A SKETCHY NOTE ON THE ARTICLE-MODIFIER RELATION[*]
Evidence from Swiss-German which sheds light on Greek Determiner Spreading

Thomas.Leu@lettres.unige.ch

1. MODIFIER HEAD RATHER THAN ARTICLE

Modified DPs appear to show interesting properties which go beyond the mere presence of the modifier. Among these properties there are some which relate to the direct article, potentially (i.e. depending on the analysis) affecting its position, form, and number of occurrences.

In the present paper I sketch a view on the phenomena in question which attribute these effects to the head of a modifier phrase (MP) in whose Spec the modifier (AP) is hosted. The head M of MP forms a chain with (or put differently, moves to) the article in D in certain structures. In cases of multiple occurrences of the "article", these (additional) occurrences are analyzed as being the spell-out of M, rather then a repetition of the actual article.

In the paper I leave aside many aspects of DP modification and concentrate on the motivation of the central hypothesis. Whether this hypothesis is tenable with respect to a richer investigation of the aspects involved only further work will show.

I will first present an insightful instance of this M-feature incorporation in Swiss-German, where the effect is overt as a change in the phonetic shape of the article. Then I will briefly review instances of (potential) manifestations of M in Swedish, Bulgarian, French, and Greek, before tempting to outline an analysis of Greek Determiner Spreading.

In the last section I will speculate on the nature of the cognitive hierarchy of adjectival modification, showing that the syntactic aspects involved as well as the facts and linguistic variation discussed throughout the paper are (potentially) reducible to the lexicon.

2. THE ENRICHED DEFINITE ARTICLE IN SWISS

In Swiss-German, the definite article can be said to cliticize onto a following noun. It has different forms depending on Gender (mas, fem, neut: distinct only in singular), Number and Case (Nom/Acc vs. Dat). It is the first element in the DP, i.e. it always precedes the noun and all modifiers. And modifiers (adjectives, numerals etc.) in turn always precede the noun.

(1) a.   d autoban
          the highway (fem)
    b.   *d / di alt autoban
          the old highway

(2) a.   k xint
          the children (plural)
    b.   *k / di xlinä xint

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the little children

Now, the presence of a modifier appears to affect the definite article. The effect is overt on the Nom/Acc feminine and the Nom/Acc plural forms, as a change in their phonetic shape.[1] (I assume that the presence of the modifier affects the article generally, and that the lack in overt manifestation on the other forms is due to their morpho-phonological properties.) Consider examples (1) and (2). The definite article preceding the noun directly is specified as a single consonant (a coronal plosive, perhaps more specific, spell it /D/ for the present purposes). It undergoes assimilation and/or degemination where applicable (as in 2a) and surfaces accordingly, though always without a vowel. But when the DP contains a modifier on the other hand, the article has a CV shape ([di]), as shown in the (b) examples.[2]

This alternation in phonetic shape (call it the */D/-/di/-alternation*) is, as far as I can see, a completely isolated phenomenon within Swiss German. With this I mean, there is no corresponding observation to be made on any other element traditionally subsumed under the label Determiner.

One possible way of viewing the /D/-/di/-alternation would be to assume the article to underlyingly correspond to /di/, and have a phonological deletion rule wipe out the vowel in a given structural context. The appropriate structural context in question would be the syntactic relation holding between the article and the noun (when adjacent), which is considerably different from the one between the article and the adjective, if we follow e.g. Cinque (1993) in assuming that adjectives are specifiers of a functional projection. In order for this to work we would have the phonological component be sensitive to such difference in syntactic structure, which would lead us to expect other overt manifestations of sensitivity to this structural distinction within the language (at least).[3] I am not going to pursue this line of reasoning any further in the present paper, but leave it open as a possible alternative to the syntactic analysis which I am developing below. Note however that in following a merely phonological account of the /D/-/di/-alternation we would lose the cross-linguistic generalization outlined below.

I propose instead that the /D/-/di/-alternation is the reflex of a change in the feature composition of the article, with /di/ being the spell-out of [Features of the article + F(x)]. Let us then assume that the feature(s) F(x) - which I am going to motivate further below - are present on the definite article at spell-out whenever the DP contains a modifier. In Swiss-German, the morphological component thus appears to dispose of two different bundles of phonetic information, /di/ and /D/, corresponding to the feature matrices with and without F(x) respectively. As for the masculine, the neuter, and the dative forms (which do not show an overt alternation) I leave the question open whether they are best analyzed as pairs of homophonous entries (for matrices containing versus lacking F(x)), or as constituting only single entries, in the morphological component, (containing F(x)) which are chosen in any case, in accordance with the Elsewhere Principle. Cross-linguistically the latter analysis clearly seems preferable.[4]

Now, where does F(x) come from? If we follow Cinque (1993) and others in analyzing adjectives as occupying the Spec of a functional projection, it is reasonable to hypothesize that

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[1] See also Marti (1985), Hodler (1969), Nübling (1992).

