On the Status and Position of PPs inside APs in Dutch

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On the Status and Position of Prepositional Phrases inside Adjectival Phrases in Dutch

Jan-Wouter Zwart

1. Introduction

Prepositional phrases (PPs) have traditionally been analyzed as either complements (1a), adjuncts (1b), or predicates (1c).

(1) a. I will wait *for you*
b. I will wait *in the lobby*
c. With you *in the lobby* (we'll be safe)

However, it has been observed that the intuitive distinction between complement PPs and adjunct PPs is hard to substantiate by syntactic tests (see e.g. Brinker 1972:154f).

For one thing, complement PPs, unlike complement noun phrases (DPs), are generally not obligatorily present:

(2) a. I will wait (for you, in the lobby)
b. I will await (*your return)

As (2a) illustrates, there does not seem to be a difference between complement PPs and adjunct PPs in this respect.

It is true that certain verbs require a PP. But these verb-PP combinations typically constitute idiomatic expressions. The following example is from Dutch, where the verb *love* is expressed by a verb-PP combination:

(3) Ik hou van jou
I hold from you
"I love you."

The meaning "love" is not transparent from the meaning of the verb *houden* "hold" in combination with the preposition *van* "from". Originally, the verb-PP combination was used to express the relation between the tenants and the land owner, between the vassals and their lord (Verdam 1911:259). Presumably, that is how the expression came to be used for relations of loyalty and affection.

If verb-PP combinations may acquire idiomatic meanings, it is not strange that in some verb-PP combinations replacement of the preposition by another preposition leads to ungrammaticality, whereas in other verb-PP combinations the replacement merely yields a change in interpretation. This contrast is illustrated in (4):

(4) a. I'm counting on/*for/*at/etc. you
b. I'm waiting in/behind/next to/etc. the lobby

The fixed preposition in (4a) has been taken as evidence for the complement status of the PP in (4a). However, *count on* seems to have acquired an idiomatic meaning, just like the Dutch example *houden van* illustrated above, and replacement of the preposition obviously destroys the idiom. If so, the replacement test does not relate to

the complement-adjunct distinction, but to a distinction between idiomatic and nonidiomatic expressions. (See Brinker 1972:158 for further demonstration of the inadequacies of the replacement test and other traditional tests.)

Since adjuncts are islands for extraction, movement of a DP out of the PP (*preposition stranding*) might yield another test. However, in many dialects of English, most notably American English, movement out of adjunct PPs is perfectly acceptable (example (5c) adapted from the preface of Fowler and Fowler 1962):

(5) a. What are you going as?
b. Music to watch girls by.
c. The limited number of authors chosen to collect instances from.
etc.

Comparable problems occur when we try to establish a difference between complement PPs and adjunct PPs on the basis of binding phenomena (cf. Koster 1987:324f). At first sight, it looks like the Dutch complex anaphor *zichzelf* can only occur in complement PPs, and that in adjunct PPs the simplex anaphor (*se*) *zich* must be used:

(6) a. Jan schoot op zichzelf/*zich
John shot on *se*-self/*se*
"John shot at himself."
b. Jan zag een slang naast zich/*zichzelf
John saw a snake next *se*/*se*-self
"John saw a snake next to him."

However, very clear exceptions exist:

(7) Jan sprak namens zichzelf/*zich
John spoke in the name of *se*-self/*se*
"John spoke on his own behalf."

In (7), the complex anaphor must be used, even if it seems inevitable to analyze the PP *namens zichzelf* as an adjunct PP.

If the distinction between complement PPs and adjunct PPs is unclear, no such problems exist with respect to the status of predicate PPs. In Dutch, there is a clear syntactic test distinguishing predicate PPs from complement PPs and adjunct PPs: only complement and adjunct PPs may appear to the right of the verb in embedded clauses (Hoekstra 1984:235f). Compare:

(8) a. ..dat Jan (op Marie) wacht (op Marie)
that John on Mary waits on Mary
"..that John is waiting for Mary."
b. ..dat Jan (in de lobby) wacht (in de lobby)
that John in the lobby waits in the lobby
"..that John is waiting in the lobby."
c. ..dat Jan Marie (aan de kant) zet (*aan de kant)
that John Mary on the side puts on the side
"..that John ditches Mary."

In a tradition going back at least to Jespersen, Hoekstra (1984) proposes to analyze constructions like (8c) as involving a propositional constituent *Marie [aan de kant]*, referred to as *Small Clause (SC)*, where the PP *aan de kant* is the predicate of the noun phrase *Marie*:

(9) $[_{VP}$ *zet* $[_{SC}$ $[_{DP}$ Marie] $[_{PP}$ aan de kant]]]

In Zwart (1993, 1994), I have adopted this analysis, and I have proposed there that the Small Clause subject (*Marie* in (9)) and the Small Clause predicate (*aan de kant* in (9)) are each licensed in the specifier position of a functional projection to the left of the VP. According to this proposal, the Small Clause subject is licensed in the specifier position of the Object Agreement Phrase (AgrOP) of Vanden Wyngaerd (1989) and Chomsky (1991), and the Small Clause predicate is licensed in the specifier position of a newly proposed functional projection, the Predicate Phrase (PredP) (see also Koster 1995):

(10) $[_{AgrOP}$ *Marie*$_i$ $[_{PredP}$ [*aan de kant*]$_j$ $[_{VP}$ *zet* $[_{SC}$ t_i t_j]]]]

Assuming for Dutch that the Small Clause predicate, like the noun phrases (cf. Zwart 1993), must move to its licensing position overtly, the ungrammaticality of (8c) follows. (We will address the position of the PPs in (8a/b) below.)

The fuzzy distinction between complement PPs and adjunct PPs, and the clear distinction between predicate PPs on the one hand and complement and adjunct PPs on the other, leads me to propose that in fact ony two types of PPs exist: predicate PPs and adjunct PPs. Below, we will give a precise definition of the distinction.

In this paper, I will investigate the status and position of PPs inside noun phrases -- more exactly: inside adjective phrases (AP) contained within noun phrases. Again, the intuitive distinction between complement PPs (11a) and adjunct PPs (11b) seems clear:

(11) a. proud of his car
b. handsome for his age

There even seems to be a clear syntactic test distinguishing complement PPs and adjunct PPs in this domain. Only adjunct PPs may appear to the right of the head noun (Bernstein 1995):

(12) a. * a proud man of his car
b. a handsome man for his age

However, I would like to maintain that the contrast in (12), just like the contrast in (8), betrays a predicate-nonpredicate distinction, rather than a complement-adjunct distinction. I will argue below that if we assume that *of his car* in (11a) is a predicate, rather than a complement, we may understand certain ill-understood word order phenomena in the syntax of noun phrases, most notably, the ungrammaticality of (13):

(13) *a proud of his car man

In presenting the argumentation, I will concentrate on examples from my native language, Dutch.

This article has the following contents. Section 2 illustrates the basic properties of noun phrases in Dutch and introduces the phenomena to be discussed in this article. This section also lays out the assumptions regarding the structural representation of gender agreement in Dutch noun phrases. In section 3, I will argue that PPs comparable to *of his car* in (11) above are not complement PPs but Small Clause predicates. Section 4 accounts for the word order phenomena inside Dutch noun phrases in terms of the proposals made regarding the status and position of the PPs. Section 5 discusses the complications that arise when the adjective is a comparative or superlative, and the noun phrase contains comparative phrases or degree elements in addition to the PPs discussed in sections 3-4. The interesting observation here is that the adjacency effect illustrated in (13) is lifted when comparative phrases or degree elements are present, and that the gender agreement morphology shifts from the adjective to the head of the comparison phrase. Finally, section 6 contains a brief discussion of predicatively used adjective phrases and adjective phrases used as `reduced relatives'.

The paper is intended to provide support for the idea that there is no distinction between complement PPs and adjunct PPs. Ultimately, the generalization I would like to make, following Barbiers (1995), is that all PPs are predicates, and that the difference between `predicate' PPs (i.e. those figuring in Small Clauses) and `adjunct' PPs is that the former modify a noun phrase, whereas the latter modify a (projection of a) verb phrase (VP) or adjective phrase.

2. Noun Phrases in Dutch

Noun phrases in Dutch containing a determiner and an attributive adjective invariably show the word order *determiner-adjective-noun* (*nn*=nonneuter, *n*=neuter):

(14) a. de oud-e man
the-nn old-AGR man
b. het oud-e huis
the-n old-AGR house

Nouns come in two gender classes, neuter and nonneuter. Gender determines the choice of the singular definite determiner (*de* = nonneuter, *het* = neuter). The singular indefinite determiner is *een*, the plural definite determiner is *de*, and the plural indefinite determiner is empty. Gender also determines the agreement morphology on the attributive adjective, but only in the singular indefinite noun phrase:

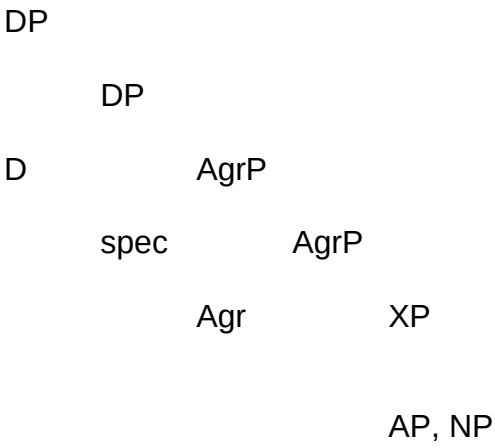
(15) a. een oud-e man
a old-nn man
b. een oud-∅ huis
a old-n house

Following Abney (1987), I will assume that noun phrases are headed by a determiner D, and that the adjective phrase and the noun phrase proper (headed by the noun N) are in the complement domain of D, in a way to be investigated below.

