

Adjectives are in Phrasal Positions*

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There are three main structural analyses of adjectives: they are argued to be in adjoined positions, in head positions, or in specifier positions. This paper takes stock of some of the arguments for and against these different analyses concluding that adjectives are in phrasal (rather than head) positions. Adjectives in specifier positions seem to have a slight advantage over adjectives in adjoined positions. Among others, prenominal adjectives with one or two arguments are discussed using examples from German, Russian, and Yiddish.

1. Introduction

In the literature on adjectives, there are three main structural analyses of these elements. Traditionally, they are assumed to be adjoined (1a) (e.g., Radford 1988: 210, cf. also Jackendoff 1977: 105, Bošković 2005 for the Slavic languages, Bošković 2016 more generally, and others for different versions of this adjunction structure).¹ Second, Abney (1987) proposes that adjectives are in head positions below DP and above NP (1b) (also Bošković 2005 for the Germanic languages). Finally, Cinque (1994) argues that adjectives form phrases hosted in the specifier position of a recursive AgrP (1c) (also Cinque 2010 and many others):

- (1) a. [NP D [N' AP [N' AP [N' N]]]] (A as adjuncts)
- b. [DP D [AP A [AP A [NP N]]]] (A as heads)
- c. [DP D [AgrP [AP] Agr [AgrP [AP] Agr [NP N]]]] (A as specifiers)

Adjectives are in head positions in (1b) but in phrasal positions in (1a) and (1c). The difference between (1a) and (1c) is the presence of intervening heads (i.e., Agr) in (1c), something that will be relevant later.

In this paper, I take stock of some of the arguments for and against these different structural analyses concluding that Abney's proposal in (1b) faces a number of serious challenges and showing that (1c) has at least one advantage over (1a). I start by discussing some merits of the head analysis in (1b), put forth by Abney (1987) and further developed by Bošković (2005), showcasing that these do not hold upon closer examination.

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¹ Actually, Bošković (2005: 20) assumes that adjectives are in Spec,NP but he explicitly states that adjoining them to NP, as in the traditional account, would make no relevant difference. Bošković (2014) points out that binding facts suggest that adjunction has some advantages. Since adjunction seems more advantageous, I will focus on this option (rather than adjectives in Spec,NP, see also footnote 17). Also, I will not discuss the clausal analysis of adjectives (Kayne 1994).

2. Adjectives as Heads

Abney (1987: 324) argues that adjectives are heads that can take a predicative (i.e., non-referential) NP (2a) or a PP (2b) as a complement:

- (2) a. too big a/*the house (English)
b. too big of a house

The possibility of *too big* to be located in a specifier position is dismissed as that would leave *of* in (2b) dangling in the structure. Assuming a complement-type of structural relation, this immediately provides a position for *of* as the head of the selected PP. As strings like (2a-b) behave like noun phrases, it is proposed that adjectives inherit features from the lower noun.

The complement structure in (2) provides a second argument in favor of adjectives as heads. Basing his discussion on English again, Abney (1987: 326) argues that if adjectives are heads taking the head noun as part of their complement, it follows that prenominal adjectives cannot take other arguments, elements directly related to the adjective itself; compare the postnominal adjective in (3a) to the prenominal adjective in (3b):

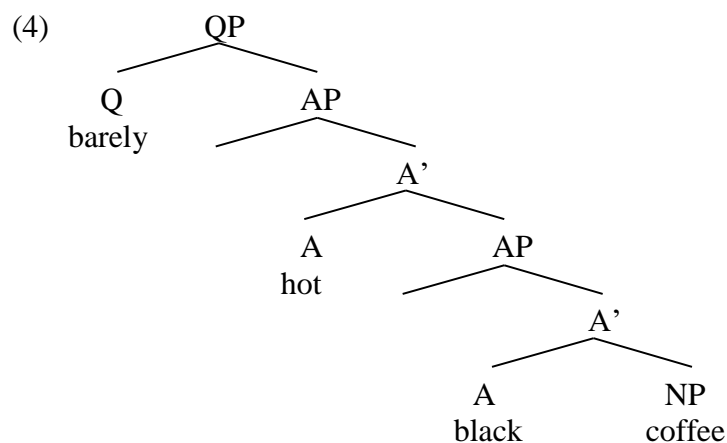
- (3) a. the man [proud of his son] (English)
b. * the [proud of his son] man

In Abney's view, these constitute arguments for adjectives as heads.

Abney proposes two structures for adjectives as heads. He argues against—what I call here—Proposal A discussed below in section 2.1 and decides in favor of Proposal B taken up in section 2.2. The difference between the two proposals has to do with the position of the degree word.

2.1. Adjectives as Heads: Proposal A

First, Abney (1987: 335) proposes the following structure where adjectives are in head positions and a degree element is in the head position of QP above AP:



Although Abney argues against this structure (see section 2.2), note that there is one potential argument in favor of it. Abney only discusses English, which does not allow prenominal adjectives to occur with an argument at all; compare (3b) and (5a). However, it is often observed that arguments of adjectives can precede their heads in other Germanic languages (5b):

- (5) a. * the [of his son proud] man (English)
 b. der [auf seinen Sohn stolze] Vater (German)
 the of his son proud father
 ‘the father proud of his son’

In fact, the claim is that these arguments can only precede the adjective when the latter is inside the noun phrase; compare (6a) to (6b) on the one hand, and (5b) to (6b) on the other:

- (6) a. der Vater [stolz auf seinen Sohn] (German)
 the father proud of his son
 ‘the father proud of his son’
 b. * der [stolze auf seinen Sohn] Vater
 the proud of his son father

Similar facts hold for other Germanic languages here illustrated with two more examples paralleling (5b) (the Yiddish examples are from Aptroot and Gruschka 2010: 149, [7b] is taken from Julien 2005: 6):

- (7) a. di [farn oylem nit varshtendlekhe] frage (Yiddish)
 the for.the people not comprehensible question
 ‘the question not comprehensible for the people’
 b. den [af sin datter stolte] mor (Danish)
 the of her daughter proud mother
 ‘the mother proud of her daughter’

Assuming the structure in (4), one could suggest that the argument of the adjective is in Spec,AP as the head noun is in the complement position of the adjective. This would explain why arguments of adjectives can only precede their head.

