FUNCTIONAL PHRASE STRUCTURE:

INTEGRATING FUNCTIONAL IDEAS IN GENERATIVE ADVERBIAL SYNTAX

Hilke Ros
Preface

With a feeling of satisfaction I finally present the result of almost four years of struggling with the peculiarities of adverbial syntax and the thought-provoking questions about subordinate clauses (although the latter component has slightly disappeared to the background during these years). It goes without saying that this work would not have been achieved without the help of many people. This is the appropriate place to show gratitude to them.

First of all, I should thank my supervisor Gunnar De Boel and co-supervisor Klaas Willems for their valuable support. I also highly appreciate the efforts made by the other members of the coaching committee, Liliane Haegeman and Daniel Knecht. I am especially grateful to Liliane Haegeman for her interesting comments on a first draft of chapter 6.

During these years, I had the opportunity of presenting my research at a couple of workshops and colloquia. I am thankful to the organisers and the audiences of ICLL XI in Amsterdam and ICLL XII in Bologna, the Pionier Workshop on Case, Valency and Transitivity in Nijmegen, the Functional Grammar Friday Talks in Amsterdam and Lingforum. I would like to mention in particular the late Machtelt Bolkestein, Caroline Kroon, Rodie Risselada, Werner Abraham and Kees Hengeveld.

I was very happy to be able to consult willing native speakers and I am grateful to Peter Flynn, Jim Pearman, Jules Gouguet, Matteo, Chiara and Ruggiero Donnadoni, Paolo di Leo, Alessia Ettha, Evanthia Kaskadhiri, Iriaklis Tsiamalos and Stelios Panagiotakis.

It was a pleasure to collaborate with all those nice people at the Latin and Greek department. I am especially obliged to Pieter and Koen, with whom I shared an office for a couple of years and who taught me to appreciate, among other things, the interesting Zottegem idiolect.

I am also grateful to André Brisau for revising the text and correcting my English.

On a more personal level, I would like to thank my parents, because they always have been supportive and have given me the chance to become who I am. Finally, I would like to mention the people who have coloured my life the last four years: Sofie, Rein and, more recently, lovely Minka.
# Table of Contents

Preface...........................................................................................................................................i
List of abbreviations ..........................................................................................................................vi

Chapter 1: Introduction ..................................................................................................................1

1.1 Functional and/or generative?.................................................................................................1
1.2 Structure of the dissertation ....................................................................................................4

Chapter 2: Adverbials in Functional Grammar............................................................................5

2.1 The theory of layering..............................................................................................................5
  2.1.1 The base ..........................................................................................................................5
  2.1.2 Further upward layering ..................................................................................................9
  2.1.3 Distinction between grammatical and discourse module .............................................10
  2.1.4 A New Architecture for Functional Grammar .................................................................11
  2.1.5 Round-up ......................................................................................................................12

2.2 Criteria for distinguishing arguments and satellites.............................................................14
  2.2.1 Distinguishing arguments from satellites ........................................................................14
  2.2.2 Distinguishing $\sigma_1$ and $\sigma_2$ from $\sigma_3$ and $\sigma_4$ ..................................................16
    2.2.2.1 Intonation ..............................................................................................................16
    2.2.2.2 Negation ................................................................................................................16
    2.2.2.3 Yes/no questions .....................................................................................................17
    2.2.2.4 Pro-form ................................................................................................................17
    2.2.2.5 Position ..................................................................................................................17
    2.2.2.6 Focusing ................................................................................................................18
    2.2.2.7 Preposing ...............................................................................................................18
  2.2.3 Distinguishing $\sigma_1$ from $\sigma_2$ ..................................................................................19
    2.2.3.1 Position ..................................................................................................................19
    2.2.3.2 Negation ................................................................................................................19
    2.2.3.3 Argument-like behaviour of $\sigma_1$ satellites .........................................................20
    2.2.3.4 Paraphrase possibilities ..........................................................................................21
  2.2.4 Distinguishing $\sigma_3$ from $\sigma_4$ ..................................................................................22
  2.2.5 $\sigma_5$ satellites ...............................................................................................................23
  2.2.6 Conclusion ......................................................................................................................23

2.3 Subordinate clauses .................................................................................................................24

...
List of abbreviations

AdvP  Adverb Phrase
AgrP  Agreement Phrase
AspP  Aspect Phrase
CLLD  Clitic Left Dislocation
C(OMP)P  Complementizer Phrase
DP    Determiner Phrase
ECC   Extra-clausal Constituent
FEO   Fact Event Object
FG    Functional Grammar
Foc   Focus
FP    Functional Projection
I(NFL)P Inflection Phrase
IIIP  Illocution Phrase
GG    Generative Grammar
HT    Hanging Topic
LCA   Linear Correspondence Axiom (Kayne 1994)
LD    Left Dislocation
LF    Logical Form
LP    Licensing Position
MCP   Main Clause Phenomena
NP    Noun Phrase
[+p]  [+presuppositional]
PF    Phonetic Form
PP    Prepositional Phrase
PredP Predication Phrase
PropP Proposition Phrase
S     Sentence
SD    Speaker Deixis
SoA   State of Affairs
Spec  Specifier
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top</td>
<td>Topic(alization)</td>
</tr>
<tr>
<td>TP</td>
<td>Tense Phrase</td>
</tr>
<tr>
<td>VP</td>
<td>Verb Phrase</td>
</tr>
<tr>
<td>$\sigma_1$</td>
<td>predicate satellite</td>
</tr>
<tr>
<td>$\sigma_2$</td>
<td>predication satellite</td>
</tr>
<tr>
<td>$\sigma_3$</td>
<td>proposition satellite</td>
</tr>
<tr>
<td>$\sigma_4$</td>
<td>illocutionary satellite</td>
</tr>
<tr>
<td>$\sigma_5$</td>
<td>clause satellite</td>
</tr>
</tbody>
</table>
Chapter 1: Introduction

The central issue of this dissertation is the problem of adverbial syntax. The basic research question is the following: how are adverbials (and adverbial clauses) integrated into the clause? What is their relationship with other elements in the clause and why do they end up in surface structure the way they do? Having defined this object of inquiry, I sought linguistic frameworks which could help to answer these questions. The reader may have noticed two crucial words in the title of the dissertation: functional and generative. They point to the two theoretical cornerstones of this work: Functional Grammar (FG, as developed by Dik (1978)) and Generative Grammar (GG).

1.1 Functional and/or generative?

The thesis presented in the following pages is neither typically functional nor typically generative. Indeed, both frameworks are addressed with a critical disposition in the hope of attaining one objective, viz. to offer a viable theory of adverbials. In the course of the discussion, the focus on adverbial clauses will gradually diminish so much so that when we reach the point of technical implementation we will actually only discuss adverbials in general, without making much reference to the specific problem of subordinate clauses. This is done for two reasons. First, the technical formalization has a very high degree of complexity even if we confine ourselves to simple adverbs. The difficulties would be compounded if we extended the formal analysis to more complex adverbials such as subordinate clauses. Second, the discussion will show that the issues of adverbial clauses and simple adverbs are to a great extent entangled. The internal adverbial complexity of subordinate clauses is intriguingly related to their status in the main clause.

The reader is likely to feel that the discussion is becoming ‘more generative’ towards the end. As a matter of fact, the technical implementation in chapter 6 is undeniably cast in a generative formalism. Yet the analysis is clearly inspired by FG theory. One could say that the ideas from FG are integrated in a generative phrase structure theory.
Combining linguistic frameworks is not considered evident by many linguists. Linking FG to GG may be even less expected, because these paradigms are generally considered to have rather different points of departure. As a matter of fact, Dik formulated his framework as a manifest response to Chomskyan linguistics, because he was dissatisfied with the latter’s basic assumptions. A central point of disagreement is the so-called autonomous status of syntax. According to Dik (1997: 3ff), GG focuses too much on syntax and disregards the influence of semantics and pragmatics. In the functional paradigm as sketched by Dik himself, a language is in the first place conceptualized as an instrument of social interaction among human beings, used with the intention of establishing communicative relationships. Therefore, pragmatics is seen as the all-encompassing framework within which semantics and syntax must be studied. Semantics is regarded as instrumental with respect to pragmatics, and syntax as instrumental with respect to semantics. Dik argues that there is no room for something like an ‘autonomous syntax’ in this view. Although I sympathize with the idea of language as an instrument of social interaction among human beings, I do not see the contradiction with the concept of an autonomous syntax. Syntax can function as a fairly independent module in a more elaborate, functional model. The following reproduces the model of verbal interaction offered by Dik (1997: 8):

(1) A model of verbal interaction

```
<table>
<thead>
<tr>
<th></th>
<th>pragmatic information P₃</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker forms:</td>
<td>constructs:</td>
</tr>
<tr>
<td></td>
<td>pragmatic information P₄</td>
</tr>
<tr>
<td>Addressee</td>
<td>interpretation</td>
</tr>
<tr>
<td></td>
<td>reconstructs</td>
</tr>
<tr>
<td></td>
<td>anticipates</td>
</tr>
</tbody>
</table>

linguistic expression
```
It is to be noticed that linguistic expression is enclosed in a separate box. I would argue that syntax is the linguistic module operating in this box. The theory that will be developed in this dissertation is clearly a syntactic account of adverbials aiming at an adequate derivation of the surface structure of well-formed clauses. Obviously, the syntactic module receives input from the semantic and pragmatic levels. It will be argued that a basic semanto-pragmatic scheme is mapped into a syntactic phrase structure tree. Moreover, it will be suggested that this basic scheme is obscured at surface structure by the intervention of certain pragmatic features. In this way functional theory and generative formalism can be successfully integrated.

As I attempt to offer a syntactic account of adverbials, I am predominantly interested in the more formalistic aspects of FG. I will more specifically concentrate on layering theory and on the status of adverbials, called satellites in this framework. Over the last few years, the interest of many FG researchers has turned to the status of discourse in language. This has even led to the formulation of a Functional Discourse Grammar. At the same time interest in syntax has diminished in FG circles. Therefore, I will for the most part rely on Dik’s (1997) framework, rather than on the ideas of the New Architecture (Hengeveld 2004a, b).

The next question might be how the present dissertation relates to the GG framework. Today, generative linguistics is a rather complex research field. The most recent stage in the rapidly evolving framework is generally called Minimalism. However, many generativists are still working in the older Principles and Parameters paradigm. In many cases it is hard to distinguish the varying approaches, as the transitions between them are rather diffuse. It may be significant that even Chomsky himself declared at the GLOW conference in April 2004 that he does not have a clue what Minimalism exactly is and who is working in it and who is not. No matter how critical one tries to be, a linguist must make certain choices about which (sub)framework he wishes to adopt. It would be fair to say that the present work is predominantly embedded in Kayne’s (1994) Antisymmetry framework. That does not mean that I endorse all his viewpoints. For instance, I do not adopt the SVO basic order for languages such as Dutch. However, I feel that these aspects are not really important. Linguistics should be about language, not about frameworks.

Neither is this text typically generative (and even not typically functional) with respect to the handling of linguistic data. Two methods have been used to gather the relevant data. On the one hand, chapter 2 is based on fairly extensive research in a
corpus of Latin data. Inevitably, I was faced with the drawbacks of this methodology. The data contained much noise, as one cannot eliminate interference from factors which are not really relevant to the problem in question. On the other hand, for the data in chapter 4 native speakers of English, Italian and Modern Greek were consulted and elsewhere I relied on my own intuition for Dutch. Native speaker’s intuitions often turned out to be contradictory and data which form the empirical basis of well-reputed theories are sometimes clearly disconfirmed. This has made me take a critical view of the empirical soundness of generative theorizing. In any case, even if the correct interpretation of data is far from straightforward, we should do the best we can. Nevertheless, I think this is something that we should bear in mind.

1.2 Structure of the dissertation

To conclude this introductory chapter, I will offer a brief sketch of the structure of the dissertation. As we are combining ideas from FG and GG, we will start with presenting the ideas on adverbials suggested in both frameworks. Chapter 2 will be devoted to FG, while the generative approaches to adverbial syntax are presented in chapter 3. In chapters 4 and 5 we try to determine to which extent the layers offered by FG are relevant in a syntactically oriented generative framework. The upper part of the adverbial hierarchy is dealt with in chapter 4 by confronting the propositional and illocutionary layer from FG with the observations from Haegeman and related work. Chapter 5 discusses the lower part of the hierarchy, taking into account the work by Frey and Pittner. In chapter 6, our findings are integrated into a generative phrase structure tree, which is supplemented by a movement theory in order to derive the possible word order permutations in Dutch and English. Conclusions are put forward in chapter 7.
Chapter 2: Adverbials in Functional Grammar

This chapter is a critical review of the treatment of adverbials in the Functional Grammar (FG) model. We will primarily concentrate on the question whether adverbial clauses are dealt with effectively. FG regards adverbials as ‘satellites’, which belong to different layers from which a clause is built up. The evolution of layering theory over the last fifteen years will be dealt with in a first section. This theoretical part is of crucial importance for chapters 4 to 6, when the functional and the generative perspectives are combined. The second section is a critical review of the classification of adverbials as advanced by the layering model. The distinguishing criteria will be looked at and their applicability to the level of subordinate clauses will be tested (section 2.3). As word order seemed to be a promising criterion for further exploration, I have conducted an extensive inquiry regarding the position of satellites and satellite clauses in Latin data. The results of this inquiry are presented in section 2.5.

2.1 The theory of layering

2.1.1 The base

The foundations of FG’s theory on layering were laid in Hengeveld (1988, 1989) and Dik (1989, reprinted as 1997). The following representations of utterances are offered by Hengeveld (1988: 3):
A clause consists of several layers. The predicate (usually a verb) and the arguments form the nuclear predication. When this predication is further specified (by additional participants, means and manner, etc.), we have a core predication. To form an extended predication, the described State of Affairs (SoA) must be located in space and time. The addition of speaker commitment renders the structure into a proposition. Finally, we arrive at the clause level by adding illocutionary force. This is formalized by providing each layer with operators (presented by $\pi$) and satellites (presented by $\sigma$). The former comprise the grammatical (functional) means to specify each layer, the latter are the lexical counterparts, generally adverbials. The four levels of satellites are defined as follows (Hengeveld 1988: 28):
A definition of satellites

(a) **Predicate satellites** capture the lexical means which specify additional properties of the set of SoAs designated by a nuclear predication.

(b) **Predication satellites** capture the lexical means which locate the SoAs designated by a predication in a real or imaginary world and thus restrict the set of potential referents of the predication to the external situation(s) the speaker has in mind.

(c) **Proposition satellites** capture the lexical means through which the speaker specifies his attitude towards the proposition he puts forward for consideration.

(d) **Illocutionary satellites** capture the lexical means through which the speaker modifies the force of the basic illocution of a linguistic expression so as to make it fit his communicative strategy.

Table 1 gives an overview of the different satellite types and provides illustrative examples (taken from (Dik et al. 1990)):

**Table 1: Typology of satellites**

<table>
<thead>
<tr>
<th>Predicate satellites ($\sigma_1$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Additional participants:</td>
</tr>
<tr>
<td>- <strong>Beneficiary</strong> John bought some flowers for Mary</td>
</tr>
<tr>
<td>- <strong>Company</strong> John went to Paris with Mary</td>
</tr>
<tr>
<td>- <strong>Instrument</strong> John cut the meat with a knife</td>
</tr>
<tr>
<td>- <strong>Inner cause</strong> He died of pneumonia</td>
</tr>
<tr>
<td>(ii) Means and manner:</td>
</tr>
<tr>
<td>- <strong>Manner</strong> John drove the car recklessly</td>
</tr>
<tr>
<td>- <strong>Speed</strong> John answered the question quickly</td>
</tr>
<tr>
<td>- <strong>Quality</strong> John accompanied Mary as her lawyer</td>
</tr>
<tr>
<td>(iii) Spatial orientation:</td>
</tr>
<tr>
<td><strong>Source, Path, Direction</strong></td>
</tr>
<tr>
<td>John drove from Amsterdam (Source) to Rotterdam (Direction) along the highway (Path)</td>
</tr>
</tbody>
</table>
**Predication satellites (σ₂)**

(i) **Spatial setting:**
*Location*  
John met Peter on the platform

(ii) **Temporal setting:**
- *Time*  
  John met Peter at five o’clock  
- *Duration*  
  John walked in the park for three hours  
- *Frequency*  
  John met Peter repeatedly

(iii) **Setting relative to other SoAs:**
- *Circumstance*  
  Mary was smoking a cigarette, while John was washing the car  
- *Cause*  
  The tree fell down because of the heavy rainfall  
  
  (= inner cause)  
- *Condition*  
  He’ll take his umbrella in case of rain

(iv) **Cognitive setting:**
- *Purpose*  
  John ran to the station in order to catch the train  
- *Reason*  
  John ran to the station because he wanted to catch the train

**Proposition satellites (σ₃)**

- **Attitudinal**
  (a) *Content (X) oriented attitudes*  
    In my opinion, we should do it  
  (b) *Event (e) oriented attitudes*  
    Fortunately, we found him immediately  
  (c) *Participant (x) oriented attitudes*  
    Wisely, John didn’t answer the question  
  - *Source*  
    According to John there’s a bull in the field  
  - *Evidence*  
    Given his absence of the last few days, he has probably gone to Rome after all  
  - *Motivation*  
    John’s at Sue’s house, because his car’s outside

**Illocutionary satellites (σ₄)**

- **Manner**  
  Frankly, I’ve had it  
- **Beneficiary**  
  For your own sake, stay away from him!  
- **Reason**  
  Since you are interested, John is a catholic  
- **Condition**  
  John has left, in case you haven’t heard  
- **Time**  
  For the last time, give it to me
2.1.2 Further upward layering

The proposals by Hengeveld en Dik were soon elaborated further. One can observe a tendency to superpose new layers on those that already existed. Hengeveld (1990) adds a fifth level of satellites, clause satellites ($\sigma_5$), to account for textual relations. Satellites of this class capture the lexical means through which the speaker locates his utterance within the context of the discourse and thus restricts the set of potential perlocutions of this utterance. Adverbs like briefly and finally belong to this class. The structure in (4), which is offered by Hengeveld (1990), differs slightly from the one from Dik (in (2)) by introducing the speaker and the addressee into the representation. The utterance is structured on the basis of an abstract illocutionary frame (ILL), which has the speaker $S$, the addressee $A$ and the propositional content $X_1$ as its arguments.

\[
(E_1: [\text{ILL } (S) (A) (X_1: [\text{e}_1: [\text{pred}_\beta (x_1: \text{pred}_N (x_1)) \ldots (x_n)] (e_1)]) (X_1)]) (E_1))
\]

This led Rijkhoff (1995) to add further elements to the underlying structure of utterances. In his view bystanders (B) should also be represented as a distinct third party and features of sex, age, and social relationships between the parties should be attached to the variables $S$(peaker), $A$(ddressee and $B$(ystanders)). Likewise the speech act variable $E$ should be provided with features which define the formality level of the setting in which the speech act takes place and which are somehow relevant to the form of the utterance.

