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# Discontinuous AP Constructions and Adjectival Modification

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## 1. Introduction

It has sometimes been pointed out in the literature that there is a constraint in English and some other languages that generally prohibits a modifier preceding the modifiee from containing any elements on the right of its head. Emonds (1985), for example, notes that phenomena of the same nature are observed across categories, as shown in (1), and presents the “Recursion Restriction” given in (2).<sup>1</sup>

- 1 Essentially the same constraint is indeed observed in various languages, including German, Dutch, Scandinavian, French and Italian, as seen in (i), though the first two allow a broader variety of AP-internal elements than English by virtue of their status as head-final languages. In (ii), for example, the nominal and prepositional complements avoid a violation of the constraint by occurring on the left of their adjectival heads, which is an option not available in English.

- (i) a. \**der sagende daß S Mann*  
the saying that S man (Williams (1994: 160))  
b. \**Een [trotse [op zijn vader]] man*  
an proud of his father man (Neeleman (1994: 233))  
c. *une longue (\*de 2 mètres) table/une table longue de 2 mètres*  
a long table/a table 2 meter long (Abeillé and Godard (2000: 13))  
d. [<sub>DP</sub> i suoi [<sub>AP</sub> fedeli (\*alla causa)] sostenitori]  
his faithful (to the cause) supporters (Cinque (1995: 301))
- (ii) a. *der seine Pfeife rauchende Mann*  
the his pipe smoking man  
'the man smoking his pipe' (Williams (1982: 160))  
b. *Een [[op zijn vader] trotse] man*  
an of his father proud man (Neeleman (1994: 233))

Although the above observation might suggest that the constraint should not be attributed only to language-specific factors, it is clearly not universal; there are some languages that lack it such as Slavic and Greek, as the examples in (iii) show.

- (iii) a. *dumma [ze swej córki] kobieta*  
proud of her daughter woman  
'a woman proud of her daughter' (Pysz (2006: 68))  
b. *enas perifanos gia tin kori tu pateras*  
a proud for the daughter his father  
'a father proud of his daughter' (Ntelitheos (2004: 60))

- (1) a. We knew about some anxious (\*to leave) tourists.  
 b. My bored (\*with the topic) audience started to leave.  
 c. The house was three miles (\*further than Sue's) away.  
 d. She owns a seven-story (\*of plush apartment) building.  
 e. The play was especially (\*for children) opaque.  
 f. The talk was three hours (\*of verbiage) long.

(Emonds (1985: 130))

(2) *Recursion Restriction*

If a language is head-initial, any phrase  $C^i$  in  $X^2$  to the left of  $X^0$  must terminate in its head  $C^0$  in s-structure. (ibid.)

More recently, a fairly comprehensive study of this constraint is made by Escribano (2004), who shows that it can be generalized to almost the full range of premodifiers, including those in the nominal and verbal domains, as illustrated by the examples in (3)–(7).

- (3) a. a residential area [<sub>PP</sub> near Boston]  
 b. \*a [<sub>PP</sub> near [<sub>DP</sub> Boston]] residential area (Escribano (2004: 2))
- (4) a. a briefcase [<sub>VP</sub> containing documents]  
 b. \*a [<sub>VP</sub> containing [<sub>DP</sub> documents]] briefcase (ibid.)
- (5) a. a politician [<sub>VP</sub> concerned with social welfare]  
 b. \*a [<sub>VP</sub> concerned with [<sub>DP</sub> social welfare]] (ibid.)
- (6) a. He reached the same results [<sub>AdvP</sub> independently [<sub>PP</sub> of Leibniz]].  
 b. \*He [<sub>AdvP</sub> independently [<sub>PP</sub> of Leibniz]] reached the same results. (ibid.)
- (7) a. He read mathematics [<sub>PP</sub> at Cambridge].  
 b. \*He [<sub>PP</sub> at [<sub>DP</sub> Cambridge]] read mathematics. (ibid.)

Based on a careful examination of the relevant data, he reformulates Williams' (1982) "Head-Final Filter" as in (8) to express the proper generalization.<sup>2</sup>

(8) *Head Final Filter (HFF)*

Base-generated pre-modifiers must be head-final. (ibid.: 5)

While this constraint has received relatively little attention, several attempts have been made to account for the relevant phenomenon involving a certain specific category. In particular, the constraint has most often been discussed in connection with the behavior of prenominal adjectives that they cannot be followed by complements or modifiers, which shows a clear contrast to the full compatibility of predicative and postnominal adjectives with post-head material, as seen in (9)–(11).

- (9) a. \*the [proud of his son] man (Abney (1987: 208))  
 b. the fearful (\*of Bill) dog (Travis (1988: 303))
- (10) a. John is proud of his son.

2 His particular formulation is intended to restrict the application of the filter to modifiers, extending it to all modifying categories; Williams' original formulation only covers modifiers of nouns, whereas Emonds' Recursion Restriction fails to exclude specifiers from its coverage in a principled way.

- b. He is conscious of his guilt. (Yasui et al. (1976: 205))  
 (11) a. the man [proud of his son] (Abney (1987: 208))  
 b. the person desirous of the job (Yasui et al. (1976: 110))

The contrast between (9) and (10)–(11) has led some scholars to assume for prenominal adjectives a special structural status that distinguishes them from postnominal and predicative adjectives.

However, even if examples like (9) are successfully ruled out, such analyses often fail to capture the fact that it is not the case that prenominal adjectives can never cooccur with complements or postmodifiers; there are some cases where they have complements or modifiers on the right of their head nouns, as in (12).

- (12) a. a (very) similar car to mine (Escribano (2003: 2))  
 b. a fat man around the waist (ibid.: 3)

Escribano (2003) refers to constructions exemplified in (12) as “discontinuous AP” constructions (henceforth, DAPCs), because the relevant APs seem to be discontinuous with the complement or modifier separated from the adjective by the head noun. Some previous accounts of the HF effects in (9) make no immediate prediction about the grammaticality of DAPCs, while others would incorrectly rule out DAPCs, always barring prenominal adjectives per se from licensing complements or postmodifiers. Note also that it is problematic to explain acceptable DAPCs by exempting some particular set of adjectives or combinations of items from the constraint responsible for HF effects, because prenominal adjectives that allow DAPCs cannot take complements or modifiers when they are not separated by the head noun, as shown in (13).

- (13) a. \*a similar to mine car (ibid.: 10)  
 b. \*a fat around the waist man (ibid.: 2)

Consequently, an adequate analysis of prenominal adjectives should provide a principled account of HF effects that they display while allowing the derivation of DAPCs only in restricted cases.

The primary aim of this paper is to present an analysis of DAPCs that explains their restricted distribution and is consistent with the general picture of adjectival modification, through a careful examination of the properties of DAPC and elaboration of the theory of DP-internal adjectives as a whole.