While initially attractive, other languages do allow adjectives with a following argument. For instance, Yiddish and Russian are cases in point ([8b] is from Pereltsvaig 2007: 65):

- (8) a. di [nit varshtendlekhe farn oylem] frage (Yiddish)
 the not comprehensive for.the people question
 ‘the question not comprehensible for the people’
 b. [skupaja na cveta] severnaja priroda (Russian)
 scanty on colors northern nature
 ‘scantly-colored northern landscape’

Note that Yiddish allows preceding and following arguments. Now, given the structure in (4), it is not clear though how an argument can follow its adjectival head and precede the head noun as the complement position is taken up by NP.

Furthermore, there are indications that degree words are not heads in the projection line of the head noun as in (4) above. Haider (1992: 320) notes that degree elements such as *sehr* ‘very’ cannot be stranded in Split Topicalizations where the lower part of a noun phrase appears to the left:

- (9) a. [Kostbare Vasen] besitzt er nur [drei (*sehr)]. (German)
 precious vases owns he only three very
 ‘He owns only three very precious vases.’
 b. [Sehr kostbare Vasen] besitzt er nur [drei].
 very precious vases owns he only three
 ‘He owns only three very precious vases.’

In the structure in (4) above, the adjective and noun form a constituent to the exclusion of the degree word. Assuming a movement analysis (e.g., van Riemsdijk 1989, Bhatt 1990), the Split Topicalization facts follow only if one **stipulates** that AP cannot move when QP is present.

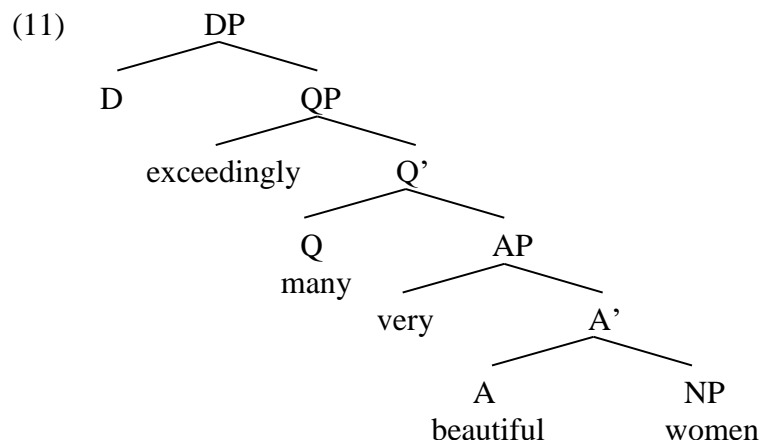
Moreover, every adjective can, at least in principle, be modified:

- (10) sehr liebe ziemlich kleine Kinder (German)
 very good fairly small children
 ‘very good fairly small children’

This implies that every AP has a QP on top of it leading to a structural alternation of QP and AP. At the very least, this is not an attractive state of affairs.

2.2. Adjectives as Heads: Proposal B

The second proposal, the one favored by Abney (1987: 339), involves degree elements in Spec,AP:



Abney argues that positing degree elements in Spec,AP has certain advantages. Focusing on German again, the Split Topicalization facts in (9) follow immediately as *sehr* is in Spec,AP. Assuming that A' is invisible for syntactic operations, the adjective and noun do not form a

constituent to the exclusion of the degree word; only AP (which includes the degree word) or NP can be moved.

A second advantage of analyzing adjectives as heads has been put forth by Bošković (2005: 33). He argues that the—in his terms—AP-over-NP analysis in (11) accounts for the ban on left-branch extraction in Germanic, specifically AP left-branch extraction.² Considering (12), the displacement of the elements to the left periphery of the clause involves phrasal movement. Note though that adjectives by themselves do not form (phrasal) constituents to the exclusion of NPs in this analysis. This accounts for the ungrammaticality of the example in (12a). For other elements in the left periphery of the noun phrase, Bošković (2005: 15 fn. 19) suggests that determiners, including demonstratives, are also heads (12b). This presumably extends to numerals (12c). Saxon Genitives like *Peters* in (12d) are taken to be non-constituents with the possessor in Spec,DP and the possessive morpheme *-s* in D:

- (12) a. ?? [Rote]_i habe ich nur [t_i Autos] gesehen. (German)
 red have I only cars seen
 b. * [Dieses]_i habe ich nur [t_i Auto] gesehen.
 this have I only car seen
 c. * [Ein([e)s)]_i habe ich nur [t_i Auto] gesehen.
 a/one have I only car seen
 d. * [Peters]_i habe ich nur [t_i Auto(s)] gesehen.
 Peter's have I only car(s) seen

To explain the ungrammaticality in (12b), the German demonstrative is analyzed as a head in this type of account. However, Norwegian provides clear evidence that demonstratives are more complex. This becomes clear when a demonstrative occurs with a deictic reinforcer. There are three distributional options: the free-standing determiner can combine with inflected *herre* (13a); it can co-occur with both *herre* and uninflected *her* (13b); and it can surface with just *her* (13c) (data set slightly adapted from Leu 2015: 32):

- (13) a. den herre klokka (Eastern Norwegian)
 the here-INFL watch-DEF
 'this watch'
 b. den herre her klokka
 the here-INFL here watch-DEF
 c. den her klokka
 the here watch-DEF

With an inflection on an internal element (*herre*) as in (13b), these strings are unlikely to be complex heads. In addition, the demonstrative and its reinforcers cannot be separated by other elements. Interpreting reinforcers as a kind of modifier, this adjacency immediately follows if both elements are part of the same specifier, Spec,DP (see Roehrs 2010a, 2013a).

² Bošković (2005) also briefly discusses the possibility of adjectives as adjuncts in Germanic (but crucially adjoined below DP). The latter possibility is opted for in Bošković 2016 (p. 7). More generally, Bošković winds up suggesting a difference between Germanic as involving DP languages and Slavic as NP languages (also Bošković 2012, but see Lyutikova & Pereltsvaig 2015, Giusti & Iovino 2016, and work cited therein).

