Chapter 2

Degree Phrases

part I

Specifiers or Adjuncts

2.1 Introduction

Degree phrases appear as small clause predicates (1a), as modifiers within the nominal domain (1b) or as modifiers outside of the nominal domain (1c):¹

(1) a Die glazen vaas is [kwetsbaar]
   `that glass vase is fragile'
   b Janna heeft [[langer] haar]
   `Janna has longer hair'
   c Janna heeft [zo hard] gelopen (dat Peter haar niet bij kon houden)
   `Janna ran so fast that Peter could not keep up with her'

It is the third case, modification outside of the nominal domain, that is the subject of this chapter. Since a fully developed theory of adverbial modification is too large an issue to be dealt with in a single chapter, I would like to restrict myself to the question whether degree phrase adverbials should be analyzed as specifiers (of functional projections) or as adjuncts.²

The traditional view on adverbials is that they are adjuncts, adjoined to, for instance, the verb phrase (e.g. Pollock 1989). However, in recent years some

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¹ See the introductory chapter for the assumption that gradable adjectives gave a G argument that has to be bound by a degree operator (Zwarts 1992): a adjectival predicate like kwetsbaar `fragile' in (1) is analysed as a degree phrase with an empty degree head:
(i) [degp o [ap kwetsbaar]]

² I will use the term adverbial as roughly similar to modifier (to the exclusion of prenominal modifiers). That is, it does not only refer to adverbs per se, but also to prepositional phrases that occur as modifiers.
proposals have been put forward to consider adverbials (more precisely, adverbs like *probably* or *quickly*) as heads or as specifiers.\(^3\,^4\)

Travis (1988) argued that an account of the distribution of adverbs should be based on an answer to the question of how their occurrence is licensed. In answer to this requirement, she developed an analysis in which adverbs are heads that are licensed by features of a verb or of inflection.

Sportiche (1994) argued that an adverb like *lentement* `slowly' in French does project an adverb phrase, but that it features as a head in the range of functional heads above the verb phrase. I will discuss Sportiche's proposal in section 2.2 below.

Laenzlinger (1993), Alexiadou (1994) and Cinque (1997) argued that adverbials are specifiers. In a theory in which specifiers and adjuncts have the same structural status, it does not seem to matter whether adverbials are analyzed as adjuncts or as specifiers. *Seem* is the correct verb, however, since there is still a distinction between adjuncts and specifiers in the sense that specifiers are those adjuncts that are involved in an agreement relation with the projecting head (Hoekstra 1991 (p.24), Kayne 1994). This agreement relationship restricts the distribution of specifiers to certain functional projections, which yields considerable differences in the predictions made by the two hypotheses. I will discuss the specifier and adjunct analyses in sections 2.3 and 2.4. My conclusion will be that adverbials are adjuncts.

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\(^3\) In exceptional cases, adverb phrases appear as complements to a verb. One example of a verb selecting an adverb phrase is *behave*:

(i) Cats behave *(well)* when they think their owner cannot see them

Alexiadou (1994, p.6) provides the following examples of what she terms complement-type adverb(ial)s:

(ii) a He behaved *(awfully)*
    b John goes *(to London)*
    c John resides *(in Berlin)*

Alexiadou proposes that complement-type adverbials move to the specifier position of a functional head to be formally licensed, whereas specifier-type adverbials (the modifiers I consider) are generated in specifier positions to be functionally licensed.

\(^4\) Tim Stowell (pc) notes that there is yet another alternative: adverbs can select the phrase they modify as specifiers. In that case, the adverb is a predicate and the phrase it modifies is its argument. An approach like that does not have the disadvantages of an analysis in which an adverb selects the phrase it modifies as a complement (cf. section 2.2.2). Moreover, it meets the advantages of the adjunct analysis that will be defended here. A full discussion of the ins and outs of such an analysis, however, will be left for future work.
2.2 Modifiers as heads in the functional structure of a sentence

Travis (1988) proposed that an adverb like *probably* features as a head in syntax. She proposed that adverbs are deficient in the sense that they do not project a full phrase. Instead, they are licensed as bare heads within the IP or VP projection. The specific licensing relationships (via features of Infl and V) are designed to explain the alleged differences in distribution between adverbs and prepositional phrases that modify (part of) a sentence.

There is a rather straightforward counterargument to Travis' claim that adverbs do not project (cf. Rijkhoek 1994). A first indication is that they can be modified (cf. (2)). A second indication is that some adverbs seem to have prepositional complements (cf. (3)).

\[(2) \quad \begin{align*}
\text{a) He painted it} & \ [\text{incredibly fast}] \\
\text{b) Hij eet} & \ [\text{bijna nooit}] \text{ zijn bord leeg} \\
& \ \text{he eats almost never his plate empty} \\
& \ \text{`He almost never finishes his plate'}
\end{align*}\]

\[(3) \quad \text{Her friend picked the exact same colour,} \ [\text{quite independently of her own choice}]\]

If adverbs are indeed bare heads, we do not expect them to be modified. In the same vein, a head that selects a complement must project to accommodate it as a sister. As such, Travis' main hypothesis is easily falsified and I will not discuss her proposal any further here.

A different view on adverbs in which they feature primarily as heads, is proposed by Sportiche (1994). In his system, an adverb like *lentement* `slowly' does project, but it takes the phrase it modifies as its complement. That is, the adverb features as one of the heads in the functional domain of the verb. An approach like this is worth considering, because it mirrors analyses with respect to adjectival modification in the nominal domain (cf. Abney 1987, Barbiers 1992). After briefly looking at modification of noun phrases in section 2.2.1, I will discuss Sportiche's proposal in section 2.2.2.

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\[5\quad \text{In addition, the distribution of adverbs is not as different from that of prepositional modifiers as Travis (1984) claims.}\]
2.2.1 Adjectival modifiers in the nominal domain

In the nominal domain, there is a lively debate going on about the structural status of adjectival modifiers. The traditional analysis is to assume that adjective phrases are generated within the NP (e.g. Jackendoff 1977). Since Abney (1987), other analyses view them as "the auxiliaries in the noun phrase" (Barbiers 1992), in the sense that they range among the functional heads in the extended domain of the noun phrase. An intermediate analysis is provided by Menuzzi (1994), in which he supports Bernstein's (1991) conclusions that we should recognize some adjectival modifiers as adjuncts to functional projections and some as heads in the extended nominal projection.

In Dutch, prenominal adjectives carry a schwa-suffix if the determiner is [+Definite], if the noun is [-Neuter] or if the noun is [+Plural]. In other cases, there is no schwa-ending.:

(4) a een klein_ boek [definite, +neuter, -plural] 
   a small book  
b het kleine boek [+definite, +neuter, -plural]  
the small book  
c kleine boeken [-definite, +neuter, +plural] 
   small books  
d een kleine man [-definite, -neuter, -plural] 
   a small man  
e de kleine man [+definite, -neuter, -plural] 
   the small man

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6 For a more extensive overview than can be given here, see Kester (1996, pp.30-50).

7 Van Riemsdijk (1991) provides interesting data involving prenominal modification. He notes that the SCHWA-inflection on a prenominal modifier must be adjacent to the noun. This prevents preposition phrases selected by an adjectiv to appear in between the adjective and the noun:

(i) a de man is [trots op zijn zoon]  
   the man is proud of his son  
b * de [trots op zijn zoon] man  
   the proud of his son man  
c de op zijn zoon trots man  
   the of his son proud-SCHWA man

Interestingly, constructions like zo snel mogelijk `as fast as possible' are allowed in prenominal modification. In that case, mogelijk 'possible' carries the inflection:

(ii) a een zo snel mogelijk vliegtuig  
   a so fast possible airplane  
b een zo snel mogelijke auto  
   a so fast possible_SCHWA car

Corver (1994, 1997) also considers examples like (i) and (ii). Since prenominal modification is not a topic that is dealt with in this thesis, I will not discuss their analyses here (but see chapter 3 in this book for discussion of other aspects of Corver 1994, 1997).
Barbiers (1992) argues that adjectives are part of the functional domain of the noun phrase. His main argument against adjective phrases as adjuncts is that the inflection on prenominal adjectival modifiers is hard to explain in an adjunct approach. If adjectives are part of the functional structure in a noun phrase, however, movement of the noun (or of a pro that is associated with the noun) allows for checking of the relevant determiner and noun features in specifier-head configurations. The agreement phenomenon between adjectives and nouns thus appears to provide a strong case for an adjective phrase as a functional projection within the extended projection of a noun.

