On some properties of DPs in Modern Greek[*]

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1 Introduction

The purpose of this paper is twofold. One part investigates the structure of noun phrases in Modern Greek (hereafter MG) within the framework of GB theory. In particular, noun phrases are analysed as DPs, as it has been argued by Abney (1986) and by Horrocks and Stavrou (1985). Moreover, the structure of DPs is shown to parallel that of clauses in that other Functional Categories are instantiated in them. This proposal has been put forward by Ouhalla (1991), and accounts for word order in MG noun phrases.

The second part investigates extraction possibilities out of noun phrases. More precisely, the possibility of extraction mainly of the argument of N which occupies the [Spec,NP] position has led to the formulation of several proposals (Cinque (1980), Giorgi and Longobardi (1991), Pollock (1989b)). In MG this is the only possibility; I will try to show that it is related to a property associated with this argument, namely that it is directly K-governed by the head N, in the light of Manzini's (1992) Locality Theory. Also, the property of [Spec,DP] in MG to be a non-argument position in certain cases will be discussed in connection with the Condition standardly referred to as the Complex NP Constraint, again along the lines of Manzini's theory of Locality.

2 DPs in Modern Greek

2.1 Introduction

In this section the structural properties of DPs in MG will be discussed. I will begin by presenting the current proposals in relation to the status of argument noun phrases, namely that they have the categorial status of DPs. I will then discuss the idea that the structure of noun phrases parallels the one of clauses. This has been argued to hold not only for the structure of derived nouns, which have the same number of arguments and assign the same theta-roles as the corresponding verbs

but also for the structure of non-derived nouns, like *book*, whose possessor argument is considered to be the syntactic subject. Following the above theoretical argumentation, I will present the structure of noun phrases in MG. I will also discuss, briefly, the proposed structural position of the arguments of the noun and the properties of empty categories in DPs.

2.2 DPs instead of NPs

That the Determiner is a head which projects its own X'-structure has been argued by Abney (1986). He examines the properties of the Functional Categories (hereafter FC) (mainly Complementizers and Infl) which are non-lexical categories distinct from the lexical categories. Unlike substantives, FCs form a "closed" class. FCs select a complement to which they do not assign a theta-role, unlike substantives. Abney calls this selection *functional*. Finally, the role of FCs is to regulate or contribute to the interpretation of their complement: a [+wh] Complementizer indicates that the sentence is interrogative.

Determiners (articles, demonstratives) form a "closed" class, too. Their function in the sentence is to specify the reference of the noun phrase. Therefore, they belong to the set of FCs, functionally selecting an NP, as Infl selects a VP. On a par with the other FCs, Ds project their own X'-structure, NP being the complement of the D head.

The DP hypothesis is supported by two pieces of evidence taken from MG. The first concerns the case assigned to the noun phrase, which, morphologically, is primarily carried by the Determiner. This is more clearly seen in the case of foreign names which, unlike the Greek nouns, have no inflection at all when used in MG:

(1)   O Piter (Nom)
      the Peter
      Peter

(2)   Tou Piter (Gen)
      of-the Peter
      of Peter

(3)   Ton Piter (Acc)
      the Peter
      Peter

In the above example, the case is morphologically shown on D, whereas the noun does not change at all[1].

The second piece of evidence comes from extraction possibilities in MG. Wh-extracted or focussed arguments of the noun appear in a position before the Determiner (ex.4a&b). Notice, crucially, that only the argument that is marked with Genitive case can be preposed: in (5a) the PP argument of N is preposed and the sentence is ungrammatical. Also, in passive nominals preposing of the PP (the by-phrase) to initial DP position is excluded (ex.5b). Consider the sentences:

(4)   a.   Tinos$_i$ to vivlio t$_i$
            whose the book
            whose book

        b.   TOU YIANNI$_i$ to vivlio t$_i$
            of-the Yianni the book
            YIANNI's book

(5)   a.   *Jia pion$_i$ i agapi tou Yianni t$_i$
            for whom the love of-the Yianni
            *for whom Yianni's love

        b.   *Apo pion$_i$ i katastrofi tis polis t$_i$
            by whom the destruction of-the city

Horrocks and Stavrou (1985) propose that there is a projection above NP to the Spec(ifier) of which the extracted element can move. This projection is a DP which functions as the CP projection in clauses, that is, as an A'-position. English DPs lack such a position because the position before the noun is always an argument position:

(6)   The enemy's destruction of the city

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[1]The Greek nouns show Case morphology but this can be taken as an agreement relation between the head D and the complement NP.

Therefore in English no wh-phrase can move to it. This, according to Horrocks & Stavrou (ibid), explains the Complex NP Constraint (CNPC) existent in English but not in MG[2]:

(7)   *Who$_i$ did you hear the claim that they fired t$_i$

(8)   Pion$_i$ akouses ti fimi oti apelisan t$_i$
        whom hear-2s-past the rumour that fire-3p-past
        *who did you hear the rumour that they fired

The argument goes as follows: the extracted element can land in [Spec,DP] in MG as "an escape hatch", but a similar path is not possible in English, hence the ungrammaticality of (7).

2.3 DPs vs CPs/IPs

Derived nouns have the same argument structure as the corresponding verbs:

(9)   Mary translated the book

(10)   Mary's translation of the book

Also, similarly with the active/passive sentence pairs there are passive nominals whose internal argument has moved to the subject position as in the following examples:

(11)   a.   John described Mary
        b.   Mary was described by John

(12)   a.   John's description of Mary
        b.   Mary's description by John.