Like the German demonstrative in (12b), these complex elements (or parts thereof) cannot undergo left-branch extraction. First, *den* itself cannot be separated from its reinforcer(s) (not shown here). Second, left-branch extraction of the demonstrative and its reinforcer(s) is not possible either (similar facts hold in Swedish):

- (14) a. * [Den herre]_i har jeg kjøpt [t_i klokka]. (Eastern Norwegian)
 the here have I bought watch-DEF
 ‘I have bought this watch.’
 b. * [Den herre her]_i har jeg kjøpt [t_i klokka].
 c. * [Den her]_i har jeg kjøpt [t_i klokka].

Above, we concluded that demonstratives are not heads. As phrases, though, they should be able to move in this constituency-based account, contrary to fact. Thus, Bošković’s (2005) explanation of the ban on left-branch extraction in Germanic, which is based on adjectives as heads, cannot be extended to other elements (e.g., complex demonstratives). An account different from that of the adjectives is needed (see section 4.6 for a tentative proposal).³

A clear argument against the structure in (11) can be gleaned from the fact that it leaves no room at all for arguments of adjectives, neither for one preceding the adjective nor for one following the adjective. These arguments form constituents by themselves. Without further assumptions, they, as phrases, are expected to move. Note that Bošković (2005) does not discuss arguments of adjectives at all. I return to this in more detail below.

2.3. Preliminary Summary

We discussed two initial merits of adjectives as heads: prenominal adjectives show restrictions in the way they take arguments and they cannot undergo left-branch extraction. With regard to the first initial advantage, we wind up with the following picture. Abney’s Proposal A accounts for the possibility of an adjective with a preceding argument; however, it does not allow a following argument. Abney’s Proposal B leaves room for neither a preceding argument nor a following argument. In short, both proposals have no account for an argument following its related adjective, a state of affairs witnessed in both the Germanic and Slavic languages.

Returning to English, which does not allow any arguments with prenominal adjectives (cf. [3b] and [5a]), the very fact that other languages do allow such constructions militates against a purely structural account of this restriction in English. This seriously undermines the claim that adjectives are heads taking head nouns as part of their complement (for an alternative proposal of the data in [2], see Hendrick 1990 arguing for operator movement to Spec,DP). As a consequence, we no longer have to accept the claim that the adjective inherits features of the noun.⁴ In fact, as pointed out by Giusti (2002: 84 fn. 15), an adjective as a lexical head in the

³ This issue remains in Bošković (2014). Assuming phase theory (Chomsky 2001), note that if the demonstrative occupies the phase edge, Spec,DP, then extraction of demonstratives out of the DP should be fine, contrary to fact. If demonstratives are indeed phrasal and in the highest specifier of the noun phrase, a different account is needed also in this type of analysis.

⁴ Note in this respect that for examples like (2b), the PP headed by *of* does not block this inheritance of features in Abney’s account: it is as if the PP were not present at all. Considering that this *of* is a grammatical preposition, one could suggest that it is not present in syntax but is inserted later. This would mean that *of* would not be ‘dangling’ in any syntactic sense militating against the argument that the adjective in (2b) selects a PP. This in turn weakens the argument for adjectives as selecting heads in the relevant sense.

extended projection line of the noun goes against Grimshaw's (1991) proposal of extended projections.

As for the second initial advantage, Bošković's (2005) proposal for the ban on left-branch extraction cannot be extended to other cases to explain their ungrammaticality. While not problematic in and of itself, the absence of such a limitation would make the proposal stronger. In the next sections, we turn to the two other structural analyses of adjectives illustrating a number of advantageous points. As part of this discussion, we will have the opportunity to return to adjectives as heads pointing out more shortcomings.

3. Adjectives in Phrasal Positions

Traditionally, it is assumed that adjunction structures involve A'-positions and specifiers are A-positions. While the former are taken to be iterative, the latter are not (unless the relevant elements occur in specifier positions of a recursive phrase). Furthermore, A'-positions often host operators whereas A-positions typically involve theta-role assignment or case checking relations. Note though that garden-variety adjectives are not operators and do not receive a theta-role or case from the head noun. As a consequence, it is hard to distinguish adjunction structures from specifier constellations from this perspective. As we will see in this and other sections, both phrasal analyses capture many of the empirical facts equally well. I dedicate section 5 to discussing the difference between the two explicitly. The difference involves intervening heads, absent in adjunction structures but present in specifier structures.⁵

Svenonius (1994: 445-46) observes for English (see also Alexiadou, Haegeman, Stavrou 2007: 348-54; Julien 2005: 7-8) that scopal facts indicate that degree elements such as *barely* take scope over the adjective immediately to their right (*hot*) but not a second one further on their right (*black*):⁶

- (15) a. some barely hot black coffee (English)
 # 'some barely hot, barely black coffee'
 b. sehr heißer schwarzer Kaffee (German)
 very hot black coffee
 'very hot black coffee'
 # 'very hot, very black coffee'

If adjectives were heads in the extended projection of the noun as in section 2, *barely* would c-command both adjectives and thus take scope over both.⁷ This is different for the phrasal analyses.

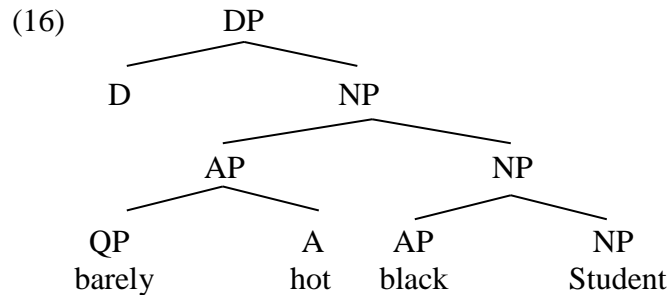
Starting with the traditional account, let us update the adjunction structure as follows. Assuming the DP-hypothesis, the AP is adjoined to NP. Corver (1991, 1997) and Zamparelli (1993, 2000: Chap. 7) argue that degree words are part of the extended projection of the

⁵ In more recent work, it has been claimed that there are constructions involving multiple specifiers. Given the considerations mentioned in the main text, multiple specifiers are hard to distinguish from adjunction structures in this context. I will not pursue the option of adjectives in multiple specifiers in detail here.

