italian.

9. Cf. Giusti (1993:ch.2) for a general proposal in which the Romance and Germanic article is analysed as a surrogate of the case morphology present in Latin and Germanic respectively. Cf. Giusti (1995) for a detailed account in German, and Giusti (2001) for an account in Romance.

10. Along the same line of reasoning, cf. Dimitrova-Vulchanova and Giusti (1998) for a more detailed account of the analysis of the Balkan noun phrase, and Giusti (1994b) for a comparative analysis with the Scandinavian languages.

Here I will argue that the enclitic article is not an independent head inserted in D which for some language-specific feature is so “strong” as to trigger N movement all the way to D; but it is an inflection of the noun which can trigger only one step movement. As a consequence, for the noun to host the enclitic article, it must be merged in the immediately lower functional head.

Let us consider the contrasts arising when a modifier of the noun is inserted in a noun phrase in which the enclitic article is present. Notice that all examples in (5)-(8) present the same word order displayed in the parallel indefinite noun phrases where no enclitic article occurs<sup>11</sup>:

- |     |           |    |  |     |                          |
|-----|-----------|----|--|-----|--------------------------|
| (5) | Rumanian  | a. | <i>băiatul</i> frumos                          | cf. | un băiat frumos          |
|     |           |    | boy-the nice                                   |     | a boy nice               |
|     |           | b. | *frumos <i>băiatul</i>                         |     |                          |
|     |           | c. | frumosul băiat                                 | cf. | un frumos băiat          |
|     |           | d. | *frumosul <i>băiatul</i>                       |     |                          |
| (6) | Albanian  | a. | <i>djali</i> i mirë                            | cf. | një <i>djalë</i> i mirë  |
|     |           |    | boy-the ARTgood                                |     | a boy ART good           |
|     |           | b. | * i mirë <i>djali</i>                          |     |                          |
|     |           | c. | %i miri <i>djalë</i>                           | cf. | %një i mirë <i>djalë</i> |
|     |           | d. | *i miri <i>djali</i>                           |     |                          |
| (7) | Bulgarian | a. | *momčeto <i>goljamo</i>                        | cf. | *momče <i>goljamo</i>    |
|     |           | b. | * <i>goljamo</i> momčeto                       |     |                          |
|     |           | c. | <i>goljamoto</i> momče                         | cf. | <i>goljamo</i> momče     |
|     |           |    | big-the boy                                    |     | [a] big boy              |
|     |           | d. | * <i>goljamoto</i> momčeto                     |     |                          |
| (8) | Norwegian | a. | * <i>gutten</i> store                          | cf. | *en <i>gutt</i> stor(e)  |
|     |           | b. | *store <i>gutten</i>                           |     |                          |
|     |           | c. | *storen <i>gutt(en)</i>                        |     |                          |
|     |           | d. | <i>den</i> store <i>gutten</i>                 | cf. | en stor <i>gutt</i>      |
|     |           |    | the big boy-the                                |     | a big boy                |
|     |           | e. | * <i>den</i> store <i>gutt</i> (OK in Danish!) |     |                          |

In (5-8a), we find the word order expected if N-to-D movement takes place before Spell-Out, in (5-8b) the word order expected if N-to-D procrastinates until LF. This is never found. In (5-8c/d) N does not move at all. (5-8c) show that the article can appear on a prenominal adjective. This is not allowed in Scandinavian (8c). There, in the presence of an adjective the article is a free morpheme. In (5-8d) the article is reduplicated. This is only allowed in Scandinavian, except for Danish where we find the parallel of (8e) which, *mutatis mutandis*, corresponds to (5-7c).<sup>12</sup>

Some general considerations are suggested by the data in (5)-(8). N-to-D movement

11. The same word orders are also found with other determiners and demonstratives, so as to make the definite interpretation on the noun phrase irrelevant to the word order.

12. For an analysis of article reduplication in Scandinavian cf. Delsing (1993), Santelmann (1993), Giusti (1994b), Börjars (1995), Kester (1996), Svenonius (1993).

is only found in languages where N-movement independently occurs.<sup>13</sup> This suggests that the presence of the enclitic article does not necessarily trigger such a movement. Furthermore, in all languages under consideration here, the article is the topmost head of the structure.<sup>14</sup>

In a bare structure framework where the structure is built bottom-up, this suggests that the features expressed by the article are merged last in the noun phrase. Thus, the article merges on the highest nominal element. In Rumanian, the highest nominal element can be the head noun which has moved across the specifier containing the adjective. But since the movement of the noun is not obligatory (depending on the adjective and on the stylistic choice)<sup>15</sup> the enclitic article can appear on an adjective. In Albanian, N moves across all specifiers in the unmarked case, regardless of the presence of the enclitic article. Thus the article appears on the noun in the unmarked case. In Bulgarian, N does not move across any adjective and the article can appear on the N only if no specifier is inserted. The same is the case in Scandinavian.<sup>16</sup>

### 2.3. *inseparable from their sister projection*

A third piece of evidence for the dependent nature of the definite article is the fact that it cannot be used discontinuously from its sister projection (9a), similarly to demonstratives (9b) but contrary to quantifiers (9c):

- (9) a. \*\*Ragazzi (li/ne) conosco i.  
 b. ?\*Ragazzi (\*li/\*ne) conosco questi.  
 c. Ragazzi, ne conosco molti. / I ragazzi li conosco tutti.  
 boys [I] CI-GEN know many / the boys [I] CI-ACC know all

Assuming that Move cannot break extended projections but can exclusively apply to  $(FP^{max})$ , we obtain that only elements which are external to  $FP^{max}$  can remain in place.<sup>17</sup>

13 In Rumanian and Albanian most APs follow the noun even if this is not inflected with the enclitic article. Only in Rumanian there is evidence that N+art can move across a specifier which cannot be crossed by an uninflected N, cf. Giusti (1997) and Dimitrova-Vulchanova and Giusti (1998).

14. In most Scandinavian languages the enclitic article is reduplicated on the noun but this can be treated as a subcase of article reduplication which will be discussed in section 2.1.4. below as evidence for the non-substantive nature of the article.

15. Some adjectives are obligatorily post-nominal (e.g. nationality adjectives) some others are preferably postnominal but maybe prenominal (e.g. topicalized descriptive adjectives, cf. Cornilescu (1995)), other still must be prenominal (e.g. *biet* (“poor” in the sense of “pityful”), and ordinals). This situation is identical to Italian as depicted in Cinque (1994) and Giusti (1993). This states of affairs confirms the total unrelatedness of the enclitic nature of the article with N-movement.

16. So far, I have assumed a generally accepted conception of how to build the lexical projection NP and its modifiers. I will stick to it. I will follow Cinque (1994) in assuming that adjectives are specifiers of functional heads. The presence of a functional head for each specifier captures in a direct way the redundant morphological agreement on adjectives. The possible alternative which considers specifiers as intervening heads, as proposed by Delsing (1988), Lamarche (1991), or a mixture of the two, as in Bernstein (1993), is incompatible with Grimshaw’s extended projection approach taken as a guiding line here.

17 An anonymous reviewer reminds me that VP preposing/topicalization appears to run against this assumption. As a matter of fact, VP preposing/topicalization is the only counterexample to such a claim that I can think of. The case of the position bound by the clitic *ne*, is shown to be a full nominal

In Giusti (1991, 1993, 1997), I have argued that those Qs which can appear in distant positions are external to the noun phrase and impose selectional restrictions on their sister (which is an  $FP^{max}$ ) such as Case requirements. In (9c), *molti* (“many”) absorbs the Accusative Case assigned by the verb *conosco*, and imposes a Partitive Case on the noun phrase which is realized as morphological genitive on the clitic form *ne*. *Tutti* has the property of letting its Case percolate down to  $FP^{max}$ , this is why the clitic *li* displays morphological accusative features. On the contrary, demonstratives in (9b) and articles in (9a) are internal to  $FP^{max}$  and cannot be separated from the rest of the projection.

The crucial difference between articles and demonstratives is the impossibility for articles to appear without an overt sister projection (10a), while this is possible with demonstratives (10b):

- (10) a.   \*\*Ho comprato il/lo/la  
           [I] bought the  
       b.   Ho comprato questo/a  
           [I] bought this

This suggests that articles, parallel to inflectional morphology; are merged only if a lexical head (a noun or an adjective) is present, while demonstratives can occur with a covert sister projection. This property is directly derived from the morpho-phonologically dependent nature of the article seen in sections 2.1-2.

Aparent counter-evidence to this generalization can be found in various Germanic languages. I take German as a case study here. In (11b-c), the definite article appears in the same contexts as a personal pronoun:

- (11) a.   Hans hat eine Frau gesehen. *Sie* stand am Fenster.  
       b.   Hans hat eine Frau gesehen. *Die* stand am Fenster.  
           “Hans saw a woman. She was standing at the window”  
       c.   Hans hat *sie/die* gesehen.  
           “Hans saw her”

It is possible to argue that the *d*-element in (11b-c) is not an article but a demonstrative. (Cf. Passaler (1997)). Prepositional phrases help us distinguish between the definite article and the *d*-pronoun. (12a) gives us the basic structure with an indefinite article which is bisyllabic and never incorporates. The definite article obligatorily incorporates in (12b), while the *d*-element cannot do so in (12c):

- (12) a.   Wir treffen uns an einem Eingang des Bahnhofs.  
           “We’ll meet at an entrance of the station.”  
       b.   Wir treffen uns **am** Eingang des Bahnhofs.  
           “We’ll meet at the entrance of the station.”  
       c.   Wir treffen uns an **dem** Eingang des Bahnhofs dort drüben.  
           “We’ll meet at that entrance of the station over there.”