Additional evidence comes from ergatives as discussed in Giorgi & Longobardi (hereafter G&L) (1991). They argue for the existence of ergative nouns i.e. nouns derived from ergative verbs like *partire* (depart), *venire* (come), *entrare*

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[2]Judgements about the grammaticality of (8) differ among native speakers and my intuition is that the data are extremely marginal. We will return to this issue in section 2 where following Manzini's (1992) theory we will account for the ungrammaticality.

(enter). These nouns are shown to have the same properties with the corresponding verbs i.e. they subcategorise for an internal argument only. G&L (1991) argue that there are cases in which an argument of the noun can be expressed with an adjective. In these cases, the adjective is called "referential" and it can only express the external argument of the noun (we will return to that for further discussion later in the section). Since ergative verbs do not subcategorise for an external argument then the possibility to express an argument of an ergative noun with an adjective, if the relation between nouns and verbs holds, should not be available. This prediction is shown to be confirmed by data such as the following:

(13)　a.　L'entrata del governo in parlamento
　　　　　the entrance of the government in the parliament

　　　b.　*L'entrata governativa in parlamento
　　　　　the governmental entrance in the parliament

The same holds for MG:

(14)　a.　I anahorisi ton filon jia to Londino
　　　　　the departure of-the friends for-the London
　　　　　the friends' departure for London

　　　b.　*I filiki anahorisi jia to Londino
　　　　　the friendly departure for-the London
　　　　　*the friendly departure for London

　　　Entrata and *anahorisi* are nouns derived from ergative verbs and the expression of an argument with an adjective is impossible.

　　　It has also been argued that noun phrases, like clauses, form a Complete Functional Complex (CFC) in the sense that "it is a projection containing all grammatical functions compatible with its head" (Chomsky & Lasnik (1991)). Consider the sentences:

(15)　a.　I agapi tou Yianni$_i$ jia ti mitera tou$_{i/j}$
　　　　　the love of-the Yianni for the mother his-Gen
　　　　　Yianni's love for his mother

　　　b.　*I agapi tou Yianni$_i$ ji'afton$_i$
　　　　　the love of-the Yianni for him
　　　　　Yianni's love for him

In (15b) the R-expression (Yianni) c-commands[3] the pronoun (afton) and their coindexation leads to a violation of Principle B of the Binding theory (BT) according to which pronouns must be free (= not bound, not coindexed and hence not coreferential with a c-commanding antecedent) in their local domain. This is defined as "the minimal CFC containing A (A being an anaphor or a pronoun) and a governor for A...." (Chomsky & Lasnik (1991)).The minimal CFC is the whole DP containing the pronoun and its governor, the preposition, and in which all the grammatical functions of N, i.e. its subject (tou Yianni) and object ((ji')afton) are contained. If we now turn to (15a) the R-expression (Yianni) c-commands the pronoun (tou) but their coindexation does not violate any Principle of BT since the sentence is grammatical. Notice, however, that the lower DP, the one governed by the preposition (jia), constitutes a CFC because there is a head noun (mitera) and all the grammatical functions of this head, i.e. the possessive clitic *tou*, which is its syntactic subject, are contained in it. The pronoun is free in this CFC which contains itself and its governor, the noun, and then it can either be coindexed with the R-expression without causing any problems or it can have an arbitrary reference.

Ouhalla (1991) takes the argument some steps further by suggesting that Agreement also is instantiated in noun phrases. Moreover, the surface word order of noun phrases, which varies cross-linguistically is derived on the basis of the lexical properties of Functional heads, namely their c-selection and m-selection properties, exactly like in sentences. To give a concrete example, consider the derivation of SNO word order: English is an SNO language:

(16)   Mary's description of the book

Ouhalla (ibid) argues that in sentences like the one above there is no DP projection but only an AGRP which assigns Genitive to the subject realised as *'s*. If we assume that the subject is base-generated in [Spec,NP] and then moves to [Spec,AGRP] to be assigned case by AGR, a configuration in which AGRP is projected higher than NP gives the SNO order. As far as the parallelism with clauses is concerned, the argumentation proceeds along similar lines: the SVO order is derived by movement of the subject from [Spec,VP] to [Spec,AGRP] which appears higher than T. This movement is motivated by case reasons as argued for subject movement inside DPs.

Ouhalla (ibid) argues also that not all languages instantiate an AGRP; for example, in Romance languages case assignment is not morphologically shown and

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[3]The c-command relation follows from the structure of noun phrases in MG, to which we will turn soon.

a preposition is required to assign case.[4] Even in the same language, noun phrases are sometimes DPs and sometimes AGRPs. In English for example, there are cases in which there is only a DP projection, as in the following example:

(17)   The destruction of the city.

In such cases no AGRP is instantiated and this explains the complementary distribution of *'s* and the Determiner:

(18)   *The his/John's house.

So far arguments for the following issues have been presented:

(19)   (a)   D is the head of noun phrases.
       (b)   The structure of noun phrases parallels the one of clauses in that:
             (i)   they subcategorise for the same arguments as the corresponding verbs;
             (ii)   functional categories are instantiated in noun phrases as well.

Bearing these in mind let us turn to the structure of noun phrases in MG.

2.4 Structure of DPs in MG

Consider first the following sentences:

(20)   I perigrafi tou Yianni (ambiguous)
       the description of-the Yianni
       a.   Yianni's description
       b.   the description of Yianni

(21)   *I metafrasi tis Marias tou vivliou
       the translation of-the Maria of-the book
       Maria's translation of the book

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[4]We could go as far as saying that nouns in such cases do not assign case at all but it is rather the preposition that not only assigns case but also theta-marks the DP (Lyons (1986)).