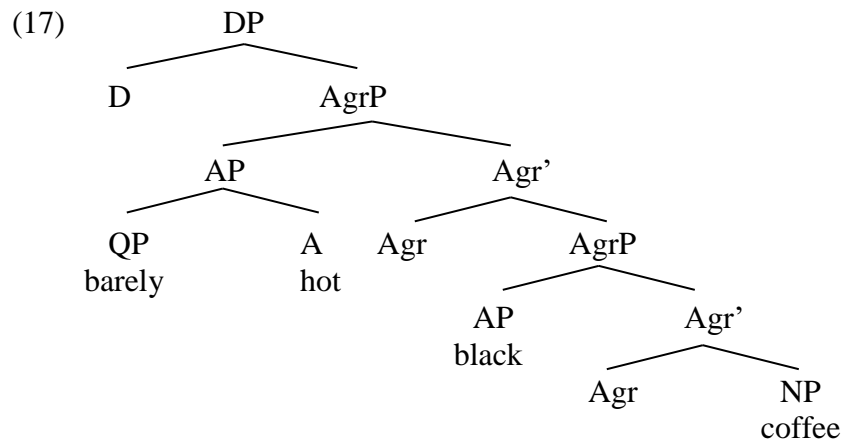
⁶ There is a similar argument with focus particles (see Roehrs & Sapp 2016: 15).

⁷ This line of reasoning for adjectives holds independent of whether the NP is located in the complement position of the adjective as in Abney 1987 (esp. 326-27) and Barbiers 1992 or the NP is in the specifier position on the right as in Bhatt 1990 and Delsing 1991, 1993 (p. 81). The structural relation between the adjectives themselves is the same.

adjective. I assume that the degree word is in the specifier of the AP.⁸ Given these assumptions, the degree word does not c-command the second adjective:



As for the other phrasal analysis, Cinque (1994, 2010) proposes in a different context (section 5) that adjectives are in specifiers of a recursive Agreement Phrase (AgrP) (see also Kester 1996: 30-50 and many others). As above, let us assume that the degree word is in Spec,AP:



As in the adjunction structure, the degree word does not c-command the second adjective here.

The Split Topicalization facts in (9) follow in both the adjunction and specifier accounts as the adjective *kostbaren* and the noun *Vasen* cannot be moved to the exclusion of the degree word *sehr*. So far, adjectives in phrasal positions fare better than adjectives as heads. The next section is dedicated to the discussion of arguments of adjectives.

4. Adjectives with two Arguments

Adjectives may take not only one argument as shown above but two. Importantly, these arguments can appear in different orders before the adjective (18a-b):

⁸ Svenonius (1994: 446) suggests that *barely* is adjoined to AP. However, this leads to a problem for the account of the data in (15) under certain definitions of c-command.

- (18) a. ein [den meisten an Kenntnissen überlegener] Student (German)
 a to.the most in knowledge superior student
 ‘a student superior to most (others) in knowledge’
 b. ein [an Kenntnissen den meisten überlegener] Student
 a in knowledge to.the most superior student
 ‘a student superior to most (others) in knowledge’

Considering the different word order possibilities in (18), there are at least three phrasal positions associated with the adjective.⁹ Below are some more examples: (19a) involves two prepositional phrases where one preposition (*an*) is selected (see also [18] above for an even clearer case of selection); the example in (19b) contains a spatial adjunct that the argument *ihm* ‘him’ must have crossed moving left:

- (19) a. ein [an Peter für die Mutter verfaßter] Brief (German)
 a to Peter for the mother written letter
 ‘a letter written to Peter for the/my mother’
 b. der [ihm im Institut begegnete] Mann
 the him in.the institute encountered man
 ‘the man meeting him in the institute’

Furthermore, if a degree word is in a specifier position, then a degree element intervening between the arguments of the adjective and the adjective itself also indicates that there are several phrasal positions. Similar to (18), different word orders are possible:¹⁰

- (20) a. ein [den meisten an Kenntnissen sehr überlegener] Student (German)
 a to.the most in knowledge very superior student
 ‘a student very superior to most (others) in knowledge’
 b. ein [an Kenntnissen den meisten sehr überlegener] Student
 a in knowledge to.the most very superior student
 ‘a student very superior to most (others) in knowledge’

In light of these facts, I consider the three structural analyses of adjectives in more detail. I focus on adjectives with two arguments and only briefly comment on structures involving adjuncts and degree words.

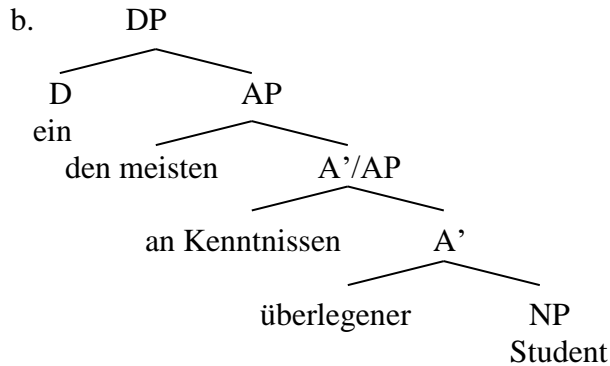
4.1. *Adjectives as Heads - Revisited*

For the structure in (1b) above (specifically Proposal A), one could assume that the arguments are base-generated in multiple specifiers/left adjunctions:

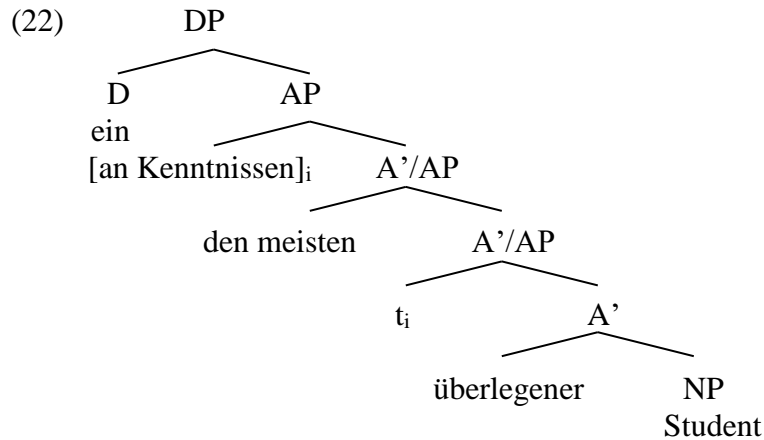
⁹ This point was inspired by a discussion with Michael Putnam.