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projection and not an intermediate nominal projection in Cardinaletti and Giusti (1992) and in Giusti (1993) to which I refer the reader. Although this is not the place to entertain the attempt to show that VP preposing actually complies with the above restriction, I would like to suggest that what VP-preposing actually moves is a complete functional projection (possibly a  $\nu P$  phase in terms of Chomsky (2000)).

In (12c) the *d*-element appears with the locative *da/hier* which generally appears with demonstratives and is incompatible with articles in other languages, such as French in (13b') and Italian (13c'):

- |      |    |         |                                  |     |                      |
|------|----|---------|----------------------------------|-----|----------------------|
| (13) | a. | German  | das (Buch) da / hier             |     |                      |
|      | b. | French  | ce (livre) ci / la               | b'. | *le livre ci / la    |
|      | c. | Italian | questo libro qui / quel libro lì | c'. | *il (libro) qui / lì |
|      |    |         | “This (book) here / there”       |     |                      |

The co-occurrence of demonstratives and locatives is not just a matter of compatibility but one of selection, as argued in Brugè (1996 and this volume). Therefore, the *d*-element should be analysed as an XP, like a demonstrative. Brugè convincingly argues that the demonstrative and the locative are merged as a constituent. The demonstrative further moves to a higher projection, while the locative remains in place, thereby marking the basic position. Her analysis applies to *d*-elements in German regardless of the presence of the locative. In (14a), I give the analysis of the relevant string of (12b), while (14b) corresponds to (12c):

- |      |    |   |
|------|----|---|
| (14) | a. | [FP <sub>max</sub> am [FP <sub>2</sub> [Eingang <sub>i</sub> [FP <sub>1</sub> [des Bahnhofs] [NP [t <sub>i</sub> [...]]]]]]]]   |
|      | b. | [FP <sub>max</sub> an [FP <sub>3</sub> dem <sub>y</sub> [FP <sub>2</sub> [Eingang <sub>i</sub> [FP <sub>1</sub> [des B.] [DemP [t <sub>y</sub> (dort drüben) ] [NPt <sub>i</sub> [...]]]]]]]]]] |

According to (H2), the demonstrative will further move for interpretive reasons to SpecFP<sup>max</sup>, in compliance to (A4), as we will see in 3.1 below.<sup>18</sup>

A further piece of evidence against a unification of the *d*-article in (15a) and the *d*-pronoun in (15b) is the fact that the two elements have a different dative plural form:

- |      |    |                         |
|------|----|-------------------------|
| (15) | a. | mit den/*denen Freunden |
|      | b. | mit denen/*den          |

The fact that the *d*-element is partly homophonous with the definite article does not surprise us if we consider that in many Indo-European languages both articles and pronouns derive from demonstratives.<sup>19</sup>

The contrast in (12b-c) also shows that “articulated prepositions” like *am* are the conflation of two functional heads which are contiguous in the extended projection of

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18 An anonymous reviewer points out that in Norwegian, a definite article can be reinforced by a locative as in *huset der borte* (“house-the over there”). This is also possible in Spanish. Brugè (1996, fn. 27) convincingly argues for Spanish that two possible analysis should be given, corresponding to an ambiguity in interpretation. One possible interpretation is that of a reduced relative (“the book [which is] over there”). Another possible interpretation is with an understood deictic (“[that] book over there”). This latter interpretation is taken to support the assumption of a covert demonstrative which is licensed by the presence of the definite article. Interestingly the deictic interpretation is not available if a prenominal possessive is present. This is explained by the observation that demonstratives are in complementary distribution with possessives in Spanish since the two elements compete for the SpecDP position. I see no reason not to extend Brugè’s analysis to Norwegian.

19. Cf. Giusti (1995) for an analysis of the formation of the definite article from the demonstrative in German, and Giusti (in press) for the results of the Latin demonstrative *ILLE* as article and pronoun in Romance.

the noun phrase

#### 2.4. devoid of substantive content

In some languages multiple occurrences of the article are found in one and the same noun phrase. This does not produce a multiple index interpretation:

- (16) Greek      a. *to oreo to vivlio*  
                  b. *to vivlio to oreo*  
                    “The good book”
- (17) Hebrew      *ha-bxina ha-tedira shel ha-mismaxim*  
                    the-examination the-frequent of the-documents  
                    “The frequent examination of the documents”
- (18) Albanian    a. *djali i mirë*  
                    boy-the the-good  
                  b. *i miri djalë*  
                    the good-the boy  
                    “The good boy”
- (19) Rumanian    a. *băiatul (cel) frumos*  
                    boy-the (the) good  
                  b. *frumosul băiat*  
                    nice-the boy  
                    “The nice boy”
- (20) Norw./Sw.    *den store gutten*  
                    the good boy-the  
                    “The good boy”

In Greek (16) and Hebrew (17), the article on the demonstrative and the article on the adjective are apparently the same kind of element with respect to their morphology and their relation to the lexical head. Their occurrence is not limited to a single adjective but to every adjective present in the structure. In Albanian (18) and Rumanian (19), we find two kinds of article which can appear on the adjective: one is the same as the nominal article (enclitic *-i* in Albanian (18b) and enclitic *-ul* in Rumanian (19b)), the other is particular for the adjective. In both languages it is proclitic on the adjective, but it otherwise displays very different properties in the two languages.<sup>20</sup>

One apparent piece of evidence in favor of the referential value of the definite article is the fact that in Italian the repetition of the definite article introduces a different referential index, as argued in Longobardi (1994). In (21), where the article is repeated, the predicate must be plural, showing that the two articles in the singular have different indexes. This contrasts with (22) in which the article is not repeated and the interpretation of the subject can only be singular:

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20. In Albanian, it is part of the adjectival root and it is present regardless of the definiteness of the noun phrase and of the pre- vs. post-nominal position of the adjective. In Rumanian, it is optional, it can only appear on some classes of adjectives (e.g. thematic adjectives are excluded), and it can only appear when the adjective is postnominal. For a more detailed presentation of the data cf. also Giusti (1993:73-79). The analysis of “adjectival articles” is not directly relevant to the point to be made in the present section. More properties of this kind of articles will be dealt with in section 3.6. below.

- (21) a. \*È arrivata la mia segretaria e la tua collaboratrice<sup>21</sup>  
has arrived the my secretary and the your assistant  
b. Sono arrivate la mia segretaria e la tua collaboratrice  
have arrived the my secretary and the your assistant  
“My secretary and your assistant arrived”
- (22) a. È arrivata la mia segretaria e tua collaboratrice  
has arrived the my secretary and your assistant  
b. \*Sono arrivate la mia segretaria e tua collaboratrice  
have arrived my secretary and your assistant

However, the same data cannot be reproduced in Rumanian, where the article is enclitic on the noun and cannot be missing. The sequence with the repeated articles in (23a) is ambiguous between the two possible interpretations, one with a single referential index and one with two indexes. The sequence in (23b) where the second noun is not inflected for the definite article is excluded:

- (23) a. Directorul de departament si presedintele de facultate a/au venit aici  
director-the of department and president-the of faculty has arrived here  
b. \*Directorul de departament si presedinte de facultate a/au venit aici  
director-the of department and president of faculty has arrived here

Longobardi’s proposal to attribute a referential index to the definite article, therefore, can only account for the Italian free article and not for the Rumanian enclitic article. However, in most cases, the free vs. dependent nature of the article is not crucial for the interpretive properties of the definite article in the two Romance languages under consideration. On the contrary, the Rumanian enclitic article appears to have many features in common with the Italian free article, despite their different morphological status.<sup>22</sup>

It is welcome to give a unified account of the data in (21)-(23). This can be done by assuming that in neither language the article has a referential index. And that insertion

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21. For some speakers the sentence is acceptable in the irrelevant reading with the ellipsis of the second predicate *è arrivata*.

22. In both languages, generic noun phrases must have a definite article, as shown in (i)-(ii):

- (i) a. \*(Le) brave ragazze sono sempre noiose.  
b. Fete\*(le) cumînti sînt totdeauna plictisitoare.  
“Good girls are always boring.”
- (ii) a. Detesto \*(le) brave ragazze.  
b. Detest fete\*(le) cumînti.  
“I detest good girls.”

Indefinite noun phrases must have an indefinite article in subject position, while they may have a null article in object positions, as shown by the contrast between (iii)-(iv):

- (iii) a. \*(Delle) brave ragazze abitano di fronte.  
b. \*(Nişte) fete cumînti stau alături.  
“(Some) good girls live nextdoor”
- (iv) a. Conosco (delle) brave ragazze.  
b. Cunosc (nişte) fete cumînti.  
“I know (some) good girls”

of the article is always a last resort application of Merge.

In Italian, the conjunction of two sequences of “art + possessive adjective + N” as in (21) involves the conjunction of two  $FP^{max}$ 's. Both  $FP^{max}$ 's have a Specifier which is not empty, but hosts a covert operator which carries an index, à la Campbell (1996). The two indexes are interpreted as disjoint according to principle C of the binding theory.<sup>23</sup> If the insertion of the article is a last resort kind of operation, it cannot apply in the second conjunct in (22), where only one covert article is inserted.