This paper is organized as follows. Section 2 examines how HF effects can or cannot be accounted for in previous analyses of DP-internal adjectives. Based on this examination, section 3 discusses how DAPCs with complements can be derived, while maintaining the account of HF effects. Section 4 presents an alternative analysis of DAPCs on the behavior of raising adjectives, then extending it to adjectives with PP complements. Section 5 states the conclusion of this paper.

## 2. HF Effects in Previous Approaches to DP-Internal Adjectives

Several approaches to adjectival modification have been proposed in the generative literature. Previous studies of DP-internal adjectives often provide no explanation of HF effects, and hence DAPCs, because they pay relatively little attention even to the former. Additional assumptions would therefore be required, if they are not incompatible with HF effects and the availability of DAPCs.

### 2.1. Prenominal Adjectives as Specifiers

The approach advocated by Cinque (1995), though based on fairly strong hypotheses about the DP structure and its universality, has recently been adopted by a number of subsequent studies, such as Laenzlinger (2000) and Scott (2002). However, it has obvious difficulties in dealing with HF effects; they cannot be accounted for in this approach unless some independent device is postulated to rule out post-head material within prenominal APs. Cinque claims that prenominal adjectives are APs that occupy specific specifier positions within the hierarchy of functional projections between DP and NP, according to the semantic class they belong to, as schematized in (14).<sup>3</sup> Along the same lines, Scott (2002) proposes a more articulated DP structure, where functional projections correspond to classes of adjectives with more specific semantics, as shown in (15).<sup>4</sup>

(14) ... [XP AP<sub>sp-or</sub> \_\_\_ [YP AP<sub>subj-or</sub> \_\_\_ [ZP AP<sub>manner/themat</sub> \_\_\_ [NP N ...  
(Cinque (1995: 294))

(15) [DP *the/this* [Ordinal.NumberP [Cardinal.NumberP  
[Subject.CommentP *nasty/magnificent* [?Evidential/Universal.CommentP *famous*  
[SizeP *big/small* [LengthP *long/short* [HeightP *tall/high* [SpeedP *fast/slow*  
[?DepthP [WidthP *fat/thick/thin* [WeightP *light/heavy* [TemperatureP *hot/cold*  
[?WetnessP [AgeP *Edwardian/modern* [ShapeP *round/triangular* [ColorP *red*  
[Nationality/OriginP *English* [MaterialP *rosewood/brass* [Compound.Element [NP ...  
(cf. Scott (2002: 114))

Given the status of prenominal adjectives as specifiers, the fixed relative order of adjectives in different classes follows straightforwardly, but the nature of HF effects remains mysterious; in theoretical and empirical terms, there do not appear to be any problems with the occurrence of post-head material within specifiers, namely phrasal categories. Note here that typical specifiers like subjects, genitives and *wh*-phrases can involve post-head material, as Escribano (2003) points out, in a sharp contrast to the ungrammaticality of (9a) and the (b)-examples in (3)–(7). In other words, Cinque's

3 In this approach certain classes of postnominal adjectives also have the same structural status in Romance languages like French and Italian. In English, on the other hand, (14) applies only to prenominal adjectives, as Laenzlinger (2000) notes.

4 The highly articulated structure in (14) is parallel to the hierarchy of functional projections above VP proposed by Cinque (1999), each of which hosts a specific semantic class of adverbs.

approach could miss the expected fundamental difference between specifiers and premodifiers.

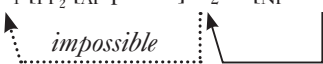

- (16) a. [NP Students [PP of linguistics]] use the library a lot.  
 b. [PP Under [DP the bed]] is a good place to hide.  
 c. [DP The [NP students [PP of linguistics']]] effort is remarkable.  
 d. [DP Which [NP account of the HFF]] do you find more convincing?  
 e. [PP In [DP which department]] do you work?  
 f. [AdvP Never [PP in my life]] had I felt more ridiculous.

(Escribano (2004: 3))

A further problem with this approach is that it is even impossible to appeal to the stipulation that the functional categories in question can only select heads not projecting phrasal categories as their specifiers, because prenominal adjectives can freely cooccur with pre-head elements like degree words in general, as shown in (17).

- (17) a. a [[six millimeter] wide] lens (Abney (1987: 215))  
 b. a [[several month] long] hiatus (ibid.)  
 c. ?their [[six millimeters] too narrowly] ground lens (ibid.: 214)  
 d. exceedingly many very beautiful women (cf. ibid: 216)

Another possible account of HF effects in this approach is to suppose that DP-internal adjectives with post-head material inevitably surface postnominally, rather than that prenominal adjectives cannot be accompanied by post-head material.<sup>5</sup> It is rather unclear, however, what the nature of leftward movement of Ns or NPs is that derives the postnominal position of such adjectives. As illustrated in (18)–(19), Ns or NPs must raise across adjectives if they are accompanied by post-head material, while the movement should be unavailable in most cases where adjectives are accompanied by pre-head material or no material.

- (18) a. [DP the ... [FP<sub>1</sub> F<sub>1</sub> [FP<sub>2</sub> [AP proud] F<sub>2</sub> ... [NP man ]]]]
- 
- b. [DP the ... [FP<sub>1</sub> F<sub>1</sub> [FP<sub>2</sub> [AP proud [PP of his son ]]] F<sub>2</sub> ... [NP man ]]]]
- 

5 Analyses that adopt this approach often assume a DP-internal position for predicative adjectives, which can host adjectives accompanied by post-head material. Cinque (1995), for example, suggests that predicative adjectives are generated as the main predicate within AgrP on the right of N and its complement, which constitutes a reduced relative clause, as (ia) illustrates. On the other hand, Laenzlinger (2000) proposes a projection that takes predicative AP as its specifier, which is between NP and the projection that hosts adjectives of nationality, as shown in (ib).

(i) a. [DP the [NP [NP mother]<sub>i</sub>] [AgrP PRO<sub>j</sub> proud of her son]] (Alexiadou et al. (2007: 354))

b. [DP [Adj<sub>nationality</sub>] [PredP [NP ]]] (Laenzlinger (2000: 66))

The assumption of such positions, however, could explain why adjectives with post-head material can appear postnominally, but not why they cannot appear prenominally.

- (19) a. [DP the ... [FP<sub>1</sub> — F<sub>1</sub> [FP<sub>2</sub> [AP proud ] F<sub>2</sub> ... [NP man ]]]]
- ↑
- ↓
- impossible
- b. [DP the ... [FP<sub>1</sub> — F<sub>1</sub> [FP<sub>2</sub> [AP proud [PP of his son ] ] F<sub>2</sub> ... [NP man ]]]]
- ↑
- ↓
- obligatory

This movement of Ns/NPs cannot be optional in either case to ensure the contrast seen in (20)–(21); the distribution of DP-internal adjectives with and without post-head material is basically complementary with systematic exceptions, most of which fall within specific morphological or semantic classes.