[2] The article /di/ is homophonous with the weak fem/plural demonstrative. Note however that the determiner chosen in modified DPs as in (1) and (2) cannot simply be the demonstrative. First of all, the DPs in questions are not restricted to a demonstrative reading. And secondly, in analogous examples with masculine and neuter DPs the article and the demonstrative are distinct (both being phonetically unchanged whether or not there is a modifier present).

[3] E.g. Cardinaletti (1993) and Rizzi & Savoia (1993) provide studies on phonological processes ([s] affrication and [u] propagation, respectively) which hold that these are sensitive to syntactically defined configurations.

[4] To explore the nature of this instance of feature matrix impoverishment / individuation in the feminine and plural forms of the article, which led to the /D/-/di/-alternation, lies outside the scope of the present paper.

F(x) actually corresponds to the head of this functional projection. Call the latter MP (modifier phrase), the former accordingly M, and F(x) finally MF (modifier features).

Let me now briefly review some related phenomena in Swedish, Bulgarian, French, and Greek, which bear further evidence supporting M.[5]

3.   OTHER INSTANCES OF THE ARTICLE-MODIFIER INTERACTION
3.1.   Swedish: first and last[6]

In Swedish, the definite article is normally realized as a suffix on the head noun. When the noun phrase contains an attributive adjective (or a cardinal numeral, quantifying adjective, etc.), however, the language has both a pre-nominal and a suffixed article (e.g. Delsing (1993)). In the example (3c), where the adjective is not preceded by *det*, the DP receives a proper name interpretation. Consider the following examples from Swedish ((a,b) from Delsing (1993), (c) from A. Wiklund (p.c.)):

(3)   a.   huset
            house-the
       b.   det stora huset
            the big house-the
       c.   gula huset
            yellow-house-the

Note that the article appears twice in the modified DP (3b), a redundancy which needs explanation. The morphologically bound article stays post-nominal, suffixed onto the noun. The unbound article is DP-initial. The awkward redundancy disappears if we analyze the DP-initial *det* as the spell-out of the modifier head M, rather than a second article.

3.2.   Bulgarian: always on the first element[7]

In Bulgarian, the definite article also appears postposed to the head noun in phrases like (4a), though it similarly attaches as a suffix to any pre-nominal modifier (4b), or more accurately speaking, it appears suffixed on the highest constituent within the DP, i.e. "in a sort of 'Wackernagel position' inside the DP" (Dimitrova & Giusti (1998)).[8] (The Bulgarian examples in (4) are taken from Dimitrova & Giusti (1998).)

(4)   a.   momce-to
            boy-the

       b.   goljamo-to momce
            big-the boy

Having D, M etc. in a head chain relation (or in terms of Mirror Theory in a complementation relation, see (7)), with D (here taken to be the highest head in the chain)

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[5] If the /D/-/di/-alternation is indeed due to the enrichment of the article by M (i.e. MF), then the existence of /D/ in non-modified DPs provides evidence for the absence of MP in the structure of non-modified DPs. That means that MP is only projected when a modifier is overt (in opposition to Cinque's (1999:135) proposition). This point holds throughout the paper.

[6] The observation extends to other Scandinavian languages such as Norwegian for instance.

[7] The observation extends to other Balkan languages such as Albanian and Rumanian.

[8] Note that in a phrase like (i) I take *very nice* to constitute one constituent with respect to Det:

(i)   very nice-the boy

being weak and M etc. strong, we can account for the fact that *to* is spelled out either post-nominally, or – when an M is present – in M, i.e. post-adjectivally. The (enriched) article is spelled out in the highest strong head of its chain. (For more on this see section 4.) This then accounts for the fact noted by Dimitrova & Giusti, that in DPs "modified by more than one adjective, only the initial adjective carries an enclitic article."[9]

3.3.   French: modified proper names[10]

In (the standard dialect of) French, proper names are generally not introduced by an article. When modified however, the modifier-name pair is obligatorily preceded by a determiner. Compare (5a) and (b):

(5)   a.   ?? (la) Brigitte
             (the) Brigitte
       b.   *   (la) petite Brigitte
             (the) little Brigitte

The obligatoriness of the determiner in (5b) can thus surely not be due to a requirement of the head noun, but clearly shows its dependency on the presence versus absence of the modifier. Note that again we can hypothesize that the determiner in (5b) is not the actual article, since the article appears to be disallowed with proper names, as shown in (5a). We would rather view it as the spell-out of M.[11]

3.4.   Greek: the so-called Determiner Spreading[12]

Greek has two strategies of rendering a modified DP. One has the form in (6a), the other the one in (6b). The latter is an instance of what Androutsopoulou (1996) calls *Determiner Spreading (DS)*. In such a structure additional functional elements (bearing the same phonetic shape as the article) are overt (i.e. spelled out individually), which allows the adjectives to appear post-nominally on the one hand, and/or in different linear orderings while keeping the unmarked reading. (The examples in (6) are taken from Androutsopoulou (1996).)