Moutaouakil (1998) extends the Underlying Utterance Structure into an Underlying Text Structure, introducing a sixth level of operators ($\pi_6$) and satellites ($\sigma_6$). The function of the operators is to indicate the type of text. The $\sigma_6$ satellites category subsumes expressions fulfilling various textual tasks such as initiating or ending the text, modalizing it, situating it with respect to other texts etc. An elaborate description of the integration of the clause in its discourse is given in Hengeveld (1997). The hierarchical structure of discourse consists of three levels embedded in each other: the rhetorical, the interpersonal and the representational level, as illustrated in (5):
The representational level (e) is structured on the basis of a predicate frame (f) which determines the relations between arguments (x). The interpersonal level (E) is structured on the basis of an illocutionary frame (F) which determines the relation between the main participants in a speech act, Speaker (S) and Addressee (A), and the content of that speech act (X). The rhetorical level (D) is structured on the basis of a discourse frame (T) which determines the relations between Moves (M).

2.1.3 Distinction between grammatical and discourse module

Later on, the proposals on upward layering were criticized. Since the theory produced some problems with direct speech complements (cf. Bolkestein 1992, Vet 1998), it was felt that a distinction should be made between grammar and discourse (Kroon 1997, Vet 1998, Bolkestein 1998, Cuvalay 1995). According to these authors, aspects such as speaker, addressee, bystanders, time, location, context etc., are relevant elements for shaping the linguistic expression, but they should be excluded from the layered representation of clause structure, since they are not linguistic properties themselves. Since the highest unit of the layered clause structure (i.e. E, called speech act by Kroon 1997) does not completely coincide with the lowest unit of the layered discourse structure (discourse act in Kroon’s terms), sentence structure and discourse structure should be handled separately in two different modules. This line of thought is probably on the right track. The proliferation of layers and variables, as witnessed in the proposals by Rijkhoff (1995), Moutaouakil (1998) and Hengeveld (1997), is due to the inability to distinguish between the conceptual and the linguistic level. This has always been a problem in FG and has been criticized by Nuyts (1985, 1990, 1992), Hesp (1990) and Harder (1992). Since Dik (1978) the predication structure representation, displaying both formal and semantic properties, has had a hybrid status
(on this point, see also Anstey (2004)). Therefore, it is difficult to see if the hierarchical structures put forward by Dik (1989) and Hengeveld (1988) are conceptual or linguistic in nature. In any case, the problematic status of layering theory and the advent of modular approaches caused Hengeveld (2004a, b) to propose a New Architecture for FG, which combines the layering and the modular perspective.

2.1.4 A New Architecture for Functional Grammar

In the New Architecture, three fairly independent modules are distinguished: the interpersonal, the representational and the expression level, which corresponds roughly to the traditional tripartition between the pragmatic, semantic and syntactic level (see Anstey 2004). However, each of these levels exhibits a layered structure. This is formalized below:

(6) (a) The interpersonal level
(M₁: [(A₁: [ILL (P₁)S (P₂)ₐ (C₁: [...] (T₁) (R₁)...] (C₁)] (A₁))] (M₁))

(b) The representational level
(p₁: [(e₁: [(f₁) (x₁)] (e₁))] (p₁))

(c) The expression level
(Para₁: [(S₁: [(Cl₁: [(PrP₁: [(Lex₁)](PrP₁)) (RP₁: [(Lex₂)](RP₁))](Cl₁))] (S₁))] (Para₁))

The expression level consists of paragraphs, sentences, clauses, predicate phrases, referential phrases and lexemes. This part of the theory is not really worked out in detail. The interpersonal level is made up by Moves and (discourse) Acts. Every act may be characterized in terms of its illocution (ILL), which is represented as an abstract illocutionary frame with the participants in the discourse act, i.e. the speaker (Pₘ) and the addressee (Pₐ), and the communicated content (C), i.e. the information transmitted in the discourse act, as its arguments. In order to build up the communicated content, the speaker may have to execute one or more ascriptive acts (T) and one or more referential acts (R).¹ Most crucial for our present purposes is the structure of the representational level. The latter contains third order entities or propositional contents (p), second order entities or states of affairs (e); first order entities or individuals (x); and zero order

¹ For a more extensive description of these notions, I refer the reader to Hengeveld (2004a).
entities or properties (f). In other words, the three lower levels (and probably the satellites related to them) seem to be maintained in the structure of the representational level. Only the fourth level has apparently received another status and should most probably be linked to the interpersonal level. Nevertheless, it remains unclear how the illocutionary satellites fare in this model. Arguably, they enter the structure at the interpersonal level. This is possible since, according to Hengeveld’s assumptions, entities of the interpersonal level can map directly to the expression level without mediation of the representational level. This is plausible for the examples in (7a-c) (the first example is offered by Hengeveld), where the italicized part forms a separate intonational unit and is fairly detached from the rest of the string (as far as the latter is existent). As acts are, by assumption, marked off by intonation units, it is reasonable to suppose that the sentences in (7b-c) contain juxtaposed discourse acts which are not further grammatically integrated (Hengeveld, pc). The illocutionary satellite in (7d), however, takes the form of a subordinate clause. It constitutes a separate intonational unit, but it cannot be formed by merely mapping from the interpersonal to the expression level by selecting the appropriate lexemes from the lexicon. Rather, it exhibits a complex internal structure which reveals the intervention of the representational level. Moreover, the relation between the subordinate and the main clause remains unclear. The example in (7e) is even more problematic, because the illocutionary satellite is integrated into the intonational contour of the whole clause.

(7)  
(a) Damn!  
(b) *That man*, I can’t stand him!  
(c) *Finally*, I will discuss some residual problems  
(d) *If you are thirsty*, there is beer in the fridge  
(e) *I honestly* don’t give a damn about the New Architecture

2.1.5 Round-up

It can be concluded from the preceding section that the status of satellites in the New Architecture is quite inconclusive. Therefore, we will in the main stick to the more

---

2 The proposition was labeled X in earlier versions (see the figures in (1) and (2)) and the predicate from earlier accounts is considered as a zero-order property in the present formulation.
traditional framework from Dik (1997) and wait for further developments in the new framework. It is obvious that hierarchies as developed in FG can shed an interesting light on sentence structure as long as we refrain from too purely pragmatic variables and layers, as proposed in the work cited above (Rijkhoff 1995, Moutouakil 1998). This means that it is necessary to determine which layers are relevant for syntax and which are not. When we compare the layers of Vet’s (1998) underlying utterance structure (which forms the grammatical module in his theory) with Cuvalay’s (1995) E-structure, the similarities can be visualized in the following table:

Table 2: Underlying utterance structure (Vet 1998) vs. E-structure (Cuvalay (1995))

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>nuclear predication (e₁)</td>
<td>core predication (c₁)</td>
</tr>
<tr>
<td>core predication (e₁)</td>
<td>ASPECT + nuclear predication</td>
</tr>
<tr>
<td>propositional content (p₁)</td>
<td>TENSE e₁</td>
</tr>
<tr>
<td>utterance content (c₁)</td>
<td>MOD p₁</td>
</tr>
<tr>
<td>utterance (u₁)</td>
<td>ILL c₁</td>
</tr>
<tr>
<td></td>
<td>expression (E₁)</td>
</tr>
<tr>
<td></td>
<td>TENSE e₁</td>
</tr>
<tr>
<td></td>
<td>extended predication (e₁)</td>
</tr>
<tr>
<td></td>
<td>proposition (X₁)</td>
</tr>
<tr>
<td></td>
<td>clause (C₁)</td>
</tr>
<tr>
<td></td>
<td>ILL c₁</td>
</tr>
<tr>
<td></td>
<td>expression (E₁)</td>
</tr>
</tbody>
</table>

The status of σ₅ satellites is a problem. They seem to fall outside Vet’s grammatical module and should, consequently, be handled in the pragmatic module. This appears to be in line with the above considerations that these expressions form a separate discourse act (see (7c)). In brief, I will assume there to be four levels which are relevant to syntax and four correlating classes of satellites/adverbials.
2.2 Criteria for distinguishing arguments and satellites

In this section I will address the criteria which have been suggested for distinguishing arguments and the different levels of satellites. The key paper on this issue is Dik, Hengeveld, Vester & Vet (1990), but some other interesting considerations can be found in Dik (1997), Siewierska (1991, 1992), Vester (1990) and, outside the FG framework, in Piitulainen (1980).

2.2.1 Distinguishing arguments from satellites

Dik’s (1997) theory on the difference between arguments and satellites is rather intuitive and not very clear-cut. Considering an example like (8) he states that it would be “strange” to regard satellites like *cautiously* as terms in the relationship designated by the predicate (Dik 1997: 227).

(8) Peter cautiously removed the lid from the jar

Further on, he argues that the possibilities of adding a certain satellite to a nuclear predication are determined by features of the nuclear predication as a whole rather than by the predicate. For example, the Manner satellite *cautiously* can be added to any nuclear predication with the feature [+control], i.e., to any Action or Position. As already noted by Siewierska (1991: 55-56), there is a certain inconsistency and circularity in this kind of reasoning. Nuclear predications are defined as Actions, Positions etc. on the base of their ability to combine with manner satellites, beneficiary satellites etc., and these satellites are defined in view of their ability to combine with certain predications. On the other hand, nuclear predications are defined as predications with no satellites and satellites as terms not involved in the definition of the SoA designated by the nuclear predications. Thus, the definitions of nuclear predications, arguments and satellites have a rather axiomatic flavour in FG theory.

Still, Dik offers two tests to distinguish between arguments and satellites. The first one is the elimination test: a satellite can be left out without affecting the grammaticality or the meaning of the remaining construction, whereas leaving out an
argument will either render the remainder ungrammatical or change its semantics. However, Dik himself questions the reliability of this test, since arguments can be left unspecified in certain contexts (for an exhaustive account of tests distinguishing between arguments and satellites, I refer to Ros (2003)). Siewierska’s (1991: 58) examples show how $\sigma_1$ satellites in (9) exhibit the same behaviour as arguments in (10):

(9)  
(a) This afternoon, Philip bought a bunch of roses [for Carol for only $5]
(b) Jane lent her camera to me [for a month] last year (and I still have it)
(c) In the park, Susan rewarded her admirer [for his efforts with a smile]

(10)  
(a) Oliver passed the salt [to Charles]
(b) Oliver was listening [to the music]
(c) Oliver taught French (to school children)
(d) Oliver is concentrating (on something)

As a second test, Dik mentions the pro-form test. Satellites can be stranded with a pro-form while arguments cannot.

(11)  
(a) *Peter removed the lid, and he did it from the jar
(b) *Peter removed from the jar, and he did it the lid
(c) Peter removed the lid from the jar, and he did it cautiously/with a screwdriver/for Mary/in a minute/quickly

Siewierska (1991: 59) notes that the major problem with this test is that it is not always clear what criteria to use in choosing the appropriate form of the verb and subject in the backformation. Nor is it easy to judge whether the basic meaning is maintained in the backformation. This is illustrated by the following examples:

(12)  
(a) *Jane lent her camera to me and she did it for a month
(b) Jane lent her camera to me and she let me have it for a month

(13)  
(a) #Susan rewarded her admirer and she did it with a smile
(b) ?Susan rewarded her admirer and it was with a smile
2.2.2 Distinguishing \(\sigma_1\) and \(\sigma_2\) from \(\sigma_3\) and \(\sigma_4\)

Criteria to distinguish between representational (\(\sigma_1\) and \(\sigma_2\)) interpersonal (\(\sigma_3\) and \(\sigma_4\)) satellites are quite numerous.\(^3\)

2.2.2.1 Intonation

Representational satellites form one intonational pattern with the predication, whereas interpersonal satellites are separated by comma intonation.

(14) (a) They didn’t treat us as if we were babies (\(\sigma_1\))
(b) They have been living here since their father returned (\(\sigma_2\))
(c) He can’t speak Dutch well, because he lived most of his life in the US (\(\sigma_3\))
(d) The book is on the second shelf, if you are interested (\(\sigma_4\))

2.2.2.2 Negation

Representational satellites fall within the scope of negation, whereas interpersonal satellites take negation within their scope.

(15) (a) Annette didn’t dance wildly (\(\sigma_1\))
(b) John didn’t arrive at eight o’clock (\(\sigma_2\))
(c) Annette probably didn’t dance (\(\sigma_3\))
(d) Frankly, I don’t like dancing (\(\sigma_4\))

\(^3\) The terms interpersonal and representational satellites are used in papers from the early nineties, and I adopt them here for convenience’ sake. They have obviously acquired another connotation in the New Architecture. Since I rely predominantly on the earlier framework, they are to be interpreted in that sense.
2.2.2.3 Yes/no questions

Sentences containing representational satellites can be questioned with a yes/no question. Sentences with interpersonal satellites cannot.

(16)  (a) Is John speaking loudly? Yes/no (σ₁)
      (b) Does he take his umbrella in case it rains? Yes/no (σ₂)
      (c) *Will he, fortunately, leave early? Yes/no (σ₃)
      (d) *Does he take his umbrella, in case you are wondering? Yes/no (σ₄)

2.2.2.4 Pro-form

The pro-form test can also be used to distinguish representational from interpersonal satellites. An interpersonal satellite cannot occur as a pro-form.

(17)  (a) Peter removed the lid from the jar and he did so cautiously (σ₁)
      (b) He’ll take his umbrella in case it rains and so does Ann (σ₂)
      (c) *Fortunately, he will leave early and so does Ann (σ₃)
      (d) *He’ll take his umbrella, in case you are wondering and so does Ann (σ₄)

2.2.2.5 Position

In the most unmarked order interpersonal satellites precede the verb and representational satellites follow it.

(18)  (a) Annette danced wildly (σ₁)
      (b) Annette danced yesterday (σ₂)
      (c) Annette probably danced (σ₃)
      (d) Frankly, the food was horrible (σ₄)

However, things are not always clear. I would doubt whether (19a) is more marked than (18b). It certainly is less marked than (19b). This aspect will be discussed in greater detail later on.

(19)  (a) Yesterday I went to the dentist
      (b) Wildly Annette danced
2.2.2.6 Focusing

Only representational satellites can have focus. Therefore interpersonal satellites cannot be questioned or clefted (cf. Quirk et al. 1985).

(20)  (a) How did they treat you? – As if we were babies ($\sigma_1$)
    (b) Why are you staying in tonight? – Because my mother is ill ($\sigma_2$)
    (c) *How did he answer the question? – Foolishly, he didn’t ($\sigma_3$)
    (d) *When will he take his umbrella? – In case you are wondering ($\sigma_4$)

(21)  (a) It was in a brutal manner that our country was attacked ($\sigma_1$)
    (b) It was because of his injury that Hilda helped Tony ($\sigma_2$)
    (c) *It was fairly that he sprang at her ($\sigma_3$)
    (d) *It is in all frankness that your son is not succeeding ($\sigma_4$)

For the same reason interpersonal satellites have problems with alternative interrogation and alternative negation.

(22)  (a) Does he like them because they are always helpful or because they never complain? ($\sigma_2$)
    (b) *Does he like them since they are always helpful or since they never complain? ($\sigma_3$)

(23)  (a) He didn’t like them because they are always helpful but because they never complain
    (b) *He didn’t like them since they are always helpful but since they never complain

2.2.2.7 Preposing

Finally, it is possible to prepose the whole verbal complex consisting of the predicate, its non-subject arguments and $\sigma_1$ and $\sigma_2$. This cannot be done with $\sigma_3$ and $\sigma_4$.