However, Barbiers' (1992) conclusion that adjectives are not adjuncts but provide a functional projection in the noun phrase is modified somewhat by Menuzzi (1994). Menuzzi provides support for and extends Bernstein's (1991) analysis, on the basis of Dutch and Brazilian Portuguese. Bernstein concluded that while some adjective phrases indeed have the status of a functional projection within the extended noun phrase, others appear to be specifiers or adjuncts after all. Adjectives that appear as heads in the functional structure of a noun phrase are those that block movement of a suffix that is claimed to be generated in N^0, yielding the order A-N (the (b) examples below). Adjectives that are a specifier of the NP, or an adjunct, do not block movement of the noun, yielding the order N-A (the (a) examples below). In Spanish, both types are available (cf. Bernstein 1991):

(5) a un hombre simple
   a man simple-minded
b un simple hombre
   `a mere man'
c uno simple
   `a simple-minded/ *mere (one)'

(6) a un autor grande
   `a big (in size) author'
b un grande autor
   `a great author'
c uno grande
   `a big/ *great one'
Another example of an analysis in which prenominal adjectives are considered to be the specifier of a functional (agreement) projection within the noun phrase is Lattewitz (1997).

(7)  
a * un accidente mero
b un mero accidente
   `a mere accident'
c * uno mero

In Spanish, adjectives that obligatorily precede the verb (cf. *mero in (7)) block movement of a nominal clitic -o that is, by assumption, raised from the position of N⁰; they are analyzed as heads in the functional projection of the noun. In contrast, adjectives that can occur after the noun as well do not block movement of the clitic from N⁰ to D⁰ (cf. (5c) and (6c)): they are analyzed as adjuncts (cf. Bernstein 1991 and Menuzzi 1994).

For Dutch, Menuzzi arrives at analysis in which there are three positions for adjectives. One ranges among the functional heads, one is an adjunct of the NP and one is the specifier position of the NP (cf. Menuzzi 1994 for discussion).

In short, although some people argue that adjectival modifiers in a noun phrase are heads in the functional domain, others argue that modifiers can be functional heads in some cases, but can also be adjoined to the noun phrase. What is important to keep in mind is that the head status of particular adjectives (e.g. Spanish prenominal ones in Bernstein 1991) is inferred from the fact that they appear to block the nominal head from moving across their position, yielding the order adjective-noun.

There is another structural option for prenominal adjectives: they can be specifiers of functional projections in the nominal domain, as Cinque (1993) proposed. This is the analysis adopted by Kester (1996), whose central topic is adjectival inflection. She adopts Cinque's specifier hypothesis because it is the least problematic analysis of prenominal adjectives that is still able to account for inflection patterns in a natural way. Her main objection to an adjunction theory of prenominal adjectives is the same objection that was expressed by Barbiers (1992): an adjunction theory cannot easily account for the agreement between determiner, noun and adjective as manifested in adjectival inflection (cf. Barbiers 1992 as well).

Indeed, the issue of how to account for adjectival inflection is a major argument in favour of the specifier approach for adjectives in the nominal domain. Unfortunately, there is no such decisive factor in the discussion about whether

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adverbials are specifiers of adjuncts. Section 2.4 compares a specifier and adjunction analysis for adverbials.

First, however, consider a proposal to consider adverbs as heads in the functional structure of a clause.

### Sportiche 1994

As mentioned in the introduction to section 2.2, Sportiche (1994) analyses adjectival degree phrases like *lentement* `slowly` in (8) as heads in the functional domain of a clause:

\[
\begin{align*}
(8) \quad a & \text{ Marie avait [lentement] mangé sa soupe} \\
& \text{Marie has (very) slowly eaten her soup} \\
& \text{´Marie ate her soup slowly´} \\

b & \text{ Marie avait [advp lentement [vp mangé sa soupe]]} \\
\end{align*}
\]

That is to say, the adverb takes its modifiee as complement: I will refer to this hypothesis as the head approach.

An advantage of Sportiche's (1994) proposal is that it makes a syntactic theory without adjuncts conceivable. That is to say, if modifiers are no longer adjuncts, base-generated adjunction can be dispensed with. In addition, Sportiche (1992) argued that all movements (of XPs) take place without adjunction as well. That is, all movements can be argued not to involve adjunction, but rather substitution into a specifier position of a particular head. This implies that adjunction as a result of movement can be dispensed with as well. Put together, these two analyses give rise to a theory in which no adjunction to XP whatsoever is needed.

A theory without adjunction is more restrictive than a theory that does include the option to adjoin to a maximal projection. When there are no restrictions on adjunction whatsoever, the theory provides an indefinite set of positions for maximal projections. For example, maximal projections usually have just one specifier position, but if adjunction is unrestricted, it allows for numerous adjuncts to a single maximal projection. In other words, unrestricted adjunction yields a huge overgeneration of possible XP sites. A theory in which adjunction is *a priori* excluded, however, only allows for specifiers. This yields a theory that is more
restricted than one that does allow for adjunction (well, provided that there are restrictions on the number of specifiers).  

Since Sportiche (1994) analyzed modifiers as part of the functional structure of a clause, he paves the way for a theory in which adjunction is not a necessary configuration anymore. In this respect, Sportiche’s proposal is very interesting.

However, it also makes a number of incorrect predictions. This section will present these incorrect predictions and provide counterarguments for the hypothesis that adverbs are heads that select their modifiee.

Sportiche’s (1994) analysis is inspired by the following contrast:

(9) a Marie avait [(très) lentement]/ *[d’une manière très lente] mangé sa soupe  
   Marie has (very) slowly/ of-a manner very slow eaten her soup  
   ‘Marie ate her soup slowly/ in a slow manner’  

b Marie avait mangé sa soupe [(très) lentement]/ [d’une manière très lente]

As we see in the (9a) example, a prepositional modifier cannot precede the main verb, in contrast to an adverb phrase. Example (9b) shows that modifiers of both syntactic categories can occur after the main verb and its object.

Sportiche argues that the difference in distribution between a prepositional phrase and an adverbial degree phrase modifier is unexpected if both are adjuncts. In addition, he adopts Zubizarreta’s (1982) idea that adjuncts assign an “adjunct thematic role” to the phrase they are adjoined to. To achieve maximum generality in assumptions about theta-role assignment, Sportiche proposes to assume that adverbial and prepositional heads (as well as e.g. verbs) assign their thematic roles inside their own maximal projection, to a complement or a specifier.

If so, the difference between (9a) and (9b) above can be explained as follows. An adverb like lentement `slowly’ can assign a thematic role both to its specifier and to its complement: both lentement mangé sa soupe and mangé sa soupe lentement are grammatical and have the structure in (10a) and (10b) below.

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10 In section 2.4 we will see that adverbials can also be thought of as specifiers (of functional projections). At first sight, the specifier approach has the same advantage of doing away with (base-generated) adjuction, without the disadvantages of the head approach.
A prepositional modifier, however, is a more complex phrase, in which the complement position is already taken by the noun phrase. Therefore, at least in a theory which assumes strict binary branching, a preposition can only assign an "adjunct" thematic role to its specifier position. The structures proposed by Sportiche (1994, p.54) are given in (10):

(10) a avait [advp [lentement [vp mangé sa soupe]]]  
    has slowly eaten her soupe  

b avait [advp [vp mangé sa soupe] [lentement]]

c AdvP

(AdvP)

Symmetrical (Adv) (VP)

(11) a avait [pp [vp mangé sa soupe] [p de [np une manière lente]]]  
    has eaten her soupe of-a manner slow  

b * avait [pp _ [p de [np une manière lente] [vp mangé sa soupe]]]

c PP

(PP) P'

P NP

The next subsection will show that Sportiche’s analysis of French does not work out correctly for Dutch.

2.2.2.1 Dutch

If we assume that Sportiche’s proposal is correct, we predict that adverbs or adjectives with a prepositional complement can occur after their modifiee only, exactly as in (11) above. That is to say, the modifiee must be the specifier of the degree phrase, because the complement position in the AP is already occupied by the PP. This prediction is not borne out in Dutch:
Note that the order in the English translation of (12) does correspond to the prediction that adverbs with a prepositional complement occur after their modifiee.