In Rumanian, the conjunction of the sequence “N+art + possessive noun phrase” in (23) can either be interpreted as a conjunction of two  $FP^{max}$ 's parallel to Italian (21) or as a conjunction of two  $F^{max}$ 's, parallel to Italian (22). In the former case, after each noun has checked its  $\phi$ -features in  $F^{max}$ , a covert operator is merged in each Specifier. The result is the projection of two  $FP^{max}$ 's which are then coordinated, yielding the interpretation with two different (disjoint) indexes.

In the latter case, the enclitic article, being part of the morphological inflection of the noun, is part of each N head without violating the last resort condition. “N+art” then checks the  $\phi$ -features in  $F^{max}$ , the structure must get at least to the F' level. At this stage the two F's can be coordinated yielding a recursive F' node to which the covert operator is merged obtaining an FP with a single  $SpecFP^{max}$  which contains a single covert operator.

So far, we have observed that in some languages, the cooccurrence of definite articles in one and the same noun phrase does not give rise to disjoint interpretation. In what follows, we observe that, conversely, the presence of the definite article is not always sufficient to trigger referential interpretation.

In (24) the presence of a definite or an indefinite article is irrelevant for the interpretation of the noun phrase *la/una segretaria di un onorevole* which is in any case interpreted as non-referential, as shown by the subjunctive mood in the relative clause:

- (24)        *Scommetto che non troverai mai* [<sub>FP</sub> *la/una segretaria* [<sub>PP</sub> *di un onorevole* *che sia disposta a testimoniare contro di lui*]].  
 I bet you'll never find the/a secretary of a deputy who is-SUBJ willing to witness against him.

I propose that the indefinite interpretation of the relevant noun phrase in (24) is due to the fact that the possessive prepositional phrase *di un onorevole* is moved to  $SpecFP^{max}$  at LF to give the same configuration as the English *a deputy's secretary*. The indefinite interpretation then percolates from the possessive PP to the whole  $FP^{max}$ .

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23. I am assuming here that a coordinated structure is a governing category for the application of the binding theory, as appears to be the case:

- (i)    a.    Sono arrivati [[Gianni]<sub>i</sub> e [[suo]<sub>j/i</sub> fratello]  
       b.    Sono arrivati [[Gianni]<sub>i</sub> e il fratello di [quel disgraziato]<sub>j/\*i</sub>].  
 (ii)   a.    [[John]<sub>i</sub> and [his]<sub>j/i</sub> brother have just arrived.  
       b.    [[John]<sub>i</sub> and [that bastard]<sub>j/\*i</sub>]'s brother have just arrived.

In (ia) and (iia) the possessive adjective in the second conjunct can refer to the noun phrase *Gianni*, *John* in the first conjunct. In (ib) and (iib) the R-expressions *quel disgraziato*, *that bastard* in the second conjunct cannot refer to the noun phrase in the first conjunct, yielding a principle C violation. This shows that in a coordination, a pronoun in the second conjunct can refer to a noun phrase in the first conjunct, while an R-expression must be free from it.

In support of the covert movement of the indefinite possessor and pied-piping of its features into the entire FP<sup>max</sup> is the fact that the indefinite possessor is incompatible with a demonstrative which is a referential element in SpecFP<sup>max</sup>, as in (25):

- (25) \*Scommetto che non troverai mai [<sub>FP</sub> *questa/quella* segretaria [<sub>PP</sub> di **un** onorevole che sia disposta a testimoniare contro di lui]].  
 “I bet you’ll never find this/that secretary of a deputeo who is-SUBJ willing to witness against him.”

(24) also contrasts with (26) where the referentiality of the entire noun phrase is given by the referential possessive PP, the presence of which makes the noun phrase incompatible with the relative clause in the subjunctive mood:

- (26) \*Scommetto che non troverai mai [<sub>FP</sub> *la* segretaria [<sub>PP</sub> di **quell'**onorevole]] che sia disposta a testimoniare contro di lui]].  
 “I bet you’ll never be able to find the secretary of that deputeo who is-SUBJ willing to witness against him.”

This is not the case in (27) which is introduced by an indefinite article which triggers an operator-variable interpretation and does not allow pied piping of the referential features of the possessor PP:

- (27) Scommetto che non troverai [<sub>FP</sub> *una* (sola) segretaria [<sub>PP</sub> di **quell'**onorevole]] che sia disposta a testimoniare contro di lui]].  
 “I bet you won’t be able to find a secretary of that deputeo who is-SUBJ willing to witness against him.”

In (26) the possessive PP *di quell'onorevole* must move to the Spec of the FP *la segretaria* for the whole FP to be interpreted, given that the definite article does not have an interpretive value. The referential interpretation of the possessor percolates to the entire FP, as argued above, and is therefore incompatible with the subjunctive mood, yielding an ungrammatical result. In (27), on the contrary, the interpretation of FP is that of the variable of a covert existential quantifier.<sup>24</sup> This blocks movement of the PP containing the referential noun phrase *di quell'onorevole*. FP is compatible with the subjunctive relative and the result is acceptable.

A completely different type of evidence against the assumption of a referential index to the definite article is the fact that in several languages the enclitic article appears with the function of realizing nominal  $\phi$ -features. The Rumanian examples below are contrasted with the Italian counterparts to show that the Rumanian definite article *-ul* is in all respects a feature marker of (at least) masculine singular parallel to the Italian morpheme *-o*, notice that it also contains case features (here nominative).<sup>25</sup>

24. In this paper I will not take stand on the nature of the indefinite article, but elsewhere I have argued that the indefinite article is a marker for the partitive Case assigned by a covert quantifier. (Cf. Giusti 1995).

25. This phenomenon is very general and can be found with other quantifiers such as *tot(ul)* “all”, *întreg(ul)* “whole”, *vreun(ul)* “some”, *alt(ul)* “[an]other”, *mult(ul)* “much”, *putin(ul)* “little”.

(28)

Rumanian	Italian	
un(* <i>ul</i> ) băiat	un(* <i>o</i> ) ragazzo	“a boy”
nici un(* <i>ul</i> ) băiat	nessun(* <i>o</i> ) ragazzo	“no boy”
Am văzut pe un*( <i>ul</i> )	(ne) ho visto un*( <i>o</i> )	“I saw one”
N-am văzut pe niciun*( <i>ul</i> )	non (ne) ho visto nessun*( <i>o</i> ) <sup>26</sup>	“I saw none”
un*( <i>ul</i> ) a spus că	un*( <i>o</i> ) ha detto che	“Somebody said that ...”
Nici un*( <i>ul</i> ) a spus că ...	un*( <i>o</i> ) ha detto che	“Nobody said that ...”

In a number of languages articles appear in contexts in which they are not expected to realize case morphology. In (29a,b) we see a German generic mass noun which appears with no article in the accusative. But the noun phrase in dative in (29b) must have an overt definite article. The same happens when the noun phrase is in the genitive, as in (29c):

- (29) a. Ich trinke gerne (\**den*) Kafee.  
“I like drinking coffee.”
- b. Ich ziehe (\**den*) Kaffe \*(*dem*) Tee vor.  
“I prefer coffee to tea.”
- c. die Zubereitung \*(*des*) Kaffees  
“the preparation of coffee”

(29c) shows that the article in (29b) is not inserted to disambiguate the sentence. In (29c) no ambiguity would arise if the article were not present, but the article is still necessary. In this case it is necessary to make an oblique case (genitive) visible.

So far we have seen that the presence of the article is not sufficient to give referential interpretation, but it is necessary to realize nominal  $\phi$ -features such as gender, number and case. Interestingly, the converse is also true: The presence of the article is not necessary for the referential interpretation of the noun phrase; while the article cannot be merged when the nominal  $\phi$ -features are realized in another way, as exemplified in prepositional phrases in Rumanian.

We have already noticed in fn. 22, that in Rumanian noun phrases, the article has the same distribution as in Italian generic and indefinite noun phrases. The same is also true for referential noun phrases which must have a definite article, as in (30a). In prepositional phrases, however, in which Case features are presumably recoverable from the preposition itself, the article must be missing, as in (30b) provided we have an unmodified noun phrase. But if the noun is modified either by an adjective, as in (30c), or by a complement, as in (30d), the article is necessary again:

- (30) a. Am citit scrisoare\*(*a*)  
“I read the letter.”
- b. Îți mulțumesc pentru scrisoare\*(*a*)  
“I thank you for [the] letter.”
- c. Îți mulțumesc pentru scrisoare\*(*a*) frumoasă

- “I thank you for the beautiful letter.”
- d. Îți mulțumesc pentru scrisoare\*(a) de la București  
 “I thank you for the letter from Bucarest.”

In (30) gender and number features are recoverable from the morphology of the noun. The presence of the preposition makes the case features recoverable. These two conspirancies allow for the article to be absent in (30b).<sup>27</sup>

From the data presented in this section, we can conclude that the definite article is neither sufficient nor necessary to trigger referential interpretation on the noun phrase. This implies that the article is not the element which carries the referential index of the noun phrase at all. This is not an unwelcome result since it is well-known that the distribution of articles is highly language-specific, while the distribution of semantic indexicals and operators such as demonstratives or quantifiers is rather uniform across languages.