(24)  (a) Return the money on Friday though Bob will, he won’t tell us where he got it from.
    (b) Sally said Bob would return the money on Friday, and return the money on Friday he did.

(25)  (a) *Mixed up the candidates evidently though he had, he still managed to impress the committee.
    (b) *They claimed that he evidently mixed up the candidates, and evidently mixed up the candidates he had.
2.2.3 Distinguishing $\sigma_1$ from $\sigma_2$

2.2.3.1 Position

As already mentioned in section 2.2.2.5, $\sigma_2$ satellites are more free to occur in either sentence-initial or sentence-final position, while $\sigma_1$ satellites cannot freely occur in initial position.

(26)  
(a) She kissed her mother on the cheek  
(b) ?On the cheek, she kissed her mother

(27)  
(a) She kissed her mother on the platform  
(b) On the platform, she kissed her mother

2.2.3.2 Negation

When a negation occurs in a sentence with a $\sigma_1$ satellite, as in (28a), this negation takes scope over the satellite rather than over the predication as a whole. With a $\sigma_2$ satellite (in (28b)) both readings are possible.

(28)  
(a) John didn’t die of pneumonia  
(b) John didn’t arrive at eight o’clock

In German, this has an effect on the position of the negation in the clause (Cf. Piitulainen 1980: 276). *Nicht can precede or follow a $\sigma_2$ satellite, in accordance with the two possible readings, while it can only precede a $\sigma_1$ satellite, because only scope over the satellite is possible in that case.

(29)  
(a) Er arbeitet nicht fleissig  
(b) *Er arbeitet fleissig nicht

(30)  
(a) Er arbeitet nicht dort  
(b) Er arbeitet dort nicht
Dik, Hengeveld, Vester & Vet (1990) present an exhaustive discussion on phenomena which show that $\sigma_1$ satellites behave similarly to arguments and, consequently, differently from $\sigma_2$ satellites. The phenomena examined are Subject/Object assignment, incorporation, valency reduction and satellite absorption. However, it is questionable whether these observations are any help in our discussion. In fact, they obscure the argument/satellite distinction, which is an undesirable result. This is illustrated in the discussion on Subject assignment to locatives, which the theory cannot well accommodate since they are $\sigma_2$ satellites and should not behave like arguments. Therefore, it is suggested that in those languages in which Subject assignment is possible, the locatives are arguments or ‘inner’ local or directional satellites which have $\sigma_1$ status. In the English example in (31) the terrace should thus be considered an argument of the predicate write on or at least as a $\sigma_1$ satellite in the (i) interpretation, while it is a $\sigma_2$ in the (ii) interpretation. Consequently, only the (i) reading is possible when the terrace has Subject function.

(31)  
(a) John was writing on the terrace  
= (i) “John inscribed something on the terrace”  
= (ii) “John was writing something while being on the terrace”  
(b) The terrace was written on by John  
= only (i)

Why should we be indecisive about argument or $\sigma_1$ status? Could locatives not simply be considered to be arguments? Moreover, the criteria suggested cannot help to decide whether a concrete example is $\sigma_1$ or $\sigma_2$. The fact that in certain languages manner satellites can be incorporated into the predicate (e.g. You must quiet-sit (= quietly)), does not say anything about wildly in Annette danced wildly. We merely observe that element x is incorporated in the predicate in language X and that in language Y element y, which has a semantic content similar to x, is not. We have to assume intuitively that wildly is a manner satellite and, based on the consideration that manner satellites are incorporated into the predicate in other languages, conclude that wildly is closer to the predicate than other satellites. In other words, observations on the argument-like behaviour of $\sigma_1$ satellites may give some clues on the theoretical
outline of our hierarchy theory but do not produce workable criteria to distinguish between $\sigma_1$ and $\sigma_2$ satellites.

2.2.3.4 Paraphrase possibilities

In English, $\sigma_2$ satellites allow for a paraphrase by means of corresponding nouns, which is impossible with $\sigma_1$ satellites. The former also allow a paraphrase with *occur*, *take place or happen*, whereas predicate satellites do not:

(32) (a) I met Sheila in the park
(b) The place I met Sheila was the park

(33) (a) I met Sheila at three o’clock
(b) The time that I met Sheila was three o’clock

(34) (a) I approached the lion with great caution
(b) *The way that I approached the lion was great caution

(35) (a) I cut the meat with a knife
(b) *The instrument that I cut the meat was a knife

(36) The event of John’s travelling took place
in Europe
last summer
frequently
although he was ill
because he hadn’t had a holiday for years…

(37) The event of John’s travelling took place
*to Italy
*by train
*for Mary…

However, paraphrase tests always tend to be rather troublesome because counterexamples are easy to find.

(38) (a) John met Peter repeatedly
(b) *The frequency that John met Peter was repeatedly

(39) (a) No more matters arising, the meeting was closed
(b) *The circumstance that the meeting was closed, was no more matters arising

(40) *The event of closing the meeting took place no more matters arising
2.2.4 Distinguishing $\sigma_3$ from $\sigma_4$

Dik, Hengeveld, Vester & Vet (1990) offer only one distinguishing criterion concerning the difference between $\sigma_3$ and $\sigma_4$ satellites. The latter may appear in front of questions and imperative and optative clauses while the former never occur in these positions.

(41)  
(a) Seriously, how do I look?  
(b) Honestly, let’s not tell him about it  
(c) *Hopefully, how do I look?  
(d) *Probably, let’s not tell him about it

It is doubtful whether the proposed hierarchy of satellites is relevant to these facts. In my opinion, seriously and honestly in (41) are Extra-clausal Constituents, occupying the P2 Theme position, as can be derived from the V2 phenomena in the following Dutch examples.

(42)  
(a) Serieus, hoe zie ik er uit?  
(b) Serieus, ik weet niet meer wat ik hierover moet denken

In fact, it is hard to find examples of $\sigma_4$ satellites in Dutch which are not extra-clausal. In those instances in which the satellite occupies P1 position, a question is not possible.

(43)  
(a) Eerlijk gezegd weet ik niet meer wat ik hierover moet denken  
(b) *Eerlijk gezegd wat denk jij hierover?  
(c) Eerlijk gezegd, ik weet niet meer wat ik hierover moet denken  
(d) Eerlijk gezegd, wat denk jij hierover?

When we use an ECC-construction, questioning is possible. It is true that $\sigma_3$ satellites are impossible in P2 position, although P3 Tail position is possible.

(44)  
(a) *Hopelijk, Jan zal slagen voor het examen  
(b) *Waarschijnlijk, Jan zal slagen voor het examen  
(c) Jan zal slagen voor het examen, hopelijk  
(d) Jan zal slagen voor het examen, waarschijnlijk
Therefore, $\sigma_3$ satellites to some extent behave differently from $\sigma_4$ satellites, since they cannot occur in Theme position. However, according to FG theory, ECC’s fall outside the theory of hierarchical layers and according to Kroon (2002) even outside the grammatical module. *Seriously* and *honestly* in (41), then, do not function as satellites but as Themes. Consequently, the relevance of the criterion can be questioned. Questions about the exact position of illocutionary satellites will frequently crop up in this dissertation and are difficult to answer satisfactorily.

2.2.5 $\sigma_5$ satellites

In Dik, Hengeveld, Vester & Vet (1990) $\sigma_5$ satellites are not considered as a distinct level and the literature does not provide criteria to distinguish $\sigma_5$ satellites from the others. Only Hengeveld (1990) observes that the order of the satellites in the sentence reflects their hierarchical position with respect to the predicate and offers the following representation, in accordance with the somewhat overloaded sentences in (46).

(45)

\[
\begin{array}{cccccccc}
\sigma_5 & \sigma_4 & \sigma_3 & \sigma_2 & \sigma_1 & \text{pred}_\beta & \sigma_1 & \sigma_2 \\
\sigma_3 & & \sigma_4 & \sigma_5 & & & & \\
+ & + & & + & & + & + \\
+ & + & + & + & + & \\
\end{array}
\]

(46)

(a) Honestly ($\sigma_4$), you certainly ($\sigma_3$) danced beautifully ($\sigma_1$) yesterday ($\sigma_2$), if I may say so ($\sigma_5$)

(b) Finally ($\sigma_5$), you honestly ($\sigma_4$) certainly ($\sigma_3$) danced beautifully ($\sigma_1$) recently ($\sigma_2$)

However, since $\sigma_5$ satellites will not be considered as a separate category, the need for criteria by which to distinguish them from other categories is not urgent.

2.2.6 Conclusion

All in all, we can say that the borderline between $\sigma_1$ and $\sigma_2$ satellites on the one hand, and $\sigma_3$ and $\sigma_4$ satellites on the other, is quite clear. Further distinctions, however, are hard to make. The argument-like behaviour of $\sigma_1$ satellites obscures the picture rather than making it clearer. The fact that $\sigma_2$ satellites occur more easily in initial position...
than $\sigma_1$ satellites, makes it more difficult to distinguish the former from $\sigma_3$ and $\sigma_4$ satellites. Even the negation criterion is not a watertight guarantee, since it is not completely impossible that the negation in (28a) takes scope over the predicate. The criterion for distinguishing $\sigma_3$ from $\sigma_4$ is debatable on theoretical grounds. For $\sigma_5$ satellites, if relevant at all, no effective criterion is offered.

### 2.3 Subordinate clauses

This section examines whether the criteria described in the preceding sections can be used to make a typology of subordinate (adverbial) clauses according to their degree of embeddedness. A good deal of attention has recently been paid to the typology of adverbial clauses regarding their internal complexity (cf. Hengeveld 1998, Pérez Quintero 2002). The degree of embeddedness of adverbial clauses, however, has not yet been fully looked into. One should ask whether the above criteria are capable of distinguishing the different levels of satellite clauses. Trying to answer this question, I have taken the sample of illustrative examples from Pérez Quintero (2002: 77-79) and subjected them to the following tests:

- do the subordinate and the main clause form one intonational unit?
- does negation take scope over the predicate or the satellite or both?
- can the sentence be questioned by a yes/no question?
- can the sentence be backformed by means of a pro-form?
- what is the unmarked position of the subordinate clause?
- can the subordinate clause be clefted?
- can the subordinate clause be preposed together with the predicate?
- is the subordinate clause dependent on the illocutionary force of the main clause?

Due to certain peculiarities (occurrence of an imperative, marked word order, embeddedness) some of Pérez Quintero’s examples (her (69) (70) and (75)) react badly to almost all the tests so that I have replaced them with other examples from the same category found elsewhere in her book. I have not been able to find an alternative for (47) (her (63)), in which the subordinate already contains a *do*-form so that the example does not work well with pro-form backformation and clefting:
(47)  (a) She cooked a turkey as her mother did
      (b) She cooked a turkey and she did so as her mother did
      (c) It was as her mother did that she cooked a turkey/

Apart from this problem, the examples react as expected to the yes/no question, the
pro-form backformation and the clefting tests.

The intonation criterion produces negative predictions in 6 of the 32 examples. The
presence of a comma serves as a standard with which to determine the length of an
intonation unit. Apart from the example expressing temporal simultaneity, all the
subordinate clauses marked off by a comma although the other tests pointed to $\sigma_2$
status, were concessive-conditional or concessive clauses. However this may be, the
intonation criterion is not a very reliable one, since the measurement of intonation
units is rather complicated.

The negation test as well produces bad results. In 13 of the 32 sentences, there are
either problems determining over which elements the negation took scope or the tests
produce the wrong predictions. The problem was systematic with concessive-
conditional and concessive clauses, which cannot fall within the scope of the
negation, even if they are $\sigma_2$ satellites. In my opinion, the same can be said about the
Substitution clause in (48f) and the Exception clause in (48g), even if they follow the
main clause.

(48)  (a) Even if you put the baby down, she won’t scream
      (b) Even if the Reagan tax program might theoretically produce the desired
          increase in savings and investments, there is no indication that it will
          work quickly
      (c) Even if he had worked very hard, he would not have failed his exam
      (d) Although he stepped on the brake, the car didn’t slow down
      (e) Caroline could do nothing but agree although she would have liked to
          stay and continue talking with him
      (f) Rather than lose all control, she didn’t return her thoughts to the young
          man
      (g) Except for being warmed it will not be unchanged

In the following sentences I feel the negation can only take scope over the satellite
and not over the predicate, although the satellites are $\sigma_2$ satellites:

(49)  (a) He didn’t bend down as if tightening his shoe laces
(b) She didn’t leave without saying goodbye
(c) He didn’t move a little in his chair so that he was facing Farland

The effect of the negation is not clear in the following examples:

(50)  (a) He didn’t know the truth as few could do
      (b) If the child had lived only a few days or weeks it wouldn’t have had a name

Neither is the position criterion very successful. In 7 of the 32 cases it makes the wrong predictions. Purpose and consequence clauses prefer a sentence-final position, even if they are \(\sigma_2\) satellites. The same is true of the clause of unreal comparison in (51a). The illocutionary consequence and cause clauses in (51b-c) prefer sentence-final position, although they are \(\sigma_4\) satellites.

(51)  (a) She greets me as if I were her best friend
      (b) And the grounds are guarded by a pair of fierce dogs, so there is no escape
      (c) Peter is in Washington, for he phoned me from there

Unfortunately, we must conclude that the only two tests which can distinguish between \(\sigma_1\) and \(\sigma_2\) satellites, are not very reliable as far as subordinate clause are concerned. The criterion distinguishing between \(\sigma_3\) and \(\sigma_4\) satellites (questioning) does not produce any better results. In 3 of the 8 relevant cases it makes the wrong predictions. In two examples a \(\sigma_4\) satellite is interjected in the middle of the clause and even if the satellite is in initial position it seems rather difficult to make it independent of the illocutionary force of the main clause. The same problem occurs with the sentence in (53b).

(52)  (a) He was, as I was later to discover, extraordinarily kind
      (b) ??As I was later to discover, was he extraordinarily kind?
(53)  (a) She called herself Billie (although her real name is Grace) after her model, her idol, the late Billie Holliday
      (b) ??Although her real name is Grace, did she call herself Billie?

A final interesting observation concerns the relation between the internal complexity of the subordinate clauses and their degree of embeddedness in the main clause. Although certain types of Pérez Quintero’s (2002) typology are not mentioned in Dik,
Hengeveld, Vester & Vet’s (1990) classification (clauses of comparison, addition, substitution, exception and, more surprisingly, consequence and concession), it appears that the internal structure of subordinate clauses is never less elaborate than the degree of embeddedness. In other words, \( \sigma_2 \) satellites can be third or fourth order entities according to Pérez Quintero’s classification, but \( \sigma_4 \) satellites will never be second or third order entities. They have to be fourth order entities. This is not very surprising, since these satellites fall outside the scope of the illocutionary operators of the main clause and, therefore, must have illocutionary operators of their own. In any case, the linkage between the internal and external complexity of subordinate clauses is an intriguing issue and will be looked into later, especially in chapter 4.

2.4 Provisional conclusions

In the preceding sections I have examined whether the FG theory on layering can provide a typology of subordinate clauses according to their degree of embeddedness in the main clause. After an overview of the development of the layering theory I have discussed the criteria which the literature proposes for distinguishing the different layers. The criteria for distinguishing \( \sigma_1 \) and \( \sigma_2 \) satellites from \( \sigma_3 \) and \( \sigma_4 \) satellites are quite numerous. The evidence for distinguishing between \( \sigma_1 \) and \( \sigma_2 \) and between \( \sigma_3 \) and \( \sigma_4 \), however, is rather meagre. As far as the former distinction is concerned, position and negation are the only workable criteria and even they appear to be unreliable when used at the level of subordinate clauses. The criterion to distinguish between \( \sigma_3 \) and \( \sigma_4 \) satellites, i.e. dependence on the illocutionary force of the main clause, runs into theoretical problems and does not always produce the right predictions when applied to subordinate clauses. In brief, if we want to use the FG theory of layering to develop a typology of adverbial clauses regarding their degree of embeddedness in the main clause, the criteria proposed in the past turn out to be inadequate. However, word order does appear to be an interesting domain for further research. I have therefore examined the position of satellites and arguments in Latin clause structure. This is the subject of the following section.
2.5 Word order in Latin

2.5.1 Methodology and research questions

The aim of this examination was to provide further formal evidence for the distinctions made between satellites in FG. This could be done by looking at the position of satellites in the clause with respect to each other, to the arguments and to the verb. To this end, I have analyzed into their constituents all the sentences (1209 main clauses and 1460 subordinate clauses) of the first two books of Cicero’s letters to Atticus and determined for each constituent its argument/satellite status. All these data have been entered into a database feeding a computer programme for determining the frequency of the relative position of the constituents.

The research questions are the following:

(54) What is the position of satellites (especially: satellite clauses) with respect to:
(a) the verb
(b) the first argument
(c) the second argument
(d) the third argument

(55) What is the order between satellites?