(12)  

(a) Janna en haar buurvrouw hebben **onafhankelijk van elkaar** dezelfde quilt ontworpen  
\[ Janna \text{ and her neighbour have independently of each other the same quilt designed}\]

\`Janna and her neighbour designed the same quilt, independently of each other’

(b) *Janna en haar buurvrouw hebben dezelfde quilt ontworpen **onafhankelijk van elkaar**

The (12b) example is ungrammatical, which is not predicted by Sportiche’s hypothesis. However, in Dutch an adjectival degree phrase cannot occur in a position after the main verb participle at all, which implies that the ungrammaticality of (12b) is an issue independent of Sportiche’s analysis:

(13)  

(a) Janna en haar buurvrouw hebben hun quilts (goed) ontworpen (*goed)  
\[ Janna \text{ and her neighbour have their quilts well designed}\]

\`Janna and her neighbour designed their quilts well’

(b) Janna heeft (snel) de deur geverfd (*snel)  
\[ Janna \text{ has quickly the door painted}\]

\`Janna painted the door quickly’

In contrast, however, example (12a) is predicted by Sportiche’s hypotheses to be ungrammatical: again, contrary to fact. His proposal, then, makes incorrect predictions for Dutch adjectival modifiers that have a PP complement.

The next subsections will present additional arguments against a head approach to adjectives or adverbs in the sentential domain.

2.2.2.2 No HMC effects

Another argument against the hypothesis that an adverbial ranges among the functional projections in a clause, is that there do not seem to be head movement effects in which a verb cannot cross an adverb (cf. Cinque 1997, p.2). Consider the examples in (14a) en (14b). As we see in (14a), the base position of the finite verb zou `would’ is lower than that of the adverbial graag `gladly’. In the (14b) example the finite verb is moved to the front of the clause (V2), a movement that appears not to be blocked by the presence of an adverb:

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11 Note that the order in the English translation of (12) does correspond to the prediction that adverbs with a prepositional complement occur after their modifiee.
Alternatively, the unexpected grammaticality of (14b) could indicate that there is no HMC. On the other hand, it has been suggested by Roberts (1991) that there could be heads in the functional domain of a verb that are irrelevant for its movement up the tree. We could analyze adverbs as heads that can be skipped by verb-movement. If that is the case, adverbs can be heads in the functional structure of a clause without blocking verb movement. Then, the grammaticality of (14b) is unproblematic.

As a third option, the grammaticality of (14b) could also mean that verbs are not involved in head movement, but move within their VP (after the VP has been emptied by subject and object movement). For work assuming this type of VP movement see Koopman and Szabolcsi (1998).

In addition, adverbials can be stacked (probably coordinated) and occur in front of a clause:

(i) Gisteren om acht uur, bibberend, met haar natte jas nog aan, stond ze voor de deur.

`yesterday at eight hour, shaking, with her wet coat still on, stood she before the door'
Recall from chapter 1 that although *snel* `quick(ly)` appears to be just a bare adjective, it is analysed as a degree phrase (an adjectival degree phrase, to be precise) with an empty degree head.

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Al in Dutch can also express a meaning similar to that of *though*:

(i) *Al is het boek op de grond gevallen, dat betekent niet dat je er over mag lopen* `Though the book fell to the floor, that does not mean that you are allowed to walk over it`

This is not the intended meaning here.

(15) a  **Snel** greep Janna het boek

> *quickly grabbed Janna the book*

> ‘Quickly, Janna grabbed the book’

b  **Waarschijnlijk** was het anders op de grond gevallen

> *probably was it otherwise on the floor fallen*

> ‘Otherwise it had probably fallen to the floor’

c  **Gisteren** waren de kaarsen ook al van tafel verdwenen

> *yesterday were the candles also PRT from table disappeared*

> ‘Yesterday the candles had also disappeared from the table’

d  **Genoeglijk** zat de kat ernaast

> *glumly sat the cat there-next*

> ‘The cat was sitting glumly next to it’

These operations are generally considered to be available only to maximal projections and not to heads. This indicates that the adjectives like *waarschijnlijk* `probable` indeed project a full (degree) phrase that is not a part of the functional structure of the sentence.

It should be noted that this argument against the head approach also depends on the exact theoretical framework one adopts. For instance, in Chomsky's (1995) bare phrase structure theory items can be heads and maximal projections at the same time. If this were to apply to adverbs, then they can be merged as heads with the phrase they modify (as in the head approach we are considering now) and still undergo movement to a focus or topicalization position that is considered to be a position for a maximal projection.

In addition, note that there is a small set of modificational elements that cannot be topicalized on their own. In Dutch, *al* `already' and *niet* `not' are members of that set:

(16) a  Het boek is **al** op de grond gevallen

> *the book is already on the floor fallen*

> ‘The book already fell to the floor’

b  *Al* is het boek gevallen

> *already is the book fallen*

> ‘The book already fell to the floor’
These elements might be heads to judge from this topicalization test, but their syntactic and semantic behaviour is much too intricate to allow for such a rash conclusion. A full discussion of these elements is outside the scope of this thesis. I refer the reader to De Mey (19??) and Barbiers (1995, chapter 3) for discussion.

### 2.2.2.4 Adverbs that select prepositional phrases

Another argument against adverbs as head in the functional domain of a clause that select their modifiee, concerns those adjectives and adverbs that have a PP-complement. Adverbs like independently are combined with a fixed preposition (viz. independently of XP).

If we assume that on the one hand, the accompanying prepositional phrase is a complement of the adverb (or the adjective, in: independent of XP) and that, on the other hand, the adverb selects its modifiee, then we are actually assuming that the adverb has two arguments.

Of course, a head selecting two arguments is not unique or undesirable in itself: there are many verbs as well that have more than one argument. The problem is which structural configuration has to be assigned to such cases.

In the remainder of this section I will show that an analysis assuming that an adverb with a PP complement has its modifiee as complement as well, runs into structural problems.

Consider a sentence like the following:

(18) Janna heeft [onafhankelijk [van haar buurvrouw]] dezelfde quilt gemaakt

`Janna made the same quilt, independently of her neighbour'
Other adverbs can intervene between the prepositional phrase and the direct object:

\[\text{Janna heeft onafhankelijk van haar buurvrouw steeds dezelfde quilts gemaakt}\]

`Independently of her neighbour, Janna always made the same quilts'

This is not a problem for the Larson-style structure in the main text, because it is not set that the adverb always selects AgrOP, as is assumed for the sake of illustration in (19). The core assumption is that the adverb selects what it modifies, which may also include other modifiers. Thus, the lowest XP in the extended adverb phrase in (i) would simply be a structurally higher one than AgrOP, since it would include a position for the adverb \textit{steeds}.

16 Other adverbs can intervene between the prepositional phrase and the direct object:

\[\text{Janna heeft onafhankelijk van haar buurvrouw \textbf{steeds} dezelfde quilts gemaakt}\]

\textit{Janna has independently of her neighbour \textbf{continuously} the-same quilts made}

This is not a problem for the Larson-style structure in the main text, because it is not set that the adverb always selects AgrOP, as is assumed for the sake of illustration in (19). The core assumption is that the adverb selects what it modifies, which may also include other modifiers. Thus, the lowest XP in the extended adverb phrase in (i) would simply be a structurally higher one than AgrOP, since it would include a position for the adverb \textit{steeds}.
However, it is unclear where the AgrOP should move and what the trigger for such movements could be.

In addition, there is no obvious reason why the AgrOP should move in this fashion in some cases (i.e. in examples involving topicalization of the adjective plus the PP) but not in other cases (i.e. when the adjective plus the PP are not moved together and movement of AgrOP could lead to ungrammaticality).

In short, an analysis in which adverbs select their modifiee runs into structural problems as soon as PP complements are involved.

Another drawback of the head approach to adverbs is that we loose the structural distinction between selection and modification. In the next subsection I will argue that such a structural distinction between modification and selection
is needed nevertheless. This will also provide another argument against the AP in Larson-style above, and a less theory-internal one at that.