- (20) a. \*the man [proud]  
 b. the [proud] man (Abney (1987: 208))
- (21) a. the man [proud of his son] (ibid.)  
 b. \*the [proud of his son] man (Yasui et al. (1976: 101))

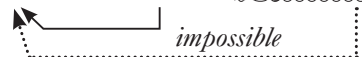
It would not be easy, especially within the recent minimalist framework, to formulate such movement of Ns/NPs depending on the components of other phrases.

Similar difficulties also arise in the approach sometimes called the “predicate fronting” approach, which is developed by Kayne (1994) as part of his more general antisymmetric approach to syntactic structures, though the idea itself goes back to earlier work on prenominal adjectives. This approach attempts to derive DP-internal adjectives from predicative adjectives by assuming a clausal structure for DPs with adjectival modifiers. DPs with prenominal adjectives have a structure essentially parallel to DPs with their postnominal counterparts, with their difference being that predicative APs and head nouns move to [Spec, CP] within the former and the latter, respectively, as sketched in (22).

- (22) a. [DP the [CP [AP yellow]<sub>j</sub> C<sup>0</sup> [IP [DP book] ... t<sub>j</sub> ]]]  
 b. [DP the [CP [DP mother]<sub>j</sub> C<sup>0</sup> [IP t<sub>j</sub> ... [AP proud of her son] ]]]
- (Alexiadou et al. (2007: 356))

Given the structure of DPs with prenominal adjectives in (22a), it is obvious that the ungrammaticality of examples like (9a) is not expected without ad hoc assumptions; there is no a priori reason to rule out specifiers with post-head material, as stated above. Although some constraints might be postulated on the derivation of DPs with adjectives to derive HF effects, as in Cinque’s approach, the nature of the movement involved is again quite unclear. If prenominal adjectives are derived via AP-fronting to [Spec, CP], it must take place if APs do not contain post-head material, while it is impossible if they contain post-head material, as in (23).

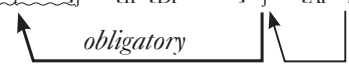
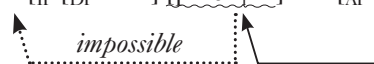
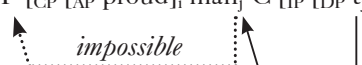
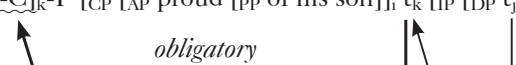
- (23) a. [DP the [CP — C<sup>0</sup> [IP [DP man] ... [AP proud] ]]]
- ↑
- ↓
- obligatory

- b. [DP the [CP      C<sup>0</sup> [IP [DP man] ... [AP proud of his son] ]]]  


The impossibility of AP-fronting in (23b) would be inscrutable, especially on the assumption that the complement of D is clausal; as is obvious, APs with post-head material can move to [Spec, CP] when generated as main predicates, as illustrated in (24).

- (24) a. How proud of Bill is John? (Takano (1995: 332))  
 b. How proud of his son Sam is! (Stowell (1991: 124))  
 c. How anxious to leave town do you think Bill is? (ibid.)  
 d. And all he could think of was how proud of him Snoot would be, now that he'd finally paid his dues. (B9000000531)

Although there are several other movement operations that can be assumed to derive word order variations within DPs with adjectival modifiers, any of them would face the same difficulties; it is inevitable to postulate that at least one step of the derivation, i.e. the one that changes the relative order of the head noun and the adjective, is conditioned by the presence/absence of post-head material within AP. For example, if the adjective undergoes head movement rather than phrasal movement while the head noun remains in [Spec, IP], as shown in (25a), I-to-C raising of the adjective would take place if and only if it is not accompanied by post-head material. Meanwhile, if the head noun that has moved to C further raises to the functional head, as Kayne (1994) assumes for French DPs with postnominal adjectives, it would take place if and only if AP contains post-head material, as in (25).

- (25) a. [DP the [CP [proud<sub>i</sub>-...-I]<sub>j</sub>-C [IP [DP man] t<sub>j</sub> ... [AP t<sub>i</sub> ]]]]  
  
 b. [DP the [CP C [IP [DP man] [proud<sub>i</sub>-...-I] ... [AP t<sub>i</sub> [PP of his son] ]]]]  
  
 (26) a. [DP the [FP F [CP [AP proud]<sub>i</sub> man<sub>j</sub>-C [IP [DP t<sub>j</sub> ] I ... t<sub>i</sub> ]]]]  
  
 b. [DP the [FP [man<sub>j</sub>-C]<sub>k</sub>-F [CP [AP proud [PP of his son]]<sub>i</sub> t<sub>k</sub> [IP [DP t<sub>j</sub> ] I ... t<sub>i</sub> ]]]]  


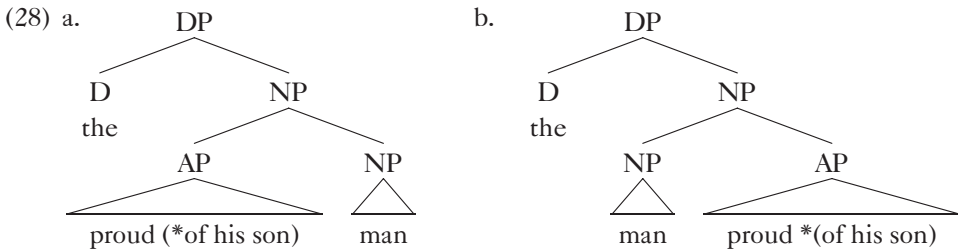
Consequently, the derivations in (25) and (26) would also leave either of the following questions unanswered: why the adjective must raise only when its projection does not contain post-head material, or why the head noun must raise only when the AP contains post-head material.

## 2.2. Prenominal Adjectives as Adjuncts

In addition to the approaches seen above, HF effects pose a problem for a more traditional approach to adjectival modification, i.e. the one that takes prenominal adjectives as APs left-adjoined to NP or some other nominal projection, as shown in (27).