I will also assume that the agreement relation between the N and the adjective is an instantiation of the more general specifier-head agreement relation (Chomsky

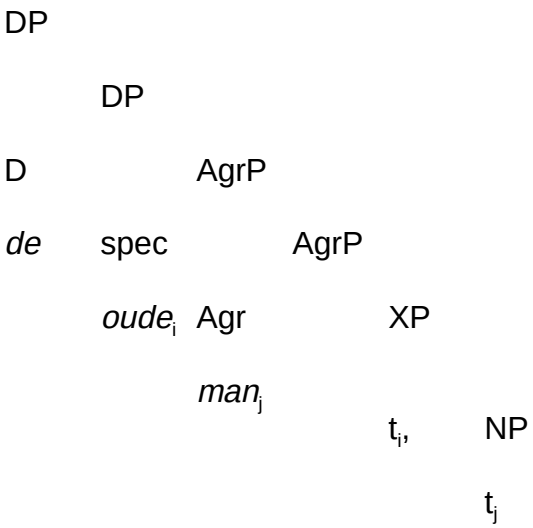
1986), realized in an Agreement Phrase (AgrP) situated between the noun phrase proper (NP) and the DP:

(16)



We will discuss the nature of the *XP* node in (16), and the hierarchical relation between AP and NP below. For the moment, let us assume that the noun heading NP moves to Agr, and that the AP moves to the specifier position of AgrP:

(17)



That the noun heading the NP may undergo head movement is well established in the recent literature on the structure of noun phrases. I assume that the noun moves to Agr, since it determines the morphology of the adjective.

The relation between the noun and the adjective could in principle also be a relation between two heads, with one head adjoining to the other (in Agr). However, we will see below that there is no absolute adjacency requirement on the relation between the adjective and the noun. This argues against analyzing *oude man* in (14) as a head adjunction structure.

Adjectives can be accompanied by PPs, as in the following predicative constructions:

(18)	a.	Hij	is	trots	op zijn auto
		he	is	proud	of his car
	b.	Hij	is	knap	voor zijn leeftijd
		he	is	handsome	for his age

In attributive constructions, these PPs cannot appear between the adjective and the head noun:

(19)	a.	een	trots-e	(*op zijn auto)	man
		a	proud-nn	of his car	man
	b.	een	knapp-e	(*voor zijn leeftijd)	man
		a	handsome-nn	for his age	man

As in the English example (12), extraposing the PP saves the b-case only:

(20)	a.	een	trots-e	man	(*op zijn auto)
		a	proud-nn	man	of his car
	b.	een	knapp-e	man	(voor zijn leeftijd)
		a	handsome-nn	man	for his age

This contrast is one of the aspects of the syntax of noun phrases to be accounted for here (see section 4).

Unlike English, Dutch has the possibility of preposing the PP:

(21)	a.		een	(op zijn auto)	trots-e	man
			a	of his car	proud-nn	man
	b.		een	(voor zijn leeftijd)	knapp-e	man
			a	for his age	handsome-nn	man
(22)	a.	*	a of his car proud man			
	b.	*	a for his age handsome man			

At this point, one might be tempted to suppose that the difference between Dutch and English is to be regarded as a difference between head-final (Dutch) and head-initial (English) languages. In other words, it could be that the position of the PPs in (21) is actually the base position of the PPs, and that some additional movement explains the position of the PPs in the predicative constructions in (18).

However, there are several reasons not to take this course. First, the preposed PP in (21) is not necessarily adjacent to the adjective, suggesting that it is not in the complement position to the adjective:

(23)	een	op zijn auto	zeer	trots-e	man
	a	of his car	very	proud-nn	man

Second, we do not expect the head-initial/head-final parameter to govern the position of adjunct PPs. Yet adjunct PPs can be preposed in Dutch, but not in English (cf. (21b) and (22b)). Hence, some other factor is needed to account for the position of adjunct PPs. This factor could account for the position of the PPs in (21a) and (22a) as well. Thirdly, the explanation in terms of the position of the head w.r.t. its complement is only valid if we are dealing with complements in (21) and (22). But, as discussed in the section, it is very unclear whether there are complement PPs at all. Finally, there is reason to doubt that Dutch and English have different settings for the head-parameter, given that the two languages are typologically so similar (with determiners preceding nouns, complementizers at the left edge of the clause, etc; see Zwart 1994). We will return to the position of the PPs in (21) in section 4.

The adjacency of the adjective and the head noun illustrated in (19) is lifted when the adjective is in a comparative or superlative form. The comparative (*comp*) and superlative (*sup*) morphemes are *-er* and *-st*, respectively, and these morphemes show up between the adjective stem and the agreement morpheme:

(24) a. een trots-er-e man
a proud-comp-nn man
"a prouder man"
b. de knap-st-e man
the handsome-sup-nn man
"the handsomest man"

Comparative and superlative adjectives may be modified by a phrase, which I will call Comparison Phrase (CompP), illustrated in (25):

(25) a. een trots-er dan gebruikelijk-e man
a proud-comp than usual-nn man
"a prouder than usual man"
b. de knap-st mogelijk-e man
the handsome-sup possible-nn man
"the handsomest man possible"

We may think of the CompP as marking a point on a scale with respect to which the comparative or superlative element must be interpreted. Thus, in (25a) the man is "proud more than usual", and in (25b) the man is "handsome as much as possible". Without comparative and superlative morphology on the adjective, the CompP cannot appear, a fact we will have to express in our analysis:

(26) a. * een trots dan gebruikelijk-e man
a proud than usual-nn man
b. * een knap mogelijk-e man
a handsome possible-nn man

Notice that the agreement morphology in (25) appears on an element from the CompP, *gebruikelijke* "usual" in (25a) and *mogelijke* "possible" in (25b). This striking feature of the constructions has remained unexplained so far.

Perhaps even more striking is the fact that the PPs in (19), which were banned from the position between the adjective and the head noun, are allowed in again when the CompP is present:

(27) a. een trots-er op zijn auto dan gebruikelijk-e man
a proud-comp of his car than usual-nn man
b. de knap-st voor zijn leeftijd mogelijk-e man
the handsome-sup for his age possible-nn man

((27b), though infinitely better than (19b), is actually rather odd. The point is illustrated better with the construction *zo knap voor zijn leeftijd mogelijk(e)* "as handsome for his age possible(-nn)", where the superlative morphology is absent, and the CompP is the discontinuous element *zo...mogelijk*. Although it seems clear that a degree element is present in this construction, as the paraphrase "handsome for his age *as much* as

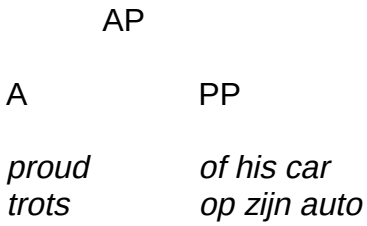
possible" suggests, I will refrain from discussing this variant, as it is unclear how to deal with the discontinuous character of the CompP.)

Both the shift of the agreement morphology in (25) and the lifting of the ban on postadjectival PPs in (27) will be accounted for in the analysis presented below.

3. The position of `complement' PPs

Let us now turn to the position of PPs of the type *of his car* in *proud of his car* (11a), and *op zijn auto* in *trots op zijn auto* (18a). Intuitively, these PPs are analyzed as complements of the adjective. In generative grammar, complements of α are generated as sisters of α. This suggests that the relevant APs are structured as in (28):

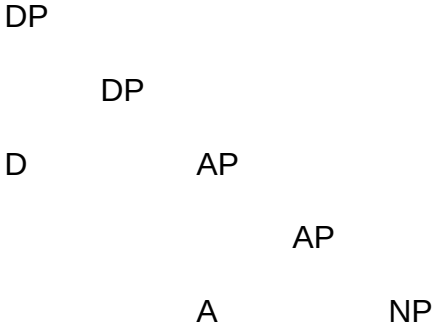
(28)



The question that arises now is, what position the AP in (28) occupies within the DP structure (cf. (16)-(17)).

On this subject, Abney (1987) has suggested that the adjective is a head, selecting the NP as its complement:

(29)

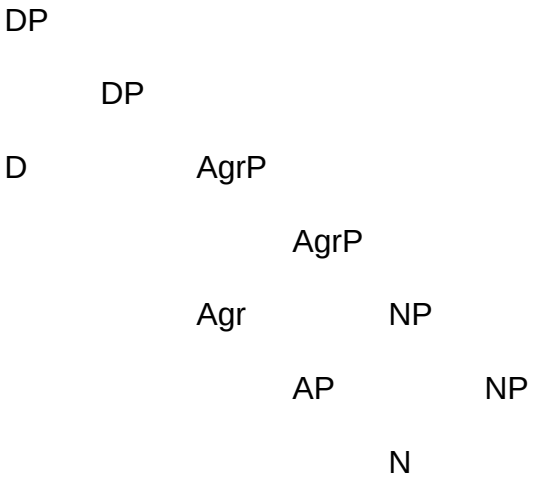


This analysis is excluded if we adopt the structure in (28).