(6)   a.   to meghalo ghermaniko piano
              the big German piano
       b.   to ghermaniko to piano to meghalo
              the German the piano the big ("the big german piano")

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[9] Complications arise with coordination structures, in which Bulgarian behaves differently from Albanian and Rumanian, which I will leave aside in the present paper. See Dimitrova & Giutsi for details. Anyway, they note that in Bulgarian, where "both adjectival heads carry the enclitic article" the two adjectives are not predicated of two independent referents. Thus we are led to view them as constituting the spell-out of M rather than twice the article.

[10] The observation extends to other Romance languages such as Italian.

[11] One might wonder then why the linear order between M and Adj in French modified proper names (and Swedish etc.) should be different from Bulgarian (and Albanian etc.). I am not going to make any strong claims here, note however that it is quite reasonable to assume that M is internally complex and thus might have a number of heads in a complementation relation of which the highest strong head will be the spell-out position of the complex, which can be below the specifier hosting the adjective in one language, and above in another.

[12] For discussions of similar phenomena in non-indoeuropean languages see a.o. Shlonsky (2001), on Semitic, Halefom (1994), on Amharic. See also fn. 20 (and Sproat & Shih (1988)) for Chinese.

The fact that the article-like elements surface repeatedly in the structure in (6b) has been taken to imply that the actual definite article is repeated in the syntax (cf. Androutsopoulou (1996), Alexiadou & Wilder (1998a)). Following our above reasoning however, it might just as well be the case that the individual feature matrices in the corresponding positions are best matched with the same morpho-phonological item and therefore spelled out the same way. In other words, they are Ms except for one of them (the highest one, as I will reasonably propose below), which then will be the article.

4.   SITUATING M (MODIFIER)

Abstracting away from the structures proposed by individual authors for the data presented above, there appears a descriptive generalization to be captured, which is that in all these languages a modifier of a head noun is only allowed to appear if a functional element of a determiner-like type is present in a position not lower than that of the modifier. Although this element and the article seem to bear a close relationship, the data above suggest that they are not identical as such.

(a)   In Swiss German, /D/ alternates with /di/ in a D-N and a D-Modifier-N configuration respectively.
(b)   In the Scandinavian pattern, the "article" appears simultaneously as a free morpheme DP-initially and as a bound morpheme suffixed onto N, which would be an awkward redundancy if it were a pure repetition of the same element.
(c)   In Bulgarian the definite article cliticizes onto the noun unless a modifier is present in which case "it" cliticizes onto the latter.
(d)   In French, the article is disallowed with proper names, though a phonetically identical element appears when a modifier is present.
(e)   And in Greek finally, modifiers can surface accompanied by an element phonetically identical with the article, which allows them to appear in certain different orders (while preserving the unmarked reading).

To account for these descriptive facts, I have hypothesized that there is a head M present (hosting the adjective in its Spec) which is either in a chain with the article or spelled out individually.

Now, in a language like Swiss German the article and M share their features, an assumption which falls out naturally in a conception of syntax such as Mirror Theory (Brody (1997, 2000)), where two functional heads in a complement relation form a *Morphological Word* which is spelled out in the highest (strong) position. (More traditionally viewed we can have M move up and incorporate to D.) Thus under this view, what is spelled out as definite article in a modified DP corresponds to the article enriched by MF (the features of M).

The mirror theoretic structure for Swiss German is given in (7):[13]

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[13] The Mirror theoretic representation dispenses with intermediate projections. The syntactic structure is made up of heads and their specifiers. Heads such as V and I, for example, are in a complementation relation if they form a morphological word (i.e. when I is encoded as a morpheme on the verb). If two heads are not spelled out as one morphological word, they are not in a complementation relation but related via (at least one) specifier. I am following Brody in indicating the highest strong head, i.e. the spell out head in a complementation by @.

(7)
```
              D@
             /    \
            /      M
           /      /  \
        Spec    Adj   (n)
                  \   /
                   \ /
                    N
```
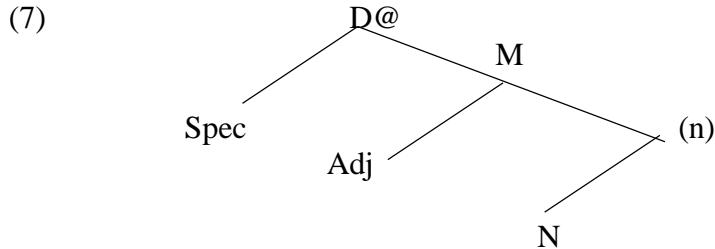
The heads D, M, and (n) form a morphological word, which is spelled out in D. The adjective and the noun are in specifier positions.[14]

Thus in Swiss-German, there is an extra item in the morphological component for the feature combination [def, fem/pl, nom, MF] distinct from the one without MF. Cross-linguistically it seems to be common that the article features and MF match the same item, i.e. that MF is a fix part of the morpho-phonological item containing the article features. Though another language which seems to dispose of a morpho-phonological item containing the (definite) article features but (potentially) lacking MF is Swedish.