(22) a.   I metafrasi tis Marias
            the translation of-the Maria
            Maria's translation
      b.   I metafrasi tis
            the translation her-Gen
            her translation

(23) a.   I metafrasi tou vivliou (apo ti Maria)
            the translation of-the book (by the Maria)
            the translation of the book (by Maria)
      b.   I metafrasi tou
            the translation it-Gen
            its translation

(24) a.   To vivlio tou Yianni
            the book of-the Yianni
            Yianni's book
      b.   To vivlio mou
            the book my-Gen
            my book

(25) I agapi tou Yianni jia ti Maria
      the love of-the Yianni for the Maria
      Yianni's love for Maria

(26) To tilefonima tou Yianni sti Maria
      the call of-the Yianni to-the Maria
      Yianni's call to Maria

As can be seen, the word order is always NSO. Also, there is at most one argument marked with Genitive case in the noun phrase (the sentence in (21) where two DPs are marked with Genitive case is ungrammatical)[5]. The Genitive case can be assigned either to the external argument (eg.(22a)) which corresponds to the

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[5]There are noun phrases in which two arguments appear to be marked with Genitive case:
        I metafrasi tou vivliou tis Marias
        the translation of-the book of-the Maria
        the translation of Maria's book
In such cases, as the translation also shows, they have an alternative irrelevant parsing with the second Genitive-case-marked DP within the first one.

external argument of the related verb, and which can also be expressed by a possessive clitic (eg.(22b)). Or, when the external argument is expressed in a by-phrase (eg.(23a)), Genitive case is assigned to the internal argument, which is again the same as the internal argument of the corresponding verb. Unlike verbal passive constructions, passivisation is optional in noun phrases.[6]
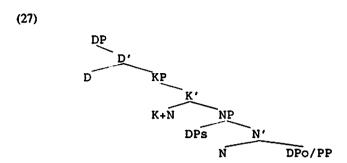
When the noun is not derived (eg.(24)) the possessor -either a DP (eg.(24a)) or a possessive clitic (eg.(24b))- is assigned Genitive case. Since either the external or the internal argument can be assigned Genitive case, it is clear why (20) is ambiguous. In cases where the subject is present and the corresponding verb transitive, the possibility of the object being marked for Genitive is not available, as it is borne by the subject. Thus, a preposition, mainly *jia*, is inserted, for case reasons as is the case with the English *of* or the Italian *di* (cf(25)). Finally, if the corresponding verb subcategorises for a PP argument, the same preposition introducing it is used in the prepositional argument of the noun, as well (cf(26)). The head noun always precedes the arguments and assigns Genitive to one of them, which is morphologically shown: no preposition is required.

Following Ouhalla (1991), this suggests that there is an AGRP in the noun phrase, which will be called KP (Kase-Phrase) as in Speas (1990) to differentiate it from clausal AGRP. Let us assume that K (the head of KP) has the feature [+Gen] and it is a bound morpheme (like AGR or TNS in clauses). Then its m-selectional properties must be satisfied at the S-structure level, that is, it must be adjoined to an appropriate host category, in order to satisfy the Generalised Projection Principle (GPP) (Ouhalla, 1991:25). Assuming that:

(a) the structure of NP is similar to that of a VP: the external argument is in [Spec,NP] and the internal one under N', as every complement,

(b) KP is projected above NP, because it c-selects an NP, and DP above KP because it c-selects a KP, and

(c) the head N moves and is adjoined to K because of the GPP,

then the expected word order is derived. The suggested structure is the following:

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[6]Ouhalla (1991) argues for English passive nominals that either the internal or the external argument can move to [Spec,AGRP] to be assigned case: this is not the case in verbal passives where this movement is allowed only for the internal argument (cf Ouhalla (ibid):177 for more discussion).

(27)

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        DP
          \
           D'
          /  \
        D      KP
                 \
                  K'
                 /  \
             K+N     NP
              /      /  \
           DPs      /    N'
                   N      \
                  /        DPo/PP
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The noun N has moved to the head K to pick up the feature [+Gen] and it assigns Genitive case to DP's (the subject). The other DP, the complement of N, which may also be a PP, cannot be assigned case: hence, the preposition *jia* is inserted. If the [Spec,NP] is empty, DPo can move to it and be assigned Genitive case (cf(23a)). This has a very important consequence for nouns in MG. It has been held (Chomsky (1986a), Kayne (1984)) that nouns are Inherent case assigners: they assign case only to an argument they theta-mark i.e. to their complement, so case is assigned under sisterhood and at D-structure. On the contrary, verbs are Structural case assigners (or else, Structural governors): they assign case only under government. In our case, Genitive is not assigned under sisterhood, nor to the complement which is theta-marked, nor at D-structure, nor with the insertion of some preposition. Rather, Genitive-Case-assignment takes place at S-structure, after movement of the head N to the head K, and whichever argument is in [Spec,NP] is assigned Genitive case features. Then, nouns in MG are Structural governors.

2.5 Discussion

Giorgi & Longobardi (G&L) (1991) present some arguments in favour of their proposal that both the external and the internal argument are base-generated to the right of the head noun in Romance but in the Germanic family the external is base-generated to the left and the internal to the right of N - with the exception of German and Dutch. Let us see how these arguments may apply to MG sentences.