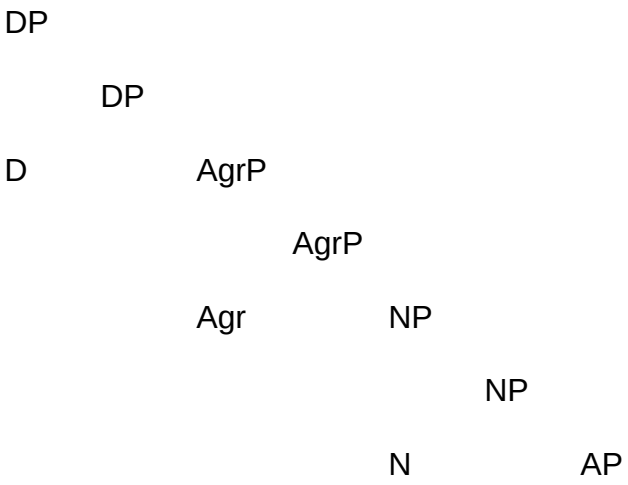
Let us suppose that (28) is correct (i.e. that the relevant PPs are complements of the adjective). Then the AP could be an adjunct or specifier of the NP, or a complement of the NP.

Assuming with Hoekstra (1991) and Kayne (1994) that no structural distinction between adjuncts and specifiers exist, this leaves us with the following options, where the AP is structured as in (28):

(30) a. *the AP is an adjunct of the NP*



b. *the AP is a complement of the NP*



Without further movements, these structures would yield the following word orders (see section 4.1 and section 6 for discussion of (31b); (32b) cannot be analyzed as a `reduced relative' construction, witness the agreement on the adjective (cf. (18)):

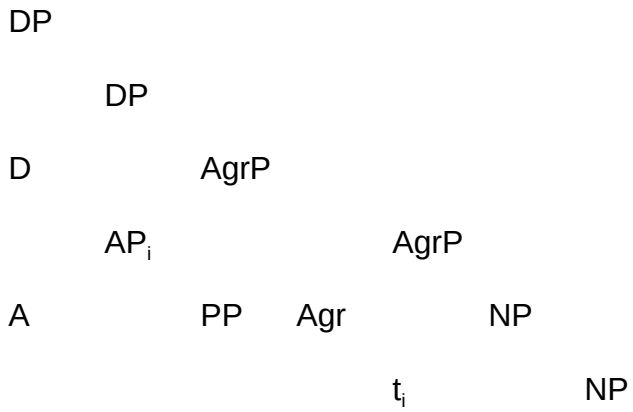
(31) a. * the proud of his car man
b. the man proud of his car (*attributive)

(32) a. * de trots-e op zijn auto man
the proud-nn of his car man
b. * de man trots-e op zijn auto
the man proud-nn of his car

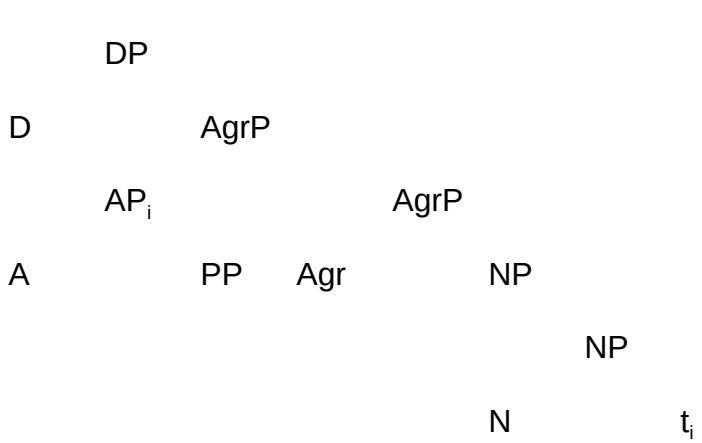
We have assumed that adjectives are licensed in the specifier position of an Agreement Phrase, and that the head of the NP moves to the head of the AgrP (see (16)-(17)). However, starting from any of the structures in (30), these movements will not yield the correct word orders.

First, suppose that the entire AP moves to the specifier position of the AgrP (taking the complement PP along, cf. (28)). Starting from the structure in (31a), this yields (33a). Starting from structure (31b), (33b):

(33) a.



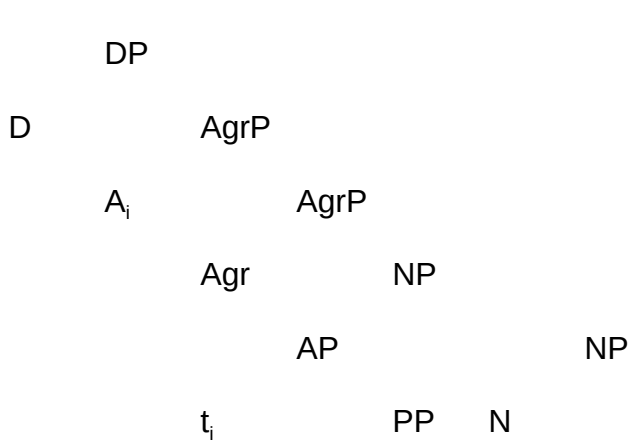
b.



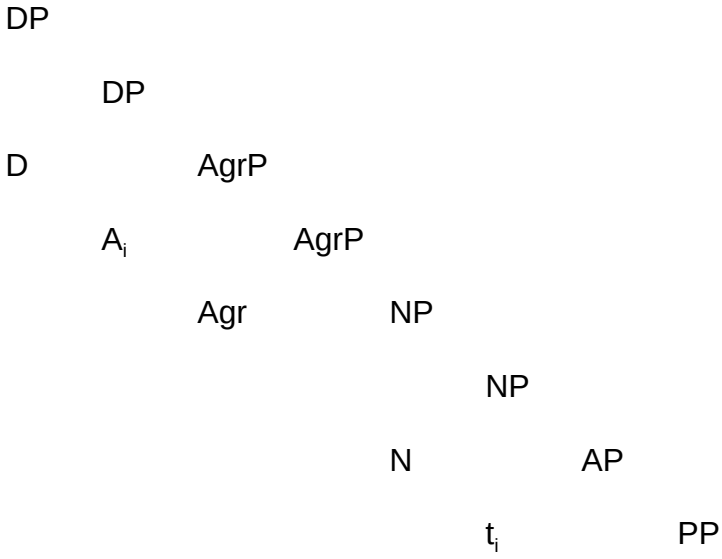
Both (33a) and (33b) yield the ungrammatical word order in (31a)/(32a).

Next let us suppose that the adjective, when moving to the specifier position of the AgrP, leaves the PP complement behind. Starting from (30a), this yields (34a). Starting from (30b), (34b):

(34) a.



b.



(34a) again yields the ungrammatical word orders in (31)/(32). (34b) yields the ungrammatical word order in (35) and (36):

(35) * the proud man of his car

(36) * de trots-e man op zijn auto
the proud-nn man of his car

(The word order in (35)/(36) would also be the result of an analysis in which the NP starts out as an adjunct/specifier of the AP, as will go without demonstration here.)

Thus, it appears that if PPs of the type *of his car* in (11a)/(18a) are analyzed as complements of the adjective, as in (28), the correct word order of the DP will not be derived. This suggests that the structure in (28), with the PP a complement of the adjective, is not correct.

Notice that we have not considered the possibility that the PP, while generated as a complement (as in (28)), moves out of the AP in the course of the derivation. If this additional PP-movement exists, the argumentation presented above is invalid. However, we know of no cases where complement PPs undergo an obligatory movement in Germanic. The only PPs for which obligatory movement has been proposed (in Zwart 1994 and Koster 1995) are predicate PPs (see (10)).

For the time being, we may feel confident in rejecting (28), and in hypothesizing that complement PPs do not exist.

4. The proposed structures

If complement PPs do not exist, we still have to make a distinction between the `complement' PPs in (11a) and (18a), on the one hand, and the `adjunct' PPs in (11b) and (18b), on the other. As we have seen above, only the latter may appear to the right of the head noun:

(37) a. * a proud man of his car
b. a handsome man for his age

(38) a. * een trots-e man op zijn auto
a proud-nn man of his car
b. een knapp-e man voor zijn leeftijd
a handsome-nn man for his age

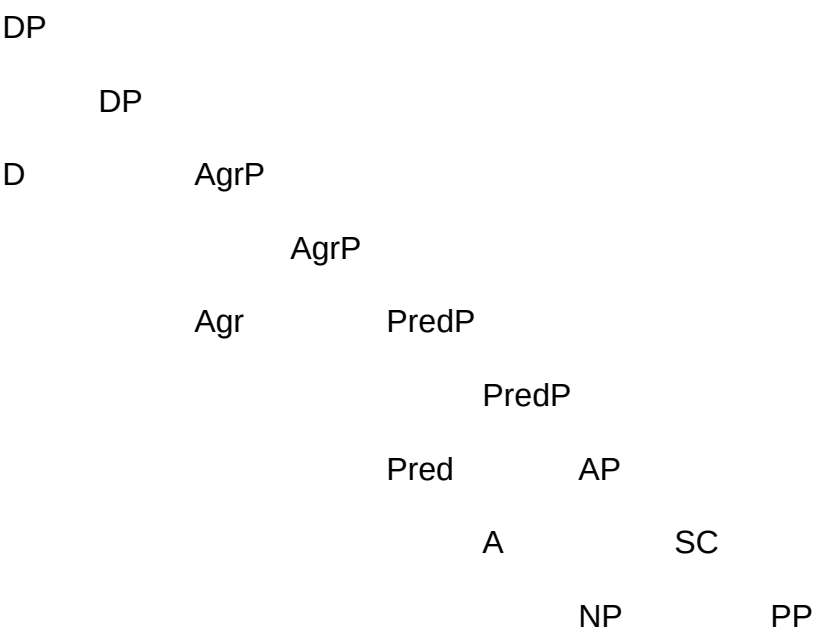
I will present an account for this difference, making the following assumptions:

(39) 1. NPs are generated in the complement domain of the adjective (cf. (29)).
2. `Adjunct' PPs are generated as adjuncts to the AP (or higher) (cf. Bernstein 1995).
3. `Complement' PPs are in fact predicates. They are generated as Small Clause predicates in the complement domain of the adjective.