In Swedish, the presence of the two individual determiners is best analyzed as follows. The morphological word that gives the actual (suffixed) article corresponds to the complementation structure D-…-(n). The article is spelled out in the highest strong head, which in (the standard dialects of) languages such as Swedish appears to be (n). The morphological word containing M is in a specifier of the morphological word containing D and (n). This gives us the individual spell-out of M on the one hand and D-(n) on the other. The actual article is spelled out in (n), i.e. post-nominally. MF are spelled out in a position within the morphological word containing M, though in a position higher than the adjective. Assuming the morphological word containing M to be internally complex, there are such positions available for the spelling out of MF. The structure for Swedish would look like (8):

(8)
```
              D
             /  \
            /    X
           /    / \
        Spec   /   \
              M@    (n)@
             /  \   /
            M    N
           /
        Adj
```
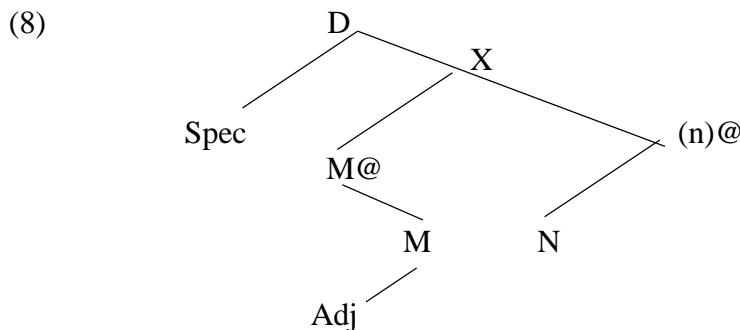
Note that in (8) we have introduced a new head X in order to extract M from the morphological word D-...-(n).[15] The same happens in Greek DS, as I will propose below. As for the nature of X see section 6 for some speculations.

The analysis of Romance is now trivial. The structure for Romance phrases, such as (5), corresponds roughly to the one in (7). There are no article features present in the structure however. The determiner in (5b) is the spell-out of MF. The morphological word containing MF is spelled out in a position higher than the adjective, analogously to (8).

In the case of Bulgarian, D appears to be weak (similar to Swedish), thus the morphological word containing D, M, and (n) is spelled out lower, i.e. in the highest strong

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[14] Possible additional heads are omitted for reasons of expository ease.

[15] As has been pointed out to me at the ReSe in Geneva, we could alternatively put the DP-initial «article» in Spec D. In doing so however, we would lose its connection to M, i.e. MF, as well as the parallels with Greek out-lined below.

head. In a simplified structure, such as (7), the strong heads would be identical to (n) and M, which then gives us the orders in (4).

5. AN OUT-LINE OF A GREEK DS ANALYSIS

It has been observed that there exists a kind of ordering restriction between classes of modifiers (cf. Cinque (1993), Sproat & Shih (1988) a.o.): ...Quality > Size > Shape > Color ...[16] This hierarchy is to be understood as constituting the unmarked order, i.e. in principle, a violation of the hierarchy leads to a marked reading. It has further been observed that this hierarchy can be violated by certain languages / in certain constructions whilst leaving the unmarked reading unaffected.

    In the Greek "Determiner Spreading" construction, the linear order of the adjectives and the noun can vary to a certain degree, as shown in (9). The examples (a-e) all have the same reading, (f) has the marked reading with the inverse scope relation between the adjectives. (The examples are taken from Alexiadou & Wilder (1998a)):

(9)   a.   the big   the red   the **book**
      b.   the big   the **book**   the red
      c.   the red   the **book**   the big
      d.   the **book**   the red   the big
      e.   the **book**   the big   the red
   f. # the red   the big   the **book**

    The fact that (a-e) have the same reading and (f) has a different one leads us to assume that (a-e) share a single underlying structure as opposed to a different structure for (f).

5.1. Alexiadou & Wilder

Let me briefly note some points of Alexiadou & Wilder's (1998a) account of DS, which I will take up in 5.2. where I will outline an alternative view. A&W analyze DS as reduced relatives. A top DP takes a CP complement. The CP hosts the raised AP in its Spec and takes an IP as its complement whose Subject (Spec) is either the DP containing a D and the noun, or another D (DP) with a CP complement (which renders the structure recursive). The IP is headed by an empty copula and contains the trace of AP in its complement position. (The structure is given in (10)). The different orders are now derived by optional movement of a lower DP to the Spec of a higher DP.