#### 2.5 A bare phrase structure hypothesis

Up so far, I have argued that the definite article, regardless of its morphology, is under all respects a functional head in the extended projection of the noun phrase. As such, it is expected to comply with the properties of functional heads assumed in (A1)-(A3) above: it is realized either as a free dummy or as an inflectional morpheme, it is merged as a last resort, and it shares all the  $\phi$ -features of the extended CHAIN.

Being a functional head in the extended projection of the noun, it can only trigger incorporation of the lexical noun. Incorporation of other lexical heads is not expected under a strict version of the Head Movement Constraint, which I maintain here. The apparent incorporation to adjectival heads will be treated in section 3.6.

In all the languages observed here, the article appears to be the highest element of the noun phrase. In a bottom-up procedure this is captured by assuming that it is merged as the last functional head in the extended CHAIN. I will follow here a radical version of the bare phrase structure hypothesis under which merge and move are interacting procedures, each immediately applying on the resulting derivation of the other. All local movements, specifically head-movements, are reduced to a single-step movement re-iterated after every application of Merge. If this approach is correct, we expect the enclitic article to be merged in a configuration in which the immediately lower functional head is or contains the lexical head noun. This is actually the case, as Dimitrova-Vulchanova and Giusti (1998) have argued. Variation across languages is to be explained by independent properties of N-movement and its trigger. Let us focus on single cases.

In Norwegian, N can move across a possessive adjective, cf. Taraldsen (1990):

- (31) a. mitt hus  
 b. huset mitt  
 “my house”

Taraldsen shows that the word order in (31b) is derived by the basic order (31a) and a further application of N-movement triggered by the presence of the enclitic article. In

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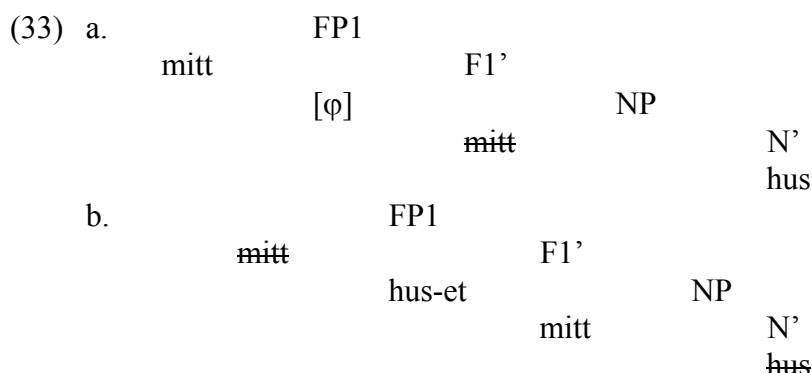
27 I refer to Giusti (1997) for an account of the obligatory presence of the article in (30c-d)

Giusti (1995), I observed that Taraldsen’s proposal could not account for the different position of the adjective and the possessive pronoun in noun phrases such as (32a) and (32b):

- (32) a. mitt store hus  
 b. det store huset mitt  
 “my old house”

In (32a) the adjective follows the possessive, while in (32b) it precedes it. If (31a) was the base of (31b) we would expect the adjective in (32) to be in the same order with respect to the possessive pronoun. This criticism assumed Cinque’s (1994) hypothesis on noun phrase structure, which is set in an X’-account in which all projections are labelled and present even if not lexically filled, and each element is generated in a given position and may move to a different one to check features. In a bare phrase structure framework, however, it is the filler which labels the projection and the structure is projected bottom-up.

I maintain, following Brugè (this volume), that possessives are (universally) merged very early in the structure: I take it here to be in SpecNP for expository reasons. The possessive carries a referential index. It is therefore sufficient to qualify the noun phrase as an argument provided that it fills a functional Spec, according to assumption (A4). In (33a), the bare phrase structure of (31a), the possessive adjective is merged in SpecFP1. Alternatively, the possessive procrastinates movement to SpecFP1, SpecFP1 must therefore be merged although empty. The last resort to project a functional structure is to merge the enclitic article triggering N-movement, as in (33b), parallel to (31b). In this case SpecFP1 remains available for covert movement of the possessive pronoun, to yield the same interpretation as (33a/31a):<sup>28</sup>



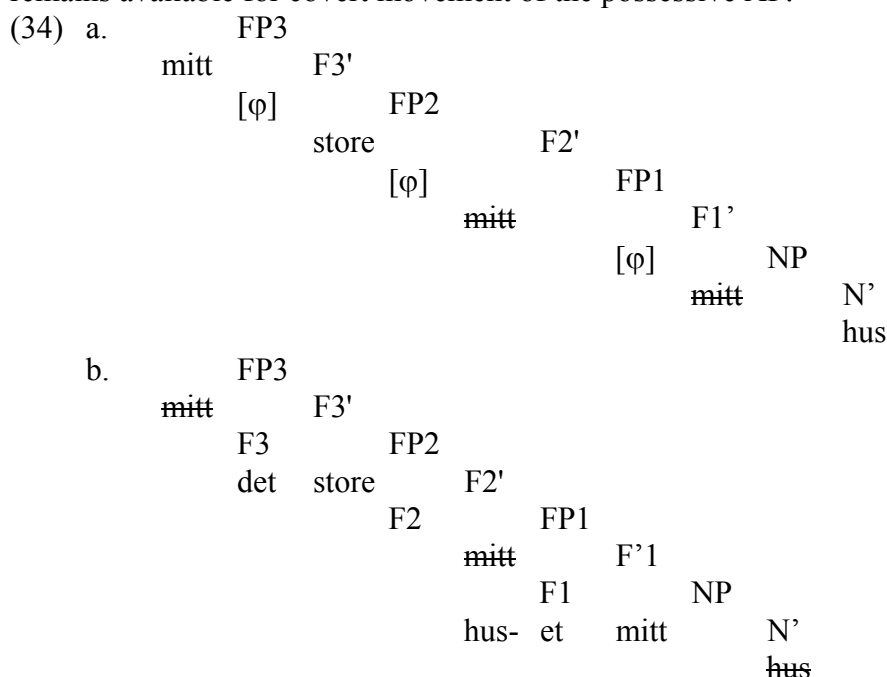
In other words, in (33) the possessive belongs to the same CHAIN in both structures. The only difference between the two structures in this respect is that in (33a) the upper link of the chain is phonetically realized, while in (33b) it is the lower link to be realized. In (33b), for the CHAIN to be interpretable, FP1 must be visible. Since

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28. Procrastination of possessive movement is possibly related to the fact that N can move across it, yielding a configuration in which N not only agrees with but also c-commands the possessive. These two phenomena go together in the languages considered here.

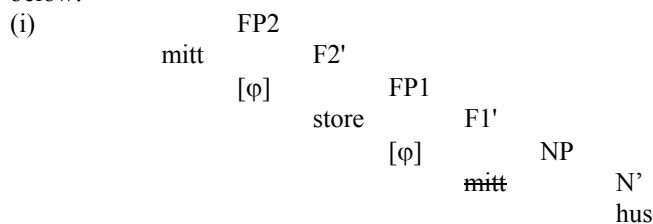
SpecFP1 is silent, F1 must be overt. This is what forces merging of the enclitic article and further movement of the head N.

On top of FP1 adjectives are merged recursively as specifiers of additional functional projections. This is the trigger for the FP2 projection below. Each functional head is projected copying all the  $\phi$ -features of the lexical head. The last application of Merge must create a functional Specifier where the referential index of the noun phrase is checked. If these operations apply to (33a), the possessive pronoun moves to the highest Spec thereby yielding (34a). If they apply to (33b), a free morpheme is inserted to fill the head of the highest functional projection, as in (34b), where the highest Spec remains available for covert movement of the possessive AP.<sup>29</sup>



The heads containing  $\phi$ -features are present although not overt, given that the features are otherwise recoverable from the morphology in their specifier. This complies with assumption (A1).<sup>30</sup> N-movement to F3 is excluded by the fact that the head did not raise to F2 in the cycle in which F2 was merged.

29. As a matter of fact, in (34a) movement of the possessive from SpecNP to SpecFP1 is vacuous and therefore irrelevant in a bare phrase structure approach. It is only reported to show the parallelism with (33a) on the one hand and (34b) on the other. The actual structure for (34a) should be rephrased as in (i) below:



30. The ungrammatical string in (i) is excluded if we assume, as suggested in fn. 28, that the possessive cannot procrastinate movement to SpecFP<sup>max</sup> if N has not moved across it:

(i) \*det store mit hus

In Norwegian, the realization of the enclitic *-et* on an N which is in a extended head CHAIN together with a free definite article, must be listed in the lexicon as a property of the inflectional morphology of nouns. The free morpheme *det* must be listed in the lexicon as the dummy to fill an  $F^{max}$  in case N-*et* cannot reach  $F^{max}$  before Spell Out. (A2) can be refined to explain the contrast in (35):

- (35) a. huset  
 b. \*det hus  
 c. \*det huset  
 “the house”

(35c) is already excluded by (A1). FP1 is already sufficient to satisfy all the interpretive requirements on the noun phrase and no further head can be projected to host the dummy *det*. (A2), as it stands, cannot decide between (35a) and (35b). In other words, we must introduce a hierarchy of “optimal realization” according to which the enclitic article is preferred over the free article:

- (A2') If a functional head is realized, the optimal realization is the morphologically weakest.<sup>31</sup>

Danish is minimally different from Norwegian in that the enclitic article cannot appear in the same extended head CHAIN with a dummy. In other words, it cannot function as an inflectional morpheme in an intermediate projection. This implies that if it is inserted, its specifier must contain the covert operator with referential index, and no other application of Merge can apply, as in (36a). If adjectives are merged in the noun phrase, the only available functional head to realize the highest projection, is the free *det*, as in (36b), for the same reasons as in Norwegian above, namely to comply with locality:

- (36) a. [<sub>FP1</sub> [<sub>hus</sub>-[<sub>F1</sub>et]] [<sub>NP</sub> hus]]  
 b. [<sub>FP2</sub> [<sub>F2'</sub> det [<sub>FP1</sub> store [<sub>NP</sub> hus]]]]

The crosslinguistic variation between Danish and Swedish can be reduced to a stricter application of (A1) in Danish.