2.5.1 Adjectives. One argument concerns the distribution of Adjectives: they are divided into two classes, those "that predicate a quality of a head N without denoting an object in the world and functioning as an argument of the head" (G&L,1991:122) called "predicative" and those that discharge a theta-role of the head N, called "referential" (they were mentioned above in the discussion about

ergative nouns). In Italian, a Predicative adjective can appear prenominally or postnominally with different interpretation each time: prenominally it has an appositive reading but postnominally it can have either an appositive or a restrictive reading. In English, it occurs only prenominally; in the rare cases of its occurring postnominally, it must be heavy:

(28) a. Una simpatica ragazza
      b. A nice girl
      c. Una ragazza simpatica
      d. *A girl nice
      e. A girl proud of her behaviour

More important is the second case. The theta-role that the adjective may have can only be the external one. The reason is that, if the adjective bears an internal theta-role, then, if it has to move prenominally, it will have to bind a trace but this is impossible (cf G&L, 1991:125-126 for discussion). Referential adjectives bearing the external theta-role appear only postnominally in Italian:

(29) a. L'invasione italiana dell' Albania
          lit: the invasion Italian of Albania
      b. *L'italiana invasione dell'Albania
          lit: the Italian invasion of Albania

A downwards movement is ruled out by ECP (the trace would not be c-commanded and hence not governed). This shows that the external theta-role is base-generated postnominally. In Germanic languages, however, it appears only prenominally. Since an upwards movement is excluded because, as before, the adjective would not be able to bind the trace left behind and the sentence would be ungrammatical, this shows that in Germanic languages the external argument is base-generated prenominally.

In MG the case is not so straightforward. In the case of either predicative or referential adjectives, their position depends on the definiteness or not of the Determiner. If the Determiner is definite the adjective appears always prenominally:

(30) a. To simpathitico koritsi (predicative Adj.)
          the nice-neut-Nom girl-neut-Nom
          the nice girl

b. I italiki epanastasi (referential Adj.)
the Italian-fem-Nom revolution-fem-Nom
the Italian revolution

But when the Det is indefinite the adjective can appear prenominally and postnominally:

(31) a. Simpathitica koritsia
nice-neut-Nom girls-neut-Nom
nice girls

b. Italikes epanastasis
Italian-fem-Nom revolutions-fem-Nom
Italian revolutions

(32) a. Koritsia simpathitica
girls-neut-Nom nice-neut-Nom
lit: girls nice

b. Epanastasis italikes
revolutions-fem-Nom Italian-fem-Nom
lit: revolutions Italian

Moreover, when the adjective occurs postnominally it has in either case a restrictive reading; in prenominal position the interpretation is appositive. Horrocks and Stavrou (1989) argue that the base-generated position is postnominal and the prenominal surface structure is derived by an application of "move-α", optional in the case of an indefinite Det but obligatory if the Det is definite. The problem with this explanation arises when we consider the case of referential adjectives which, as was already said, cannot move prenominally because they cannot bind a trace. Rather, it should be noted that postnominally an adjective appears either in copula constructions, (eg. with verbs like *become, exist, be* etc) or with ergative verbs like *happen*. Given also that it has a predicative interpretation, this shows that the construction is not a DP but, rather, a Small Clause headed by the adjective. Conclusively, Adjectives in DPs in MG appear only prenominally, which provides further evidence for the proposed structure of DPs in which the external argument is base-generated prenominally.

2.5.2 Affectedness Constraint. As proposed by Jaeggli (1986:607) and discussed in Anderson (1979) (see G&L (1991) for the reference) a class of nouns resist

passivisation i.e. their internal argument cannot move to the subject position. This happens only in cases that the internal argument is not affected by the action described by the noun, hence the name Affectedness Constraint:

(33) a. *The event's recollection
      b. *The problem's perception
      c. *The picture's observation

    Jaeggli (ibid) proposed that when the internal argument is unaffected, the external theta-role cannot be eliminated because it is necessary for the specification of the theta-role of the internal argument. Thus, movement of the internal argument to prenominal position is excluded. In Italian, the Affectedness Constraint does not hold. This can be accounted for, if we assume that the possessor position does not interfere with the position of the external argument so they can both coexist: hence, as G&L (ibid) have argued, this shows that the possessor position is to the left of the noun but the external argument position is to the right of the head noun.

    In MG the Affectedness Constraint does not hold either:

(34) a. I anamnisi tou gegonotos
        the recollection of-the event
      b. I sillipsi tou provlimatos
        the perception of-the problem
      c. I paratirisi tou pinaka
        the observation of-the picture

    This goes counter our proposal that the external argument is base-generated in [Spec,NP] since, if we assume that it must always be present, then the internal argument should not be able to move there and the sentences should be ungrammatical. So, either the position of the external argument is somewhere else or it is not true that the external argument must always be present.

    In English, the Affectedness Constraint is related to the impossibility of the corresponding verbs to appear in middle constructions: in these constructions, the external theta-role cannot be syntactically assigned:if we assume that these verbs require that the external theta-role be always assigned, this explains their incompatibility with the middle constructions. The assumption then that nouns and related verbs have the same thematic properties explains why in English these nouns do not allow passivisation.

    As far as MG is concerned, the related verbs do not appear in middle constructions, as is the case with English. It has, however, been suggested in Tsimpli (1989) that unlike English middle verbs, middle constructions in MG are

morphologically and syntactically similar to passive constructions, the difference being restricted to the generic reading that middles convey. Most importantly, in both cases the external theta-role is assigned; in middle constructions it has an arbitrary reading connected to the generic one. Consequently, the fact that MG verbs related to nouns which do not obey the Affectedness Constraint, do not appear in middle constructions, has nothing to do with the assignment of the external theta-role. The non-obligatory presence of the external argument explains the possibility of the internal argument to move to its position, thus there is no need to stipulate another position for the external argument.