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[16] Here taken from Androutsopoulou (1996).

(10)

```
                  DP3
              ╱        ╲
           D            CP
                     ╱      ╲
                  AP1        IP
                         ╱      ╲
                      DP2        ╲
                  ╱       ╲       ╲
               D           CP      t_AP1
                        ╱     ╲
                     AP2       IP
                           ╱      ╲
                        DP1        ╲
                     ╱      ╲       t_AP2
                  D          NP
```
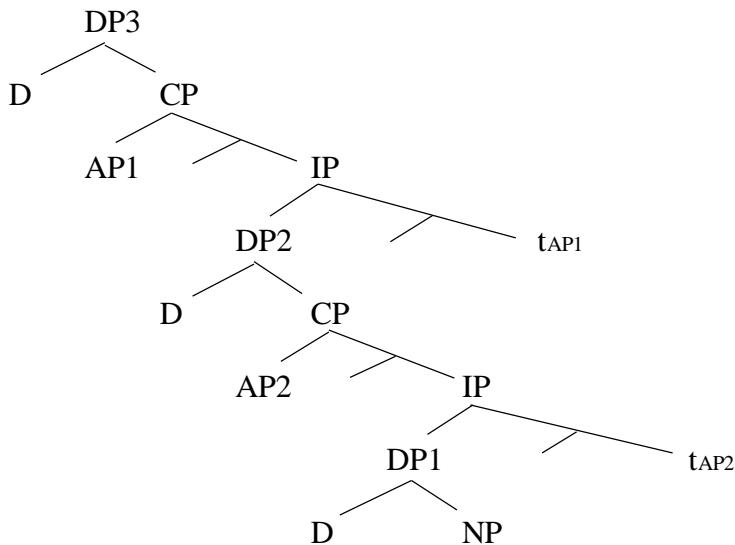
Alexiadou & Wilder propose a clausal analysis of DS in order to capture the fact that "an adjective permits DS only if it can be used predicatively" (A&W (1998:314)). Androutsopoulou (1996:24) however notes that this correlation is to be stated conversely and that it is not reciprocal. According to her "there exist adjectives that cannot appear in copulative constructions and still allow DS", which (potentially) undermines A&W's analysis. An example is given in (11):

(11) a. * o prothipourghos itan proighoumenos
               the prime minister was former
      b.   o proighoumenos (o) prothipourghos
               the former the prime minister

A further and related observation which A&W make is that predicative adjectives used attributively may develop a special meaning. These adjectives they term "ambiguous adjectives". They note that the special meaning is unavailable in DS constructions, just as it is unavailable in copular use (examples from A&W (1998:314)). I will come back to this in section 6:

(12) a.   o anthropos o ftohos   ('impoverished' / *'pitiable')
               the man the poor
      b.   o ftohos o anthropos   ('impoverished' / *'pitiable')
               the poor the man
      c.   o ftohos anthropos   ('impoverished' / 'pitiable')
               the poor man

Another point I will touch on is the consequences of A&W's analysis for indefinites. DS (understood as reordering without affecting the reading) is allowed with indefinites as well, though only one "determiner-like element" surfaces, the initial indefinite article (see (13), adapted from A&W).

(13) a.   *(ena) megalo (*ena) kokkino (*ena) vivlio
               a   big   red   book

b.   *(ena) vivlio (*ena) megalo (*ena) kokkino
        a   book   big   red

A&W thus have the structure in (10) with, for indefinites, all Ds phonetically empty, except for the one that happens to be string-initial at spell-out. Their explanation is that there is either a PF-rule at stake or, as they footnote, that this could be somehow attributed to the novelty condition (cf. Heim (1982)) which states that within the discourse an indefinite is constrained to introduce a novel referent. "[R]epetition of an indefinite determiner would lead to a violation of the novelty condition" (A&W (1998:331)).

I will take up these points in the next (sub-)section(s) sketching an alternative view based on the findings from the other languages discussed above. The alternative appears to have certain advantages, though I am aware of the fact that several further issues arise which will need to be addressed.

5.2.   A single-DP alternative

Let us first take up the last point of the above sub-section. The awkward resort to PF or discourse in order to account for the single and merely string-initial occurrence of the indefinite article seems theoretically and empirically problematic. As for the novelty condition explanation, there are at least two problems. On the one hand, if all but the first D associated with a referent within the discourse must not be indefinite, then we would expect the further instances of D to be definite rather than simply phonetically empty indefinites. Thus we would expect them to be spelled out as *to*, which is not what we find. On the other hand, it is not clear if the novelty condition on indefinites applies within a single mentioning of a referent. The repetition of an "indefinite article-like element" within a single DP (with a single referent) can be found in Swiss-German, with degree words[17]:

(14)   ä ganz ä schönä Baum
            a totally a beautiful tree

As for the PF-rule involved A&W don't give a reason why it should apply to indefinites only.