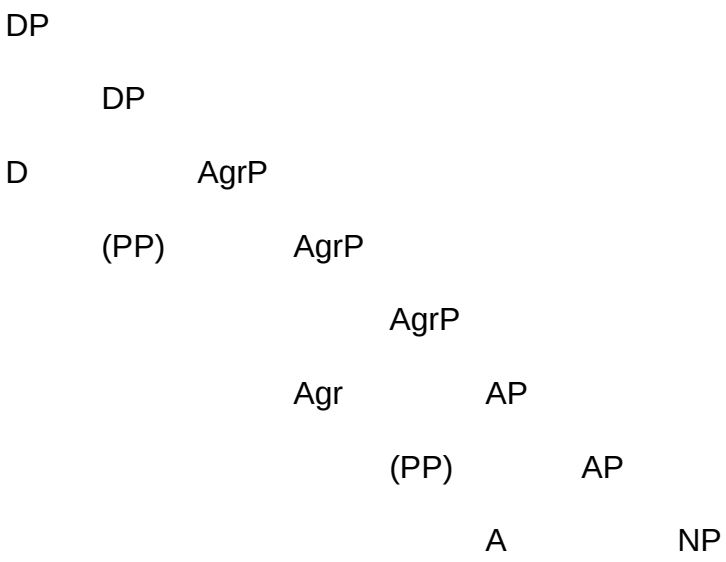
In (39), the *complement domain* of α is understood as defined in Chomsky (1993:11), containing the sister of α and the set of nodes dominated by α.

The assumptions in (39) lead to the following structures:

(40) a. *proud of his car*



b. *handsome for his age*



We will discuss these structures and the concomitant derivations in turn, restricting ourselves mainly to the more complicated phenomena of Dutch.

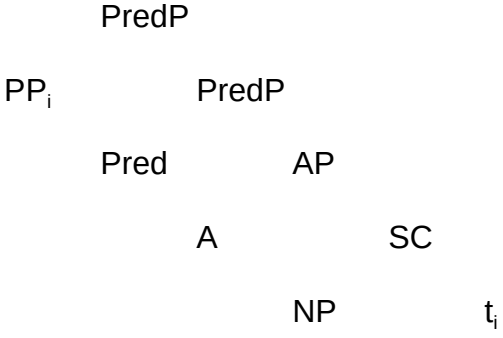
4.1 The type *proud of his car*

In section 1, we have argued that the only clear distinction among PP types is the distinction between adjunct PPs and predicate PPs. This distinction, illustrated there in the context of the syntax of VP and its functional projections, is transferred to the syntax of NP and its functional projections in (40a).

As illustrated in (10), Small Clause predicate PPs are assumed to move obligatorily to the specifier position of a Predicate Phrase (PredP). This movement, which is overt in Dutch, explains the fact that predicate PPs have to appear to the left of the verb in embedded clauses in Dutch (Zwart 1994, Koster 1995).

In (40a), we have made the same assumption for predicate PPs appearing inside noun phrases. There is a PredP in the functional domain of the AP, and the predicate PP is assumed to move to the specifier position of this PredP, overtly in Dutch:

(41)

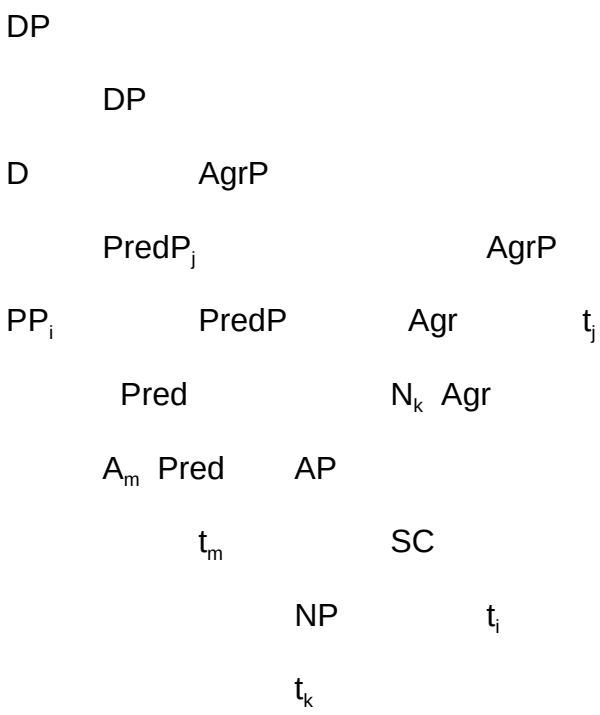


In section 2, we have assumed that the agreement relation between the head noun (N) and the adjective is given structural shape by moving N to Agr, and AP to the specifier

position of the AgrP. Here, we have to adapt that proposal minimally. Assuming that A has to move to Pred at some point in the derivation, we would have to move the entire PredP to the specifier position of AgrP. Movement of the AP out of the PredP would make it impossible for A to ever reach Pred.

Let us therefore complete the picture as in (42):

(42)



The structure in (42) is derived by the following movements:

(43)
1. N moves to Agr
2. PP moves to Spec,PredP
3. A moves to Pred
4. PredP moves to Spec,AgrP

These movements yield the word order in (44a), and exclude the word orders in (44b-c):

(44)

a.		de	op zijn auto	trots-e	man	
		the	of his car	proud-nn	man	
b.	*	de	trots-e	man	op zijn auto	
		the	proud-nn	man	of his car	
c.	*	de	trots-e	op zijn auto	man	
		the	proud-nn	of his car	man	

(44b-c) are excluded because of the obligatory movement of the predicate PP *op zijn auto* “of his car” to Spec,PredP. As a result of this movement, the predicate PP will always end up to the left of the adjective.

Also excluded are the following word orders (again, the agreement on the adjective shows that these are not predicative constructions; cf. section 6):

(44)

d.	*	de	man	trots-e	op zijn auto
		the	man	proud-nn	of his car

e. * de man op zijn auto trots-e
the man of his car proud-nn

(44d-e) are excluded because the specifier-head relation between the adjective and the noun is not overtly realized. In addition, (44d) has the adjective and the predicate PP in the wrong order, just like (44b-c).

(As for English, if we assume that none of the movements in (43) are overt, we derive *the man proud of his car* as the only possible word order for the attributive construction. In other words, the attributive construction would coincide with the predicative construction. In Dutch, there appears to be a clear preference for the noun phrase in predicative constructions to be indefinite. If this preference holds generally, and if *the man proud of his car* does not suffer from it, we must conclude that it may indeed be an attributive construction. I will leave this for further study.)

4.2 The type *handsome for his age*

According to our hypothesis, adjunct PPs are generated to the left of AP, or higher (cf. (40b)). They do not move to the specifier of a Predicate Phrase (which we may assume to be absent in DPs containing adjunct PPs associated with the adjective).

Unlike predicate PPs, adjunct PPs show an extraposition pattern (see (37)-(38)). Before discussing the structure in (40b), we have to consider the mechanisms by which extraposition patterns may come about.

Generative grammar has long known a tradition by which extraposition is the result of rightward movement. Recently, however, it has been proposed that rightward movement does not exist (Kayne 1994). Barbiers (1995) provides convincing evidence in support of Kayne's conjecture, precisely from the domain of extraposition of PPs.

The evidence, which will be presented here in schematic form only, is based on the observation (by Koster 1974) that in Dutch extraposed PPs appear in an order that mirrors the order of the nonextraposed PPs:

(45) a. *nonextraposed PPs*
PP_1 PP_2 PP_3 V

b. *extraposed PPs*
V PP_3 PP_2 PP_1

In an analysis involving rightward movement of the PPs (or leftward movement of the PPs, for that matter), this mirror image pattern must be stipulated. Barbiers (1995), on the other hand, proposes to derive the mirror image pattern by having the XP containing the V move to the specifier position of the PP adjoined to the XP containing the V.

According to this proposal, extraposition of PP_3 in (45) results from moving the VP containing the V to the specifier position of PP_3:

(46) a. $[_{PP1}\ [_{PP2}\ [_{PP3}\ VP_i\ [_{PP3}\ PP_3\ t_i\ ]\ ]\ ]\ ]$

Extraposition of PP_2 results from moving PP_3 (now the XP containing the V) to the specifier of PP_2, and so on. Ultimately, this will yield the structure in (46b):

(46) b. $[_{PP1}\ [_{PP2}\ [_{PP3}\ VP_i\ [_{PP3}\ PP_3\ t_i\ ]]_j\ [_{PP2}\ PP_2\ t_j\ ]]_k\ [_{PP1}\ PP_1\ t_k\ ]]$

In this analysis, the mirror immage pattern is the inevitable result of the movement to the specifier position of the `extraposed' element.