Bulgarian (37) parallels Danish (36a). Differently from Danish, the Bulgarian lexicon has nothing like a free article. So, there is nothing like (36b) in Bulgarian:

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31. (A2) can be subsumed by a general “minimize structure” principle (cf. Cardinaletti 1994) if we extend Borer’s (1997) proposal on the syntax-morphology interface to functional elements. According to Borer, a complex event nominal is derived in the morphological component by projecting the verbal head and then incorporating it into a nominal head. This complex nominal head is inserted in the syntax with the internal VP still able to assign the  $\theta$ -roles to its arguments. But it behaves like other nominal heads in all other respects.

In the case under consideration here, the free morpheme *det* is formed by incorporating a root *d-* to the clitic *-et*. This procedure takes place in the morphology and not in the syntax, since *det* behaves as a simple head. However its insertion is less optimal than insertion of the enclitic *-et* since it has a more complex structure.

(37) [FP1 [momče-[F1to]] [NP ~~momče~~]]

When the adjective is merged, the noun does not move to the newly merged functional head, as in the indefinite noun phrase (38a). Merging of the enclitic article in FP2 does not trigger N-movement. Given that head movement applies cyclically, N cannot reach F2 in (38b):

(38) a. [FP1 goljamo FP1 [NP momče]]  
 b. [FP2 -to [FP1 [AP goljamo] FP1 [NP momče]]]

The alternative is for AP to move to SpecFP2. The details of this procedure will be dealt with in 3.6.

Rumanian and Albanian show the exactly opposite situation. The noun is cyclically moved into the newly merged functional head. In Rumanian, the noun can precede a descriptive adjective. In our framework, this means that it moved to F1 in the previous cycle, as in (39a). In (39b), we observe that the noun can further move across the demonstrative provided that an enclitic article is merged to project the relevant portion of structure:

(39) a. [FP2 acest [F2 băiat] [FP1 [AP frumos] băiat [NP băiat]]]  
 b. [FP3[[băiat-[F3ul]][FP2acesta [[F2băiat][FP1[APfrumos][[F1băiat][NP băiat]]]]]]]

In Albanian the noun must always move across the adjective:<sup>32</sup>

(40) a. [FP4një [FP3[F3grua]][FP2tjetër [[F2grua][FP1[APe bukur][[F1grua][NPgrua]]]]]]]  
 b. [FP3[[grua-[F3ja]][FP2tjetër [[F2grua][FP1[APe bukur] [[F1grua] [NPgrua]]]]]]]

The general observation made above that the enclitic article triggers N-movement only in those configurations in which the noun is in the head of the highest projection in the preceding cycle appears to be empirically true.

Let us finally analyse the Rumanian data in (30) above, where the article is not inserted if the noun is preceded by a preposition and has no modifier:

(41) a. [FP1 [F1 pentru] [NP scrisoare]]  
 b. [FP3 [F3 pentru] [FP2 scrisoarea [FP1 frumoasă [NP scrisoare]]]]]

In both structure of (41), the preposition *pentru* fills  $F^{max}$ . In (41a) *pentru* provides the morphological realization of Case features, while N has its own  $\phi$ -features: so, the derivation is complete. In (41b), a modifier is inserted in FP1. For the adjective to agree with the noun, the adjective must be in a functional specifier whose head has the complete  $\phi$ -feature specification of the noun phrase. For the head F1 to be in a CHAIN with the relevant  $\phi$ -features, the noun must move across it. This triggers insertion of the article in F2. Finally, the preposition is merged in F3.

32. To simplify the structure, I assume that the indefinite marker *një*, which is optional, is in SpecFP4, but I have no claim on its actual position.

It is beyond the goal of this paper to explain what makes it necessary for the head noun to move across modifiers in some languages and not in others.

### 3. The Occupants of SpecFP<sup>max</sup>

In various cases above, I have assumed without discussion that possessive adjectives and demonstratives are maximal projections in specifier positions, even in languages where they appear in complementary distribution with the article. This complementary distribution between a lexical head in F<sup>max</sup> and an XP in SpecFP<sup>max</sup> is derived by the interaction of assumption (A1), which disallows insertion of an overt element in a functional head if not necessary, and a general principle such as (42), proposed in Dimitrova-Vulchanova and Giusti (1998):

(42) Principle of economy of lexical insertion:

- A functional projection must be licenced at all levels of representation by
- a. Making the specifier visible
  - b. Making the head visible.

(42) is partly subsumed by the general theory of bare phrase structure, since a functional projection is built only if an XP is merged as its specifier or a functional element is merged in its head. (42a) and (42b) can be either disjoint or conjoint, in the former case it derives the “doubly-filled Comp Filter”, when they are conjoint it accounts for Verb second structures and doubly filled Comp languages. The choice between the conjunction or the disjunction of the two conditions in (42) depends on the languages, on the projection and on the element in Specifier position.

With respect to our topic, we will see that (42a) and (42b) are disjoint in cases in which the possessive adjective or the demonstrative is in complementary distribution with the article; they are conjoint in those cases in which the possessive adjective or the demonstrative precedes the article. We will see below that the demonstrative and the possessive adjective are not the only categories to appear in SpecFP<sup>max</sup>.

#### 3.1. Demonstratives

In Giusti (1993, 1994a, 1997) I proposed, on comparative evidence, that demonstratives are maximal elements inserted in functional specifiers. For Rumanian, I argued for the maximal status of the demonstrative *acest(a)* on the ground that starting from a basic word order as in (43a), the demonstrative can only be crossed over by the head noun, as in (43b) and not by an adjective which is more certainly than the noun a maximal element, as in (43c):

- (43) a. *acest băiat frumos*  
this boy nice  
b. *băiatul (acesta) frumos*  
boy-the (this) nice  
c. *frumosul (\*acesta) băiat*  
nice-this (\*this) boy  
“this nice boy”



The alternative is (47) where the demonstrative moves to an intermediate position before moving to SpecFP<sup>max</sup>:

- (47) a. [FP<sup>max</sup> dem. [N+art [FP<sup>4</sup> dem. [N [FP<sup>3</sup> descr.AP [N [FP<sup>2</sup> dem. [N [FP<sup>1</sup> poss.AP [N]]]]]]]]]]  
 b. acest băiat frumos al său  
 c. \*\*băiatul frumos acesta al său  
 d. băiatul acesta frumos al său  
 e. \*\*acest băiatul (frumos al său)

In (47a), the head noun moves cyclically, first across the poss.AP, then across the descriptive AP. At this stage, the demonstrative must move to FP<sup>4</sup>, as shown by the grammaticality of (47b) and the ungrammaticality of (47c). At this point the merging procedure can stop. In (47b) the demonstrative is in SpecFP<sup>max</sup>, the noun phrase complies with (A4) no article is merged in this structure. However, an enclitic article can be merged to create a further projection, as the full structure in (47d). Merging of the article triggers further N-movement and the creation of a new Specifier position which must remain available for further movement of the demonstrative at LF. (47e) is excluded by (A1), according to which merging of the article is a last resort procedure. If dem is in SpecFP<sup>max</sup>, the head F<sup>max</sup> needs not be overt and thus cannot.

Two open questions are left in the analysis of the pattern in (47): What makes movement of the demonstrative to the intermediate position necessary in (47d). And what makes merging of the article in (47d) necessary.

The former question is spurious in a bare phrase structure framework: demonstrative movement in (47b) is of the same kind as in (47d). Both are driven by (A4), namely by interpretive reasons. Rumanian is parallel to Italian and different from Spanish, in that demonstrative movement cannot procrastinate. Rumanian differs from Italian in the nature of the article. The Rumanian enclitic article triggers N-movement, the Italian free article does not. As for the second question, Tasmowski-De Ryck (1990) convincingly argues that the two positions of the demonstrative have a different discourse interpretation: The prenominal position is thematic, while the postnominal one is rhematic. The merging of the article in (47d) is therefore necessary to trigger N-movement and the consequent rhematic interpretation of the demonstrative.

The unacceptability of the demonstrative in (43c) above is still explained by the crucial assumption that the demonstrative must appear in SpecFP<sup>max</sup> at the latest at the LF level. In (43c) the adjective inflected for the article occupies this position making it unavailable for checking of the demonstrative at LF.

Bernstein's (1997) proposal is an alternative to the present account in two respects: On the one hand, the complementary distribution of the demonstrative and the article is taken as evidence that the two elements compete for the same position. The demonstrative is thus taken to cliticize onto D. On the other hand, it is proposed that such movement does not apply in the case of non-deictic demonstratives as in (48):

- (48) a. there's this guy  
 b. il y a ce gars

The demonstratives in (48), being non-deictic would not be in the highest specifier.