These questions however don't arise in an single DP analysis, in which there is one article present, overt and string-initial in both definite and indefinite DPs with (and without) DS. The corresponding structure is given in (15):

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[17] This is not a strong point here anyway. It is not so clear whether the analysis of both *ä* as actual indefinite articles is correct.

(15)

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          D
          ⋮       DefP
          to          XP1
                  MP          XP2
              to      AP   MP          NP
                        to      AP
```
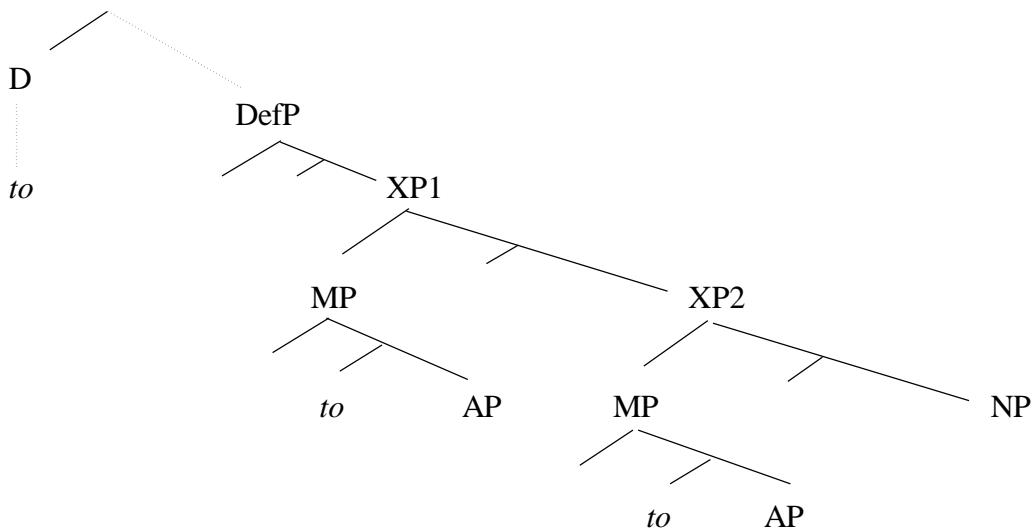
In (15) there is one article spelled out in D, the additional occurrences of *to* are analyzed as the spell-out of M, just as seen in Swedish in (3) and French (5). In indefinite DPs then the structure is the same. The indefinite article is under D just as the definite is, and the item corresponding to M in indefinite DPs is phonetically empty. Note that such 'definiteness harmony' is independently needed to account for the adjectival forms in languages in which definiteness is morphologically (overtly) encoded on the adjective. The structure as given in (15) is not the one sent to PF but rather an underlying one, to which further operations apply.

As can be seen, the modifier phrase (MP) is disintegrated just as in Swedish (8) which accounts for the fact that in the structure at hand M does not form a morphological word with D but is spelled out separately. Now how do we get the word order facts (9a-e), abstractly presented in (16a-e)?

There are several (partly mutually exclusive) movements involved in deriving the spell-out orders of underlying (15). First of all (depending on our theory of NP), we may wish to disintegrate NP (i.e. N) from the complementation relation of D-...-Def... in every case, since it never forms a morphological word with D. The ways to do this is to put it, or some higher projection containing it, in a specifier. Thus let us assume that (16e) is the spell-out of (15) with NP moved to Spec DefP (or (perhaps subsequently) to some other Spec higher than XP1 and lower than D).

(16) a.   A1   A2   N
     b.   A1   N   A2
     c.   A2   N   A1
     d.   N   A2   A1
     e.   N   A1   A2
     f. # the red   the big   the **book**
     (The numbers on the As indicate the ordering with respect to the unmarked reading hierarchy A1 > A2 => Size > Color, i.e. their linear base order.)

Note that in the derivation of (16e) something was moved across both XPs and nothing moved inside their respective MPs (i.e. the APs stay in the complement of their respective MPs). These two facts appear to somehow correlate throughout, though I do not as yet have an explanation for this (see fn. 18).

To derive (16d), let XP2 move to Spec DefP and NP move on to some higher Spec (below D). Again, both XPs have been crossed by an element and the APs stay frozen within the MPs. As for (16c), XP2 moves to Spec DefP as before, but NP stays in its complement. Here now only XP1 has been crossed, not XP2, which lets AP2 raise to the Spec of its MP. AP1 however does not move.[18] N may or may not be moved to X2 before XP2 raising. Such head movement of N however seems to be involved in (16b), where N moves through X2 to X1 prior to raising of XP1 to Spec DefP. Here, XP2 has been crossed by N, XP1 hasn't. The result of this is that AP1 undergoes MP-internal raising to Spec MP. (16a) finally simply involves XP1 raising to Spec DefP, combined with the two MP-internal AP movements. Note that in all the derivations Spec DefP is the only possible landing site for XP raising, thus maximally one of the two XPs can raise (and must raise unless Spec DefP hosts NP). With this restriction it is impossible to derive (16f), which thus must be derived from a different underlying structure, exactly as expected.

The word order facts can thus be derived, though with a relatively heavy and partly unexplained machinery which will still need some refinement. For the moment being, I will not undertake such a refinement however, but simply note that a unification of definite and indefinite DS can easily be obtained under the analysis I have presented. At the same time such an analysis accounts for the parallels with the data from other languages as discussed above.

In the last section I will briefly address the question about the nature of XP, showing that relating it to the cognitive hierarchy of modifiers seems prosperous.

6. SOME FURTHER SPECULATIONS
6.1. "XP" as Modifier Class Phrase

Let me briefly repeat some observations noted earlier. First of all, there are reasons to assume that adjectives are grouped into classes which are hierarchically ordered (Cinque (1993), Sproat & Shih (1988) a.o.). The ordering translates into the scope relations between these classes within the phrase marker, which in turn maps onto linear order (cf. Kayne 1994). The scope relation accounts for the reading: unmarked vs. marked. Secondly, there are constructions in which the linear order can be changed while preserving the unmarked reading (Androutsopoulou (1996), Alexiadou & Wilder (1998) a.o.). Thirdly, as for our Greek example, this construction type (DS) correlates with the impossibility for the adjective to develop a special (figurative) meaning. And finally, there are two correlations between groups of adjectives: On the one hand, the group of adjectives available for DS is a superset of the group of adjectives allowed in copular constructions. On the other hand, adjectives in copular constructions (just as in DS) are deprived of the possibility to acquire a special (figurative) meaning.