According to Barbiers (1995), the movement to the specifier position that yields the extraposition pattern creates a predication structure, with the adjunct PP now functioning as the predicate of the XP that has moved to its specifier position. Thus, in (46a) PP_3 is the predicate of the VP. (See Barbiers 1995 for structural definition of the predication relation.)

I will here adopt Barbiers' proposal of `extraposition via movement-to-spec', and I will assume that this is the only mechanism by which extraposition may come about. (I will henceforth refer to extraposition via movement-to-spec as *Barbiers-movement*. Barbiers-movement is typically optional, a fact that has gone unexplained so far.)

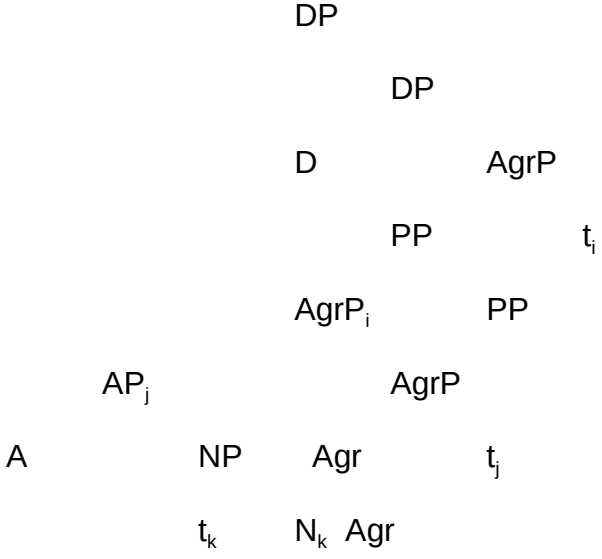
Let us now return to the structure in (40b). Suppose the adjunct PP is generated as an adjunct to AgrP. As before, let us assume that N moves to Agr, and AP to Spec,AgrP. Without further movements, this yields the word order in (47a):

(47)	a.	een	voor zijn leeftijd	knapp-e	man
		a	for his age	handsome-nn	man

However, an additional movement is possible: Barbiers-movement of the AgrP to the specifier of the adjunct PP. This movement, illustrated in (48), yields the word order in (47b):

(47)	b.	een	knapp-e	man	voor zijn leeftijd
		a	handsome-nn	man	for his age

(48)



Barbiers-movement can never involve predicate PPs. Predicate PPs are not generated as adjuncts, but as Small Clause predicates. Functionally, they already serve as predicates to a noun phrase, and therefore cannot appear in a predication relation with a VP (or AP, or of a functional projection containing VP or AP). Structurally, predicate PPs are generated in the complement of the phrase that undergoes the Barbiers-movement, and therefore they cannot be the target of the Barbiers-movement. (It is also assumed here that a predicate PP appearing in the specifier position of a PredP cannot

be a target of Barbiers-movement of the PredP itself, perhaps for the reason given above, namely that the predicate PP already functions as a predicate to the PredP.)

This explains the ungrammaticality of the relevant example in (8c) above, repeated here as (49a), but also, if we were correct by identifying the PP *op zijn auto* "of his car" as a predicate PP, the ungrammaticality of (44b), repeated here as (49b):

(49)	a.	*	..dat	Jan	Marie	zet	aan de kant
			that	John	Mary	puts	on the side
			"..that John ditches Mary."				
	b.	*	een	trots-e		man	op zijn auto
			a	proud-nn		man	of his car

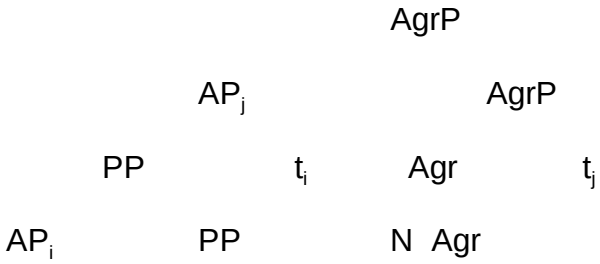
These examples are excluded, because Barbiers-movement is the only way to get extraposition, and Barbiers-movement cannot target predicate PPs.

Returning to (40b), we still have to address the possibility that the adjunct PP is generated as an adjunct to AP. Without Barbiers-movement, such a structure will again yield the word order in (47a) (assuming, as before, movement of N to Agr and movement of AP to Spec,AgrP). Barbiers-movement, however, would place the AP to the left of the PP. Movement of the AP to the specifier position of AgrP would then yield the ungrammatical (50):

(50)	*	een	knapp-e	voor zijn leeftijd	man
		a	handsome-nn	for his age	man

Consider the (partial) structure of (50):

(51)



(50) can be excluded if the Barbiers-movement of AP to Spec,PP blocks the agreement relation between AP and N (in Agr). This would imply that AP$_j$ in (51) cannot enter into an agreement relation with N. Thus we need an auxiliary hypothesis to that effect:

(52) XP enters into an agreement relation involving the feature φ only if XP dominates the (trace of the) head carrying φ.

If we assume that (52) holds, (50) is excluded because AP$_i$ is not in the checking domain of Agr (on the definition of checking domain in Chomsky 1993).

The remaining word orders in (53) are excluded, again because overt movement of AP and N has to be assumed (cf. (44d-e):

(53)	a.	*	een	man	knapp-e	voor zijn leeftijd
			a	man	handsome-nn	for his age
	b.	*	een	man	voor zijn leeftijd	knapp-e
			a	man	for his age	handsome-nn

4.3 Conclusion

This concludes our discussion of the basic patterns of noun phrases containing an adjective and a PP associated with the adjective. We have assumed the following:

(54) 1. PPs are either predicates or adjuncts.
2. A head has either NP or SC as its sister.

Both statements in (54) are well-established in the syntax of clauses. For (54.1), see section 1. For (54.2), see Hoekstra (1984), Mulder (1992), and references cited there.

Now let us turn to noun phrases involving comparatives and degree elements.

5. Comparative APs

As we have seen in section 2, noun phrases containing Comparison Phrases deviate from the pattern discussed so far in two respects. First, the agreement morphology shifts from the adjective to the comparison phrase. Second, the presence of the comparison phrase lifts the ban on the A-PP-N order discussed above.

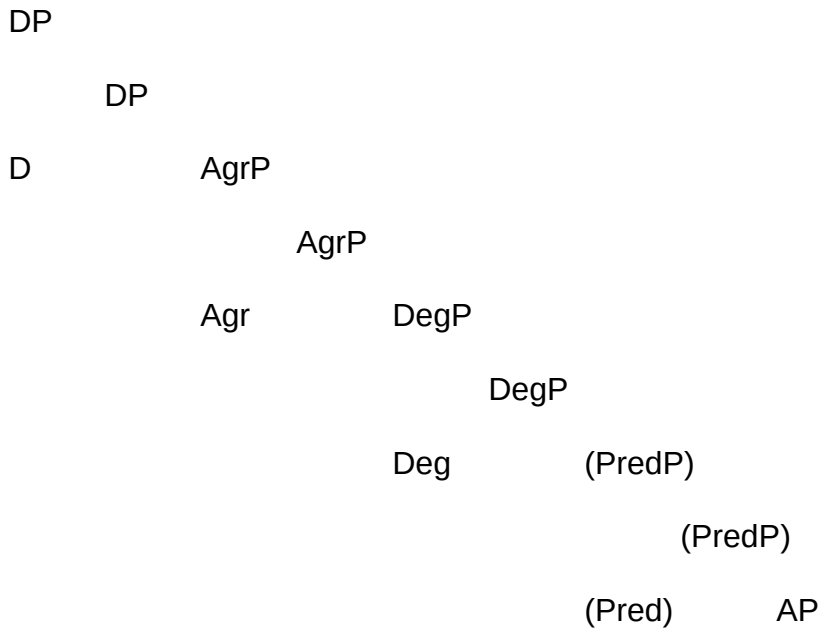
We will discuss these aspects one by one. First, however, we have to address the issue of how the comparative morphology and the comparison phrase are represented in the tree structure.

5.1 The structure of comparative APs

As we have seen, two elements must be distinguished in comparative APs: the comparative/superlative morphology, and the constituent expressing the standard of comparison (e.g. *than usual, as possible*). We will refer to these elements as the *degree element* and the *comparison element*, respectively.

Following Corver (1993), I will assume that the degree element is structurally represented in a Degree Phrase (DegP). The DegP is part of the functional domain of the AP, and the head of the DegP hosts the features associated with the comparative/ superlative morphology:

(55)



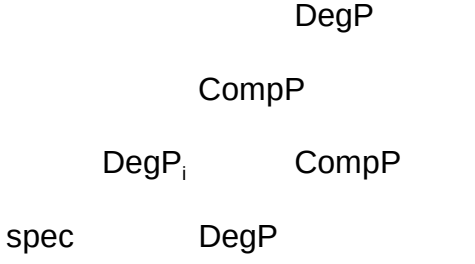
The adjective, generated in the head position of AP, carries the comparative/ superlative morphology. The features associated with this morphology must be checked in Deg. We therefore assume that the adjective moves to Deg (via Pred, if present).