¹⁰ If degree elements are in a higher head position inside the complex specifier in (17), then we still need at least three phrasal positions above the AP.

(21) a. [DP D [AP A [NP N]]]



The dislocated argument could be assumed to have scrambled to a higher phrasal position:



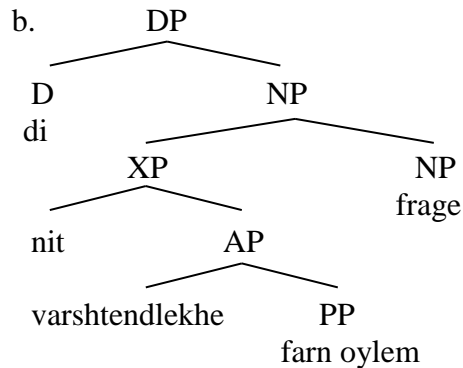
On this analysis, we have at least three specifiers or one specifier and two adjunctions. Note though that the reordering of arguments involves anti-local movement. This type of movement is considered too short as it must cross more than phrasal segments. This is not the case in (22) above.¹¹ Alternatively, one could suggest different base-generated orders. However, notice that the adjectives in (18) and (19a) select a specific preposition (*an*) on one of their arguments. Making the common assumption that selection is a local process, this militates against different base-generated orders. Furthermore, arguments are merged closer to their predicates than adjuncts. In fact, like verbs, adjectives can assign specific cases such as dative, genitive, and accusative. In (19b), the verb assigns the lexical case dative. Observe though that an adjunct intervenes between the adjective and its dative argument. This raises questions about different base-generated orders for such examples as well. Similar issues of anti-locality of movement and local selection of arguments also arise in (20) with an intervening degree word. Most importantly, Yiddish and Russian adjectives with a following argument are still problematic.

¹¹ To avoid the issue of anti-local movement, one could suggest that the argument moves to the specifier of a different, higher phrase, for instance, a Topicalization Phrase or a Focus Phrase. However, with the exception of the dislocation of strongly stressed adjectives, such phrases have not been argued to be part of the extended projection line of nouns in German.

4.2. Adjectives as Adjuncts

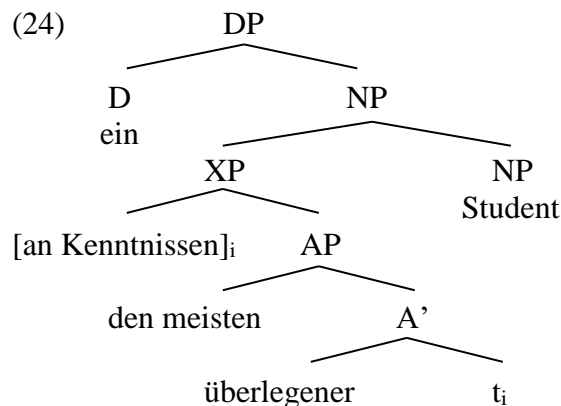
Continuing the discussion of section 3, I follow Corver 1997 in that the adjective builds an extended projection (XP) on top of AP. XP is adjoined to NP. The base position of the relevant elements inside XP can be illustrated with Yiddish (the AP in Yiddish is most likely head-initial):

- (23) a. di nit varshtendlekhe farn oylem frage (Yiddish)
the not comprehensive for.the people question



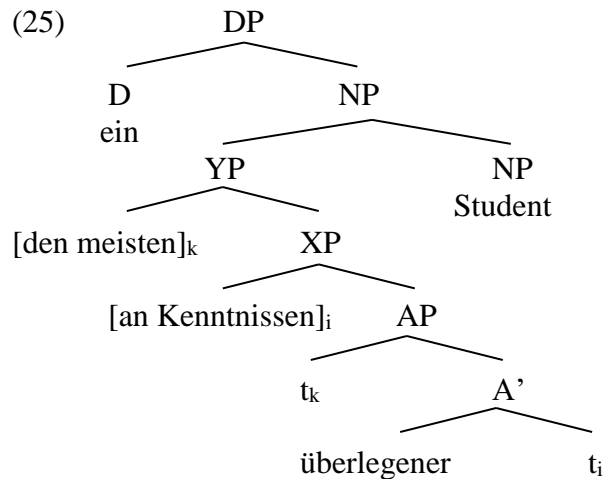
Continuing with German, displacement of the complement occurs inside of this complex adjunct where the PP moves to the specifier of XP (for a proposal as to why the complement has to move, see Roehrs 2010b):¹²

- (24) (German)



The structure with two displaced arguments is as follows where the dative DP has moved to the specifier of a higher phrase (YP), also part of the extended projection of the adjective:

¹² The headedness of the AP in German is not clear (but see Riemsdijk 1983: 235 on adjectives with NP complements). Note though that this argument goes through even if the AP is head-final as the two arguments reorder with regard to each other as seen in the next structure (whereas reordering of an argument and its related adjectival head could simply indicate flexibility in the headedness of the AP).



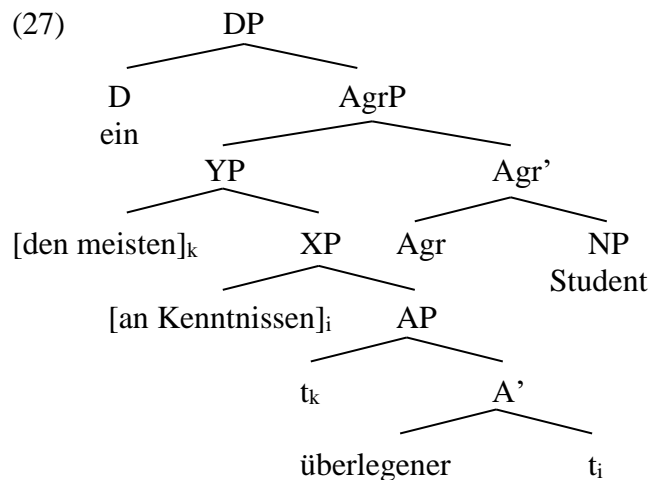
Note that it is not exactly clear what kind of phrases XP and YP are. Be that as it may, adjectives as adjuncts straightforwardly accommodate their arguments. This type of analysis can also accommodate adjuncts and degree words without a problem.