There is, however, another set of nouns which obeys the Affectedness Constraint in MG as well as in Italian, English and other Romance and Germanic languages:

(35) a.   I epithimia jia apeleftherosi
            the desire for liberation
      b.   *I epithimia tis apeleftherosis
            the desire of-the liberation
            * the liberation's desire
      c.   I agapi jia/pros ta pedia
            the love for/towards the children
      d.   To misos jia/pros ti Maria
            the hatred for/towards (the) Maria

In the sentences above, the internal argument cannot move to the position of the external one to be assigned case (35b). It has been suggested that the prepositions in these cases are only homophonous with the Genitive case-markers in Italian etc or with *jia* in MG. In fact, they have different properties which do not allow passivisation: they are prepositions not inserted to assign case but they introduce the prepositional argument of the noun: the noun in such cases does not subcategorise for a DP but for a PP. This can be shown by the fact that other prepositions, like *pros*, are used, as well. Another suggestion is that the external argument position is already filled and that is why movement to it is not possible. The presence of an empty category can be detected if it can bind an anaphor in the PP. Consider the sentences:

(36) a.   I agapi jia ton eafto tis voithise ti Maria
            the love for the-self-her help-3s-past (the) Maria
            the love towards herself helped Maria

b.   O fovos jia ton eafto tis katestrepse ti Maria
the fear for the-self-her destroy-3s-past (the) Maria
the fear for herself destroyed Maria

The anaphor *eafto tis* is understood as coreferential with the experiencer of *love* and *fear* which is *Maria* in both cases. But since DPs are CFCs then the anaphor is bound in the DP by the understood subject in the [Spec,NP] position.

What remains to be done is to identify this empty category (ec). Since it cannot be a trace because no movement has occurred, it can either be a pro or a PRO. The pro-drop parameter requires the following(cited in Haegeman, 1991:418):

(37) a.   pro is governed by X;
b.   Let X be the licensing head of an occurrence of pro: then pro has the grammatical specification of the features of X coindexed with it.

Condition (a) is satisfied; the subject position is governed by (K+N) as we have indicated. However, (b) cannot be satisfied because the content of the ec cannot be recovered by the features of (K+N): the only feature it has is [+Gen]. The remaining possibility is PRO. This contradicts the requirement of the PRO-Theorem, that PRO must occur in ungoverned positions. In our case the position is governed by (K+N). However, as suggested by Chomsky & Lasnik (1991), PRO has case (null) like all other arguments. Assuming that PRO like other arguments moves from non-case marked positions to positions where its case can be assigned or checked, it follows that PRO can occur in governed positions, since Case is always assigned under government. Therefore, following this proposal, the ec in [Spec,NP] is PRO.

3 Extraction and [Spec,DP]

3.0 In this section two issues are considered. The first concerns extraction possibilities out of DPs in MG. The second issue concerns the properties of [Spec,DP] in MG: it was discussed in section 2 and it will be further argued below that it is an A'-position. However, not any wh-phrase can move to it. An account for that will be given following Manzini's (1992) theory.

3.1 The data and their interpretation

Let us first consider extraction of N's arguments. The DP can be either an object or a postverbal subject or a preverbal subject. Before proceeding, a few words should be said about the word order in sentences in MG. It has been argued in Tsimpli (1990) that MG is a VSO language: TP c-selects AGRP and this, in turn, c-selects a VP. V moves and attaches to the bound heads AGR and T and the subject, which is base-generated in [Spec,VP] where it is assigned the external theta-role, moves to [Spec,AGRP] where it is assigned Nominative case under coindexation with the head AGR. So, the canonical subject position is in [Spec,AGRP], lower than V. As for the SVO and VOS order, both attested in MG, it is argued that the subject is base-generated as a Topic adjoined to CP and is coindexed with a resumptive pronoun -pro- which is in the canonical subject position. Therefore, when we talk about a postverbal (but not post VP) subject in MG, we imply that it is in its canonical position, but a preverbal or a post VP subject is a topic. Let us now consider the following sentences:

(1) a.   [Tinos$_i$ i agapi t$_i$ jia ti Maria]$_j$ siginise t$_j$ ton kosmo
          whose the love for the Maria move-3s-past the people
          *whose the love for Maria moved the people

     b.   *[Jia pion$_i$ i agapi tou Yianni t$_i$]$_j$ siginise t$_j$ ton kosmo
          for whom the love of-the Yianni move-3s-past the people
          *for whom Yianni's love moved the people

     c.   *[Se pion$_i$ to tilefonima tou Yianni t$_i$]$_j$ costise t$_j$ poli
          to whom the call of-the Yianni cost-3s-past much
          *to whom Yianni's call cost a lot

(2) a.   Tinos$_i$ diavases to vivlio t$_i$
          whose read-2s-past the book
          *whose did you read the book

     b.   ?Tinos$_i$ akouses to tilefonima t$_i$
          whose hear-2s-past the call
          *whose did you hear the call

     c.   *Se pion$_i$ akouses to tilefonima tou Yianni t$_i$
          to whom hear-2s-past the call of-the Yianni
          *to whom did you hear Yianni's call