The comparison element has been referred to above as the *comparison phrase* (CompP). The CompP may only appear when the degree element is present (cf. (26)). Therefore, the CompP must be in some syntactic relation to the DegP. I will tentatively assume that the CompP is generated as an adjunct to DegP:

(56)

Being an adjunct, the CompP must be in a predicative relation to some other phrase, presumably the DegP. Applying Barbiers' (1995) hypothesis about predicative relations being established via movement-to-specifier (Barbiers-movement), we may conjecture that the DegP in (56) moves to the specifier position of its adjunct, the CompP:

(57)



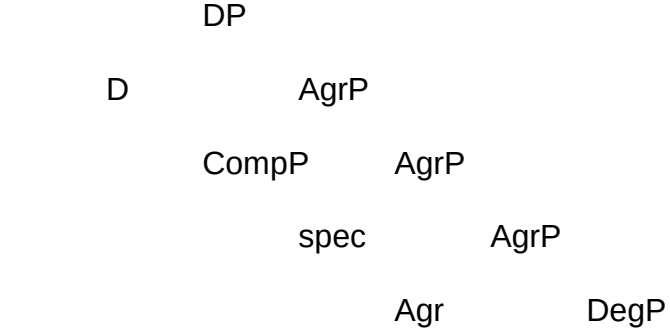
The standard order of the adjective and the comparison phrase in Dutch and English is derived if the Barbiers-movement of the DegP is overt:

(58)	a.	fast-er	than expected
	b.	best	possible
(59)	a.	snell-er	dan verwacht
		fast-comp	than expected
	b.	best	mogelijk
		good-sup	possible

In (56), the CompP is generated as an adjunct to DegP. Being an adjunct, however, we may consider the possibility that the CompP is generated higher.

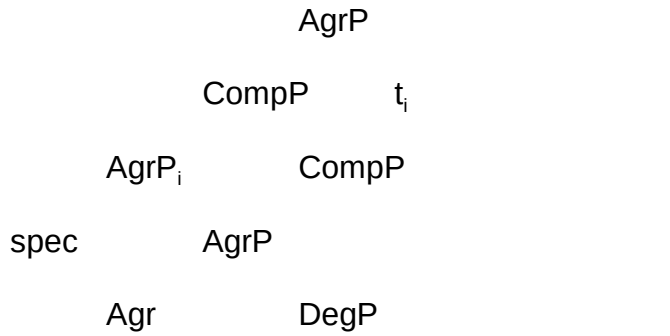
Suppose the CompP is generated as an adjunct to AgrP:

(60)



Barbiers-movement will then put the AgrP sister to CompP in the specifier position of CompP:

(61)



In Dutch, the specifier position of AgrP is occupied by the AP, and the head noun N is adjoined to Agr (see (17)). As a result, both the adjective and the noun will precede the CompP in (61). The corresponding construction is grammatical in the comparative, not, it seems, in the superlative (cf. Zwart 1993:354 fn 6):

(62)	a.		een	snell-er-e	route	dan gebruikelijk
			a	fast-comp-nn	route	than usual
	b.	*	de	best-e	kandidaat	mogelijk
			the	best-sup	candidate	possible

Apparently, a certain freedom in the generation of the CompP must be allowed for, although a complete freedom would make the wrong predictions. We will leave the investigation of the possible adjunction sites of the CompP for further study.

Next, let us turn to the shift of the agreement morphology in comparative AP constructions. We will make crucial use of the A-to-Deg movement, and of the Barbiers-movement reversing the order of DegP and CompP.

5.2 The shift of the agreement morphology

As noted in (25), a comparative or superlative adjective accompanied by a comparison phrase, does *not* carry the agreement morpheme. Instead, the gender agreement is realized on an element of the comparison phrase:

(63)	a.	een	snell-er-(*e)	dan gebruikelijk-*(e)		route
		a	fast-comp-nn	than usual-nn		route
	b.	de	snel-st-(*e)	mogelijk-*(e)	route	
		the	fast-sup-nn	possible-nn	route	

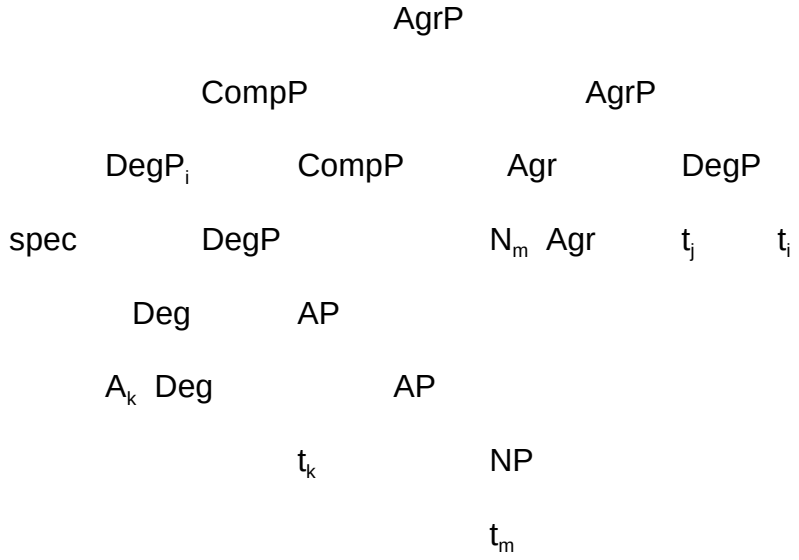
The following generalization regarding agreement seems to hold:

(64) If an XP headed by α shows morphological agreement with a head β regarding feature φ, the morpheme that expresses φ is carried by α.

There is no reason to believe that the constructions in (63) should not fall under the generalization in (64). Therefore, we are led to conclude that in (63), not the adjective, but the head of the CompP is the head of the XP in the specifier position of AgrP.

In section 5.1, we have assumed that in comparative constructions, the adjective A adjoins to Deg via standard head movement, and the DegP moves to the Spec,CompP via Barbiers-movement (cf. (57)). At this point in the derivation, no Spec-Head agreement relation has been realized in AgrP. We have assumed that N moves to Agr, and that the adjective appears in Spec,AgrP. The morphology in (63) now shows that the XP moving to Spec,AgrP is not the AP, or the DegP containing A (after A-to-Deg movement), but the CompP containing the DegP containing A:

(65)



(Notice that movement to Spec,AgrP of the DegP dominating CompP in (57) is excluded by (52).)

In (65), only the head of CompP may carry the agreement morphology associated with the gender features on the noun. This explains the `morphology shift' that is so remarkable in these constructions. The structure in (65) is linearized as follows:

(66)	(D)	A-Deg	CompP	N
	(een)	snell-er	dan gebruikelijk-e	route
	a	fast-comp	than usual-nn	route

There is a question about the internal structure of the CompP. The analysis presumes that the adjective contained in the CompP is the head of the CompP. Why cannot the comparative conjunction *dan* be the head? I would like to conjecture here that, if *dan* is a head, it is comparable to conjunctions like *and* rather than to prepositions. For some reason, conjunctions like *and* never carry agreement morphology, in violation of (64). I presume that comparative phrases like *dan gebruikelijk* fall in this category. Possibly, (64) will have to be reformulated to some extent in order to capture the distribution of agreement morphology in conjunction phrases.

Skirting this issue, we may conclude that the agreement shift in comparative APs follows from generalization (64), in conjunction with the proposed Barbiers-movement to Spec,CompP of the DegP containing the adjective.

5.3 The A-PP-N order in comparative APs

The second curious property of comparative APs to be discussed here is that the presence of a comparison phrase makes it possible for PPs to appear between the adjective and the noun:

(67)	a.		D	A	PP	N		
		*	een	trots(-e)	op zijn auto	man		
			a	proud-nn	of his car	man		
	b.		D	A-Deg	PP	CompP		N
			een	trots-er	op zijn auto	dan gebruikelijk-e		man
			a	proud-comp	of his car	than usual-nn		man
(68)	a.		D	A	PP		N	
		*	een	knapp(-e)	voor zijn leeftijd		man	
			a	handsome-nn	for his age		man	
	b.		D	A-Deg	PP			
			een	knapp-er	voor zijn leeftijd			
			a	handsome-comp	for his age			

	CompP	N
	dan gebruikelijk-e	man
	than usual-nn	man

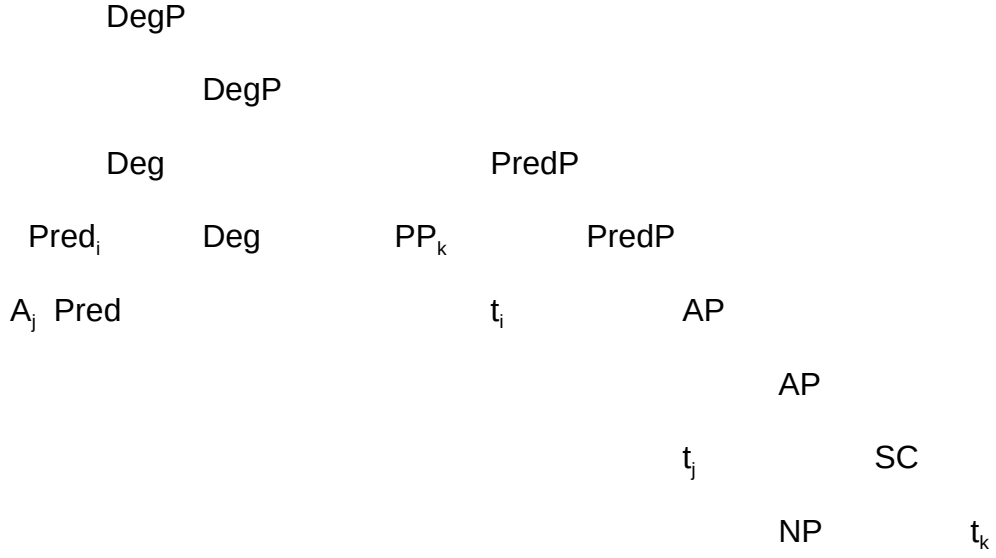
This fact falls out from the analysis presented above.