### 2.2.2.5 Structural distinction between modification and selection necessary

The fourth problem with adverbs as heads selecting the phrase they modify is that this approach does not allow for a structural distinction between those modifying part of a clause and those modifying other adverbs that modify part of a clause. That is to say, if adverbs select the phrase they modify as their complement, an adverb modifying another adverb will have to select the latter as its complement. As such, in the following structure, adverb$_2$ can be a modifier of adverb$_1$:

(23) ...  

\[
\text{AP}_2  \\
\text{A}_2 \quad \text{AP}_1  \\
\text{A}_1 \quad \text{XP}  \\
\text{X} \quad \text{ZP}
\]

What is important to consider, however, is that if adverb$_2$ were modifying everything under the AP$_1$-node (i.e. that part of the sentence that includes adverb$_1$ and XP (or whatever adverb$_1$ is modifying)), we would get the exact same structure.$^{17}$

In other words, the structure above is ambiguous between adverb$_2$ modifying adverb$_1$ and adverb$_1$ modifying a larger part of a clause. This implies that sentences in which two adverbials appear in the above configuration should be ambiguous. *Waarschijnlijk* `probably' is an adjectival degree phrase that can be a modifier both at a phrasal and at a clausal level:

(24) Janna heeft waarschijnlijk snel dat boek uitgelezen  
\emph{Janna has probably quickly that book out-read}  
`Janna probably quickly finished that book'  

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$^{17}$ See (28) and (29) below for the structures that I believe are correct.
Indeed, (24) seems to have two readings: either *waarschijnlijk* modifies *snel*, or it modifies the proposition that Janna read the book quickly.

However, when the two readings are teased apart, as in (25)-(27), absence of a structural distinction between modification and selection makes incorrect predictions with respect to extraction possibilities.

Consider the following examples:

(25) a Janna heeft gisteren snel dat boek uitgelezen
    *Janna has yesterday quickly that book out-read*
    `Janna quickly finished that book yesterday’

b Janna heeft ongelooflijk snel dat boek uitgelezen
    *Janna has incredibly quickly that book out-read*
    `Janna has finished that book incredibly fast’

c * Janna heeft ongelooflijk dat boek uitgelezen
    *Janna has incredibly that book out-read*
    `Janna has incredibly finished that book’

In (25a), *gisteren* `yesterday’ cannot be a modifier of the adverbial degree phrase *snel* `quickly’. In (25b), *ongelooflijk* `incredibly’ must be a modifier of *snel*, since it cannot modify any other part of the clause (cf. (25c)). If there were no structural difference between the two sentences in (25a-b), we would expect the extraction possibilities to be the same in both cases. The next paradigm shows that this is not the case:

(26) a Gisteren, heeft Janna t, snel dat boek uitgelezen
    *yesterday has Janna _ quickly that book out-read*
    `Yesterday Janna quickly finished that book’

b * [Gisteren snel], heeft Janna t, dat boek uitgelezen
    *yesterday quickly has Janna _ that book out-read*
    `Yesterday quickly Janna finished the book’

c [Snel dat boek uitgelezen], had ze gisteren nog niet t, !
    *quickly that book out-read has she yesterday yet not*
    `Finished the book quickly, that’s what she didn’t do yet yesterday!’
It should be noted here that the intended meaning is not:

(i) Incredibly, Janna quickly finished the book

In fact, the paradigm shows extraction patterns that are exactly opposite to what we expect. Whichever extraction yields grammaticality for (25a) does not for (25b) and vice versa. This is clear evidence that the examples in (25a-b) involve different structures.

In sum, we do need a structural distinction between selection and modification. Therefore, adverbs are not heads that select the phrase that they modify as complements.

2.2.2.6 Summary

In this section I discussed the head approach to modification, in which adverbs (or adjectives in Dutch) are considered to be heads that are sister to the phrase they modify. A number of counterarguments were presented.

For one, there are no Head Movement Constraint effects for verb movement, which is unexpected if the adverbs are indeed intervening heads.

Second, adverbials like *snel `quickly' can be topicalized or focused, which is usually applicable to maximal projections only and hence unexpected if adverbs are heads projecting a full phrase in between other functional heads.

Third, some adjectives (and corresponding adverbial forms) select prepositional complements, which entails that they would have two complements if they also select their modificiee. To allow for this structurally, several additional assumptions are needed, rendering the head approach less restrictive than other theories.

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18 It should be noted here that the intended meaning is not:

(i) Incredibly, Janna quickly finished the book
The fourth problem with the head approach is that it does not allow for a structural distinction between modification and selection, since both modification and selection will be expressed by a head-complement relation. Section 2.2.2.5 showed that abandoning the structural distinction between modification and selection leads to incorrect predictions with respect to extractibility of modifiers.

I conclude that adverbs do not appear in syntax as heads selecting their modificiee.

2.3 Specifier or adjunct

As noted in the beginning of section 2.2, Travis (1988) argued that the key to the structural configuration of modification by adverbs lies in the answer to the question how adverbial modifiers are licensed. One answer to this question is to treat adverbs as specifiers, a position that is argued for by Laenzlinger (1993), Alexiadou (1994) and Cinque (1997). In Alexiadou’s words: “adverbs are licensed as Specifiers of functional projections by the relevant feature of a head. This presupposes that adverbs have certain features that would enable them to enter an agreement relation with a head and that adverbs are maximal projections. Adverbs are subject to the same requirement as arguments that only one of each type can occur in a syntactical representation.” (ibid., p.19).

In chapter 1 I assumed an antisymmetric framework for this thesis (cf. Kayne 1994). This means that there is no X'-level in between heads and maximal projections: Kayne (1994) (and Hoekstra 1991 as well) argues for a one-level X-bar system. This implies that specifiers will be structurally identical to adjuncts, since both are sisters of a maximal projection. Hoekstra (1991) defines a specifier as “an adjunct which agrees with a head” (p.24). That is to say, adjuncts and specifiers have the same structural status, but they are still distinguished on the basis of whether or not they are involved in a local relation with the head X° of the phrase they are adjoined to. Now if we assume that adverbials (which traditionally have adjunct-status) are involved in spec-head relationships as well, no distinction between adjuncts and specifiers is left.

As such, it seems superfluous to distinguish a theory of adverbials as adjuncts from a theory of adverbials as specifiers. However, if specifiers are those adjuncts that agree with a head, it is clear that they do not have the exact same status as adjuncts, even if their structural status is identical.
Hence, the main hypothesis that degree phrases are specifiers leads to patterns in syntactic theory that differ from the patterns that originate in the hypothesis that they are adjuncts (which do not agree with the head of a projection). This is the reason these two approaches are distinguished from each other and discussed in this thesis. Section 2.4 will compare the two types of analysis, where Cinque's (1997) analysis is taken to exemplify the specifier type.

2.3.1 Structural distinction between selection and modification guaranteed

An advantage of both the adjunct and the specifier approach concerns the structural distinction between modification and selection. In subsection 2.2.2.5 above I argued that such a structural distinction cannot be dispensed with.

Recall that specifiers and adjuncts in this thesis appear in the same structural configuration. If modification is expressed by an adjunction structure, we can make a clear structural distinction between adverbs modifying other adverbs and adverbs modifying larger parts of a clause including another adverb. The former would have the structure in (28), the latter the structure in (29):\textsuperscript{19}

\begin{itemize}
  \item[(i)]
    \begin{align*}
      \text{a} & \quad \text{voor acht uur} & \quad \text{before eight o'clock} \\
      \quad \text{om acht uur} & \quad \text{at eight o'clock} \\
      \quad \text{na acht uur} & \quad \text{after eight o'clock} \\
      \text{b} & \quad \text{voor woensdag} & \quad \text{before Wednesday} \\
      \quad \text{op woensdag} & \quad \text{on Wednesday} \\
      \quad \text{na woensdag} & \quad \text{after Wednesday} \\
      \text{c} & \quad \text{voor komende woensdag} & \quad \text{before next Wednesday} \\
      \quad \text{(*op) komende woensdag} & \quad \text{(*on) next Wednesday} \\
      \quad \text{na komende woensdag} & \quad \text{after next Wednesday} \\
      \text{d} & \quad \text{voor gisteren} & \quad \text{before yesterday} \\
      \quad \text{(*op) gisteren} & \quad \text{(*on) yesterday} \\
      \quad \text{na gisteren} & \quad \text{after yesterday} \\
      \text{e} & \quad \text{voor morgen} & \quad \text{before tomorrow} \\
      \quad \text{(*op) morgen} & \quad \text{(*on) tomorrow} \\
      \quad \text{na morgen} & \quad \text{after tomorrow}
    \end{align*}

The prepositions \textit{voor - om/op - na} 'before - at/on - after' express that the event they modify precedes, coincides with or follows the time mentioned. In (a,b) the noun phrases \textit{acht uur} and \textit{woensdag} are not indexical (they allow iterative readings, for example). \textit{Komende woensdag} 'next Wednesday', \textit{gisteren} 'yesterday' and \textit{morgen} 'tomorrow', however, are indexical. Strikingly, these indexical noun phrases do not allow an overt preposition that expresses temporal overlap. In fact, using \textit{woensdag} 'Wednesday' without any preposition or prenominal modification yields an indexical interpretation in Dutch, even though \textit{woensdag} is not indexical in itself like \textit{gisteren} is:

\begin{itemize}
  \item[(ii)]
    \begin{align*}
      \text{Woensdag ga ik naar Amsterdam} & \quad \text{Wednesday go I to Amsterdam} \\
      \quad \text{I'm going to Amsterdam next Wednesday}
    \end{align*}
\end{itemize}
Given that only the indexical or indexically interpreted noun phrases do not allow a (lexicalized) preposition, I will assume that they are prepositional phrases with an empty preposition that receives a default overlap interpretation (cf. McCawley 1988 as well, contra Larson 1987).