(27) [DP the [NP [AP proud] [NP man ]]]

While rather complicated derivations are often assumed in Cinque's (1995) or Kayne's (1994) approach, the adjunction approach allows a fairly straightforward structural analysis, and is also adopted by recent studies like Svenonius (1994), Kennedy and Merchant (2000) and Hankamer and Mikkelsen (2005). Although analyses based on this approach may differ in details, such as the exact adjunction site for adjectives, the problem shared by them arises from the phrasal status of prenominal adjectives in (27): if they project phrasal categories, HF effects are not expected at all in structural terms, as we saw above. Their status as adjuncts rather than specifiers, moreover, would pose a more serious problem. It would be a natural extension of the adjunction analysis to claim that postnominal adjectives are APs right-adjoined to the same nominal projection as prenominal ones, as in fact assumed in many previous studies, but this extension leads to an undesirable distinction between the adjunction of the same phrase in the two different directions: left-adjoined APs cannot contain post-head material whereas their right-adjoined counterparts must contain post-head material, as illustrated in (28).



To avoid this difficulty, one can suppose, for example, that only left-adjunction is allowed, which is independently motivated in terms of Kayne's (1994) Linear Correspondence Axiom or Chomsky's (1995) version of it. Then, if postnominal adjectives are generated in a different position to the right of the head noun, it suffices to assume that out adjuncts to nominal projections with post-head material are ruled out, in order to derive HF effects.

Such attempts have sometimes been made in the literature on modification. Travis (1988) argues that prenominal adjectives are bare heads licensed by certain features on the heads of nominal projections. Since they are licensed as heads that do

not project, it follows that they cannot take complements, as illustrated in (29).<sup>6</sup>

- (29) [DP the [NP [A<sup>0</sup> proud (\*of his son)] [NP  
[N' [A<sup>0</sup> proud (\*of his son)] [N'  
[N<sup>0</sup> [A<sup>0</sup> proud (\*of his son)] [N<sup>0</sup> man ]]]]]]]] (cf. Travis (1988))

However, the characterization of prenominal adjectives as bare heads would rule out not only those with post-head material, but also those with premodifiers, which is clearly incorrect, as the acceptability of (17) shows.

### 2.3. Prenominal Adjectives as Heads

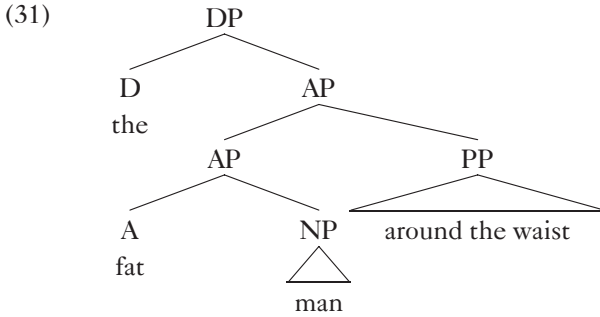
Given the discussion so far, it can be concluded that HF effects cannot be captured in the approaches that regard prenominal adjectives either as phrasal categories or as non-projecting heads. On the other hand, there has been a significantly different approach to prenominal adjectives developed in the literature. This approach makes a fundamental structural distinction between prenominal and postnominal adjectives, identifying the former as projecting heads, while assuming a usual predicative structure for the latter.

An influential analysis that takes this approach is proposed by Abney (1987), who argues that prenominal adjectives f(unctional)-select NP as their complements, and project APs with some features inherited from their sisters, i.e. the modified NPs, which in turn allows them to be selected by D, as schematized in (30).

- (30)
- 
- DP  
 / \  
 D    AP  
 |    / \  
 a    A    NP  
      |    |  
      proud man
- (cf. Abney (1987: 208))

Since the complement position of prenominal adjectives is already occupied by the modified NP, as in (30), there remains no room for subcategorized complements, whereas their postnominal counterparts allow the cooccurrence of their complements. While subcategorized complements are excluded, the structure in (30) does not eliminate the possibility of adjunction of postmodifiers. On standard assumptions, postmodifiers of adjectives would be adjoined to AP or A', which results in their appearance on the right of the whole AP including the modified NP rather than the adjectival head alone, as seen in (31).

6 Although Travis (1988) only mentions complements and does not take postmodifiers into account, the explanation in terms of the bare-head status of prenominal adjectives may be extended to the unavailability of prenominal APs with postmodifiers.



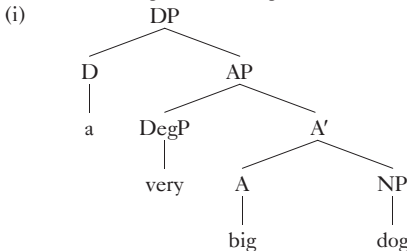
Thus, the analysis of prenominal adjectives as heads selecting modified NPs rules out examples like (13b), which violate whatever constraint yields HF effects. Note here that the postmodification of AP in (31), on the other hand, exemplifies a DAPC with the postmodifier appearing on the right of the head noun (see (12b)). I will return to this point below.

Consequently, HF effects and their distribution in the adjectival domain follow fairly straightforwardly from the structural status assumed for prenominal and postnominal adjectives under the approach along lines of Abney (1987). Note also that the structure proposed for DP with prenominal adjectives does not rule out the cooccurrence of their premodifiers, as desired; putting aside their exact position, they can be positioned within AP, for example, as shown in (32).<sup>7</sup>

(32) [DP the [AP very [AP/A' proud [NP man ]]]]

In addition, it is empirically desirable that prenominal adjectives are structurally distinguished from typical specifiers, which can contain complements, as seen in (16).

7 If premodifiers of prenominal adjectives are contained within the AP headed by the latter, as suggested in the text, the former can be analyzed either as a specifier or as an adjunct. Abney (1987) himself adopts the first option, as shown in (i).



(Abney (1987: 214))

An alternative possibility is to postulate DegP that immediately dominates AP and hosts premodifiers of prenominal adjectives, as in (ii), though Abney dismisses this possibility on the basis of the properties of f-selection he assumes.

(ii) [DP the [DegP very [AP proud [NP man ]]]]

Again, there are some options: premodifiers of prenominal adjectives can be a specifier or head of DegP, or an adjunct to DegP/Deg'. I will not choose among these possibilities, just pointing out the availability of an adequate analysis of premodifiers of adjectives in this approach.

### 3. DAPCs in Previous Analyses of DP-Internal Adjectives

We have so far seen that as far as HF effects are concerned, Abney's (1987) approach allows an analysis of prenominal adjectives that provide an elegant account of their behavior in structural terms. Now let us consider how DAPCs can be accommodated by an analysis of adjectival modification along these lines.

#### 3.1. Abney's (1987) Approach and the Distribution of DAPCs

As noted above, given Abney's (1987) approach to prenominal adjectives, adjunction of (post)modifiers to AP results in DAPCs in which the modifier follows the head noun, separated from the adjectival head. This predicts that DAPCs are generally available as well as their postnominal counterparts when the post-head material is a modifier, namely an adjunct. On the other hand, it is predicted in this approach that complements never cooccur with prenominal adjectives, i.e., when adjectives with complements modify nouns, "the discontinuous version" is generally not available. This prediction is largely borne out. Based on the observation of the relevant examples, Bernstein (1993) draws a generalization that DAPCs containing adjuncts to AP are possible, as seen in (33), whereas DAPCs containing complements of A are impossible, as in (34). For expository purposes, I refer to the former and the latter as Adjunct DAPCs and Complement DAPCs, respectively.