Consider first the `complement PP' case in (67). In section 4, we have analyzed this PP as the predicate of a Small Clause, which is itself generated as the sister of the adjective A (see (40a)). In Dutch, the predicate PP moves to the specifier position of a

PredP, and A moves to Pred (see (41)-(42)). As a result, the PP always ends up to the left of the adjective.

We have assumed in section 5.1 that the DegP associated with the comparative morphology of the adjective is generated on top of the PredP (see (55)). We have also assumed that the adjective moves to the head of the DegP, Deg (see section 5.1, below (55)). As a result, the adjective ends up to the left of the PP again:

(69)



Eventually, DegP will move to the Spec,CompP, and CompP will move to Spec,AgrP, as discussed in section 5.2. This does not affect the order of the adjective and the PP, however, which follows straightforwardly from the A-to-Deg movement. (N ends up being to the right of the other constituents as a result of the N-to-Agr movement. The PP ends up being to the left of the CompP, because of the Barbiers-movement of the DegP containing A and PP to Spec,CompP.)

After the derivation is completed, the structure in (69) yields the following linearization:

(70)

D	A-Deg	PP	CompP	N
een	trots-er	op zijn auto	dan gebruikelijk-e	man
a	proud-comp	of his car	than usual-nn	man

The derivation of the adjunct case, (68), is not significantly different. However, since we have assumed that the adjunct PP can be generated in various positions (cf. (40b)), some discussion is required.

If the adjunct PP is generated as an adjunct to AP, the derivation runs almost exactly as in (69). The only difference is that the PP is not moved to Spec,PredP, but adjoined to AP. The A-to-Deg movement will have the same effect, however, with the PP ending up to the right of the adjective, and to the left of the CompP and the noun. (Notice that Barbiers-movement of the AP to the specifier position of the PP will have no observable effect on the word order, as the AP and the NP have been emptied by head movement of N-toAgr and A-to-Deg.)

This yields the following linearization:

(71)	D	A-Deg	PP	CompP	N
	een	knapp-er	voor zijn leeftijd	dan gebruikelijk-e	man
	a	handsome-comp	for his age	than usual-nn	man

(At this point, we have to note a serious problem for the analysis pursued here. So far we have only considered APs containing both a Degree Phrase and a Comparison Phrase. Absence of the Comparison Phrase would not be likely to obstruct movement of A to Deg, creating the A-PP order. Nevertheless, the A-PP-N order cannot occur unless the CompP is also present. In other words, for the analysis to be successful, we have to make sure that A-to-Deg does not take place in the absence of a Comparison Phrase. This does not fall out from the analysis, indicating that further investigation is necessary. The problem suggests that the structures are slightly different than assumed here, with PredP dominating DegP, and the CompP an adjunct to an unknown functional projection dominating PredP, which is present only if there is a CompP, and the head of which hosts the adjective in that case. But, having noted the problem, we will continue the reasoning followed thus far.)

If the adjunct PP is generated as an adjunct to AgrP, the following two word orders can be derived, depending on the presence or absence of Barbiers-movement of AgrP to Spec,PP (cf. (47a-b), (48)):

(72)	a.	D	PP	A-Deg	CompP
		een	voor zijn leeftijd	knapp-er	dan gebruikelijk-e
		a	for his age	handsome-comp	than usual-nn
		N			
		man			
	b.	D		A-Deg	CompP
		een		knapp-er	dan gebruikelijk-e
		a		handsome-comp	than usual-nn
		N	PP		
		man	voor zijn leeftijd		
		man	for his age		

The word order in (72b) is derived by Barbiers-moving the AgrP *knapper dan gebruikelijke man* into the specifier position of the PP *voor zijn leeftijd*.

Notice that this case is irrelevant for the particular point under discussion, namely the A-PP-CompP-N order in noun phrases containing comparative APs. However, it needs to be mentioned because of the following problem. Next to (70), parallel to (71), the following word order is also possible, parallel to (72b):

(73)	D	PP	A-Deg	CompP	N
	een	op zijn auto	trots-er	dan gebruikelijk-e	man
	a	of his car	proud-comp	than usual-nn	man

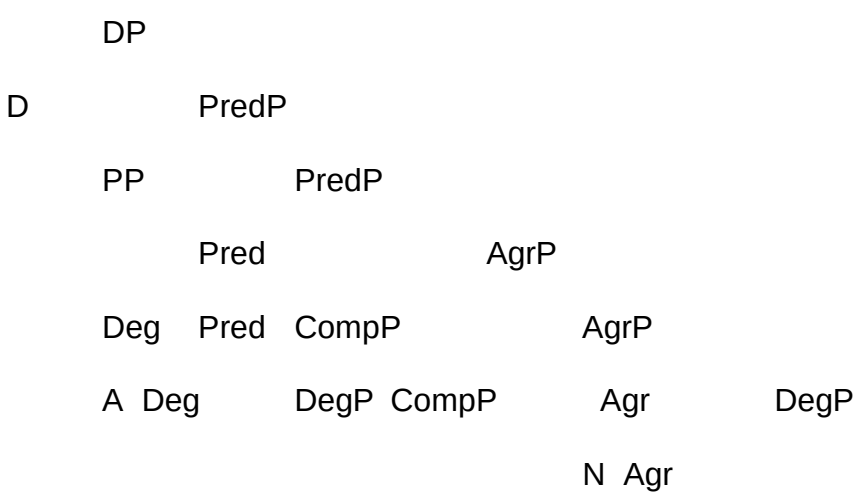
In (73), the predicate PP *op zijn auto* ends up more to the left than expected on the basis of our analysis. We have assumed that predicate PPs move obligatorily to their designated licensing position, Spec,PredP.

Notice that we cannot solve the problem posed by (73) by reanalyzing the PP as an adjunct PP in this case. Still assuming the possibility of Barbiers-movement, this would lead to the prediction that the PP can also be to the right of the A-CompP-N chunk, contrary to fact:

(74)	*	een	trots-er	dan gebruikelijke	man	op zijn auto
		a	proud-comp	than usual-nn	man	of his car

Possibly, PredP must be generated higher than AgrP in order to derive (73), admittedly an unattractive move. In that case, the adjective could move from A to Deg to Pred, and would precede the CompP (containing the DegP and the emptied AP) in Spec,AgrP. This has no effect on the agreement relation in AgrP, since, as we have seen, the head of the CompP takes care of the agreement with the noun:

(75)



But given the unattractiveness of this solution, I would like to reserve this problem for further study, along with the other problems mentioned earlier.

5.4 Conclusion

In this section, I have proposed a solution for two problems associated with noun phrases containing comparative APs. The problem of the shift of the agreement morphology was solved by taking the head of the comparison phrase to be the element agreeing with the noun. This follows from the agreement principle (64), if we assume that the DegP, which contains the adjective in Deg, is in the specifier position of CompP, and CompP is the phrase moving to Spec,AgrP. The movements to specifier positions are of two types:

(76)
1. movement to create standard Spec-Head agreement configurations (CompP-to-Spec,AgrP; N-to-Agr; A-to-Deg).
2. movement to create predication configurations, in the sense of Barbiers (1995) (DegP-to-Spec,CompP).

The problem of the surprising A-PP-CompP-N order was solved by assuming that in comparative constructions A moves to Deg, reversing the order of A and PP. (DegP-to-

Spec,CompP movement again derives the position of A w.r.t. CompP, and CompP-to-Spec,AgrP again derives the position of CompP w.r.t. N.)

In the final section, we will briefly address the `reduced relative' variant of the AP constructions discussed here.

6. Predicative APs and reduced relatives

In the examples discussed so far, the APs are used attributively. When the APs are used predicatively, as in (77):

(77)	a.	(Die man is)	trots	op zijn auto
		that man is	proud	of his car
	b.	(Die man is)	knap	voor zijn leeftijd
		that man is	handsome	for his age

two changes occur.