Note that the intended meaning is not:

(i) Incredibly, Janna quickly finished the book.
The only unexpected ungrammaticality is that in (31a); apparently a modifier of an adverb cannot be extracted. The structure in (28) in itself does not prevent extraction of ongeloflijk `incredibly'. It cannot be the case that (31a) is difficult because ongeloflijk might be interpreted as a sentence modifier and hence cause unclarity, because ongeloflijk cannot be used as a sentence modifier:

(i) a * Janna heeft ongeloflijk dat boek uitgelezen
   * `Janna has incredibly finished that book'

b * [Ongelooflijk snel], heeft Janna dat boek uitgelezen
   incredibly quickly has Janna _ that book out-read
   * `Incredibly quickly Janna finished the book'

The extraction data in (31) and (32) follow straightforwardly; in structure (28) it is not possible to prepose adverb, plus XP (cf. (31c)), but extraction of the two adverbs together is fine (cf. (31b)). In structure (29) it is impossible to prepose the two adverbs together (cf. (28b)), but adverb, plus XP can be extracted (cf. (32c)).

2.3.2 Cinque 1997


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21 The only unexpected ungrammaticality is that in (31a); apparently a modifier of an adverb cannot be extracted. The structure in (28) in itself does not prevent extraction of ongeloflijk `incredibly'. It cannot be the case that (31a) is difficult because ongeloflijk might be interpreted as a sentence modifier and hence cause unclarity, because ongeloflijk cannot be used as a sentence modifier:

(i) a * Janna heeft ongeloflijk dat boek uitgelezen
   * `Janna has incredibly finished that book'

b * Ongelooflijk heeft Janna dat boek uitgelezen
   incredibly has Janna _ that book out-read
   * `Incredibly did Janna finish that book'

I have no explanation to offer here for the ungrammaticality of (31a), nor does Corver (1991, pp.227-238) in his discussion of left branch extraction of adjectival modifiers out of adjective phrases.
On the basis of a relative ordering of numerous adverbs, he arrives at an extensive range of adverbs. For example, *mica* `not' must precede *più* `any longer' and *più* must precede *sempre* `always' (ibid. pp.4-6, Cinque's translations):

\[(33)\]
\[
a \quad \text{Non hanno chiamato *mica più*, da allora}
\quad `They haven't telephoned not any longer, since then'
\]
\[
b \quad \text{Non hanno chiamato *più mica*, da allora}
\]

\[(34)\]
\[
a \quad \text{Da allora, non ha *più sempre* vinto}
\quad `Since then, he has no longer always won'
\]
\[
b \quad \text{Da allora, non ha *sempre più* vinto}
\]

\[(35)\]
\[
a \quad \text{Gianni non ha *mica sempre* vinto}
\quad `Gianny hasn't not always won'
\]
\[
b \quad \text{Gianni non ha *sempre mica* vinto}
\]

\[(36)\]
\[
a \quad \text{Da allora, non accetta *mica più sempre* i nostri inviti}
\quad `Since then, he doesn't not any longer always accept our invitations'
\]
\[
b \quad \text{Da allora, non accetta *più sempre mica* i nostri inviti}
\]
\[
c \quad \text{Da allora, non accetta *sempre mica* i nostri inviti}
\]
\[
d \quad \text{Da allora, non accetta *più mica sempre* i nostri inviti}
\]
\[
e \quad \text{Da allora, non accetta *sempre più mica* i nostri inviti}
\]
\[
f \quad \text{Da allora, non accetta *più sempre mica* i nostri inviti}
\]

As a second example, modal adverbs and evaluative adverbs (at the higher end of the functional domain) show a similar restriction in their order (ibid., p.17):

\[(37)\]
\[
a \quad \text{Gianni accetterà *forse saggiamente* il vostro aiuto}
\quad `Gianni will perhaps wisely accept your help'
\]
\[
b \quad \text{Gianni accetterà *saggialemente forse* il vostro aiuto}
\]

\[(38)\]
\[
a \quad \text{Gianni sarà *probabilmente forse* ancora in grado di aiutarci}
\quad `Gianni will probably perhaps still be able to help us'
\]
\[
b \quad \text{Gianni sarà *forse probabilmente* ancora in grado di aiutarci}
\]

\[(39)\]
\[
a \quad \text{Gianni ha *per fortuna probabilmente* accettato}
\quad `Gianni has luckily probably accepted'
\]
\[
b \quad \text{Gianni ha *probabilmente per fortuna* accettato}
\]

Cinque claims that the ordering of adverbs is rather rigid. He argues that the rigidity is best explained by the assumption that adverbs are specifiers of functional projections (cf. Alexiadou 1994 as well). Thus, the ordering of adverbs can be
attributed to the ordering of the functional projections the adverbs are specifiers of.

In addition, between every two (otherwise adjacent) adverbs there is exactly one (head) position in which a participle can occur (Cinque 1997, p.62, ex.(1), my gloss, his translation):

\[(40)\]
\[
a. \text{Da allora, non hanno} \text{ rimesso} \text{ di solito mica più sempre completamente tutto bene in ordine} \\
\text{since then, they haven't put usually not any-longer always completely everything well in order} \\
\text{`Since then, they haven't usually not any longer always put [completely] everything well in order'}
\]
\[
b. \text{Da allora, non hanno di solito} \text{ rimesso} \text{ mica più sempre completamente tutto bene in ordine} \\
\text{c. Da allora, non hanno di solito mica} \text{ rimesso} \text{ più sempre completamente tutto bene in ordine} \\
\text{d. Da allora, non hanno di solito mica più} \text{ rimesso} \text{ sempre completamente tutto bene in ordine} \\
\text{e. Da allora, non hanno di solito mica più sempre} \text{ rimesso} \text{ completamente tutto bene in ordine} \\
\text{f. Da allora, non hanno di solito mica più sempre completamente} \text{ rimesso} \text{ tutto bene in ordine}
\]

Cinque accounts for the order \( \ldots \text{Adverbial-}X^0-\text{Adverbial-}X^0-\text{Adverbial-}X^0 \ldots \) as follows. Besides his hierarchy of adverbs, he also argues for a universal hierarchy of functional projections like Mood Phrases, Tense Phrases and Aspect Phrases, with several types of each. Cinque's line of reasoning in this is that all functional projections for which there is morphological evidence in any language are part of a universal hierarchy that is present in all languages. That is to say, if there is a language that has morphological evidence for two functional projections \( \alpha \) and \( \beta \), and they occur in a particular order, then these projections \( \alpha \) and \( \beta \) will also occur in that particular order within the full range of functional projections that holds across languages (Cinque 1997, p.85). Morphological evidence for a functional projection consists of one of the following: `non-closing' (agglutinating) suffixes, `closing' (inflectional) suffixes, auxiliaries and functional particles.

Cinque (1997) then proceeds by combining the hierarchy of functional projections and the hierarchy of adverbs in such a way that the adverb phrases fill up the specifier positions of the functional projections he distinguishes. The order
...Adverbial-$X^0$-Adverbial-$X^0$-Adverbial-$X^0$... follows if a past participle is able move to each of these head positions (represented by $X^0$) between two adverbs:

(41) a Da allora, non hanno [ _ rimesso [di solito $X^0$ [mica $X^0$ [più $X^0$ [sempre $X^0$ [completamente $X^0$ [tutto bene in ordine

*Since then, they haven’t put usually not any-longer always completely everything well in order*

The entire structure consists of the following functional heads, paired with adverb types in their respective specifier positions (cf. Cinque 1997, p.178). The notation in (42) is mine:
The main background assumption in Cinque's (1997) extensive work is that adverbs express grammatical notions, like habituality, past tense etc. These grammatical notions can also be expressed by particles, as indicated in the following gloss and translation from Guyanese Creole (Cinque 1997, p.95, citing Gibson 1986, p.582f):

\[ (43) \text{Shi a aalweez/neva de a sing} \]
\[ \text{she HAB always/never DUR PROG sing} \]
\[ 'She usually always/never keeps singing' \]
The particle expressing habituality is analyzed as representing a functional head. It is translated by an adverb phrase in English.