- (33) a. a famous actress for her Lady Macbeth  
 b. a fat man around the waist  
 c. a lucky woman in matters of love  
 d. a popular guy with girls  
 e. a respected woman in her field  
 f. a shy man around linguists  
 g. a strong department in semantics  
 h. a timid girl with strangers (Escribano (2003: 5))
- (34) a. \*an abounding area in oil  
 b. \*a bound ship for New York  
 c. \*a capable man of murder  
 d. \*a dependent youth on his parents  
 e. \*an empty principle of content  
 f. \*a familiar teacher with our problem  
 g. \*a guilty convict of murder (ibid.: 3)  
 h. \*a heedful officer of the rules  
 i. \*an ignorant child of the danger  
 j. \*a keen friend on classical music  
 k. \*a liable person to prosecution  
 l. \*a married woman to businessman  
 m. \*a next person to me

- n. \*an observant citizen of the law
- o. \*a partial friend to miniskirts
- p. \*a respectful family of etiquette
- q. \*a satisfied worker with his pay
- r. \*a thankful neighbour for her attentions
- s. \*an unaware child of the danger
- t. \*a wanting diplomat in subtlety (ibid.: 4)

Closer inspection, however, immediately reveals that her generalization is not accurate enough since there are a number of exceptions like (12a). This unexpected availability of complement DAPCs should be incorporated into an adequate account of DAPCs, because the possibility of examples like (12a) seems too systematic to simply ignore them as exceptions; they constitute several classes that can be semantically and/or morphologically characterized. Some other examples of complement DAPCs are given in (35)–(36) from Escribano (2003).

- (35) a. a subsequent article to Chomsky's
- b. a previous version to this one
- c. a prior attempt to Russel's
- d. a preferable solution to Chomsky's (ibid.: 6)
- (36) a. an alternative view to Chomsky's
- b. an analogous hypothesis to Abney's
- c. a comparable situation to ours
- d. a different view from yours
- e. an equivalent idea to that
- f. a parallel theory to Frege's
- g. a separate room from ours
- h. a similar car to mine (ibid.)

To accommodate examples like those in (35)–(36), DP-internal adjectives must be allowed in certain cases to surface prenominally while selecting subcategorized complements to the right of the head noun. However, this possibility would not be compatible with the structure of prenominal adjectives shown in (30). In order for prenominal adjectives to select thematic complements, it would have to be assumed that they can select multiple complements for prenominal adjectives, as shown in

(37).<sup>8</sup>

(37) [DP a [AP [A similar] [NP car] [PP to mine]]]

This must not be an available option, because it would allow the occurrence of complement DAPCs in general; it would be quite implausible that the selection of multiple complements is restricted to particular lexical items. Moreover, the multiple complement analysis even fails to account for HF effects, allowing examples like (13a), because it would be in principle possible that thematic complements of A precede NP, as shown in (38).

(38) [DP a [AP [A similar] [PP to mine] [NP car]]]

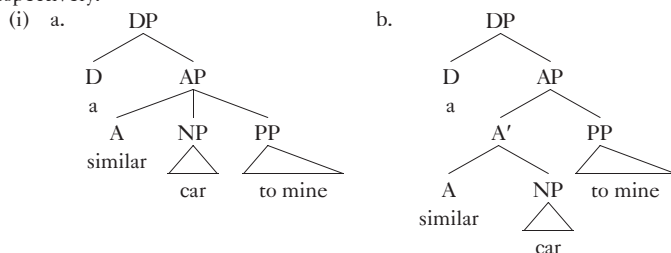
The above discussion clearly suggests that complement DACPs cannot be derived by assuming multiple complementation for prenominal adjectives, without giving up a principled account of HF effects and the restricted distribution of DAPCs.

### 3.2. Complement DAPCs as Instances of Postnominal Modification

Even though it is implausible to analyze complement DAPCs as having a structure parallel to DP with prenominal modifiers, as we have just seen, there is another possibility available to derive complement DAPCs: their derivation from DP with postnominal adjectives via movement. If so, the structure assumed for DPs with postnominal adjectives is crucial for the analysis of complement DAPCs.

In previous analyses of DP-internal adjectives including Abney (1987), the structural position of postnominal adjectives is often less clear than that of prenominal ones, but there is general agreement in the literature that they are generated in some “predicative” position, which is to the right of the head N. This predicative position is assumed to be that of the main predicate within a reduced relative clause or a small

8 The precise structure of prenominal adjectives with multiple complements would be as shown in (ia) or (ib), which involve ternary branching and selection of a non-sister complement, respectively.

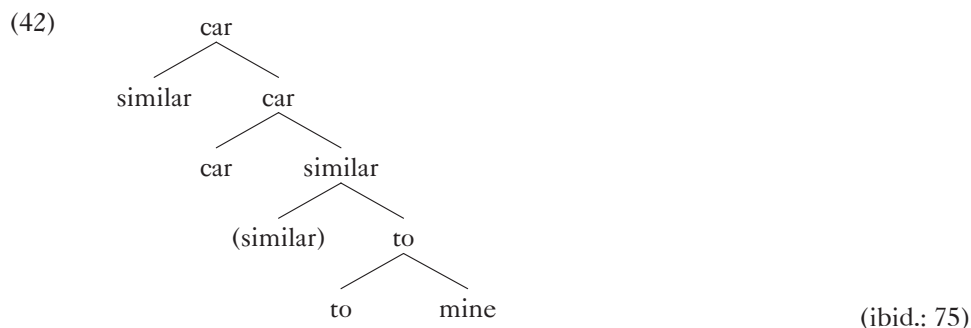


Apart from the problems pointed out in the text, both structures are also problematic in conceptual terms. That is, ternary branching is not permissible given Kayne's (1994) Linear Correspondence Axiom, and complements not c-commanded by their heads not only fall out of the traditional conception of complements, but also pose a serious problem under a configurational theory of argument structure like Hale and Keyser (2002) insofar as they are thematically nondistinct from canonical complements.



In other words, the head nouns of complement DAPCs correspond to internal arguments of their adjectives.

To capture this generalization, he proposes that the derivation of complement DAPCs involves the process of “re-internalization,” which consists of optional raising of the head A across the NP serving as its internal argument to some higher head like Agr, as illustrated in (42).



Since only internal arguments of adjectives can be re-internalized, the possibility of A-raising is restricted to unaccusative/ergative adjectives, deriving the contrast between (34) and (35)–(36).