First, the adjective does not show agreement with the noun:

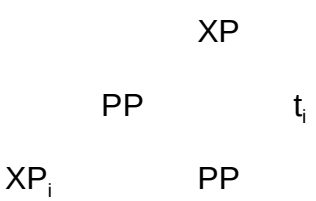
(78)	a.	(Die man is)	trots(*-e)	op zijn auto
		that man is	proud-nn	of his car
	b.	(Die man is)	knap(*p-e)	voor zijn leeftijd
		that man is	handsome-nn	for his age

Second, the distinction between `complement' PPs (predicate PPs, in our analysis) and adjunct PPs seems to disappear, as both types of PP may appear in extraposition:

(79)	a.	..dat die man	trots	is	op zijn auto
		that that man	proud	is	of his car
	b.	..dat die man	knap	is	voor zijn leeftijd
		that that man	handsome	is	for his age

Still assuming, with Barbiers (1995), that movement-to-spec is the only mechanism by which extraposition may come about, we must conclude that in both sentences of (79) the PP is generated as an adjunct, and that the XP containing the adjective and the verb *is* `is' has been moved to the specifier position of the PP:

(80)

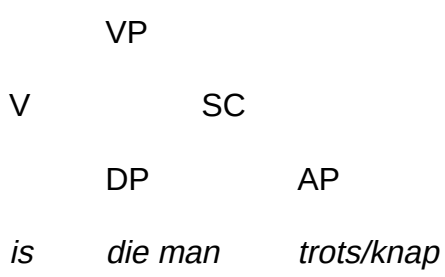


We need not dwell on the nature of XP here. In both sentences of (79), the adjective is generated as the predicate of a Small Clause complement of *is*. We assume, as in Zwart (1994), Koster (1995), that the adjective moves to the specifier of a Predicate Phrase (cf. (10)), so that XP is minimally PredP.

The facts in (79) suggest that predicative APs are fundamentally different from attributive APs. In particular, it seems that the analysis in which the PP is a predicate (cf. (40a)) is unavailable in predicative PPs.

Consider the Small Clause structure underlying the sentences in (79):

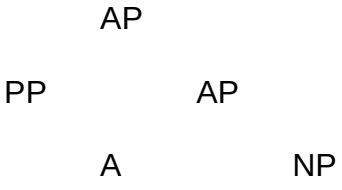
(81)



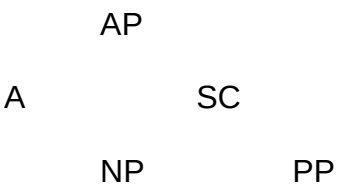
In (81), the noun phrase *die man* is generated as the subject of the predicate AP. Consequently, there is no representation in which the DP is in the complement domain of the adjective, as we have crucially assumed for attributive constructions (see (39.1)).

In our analysis, the difference between `complement' and adjunct PPs in attributive constructions makes crucial reference to the position of the noun phrase in the complement domain of the adjective. In the adjunct type, the noun phrase is the sister of the adjective (82a), whereas in the `complement' type, the noun phrase is the subject of a Small Clause that is the sister of the adjective (82b):

(82) a.



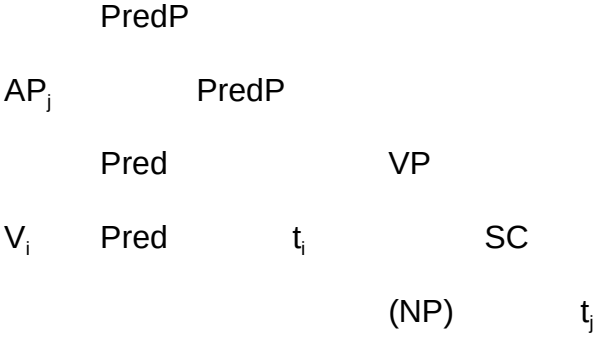
b.



If (81) is correct, the noun phrase is not in the complement domain of the adjective in either (79a) or (79b). If PP in (79a) were a Small Clause predicate in the complement domain of the adjective, there would have to be a noun phrase (the Small Clause subject) in the complement domain of the adjective. The structure in (81) excludes that.

The absence of agreement on the adjective follows straightforwardly from the movement of the AP to Spec,PredP:

(83)



In (83), the AP is in a Spec-Head relation with V, not with N. Therefore, no gender morphology is expected to show up on the head of the AP.

APs in reduced relative constructions pattern with predicative APs. Thus, there is no gender agreement on the adjective:

(84)	a.	een man	trots(*-e)	op zijn auto
		a man	proud-nn	of his car
	b.	een man	knap(*p-e)	voor zijn leeftijd
		a man	handsome-nn	for his age

Also, no asymmetries between `complement' PPs and adjunct PPs appear to exist. Thus, both types of PPs may appear in extraposition:

(85)	a.	een man	trots	gebleven	op zijn auto
		a man	proud	remained	of his car
		"a man (who has) remained proud of his car"			
	b.	een man	knap	gebleven	voor zijn leeftijd
		a man	handsome	remained	for his age
		"a man (who has) remained handsome for his age"			

This suggests that the constructions in (84)-(85) are derived from constructions involving predicative APs (as indicated by the translations in (85)), confirming the analysis involving reduction of a relative clause (cf. Kayne 1994:97 and references cited there).

7. Conclusion

In this paper I have attempted to discuss in some detail the properties of Dutch noun phrases containing an adjective and a PP associated with the adjective. I have argued that in attributive constructions, these PPs come in two types. One type is an adjunct adjoined to the left of the AP (or to the left of a functional projection dominating AP). This type allows extraposition of the PP. Another type is the predicate of a Small Clause complement of the adjective. This PP moves to the specifier position of a Predicate Phrase (cf. Zwart 1994), and can never appear in extraposition.

The analysis explains the distribution of the two types of PPs inside the noun phrase. When no degree elements are present, the PPs may not appear in between the adjective and the noun, as both the adjunct PP and the predicate PP remain to the left of the adjective. However, when degree elements are present, the adjective undergoes a further movement to the head of the Degree Phrase (Corver 1993), crossing the position of the predicate PP, and the position of the adjunct PP in some of the derivations. The Degree Phrase moves to the specifier position of a Comparison Phrase, generated as an adjunct of the Degree Phrase. The Comparison Phrase, containing the adjective (in the head of the Degree Phrase) and the PP (to the right of the adjective) moves to the specifier position of the Agreement Phrase taking care of the gender agreement with the noun. These movement processes explain the shift of the agreement morphology to an element of the Comparison Phrase, as well as the possibility of the word order A-PP-CompP-N (which is excluded without the Comparison Phrase (CompP) present).

The analysis makes use of two types of movement:

(86) 1. Movement to create specifier-head agreement configurations (Chomsky 1986)
2. Movement to create predication configurations (Barbiers 1995)

The latter movement consists in movement of a phrase XP to the specifier of the adjunct of XP, and yields extraposition phenomena (as it inverts the order of two phrases).

The analysis supports the hypothesis that there are only two types of PPs, predicate PPs and adjunct PPs, and that no complement PPs exist. Predicate PPs are generated as Small Clause predicates, and invariably have a noun phrase as their subject. Adjunct PPs may function as the target for `Barbiers-movement' (86.2), and may be characterized as predicates of other phrases than noun phrases.

Though many problems and uncertainties remain, I hope that this paper contributes to a proper understanding of the phenomena involved.

References

Abney, S.P. 1987. *The English Noun Phrase in Its Sentential Aspect.* Dissertation, MIT.

Barbiers, S. 1995. *The Syntax of Predication.* Dissertation, University of Leiden.

Bernstein, J. 1995. "Adjectives and their Complements." Paper presented at the LSA Meeting, New Orleans, January 6.

Brinker, K. 1972. *Konstituentenstrukturgrammatik und operationale Satzgliedanalyse.* Frankfurt am Main: Athenäum.

Chomsky, N. 1986. *Barriers*. Cambridge: MIT Press.

Chomsky, N. 1991. "Some Notes on Economy of Derivation and Representation." In *Principles and Parameters in Comparative Grammar*, R. Freidin, ed., Cambridge: MIT Press.

Chomsky, N. 1993. "A Minimalist Program for Linguistic Theory." In *The View from Building 20. Essays in Linguistics in Honor of Sylvain Bromberger.* K. Hale and S.J. Keyser, eds. Cambridge: MIT Press.

Corver, N. 1993. "Phrasal Structure and Word Order within the Adjeectival System." Paper presented at the GLOW Colloquium, Vienna, April 6.

Fowler, H.W. and F.G. Fowler. 1962. *The King's English.* Reprint of the third edition (1931). Oxford: Oxford University Press.

Hoekstra, T. 1984. *Transitivity. Grammatical Relations in Government-Binding Theory.* Dordrecht: Foris.

Kayne, R.S. 1994. *The Antisymmetry of Syntax.* Cambridge: MIT Press.

Koster, J. 1974. "Het werkwoord als spiegelcentrum." *Spektator* 3, 601-619.

Koster, J. 1987. *Domains and Dynasties. The Radical Autonomy of Syntax.* Dordrecht: Foris.

Koster, J. 1995. “Predicate Incorporation and the Word Order of Dutch.” In *Paths Toward Universal Grammar.* G. Cinque et al, eds. Washington: Georgetown University Press.

Mulder, R. 1992. *The Aspectual Nature of Syntactic Complementation.* Dissertation, University of Leiden.

Verdam, J. 1911. *Middelnederlandsch handwoordenboek.* The Hague: Martinus Nijhoff.

Vanden Wyngaerd, G. 1989. “Object Shift as an A-Movement Rule.” *MIT Working Papers in Linguistics* 11, 256-271.

Zwart, C.J.W. 1993. *Dutch Syntax. A Minimalist Approach.* Dissertation, University of Groningen.

Zwart, C.J.W. 1994. “Dutch is Head Initial.” *The Linguistic Review* 11.3/4, 377-406.