(3)   a.   *Tinos₁ siginise i agapi t₁ ton kosmo
             whose move-3s-past the love the people
             *whose moved the love the people

       b.   *Jia pion₁ siginise i agapi tou Yianni t₁ ton kosmo
             for whom move-3s-past the love of-the Yianni the people
             *for whom moved Yianni's love the people

(4)   a.   *Tinos₁ siginise ton kosmo i agapi t₁
             whose move-3s-past the people the love
             *whose moved the people the love

       b.   *Jia pion₁ siginise ton kosmo i agapi tou Yianni t₁
             for whom move-3s-past the people the love of-the Yianni
             *for whom moved the people Yianni's love

         As can be seen in examples (1b), (2c), (3b) and (4b) extraction of a PP
argument of N is in all cases impossible. Similar facts are attested in Italian and
French, as is discussed by Cinque (1980), Giorgi & Longobardi (1991) and Pollock
(1989b). Let us then consider extraction of the argument which is marked with
Genitive case. In (1a), the DP is a subject and, as was said before, it is not in its
canonical position. Therefore, we cannot say that only the wh-phrase moves to
[Spec,CP]. Rather, preposing within DP takes place before the whole DP moves to
[Spec,CP]. As was also said in section I (cf ex 4&5), only the Genitive-case-
marked argument can be preposed. This will be investigated in more details later
on in this section. In (2a) extraction of an argument bearing the possessor theta-role
out of a DP in object position does not give rise to ungrammaticality. Extraction
of an argument bearing the external theta-role in (2b), however, is not fully
grammatical. This could be explained if we assume that, unlike in VP's, the
extraction of N's arguments is lexically restricted, i.e. it depends on the theta-role
assigned to the argument. If we now turn to the example in (3a), the DP is in the
canonical subject position. Extraction is not possible due to the fact that it crosses
a subject island. The case could be saved if the whole DP was pied-piped with the
wh-phrase in situ or if, as in (1a), preposing had taken place before extraction of
the whole DP. Finally, in (4a), the DP is a topic and, hence, an adjunct and
extraction out of it is not possible because it will cross an adjunct island. In sum,
extraction of the PP argument is impossible; extraction of the argument marked
with Genitive case is possible unless there is an island violation or it is lexically
restrained.

For the rest of this section we will concentrate on (1a), i.e. on the fact that, although preposing is possible in DPs in MG, it is restricted to this argument which, regardless of its theta-role, is marked with Genitive. And on (2a), which illustrates extraction out of an object DP. First I will present theories which discuss such extraction facts, and I will show why they cannot apply in MG. Then I will present Manzini's (1992) theory which, I believe, explains this restriction in a more suitable way for the MG data.

3.2 Movement through [SPEC,NP]?

Cinque (1980) observes that only the [di,NP] PP argument of N can be extracted out of an NP[7] and that extraction takes place in the following order: if there is a possessive adjective, extraction of any other phrase is blocked. In the absence of a possessive adjective, the [di,NP] PP that qualifies as the syntactic subject can be extracted. The object [di,NP] PP can be extracted only when none of the other arguments is present. He does not, though, provide any account for that.

Giorgi and Longobardi (G&L) (1991) suggest an account of Cinque's (ibid) observations. They argue that the argument that can be extracted is the one that can also be possessivised. For example, the complement of the noun *desiderio* is ambiguous between a theme and an experiencer reading; however, when it is wh-moved or possessivised it has only the experiencer reading:

(5)   a.   Il desiderio di Gianni (ambiguous)
              1. Gianni's desire
              2. the desire for Gianni
       b.   Gianni, di cui abbiamo ricordato il desiderio (only experiencer)
              Gianni of whom we remembered the desire
       c.   Il suo desiderio (only experiencer)
              his desire

Consequently, they propose that movement is allowed only through [Spec,NP], where possessors surface. Their account for this obligatory movement is based on Kayne's (1984) suggestion that non-structural governors, like nouns in Italian, do not allow extraction of a wh-phrase unless its antecedent is inside their

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[7]It should be noted that in Italian, nouns do not directly case-mark their arguments but the preposition *di* is inserted to assign case. What Cinque wants to indicate is that prepositional complements of N cannot be extracted. This was said to be the case in MG, as well.

maximal projection. In case extraction is not possible, it is due to the fact that the trace in [Spec,NP] is not governed by a head outside NP.

In MG, it is true that only those DPs which are in [Spec,NP] are extracted, since, as was shown in section 2.2., only the Genitive-case-marked argument can be extracted, and this argument is obligatorily in [Spec,NP] for case reasons. Moreover, as was said in section I, nouns in MG are structural governors. Therefore, any stipulation about obligatory movement to [Spec,NP] before any further extraction is rendered unnecessary and redundant.

3.3 Reanalysis?

Pollock (1989b) argues that the [Spec,NP] position has nothing to do with extraction out of DPs: this is supported by examples, somewhat marginal, in which arguments other than the possessivised one are extracted. He argues that it is rather the property of the case-marking prepositions *of* in English and *de/di* in French/Italian, namely that they can be reanalysed, which allows their DP complement to be governed by V and to adjoin to VP[8]. He then attributes the fact that it is mainly the argument which is in [Spec,NP] that is extracted, to thematic properties of nouns.

In MG, extraction out of DPs or preposing to [Spec,DP], as said above, is only from [Spec,NP] and no other possibility is available. The DP in [Spec,NP] is assigned Genitive case directly by the noun and no insertion of a preposition is necessary. Therefore, we do not need to relate extraction to the possibility of reanalysis. Rather, with respect to the MG data, we should account for the relation between the head N and its Genitive-case-marked argument DP which allows it to be extracted. Such a relation is given in Manzini's (1992) theory briefly presented below.