Escribano’s generalization seems basically correct, but his analysis of complement DAPCs, nonetheless, contains some problems. One problem is that not all unaccusative/ergative adjectives allow DAPCs. Yasui et al. (1976) note that many adjectives with the suffix *-able* do not appear in complement DAPCs, contrary to the prediction made by his analysis. Another problem is that the nature of the process “re-internalization” is quite unclear. Although he suggests that it is the process of defocusing adjectives that is motivated by the feature [-Focus], this characterization of the process would make a prediction that unaccusative/ergative adjectives can be optionally defocused, whereas adjectives with external arguments, namely transitive adjectives, are always focused. It is, however, quite questionable whether such a correlation can be assumed between the argument structure of adjectives and their focus properties in any plausible ways.

In what follows, adopting the general picture of complement DAPCs obtained from Escribano’s (2003) observation, I will explore another possibility to associate complement DAPCs with their postnominal counterparts.

#### 4. The NP-Raising Analysis

Taking a different approach to Escribano’s (2003) generalization, I argue that complement DAPCs reflect base order rather than derived order. More specifically, I propose that complement DAPCs are derived from the structure roughly schematized in (43a) by leaving the modified NP within the complement of A, while its raising to the preadjectival position results in their “continuous” counterparts, as in shown

(43b).

- (43) a. [DP D [ \_\_\_ ... [AP A [ NP ... ]]]]  
 b. [DP D [ NP<sub>i</sub> ... [AP A [ t<sub>i</sub> ... ]]]]

#### 4.1. Raising Adjectives

The analysis proposed here is motivated in particular by the behavior of raising adjectives with respect to complement selection within DP. Raising adjectives like *sure*, *certain* and *likely* allow DAPCs, as illustrated in (44)–(47).

- (44) a. He is sure to succeed. (Maruta and Hirata (2001: 104))  
 b. We are {likely/certain} to return the merchandise. (cf. *ibid.*: 103)
- (45) a. ?a sure candidate to win (Escribano (2003: 29))  
 b. ?a sure plan to fail (*ibid.*)  
 c. ?a sure application to succeed (*ibid.*: 60)
- (46) a. ?a certain candidate to be elected  
 b. ?a certain plan to fail (*ibid.*: 29)
- (47) a. ?a likely executive to be appointed CEO (*ibid.*)  
 b. John is a likely man to come. (Yasui et al. (1976: 241))

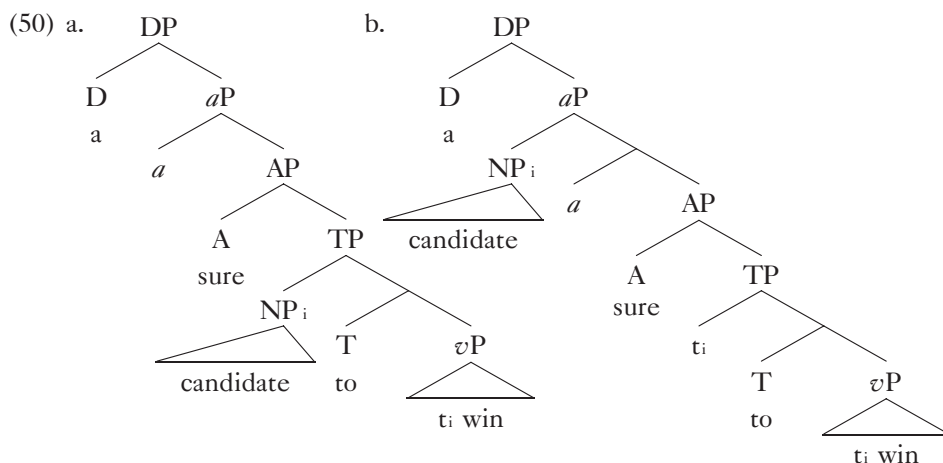
Since raising adjectives constitute a subclass of unaccusative/ergative predicates by virtue of their lack of external arguments, their behavior in (45)–(47) is not inconsistent with Escribano's (2003) generalization *per se*. The availability of complement DAPCs to raising adjectives would, nonetheless, be problematic for his theory of modification in some respects, because it is not the modified NP but the whole infinitival complement containing it that serves as an argument of the adjective. The absence of a thematic relation between the adjective and the modified NP eliminates the possibility that the latter is externally merged with the former; rather, it is reasonably assumed to originate in the TP complement, just as in constructions in which the adjective serves as the main predicate, as in (48).

- (48) [DP a [AP sure [TP [NP candidate]<sub>i</sub> to [tP t<sub>i</sub> win]]]]]

A first problem has to do with the internal structure of the infinitival complement. Given Escribano's Labeling Principle, it is rather unclear what is the result of external Merge of the modified NP to an argument position of the embedded predicate even if not causing a crash, because both syntactic objects would remain unsaturated after Merge. A second problem is that if complement DACPs are always derived by A-raising, as Escribano argues, two instances of movement would be necessary to obtain the word order in DAPCs. Since the adjective is base-generated to the left of the head noun in (47), A-raising does not change their relative order. Accordingly, the modified NP must raise to a higher position than the adjective before A-raising applies. If the derivation of continuous constructions like (49) involve raising of NPs, their discontinuous counterparts can be derived most straightforwardly by its optionality.

(49) a candidate sure to win

The structures proposed here for DAPCs with raising adjectives and their continuous counterparts are depicted in (50a) and (50b), respectively.



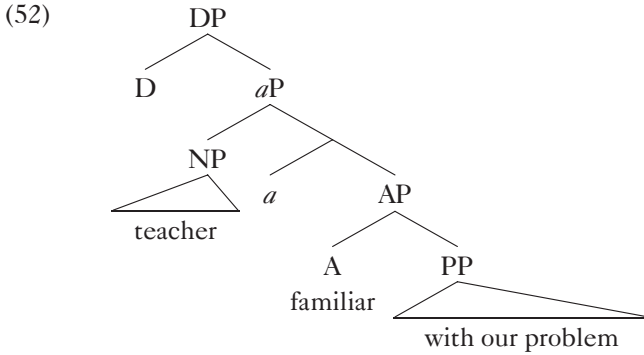
Following Osawa (1999) and Bennis (2004), among others, I assume that the lexical AP is selected by the functional head  $a$ , which corresponds to  $v$  in the verbal domain and bears uninterpretable  $\phi$ -features and an optional EPP property. With its  $\phi$  features serving as a probe, the head  $a$  enters into an Agree relation with the modified NP. Although it introduces the external arguments in the case of transitive adjectives, nothing is externally merged to its specifier position in (50). Instead, if it is assigned an EPP property, the Agree relation just noted induce internal Merge of the goal NP to its specifier, resulting in the continuous order, as seen in (50b). If it is assigned no EPP property, on the other hand, the NP remains in [Spec, TP] within the complement of the adjective, yielding complement DAPCs, as in (50a).<sup>9</sup>

In this analysis, the incompatibility of transitive adjectives with complement DAPCs is accounted for in a straightforward way. Since the modified NP is base-generated in [Spec,  $a$ P] as the external argument of the adjective, the former does not follow the latter at any stage of the derivation, as is clear from (52).