The findings relating to the comparison with the third argument are not included in the results because the data were too scarce to be reliable. This admittedly also holds for some other tables which are presented: the numbers are sometimes quite low, so that we have to be careful when drawing conclusions.

In order to gather enough data some factors were ignored although they may have a certain influence. The fact, for instance, that the first argument can often be omitted in Latin, was not taken into account. Of course, the clauses in which this occurs will be omitted from the table considering the first argument. They are, however, included in the data about the comparison with the verb or the second argument. Although I am aware of the shortcomings of this approach, I still think many interesting conclusions can be drawn from the findings which are presented in the following section.
2.5.2 Results

2.5.2.1 Position of satellites with respect to the verb

Looking at table 3, we can see that all satellites tend to precede the verb. The tendency is stronger with illocutionary satellites (87.9 %). This is not surprising since in Latin the verb prefers final position. However, subordinate clauses produce some interesting results (see tables 4-7). We find that a higher percentage of predicate satellite clauses follow the verb (approximately 60 against 40 %). This is probably related to the well-known fact that heavy constituents more often move to the end of the sentence to facilitate processing (cf. the Principle of Increasing Complexity (formerly known as LIPOC) formulated by Dik (1997) or Hawkins’s (1994) Principle of Early Immediate Constituents). Apparently, these principles do not apply to propositional and illocutionary satellite clauses, which behave in the same way as their non-clusal equivalents, predominantly preceding the verb. The position of propositional manner clauses (preceding the verb), as opposed to predicate manner clauses (following the verb), is fairly significant. Quite unexpected is the behaviour of illocutionary conditional clauses. Unlike the other illocutionary satellites, they follow the verb in 4 out of 5 cases. This contrasts with predicational conditional clauses, which generally precede the verb. As far as predicational satellite clauses are concerned, there seems at first sight to be an equal distribution. On closer examination, however, we can distinguish two groups: purpose, consequence and causal clauses generally follow the verb, while temporal, conditional and concessive clauses precede it.4

---

4 A small class of clauses is formed by substitution clauses (introduced by rather than in English, potius quam or (malle) ... quam in Latin), which tend to follow the verb. As the occurrences are very scarce, they are here and in the following ignored. The same holds for exception clauses.
Table 3: position of satellites with respect to the verb

<table>
<thead>
<tr>
<th></th>
<th>s1&gt;v</th>
<th>v&gt;s1</th>
</tr>
</thead>
<tbody>
<tr>
<td>s1</td>
<td>1130</td>
<td>239</td>
</tr>
<tr>
<td>s2</td>
<td>1325</td>
<td>380</td>
</tr>
<tr>
<td>s3</td>
<td>253</td>
<td>69</td>
</tr>
<tr>
<td>s4</td>
<td>124</td>
<td>15</td>
</tr>
</tbody>
</table>

Table 4: position of predicate satellite clauses with respect to the verb

<table>
<thead>
<tr>
<th></th>
<th>s1&gt;v</th>
<th>v&gt;s1</th>
</tr>
</thead>
<tbody>
<tr>
<td>s1</td>
<td>27</td>
<td>16</td>
</tr>
<tr>
<td>manner</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>comparison:</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 5: position of predication satellite clauses with respect to the verb

<table>
<thead>
<tr>
<th></th>
<th>s2&gt;v</th>
<th>v&gt;s2</th>
</tr>
</thead>
<tbody>
<tr>
<td>s2</td>
<td>388</td>
<td>184</td>
</tr>
<tr>
<td>purpose:</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>consequence:</td>
<td>1</td>
<td>52</td>
</tr>
<tr>
<td>cause:</td>
<td>19</td>
<td>35</td>
</tr>
<tr>
<td>substitution:</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>temporal:</td>
<td>76</td>
<td>26</td>
</tr>
<tr>
<td>conditional:</td>
<td>88</td>
<td>32</td>
</tr>
<tr>
<td>concessive:</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>concessive-cond.:</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>243</td>
<td>16,55%</td>
<td>83,45%</td>
</tr>
</tbody>
</table>
Table 6: position of proposition satellite clauses with respect to the verb

<table>
<thead>
<tr>
<th></th>
<th>s3&gt;v</th>
<th>v&gt;s3</th>
</tr>
</thead>
<tbody>
<tr>
<td>manner:</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>consequence:</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>cause:</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>conditional:</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>concessive:</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>concessive-cond.:</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 7: position of illocutionary satellite clauses with respect to the verb

<table>
<thead>
<tr>
<th></th>
<th>s4&gt;v</th>
<th>v&gt;s4</th>
</tr>
</thead>
<tbody>
<tr>
<td>purpose:</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>manner:</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>cause:</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>condition:</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

2.5.2.2 Position of satellites with respect to the first argument

Table 8 compares the behaviour of satellites in relation to the first argument (i.e. the subject). It reveals a decline in the tendency to follow the first argument from 70.59 % (predicate satellites) to 66.30 % (predication satellites), to 55.77 % (proposition satellites) and to 32.86 % (illocutionary satellites). Clauses show a stronger tendency to follow the first argument (91 % of the predicate satellites, 70 % of the predication satellites and 67 % of the proposition satellites), probably related with the phenomenon of syntactic weight (see table 9-12). Again, this explanation does not hold for illocutionary satellites, since 68 % of the illocutionary clauses precede the first argument. The figures for illocutionary purpose clauses in contrast with predicational purpose clauses are striking: the former generally precede the first argument while the latter follow it. It is worth looking once more at the two groups of predication satellites which we distinguished in the preceding section. The first group
of purpose, consequence and causal clauses predominantly prefer a position after the first argument (95% of the cases). The figures for temporal, conditional and concessive clauses, however, are not comparable with those in the previous section. There are even a few more cases in which the clauses follow the first argument. Particularly conditional clauses do not produce the results we expected. They more often follow the first argument, which contradicts the previous data according to which they predominantly precede the verb.

**Table 8: position of satellites with respect to the first argument**

<table>
<thead>
<tr>
<th></th>
<th>s1&gt;a1</th>
<th>a1&gt;s1</th>
</tr>
</thead>
<tbody>
<tr>
<td>s1</td>
<td>595</td>
<td>175</td>
</tr>
<tr>
<td>s2</td>
<td>733</td>
<td>247</td>
</tr>
<tr>
<td>s3</td>
<td>156</td>
<td>69</td>
</tr>
<tr>
<td>s4</td>
<td>70</td>
<td>47</td>
</tr>
</tbody>
</table>

**Table 9: position of predicate satellite clauses with respect to the first argument**

<table>
<thead>
<tr>
<th></th>
<th>s1&gt;a1</th>
<th>a1&gt;s1</th>
</tr>
</thead>
<tbody>
<tr>
<td>s1</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>manner:</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>comparison:</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>
Table 10: position of predication satellite clauses with respect to the first argument

<table>
<thead>
<tr>
<th></th>
<th>s2&gt;a1</th>
<th></th>
<th>a1&gt;s2</th>
</tr>
</thead>
<tbody>
<tr>
<td>197</td>
<td>59</td>
<td>138</td>
<td>70,05%</td>
</tr>
<tr>
<td>purpose:</td>
<td>1</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>consequence:</td>
<td>0</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>cause:</td>
<td>3</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>substitution:</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>exception:</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>78</td>
<td>5,13%</td>
<td>94,87%</td>
<td></td>
</tr>
<tr>
<td>temporal:</td>
<td>29</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>conditional:</td>
<td>20</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>concessive:</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>concessive-cond.:</td>
<td>3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>119</td>
<td>46,22%</td>
<td>53,78%</td>
<td></td>
</tr>
</tbody>
</table>

Table 11: position of proposition satellite clauses with respect to the first argument

<table>
<thead>
<tr>
<th></th>
<th>s3&gt;a1</th>
<th></th>
<th>a1&gt;s3</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>12</td>
<td>24</td>
<td>66,67%</td>
</tr>
<tr>
<td>manner:</td>
<td>8</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>consequence:</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>cause:</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>concessive:</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>concessive-cond.:</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
Table 12: position of illocutionary satellite clauses with respect to the first argument

<table>
<thead>
<tr>
<th>s4:</th>
<th>s4&gt;a1</th>
<th>a1&gt;s4</th>
</tr>
</thead>
<tbody>
<tr>
<td>manner:</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>purpose:</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>cause:</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>conditional:</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

2.5.2.3 Position of satellites with respect to the second argument

Finally, we look into the behaviour of satellites with regard to the second argument (more or less the object). As can be seen from table 13, the picture for satellites as a whole is rather fuzzy. Only illocutionary satellites clearly tend to precede the second argument (82% of the cases). With predicate satellites we observe a very weak tendency to follow the second argument, but predication and proposition satellites follow the second argument almost as often as they precede it. When we look at subordinate clauses, however, some earlier observations from section 2.5.2.1 are confirmed (tables 14-17). Predicate satellites prefer end-position. With predication satellites the picture of two groups emerges again: 79% of purpose, consequence and causal clauses follow the second argument, while 68% of temporal, conditional and concessive clauses precede it. As for proposition satellites, we observe an almost equal distribution. However, the statistics become unbalanced because of a particular type of manner clauses, an example of which is the following:

(56) ac nostrae quidem rationis ac vitae quasi quandam formam, ut opinor, vides (CIC. Att. 1, 19, 8)
    ‘You see a kind of outline of my way of life and behaviour, I think’

The behaviour of these clauses with verbs of opinion is quite extraordinary. They like to be placed near the end of the sentence, often right before the focus of the utterance. If we disregard them, we have 14 clauses preceding the second argument and 5 clauses following it, which is more in conformity with the observations about the verb
in section 2.5.2.1. The figures about illocutionary clauses are also less high than expected, but here we see the influence of conditional illocutionary clauses: all four cases follow the second argument, while most illocutionary satellites precede it. Again, the behaviour of conditional clauses is exceptional.

Table 13: position of satellites with respect to the second argument

<table>
<thead>
<tr>
<th></th>
<th>s1&gt;a2</th>
<th>a2&gt;s1</th>
</tr>
</thead>
<tbody>
<tr>
<td>s1</td>
<td>541</td>
<td>227</td>
</tr>
<tr>
<td>s2</td>
<td>664</td>
<td>363</td>
</tr>
<tr>
<td>s3</td>
<td>155</td>
<td>88</td>
</tr>
<tr>
<td>s4</td>
<td>90</td>
<td>74</td>
</tr>
</tbody>
</table>

Table 14: position of predicate satellite clauses with respect to the second argument

<table>
<thead>
<tr>
<th></th>
<th>s1&gt;a2</th>
<th>a2&gt;s1</th>
</tr>
</thead>
<tbody>
<tr>
<td>s1</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>manner:</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>comparison:</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 15: position of predication satellite clauses with respect to the second argument

<table>
<thead>
<tr>
<th></th>
<th>s2&gt;a2</th>
<th>a2&gt;s2</th>
</tr>
</thead>
<tbody>
<tr>
<td>purpose:</td>
<td>105</td>
<td>99</td>
</tr>
<tr>
<td>consequence:</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>cause:</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>substitution:</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>temporal:</td>
<td>45</td>
<td>19</td>
</tr>
<tr>
<td>conditional:</td>
<td>37</td>
<td>21</td>
</tr>
<tr>
<td>consequent:</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>consequent-cond.:</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>133</td>
<td>133</td>
<td>67.67%</td>
</tr>
</tbody>
</table>

Table 16: position of proposition satellite clauses with respect to the second argument

<table>
<thead>
<tr>
<th></th>
<th>s3&gt;a2</th>
<th>a3&gt;s3</th>
</tr>
</thead>
<tbody>
<tr>
<td>manner:</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>consequence:</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>cause:</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>conditional:</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>consequent:</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>consequent-cond.:</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 17: position of illocutionary satellite clauses with respect to the second argument

<table>
<thead>
<tr>
<th></th>
<th>s4&gt;a2</th>
<th>a2&gt;s4</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>15</td>
<td>9</td>
</tr>
</tbody>
</table>

2.5.2.4 The order among satellites

FG theory assumes that satellites take scope over each other, i.e. illocutionary satellites take scope over the other satellites, proposition satellites take scope over predication and predicate satellites and predication satellites take scope over predicate satellites. The question is whether these scope relations are translated into word order (cf. Hengeveld 1990).5

2.5.2.4.1 Do illocutionary satellites take the other satellites in their scope?

Table 18 shows that illocutionary satellites generally precede the other satellites. The tendency is weaker with proposition satellites (only 63 %) than with predication and predicate satellites (73 and 77 %, respectively). The picture becomes different when we look at subordinate clauses (table 19). Proposition and predicate satellites even show the opposite tendency: they more often precede the illocutionary clauses. When we look at the types of illocutionary clauses, the reason becomes clear. Most of the unexpected cases are of illocutionary manner clauses as in (56) or illocutionary conditional clauses. We have already observed that this type of clauses behave in an extraordinary fashion. Although there is a clear tendency for illocutionary clauses to precede predication satellites (70 %), the divergent cases are telling: all five cases are

5 Seminal thoughts on a hierarchy of satellites, long before the emergence of FG theory, can already be found in Marouzeau (1944: 13ff).
illocutionary manner clauses. Moreover, it should be added that the figures represent only the relative position of satellites without taking into consideration their position with respect to the verb. In fact, the word order pattern should be reversed if the satellites occur postverbally, because in that case the scope is calculated from right to left (see (45)-(46)). Of the seven cases where a propositional satellite precedes the illocutionary satellite, the satellites are located in opposite directions with regard to the verb (i.e. the propositional satellite precedes and the illocutionary satellite follows the verb) in three cases, and in one instance they both occur postverbally. This means that only three problematic examples remain, which probably require a parenthetical interpretation of the illocutionary satellite. This reconsideration of the data yields a ratio of 89% against 11% for the first row in table 18 in support of the FG scope theory on satellites. In the second row, considering the relations between illocutionary and predicational satellites, two cases should be transferred from the right to the left column, if the position of the verb is taken into account. Eight of the twenty-two cases seem to demand a parenthetical interpretation of the illocutionary satellite. As for the predicate satellites, six of the sixteen cases should be reconsidered as supporting the scope theory. This yields a ratio of 86% against 14%.

Table 18: do illocutionary satellites take other satellites in their scope?

<table>
<thead>
<tr>
<th></th>
<th>s4&gt;s3</th>
<th>s3&gt;s4</th>
</tr>
</thead>
<tbody>
<tr>
<td>s3:</td>
<td>19</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>36.84%</td>
</tr>
<tr>
<td>s2:</td>
<td>83</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>26.51%</td>
</tr>
<tr>
<td>s1:</td>
<td>72</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>22.22%</td>
</tr>
</tbody>
</table>

6 Interpreting exceptions as parenthetical is of course an easy escape hatch.
Table 19: do illocutionary satellite clauses take other satellites in their scope?

<table>
<thead>
<tr>
<th></th>
<th>s3&gt;4</th>
<th>s4&gt;s3</th>
<th>s3&gt;s4</th>
<th>s4&gt;s3</th>
</tr>
</thead>
<tbody>
<tr>
<td>s3: conditional:</td>
<td>5</td>
<td>20.00%</td>
<td>4</td>
<td>80.00%</td>
</tr>
<tr>
<td>manner:</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cause:</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>s2&gt;4</th>
<th>s4&gt;s2</th>
<th>s2&gt;s4</th>
<th>s4&gt;s2</th>
</tr>
</thead>
<tbody>
<tr>
<td>s2: manner:</td>
<td>17</td>
<td>70.59%</td>
<td>5</td>
<td>29.41%</td>
</tr>
<tr>
<td>purpose:</td>
<td>3</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cause:</td>
<td>4</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>conditional:</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>s1&gt;4</th>
<th>s4&gt;s1</th>
<th>s1&gt;s4</th>
<th>s4&gt;s1</th>
</tr>
</thead>
<tbody>
<tr>
<td>s1: manner:</td>
<td>14</td>
<td>42.86%</td>
<td>8</td>
<td>57.14%</td>
</tr>
<tr>
<td>purpose:</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cause:</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>conditional:</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.5.2.4.2 Do proposition satellites take predication and predicate satellites in their scope?

When we compare the position of proposition satellites with the position of predication and predicate satellites, the results are rather unexpected. The figures show an equal distribution for predication satellites and a slight preference for predicate satellites after the proposition satellites (table 20). Looking at propositional satellite clauses (tables 21-22), we can observe a precedence tendency, though a very weak one (only 60 %), in relation to predication satellites and an equal distribution for predicate satellites. Again, we should take into account that these figures represent only the absolute precedence relations between the satellites and that the position of the verb may alter the direction of scope. As a matter of fact, quite a large number of counterexamples are neutralized by the fact that the satellites occur at different sides of the verb or are turned into positive evidence because the verb precedes both satellites, causing right-to-left scope assignment. If we revise the figures in view of
these observations, we obtain the results in table 20’, which are in far greater conformity with FG predictions.

Table 20: do proposition satellites take predication and predicate satellites in their scope?

<table>
<thead>
<tr>
<th></th>
<th>s3&gt;s2</th>
<th>s2&gt;s3</th>
</tr>
</thead>
<tbody>
<tr>
<td>s2:</td>
<td>189</td>
<td>51.32%</td>
</tr>
<tr>
<td>s1:</td>
<td>167</td>
<td>61.68%</td>
</tr>
</tbody>
</table>

Table 21: do propositional satellite clauses take predication satellites in their scope?