3.4 Locality

Every lexical item is assigned an index called *categorial* index which percolates up to its maximal projection. If an XP is *K-governed*, that is, if a head case-marks it, then it is assigned the index of this head which together with the XP's categorial index form a pair of indices, namely an *address*. The address can also percolate down to the XP's head. Extractions are well-formed if either a *categorial index*

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[8]Here he follows Frampton's (1988) suggestion (see Pollock (1989b) for the reference) that for a phrase to be adjoined to VP, it must be governed by it.

sequence or an *address-based* sequence can be formed. Mainly, government should be respected, i.e. no Barriers should be crossed, in either case. The definition of what qualifies as a Barrier is given below:

(6)   (a)   g(overnment)-marking
              B g-marks A iff B is a head and
              (i) B is a sister to A or
              (ii) B is a sister to a category that agrees with A
              (an XP agrees with its head and its Spec).

       (b)   B is a Barrier for A iff
              B is a maximal projection, B dominates A and
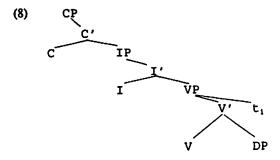   if A is g-marked, B dominates the g-marker of A.

So every XP is a Barrier unless there is another head (Y) to which the XP is a sister (which is the g-marker of the XP, its Spec and its head). In this case, the XP is not a Barrier but the maximal projection dominating Y (i.e. YP) is.

As its name suggests, a categorial index sequence can be formed by a wh-phrase bearing a categorial index, namely an adjunct or an argument. On its way to the landing site, it must void any Barriers by moving Spec to Spec, in order to always have a g-marker. If being in a Spec position, it has no g-marker, i.e. if the XP dominating this Spec is not a sister to a head, then a Barrier is crossed and the sequence is ill-formed.

As for the address-based sequence it can be formed by an argument only, since only arguments can be K-governed. It consists of a set of links, each being in a c-command relation with the next one (c-set). When another XP, and hence its head, is itself addressed, then it cannot be co-addressed with the argument: in that case, a Barrier is crossed and the sequence is ill-formed.

The two cases are illustrated with the following examples:

(7)   How$_i$ did Peter fix it t$_i$

(8)

```
        CP
          \
          C'
        ___|___
      C        IP
               __|__
                   I'
                 __|__
               I      VP
                     __|‾‾‾‾‾___
                      V'        t₁
                    __|__
                  V     DP
```
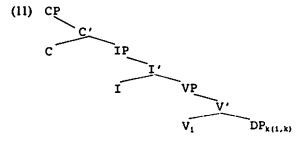
The wh-phrase is an adjunct, so it has only a categorial index and it can only move Spec to Spec. If another wh-phrase is in the way, the sequence is ill-formed: an example is the sentence below in which *what* is in [Spec,CP] of the embedded clause and *how* cannot move through it and hence government is violated:

(9)   * How$_j$ do you believe what$_i$ Peter fixes t$_i$ t$_j$

An example illustrating an address-based sequence is provided below:

(10)   What$_i$ did Peter fix t$_i$

(11)

```
        CP
          \
          C'
        ___|___
      C        IP
               __|__
                   I'
                 __|__
               I      VP
                     __|__
                         V'
                       __|___
                     V₁      DP_{k(i,k)}
```
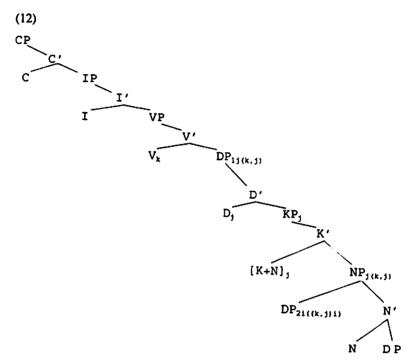
What is an argument of V; its categorial index is (k) and since it is K-governed by V, V gives it its index (i) and the address (i,k) is formed. This address percolates upwards to every c-commanding head and since no other argument, which would have its own address, is in the way, the sequence is well-formed.

Bearing this theoretical background in mind, let us consider whether the MG data could be accommodated.

Notice first that Functional Categories are assumed not to have categorial indices, the later being a property of lexical categories only. Also, it is assumed in

the theory, that arguments should not be associated with A'-positions. However, as we have already shown, [Spec,DP], i.e. the Spec of an argument, is an A'-position. We will return to this point soon.

Let us consider an example like the one in (2a). The structure is given below:

(12)

Since D is a Functional Category and it does not have an index of its own, the index (j) of the head N percolates up through K to it. Then an address can be formed since V K-governs DP_1: it is indicated as (k,j). D and N have the same categorial index. Also, DP_1 and NP share the address (k,j). In general, it is suggested that all maximal projections and heads in the DP apart from the arguments of N share indices. DP_2 is K-governed by (K+N), so apart from its categorial index (i), it is given the address (k,j). So DP_2 has a compatible index with N and DP_1. This observation leads me to the assumption that only these XPs can move to [Spec,DP] that bear a compatible index with DP. This assumption is

borne out by the examples we have considered so far as well as by the CNPC to which we will turn after the discussion about internal DP movement.