9 Given this derivation, Escribano's (2003) insight that the difference in word order between DAPCs and their continuous counterparts is related to defocusing is recaptured in terms of the interpretation of modified NPs rather than adjectives. If they undergo movement to satisfy the optional EPP property of  $a$ , they can be regarded as having a parallel status to that of shifted objects of verbs, which are assigned certain interpretations that Chomsky (2001) calls "Int." In other words, the interpretive difference between DAPCs and their continuous counterparts should be ascribed not to defocusing of adjectives in the former, as Escribano argues, but to defocusing of the modified NP in the latter. Note that it is not necessary to stipulate a particular connection between the interpretation and the argument structure of DP-internal adjectives; possible order patterns of adjectives and their modified NPs follow straightforwardly from the structures proposed here, together with a more familiar correlation between positions and interpretations of nominals.

- (51) a. a teacher familiar with our problem  
 b. \*a familiar teacher with our problem

(Escribano (2003: 3))



Note that no stipulative distinction is necessary in this analysis among adjectives with different argument structures in the possibility of movement of their modified NPs. The absence of raising of the modified NP in (52) immediately follows from the proposed structure.

The present analysis is supported by the fact that non-raising adjectives like *probable*, though semantically similar to *sure* and *likely*, do not allow complement DAPCs, as shown in (53c).

- (53) a. It is probable that he will succeed.  
 b. \*He is probable to succeed.  
 c. \*He is a probable man to come.

(Maruta and Hirata (2001: 104))

(Yasui et al. (1976: 241))

It also follows naturally from this analysis that adjectives that select finite complements cannot appear in complement DAPCs, as seen in (54).

- (54) a. \*a convinced teacher that he is always right  
 b. \*a happy girlfriend that he is a bachelor  
 c. \*a lucky friend that he has a job  
 d. \*a sorry V.C that the university is short of funds  
 e. \*an amazed onstable what a mess he had made  
 g. \*an unsure officer what he should do

(Escribano (2003: 4))

The fact that adjectives like *sure* and *certain* cannot participate in DAPCs when serving as transitive adjectives, as seen in (55), provides another piece of support for the analysis proposed here.

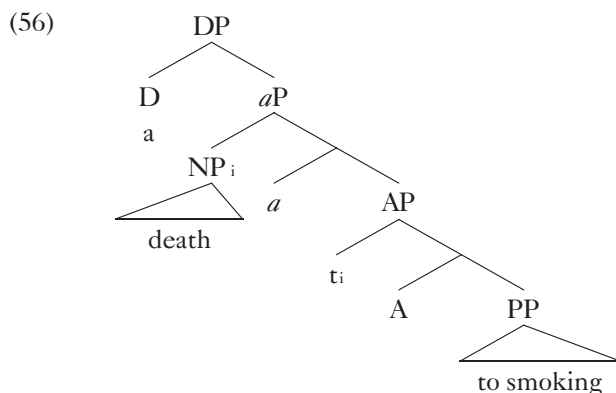
- (55) a. \*a sure candidate of his assets  
 b. \*a sure candidate of winning  
 c. \*a sure candidate that he will win

(ibid.: 30)

The next section shows that the same analysis can be extended to DAPCs with PP complements.

## 4.2. DAPCs with PP Complements

The analysis proposed above is based on the generalization that complement DAPCs are only available when the modified NP is base-generated in a position preceded by the adjective. This allows a structural distinction between unaccusative/ergative adjectives compatible with complement DAPCs and transitive adjectives that is incompatible with them. If adjectives remain within lexical APs, internal arguments generated in [Spec, AP] surface to the left of adjectives, like external arguments of transitive adjectives. Hence, unaccusative/ergative adjectives like *attributable* that disallow complement DAPCs can be given the structure presented in (56).



On this assumption, the present analysis predicts the contrast between raising adjectives and control adjectives. Given that clausal arguments of adjectives occupy their complement positions, control adjectives surface after their arguments serving as controllers, even when the latter are internal arguments, as shown in (57).

(57)  $[_{aP} a [_{AP} \langle \text{Controller} \rangle; [_{A'} \text{Adj} [_{CP} \text{PRO}_i \text{ to } \dots]]]]]$

Therefore, unaccusative/ergative adjectives are predicted to disallow DACPs if they select control infinitives. This prediction is borne out, as shown in (58), where the adjectives are morphologically related to passive participles, suggesting the status of the modified NPs as internal arguments.

- (58) a. \*a bound marriage to fail  
 b. \*a condemned prisoner to be shot at dawn (Escribano (2003: 5))

On the other hand, I argue that unaccusative/ergative adjectives like *similar* and *comparable* allow DAPCs because the modified NPs are generated within complements of the lexical As, as shown in (59). This amounts to the claim that every DP-internal adjective that occurs in complement DAPCs is a kind of raising predicate.

(59)  $[_{AP} \text{similar} [_{PP} \text{car} [_{P'} \text{to mine } ]]]]$

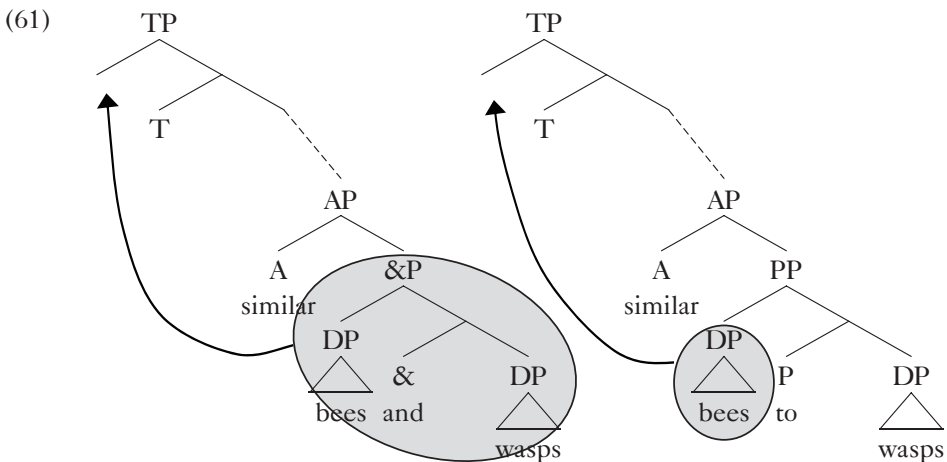
One might wonder, however, whether such an analysis is actually available; unlike raising adjectives like *sure*, which allow the modified NPs to be identified as the

subjects of their infinitival complements, it seems rather difficult to suppose any thematic relation between the NPs modified by adjectives like *similar* and (part of) their PP complements.