<table>
<thead>
<tr>
<th></th>
<th>s3&gt;s2</th>
<th>s2&gt;s3</th>
</tr>
</thead>
<tbody>
<tr>
<td>s2:</td>
<td>37</td>
<td>59.46%</td>
</tr>
<tr>
<td>manner:</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>consequence:</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>cause:</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>conditional:</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>concessive:</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>concessive-cond.:</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 22: do propositional satellite clauses take predicate satellites in their scope?

<table>
<thead>
<tr>
<th></th>
<th>s3&gt;s1</th>
<th>s1&gt;s3</th>
</tr>
</thead>
<tbody>
<tr>
<td>s1:</td>
<td>36</td>
<td>50.00%</td>
</tr>
<tr>
<td>manner:</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>consequence:</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>cause:</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>conditional:</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>concessive:</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>concessive-cond.:</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 20’: do proposition satellites take predication and predicate satellites in their scope? (revised)

<table>
<thead>
<tr>
<th>s2:</th>
<th>s3s2</th>
<th>s2s3</th>
</tr>
</thead>
<tbody>
<tr>
<td>189</td>
<td>136</td>
<td>53</td>
</tr>
<tr>
<td>71,96%</td>
<td>28,04%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>s1:</th>
<th>s3s1</th>
<th>s1s3</th>
</tr>
</thead>
<tbody>
<tr>
<td>167</td>
<td>144</td>
<td>23</td>
</tr>
<tr>
<td>86,23%</td>
<td>13,77%</td>
<td></td>
</tr>
</tbody>
</table>

2.5.2.4.3. Do predication satellites take predicate satellites in their scope?

A comparison of the position of predication and predicate satellites (table 23) reveals an equal distribution. For predicational satellite clauses results are similar to those in section 2.5.2.1 and 2.5.2.3. We again find two groups of clauses: purpose, consequence and causal clauses follow predicate satellites, temporal, conditional and concessive clauses precede them. When we take the position of the verb into consideration, the results support the FG scope theory far better. A revision of the data in table 23’ produces a ration of 85% against 15%.

Table 23: Do predication satellites take predicate satellites in their scope?

<table>
<thead>
<tr>
<th>s1:</th>
<th>s2&gt;s1</th>
<th>s1&gt;s2</th>
</tr>
</thead>
<tbody>
<tr>
<td>594</td>
<td>332</td>
<td>262</td>
</tr>
<tr>
<td>55,89%</td>
<td>44,11%</td>
<td></td>
</tr>
</tbody>
</table>
Table 24: Do predicational satellite clauses take predicate satellites in their scope?

<table>
<thead>
<tr>
<th>s1:</th>
<th>s2&gt;s1</th>
<th>s1&gt;s2</th>
</tr>
</thead>
<tbody>
<tr>
<td>purpose:</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>consequence:</td>
<td>0</td>
<td>37</td>
</tr>
<tr>
<td>cause:</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>substitution:</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>temporal:</td>
<td>32</td>
<td>15</td>
</tr>
<tr>
<td>conditional:</td>
<td>36</td>
<td>21</td>
</tr>
<tr>
<td>concessive:</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>concessive-cond.:</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>113</td>
<td>65,49%</td>
<td>34,51%</td>
</tr>
</tbody>
</table>

Table 23': Do predication satellites take predicate satellites in their scope? (revised)

<table>
<thead>
<tr>
<th>s1:</th>
<th>s2&gt;s1</th>
<th>s1&gt;s2</th>
</tr>
</thead>
<tbody>
<tr>
<td>594</td>
<td>505</td>
<td>85,02%</td>
</tr>
</tbody>
</table>

2.5.4 Conclusions and further discussion

In this section I would like to draw conclusions and to elaborate further on certain topics which cropped up in the preceding sections.

Some interesting tendencies in word order patterns emerge, but it is hard to formulate strict rules in this matter. Besides, we should be careful with strong statements because in some cases the statistical data are rather scarce. Also, the fact is that only one author was examined. Amacker (1989) notes that there are differences between authors with regard to the relative position of arguments and satellites. Summing up, the results for the relative position of satellites are rather a disappointment as long as only absolute positions of satellites are taken into account. However, when the role of
the verb is taken into consideration (i.e. the assumption that in the postverbal domain
the direction for scope is reversed), the following pattern emerges (cf. (45)):

\[(57) \quad \sigma^4 < \sigma^3 < \sigma^2 < \sigma^1 < V < \sigma^1 < \sigma^2 < \sigma^3 < \sigma^4\]

As far as the relation with the verb and the arguments is concerned, the observed
tendencies can be summarized as follows:

\[(58) \quad (a) \text{ predicate satellite clauses: follow the verb and the arguments} \]
\[ (b) \text{ predicational satellite clauses: two groups:} \]
\[ \quad \text{temporal, conditional and concessive clauses precede} \]
\[ \quad \text{purpose, consequence and causal clauses follow} \]
\[ (c) \text{ propositional satellite clauses: precede (weaker tendency)} \]
\[ (d) \text{ illocutionary satellite clauses: precede} \]

In evaluating the data for predication satellites, it sometimes proves to be necessary to
distinguish two groups of satellites (cf. (58b)). Apparently, there is a tension between
two principles formulated by Dik (1997):

\[(59) \quad \textbf{The Principle of Functional Stability}\]
\[ \text{Constituents with the same functional specification are preferably placed in the} \]
\[ \text{same position} \]
\[(60) \quad \textbf{Iconicity Principle}\]
\[ \text{Clauses should preferably be ordered in accordance with the conceptual or} \]
\[ \text{temporal relations obtaining between the facts or States of Affairs which they} \]
\[ \text{designate} \]

The Principle of Functional Stability appears to be overruled by the Iconicity
Principle. It is true, of course, that conditions logically and chronologically precede
the main clause and purposes and consequences generally follow it. This view was
already formulated in Greenberg’s (1963) principles 14 and 15. One wonders whether
the functional class of predication satellites should be split into two classes in order to
meet the requirements of the Principle of Functional Stability.\(^7\) It could be argued that
information structure theory offers the solution to the predication satellites puzzle (cf.
Panhuis 1982). Temporal, conditional and concessive clauses are generally topic,
while purpose and consequence clauses most of the time bear the focus of the

\(^7\) This is more or less the path that will be followed in chapter 6. The group of preceding predicational
satellites will be linked to the TP, while the other group is collapsed with the predicate satellites type
and related to PredP.
sentence. However, the use of this criterion to explain the position of causal clauses is a more delicate matter. At any rate, I have checked how reliable the predictions of information structure theory are. Postposed purpose/consequence/causal clauses are focal in 95% of cases and preposed ones are topical in 83% of cases. Preposed temporal/conditional/concessive clauses are topical in 93% of cases and 71% of the postposed ones are focal. Thus predictions are quite reliable though not perfect. I therefore feel other explanations should be provided.

2.6 Summary

This chapter dealt with some aspects of the way in which Functional Grammar tackles the issue of adverbial syntax. First the evolution of layering theory was sketched. It was concluded that one should be careful about distinguishing grammar from discourse and that it would be the most convenient solution to stick to the original proposal by Hengeveld (1989), discerning four types of satellites: predicate ($\sigma_1$), predication ($\sigma_2$), proposition ($\sigma_3$) and illocutionary satellites ($\sigma_4$). In the second part of the chapter the criteria with which to distinguish these satellite types were scrutinized. The conclusion was that the empirical adequacy of the criteria is rather poor, certainly if one tries to apply them at the level of subordinate clauses. Therefore, in the third part of chapter the word order criterion was examined in greater detail using a considerable amount of Latin data. The results of this inquiry are summarized in (58-59) above.
Chapter 3: Adverbials in Generative Grammar

After reviewing the FG viewpoints on adverbials in chapter 2, we now turn to the generative framework. Generative literature offers many different approaches to adverbial syntax, all of them with their own particular perspective on the issue. In this chapter I will try to sketch a representative overview of these adverbial theories. Although they are quite diverse, it is still possible to classify them in two or three groups. In a brief first section I will start with some early accounts. Next the adverbal theories will be divided into two main groups, called ‘loose-fit’ and ‘tight-fit’ theories, respectively. This distinction is predominantly based on their diverging appreciation of the so-called Transportability Problem. Everyone who studies adverbials is puzzled by the apparent chaotic nature of adverbial/argument order. Adverbials are seemingly scattered anywhere in the clause and few or no restrictions concerning their position in the clause seem to apply. Nevertheless, tight-fit theories assume that adverbials occupy fixed syntactic positions in the clause and that it is other factors that cause the surface structure to be so confusing. By contrast, loose-fit theories argue that adverbials do not have a fixed position and that they are inserted in the clause depending on semantic interpretation. The dominance of semantics over syntax is a characteristic feature of these theories. In a final section, we will deal with ‘domain’ approaches. The latter take an intermediate position between loose-fit and tight-fit theories. They argue that there are certain syntactic domains for certain types of adverbials (a reasoning which more or less follows the tight-fit hypothesis) but that further, fine-grained differences are dealt with semantically (which is more in the loose-fit spirit).

3.1 Early accounts

In the early approaches to adverbial syntax, the difference between so-called VP-adverbs and sentential adverbs is a prominent feature. In Jackendoff’s (1977) remarks on adverbs this is exemplified by his X’-bar framework, which at the time contained three bar-levels. Jackendoff states that the expressions of manner, means, accompaniment, instrument, purpose and other VP-adverbials are V’’ complements.
Semantically, they map predicates into predicates of the same number of arguments and they contribute to the main assertion of the sentence. $V'''$ complements, by contrast, add no conditions to the assertion of the sentence, but rather add some sort of auxiliary assertion (one of whose arguments is usually the main assertion). They include all sorts of sentence adverbials, sentential appositives, parentheticals and other subordinate clauses. Jackendoff adds that the first group can be focused, clefted and affected by sentence negation while the latter cannot (see section 2.2.2). His examples give an idea which adverbials are subsumed under these categories ($V''$ complements in (1), and $V'''$ complements in (2)):

(1) (a) John hit the nail *softly*
    (b) It was with a hammer that John hit the nail
    (c) We didn’t buy this for *your* benefit

(2) (a) *John hit the nail, of course*
    (b) *It was {probably/in my opinion} that John hit the nail*
    (c) *John didn’t hit the nail, I *think*

Andrews (1982, 1983) argues that adverbials cannot be the complement of a $V'''$-node, as suggested by Jackendoff. Instead, he proposes that they should be introduced by a recursive rule expanding $V'$ to $V'+$modifier. This would mean that the adverbials are “semantically applied to what they are sister of”.

McCawley (1990) makes a three-way distinction and uses the terms ad-V, ad-V’, and ad-S. These can be adverbs, such as the ad-V *completely*, the ad-V’ *willingly*, and the ad-S *probably* in (3).

(3) (a) The invaders completely destroyed the bridge
    (b) John willingly took part in the riot
    (c) Probably John will get a suspended sentence

According to McCawley, many ad-V’s (*with a knife, in a strange way*) and ad-Ss (*since yesterday, in all likelihood*), and perhaps also some ad-Vs (*in part*), are not adverbs but prepositional phrases. He also observes that ‘high’ adverbs can occur lower in the surface structure than their semantic scope demands. In McCawley’s words, expressions that are semantically ad-Ss sometimes appear as sisters of Ss (as in (4a)) and sometimes as sisters of V’s (as in (4b)).
(4) (a) Probably [the house has been broken into and our money has been stolen]
(b) You probably [heard me complaining and think I’m angry at you]

However, McCawley assumes that syntactic deep structures should be approximate semantic structures, and in particular, that modifiers in deep structure must modify the constituents that they modify semantically. He therefore argues that a transformation can take place optionally, transforming the deep structure into the surface structure. This is illustrated below.

(5)

During the eighties and the nineties, phrase structure theory became more and more complex, as the theory was enriched by a growing number of functional projections. This made the question where adverbials should reside in the phrase structure tree more and more difficult, since the number of possible attachment positions was extended accordingly. This led to a number of diverging approaches, which will be reviewed in the next sections.

3.2 Tight-fit theories

Adherents of the tight-fit approach claim that adverbials occupy fixed positions in the phrase structure and that the other material is moved around yielding the varying word orders. Thus adverbials are considered the constant factor in the sentence. For instance, Verhagen (1986: 70-71) observes that the position of sentence adverbials and noun phrases relative to each other may influence the interpretation of the noun phrases (being specific or non-specific), while the interpretation of the adverbials seems to remain unchanged. This observation implies that it is the structural position of the NP which must be different in both cases, i.e. the NPs must move, not the adverbials, because the interpretation of the NPs ‘changes’, not the interpretation of
the adverbials. Another manifestation of their constancy is the rigid mutual order between adverbials, which has been richly documented by one of the most influential works on adverb syntax, Cinque (1999).

### 3.2.1 Cinque 1999

Cinque’s book presents ample cross-linguistic evidence to motivate the analysis of adverb phrases as the unique specifiers of distinct, hierarchically ordered functional projections. I will first offer an overview of Cinque’s framework and then review his critics.

#### 3.2.1.1 Overview

In the first chapter of Cinque’s book, the hierarchical order between adverbials is fleshed out on the basis of Romance data (mainly Italian and French). Cinque concludes that there is a ‘low space’ of mutually ordered AdvPs (presented in (7)), preceded by a ‘high space’ of similarly ordered AdvPs (illustrated in (6)).

(6) (a) francamente > fortunamente > evidentemente > probabilmente > ora> forse> intelligentemente
    sinceramente purtroppo chiaramente presumibilmente allora per caso goffamente
(b) franchement > heureusement > évidemment > probablement > maintenant > peut-être > intellegemment

(7) (a) solitamente > mica > già > più > sempre > completamente >tutto > bene
    di solito neanche poi ancora mai parzialmente niente male
abituaimente neppure non ancora
(b) généralement > pas > déjà > plus > toujours > complètement >tou > bien
    habituellement (pas) encore encore jamais partiellement rien mal

Circumstantial adverbs (place, time, manner, etc.) appear to be unordered and occur after the verb and its complements. After these circumstantial adverbs, a second ‘low space’ can be constructed, showing the same hierarchy as in (7). At the end of the clause, there is room for de-accented (and prosodically detached) adverbials which should normally occur higher in the hierarchy. This is summarized below:
(8) “Higher” (sentence) AdvPs > “Lower” AdvPs > (DP subj) (V) complements > Place, time, manner, etc. adverbials > (focused) “Lower” AdvPs > de-accented material

Cinque argues that both ‘low spaces’ are related by movement, i.e. the adverbials have their base-position postverbally and are moved to the front to meet the appropriate focus requirements. However, the AdvPs are not moved independently but ‘on the back’ of a bigger constituent, as illustrated below. This yields word orders which, at first sight, contradict the proposed adverbial hierarchy (i.e. completamente precedes di già), but on closer inspection are caused by movement.

(9) A Natale, credo che avesse di già [completely perso la testa]

‘At Christmas, I think he had completely lost his mind already’

In the next chapter, Cinque develops the idea that adverbials should be located in the Spec-position of different functional heads. This is motivated by Italian data which show that active past participles and finite verbs can occur between every two adverbials of the hierarchy (or at least a specific range of this hierarchy):

(10) (a) Da allora, non hanno rimesso di solito mica più sempre completamente tutto bene in ordine
(b) Da allora, non hanno di solito rimesso mica più sempre completamente tutto bene in ordine
(c) Da allora, non hanno di solito mica rimesso più sempre completamente tutto bene in ordine
(d) Da allora, non hanno di solito mica più rimesso sempre completamente tutto bene in ordine
(e) Da allora, non hanno di solito mica più sempre rimesso completamente tutto bene in ordine
(f) Da allora, non hanno di solito mica più sempre completamente rimesso tutto bene in ordine

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

(11) (a) Allora aveva forse saggicamente deciso di non presentarsi
(b) Allora forse aveva saggicamente deciso di non presentarsi
(c) Allora forse saggicamente aveva deciso di non presentarsi

‘Then he had perhaps wisely decided not to go’

These facts can be accounted for if there are head positions between the adverbials to which the participle or the finite verb can move. This would mean, in the framework
proposed by Kayne (1994), that the adverbials are in Spec-positions to the left of these heads.