4.3. Adjectives as Specifiers

In a similar fashion, one could update (1c) above where the extended projection of the adjective sits in Spec,AgrP:

(26) [DP D [AgrP [YP AP] Agr [NP N]]]

I only provide the tree where both arguments are displaced inside the specifier:



Like adjectives as adjuncts, adjectives as specifiers have no problems with arguments, adjuncts, and degree words. Making certain assumptions, both phrasal analyses of adjectives can accommodate the relevant elements and their reorderings.

4.4. Extraction of Arguments of Adjectives from the Noun Phrase

Dependents of a head noun can move out of indefinite DPs even in the presence of adjectives. This can be seen with arguments of relational nouns (28a) and adjuncts of concrete nouns (28b):

- (28) a. [Von Peter]_i habe ich [einen jüngeren Bruder t_i] gesehen. (German)
of Peter have I a younger brother seen
'I have seen a younger brother of Peter's.'
b. [Aus welcher Stadt]_i hat er [ein nettes Mädchen t_i] kennengelernt?
from which city has he a nice girl gotten to know
'From which city has he gotten to know a nice girl.'

Crucially, though, none of the arguments of adjectives can extract (oblique case-marked DPs seem to be worse than PPs):

- (29) a. * [Den meisten]_i treffe ich einen [t_i an Kenntnissen überlegenen] Studenten. (Germ.)
to.the most meet I an in knowledge superior student
b. ?? [An Kenntnissen]_i treffe ich einen [(t_i) den meisten t_i überlegenen] Studenten.
in knowledge meet I an to.the most superior student

The data in (29) follow from the assumption that complex adjuncts (traditional account) or specifiers (Cinque's proposal) are islands for movement and sub-extraction out of them leads to ungrammaticality (Chomsky 1986).

It is not clear where arguments of adjectives are located in Bošković 2005 but his formulation of the Left-branch Condition does not apply to them as arguments are (phrasal) constituents. If arguments are in specifiers as in Abney's proposal A (section 4.1), they should be able to move just as the phrasal elements in the extraction data in (28) above can move.

However, this is not what we find. A different proposal is made in Bošković 2016, where adjectives are adjoined to NP below DP. Note though that Bošković 2016 only discusses Slavic in this respect focusing on adjectives with one argument. So, while the Germanic languages are not explicitly discussed in this respect, one could make the following suggestion. Assuming adjectives involve phases, their arguments must adjoin to the highest projection of the adjective on their way out of the DP. The next step, movement from this adjoined position to Spec,DP, would result in anti-local movement explaining the ungrammaticality in (29). However, to be clear, adjectives are not in head positions in that account.

Next, we check Bošković's (2005) proposal for Russian, which allows two following complements (m = marked):

- (30) a. [prevosxodjaščij vsex po znaniyam] student (Russian)
superior all.GEN on knowledge student
'a student superior in knowledge to all (others)'
b. ^m [prevosxodjaščij po znaniyam daže vypusnikov stenforda] student
superior on knowledge even graduates.GEN Stanford student
'a student superior in knowledge even to the Stanford graduates'

Russian APs are (phrasal) adjuncts in Bošković's 2005 analysis and adjectival arguments should

be part of these adjoined structures for local theta-role assignment. In contrast to the discussion of German above (i.e., extraction out of specifiers, cf. (21b)), **sub**-extraction out of adjuncts should be ungrammatical. However, Russian allows scrambling of arguments out of nominals:

- (31) a. [Vsex]_i ja vstretil [prevosxodjaščego t_i po znanijam] studenta. (Russian)
all.GEN I met superior on knowledge student
‘I met a student superior in knowledge to all.’
b. [Po znanijam]_i ja vstretil [prevosxodjaščego vsex t_i] studenta.
on knowledge I met superior all.GEN student
‘I met a student superior in knowledge to all.’

Without further assumptions, the grammaticality in Russian is thus unpredicted. Note that we cannot claim that the arguments are in adjoined or specifier positions—see again section 4.1—as the adjectives themselves are not in head positions (again, see Bošković 2016 for an account).

Table 1 summarizes how Bošković’s (2005) analysis fares with regard to movement of adjectives and its extension to movement of their arguments:

Table 1: Summary of Bošković’s (2005) Account

	German	Russian
Bošković’s structure (p. 21)	[_{DP} D [_{AP} Adj [_{NP} N]]]	[_{NP} AP N]
movement of adjective	ungrammaticality explained	grammaticality explained
extraction of argument	ungrammaticality unexplained	grammaticality unexplained

To be fair, Bošković focuses on adjectives and does not discuss the movement properties of their arguments. What is interesting to point out is that while German does not allow movement of adjectives or their arguments, Russian does. An obvious difference between the two languages is that German has an article/DP that seems to induce the ungrammaticality in German or more generally Germanic. Specifically, the article/DP seems to turn the specifier or adjunct containing the adjective and its arguments into an island in the Germanic languages. If correct, islands are not structural per se but are induced in a certain environment (cf. Bobaljik and Wurmbrand 2005, Bošković 2014 on a contextual approach to phasehood, also Bošković 2016). Regardless, we have arrived at another argument against Abney’s proposal in (1b) examining Germanic: with adjectives as heads, there is no **sub**-extraction and arguments should be able to move from their specifier or adjoined positions, contrary to fact.