If a grammatical relation is expressed by a functional head in one language, but by an adverbial in another language, it is attractive to consider the adverbial as closely connected to the functional head. In other words, if an adverbial expresses the same relation in one language as a functional head (particle) in another language, the adverbial is elegantly analyzed as a specifier of the functional projection at issue.

This is an attractive thought indeed. In fact, it seems plausible to analyse a deictic temporal adverbial like *yesterday* as a specifier of a functional head representing Tense or Past Tense (although Cinque himself (1997, p.150) notes that this is not straightforward in Italian because the distribution of an adverbial like *yesterday* is variable beyond expectation). However, adverbials like *yesterday*, or like *usually* in (43) appear as modifiers in, for instance, noun phrase modification:

(44) a de gisteren nog prachtige bloemen
    *the yesterday still beautiful flowers*
    `the flowers that were still beautiful yesterday`

b de gewoonlijk incorrecte voorspellingen
    *the usually incorrect predictions*

The adverbials in (44) seem to represent the same meaning as they do in sentential contexts. Cinque (p.178) assumes that *usually* is a specifier of the functional head representing habitual aspect. If the adverb is really closely related to the functional head, this implies that the noun phrases in (44) incorporate functional heads for tense and habitual aspect to host the adverbials. Such modification cases will be discussed in section 2.4.2.1 below.

2.4 Issues in comparing specifier and adjunct approach

There are a number of issues that have to be addressed in comparing an analysis in which modifiers are specifiers (cf. Cinque 1997) and one in which modifiers are adjoined to the phrase they modify. Details of the analyses follow below.

A first general advantage of a specifier analysis seems to be that we are able to do without base-generated adjunction. The specifier analysis discussed in the last section is claimed by Cinque to dispense with base-generated adjunction
for adverbials. One of the conceptual arguments in support of his analysis that he puts forward is precisely that a syntactic system that does not distinguish adjuncts from specifiers is more restrictive, and hence more desirable, than one that does distinguish them (cf. Cinque 1997, p.61 and the discussion in the beginning of section 2.3.2 on Sportiche’s 1994 analysis).

However, there are instances of modification that Cinque (1997) does not address. Among those are modification by prepositional phrases and modification of degree phrases by other degree phrases. If Cinque’s analysis has to account for all these cases as well, we might not end up with such a restricted theory after all. In fact, he would be forced to assume that all functional projections in the clausal domain are replicated in each phrase that can be modified by the same adverbials as can occur in the clausal domain (cf. the discussion in section 2.4.1.2 below).

In defense of the adjunction analysis, we may note that adjunction need not a priori be unrestricted: there need not be a huge overgeneration of possible adjunction sites. That is, restricting the possibilities of adjunction in a principled way, like for instance in Kayne (1994), already provides a syntactic theory that is highly restrictive. In contrast, a theory in which no adjunction whatsoever is allowed will probably have to provide a number of additional hypotheses as well to cover the data.

A second advantage of a specifier analysis, according to Cinque (1997, p.61), is that modifiers are arguably left-branch elements. Adjunction, however, used to be available both to the left and to the right of an XP, and hence is too unrestricted to capture the left-branch nature of modifiers. In contrast, specifiers are already taken to be left-branch elements, which leads Cinque to the conclusion that it is preferable to analyse modifiers as specifiers. Again, in a theory like Kayne’s (1994) antisymmetric syntax (that is in fact adopted by Cinque 1997), both adjuncts and specifiers are left-branch elements and it is questionable whether it is necessarily more restrictive to analyse them as specifiers than it is to analyse them as adjuncts.22

---

22 Ernst (1997) argues that right-adjunction should be allowed for in adverb syntax. His major argument is that postverbal adjectives take scope over adjectives to their left:

(i) a Probably he purposely killed the cat
    b He killed the cat purposely probably

Ernst claims that alternatives to right-adjunction can not properly account for the scopal behaviour of postverbal adverbials. However, he appears to assume that any alternative to right-adjunction will generate sentence-final adverbs in low, VP-internal position. This is clearly incorrect.

An account that Ernst (1997) does not consider is one in which the adverbials are generated in
Other than the questions whether there should be adjunction or whether there are only left-branch elements, two major issues arise in comparing the specifier and the adjunct approach to modification. The first is how to account for basic ordering restrictions among adverbs. The second is how to account for the relative order between adverbs and arguments of the verb. These issues will be discussed in the next two subsections.

2.4.1 The relative ordering of modifiers among themselves

In this subsection I will consider the ordering of adverbs among themselves. As an example, modal adverbs will generally have higher scope than manner adverbs:

(45) a John probably has skillfully cut the film
    b John has probably skillfully cut the film
    c * John has skillfully probably cut the film

In an adjunction-based theory, the relative ordering among adverbs must be derived from differences in their scopal behaviour (cf. Ernst 1997 and Shaer 1997). In a specifier system like Cinque's (1997), the relative ordering among adverbs is considered to be the effect of the relative ordering of the functional projections that the adverbs are specifiers of. The relative order of functional
projections is not stipulated, but based on partial orderings of functional elements observed in numerous languages (cf. section 2.4.2 above). As the structure in (42) shows, Cinque assumes that *probably* is a specifier of the functional head expressing epistemic modality \( \text{Mod}_{\text{epistemic}} \). *Skillfully* will presumably be a specifier of the modality termed `ability' \( \text{Mod}_{\text{ability}} \). Since epistemic modality precedes the modality of ability, *probably* will precede *skillfully*.

Another example of adverb ordering is given by Cinque (1997, p.64 ff.) when he compares his specifier analysis with an analysis in which adverbials adjoin freely in any possible order. Consider *mica* `not' and *più* `any longer', which are Italian adverbs that both can occur either to the left or to the right of a past participle:26

(46) a  Non hanno mica mangiato

*not have*-3PL *not eaten* `They haven't not eaten'

b  Non hanno mangiato mica

(47) a  Non hanno più mangiato

*not have*-3PL *any-longer eaten* `They haven't any longer eaten`

b  Non hanno maniato più

If they occur together in one clause, they can still both occur either to the left or to the right of the past participle (or one to the left and one to the right), but their order is fixed: *mica* has to precede *più* in all cases.

(48) a  Non hanno mica mangiato più

*not have*-3PL *not eaten* *any-longer*
Cinque argues that the adjunct approach has to stipulate that mica will always precede più. According to him, this additional stipulation renders the adjunct approach the non-favored one (but see the discussion on scopal relations between adverbs below).

Of course, the immediate question that has to be answered is: why are functional projections ordered as they appear to be? If this ordering is in any way scope-related, we seem to have a classical instance of the chicken or egg paradox.

I do not fully agree with Cinque’s line of reasoning when he compares his specifier analysis with an adjunction analysis in which phrases are adjoined freely in any possible order. When Cinque claims that the adjunct approach always predicts both orders between two adverbs, he leaves semantic scope effects out of consideration. In a footnote (Cinque 1997, fn. 6, p.64), he does mention the possibility of a (semantic) ordering principle that could determine the relative order of adverbs, e.g. that più ‘any-longer’ follows mica ‘not’ (cf. the examples in (46)-(50)). However, he argues that his specifier approach is still the superior theory, because it does not have to state such an ordering principle.

There are a number of issues to be dealt with in this context.

First, if scope is expressed structurally, which is rather straightforward in the antisymmetric framework assumed in this book, then having scope over translates almost directly into structurally higher than (abstracting away from
reconstruction effects for now).\textsuperscript{27} Thus, if an adverb\textsubscript{1} has scope over another adverb\textsubscript{2}, it will occur structurally higher than adverb\textsubscript{2}. In turn, this means that in general adverb\textsubscript{1} will occur to the left of adverb\textsubscript{2}.