Back to the above example, DP_2 can form an address-based sequence or a categorial index one. Let us consider the two cases. DP_2 is g-marked by (K+N) because (K+N) is a head and DP_2 is in the Spec of a sister of (K+N), namely NP, which agrees with DP_2, the latter being in its Spec. KP dominates (K+N) and hence it is a Barrier for DP_2. DP_2 has an address that includes the address of N, therefore their indices are compatible and according to the theory, an address-based sequence can be formed. The next Barrier is DP_1 which is again voided as before. The address of DP_2 percolates through V which is not addressed (because it is not an argument) and I and reaches [Spec,CP]: the address of DP_2 percolates up to c-commanding positions and government is not violated.

Let us now try the categorial index sequence which will also account for (1a) repeated below and for all the cases of preposing to [Spec,DP]:
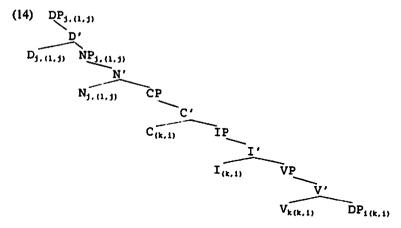
(1)   a.   Tinos$_i$ i agapi t$_i$ jia ti Maria...
             whose the love for the Maria
             *whose the love for Maria

DP_2 can move to [Spec,KP], since KP is not an argument and so it can be associated with an A'-position; then it moves to [Spec,DP] and it either surfaces there (eg(1a)) or it is extracted further to [Spec,VP] again an A'-position, and so on (eg(2a)).

Let us now turn to the examples involving a CNPC repeated below:

(13)   *Pion$_i$ akouses ti fimi oti apelisan t$_i$
         whom hear-2s-past the rumour that fire-3p-past
         *whom did you hear the rumour that they fired

The wh-phrase is an argument and it is K-governed by V and it can form either an address-based sequence or a categorial index one. In the first case, it forms a c-set up to C without any problems: no c-commanding head has its own address:

(14)

The address of the extracted phrase (k,i) percolates up via a chain (t, V, I, C). But then, the next c-commanding head, namely N, has its own address, which, as was said before, is shared by it and the K-governed D. Hence, N cannot be co-addressed with the wh-phrase and the sequence is ill-formed.

In case a categorial index sequence is formed, again movement up to [Spec,CP] is unproblematic, since no Spec is filled (we can assume adjunction to IP). But, then, even if we assume that the trace can move to [Spec,NP], its movement to [Spec,DP] is not allowed, because the index of the wh-phrase is not compatible with the index of D.

Let us now turn to the impossibility of extraction of the PP complement of N. There are two cases which we should consider: the one is the case in which the preposition *jia* is inserted for case reasons as in (1b) repeated below:

(15)   * Jia pion$_i$ i agapi tou Yianni t$_i$
        for whom the love of-the Yianni
        *for whom Yianni's love

The relevant structure is given in (12) above. The DP complement of *jia* is the argument of N but it is not K-governed by it but rather by the preposition *jia*. The PP is not an argument of N so it is not addressed and it can only be extracted by creating a categorial index sequence. PP is g-marked by N, NP is a barrier for it. Therefore, it must move to [Spec,NP]. [Spec,NP], however, as was said in section I, is always filled by the other argument of N, either overt or PRO. Therefore, a government violation arises.

There are cases like (1c) in which the PP is an argument of N and hence it could bear an address given by N, but still extraction is not possible. Since such cases are attested in other languages as well and they are also ungrammatical (cf the discussion about Cinque's (1980) observations) we could say that extraction of a PP argument of N is not possible due to some property of the nouns.

In sum, the fact that the argument that can be extracted is the one that is marked with Genitive case is explained by the fact that it is K-governed and it can form an address-based sequence or a categorial index one. It is allowed to move to [Spec,DP], unlike any other argument or wh-phrase, because it has a compatible index with the head D.

To complete the discussion, I would like to point out some cases involving CNPC (taken from Theophanopoulou (1989)), where no violation is noticed. Consider the examples:

(16) a.   Pion$_i$ edose tin iposhesi o Yiannis oti tha voithisi t$_i$
            whom give-3s-past the promise the Yiannis that FUT help-3s
            who did Yiannis give the promise that he will help

      b.   Pion$_i$ ehis ti gnomi oti tha psiphisi i Maria t$_i$
            who have-2s the opinion that FUT vote-3s the Maria
            who do you have the opinion that Maria will vote for

The structure is similar to the example in (13) but these sentences are grammatical. A possible explanation is that of reanalysis between the verb and the noun. This becomes more plausible by the fact that "give promise" may well be substituted by the single verb *promise* and "have the opinion" by *think*. So extraction is possible. The wh-phrase can either move from [Spec,CP] to [Spec,VP] and continue up to [Spec,CP], because no other Spec is filled, or it can form an address-based sequence since no other addressed head is in the way. This concludes our discussion about extraction out of DPs.

4 Conclusion

In this paper the structure of noun phrases in MG has been discussed. First, arguments for the existence of a DP projection in noun phrases have been provided. Further arguments for the existence of Functional Categories in DPs have also been outlined. The assumption then that there exists a Functional Category, namely K, c-selected by D and c-selecting NP, which has the feature [+Gen] and which is affixal and hence triggers movement of the head N to it, explains the attested word

order in noun phrases in MG, i.e. NSO. The proposed structural position of the arguments of N has been supported by arguments based on the position of referential Adjectives and the partial application of the Affectedness Constraint. Furthermore, the existence of an empty category in DPs, namely PRO, has been argued for.

Following mainly Manzini's (1992) theory, preposing in DPs in MG was also discussed. The DP in [Spec,NP] is K-governed by the head N and this explains that this is the only wh-phrase that can move to [Spec,DP].

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