To pursue this idea, Cinque closely examines the order of suffixes, auxiliaries and functional particles and concludes that they can be ordered into a universal hierarchy of functional heads (chapter 3). Next the analyses of both adverbials and functional heads are combined in chapter 4 and it is observed that the hierarchies of adverbial specifiers and clausal functional heads match in a systematic one-to-one fashion. This results in the Universal Hierarchy of Clausal Functional Projections:

(12) **The universal hierarchy of clausal functional projections**

\[
\begin{array}{c}
\text{Frankly}\ 	ext{Mood}_{\text{speech act}} \ [\text{fortunately} \ 	ext{Mood}_{\text{evaluative}} \ [\text{allegedly} \ 	ext{Mood}_{\text{evidential}} \ [\text{probably} \ 	ext{Mod}_{\text{epistemic}} \ [\text{once} \ T(\text{Past})] \ [\text{then} \ T(\text{Future})] \ [\text{perhaps} \ 	ext{Mood}_{\text{irrealis}} \ [\text{necessarily} \ 	ext{Mod}_{\text{necessity}}] \ [\text{possibly} \ 	ext{Mod}_{\text{possibility}}] \ [\text{usually} \ 	ext{Asp}_{\text{habitual}}] \ [\text{again} \ 	ext{Asp}_{\text{repetitive(I)}}] \ [\text{often} \ 	ext{Asp}_{\text{frequentative(I)}}] \ [\text{intentionally} \ 	ext{Mod}_{\text{volitional}}] \ [\text{quickly} \ 	ext{Asp}_{\text{celerative(I)}}] \ [\text{already} \ T(\text{Anterior})] \ [\text{no longer} \ 	ext{Asp}_{\text{terminative}}] \ [\text{still} \ 	ext{Asp}_{\text{continutive}}] \ [\text{always} \ 	ext{Asp}_{\text{perfect?}}] \ [\text{just} \ 	ext{Asp}_{\text{retrospective}}] \ [\text{soon} \ 	ext{Asp}_{\text{proximative}}] \ [\text{briefly} \ 	ext{Asp}_{\text{durative}}] \ [\text{characteristically (?) Asp}_{\text{generic/progressive}}] \ [\text{almost} \ 	ext{Asp}_{\text{prospective}}] \ [\text{completely} \ 	ext{Asp}_{\text{Sgcompletive(I)}}] \ [\text{tutto} \ 	ext{Asp}_{\text{Plcompletive}}] \ [\text{well} \ 	ext{Voice}] \ [\text{fast/early} \ 	ext{Asp}_{\text{celerative(II)}}] \ [\text{again} \ 	ext{Asp}_{\text{repetitive(II)}}] \ [\text{often} \ 	ext{Asp}_{\text{frequentative(II)}}]\end{array}
\]

The fifth chapter deals with two issues which had so far been ignored: agreement and negation. It is argued that NegPs and DP-related functional projections (hosting the arguments) can be inserted freely in the hierarchical phrase structure tree. This is clearly the least developed part of the theory. In the last chapter, a couple of theoretical matters are briefly discussed. The question whether the complete functional hierarchy is present in every sentence, even if there is no lexical motivation, receives an affirmative answer. Cinque assumes that there are default and marked values for every projection and that the former results in the absence of overt material. Furthermore, he argues that the Universal Hierarchy of Clausal Functional Projections cannot be replaced by some semantic principle. Although semantics are clearly involved, not all facts can be explained by it and a syntactic approach as proposed by Cinque remains indispensable. Finally, it is stated that the functional hierarchy analysis could be extended to non-clausal projections.
3.2.1.2 Criticism

Most of the criticism levelled at Cinque’s approach concentrates on the technical details of how specific empirical problems should be dealt with in the framework. One of them is the fact that adverbials related to different functional projections can be coordinated (as in the Portuguese example below from Costa (2000)). To this, Cinque (2004) replies that such cases may involve not coordination of AdvPs but of larger constituents.

(13)   O Paulo lê frequentemente e simpaticamente o livro à avó
       ‘Paulo often and nicely reads the book to the grandmother’

It is worth mentioning another difficulty: Costa (1997, 1998) observes that there is a dependency between overt realization of lexical material and the existence of adjunction sites. The insertion of extra verbal heads can alleviate the ungrammaticality of adverb sequences:

(14)   (a) *John quickly carefully read the book
       (b) ?John has quickly talked carefully to his mother

If each of these two adverbs is licensed in the specifier position of a different projection, sequences of adverbs could be generated independently from the overt realization of heads in between them, and the ungrammaticality of (14a) would be left unexplained.

The most fundamental criticism, however, addresses the lack of restrictiveness in movement theory (see Costa (1998), Ernst (2002), Svenonius (2002)). According to these critics, the view that there is a single position for adverb attachment, with the corollary that the multiple order possibilities are to be realized by means of optional movements of all the other constituents, is not plausible at all, since it creates the rather unlikely need for making as many optional movements as there are constituents and positions of adverbs. Moreover, it is unclear how these movement operations are to be motivated (are there any features to check?) and furthermore the possibility of optional movement is in any case incompatible with the economy principles of
Minimalism. Svenonius (2002) notes that, if the various possible positions for the subject in the string of adverbials indicate different landing sites for the subject, as argued by Cinque, then the Norwegian facts motivate twenty different subject landing sites. If one takes into consideration the distribution of arguments and adverbials in Icelandic, the picture becomes even more complicated:

(15)  (a)  þá gáfu vonandi alltaf einhverjir Sigridi hana tilbaka
then gave hopefully always somebody Sigrid it back
‘Then somebody hopefully always gave it back to Sigrid’

(b)  þá gáfu vonandi einhverjir Sigridi hana alltaf tilbaka
then gave hopefully somebody Sigrid it always back

(c)  þá gáfu einhverjir Sigridi hana vonandi alltaf tilbaka
then gave somebody Sigrid it hopefully always back

Since all three arguments can precede, intervene between, or follow the two adverbs, this seems to motivate three specifier positions, hence three heads, between each of the head positions argued to exist for adverbial placement.

Finally, Pittner (1999: 43-44) raises some conceptual objections to Cinque’s theory. She states that the problem of adverb ordering is not solved, but rather shifted to the phrase structure level, since one should seek an explanation for the exact nature of the functional hierarchy (see also Nilsen (2003)). According to Pittner, Cinque’s framework embodies an unnecessary ‘semantification’ of syntax, because a functional projection must be provided for every adverbial type. It remains unclear what is gained by Cinque’s syntactic approach, when the postulation of discrete functional projections is ultimately dependent on semantics.

3.2.2 Nilsen 2000

Nilsen’s work is essentially an extension of Cinque’s framework and scrutinizes the distribution of circumstantial adverbials. In contrast with Cinque, he states that circumstantial adverbs are hierarchically ordered and are, in fact, related to different functional projections from Cinque’s theory. Considering Norwegian facts, Nilsen formulates the following hierarchy, where the first member is most closely related to the VP:
The difference between culmination-locatives (c-loc) and normal locatives is illustrated in (17a-b). Instrumental and temporal PPs are transparently abbreviated as PP instr and PP temp. Telic PPs are exemplified by *in five seconds* in (17c), while *for an entire hour* is a representative of the atelic PP type. Finally, the class of habitual DPs contains bare NPs such as *every day*.

Nilsen argues extensively that these adverbials cannot be analyzed as the complements of VP-shells, as proposed by Larson (1988) (see section 3.2.4). He therefore looks for another solution, which is compatible with Kayne’s (1994) Antisymmetry model and proposes that predicate adverbials (used as a synonym for circumstantial adverbials) should be considered semantically as predicates on an underlying event-variable. For this purpose, the VP must be (contained) in the specifier of the adverbial and according to Nilsen this result can be obtained by analyzing adverbials as reduced relative clauses on the event. This would be analogous to Kayne’s analysis of predicative adjuncts in the noun phrase, i.e. relative clauses. Here, the NP is moved from inside the relative clause to its specifier:

\[
\begin{array}{c}
\text{DP} \\
D^o \\
\text{the} \\
\text{man} \\
C^o \\
\text{that} \\
\text{IP} \\
\end{array}
\]

Nilsen adopts this idea to represent *meet John in the park*, and converts Kayne’s D° into Asp°. This yields the following tree:
Unfortunately, Nilsen is not wholly consistent in transforming Kayne’s representation. In the latter, the most dominating projection and the phrase that is moved into Spec,CP (DP and NP, respectively) differ. In (19), however, both are labeled AspP. Calling the phrase (which moves from Spec,PP to Spec,CP via Spec,IP) VP would be more correct. Technical oddities of this kind emerge here and there in Nilsen’s work. His disappreciation of Barbiers’ (1995) analysis, for instance, is rather ill-motivated (see next section).

Returning to Nilsen’s approach, the functional projection in (19) to which the adverbial is linked, is not always the same AspP. The different types of circumstantial adverbials are related to one of the AspP and TP phrases of Cinque’s hierarchy in (12). In this fashion, the order of circumstantials is explained and derived by the Universal Hierarchy of Clausal Functional Projections.

3.2.3 Barbiers 1995

I will confine myself to a short outline of Barbiers’ representation since an extensive discussion and comparison of Nilsen’s and Barbiers’ approaches would lead us too far. Barbiers adopts a VP-shell analysis with the adverbials on the top, and the lexical verb and its arguments at the bottom, and then moving the VPs into the specifier of
the adverbials. The base-generated order is illustrated in (20a), and (20b) is the result of moving the VPs into the Spec,PPs:

(20) (a) 
```
   VP₁
  /   \\  
PPTEMP VP₁
  \    /
   V°  VP₂
     /   \
PPLOC VP₂
     \   /
      V°  VP₃
```

(b) 
```
   VP₁
  /   \\  
PPTEMP VP₁
  \    /
   VP₂
     /   \
PPLOC VP₂
     \   /
      V°  t_{VP₂}
```
```
   VP₃
  /   \
PP  VP₂
  \    /
   V°  t_{VP₃}
```
```
P0  DP
```

3.2.4 Larson 1988, 1990; Stroik 1990

Another and, as a matter of fact, older view of the position of adverbials is offered by Larson (1988, 1990). Actually, Larson’s papers dealt with the double object construction, producing the very influential VP-shell theory, which was also applied to adverbials. Stroik (1990) has developed a full account about adverb position in the light of Larson’s theory.

In Larson’s view, modifiers cannot be outermost adjuncts but must rather be innermost complements. Adverbials are thus sisters of V, as shown in the representation offered by Stroik:

(21) 
```
[VP Spec [V eV [VP NP [V V Adv]]]]
```
This claim is inspired by data concerning negative polarity, superiority, anaphor binding, bound pronouns, weak crossover and *each ... the other*, which can only be explained if objects c-command adverbials. Here I give only a brief illustration of negative polarity:

(22)  
(a) John saw no one anywhere  
(b) *John saw anyone nowhere*

These data are easily accounted for under the analysis in (21). The object is the NP in the specifier position of the lower VP-shell and c-commands the adverb in complement position.

Naturally, this hypothesis was heavily criticized. Jackendoff (1990) criticizes the fact that Larson’s analysis completely neutralizes the structural distinction between arguments and modifiers, a distinction that has always been important in generative and other linguistic literature. Moreover, Nilsen (2000, section 3.2) argues at length that the Larsonian structure cannot be correct. To start with, it cannot account for VP-topicalization and substitution data (Norwegian and English examples are taken from Nilsen (2000)):

(23)  
(a) *Møtte henne* gjorde jeg i parken på fredag.
    met her       did I in park-the on Friday
(b) *Møtte henne i parken* gjorde jeg på fredag
    met her in park-the did I on Friday
(c) *Møtte henne i parken på fredag* gjorde jeg (ikke)
    met her in park-the on Friday did I not

(24)  
(a) John buried the corpse in the park on Friday, and Jack did so...
    (b) ...in his garden on Saturday
    (c) ...on Saturday
    (d) *...in his garden
    (e) *...his mother in the garden on Saturday

Furthermore, Nilsen claims that Larson’s and Stroik’s evidence about the c-command relations between objects and adverbials is wrong or inconclusive. For a full account,
I refer the reader to Nilsen (2000). Ernst (2002) signals yet other shortcomings of the Larsonian approach. To derive the correct scope relationships, the hypothesis needs covert LF-movement rules, assuming that it is worth keeping the c-command condition on scope. This would mean that adjuncts should be raised at LF to explain different scope relations as in (26):

(26)  (a) Carol has made extra tips frequently willingly  (WILLING > FREQ)
      (b) Carol frequently has willingly made extra tips  (FREQ > WILLING)

Such a theory would be fraught with stipulations and theoretical complications and ultimately makes the Larsonian framework rather unattractive.

3.2.5 Alexiadou 1997

To a certain extent Alexiadou’s approach takes an intermediate position between Cinque and Larson. She suggests that there are two types of adverbs: specifier-type and complement-type adverbs. This distinction expresses the following intuitions: a) complement-type adverbs are thematically related, specifier-type ones are not; b) complement-type adverbs are generated within the complement domain of the verb, specifier-type ones are generated in the left periphery of the VP. The two groups contain the following adverbs:

(27)  **Specifier-type adverbs**

(a) evaluative  Fortunately, no harm was done
(b) conjunctive  Finally, you should not forget what he has done to you
(c) speaker-oriented  Frankly, you should not go after it
(d) modal  Probably, Mary will visit me
(e) domain  Logically, this cannot hold
(f) subject-oriented  Courageously, Alexander fought all day long
(g) aspectual  always
(h) frequency  frequently

(28)  **Complement-type adverbs**

(a) manner  correctly
(b) completion  entirely, completely
(c) time  yesterday
(d) location  here
Essentially, the class of specifier-type adverbs comprises all sentence adverbs, but also aspectual and frequency adverbs. Complement-type adverbs are usually VP-modifiers, although time and location adverbs are often considered sentence adverbs. Since Alexiadou wants to adopt the Antisymmetry framework developed by Kayne (1994), adverbs can only occur in specifier or complement position. Indeed, this is the gist of Alexiadou’s theory: specifier-type adverbs are specifiers of functional projections, as in Cinque (1999), and complement-type adverbs are generated in VP-shells, as the verb’s immediate complements, in the way proposed in Larson (1988, 1990).

However, that does not mean that the complement-type adverbs are not related to a correspondent functional projection. As a matter of fact, they are related by movement, which can be overt or covert. Alexiadou argues that temporal adverbs are referential expressions, i.e. they bear a referential thematic role. As such they originally appear inside the VP (because the VP is the domain of theta-role assignment), but move to TP. The movement can be overt or covert feature movement. When the movement is overt, the adverbs appear in mid position, i.e. in [Spec, TP]. When it is covert, the adverbs appear in final position. This is illustrated by the following contrast:

(29) (a) The Prime Minister today described the relations between Persia and Britain as having reached a happy stage
    (b) He bought the car yesterday

A similar argument is developed to account for the position of manner adverbs. They can occur clause-finally as a VP-complement or they can be moved leftwards to a functional projection, which Alexiadou calls VoiceP. This is illustrated below.

(30) VoiceP
    AdvP1 VoiceP
    non-complex Voice° VP
    Voice° AdvP1/AdvP complex

V°
As can be observed, the movement is also dependent on the complexity of the AdvP. Complex AdvPs must stay in complement position, while morphologically light AdvPs move to Spec, VoiceP. Alexiadou assumes that every right-branching structure must end in a trace, when the right branch lacks internal structure. This forces bare adverbs to move to a Spec-position, while complex phrases can remain in situ. When bare adverbs stay in VP, they receive focal stress. This is confirmed by the following data (Greek and French data from Alexiadou (1997)):

(31) (a) έφαγε (γοργά) τη σούπα (γοργά) 
éfage (γοργά) τη σούπα (γοργά) 
ate-3sg (fast) the soup-ACC (fast) 
(b) έφαγε τη σούπα με πολύ αργό ρυθμό 
éfage tē soúpa me polú argó rithmò 
ate-3sg the soup-ACC with very fast pace 
(c) *έφαγε με πολύ αργό ρυθμό τη σούπα 
*éfage me polú argó rithmò tē soúpa 
ate-3sg with very fast pace the soup-ACC 

(32) (a) Marie a très lentement mangé sa soupe 
Marie has very slowly eaten her soup 
(b) *Marie a d’une manière lente mangé sa soupe 
Marie has in a slow manner eaten her soup 

3.2.6 Rosengren 2003

Finally, we draw attention to a recent paper by Inger Rosengren. Her proposal fits in with the Larsonian approach as far as postverbal adverbials occur at the bottom of the tree. They are, however, not complements of the lexical verb. Instead, the lexical head has an empty VP as its complement and the adverbials are adjoined to this empty VP. This would mean that the adverbials are in the VP (which explains their postverbal position), but that they do not belong to the MAC (Minimal Argument Projection Complex). In this fashion, the adverbials are distinguished from the arguments in the VP. Rosengren represents her ideas by means of the tree below. It is obvious that this analysis is rather uncommon and stipulative. Moreover, it is unclear which stance Rosengren takes regarding phrase structure theory. In representing the adverbials at the bottom of the tree, she follows the example of Larson and Kayne, where linear precedence is taken to be crucial for phrase structure hierarchy. But then again she sticks to more traditional approaches by admitting multiple adjunction. In brief, the analysis appears to be of a too premature nature to stand comparison with other theories.
We now move on to the loose-fit approaches.

\[(33)\]

\[\begin{array}{c}
\text{VP (MAC)} \\
\text{XP}_3 \quad V' \\
\text{V°} \rightarrow \text{VP} \\
\text{XP}_2 \quad V' \\
\text{V°} \rightarrow \text{VP} \\
\text{XP}_1 \quad V' \\
\text{V°} \rightarrow \text{VP (outside the MAC)}
\end{array}\]

place VP

time VP

e

### 3.3 Loose-fit theories

#### 3.3.1 Travis 1988

Travis offers a theory in which adverbs are regarded as heads licensed by features of other heads. First, she observes that adverbs cannot take complements. According to Travis, this means that they may not project to a phrasal category but simply remain as heads. Furthermore, these adverbial heads enter into relationships with other heads. She assumes that it is a feature of the licensing head (noun or verb) which licenses the modifying head (the adverb).