Taking these observations together, we can note that either the order (scopal, linear) of the adjectives must match the cognitive metric (the intended reading), or something else takes over the job of the order with the effect that the adjective(s) in question must express a meaning given by the class it belongs to.

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[18] As for the reason of the MP-internal movement, it has been pointed out to me at the ReSe in Geneva, that the correlation may be found in a need to check certain features within the XP-projections, which can be satisfied either by raising of the respective AP to the Spec (MP) of the corresponding Spec (XP) or by head movement through the respective X°. As far as I can see the relevant head-head relation would than include not only a head (originally) lower than X° but also the one above X°. Thus in (16c), for example, X2° would head-raise through X1° to Def° prior to XP2 raising to Spec DefP.
See also the discussion of (18, 19) in section 6.
See also Shlonsky (2001:20) who observes a correlation between , in his case, the expression of agreement features on an adjectival head and this head's being crossed by an XP.

These observations and correlations fall in place if we take the XPs in (15) to be grammaticalisations of the cognitive hierarchy of modifiers, i.e. if we take XP to stand for SizeP, ColorP etc. Let us subsume the individual phrases under the label ClassP. Whenever an adjective (i.e. the MP hosting it, but see 6.2.) is generated under a ClassP, it is bound to express a meaning within the range defined by the corresponding class.

As for the copular constructions, we have noted that certain adjectives are not allowed, some of which allow DS others don't. It now seems reasonable to assume that copular constructions only allow for certain types of ClassP, which then excludes all other ClassPs as well as adjectives (or modifiers) not generated under a ClassP. This assumption (that predicative use involves the Class node) then accounts for the fact that in copular constructions, just as in DS, the adjective can only express its literal meaning.

6.2. "ClassP" as a part of MP

One might wonder about the role of ClassP in languages in which M is not normally spelled out individually, i.e. languages such as Swiss-German, French etc. in which MP is integrated rather than mediated via ClassP. A possible assumption is that in these languages Class is a sub-feature of MF. Thus instead of having the lexicon items M° next to Size°, Color° etc. as in Greek and Swedish, they have the items M°, MSize°, MColor° etc. This assumption appears to be supported by a comparison of the possibilities of partial DS in Greek and the position of "ambiguous" adjectives in languages like Swiss-German.

Consider partial DS in Greek. Alexiadou & Wilder note that of the conceivable patterns of partial DS only some are grammatical. (The examples are adapted from A&W and given in English):

(17) a. ? the [big the red book
      b. ? the [red book the big
      c. * the [big red the book
      d. * the [book the big red
      e. * the [big the book red
      f. * the [book big the red

Under my analysis of DS this translates into structural terms as follows[19]:

(18)   a.   (?)   ClassP
                        ╱╲
                          MP
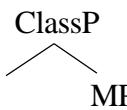
          b.   *   MP
                      ╱╲
                        ClassP
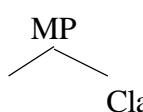
Sticking to the above assumption that Spec DefP is the only possible landing site (except for NP which can optionally raise on), (17a) involves SizeP raising and MP-internal adjective raising. (17b) is derived by MP raising to Spec DefP. In the discussion of (full) DS above we had not encountered MP raising, note however that this could be forced by forbidding NP

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[19] Note that (18a) needs to be allowed anyway, since MP under ClassP is the normal configuration in DS.

raising across a non-class modifier. There is indeed evidence for such a move.[20] For one thing it directly accounts for the impossibility of (17d,e,f) and secondly, it nicely relates the observation made in 5.1. that the generation under Class forces the literal meaning with the French pattern represented in (19) below, where the figurative meaning can only be obtained prenominally:

(19) a. un pauvre type   ('impoverished' / 'pitiable')
          a poor guy
      b. un type pauvre   ('impoverished' / *'pitiable')
          a poor guy