4.5. Argument Movement inside the Noun Phrase

If a second adjective is added to the left, none of the arguments can move to precede that adjective:¹³

¹³ Similar facts hold for an adjective that is added to the right:

- (i) a. * ein [an Kenntnissen überlegener den meisten] netter Student (German)
a in knowledge superior to.the most nice student
b. * ein [den meisten überlegener an Kenntnissen] netter Student
a to.the most superior in knowledge nice student
(ii) a. * ein [an Kenntnissen überlegener] netter [den meisten] Student (German)

- (32) a. * ein [den meisten]_i netter [t_i an Kenntnissen überlegener] Student (German)
 a to.the most nice in knowledge superior student
 b. * ein [an Kenntnissen]_i netter [den meisten t_i überlegener] Student
 a in knowledge nice to.the most superior student

Recalling that we argue that adjectives are in phrasal positions, one might suggest that the impossibility of movement in (32) falls under Relativized Minimality (Rizzi 1990) such that one phrasal element (adjective) blocks the movement of another (argument of the other adjective). Note, however, that Relativized Minimality is quite selective (Rizzi 2001). In fact, considering the data in (18), one of the arguments of the adjective does not prevent the other from moving. If anything, one might expect the opposite state of affairs as arguments of adjectives are more similar to one another (and thus would be expected to block each other's movement¹⁴) than an argument and the adjective itself (and thus would not be expected to block each other's movement). Again, this is, however, not what we find. Rather, similar to (29), we can also state here that subextraction out of adjuncts or specifiers explains the ungrammaticality.

Perhaps unexpectedly, Russian is also ungrammatical in this context:¹⁵

- (33) a. * [vsex]_i zamečatel'nyj [prevosxodjaščij t_i po znanijam] student (Russian)
 all.GEN excellent superior on knowledge student
 b. * [po znanijam]_i zamečatel'nyj [prevosxodjaščij vsex t_i] student
 on knowledge excellent superior all.GEN student

The ungrammaticality also holds with movement out of the nominal:¹⁶

- (34) a. * [Vsex]_i ja vstretil zamečatel'nogo [prevosxodjaščego t_i po znanijam] studenta.
 all.GEN I met excellent superior on knowledge student
 b. * [Po znanijam]_i ja vstretil zamečatel'nogo [prevosxodjaščego vsex t_i] studenta.
 on knowledge I met excellent superior all.GEN student

-
- a in knowledge superior nice to.the most student
 b. * ein [den meisten überlegener] netter [an Kenntnissen] Student
 a to.the most superior nice in knowledge student

The ungrammaticality in (i) follows if arguments in German cannot stay in situ, i.e., in the complement position of the (head-initial) adjective (section 4.2); the ungrammaticality in (ii) follows if arguments cannot undergo rightward movement.

¹⁴ Unless both elements are equidistant from the target of movement.

¹⁵ Asya Pereltsvaig (p.c.) points out, though, that the very addition of the second adjective (even without extraction) is degraded. Furthermore, she observes that (33b) is fine if 'in knowledge' forms a phrase with 'excellent' (rather than 'superior'). The latter reading is possible (but irrelevant here) as complements can precede adjectives in a marked order (for instance, if one wants to focus the complement). In that case, an appropriate intonation is required.

¹⁶ Potentially, there might be an issue with some of the Russian data. One of the editors points out that (31a) seems to be grammatical for some speakers and that (34b) might actually be fine, if intoned properly. Checking some more data, my informant confirmed the judgments in the main text adding that if 'superior in knowledge' is exchanged by *molože po vozrastu* 'younger in age' or if *ostal'nyx* 'others' is added after *vsex* 'all', the same judgements as in the main text hold.

Given that the addition of a second adjective leads to ungrammaticality in Russian, we need to say more. If the two languages, German and Russian, are assumed to involve phrasal positions of adjectives, specifier or adjunct, then we could suggest that there is no FocusP above the base position of adjectives in Russian. In other words, there is no final landing site for the argument in (33) or no intermediate landing site in (34) making the movement to the beginning of the sentence too long. Alternatively, one could suggest that like an article/DP in Germanic, a second higher adjective in Russian induces islandhood (under Bošković's 2016 adjunction analysis, the second, lower adjective and its arguments are not in the outermost edge and thus an argument cannot undergo extraction).

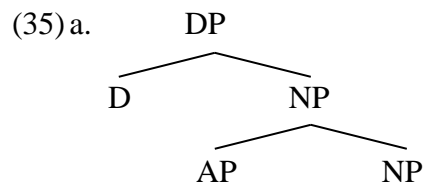
4.6. *Ban on Left-Branch Extraction of Determiners in Germanic*

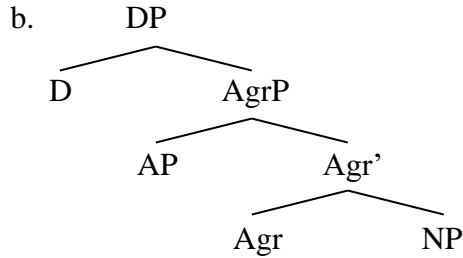
Bošković (2005) does not discuss the impossibility of (left-branch) extraction of determiners in Germanic in much detail. In footnote 19, he simply states that determiners, including demonstratives, are in D and that Saxon Genitives are non-constituents with the possessor in Spec,DP and the possessive morpheme *-s* in D (but see Roehrs 2013b and Bošković 2014: 35 fn. 12). As such, none of these elements can move out of the DP. In his more recent paper, Bošković (2016) does not discuss determiners and determiner-like elements in Germanic in detail either but he could appeal to the assumptions in his earlier 2005 paper.

Above, we argued that demonstratives are in phrasal positions (see also Roehrs 2010a, 2013a and references cited therein). Located in Spec,DP, they are expected to move in both Bošković's 2005 and 2016 systems, contrary to fact. A different account is called for. Following Schoorlemmer 2012 and Roehrs 2013a, I assume that D houses a [DEF] feature. Furthermore, I assume that [DEF] needs to be overtly licensed (Longobardi 1994; or, alternatively, D is an affix that requires an overt host). This will not only ban the movement of the demonstrative out of the noun phrase but also that of all determiner-like elements. While allowing us to retain Bošković's 2016 insights, this, however, would not be a structural account.