According to Bernstein they are preceded by an empty functional projection. This predicts that there must be some word order differences between deictic and non-deictic demonstratives, at least in Romance languages where the noun moves across specifiers, contrary to facts.<sup>33</sup> Furthermore, in Romance languages indefinite singular noun phrases cannot lack an article, as is also the case for plural indefinite noun phrases in subject positions. In Bernstein's framework, we would expect an indefinite article to precede the indefinite demonstrative. But this is never the case and the non-deictic demonstrative appears to be in complementary distribution with the article as well as with other determiners:

- (49) a. C'è \*(un) ragazzo nuovo che mi piace molto.  
 b. C'è (\*un) questo ragazzo nuovo che mi piace molto.  
 There's this new guy who I like a lot

In the bare phrase structure analysis developed here there is no way to differentiate between a high position preceded by an empty functional head and the topmost position. I think this is welcome, given that there is no syntactic effect to be noticed between the two positions. The different interpretation can be reduced to two different associations of lexico-semantic features to an element in a given language. In particular, the non-deictic interpretation is incompatible with a deictic reinforcer.

A functional head status for demonstratives has been argued against in section 2. above in comparison with the functional status of articles.<sup>34</sup> In the framework developed here the complementary distribution of the demonstrative and the article is dealt with by assuming a disjunction of the two conditions in (42). The assumption of the clitic-like status for demonstratives in languages such as Italian would not dispense with (42). Notice that in Italian demonstratives would be the only bisyllabic clitics and the only clitics to appear inside the noun phrase.

Summarizing: the demonstrative moves to a high functional specifier to let its interpretive features percolate onto the noun phrase which contains it. This movement can procrastinate in some languages, cf. Spanish among many others, but it must take place while constructing the structure in others, among which Italian and Rumanian. The second position of the demonstrative in Rumanian is analysed here as the result of such movement and a further application of Merge to allow for the noun to cross the

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33. Bernstein reports that Romance languages do not have non deictic demonstratives except French. This is not correct for Italian which makes massive use of them. In Italian, parallel to what Bernstein notices for French, they cannot occur with a reinforcer. The same is the case for Spanish, according to Brugè (this volume). Both Italian and Spanish may be considered to have the position of the non deictic demonstrative so high that it cannot be crossed by N-movement. Unfortunately, Rumanian does not have the non-deictic demonstrative in either position.

34. This does not hold for French *ce* which displays many properties in common with clitics. However, it is still necessary to make a difference between a clitic or a weak element and a functional element filling a head in the extended projection. One important difference between these two categories is that the clitic is linked to an XP position with independent semantic properties; while the functional head is merged as a last resort and only realizes functional features. This difference is also present in Bernstein's analysis, in that it allows for movement of the demonstrative to SpecDP in those languages, e.g. Greek, where the demonstrative cooccurs with an article in D. However, in these languages the demonstratives are not morphologically "heavier" than e.g. in Italian.

demonstrative and derive a rhematic interpretation of it.

The apparent second position of the demonstrative is not so language-specific as may appear at first sight. If we take functional prepositions to be part of the extended projection of the noun phrase, we must take demonstratives preceded by such prepositions as being in second position, cf. (14b) above in German and the parallel case in Italian (50b):

- (50) a. Ci vediamo all'entrata della stazione.  
b. Ci vediamo a quell'entrata laggiù.  
"Let's meet at the entrance down there."

At various points above (cf. 2.1. (3b) for Italian, 2.3. (14b) for German, 2.4. (30b) for Rumanian), I have hinted at the possibility of considering (at least some) prepositions as merged in  $F^{max}$ . This is also the position of the preposition in (50b). The demonstrative is necessarily in the immediately lower SpecFP. I assume that, according to (A4), it will covertly move to  $SpecFP^{max}$ .

### 3.2. *possessive adjectives*

Possessive adjectives are often considered determiners in Germanic languages. However, even in these languages, there are cases in which the two different elements can co-occur. This happens if the possessive is lower than the article. We have already observed and analysed the Norwegian case in (31) above. Let us observe now the case of German in (51):

- (51) a. (\*die) meine Frage  
b. diese meine Frage

In (51a) we observe the unmarked case. In (51b) the noun phrase is emphatic. In (52a) the elliptic noun phrase consists of a possessive pronoun which displays strong inflection. In (52b) an article precedes the possessive adjective which displays weak inflection, typical of regular adjectives:

- (52) Deine Fragen wurden beantwortet, ...  
a. meine jedoch nicht.  
b. die meinen jedoch nicht.  
"Your questions were answered, mine however were not."

Up to this point I have maintained that if an element starts as an XP, it also moves as XP, unless it is a weak element (e.g. clitics or weak pronouns). The possessive in German cannot be weak, since it is bisyllabic. I take it to be an XP in all cases. The apparent complementary distribution with the article can be reduced to an either/or choice of principle (43) above.<sup>35</sup>

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35. This is not to deny that in some languages, e.g. Spanish (cf. Picallo 1994) possessive adjectives may be clitics, namely behaving in some respects like heads. However, if the possessive adjective is a clitic, it is a functional element which originates in a maximal projection in a Specifier position, and further

A SpecFP<sup>max</sup> position can also be argued for in the case of possessive adjectives modifying kinship terms in Italian. In (53), it is shown that it must be a property of the noun which triggers the observed complementary distribution of possessive adjectives and articles, and not a property of the adjective itself which remains morphologically the same in all cases:

- (53) a. (\*la) sua madre  
 b. % (la) sua mamma  
 c. \*(la) sua (amata) madre (adorata)  
 “his/her dear mother”

In (53a) the article is ungrammatical when the possessive adjective modifies the noun *madre*. In (53b) the situation changes with the noun *mamma* with the same meaning but more colloquial than *madre*. Here the presence of the article is allowed only in northern regional varieties, while it is excluded in other regional varieties and in the standard. In (53c) the noun *madre* is further modified by an adjective (regardless whether it is pre- or post-nominal) and the article becomes obligatory again.<sup>36</sup>

First of all, we must observe that this is a property of a closed class of lexical items which includes only some kinship terms, e.g. *madre*, *padre*, *fratello*, *sorella*, *zio/a*, *cugino/a*, *nonno/a*, *cognato/a*, *suocero/a* but not *mamma*, *papà*, *fratellastro*, *sorellastra*, *patrigno*, *matrigna*, *consuocero/a*, *prozio/a*, *bisnonno/a*, as well as the diminutive counterparts of the former group of nouns, e.g. *mammina* (in the variant where *mamma* patterns with *madre*), *sorellina*, *nonnetta*, *zietta*, etc.:

- (54) a. (\*la) mia sorella  
 b. \*(la) mia sorellina

Second, it takes place only in case no other modifier than the possessive adjective is inserted, as shown in (53c). This latter property suggests that the structure of (53a) and (54a) is minimal. Possibly limited to one functional projection. This may be due to a particular property of these nouns which assign a particular  $\theta$ -role in SpecNP. Merging the possessive adjective in SpecFP1 satisfies every requirement of the noun phrase. But if a further adjective is inserted, as in (53c), the usual structure is projected to allow partial N-movement. In this case, the noun phrase has the same structure as other common nouns and merging of an article is necessary. In the cases of other kinship terms which do not display the property of discharging the  $\theta$ -role in SpecNP, the result is the same as other common nouns.

Possessive adjectives are not the only adjectives which can carry referential features and therefore be moved to SpecFP<sup>max</sup>. Delsing (1993:118-9) presents a list of referential adjectives in Scandinavian which trigger apparent optional article insertion when they modify certain nouns:

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moves into a functional head of the structure and never a purely functional head. For possessive clitics also cf. Cardinaletti (1999).

36. Recall that merging of the article was made necessary by the presence of an adjective in Rumanian prepositional phrases in (30) above.

- (55) (*den*) franska revolutionen, (*den*) svenska kyrkan, Svarta Havet, Vita Huset, ...  
 (the) French Revolution-the, (the) Swedish Church-the, Black Sea-the, White House-the  
 (*det*) sista paret, (*den*) tredje gången, (*den*) yttre/inre sängen, (*den*) västra sidan,  
 ...  
 the last pair-the, the third time, the outer/inner bed-the, the western side-the

In the framework adopted here the article cannot be optional, given that it is a last resort procedure. The noun phrases in (55) must have two different structures one in which the article cannot be inserted and one in which the article must be inserted. The former is parallel to the analysis proposed for Italian kinship terms modified by possessive adjectives, the other is the structure for common noun phrases.

### 3.3. *Personal pronouns*

Postal's (1969) seminal work drew attention to the possibility for personal pronouns to introduce noun phrases. In our framework we may wonder whether they are functional heads or Specifiers. Here I will argue for the latter hypothesis.

In Italian (56a) the pronoun is in complementary distribution with an article, but this is not the case in Rumanian (56b):

- (56)a. Voi (\*i) professori credete che sia facile ma per noi (\*gli) studenti è difficile.  
 b. Dumneavoastră profesori\*(i) credeți că e ușor, dar după noi elevi\*(i) ește greu.<sup>37</sup>  
 "You professors believe that it is easy, but for us students it is difficult."