Secondly, if the ordering principle needed to complement the adjunct approach is semantic in nature, the starred sentences in the examples above are semantically ill-formed instead of ungrammatical. Since all sentences need to be interpreted eventually, I do not think that the scope-based ordering principle needed by the adjunct approach is in any way additional or superfluous.\textsuperscript{28,29}

As such, consider probably and skillfully in (45), repeated as (51):

\begin{enumerate}
\item [51] a. John probably has skillfully cut the film  
\item b. John has probably skillfully cut the film\textsuperscript{30}  
\item c. * John has skillfully probably cut the film
\end{enumerate}

If someone creates a physical object, like carving a piece of wood into a little statue, he can do so skillfully. Similarly, someone can skillfully cut a film. However, in (51c) it is probable, but not absolutely certain that John cut the film. If it is not clear whether the cutting actually took place, we cannot say that John did so skillfully, because we do not even know whether it was done at all. As such, it skillfully cannot precede probably in (51c), because in that case it would have scope over it, which yields an interpretation that makes no sense.

A third issue in comparing a specifier and an adjunction analysis with respect to the order of adverbials is that, according to Cinque (1997), his specifier

\textsuperscript{27} Of course, a scopal approach to the adverb ordering will have to take into account several problematic issues, such as reconstruction phenomena and adverbs that appear sentence-finally, yet have scope over the entire clause (cf. footnote 22 for a proposal).

\textsuperscript{28} In Zwart (1997) the distribution of sentence and `lower' adverb phrases is explained in terms of intonational factors.

\textsuperscript{29} Apart from my impression that Cinque (1997) does not give the adjunct approach the attention it deserves, it should be noted that his rigid specifier theory has its own disadvantages. For one, it has to stipulate which type of adverb is the specifier of which designated functional projection. For some adverbs the combination with a specific functional head is straightforward (e.g. an evaluative adverb in the specifier position of an Evaluative Mood phrase). Other combinations, however, (e.g. an adverb like well as specifier of a Voice projection), are less easy to defend. In addition, the same interpretative component used to account for ordering of adverbials in the adjunct analysis will have to evaluate sentences built in accordance with Cinque's specifier approach.

\textsuperscript{30} Note that the intended meaning in this example is not `probably skillfully'. The intended meaning is the same as in the (a) example.
theory of adverbs is to be preferred over an adjunction theory, because it is highly restricted and easy to falsify. Indeed, his theory appears to be falsified by such examples as given by Ernst (1997, p.12, exx. (96), (97)):

(52) a Carol willingly has frequently made extra trips  
    b Carol frequently has willingly made extra trips  
    c Carol has made extra trips willingly frequently  
    d Carol has made extra trips willingly frequently

(53) a Purposely he again disobeyed orders  
    b Again he purposely disobeyed orders  
    c He disobeyed orders purposely again  
    d He disobeyed orders again purposely

In each of these examples, two modifiers occur in either order, both sentence-initially or -internally and sentence-finally. If they are specifiers of designated functional projections, a number of extra hypotheses are needed to account for the data in (52) and (53).

Of course, faced with two adverbs that apparently can occur in both possible orders, there are ways for Cinque (1997) to save his main hypothesis that their distribution is fixed by the functional projections they are specifiers of. That is to say, he can claim that an adverb exceptionally precedes another adverb in such and such an example, because the former is focused (as in (53) above) or fronted for other purposes. Additionally, Cinque (1997, par.1.6) argues that an adverb that appears in two positions can "only deceptively [have] that same interpretation in the two positions".

### 2.4.1.2 Other cases of modification

In addition, it should be noted that Cinque (1997) does not discuss any prepositional modifiers, such as the participant adjuncts of Ernst (1997): instrumentals (*with a shoe*), benefactives (*for anyone listening*), locatives (*on the ledge*), goals (*to the shore*), etc. Members of this class especially can occur in various orders (Ernst 1997, p.1, ex.(6)):

(54) a The game took place [on Sunday], [in the park], [with everyone in attendance].
b The game took place [in the park] \_2 [on Sunday] \_1 [with everyone in attendance] \_3

c The game took place [with everyone in attendance] \_3 [on Sunday] \_1 [in the park] \_2
d The game took place [in the park] \_2 [with everyone in attendance] \_3 [on Sunday] \_1

Given such ordering possibilities among participant adverbials, it is hardly plausible that they should be assigned specifier positions in designated functional projections. One could claim that adverbial modifiers are a type of modifier that is different from prepositional ones, and hence should receive a different treatment. However, I take it to be highly preferrable to have a unified theory of modification.

Another aspect of modification is not provided for in Cinque’s analysis either. As discussed in chapter 1, adverbials can also modify degree phrases and prepositional phrases:

\(55\) a dat is een ongelofelijk mooi boek
\(\) `that is an incredibly beautiful book’
b het waarschijnlijk groene boek komt volgend jaar uit
\(\) the probably green book comes next year out
\(\) `the book, that will probably be green, will appear next year’
c zij zit diep in de put
\(\) she sits deeply in the well
\(\) `she’s deeply depressed’
d dat is pijnlijk betrekkelijk
\(\) that is painfully relative
e de klaarblijkelijk bloedmooie roman
\(\) the apparently blood-beautiful novel
\(\) ‘the apparently very beautiful novel’
f de gisteren nog prachtige bloemen
\(\) the yesterday still beautiful flowers
\(\) ‘the flowers that were still beautiful yesterday’

In general, adverbs modify anything that adjectives do not. Or, the other way around, adjectives are modifiers in the nominal domain, adverbs are modifiers outside of the nominal domain.

If adverbials are adjuncts, we can simply assume that they adjoin to PPs and DegPs as well. However, if adverbs are specifiers of designated functional projections in the clausal domain, we are forced to assume that the adjectival domain has similar functional projections to host the adverbs, and that the
Prepositional domain also involves such functional projections. Prepositional modification appears to involve a full clausal structure in Dutch. For examples, modification by a past participle is allowed:

(i) de opgegeten koekjes
the up-eaten cookies
`the cookies that were eaten'

In addition, all types of modifiers that appear in the clausal domain are also allowed in prepositional modification:

(ii) a Die kok werkt nog altijd met oude keukenhulpjes
that cook works still always with old kitchen-tool-DIM-s
`That cook still uses old kitchen tools'

b de nog altijd met oude keukenhulpjes werkende kok
the yesterday still beautiful flowers
`the cook who still uses old kitchen tools as ever'

Similarly, we may view (55f) as involving a full clausal structure:

(iii) a De bloemen waren gisteren nog prachtig
the flowers were yesterday still beautiful
`The flowers were still beautiful yesterday'

b de gisteren nog prachtige bloemen
the yesterday still beautiful flowers
`the flowers that were still beautiful yesterday'

Examples like (55c), however, in which a prepositional phrase is modified by a degree phrase, are less likely to involve the range of functional projections proposed by Cinque (1997).

In the adjunct approach, however, there are no extensive requirements concerning the constituent hosting the adjoined adverbial, except maybe that it is non-nominal and that it does not have a specifier. It is not a surprise, then, that an adjoined adverb is able to modify phrases of more syntactic categories than just a part of a clause.

In light of the general distribution of modifiers, then, the assumption that adverbials are adjuncts appears to provide the simplest theory. The following section provides a conceptual argument that, in my view, definitely decides in favour of an adjunct approach.

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31 Prenominal modification appears to involve a full clausal structure in Dutch. For examples, modification by a past participle is allowed:

(i) de opgegeten koekjes
the up-eaten cookies
`the cookies that were eaten'

In addition, all types of modifiers that appear in the clausal domain are also allowed in prenominal modification:

(ii) a Die kok werkt nog altijd met oude keukenhulpjes
that cook works still always with old kitchen-tool-DIM-s
`That cook still uses old kitchen tools'

b de nog altijd met oude keukenhulpjes werkende kok
the yesterday still beautiful flowers
`the cook who still uses old kitchen tools as ever'

Similarly, we may view (55f) as involving a full clausal structure:

(iii) a De bloemen waren gisteren nog prachtig
the flowers were yesterday still beautiful
`The flowers were still beautiful yesterday'

b de gisteren nog prachtige bloemen
the yesterday still beautiful flowers
`the flowers that were still beautiful yesterday'

Examples like (55c), however, in which a prepositional phrase is modified by a degree phrase, are less likely to involve the range of functional projections proposed by Cinque (1997).

32 In a theory in which adverb phrases are specifiers of functional projections in general (i.e. not of designated projections), we are not forced to assume that all functional projections are repeated in the domain of each syntactic category.