Travis suggests the following adverb typology, in which adverbs are ordered according to their possible positions in the clause:
(34) | Initial/AUX | VP-initial/VP-final | AUX | VP-final |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type Ia</td>
<td>Type Ib</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type IIa</td>
<td>Type IIb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type III</td>
<td>Type IV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type V</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type VI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ia: cleverly, clumsily,... (subject sensitive)
Ib: cleverly, clumsily,... (agent sensitive)
IIa: quickly, slowly,... (modifying the event)
IIb: quickly, slowly,... (modifying the process)
III: evidently, probably, unbelievably,...
IV: completely, easily, totally,...
V: hard, well, more,...
VI: truly, virtually, merely,...

She claims that Type Ia, IIa, and III are all licensed by a feature in the head INFL, while Type Ib, IIb, and IV are all licensed by a feature in the head V. The variable position of adverbs in English comes about through feature percolation from the head to the maximal projection. Adverbs may appear anywhere along the projection line of the licensing head, as illustrated below. This can yield the word orders shown in (36) and (37).

(35)
(36)  (a) George has probably read the book
     (b) George probably has read the book
     (c) Probably, George has read the book
(37)  (a) Mary will have slowly put the book on the table
     (b) Mary will have put the book slowly on the table
     (c) Mary will have put the book on the table slowly

An important outcome of Travis’ framework is the distinction between subject sensitive (38a, b) and agent sensitive (38c, d) adverbs. She claims that the former are licensed by an AGR feature in Infl and the latter by the feature Manner in V. She goes on to argue that if an adverb is licensed by the feature AGR, it will assign an adjunct theta-role to whatever AGR is coindexed with. If the adverb is licensed by Manner, it will assign an adjunct theta-role to the external argument of the verb.8 This leads to the different interpretations in (38).

(38)  (a) The police carelessly will arrest Fred
     (b) Fred carelessly will be arrested by the police
     (c) The police arrested Fred carelessly
     (d) Fred was arrested carelessly by the police

As a final remark, she suggests that speaker-oriented adverbs (e.g. frankly) are licensed by a discourse feature in the matrix COMP. The table below summarizes which adverb types are licensed by which feature of which head.

<table>
<thead>
<tr>
<th>Head</th>
<th>Feature</th>
<th>Adverb type</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERB</td>
<td>Agent</td>
<td>Type Ib</td>
</tr>
<tr>
<td></td>
<td>Manner</td>
<td>Type IIb, Type IV</td>
</tr>
<tr>
<td>INFL</td>
<td>AGR</td>
<td>Type Ia</td>
</tr>
<tr>
<td></td>
<td>Event</td>
<td>Type IIa, Type III</td>
</tr>
<tr>
<td>COMP</td>
<td>?</td>
<td>speaker-oriented</td>
</tr>
</tbody>
</table>

3.3.2 Bowers 1993

Bowers argues in the first place for a new basic structure of sentences comprising a newly created projection PrP (for Predication Phrase). In this view the VP contains all

8 Later on in the discussion, the relevant feature is called Agent, as displayed in the table below.
the arguments of the verb except the external argument (the subject). The latter is located in the Spec of a functional category Pr that takes VP as its complement. The object occupies the Spec,V position. The surface order of the verb and its complements in a language like English arises from the obligatory movement of the verb to Pr°. The semantic function of Pr is to create an unsaturated propositional function, which is then predicated of the external argument.

Interestingly, there is a section on adverb placement among the syntactic evidence that Bowers offers to support his claims. He assumes that adverbs such as perfectly are licensed by V and adverbs such as quickly by Pr and that all adverbs are X´ adjuncts (which can be left- or right-adjoined). This explains why perfectly can only occur post-verbally: V is obligatorily raised to Pr, which ensures that the verb is always to the left of the adverb. In contrast, adverbs such as quickly can appear either as left Pr´ adjuncts or as right Pr´ adjuncts, hence either to the left or to the right of VP. This is illustrated below.

\[\text{(39)}\]

\[\text{IP}\]
\[\text{NP}\]
\[\text{I'}\]
\[\text{I}\]
\[\text{PrP}\]
\[\text{NP}\]
\[\text{AdvP}\]
\[\text{Pr'}\]
\[\text{(AdvP)}\]
\[\text{Pr}^\circ\]
\[\text{VP}\]
\[\text{NP}\]
\[\text{AdvP}\]
\[\text{V'}\]
\[\text{(AdvP)}\]
\[\text{V}\]
\[\text{V'}\]

John, will, e_i quickly, learn_j French perfectly, e_j (perfectly), (quickly)

In this framework, the verb-object adjacency in English, which has been bothering most generative accounts of adverb syntax since Stowell (1981), is explained quite elegantly. The fact that V-licensed adverbs such as perfectly cannot intervene between the verb and its direct object follows immediately from the assumption that these adverbs are V´ adjuncts, together with the assumptions that direct objects are in
Spec,V and that the verb is obligatorily raised into Pr. Since prepositional objects occupy the complement position of V, adverbs can occur to their left or their right, as shown in the following examples:

\[(40)\]

(a) John spoke French intimately to Mary
(b) *John spoke intimately French to Mary
(c) John spoke to Mary intimately
(d) John spoke intimately to Mary

Bowers extends his analysis to other types of adverbs when he offers the tree in (41) (his (42)). Illocutionary adverbs such as clearly are adjoined to C’, epistemic adverbs such as probably to I’. The two other types are repeated from the above: adverbs adjoined to Pr’ and V’, respectively.

\[(41)\]

---

9 This analysis is taken over in Ernst’s theory (see section 3.3.4, where I offer some criticism of this approach).
In other words, there are four licensers (C, I, Pr and V) licensing four types of adverbs. Although this theory is attractive enough, it obviously cannot deal with all empirical data. To cite one problem, the fact that *probably* can occur before the subject and *clearly* can follow it, cannot be accounted for. Furthermore, one needs to be willing to accept all elements of Bowers’ framework, including the existence of a PrP projection.

3.3.3 Svenonius 2002

While the approaches of Travis and Bowers are not radically ‘loose fit’, though they do assume that adverbials can be generated in different positions, we are now gradually addressing the more hardcore ‘loose fit’ proponents. Svenonius (2002) is a convinced representative of the semantic approach to adverbs; his paper is offered manifestly as an alternative to the syntactic functional specifier analysis of Alexiadou (1997) and Cinque (1999). In its rejection of syntactic analyses and its preference for semantic interpretation it also contains, in my opinion, some examples of immature reasoning and theoretical vagueness. In the following I will review Svenonius’ viewpoints (which are sometimes difficult to grasp in their dense formulation) and point out their shortcomings.

Svenonius’ theory introduces flexibility at three points. First, a node of a given category may not always receive the same interpretation. Second, since interpretation is a matter not of Deep Structure category labels, but of LF interpretations, any covert movement that affects interpretation can potentially effect adverb placement, including restructuring. Third, a node that contributes no semantic information that is relevant to the interpretation of a given adverb will be, in effect, invisible to that adverb. An example will clarify this.

(42)  (a) Cari probably will have been finishing up by then
(b) Cari will probably have been finishing up by then
(c) %Cari will have probably been finishing up by then
(d) ??Cari will have been probably finishing up by then
What Svenonius essentially claims, is that adverbs can be attached in different positions, as long as this does not collide with their semantic requirements. He suggests that will occupies the same node in (42a-b) and assumes that node to be Agr (the tensed verb is moved to Agr from a lower position, most probably T). The semantics of the epistemic adverb probably dictate that the adverb scope over the tense, which is borne by the auxiliary will. Now, the adverb is free to attach to AgrP or to TP, as long as it c-commands the tense feature. In Svenonius’ words, the interpretation of Agr is irrelevant to probably, so it can attach above or below that node. A first question that one could ask, is where exactly the adverb can be attached. In (42b), one could assume that it is adjoined to an empty T node, but it is much harder to imagine how the adverb can intervene between the subject and the auxiliary in (42a). If the latter occupies Agr and the subject resides in Spec,AgrP, where should the adverb be located? Should it be adjoined to Agr? Would it not be uncommon to claim that adverbs can adjoin to heads? Is there any motivation in Svenonius’ framework for adverbs to adjoin to heads or maximal projections or both?

Things are not improving when Svenonius discusses the following example from Italian.

(43)  
(a) Allora aveva forse saggiamente deciso di non presentarsi  
(b) Allora forse aveva saggiamente deciso di non presentarsi  
(c) Allora forse saggiamente aveva deciso di non presentarsi

Svenonius argues that the adverbs have to scope over T and that Agr provides no information relevant to their interpretation. The verb always moves to Agr, and the adverbs are optionally attached to AgrP or TP. In my opinion this analysis is debatable in several respects. First of all, it is not evident that saggiamente should scope over T. It is completely neglected that this adverb can have two interpretations:

10 Further on, Svenonius argues that a functional T node is not even necessary. What is important is that there is a node below probably in which the tense feature is interpreted. This is true as long as will has undergone head movement in (42b) from some lower position, which might even be a lexical projection. However, this line of thinking demands that the verb can be interpreted under reconstruction, which is not an evident claim. If reconstruction of heads is not permitted, there must be a T node below the position of probably in (42b). Unfortunately, this T node is always empty, since the verb is obligatorily raised to Agr. In other words, neither of these paths gives the impression of a coherent theory.
a manner and a subject-oriented interpretation. The latter presupposes involvement of the speaker and complies with an attachment site above T, the former not. Svenonius himself signals two other problems, but I feel his solutions are not adequate. First, the sentences in (43a) and (43c) contain two successive adverbs, which should be adjoined on top of each other according to this framework. However, this is not consistent with Kayne’s (1994) claim that adjuncts are unique. To fulfil that requirement, there must be one head for each adverb. According to Svenonius, that does not mean that Cinque’s position must be adopted (where every adverb resides in a different functional projection with a specific semantic content; see section 3.2.1). He claims that nothing in Kayne’s theory requires that the heads be semantically coordinated with the phrasal expressions attached to them, given that interpretation occurs at LF. The heads could even be semantically vacuous, in principle. Svenonius suggests that vacuous Agr heads can be freely generated to provide sites for adverb attachment. In this manner, Kayne’s requirement of the uniqueness of adjuncts is fulfilled. Frankly, I do not see the advantage of freely generating empty Agr heads, especially in comparison with Cinque’s approach. After all, isn’t the whole enterprise of inserting adverbs semantically in the structure meant to avoid the creation of elaborate syntactic structures as in Cinque’s framework? The unrestrained generation of Agr projections creates an equally complex structure, the only difference being that all functional projections have the same, contentless label. This emptiness of meaning is necessary because of Svenonius’ proposal that adverbs should be attached to the Agr projections, and in this way the original purpose of Agr (viz. to provide a site for arguments to check their agreement features) is completely lost.

A final problem concerning the Italian example in (43) is constituted by the fact that nothing in Svenonius’ framework warrants that the adverb forse precedes saggiamente, although this is their obligatory mutual order. He suggests that one should appeal to semantic interactions among the adverbs. The crucial question is, however, how these semantic interactions work and Svenonius remains completely silent about this matter. Since adverbs are interpreted at LF, it is difficult to envisage any restriction on the order between adverbs at surface structure/Spell Out. What is to prevent us from constructing the (unacceptable) sentence Allora aveva saggiamente

\[11\] in FG terms, the adverb would be a \(\sigma_1\) satellite in the manner interpretation and a \(\sigma_3\) participant-oriented attitudinal satellite in the subject-oriented interpretation.
forse deciso di non presentarsi and from assuming that forse moves covertly across saggiamente, yielding a perfectly interpretable sentence at LF? If verbs can be interpreted by reconstruction, why could adverbs not be reconstructed into positions where they belong semantically? This would permit adverbs to move anywhere at surface structure, as long as they are reconstructed properly at LF. In other words, claiming that semantics will do the job only seems to be a way of shifting or even concealing the problem.

In the second part of his paper, Svenonius studies the position of subjects in the Germanic languages. The main result emerging from the data is that subjects with a topical feature precede sentential adverbs, while subjects without topical status follow such adverbs. Languages only differ in their interpretation of what is considered as topical. Paradoxically, this does not lead Svenonius to recognize that adverbs are the pivots of sentence structure and to drop his loose-fit stance. He admits that the possibility of attaching adverbs to AgrP is questionable, because this would overgenerate adverb-subject orders (i.e. adverbs illicitly preceding [+Top] subjects). Therefore, he is forced to stipulate that adverbs cannot attach to AgrP and he even claims that he can offer a well-motivated solution. He argues that TP denotes a proposition, sort p, and that CP denotes an information unit (sort i) anchored to a context. C provides an anchoring, represented by w (for possible world). Agr is type <p, <w, i>> (i.e., it combines with a proposition-denoting element (TP) to return an open function from anchorings to information units). If sentential adverbs are basically functions over sorts of entities, for example propositions, then AgrP will not be the right sort of element for those adverbs to combine with. Remember that Agr was taken to be semantically vacuous and irrelevant to adverb interpretation in the first part of Svenonius’ paper. Here we have a completely different picture. In the first place, I would not regard TPs as denoting a proposition. They should denote events and are only turned into propositions by the insertion of an adverb indicating the speaker’s involvement. The claim that TPs are propositions is thus only provoked by the assumption that sentential adverbs adjoin to them. Moreover, as Svenonius himself notes, it will not do to simply attach all adverbials to TP. When the subject appears between two adverbials, the lower adverbial can be attached to TP, but the subject should be in Spec,AgrP and, consequently, the adverbial preceding the subject cannot be attached to TP. Svenonius’ proposals thus face a virtually insurmountable paradox. This leads him to propose a theory without Agr. He assumes only one
functional projection Infl, were both a +Topic and a D feature can be checked (the latter feature forces the subject to be moved to Infl, as generally assumed in generative literature, the former is only checked when the subject is topical). Adverb-subject order results when a subject is raised to check D but does not check +Topic, because it is not topical. The adverb is afterwards merged on top of the subject. Subject-adverb order, by contrast, is the result of an adverb merging first with IP, with unchecked D and +Topic features, followed by raising of a topical subject, checking both of the features. In other words, the different word orders are derived from the different timing of merging the adverb: before the topical and after the non-topical subject. The first objection that comes to my mind in connection with this analysis is how exactly subject and adverb can be attached to the same IP in different orders. Are they in Specs, are they adjoined? It should look approximately as in the representations below, but I have no clue what theoretical status these trees might have.

(44) (a)  
\[ \text{IP} \quad \text{AdvP} \quad \text{IP (I’?)} \quad \text{subject (non-topical)} \quad \text{I’ (IP?)} \quad \text{VP} \]

(44) (b)  
\[ \text{IP} \quad \text{subject (topical)} \quad \text{AdvP} \quad \text{I’ (IP?)} \quad \text{I} \quad \text{VP} \]

Another question is how it can be determined where the adverb should be attached. Svenonius suggests the following generalization:

(45) An adverb may not attach to IP with a checked +Topic feature

As Svenonius notes, this is only a descriptive generalization, without any theoretical motivation. He therefore resorts to a similar explanation about propositions and information units as the one offered to explain why adverbs do not adjoin to AgrP. IP with the topic feature unchecked denotes a proposition, while IP with the topic feature checked is of the type \(<w,i>\). This means that the lower part of the IPs in (44b) is of a different type than its upper part and that the whole IP in (44a) is of the first type, i.e.
a proposition. I do not find this very appealing. The status of IP becomes murky if it can represent different types, even in the same projection. If a functional projection fulfills two functions, the sense of functional projections becomes hazy and this is a recurring problem in Svenonius' paper. TP, AgrP and IP are used as tools to which elements can be attached without considering the idea behind these functional projections (I would almost say that their 'meaning' is wiped out). This leads to awkward proposals and stipulative statements such as (45) and culminates in a not very convincing loose-fit theory.