It is crucial to establish whether we are dealing with two instances of the same construction and what this is. Cardinaletti (1994) argues for Italian, and this could be straightforwardly extended to Rumanian, that pronouns are full noun phrases and that the following nominal is in a sort of predicate position. (57a) would be parallel to (57b), on the ground that the two noun phrases behave similarly with respect to some tests:

- (57) a. noi/voi linguisti  
 b. i miei amici linguisti

I follow Cardinaletti in taking the two strings in (57) as two instances of the same construction. I also agree with her in analysing strong pronouns as full noun phrases. But I depart from her line of reasoning where this is taken to be evidence for an adjunction construction, extending the parallelism to other cases of multiple occurrences of nouns and/or proper names in a single noun phrase with a single referential index, such as those discussed in section 3.4. below.

The framework developed here provides a straightforward explanation to the contrast between Italian and Rumanian in (56) above, provided that we assume a rather costless stipulation: In Rumanian, Merge of the pronoun is not sufficient to make the

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37. The Rumanian example is taken from Lombard (1974:96). It is interesting to notice for the sake of the following discussion that, although Lombard poses the nouns following the pronouns in commas, he explicitly remarks that this is not obligatory.

extended projection of the noun phrase visible, while in Italian it is. The two conditions in (42) must be conjoint in Rumanian, while they must be disjoint in Italian.<sup>38</sup>

If pronouns carry the referential index of the noun phrase, they are expected to be in complementary distribution with demonstratives in the two languages, as in (58):

- (58) a. \*noi questi ragazzi  
b. \*noi acești băieți / \*noi băieții aceștia  
we these boys

Furthermore, if noun phrases are 3<sup>rd</sup> person by default, we expect that “Minimize structure” should prevent insertion of 3<sup>rd</sup> person pronouns, as is the case:

- (59) a. \*loro linguisti/e  
b. \*essi/esse linguisti/e  
they linguistist

### 3.4. Proper names

Proper names have many properties in common with demonstratives. Longobardi (1994) derives (60b) from (60a) by head movement of the lexical noun into D. He does not discuss the case of complex noun phrases such as those in (60c-d) below:

- (60) a. il mio Gianni  
b. Gianni mio  
c. Gianni Rossi  
d. Francesco Maria Finzi Contini

I propose that (60c-d) are in all respects parallel to (60b).

Reformulating Longobardi’s proposal in our bare phrase structure framework, we must face a problem: In (61) the lexical head *Gianni* projects a maximal projection in whose specifier the possessive adjective *mio* is merged. A functional projection is therefore merged to create at least the functional specifier which is the locus of interpretation of the whole noun phrase. The functional head is filled by the definite article showing that the Specifier is either empty or covert. The covert element cannot be the empty operator assumed for referential common nouns above, since proper names have different interpretive properties. The assumption of two different covert operators would be quite stipulative and could not explain how speakers can differentiate between the two. We are left either with Longobardi’s proposal that the head noun covertly moves to  $F^{\max}$  (D in his framework) by substitution (which also appears rather stipulative) or with a natural alternative, namely that the proper name is moved as NP into SpecFP2, covertly in (61a), overtly in (61b). In the latter case the article is not inserted:

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38. Hopefully, this stipulation can be accounted for by a deeper study of the morphologic realization of  $\phi$ -features and Case features in articles and pronouns in the two languages. I think that the enclitic vs. free nature of the article is irrelevant to this question, as was for the contrasts discussed in (21)-(23) above.

- (61) a.
- |                   |        |     |    |     |        |
|-------------------|--------|-----|----|-----|--------|
|                   |        | FP2 |    |     |        |
| NP                |        |     | F' |     |        |
| <del>Gianni</del> | F2     |     |    | FP1 |        |
|                   | il     | mio |    |     | F'     |
|                   | tenero |     | F1 |     | NP     |
|                   |        |     |    |     | Gianni |
- b.
- |        |    |       |    |     |                   |
|--------|----|-------|----|-----|-------------------|
|        |    | FP2   |    |     |                   |
| NP     |    |       | F' |     |                   |
| Gianni | F2 |       |    | FP1 |                   |
|        |    | Rossi |    |     | F'                |
|        |    | mio   | F1 |     | NP                |
|        |    |       |    |     | <del>Gianni</del> |

In (61a), the proper name is minimal and maximal at the same time and it is labeled NP.<sup>39</sup> A modifier is inserted in FP1, which can either be a further specification of the name or a possessive adjective (the lowest adjective in the hierarchy). Then the proper NP must raise to escape the cycle. A functional projection (FP2) is created by this application of Move. At this point in the derivation nothing else is necessary: the highest Spec has an index and that is sufficient to make the noun phrase interpretable at LF. Alternatively, the NP may remain in place and procrastinate movement when the modifier is the family name, obtaining *Rossi Gianni*. In this case too, nothing else needs to be done, since the family name also carries a referential index. The extended projection would stop at FP1 in (61a).

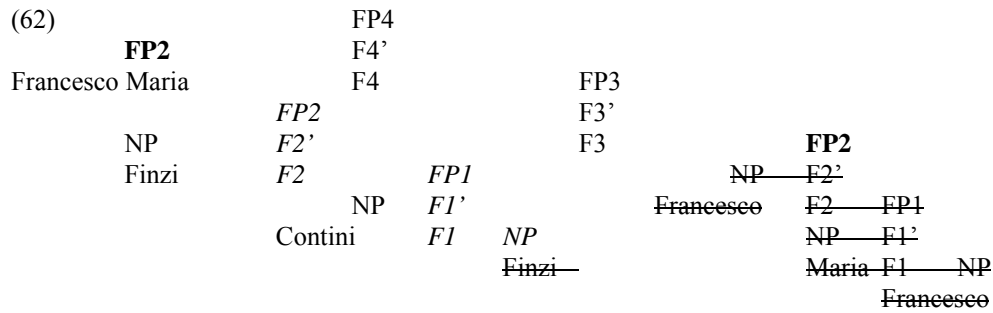
A possessive adjective in Italian cannot function as a referential operator, so either the NP moves across it, as in (61a), or a definite article is inserted to allow the NP to procrastinate this movement until later, as in (61b). I leave open the question of what prevents NP movement when a descriptive adjective is present.<sup>40</sup>

The case in (60d) is a cyclical application of the operations in (61a), as in (62):

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39. This is motivated by the fact that the proper name bears itself the R-relation which is in SpecNP in all noun phrases, according to Higginbotham (1987), and the assumption made here that referential features are checked in SpecFP<sup>max</sup>.

40. Given the XP status of the proper name, this prohibition reminds us of a relativized minimality effect. It is not clear, however, why the possessive does not give the same effect. Notice that in Longobardi's proposal relativized minimality could not be invoked to rule out the movement of the proper name. No reason is given there to distinguish between the possessive and the descriptive adjective.



In (62), first the complex first name *Francesco Maria* is created in FP2, then a complex family name *Finzi Contini* is merged with the same structure, which is labeled in italics to distinguish it from the structure of the first name. Finally the whole projection FP2 containing the proper name is merged to a higher specifier to give the referential index to the entire noun phrase, yielding *Francesco Maria Finzi Contini*. If this last movement does not apply, the referential index would be given by the last name, obtaining the string *Finzi Contini Francesco Maria*, which is typical of the bureaucratic style.

If we reconsider the different results with respect to the conflation of article and preposition observed in (3) above. We can now explain why this does not take place with proper names (or demonstratives). Proper names and demonstratives are in specifier position, while this phenomenon only involves two contiguous functional heads in the extended projection.

### 3.5. Apparent adpositions

Now we can go back to the problem presented by complex noun phrases such as (63a) pointed out in Cardinaletti (1994). I propose to extend the analysis given for complex proper names in (62) above to all complex noun phrases in (63):

- (63) a. i miei amici linguisti  
 b. Giovanni il giardiniere (“John gardener”)  
 c. il dottor Gianni Rossi (“doctor G.R.”)  
 d. (la) zia Vittoria (“aunt V.”)

An adposition analysis of the strings in (63) is excluded by the observation that they are not pronounced with comma intonation. The comma intonation is possible but not with all strings. Furthermore, it blocks vowel deletion and, crucially, produces a rather different interpretation, as expected if the second noun phrase is a predicate of the first.

Comma intonation is excluded for (64a,d), in (63c) the noun *dottor* is interpreted as an academic title, while in (64c) *dottore* is interpreted as the professional title “medical doctor” (as when no proper name is present at all) and does not delete the final vowel. Deletion of the epenthetic vowel of the article also takes place in fast speech in (63b) but not in (64b):

- (64) a. \*Francesco, Maria, Finzi, Contini  
 b. Giovanni, il giardiniere,

- c. il dottor\*(e), Gianni Rossi,
- d. \*la zia, Vittoria, / \*zia, Vittoria

I take this to be evidence that the noun phrases in (63) are not formed by a predicative adposition, while those in (64) are.<sup>41</sup> (64) shows that an adposition is only possible in a predication structure, namely when the two noun phrases have two different indexes.<sup>42</sup>

The proposal developed here provides a framework to merge a number of maximal projections as specifiers of the head noun. Let us start from the cases which display a definite article, since we have argued above for a specific position inside the noun phrase structure universally, namely the highest functional head in the extended projection of the noun phrase. In (63b), the proper name *Giovanni* must be a maximal projection in the specifier of the article. As a proper name it carries a referential index. This index percolates up to the entire noun phrase. (63c,d) display exactly the opposite case. Here the lexical head of the extended projection is the proper name and the common noun is a qualifying modifier. These proper names are therefore preceded by the definite article, parallel to proper names modified by a descriptive adjective, as in (65):

- (65) a. il tenero Giacomo  
“sweet Jakob”
- b. l’antipatica Maria  
“obnoxious Mary”

In (65), the head of the construction is certainly the proper name. The head of the construction in (63) can be determined following the intuition of the speaker: In (63a), repeated as (66a), it is *amici*. It is possible to construct a parallel case with the head noun *linguisti* obtaining a different word order, as in (66b). The pronominal position of the possessive is preferred when it refers to the head noun, as shown by comparing (66a) with the less acceptable (66c); while the postnominal possessive is preferred for the modifier noun phrase, as shown by comparing (66b) with the less acceptable (66d):

- (66) a. i miei amici linguisti
- b. i linguisti amici miei
- c. ?gli amici miei linguisti
- d. ?i linguisti miei amici

Other orders are unallowed. (67a) shows that the modifier noun phrase is merged

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41. I will leave open here what the actual structure of the adpositional construction is.