However, considering the fact that adverbs can modify e.g. prepositional phrases, we would be forced to assume that there is at least one functional projection above a PP that the adverb can `use' as a host. The same holds for the adjunct approach whenever the phrase adjoined to has a specifier; in Kayne's (1994) antisymmetry system each phrase can have either one specifier or one adjunct.
2.4.2 The relative ordering of arguments and modifiers

Besides the ordering of adverbs among themselves, the order of adverbs relative to arguments of the verb is also a fundamental issue in a theory of modification.

Cinque (1997) assumes that arguments of the verb end up in specifier positions of agreement phrases. These arguments can occur in several positions relative to adverbs. For example, *Gianni* in (56) can precede or follow *rapidamente* `rapidly' or *di nuovo* `again' (cf. Cinque 1997, pp.185, ex. (4a'-a'') and (4c'-c'')):

(57) a Rapidamente Gianni alzò di nuovo il braccio
     *quickly Gianni raised again his arm*

a' Gianni rapidamente alzò di nuovo il braccio

b Di nuovo Gianni rifiutò l'invito
     *again Gianni refused the invitation*

b' Gianni di nuovo rifiutò l'invito

Assume that *rapidamente* is one of the *cleverly*-type of adverbs and occurs in the specifier position of Modability/permission and that *di nuovo* is the specifier of the Aspability/permission head (cf. Cinque's full functional structure in (42) above).

Since Cinque's distribution of adverb types over functional projections is rigid, he is forced to assume that there are several agreement projections in which the subject can end up. In support of this assumption, Cinque (1997, p.191) refers to work by Beghelli & Stowell (1996), who argue for several DP-related positions, based on scopal behaviour of different DP types.

It should be noted, however, that the examples that Beghelli & Stowell use to argue for several DP-positions do not involve interaction with (for instance modal) adverbials. Therefore, Cinque cannot simply assume that the projections they argue for in light of noun phrase interpretation (e.g. DistributiveP or ShareP) will straightforwardly range among the functional projections in his clausal structure. As such, he cannot assume that these projections provide the subject positions (relative to particular adverbials) that he observes either.33

In the same vein, Cinque (1997) has to assume that an object DP finds a number of agreement projections available as well to account for the positions the object may occupy relative to the fixed sequence of adverbs and functional heads.

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33 Cinque (1997) does not discuss the question of how the agreement projections for the verb's arguments are distributed among the functional projections that host the adverbs.
Consider the examples below:

(58) a  Janna heeft gisteren het boek gekocht  
\[ Janna has \; yesterd\text{a} \; the \; book \; bought \] 
\`Janna bought the book yesterday' 

b  Janna heeft het boek gisteren gekocht  
\[ Janna \; has \; \text{the \; book} \; \text{yesterd}\text{a} \; \text{bought} \] 
\`Janna bought the book yesterday' 

(59) a  dat ik gisteren het boek gelezen heb  
\[ that \; I \; \text{yesterd}\text{a} \; \text{the \; book \; read \; have} \] 
\`that I read the book yesterday' 

b  dat ik het boek gisteren gelezen heb  
\[ that \; I \; \text{the \; book} \; \text{yesterd}\text{a} \; \text{read \; have} \] 

In the (58-57a) examples we observe an adverb-object order, in the (58-57b) examples an object-adverb order. In these examples, the differences in constituent order do not seem to correspond with any meaning differences. For a long time the standard assumption was that the adverb *gisteren* is adjoined to the VP, and that the definite object (in contrast to indefinites) can optionally move past it to get the (58b) order. De Hoop (1992) argued convincingly that indefinite objects are indeed able to precede adverbs, but that this order corresponds with an interpretation that is different from that of the adverb-indefinite object order.

The intriguing question here is whether it is indeed the adverb that has a fixed position (e.g. adjoined to VP) and the object that does or does not move past it. The alternative is that the object occupies a fixed position and that the adverb either moves past it or is able to occur in positions on either side of the object.

If Cinque is correct that the adverbs occur in fixed positions, he will have to assume that the scrambling phenomena in (58) and (57) are derived from movement of the object from a position to the right of the adverbial *gisteren* `yesterday' to a position to the left of the adverbial.

However, Zwart (1993, pp.302-319) and Rijkhoek (1994) argue that an object noun phrase in Dutch occupies the specifier position of AgrOP in both (58a,b) and (59a,b) (unless it is focused). In its movement to that position, it may cross *gisteren* `yesterday': this yields the order in (59b). In (59a) however, the object also occupies the specifier position of AgrOP: the order adverbial - object (*gisteren het boek*) implies that the adverbial occurs in a position that is structurally higher than that of the object. In a minimalist approach, then, the object is argued
to occur in a specific position (the specifier of AgrOP) that is well motivated. Adverbials, on the other hand, occur in positions on both sides of the object noun phrase.

2.4.3 Fixed position for adverbs or for arguments

In the preceding section we discussed some examples in which adverbials and the arguments of the main verb occur in various orders:

(60) a Rapidamente Gianni alzò di nuovo il braccio
    quickly Gianni raised again his arm
     a’ Gianni rapidamente alzò di nuovo il braccio
     b Di nuovo Gianni rifiutò l’invito
        again Gianni refused the invitation
     b’ Gianni di nuovo rifiutò l’invito

(61) a Janna heeft gisteren het boek gekocht
    Janna has yesterday the book bought
    ‘Janna bought the book yesterday’
     b Janna heeft het boek gisteren gekocht
         Janna has the book yesterday bought
         ‘Janna bought the book yesterday’

To account for the variable order within a clause of (on the one hand) verbs and arguments and (on the other hand) modifiers, one cannot but make a choice as to which category occupies fixed positions (relative to which the position of the other categories can be determined).34

Given the two categories, either the verbs and their arguments occupy specific positions, or the adverbials do. If one decides that the verbs and their arguments occupy specific positions, adverbials will be bound to occur in variable positions, as in the adjunct approach. If one decides that adverbials occur in specific positions, something like the specifier approach will result.35

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34 It is also conceivable that both agreement projections and functional projections allow for a free ordering. If nothing whatsoever occupies a fixed position, however, it is extremely hard to argue for any phrase what its position will be.

35 For both cases a head approach is also conceivable. Since I argued in section 2.2 that the head approach leads to a number of problems, I will no longer consider it here.
In the specifier system, verbs can occupy the head positions of the functional projections, all of which will be present in every sentence in every language. Arguments of the verb occur in agreement projections. To account for the relative order between specific adverbs and arguments, these agreement projections have to be able to occur in several places in between the other functional ones. That is to say, the choice to assign fixed positions to adverbs leads to the assumption that for each argument of the verb there are several agreement projections. In contrast, the adjunct approach assumes that the position of adverbs or other modifiers is defined relative to verbs and arguments.

In view of this, let us consider the status of the verb and its arguments on the one hand and that of modifiers on the other hand. The verb and its arguments are the basic building blocks of a clause; without them there is not even a clause. Modifiers, in contrast, are optional: they add information about that speaker's attitude to what he is saying (62a) or about the way in which someone is doing something (62b):

(62)  
   a  Evidently, John went to the market  
   b  He put the eggs down clumsily

Crucially, however, adverbials can easily be left out of a clause without causing ungrammaticality:

(63)  
   a  John went to the market  
   b  He put the eggs down

In view of the fact that the verb and its arguments are essential to a clause and that modifiers are optional, is it conceptually attractive to assume that the verb and its arguments have to adjust themselves to the position of the optional modifiers, as they must in the specifier analysis? I do not think so.

Instead, it seems to me that one should think of clausal structure as based on the most elementary building blocks: the verb and its arguments. This is exactly what is expressed by the adjunct approach: the verb and its arguments constitute the base line and the position of any modifiers that occur in a clause will have to be defined relative to their position. It seems to me that this approach gives full justice to the conceptual status of verbs, arguments and modifiers.

I conclude that, in my view, the adjunct approach to adverbials is conceptually superior to the specifier approach.
2.5 Conclusion

In this chapter I compared three types of analyses of the structural status of adverbials. First I argued that adverbs do not appear as heads in the functional domain of a clause. I then compared an analysis in which adverbials are specifiers of designated functional projections (cf. Cinque 1997) with an analysis in which adverbials are adjoined to the phrase they modify. I concluded that the latter is more easily suited to account for modification in general. In addition, I argued that the adjunction analysis is conceptually superior to the specifier analysis of adverbials, because it allows us to express that predicates and their arguments are the basic elements in a clause, with the adjunct status of adverbial modifiers expressing their optional nature. I conclude that adverbial degree phrases, and modifiers in general, are adjuncts.