Nonetheless, there is reason to assume the structure in (59) for at least a class of adjectives that allow DAPCs in which their PP complements follow the modified NPs: the class of “symmetric” or “allelic” predicates, such as *similar* and *comparable*. Adjectives in this class denote symmetric relations between their arguments, and exhibit some characteristic behaviors. It is particularly of significance here that they generally show an alternation between two types of constructions; the two individuals involved in the relation denoted by them may be realized as two distinct arguments, or as a single argument involving coordination, as shown in (60a, b), respectively.

- (60) a. Bees are similar to wasps.  
 b. Bees and wasps are similar. (Dimitriadis (2004: 39))

The two examples in (60) are interpretively equivalent, which leads us to assume the parallelism between their structures, as seen in (61).<sup>10</sup>



On the hypothesis that coordination structures are phrases headed by coordinate

10 Strictly speaking, the interpretation of (60a) is not exactly the same as that of (60b). As Dimitriadis (2004) points out, (60a) entails that it is the set of bees and the set of wasps that are in a similarity relation, namely, the grouping of the referents in accordance with their syntactic realization, whereas (60b) does not have such an entailment. (ia) indeed implies in its most natural interpretation that a separation was made between the set of cows and the set of pigs, but this is just a pragmatic preference; it can be canceled, for example, by specifying the standard for separation as in (ib). The addition of such an expression to the corresponding example with a preposition, on the other hand, results in a contradictory statement, as shown in (ii).

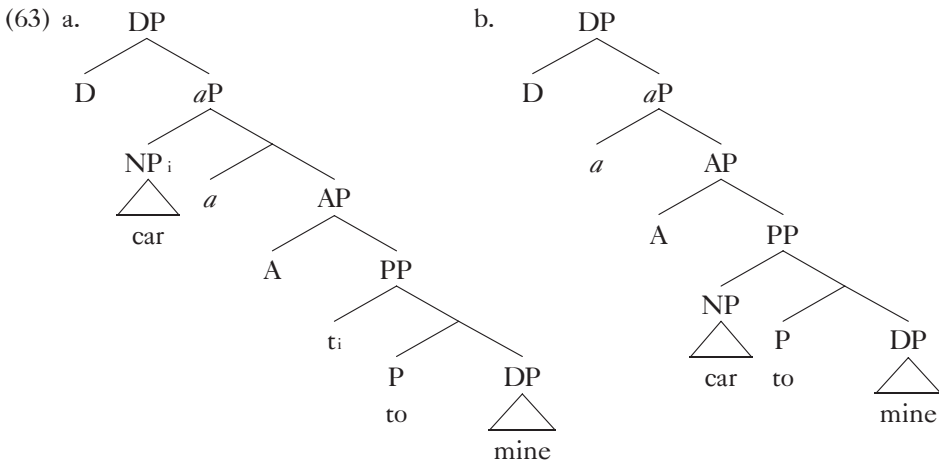
- (i) a. The cows and the pigs were separated.  
 b. The cows and the pigs were separated according to color. (cf. Dimitriadis (2004: 30))  
 (ii) The cows were separated from the pigs (\*according to color). (ibid.)

This difference in interpretation is not inconsistent with the present analysis. Some distinction needs to be made between constructions with coordinate structures and those with prepositions when asymmetric adjectives are taken into account. See also note 11.

conjunctions (Kayne (1994), Johannesen (1998)), (60b) can be analyzed to have the structure in (61a), while the parallel structure in (61b) can be assumed for (60a), whose subject corresponds to the first conjunct within the subject of (60b). As shown in (62), Kayne (1994) gives a similar analysis of sentences involving predicates like *friends*, which also instantiates a symmetric predicate.

- (62) a. John is friends with Bill. (Kayne (1994: 63))  
 b. John<sub>i</sub> is friends [[e]<sub>i</sub> with Bill]. (ibid.: 66)

If the above analysis of symmetric predicates is on the right track, it follows that the NP modified by adjectives like *similar* is base-generated in the specifier position of their complement PP, thereby accounting for the availability of complement DAPCs to this class of adjectives as in the case of raising adjectives. If the modified NP raises to [Spec, *a*P], as seen in (63a), the “continuous” construction is derived, whereas the DAPC is derived when the NP remain in situ, as seen in (63b).



It would not be unreasonable to extend the same analysis to examples like those in (35), whose adjectives also denote relations between their arguments, though they are not symmetric and no parallel alternation is available. Assuming that coordinate structure is allowed as arguments of symmetric but not asymmetric predicates by virtue of their semantic difference, I argue that DPs with adjectives such as *subsequent* have the structure given in (64a, b), which are closely parallel to those in (63a, b), respectively.<sup>11</sup>

11 More specifically, this difference between symmetric and asymmetric predicates would also have to do with the semantics of coordinate structures and PP complements in the relevant constructions. As stated in note 10, PP complements like those in (61b) entail the grouping of their referents that correspond to the two DPs they involve, which is fully compatible with the semantics of both symmetric and asymmetric predicates. On the other hand, coordinate structures like those in (61a) do not specify any particular grouping. The non-specification of grouping would be consistent with symmetric predicates, but highly problematic to asymmetric predicates, because their meaning hinges crucially on the grouping of the individuals denoted by their arguments.

- (64) a. [DP a [<sub>AP</sub> [NP article]<sub>i</sub> a [<sub>AP</sub> subsequent [PP t<sub>i</sub> [P' to Chomsky's]]]]]  
 b. [DP a [<sub>AP</sub> a [<sub>AP</sub> subsequent [PP [NP article]] [P' to Chomsky's]]]]]

Given the structure in (64), the availability of DAPCs to asymmetric adjectives like *subsequent* is accounted for in the analysis proposed above.

## 5. Conclusion

This paper has attempted to account for the restricted availability of DAPCs as well as HF effects in the adjectival domain. Close examination of previous approaches to DP-internal adjectives revealed that HF effects can only be explained in a principled way if prenominal adjectives are analyzed as heads selecting the modified NPs as their complements, as Abney (1987) argues. On the other hand, it turned out in the subsequent discussion of DAPCs that adjunct DAPCs can be straightforwardly captured in Abney's approach, whereas complement DAPCs must be derived from constructions with postnominal adjectives. To give an adequate account of the distribution, I proposed that complement DAPCs directly reflect their base word order, while their "continuous" counterparts are derived via raising of the modified NP.

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