5. Adjectives in Phrasal Positions: Adjuncts vs. Specifiers

Thus far, we have seen that adjectives in adjoined and specifier positions account for many of the properties equally well displaying a number of advantages over adjectives as heads. We now turn to a few remarks that discuss some differences between these two phrasal positions. We will see that these differences do not have to do with the properties of the adjectives themselves but rather different considerations. Recall the basic structures where the adjective is adjoined to NP in (35a) but it is in the specifier position of AgrP in (35b):





At first glance, the adjunction structure seems more desirable as it posits less structure than the specifier analysis. However, there are some indications that more structure is independently needed. Most of the arguments against (35a) and in favor of (35b) involve positions intervening between the adjective in AP and the noun in NP. Before I turn to the obvious candidate Agr in (35b), I start with some other intervening positions that have been argued for in the literature.

There is evidence that the head noun undergoes partial raising such that it precedes all arguments but still follows adjectives. This can clearly be seen in languages like German (36a). Note that anaphors must be c-commanded by their antecedent. This means that the antecedent (*des Sohnes*) is higher in the structure than the anaphor (*sein*). Note though that the preposition *auf* ‘at’ is selected by the noun *Wut* ‘rage’, which surfaces to the left of both arguments. Assuming partial N-raising from N to an intermediate position, the binding data and local selection of the preposition can be explained. This intermediate landing position has been identified as the position where suffixal determiners (or definiteness features) are base-generated in Norwegian. Consider example (36b), taken from Julien (2005: 1). Julien argues that the head noun moves from N to Num to pick up the plural morpheme and moves on to—what I call here—Def of a Definiteness Phrase to pick up the suffixal determiner:

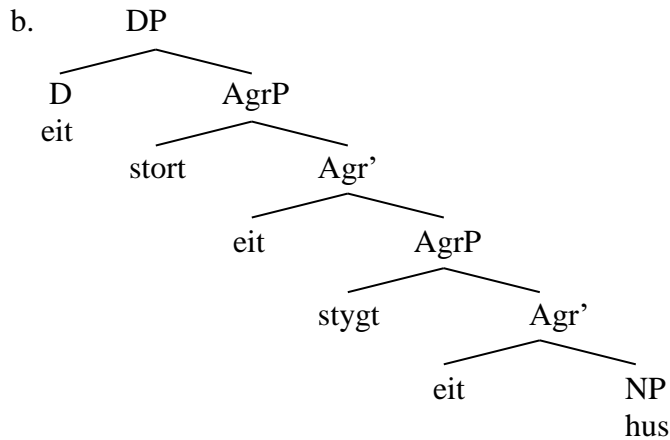
- (36) a. die riese Wut des Sohnes auf seinen Vater (German)
 the huge rage the-GEN son at his father
 ‘the huge rage of the son at his father’
 b. dei to gamle teikningj-a-ne mine tj av byen (Norwegian)
 the two old drawing-s-DEF my of town-DEF
 ‘my two old drawings of the town’

To the extent that this is correct, there seem to be two phrases between NP and the adjective: NumP and DefP. These two phrases are incompatible with the structure in (35a). However, one could add these two phrases between D and NP claiming that adjunction is to the higher phrase (i.e., DefP). These two phrases can also be added between Agr and NP in (35b). A real difference between the two phrasal analyses emerges with regard to the Agr head, absent in (35a) but present in (35b).

Julien (2002: 269-70) observes that indefinite determiners can follow prenominal adjectives in some Scandinavian dialects (37a) (also Delsing 1993: 143). Importantly, these articles cannot be interpreted as adjectival agreement as each adjective has its own (strong) overt ending. Julien proposes that the article is in Agr (her α) and the adjectival inflection is part of a complex specifier of the adjective:¹⁷

¹⁷ Note also that similar issues arise if adjectives are proposed to be in Spec,NP. In fact, analyzing garden-variety adjectives to be in Spec,NP raises another issue. For instance, it has been claimed that nouns may merge one of their arguments in Spec,NP as suggested by (36) (see Valois 1991).

- (37) a. ? eit stor-t eit styg-t eit hus (Norwegian)
 a big-ST an ugly-ST a house
 ‘a big ugly house’



The very possibility of this kind of intervening material undermines the initial attraction of the adjunction analysis to involve less structure. In fact, the specifier analysis immediately provides a position for that material—Agr.

There are at least three more arguments that have been used in the past to argue for adjectives to be in specifier positions, separated by intervening Agr heads. However, from today’s perspective, they have to be taken with a pinch of salt. First, differences in N-raising between French and Walloon (Bernstein 1993) require that adjectives be in phrasal position, specifically specifier positions (Cinque 1994). The intervening heads provide different landing sites for the raised head noun. In a similar vein, Gallmann (1996) proposes for German that there is Spec-head agreement between the adjective and noun brought about by covert N-raising. This type of agreement has been taken to indicate a tight connection between the head and its specifier. Note, however, that given certain shortcomings, N-raising has been replaced by roll-up movement in more recent work (e.g., Cinque 2010). Third, another potential argument for intervening Agr heads comes from the fairly fixed sequence of stacked adjectives in the sense of Cinque 2010 where certain types of Agr select different types of AgrPs (for an alternative explanation, see Abels and Neeleman 2012).

6. Summary

Table 2 summarizes the status of the three structural analyses of adjectives (A = Abney’s proposal A, B = Abney’s proposal B; ? = no account):

Table 2: Summary of Data and Structural Analyses of Adjectives in Germanic

Data:	A as Head	A as Adjunct	A as Specifier of Agr
Preceding adj. arg.	√ (A); ? (B)	√	√
Following adj. arg.	?	√	√
Split Top. of deg. wo.	? (A); √ (B)	√	√
Extraction of adj.	√ (but demonstr.)	√	√
Adj. in ext. proj. of N	?	√	√
Scope of degree word	?	√	√
Two preced. adj. arg.	√ (A) (but anti-local)	√	√
Extraction of adj. arg.	?	√	√
Multiple indef. art.	?	?	√
Order in adj. stacking	√	√	√
(N-raising)	?	?	√

Considering these results, it seems fair to say that adjectives as heads exhibit the most issues, while adjectives as adjuncts or specifiers fare much better. Also, the analysis of adjectives as specifiers has a slight advantage over adjectives as adjuncts. The latter was illustrated with multiple indefinite articles in some Scandinavian dialects. Depending on the status of N-raising, more evidence might speak in favor of adjectives in specifier positions.

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