42. This can also be checked by construing full predication structures from (64):

- (i) a. \*Francesco è Maria
- b. \*Francesco Maria è Finzi Contini
- cf. Francesco Maria è *un* Finzi Contini
- (ii) Giovanni è il giardiniere
- (iii) Il dottore è Gianni Rossi
- (iv) a. \*la zia è Vittoria
- b. \*zia è Vittoria
- cf. (la) zia si chiama Vittoria

very early in the structure even earlier than the possessive adjective. (67b) show that the head noun must move across its noun phrase modifier:

- (67) a. \*gli amici linguisti miei  
 b. \*i miei linguisti amici

The early merging of the noun phrase modifier can be due to the slightly different properties of agreement for nouns and adjectives. For example a modifier noun phrase may in marginal cases display gender features different from the head noun, as in: *la mia amica medico* (“my friend-FEMM doctor-MASC”). In a bottom-up procedure, each newly projected functional head is identical to the lower one. Once the features triggering adjectival agreement are projected, no noun phrase modifier can be inserted. The noun phrase modifier must therefore be projected before the adjectival agreement projection is started. This excludes (67a) where the possessive is lower than and therefore merged before the modifier noun phrase. (67b) is excluded by the general principle that triggers partial N-movement in Italian.

### 3.6. Adjectives inflected for definiteness

As we have observed in examples in (5)-(8) above, languages that display prenominal adjectives in indefinite noun phrases, do so in definite noun phrases as well, regardless of the presence of the definite article. If the adjective is prenominal in the Balkan languages represented in (68) the article appears on the adjective:

- (68) Albanian a. e bukura vajzë  
 the nice-the girl  
 Bulgarian b. goljamoto momče  
 big-the boy  
 Rumanian c. frumosul băiat  
 nice-the boy

Grosu (1988) notices for Rumanian that head-movement of the adjective would incorrectly predict that the adjective would precede its adverbial modifier, as in (69b). But the enclitic article on the adjective does not change the canonical word order with the adverbial preceding the adjective, as in (69a). The same is the case in Albanian (70) and Bulgarian (71), as observed in Dimitrova-Vulchanova and Giusti (1998):

- (69) Rumanian a. foarte frumosul băiat  
 very nice-the boy  
 b. \*frumosul foarte băiat  
 (70) Albanian a. shumë e bukura vajzë  
 very the nice-the girl  
 b. \*e bukura shumë vajzë  
 (71) Bulgarian a. mnogo goljamoto momče  
 very big-the boy  
 b. \*goljamoto mnogo momče

Rephrasing the analysis proposed in Dimitrova-Vulchanova and Giusti (1998) in

the framework developed here, I propose the structure in (72) where the leftmost adjective<sup>43</sup> is merged in SpecFP<sup>max</sup> already inflected for the definite article:<sup>44</sup>

(72)

	F <sup>A</sup> P <sup>max</sup>			F <sup>N</sup> ,	
	AdvP	F <sup>A</sup> P		F <sup>N</sup>	NP
	F	AP		F <sup>A</sup> P <sup>max</sup>	N'
		A			N
a.	foarte	frumos- <i>ul</i>			băiat
b.	shumë	e bukur- <i>a</i>			vajzë
c.	mного	goljamo- <i>to</i>			momče

This hypothesis makes two correct predictions: First, if the prenominal adjective can have a complement, the inflection still appears on the adjective. Second, if the prenominal element is a conjunction of adjectives, the inflectional morphemes appears in both. These two facts could not be captured in the alternative hypothesis which assumes the enclitic article to be in F<sup>N</sup>.

In Bulgarian, as well as in other Slavic languages, it is possible for a prenominal modifier to display a complement. Let's compare the Bulgarian facts in (73) with the English Saxon Genitive in (74):

- (73) a. \*[[mного vernij na žena si][-at [muž]]]  
 b. [[mного vernij- at na žena si] [ [muž]]]  
 very true -the to wife his man  
 "the man very true to his wife"
- (74) a. [[the man I met yesterday] ['s [hat]]]  
 b. \*[[the man's I met yesterday] [ [hat]]]

In (73a) and (74a), the highest functional head of the noun phrase contains the relevant weak morpheme. In English this yields a grammatical structure. In Bulgarian this results in ungrammaticality. In (73b) and (74b), the weak morpheme is internal to the adjectival phrase. This is grammatical in Bulgarian and ungrammatical in English.

This contrast can be explained by (A2) which favors dependent morphemes over free ones to realize functional heads. English has a very poor inflectional morphology. In other words, it is very poor of dependent morphemes. The English 's is phonologically dependent but morphologically free, it is merged in the Genitive assigning functional projection which is also FP<sup>max</sup> in the English noun phrase, due to the fact that the noun phrase in its specifier percolates its referential value up to the

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43. Bulgarian is the only language in which the prenominal position of adjectives is the only possibility. Albanian hardly bares one prenominal adjective, as will be discussed in detail below. Rumanian prefers postnominal adjectives, like other Romance languages. However, if two prenominal adjectives are construed, only the leftmost one bears the definite article:

(i) Primele frumoase(\*le) fete  
 first-the beautiful girls

44. The AdvP is in SpecF<sup>A</sup>P<sup>max</sup> only for expository reasons. The only claim on the internal structure of the extended projection of the adjectival phrase here is that the enclitic article is an inflectional morpheme of the adjective. It is therefore not in the extended projection of the noun phrase.

entire  $FP^{max}$ . In Bulgarian, the noun is not moved across its modifier, the only possible way to insert an inflectional morpheme to realize the referential features of the noun phrase is to do so inside the extended projection of the adjective.

Coordination is a further argument in favour of the analysis in (72). If  $SpecF^N P^{max}$  hosts a coordinated structure, (72) predicts that the inflectional morphology appears on both coordinated adjectives, as in (75a) and (76a); while the alternative analysis which places the inflectional morpheme in  $F^N$  wrongly predicts that the inflectional morpheme is only one and it appears on the second conjoint adjective, as in (75b) and (76b):<sup>45</sup>

- (75) Rumanian a. frumoasele și bunele fete  
 beautiful-the and good-the girls  
 b. \*frumoase și bunele fete  
 c. \*frumoasele și bune fete
- (76) Albanian a. e gjora dhe e vogla vajzë  
 the poor-the and small-the girl  
 b. \*e gjora dhe e vogël vajzë  
 c. \*e gjorë dhe e vogla vajzë

### 3.7. Conclusions

In this section, I have motivated the assumption formulated in (A4) according to which  $SpecFP^{max}$  is the locus of the interpretation of the referential value of the noun phrase at LF. This assumption grounds two claims made here. One is stated in (H2) above and regards the categorial status of demonstratives as maximal projections. The other is complementary to (A1) according to which insertion of the article is a last resort. Insertion of the article is necessary if  $SpecFP^{max}$  must be projected but is either empty (because it must be available for movement of an XP at a later stage of the derivation) or covert (as in the case of the covert operator proposed by Campbell (1996)). If neither of these conditions is met, no article is needed.

## 4. Final Remarks

In this paper I have argued against a unified treatments of determiners but in favour of a principled treatment of functional heads in the extended projection of the noun phrase. One of these functional heads is the article crosslinguistically. I have proposed

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45. Bulgarian presents neither of the expected orders, indicated in (ii)-(iii). Instead we find (i) where the article appears on the first conjunct:

- (i) nova-ta i interesna kniga  
 new-the and interesting book  
 (ii) \*nova-ta i interesna-ta kniga  
 (iii) \*nova i interesna-ta kniga

The ungrammaticality of (iii) is crucial for our point here. Notice that the position of the enclitic article in the presence of a complement of the adjective in Bulgarian was our first piece of evidence in favor of (72).

(i) can also be explained in terms of (72) with additional assumptions independently necessary of other conjoined structures. I refer the reader to Dimitrova-Vulchanova and Giusti (1998:344) for a discussion of this property of Bulgarian.

that functional elements are never inserted for semantic reasons, since they have no semantic content. As a consequence, their insertion is a last resort procedure.

Demonstratives are different from articles and similar to other modifiers of the noun which provide referential features to the noun phrase. Among these, we can mention possessive adjectives, referential adjectives, possessive noun phrases and proper names. These elements contribute semantic content to the noun phrase and are maximal projections. The apparent complementary distribution of articles and these other elements is derived by the last resort nature of article insertion.

If this study is correct in its essentials, it offers a more radical way to look at functional elements as the realization of features of the lexical head of their extended projection. In an economy framework their realization is expected to be minimal.

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