In (19a) the adjective can be generated under a non-class node as well as under a node containing Class. The former case allows the special meaning. In (19b), where the NP (or N) moves across the adjective, however, the special meaning is not available. The adjective thus cannot be generated under a non-class node (since if it were, N(P) movement across it would lead to ungrammaticality).

As for (17c), this is exactly the phrase we would expect to be grammatical if (18b) were permitted, yet it is ungrammatical. (18a) correctly excludes it.

Thus the node containing Class cannot be below a modifier node not containing Class but only above. Now, as we have noted above, an adjective generated under Class is restricted to the (range of) meaning(s) defined by the class in question. This means that an "ambiguous" adjective is generated under a node not containing Class. Let us then look what happens when an adjective which in its literal sense belongs to Class Y is used figuratively (20c,d) and combined with an adjective which belongs to a class other (in this case lower) than Class Y:

(20) a.   es rots itliänischs Auto   Color >> Provenance
           a red Italian car
      b. ? es itliänischs rots Auto   (marked reading)

      c.   n itliänischä grüänä Politiker   Provenance >> special meaning
           an Italian green politician
      d. ?? n grüänä itliänischä Politiker   special meaning >> Provenance

Though clear cut examples and judgments are not easy to get, the pattern in (20) correlates with the structures in (18) only under the assumption that "ambiguous" adjectives are generated under a non-Class node.

The observations made suggest that (cross-linguistically) the manners to introduce adjectives into DP are tripartite: the adjective can be generated (i) under an MClass node, in which case the literal meaning and the hierarchy order are preserved; (ii) under a non-class M node, in which case the special meaning is invoked (or at least possible) and any Class nodes

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[20] Further supporting evidence comes from Chinese. Sproat & Shih (1988) distinguish between direct and indirect modification. The latter is distinguished from the former (among other things) by the following (for us interesting) two properties : (i) indirect modification is not subject to ordering restrictions, and (ii) in indirect modification the adjective surfaces with an additional suffix -de (apparently identical for all classes of adjectives). In its effect now, this de-suffix resembles the Greek to, i.e. the spell-out of M°. Assuming that it corresponds to M, the fact (noted by S&S) that indirect modifier above direct modifier are allowed, but not the inverse (see (a) and (b)), mirrors exactly the restrictions in (18) :
  a.   modifier-de....modifier....
  b. * modifier....modifier-de...

must precede (underlyingly); and (iii) under a disintegrated M node mediated via a Class node, in which case the surface order is free and the literal meaning preserved.

Note that the three manners (and the corresponding structures) are directly related to the (feature make-up of the) corresponding functional heads provided by the lexicon of any given language.

7.   SUMMARY

I have presented evidence for the existence of modifier projections (MP) hosting a modifier (AP) in their Spec (or possibly in their complement when disintegrated). The evidence comes from overt manifestations of the head M (i.e. MF) of such MPs. The head M is in a complement relation with other functional heads of the DP projection, notably with D (unless it is disintegrated), which falls out quite naturally under Mirror theoretic assumptions. M is manifested as a change in the morpho-syntactic composition of the "article", which in certain languages is overtly expressed as a change in the phonological make-up of the (MF-enriched) article (e.g. Swiss-German), in others as a change of the spell-out position of the (MF-enriched) article (e.g. Bulgarian). Another overt expression is found in M being spelled out in the absence of an article as in e.g. French (with modified proper names) in which case the morphological component matches the features of M (MF) with the phonological matrix of the article in accordance with the Elsewhere Principle. A further manifestation is the spelling out of MF in addition to the article (e.g. Greek DS, Swedish) in constructions where M is disintegrated from the D-....-N complementation.

In the last section I have shown how a grammaticalised conception of the cognitive hierarchy of modifier classes fits into the analysis outlined. Disintegrated M is mediated by a ClassP, an assumption which accounts for the syntactic, morphological, and semantic facts discussed in the paper. Languages differ in the way they combine M and Class lexically. Variation is thus to a good deal (if not completely) reducible to the lexicon in the above account, as we expect.

The concrete theoretical implementation of the facts observed surely is an open issue still. I have attempted to sketch certain lines of thought towards the way how M could be represented in its (dis-)integrated occurrences. There is however still much work to be done.

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