3.3.4 Ernst 1984, 2002

The approach developed by Ernst is probably the most detailed loose-fit adverb theory in the literature. As a matter of fact, the opposition between tight-fit and loose-fit was introduced by Ernst (1984). The gist of his ideas is already present in his 1984 work, but his theory only came to full development in Ernst (2002). It is an extensive study (more than 500 pages), which in this brief survey cannot be discussed in any depth without diminishing its richness. Ernst explores an adverb theory in which most of the burden is borne by semantics and little is left for syntax. He claims that the most important determinant of adjunct licensing is an adjunct’s scope (and other selectional) requirements, encoded as lexical properties and verified at LF, rather than syntactic feature licensing, as Cinque (1999) claims. In this line of thinking he relies on a few assumptions about good theoretical design which are rather different from Cinque’s (and mine). As his theory is a sort of reaction to the Cinque-style approach to adverbials, he often explicitly compares his own proposals with Cinque/Kayne approaches. Although his analyses are generally pertinent and his arguments sound enough, they are often based on (and maybe a little coloured by) his disputable assumptions about good theoretical design; moreover, his way of presenting his own and other researchers’ ideas is sometimes biased. I will illustrate this briefly a little further, but an extensive comparison of both theories (i.e. Ernst’s and Cinque’s) will be postponed until chapter 7. First, I will give a brief survey of Ernst’s views and in a final subsection I will try to uncover the Achilles’ heel of Ernst’s theory. For a full comprehension of his framework I can only refer to Ernst (2002).
3.3.4.1 Overview of Ernst’s framework

Ernst argues that relatively little syntax is specific to adverbials and that semantic and PF-side principles, and not the purely syntactic ones, are decisive in determining adverbial syntax. The essential elements of his theory are presented below:

(46) (a) LF side: FEO-Calculus and lexicosemantic requirements of individual adverbs
(b) PF side: Directionality Principles and Weight Theory
(c) Phrase structure and movement theories

As far as phrase structure is concerned, Ernst adopts more ‘traditional’ views, opposing Kayne (1994) and making great efforts to refute the latter’s hypotheses. He makes extensive use of adjunction (which can be applied successively) and rightward movement. At the PF side, the Directionality Principles prescribe (to put it in simple terms) that functional elements (which Ernst calls the F-Complex) should occur at the left, while the position of C-Complex elements (those bearing the content, mostly selected complements) is parametrized according to language type. In head-first languages they occur to the right, in head-final languages to the left. Weight Theory warrants that heavy elements end up to the right and light ones to the left.

Probably the most important aspect of Ernst’s framework is the introduction of the FEO-Calculus. This is a theory about the semantic make-up of sentences, which is very similar to the layering theory of FG. A sentence can comprise different types of so-called Fact Event Objects (FEO’s), which are hierarchically ordered as below:

(47) Speech Act > Fact > Proposition > Event > Specified Event

Essential to the theory is the assumption that any FEO type may be freely converted into an FEO of the same or a higher type, but not to a lower one. Adverbs select for different FEO types and if a certain FEO does not match with the requirements of the adverb the sentence becomes ungrammatical. To take an example, the modal adverb *probably* selects a proposition and yields a fact. The latter cannot serve as the complement of the manner adverb *loudly*, since this adverb needs a Specified Event. Consequently, *loudly* cannot precede *probably*, because this would violate the FEO-
Calculus. By contrast, the manner adverb makes a specified event into an event, which can be converted into a proposition and serve as the complement of the modal probably. Thus, the order probably – loudly is legitimate. It is important to note that there is not always a one-to-one correspondence between a given syntactic projection and a specific semantic type. According to Ernst, adverbs can in principle be adjoined to any projection, as long as the semantic requirements of the adverb are met in accordance with the FEO-Calculus.

In brief, Ernst assumes the following adverb classification:

<table>
<thead>
<tr>
<th>ADVERB CLASSIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Predicational adverbs</strong></td>
</tr>
<tr>
<td>Subject-oriented</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>speaker-oriented</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Exocomparative</td>
</tr>
<tr>
<td>(pure) manner</td>
</tr>
<tr>
<td>Domain adverbs</td>
</tr>
<tr>
<td>Functional adverbs</td>
</tr>
<tr>
<td>time-related</td>
</tr>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>clausal relations</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>participant PPs</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Focusing</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Ernst’s work lays great emphasis on predicational adverbs. Subject-oriented adverbs take two arguments: the subject and an event as their FEO argument. The relation with the subject is guaranteed by a structural condition:
(48) **Structural condition on subject-oriented interpretation:**
the DP (in an A-position) denoting a subject-oriented adverb’s agentive argument must c-command the adverb.

All the other predicationals select only one argument. Modal adverbs take a proposition as their argument and yield a fact (i.e. a true proposition). Evaluatives also yield facts, but their FEO argument should also be a fact. Evidential adverbs convert facts into stative events. Speech-act adverbs differ in requiring the covert predicate *E(xpress)*, which must take the entire proposition in its scope. Most predicationals have manner equivalents in addition to their clausal interpretation. Ernst assumes that these manner readings are derived from the predicational ones by the Manner Rule. This would make double lexical entries for these adverbs superfluous. Furthermore, certain predicationals, mainly modal adverbs, cannot have manner interpretations (e.g. *probably, maybe*). However, Ernst must admit that there are ‘pure’ manner adverbs that do not have clausal equivalents. These are often adverbs expressing some physical property (e.g. *loudly*), which makes a clausal interpretation very difficult from a conceptual point of view. In other words, there is a certain inconsistency in Ernst’s perspective on (manner readings of) adverbs. When dealing with pure manner adverbs, he takes the manner reading as point of departure and argues that a clausal reading cannot be derived conceptually. In the other cases he claims that the clausal interpretations are basic and that the manner readings are derived. It goes without saying that one cannot reverse Ernst’s idea and argue that the clausal readings are derived from the manner readings, because in that case modal adverbs would arise from a vacuum. Thus it seems that Ernst’s desire to avoid redundancy in the lexicon drives us to an impasse.

Exocomparatives can take speech-acts, propositions and events as their argument, depending on what exactly is compared. Consequently, they can also have manner readings (when specified events are compared). The ambiguity between manner and clausal interpretation is also present in the case of domain adverbs. The distribution of functional adverbs is less restricted than that of predicational adverbs. Of course, semantic clashes may occur, but in general their position is fairly free, although influenced by Weight Theory.

12 The formulation of this rule is too technical to be included here; moreover, the precise formulation is not really of great importance. I refer the reader to Ernst (2002).
3.3.4.2 Ernst’s presentation of arguments

It is important to emphasize once again that in Ernst’s framework adverbials are not strictly related to a specific syntactic projection. In principle, they can be adjoined everywhere as long as their semantic requirements, translated in the FEO-calculus, are met. On this point, he manifestly disagrees with Cinque (1999), who assumes that each adverbial is tied to a specific functional projection. The latter approach is a consistent re-interpretation of adverb syntax in the spirit of Kayne’s (1994) restrictive phrase structure theory, the simplicity of which has been widely applauded in generative theory. Ernst, however, argues that this simplicity causes unnecessary complications in other parts of the grammar, more specifically in movement theory. I would like to draw attention to the fact that, although he adequately reveals the debatable aspects of Cinque’s approach, his presentation quite cleverly highlights the advantages of his own framework. After a comparison of both theories with regard to a couple of phenomena, he offers the following summary:

(49) Mechanisms of the Feature Theory [i.e. Cinque]
   (a) stipulated order of heads for licensing (at least predicational) adjuncts
   (b) additional syntactic conditions on topicalization
   (c) extra triggers for auxiliary movement
   (d) extra device to distinguish sentential and constituent negation non-structurally
   (e) encoding of scope for each occurrence of a Functional adjunct in its licensing head
   (f) something to condition the syntactic difference between unique heads for adverb licensing versus iterable v’s for participant PPs
   (g) constraints on morphological realization of functional heads in DPs with respect to clauses
   (h) (scope-based mechanism or) arbitrary generalizations about which types of adjuncts may have alternate positions
   (i) some extra principle for coordinated adjuncts of different classes (or stipulations to account for exceptions to deletion processes)
   (j) scope-based mechanisms

(50) Mechanisms of the Scope Theory [i.e. Ernst]
   (a) the FEO Calculus
   (b) limited triggers on auxiliary movement
   (c) lexico-semantic selectional (scope) requirements
   (d) scope-based mechanisms

Obviously, when presented in this way Ernst’s own theory looks more attractive than Cinque’s. However, this is to a great extent the consequence of the perspective
chosen. Of course, it is true that Cinque’s approach is faced with a few problems and that his movement theory needs some improving, but this is merely a logical consequence of his attempt to offer a syntactic account. Ernst, however, remains largely silent about syntactic issues and leaves most work to semantics. Naturally, if there aren’t many problems, it is simply because the relevant questions are not asked, and this approach makes Ernst’s theory look more restrictive. My point is that catching Cinque on details and offering only the broad lines of one’s own theory is rather unfair. However, that does not diminish the great merits of Ernst’s framework. I simply do not share all his assumptions. However, a comparison of Ernst’s, Cinque’s and my own approach will be offered in chapter 7. To conclude this initial exploration of Ernst’s theory, I will try to uncover the stipulative part of his tenets, since stipulativeness is the deficiency which he most often points out in the work of his opponents.

3.3.4.3 PredP and the ban on left adjunction in VP

Ernst (2002: 168) offers the following phrase structure tree, in which all the possible attachment sites for adverbials are indicated:

(51)
Adverbials can be freely left- or right-adjointed, and only left-adjunction to VP is not possible. The existence of a PredP is postulated and the verb is obligatorily moved to Pred. Since the object resides in Spec,VP, the adjacency between verb and object (in English) is warranted. Left-adjunction to VP would destroy this obligatory adjacency. When one takes a careful look at the tree in (51), one could ask what the effect might be of right-adjointing to PredP in comparison with right-adjointing to VP. As the attachment of adverbials to either of these places will not produce any difference in word order (and hardly in scope), one of the two positions seems to be redundant. If the distribution of adverbials in these positions is taken into account, things even become more suspect. Ernst states that manner, domain and measure adverbs adjoin to VP if they are postverbal (i.e., right-adjointed to VP) and to PredP if they are preverbal (i.e., left-adjointed to PredP). This leaves the question what right-adjunction to PredP is designed for. Ernst claims that Participant PPs (instrumental, comitative, benefactive, etc.) adjoin to PredP, and not to VP, but his arguments are rather unsatisfactory. First, he offers two pieces of evidence from English. Participant PPs are less felicitous before manner adverbs than after them. This is illustrated below.

(52) (a) She was working very slowly with that drill
     (b) *She was working with that drill very slowly

Furthermore, manner adverbs may precede particles and subcategorized PPs fairly easily, while Participant PPs do not.

(53) (a) *She moved it quite slowly away
     (b) *She moved it with a spoon away
(54) (a) She signed the bill boldly into law
     (b) *She signed the bill with a gold pen into law

To begin with, other factors might be involved, such as the fact that the Participant PPs and manner adverbs differ in categorial status or that a specific pragmatic context might override the acceptability judgements. Moreover, the examples demonstrate that manner adverbs are more central to the verb than participant PPs, but that does not have to mean that the former should be adjoined to VP and the latter to PredP. One could argue that both are adjoined to VP and that the participant PPs are adjoined more outward because of their semantic scope requirements, as this is the spirit of
Ernst’s framework. In his view there should be no one-to-one correspondence between adverbs and specific projections.

Ernst’s second argument concerns Chinese word order. Apparently, Chinese is very restrictive in admitting adverbials in postverbal position. Only ‘de-XPs’ (manner and resultative phrases) and duration and frequency expressions may be postverbal. According to Ernst, all of these are event-internal and so can adjoin to VP. Thus their rightward adjoinction is predicted. Participant PPs can only occur preverbally. This means that they can only adjoin to PredP, and not to VP. Seemingly, this property is only derived from the fact that they must precede the verb. However, Ernst admits that certain types of VP-internal adverbials (repetitive *again, completely*) are not found postverbally in Chinese as might be expected. In these cases, Ernst resorts to the explanation that these adverbials are morphologically Lite and thus preverbal for weight-theoretic reasons. The dichotomy between VP-internal and not-VP-internal adverbials, then, seems less defined with regard to pre- or postverbal position.

A picture emerges in which preverbal position is linked to PredP-adjunction and postverbal position to VP-adjunction. This looks like an artefact of the assumption that left-adjunction to VP is prohibited. The PredP is mainly created to provide a position for preverbal adverbials without being forced to abandon the ban on left-adjunction to VP. Ernst claims that this ban rests on general grounds supplied by the Directionality Principles. In head-initial languages, C-direction is active, which means that elements of the C-complex end up to the right of the head (roughly, the complements follow the verb). Because C-direction is active, any adjunct in the lexical VP as well is required to right-adjoin. Adjuncts in PredP can left-adjoin, because PredP is [-Lex] and therefore C-direction does not apply. VP, by contrast, is [+Lex] and according to the Directionality Principles, this precludes left-adjunction. It is obvious that the postulation of a functional PredP is stipulative. The idea that the verb should be raised from a lower VP to a higher projection is borrowed from Larson (1988). However, Ernst adds the provision that this higher projection should be a [-Lex] PredP, whereas in Larson’s original proposal, the verb moves to a higher VP-shell, i.e. a [+Lex] projection. In other words, Ernst uses the verb movement procedure to make sure that the verb has [+Lex] properties by its trace in VP, and [-Lex] properties by its position in PredP. This ambiguity is necessary to maintain that the Directionality Principles prohibit left-adjunction in VP, but permit left-adjunction.
in PredP. It appears, then, that the whole situation is set up to ban left-adjunction to VP, from which the verb must be raised.

Ernst’s further evidence for this claim is not really convincing. First, he argues that the verb-object adjacency can thus be explained. If V is always raised to Pred, if direct objects are in Spec,VP and if adjuncts may not left-adjoin to VP, the adjacency pattern is easily accounted for. I would claim, however, that this is not an argument but rather the motivation for the whole enterprise (assuming V-to-Pred movement and banning left-adjunction to VP). The next argument concerns the scope of focusing adverbs. According to Ernst, the following opposition cannot be explained in theories allowing left-adjunction to VP.

(55) (a) Carol had bought only *barbecue sauce for the picnic on Friday
(b) *Carol had bought only barbecue sauce for the *picnic on Friday

In (55a), only forms a constituent with the DP, so that the focusing adverb does not c-command the PPs. Ernst asserts that this is only guaranteed if left-adjunction is always barred in such structures. This criticism may hold in Larsonian versions of left-adjunction theories, but the problem probably vanishes if the intraposition analysis (as in Barbiers 1995) is adopted. The third argument concerns a very specific problem in Chinese. This language has an unusual kind of postverbal manner adverbial of the form *de-AP, which has the oddity of excluding all other postverbal constituents. In Ernst’s analysis, the adjunction of manner adverbials to the left in VP would yield ungrammatical structures. On the other hand, neither can it be said that Chinese manner adjuncts are generally barred from adjoining to the left in principle, since they can occur preverbally. Ernst assumes that manner adverbials are adjoined to the left in PredP in these cases. The argumentation is too technical and language-specific to come up with an alternative solution, but the argument does not really look compulsive. Next, Ernst claims that the following judgements can only be explained if the preverbal adverbial is adjoined to PredP, if the particle is moved rightward to no more than a very limited distance, and if left-adjunction to VP is prohibited.

(56) (a) They immediately skated over smoothly
(b) They immediately skated smoothly over
(c) They skated immediately over
(d) They skated smoothly over
(e) *They skated immediately smoothly over
(f) *They skated smoothly immediately over
It does not take much imagination to come up with a leftward movement analysis with equal explanatory adequacy. For instance, one could assume (in the spirit of chapter 6) that the VP is moved leftward across the adverbials and that the particle cannot be stranded at such a distance. Finally, Ernst points to the distribution of certain manner adverbs.

(57)  
(a) Joe (*poorly) built the house (poorly)  
(b) Al (*horribly) performed the pirouette (horribly)

First, I wonder to what extent these examples are relevant to the ban on left-adjunction to VP, since, in the ungrammatical versions, the adverb precedes the verb and should be adjoined to PredP in Ernst’s framework. Moreover, Ernst notes that these adverbs can occur preverbally, “if the verb is less transitive”.

(58)  
(a) Jane poorly understood what was required of her  
(b) This idea (rather) poorly correlates with the facts

In my opinion, this is not related to transitiveness but rather to the fact that the adverbs in (57) can hardly be backgrounded. As Ernst (2002: 272) himself notes, a background interpretation is required if the adverb occurs preverbally.

In brief, the ban on left-adjunction to VP appears to be rather stipulative and is probably designed, together with V-to-Pred movement, to deal with the troublesome phenomenon of verb-object adjacency in English. Unfortunately, this results in an awkward theory about adverb distribution, in which adverbs adjoin to different projections depending on their preverbal or postverbal position (left-joined to PredP or right-joined to VP, respectively).

This concludes the discussion of Ernst’s framework for adverb syntax. Although I have lingered over the shortcomings of his approach, I would like to repeat that Ernst’s book in the first place offers a rich and elegantly developed theory on adverbials, the merits of which do not show up adequately in such a brief review.
3.4 Domain theories

There are yet other approaches to adverb syntax, but they cannot be categorized as tight-fit or loose-fit, since they take an intermediate position between these two poles. On the one hand, they posit syntactically determined positions for adverbials, which is in line with the Cinquean tight-fit approach. On the other, they do not assume each adverbial type to have its specific position, but suggest that adverbials should be divided into different classes or domains. These classes are related to designated syntactic positions, but the hierarchy and the order between adverbials of the same class is regulated by semantics. The latter aspect of these theories is more in the spirit of loose-fit approaches such as Ernst (2002). In the following I will first discuss the work by Frey and Pittner and next the proposals made by Laenzlinger (1996, 1998, 2000). In connection with the latter, I briefly mention some observations by Tenny (2000).

3.4.1 Frey & Pittner

This theory was first presented in Frey & Pittner (1998a, b) and further elaborated in Pittner (1999) and Frey (2003). The authors distinguish the following adverb or adjunct classes:

(59)  

<table>
<thead>
<tr>
<th>Adjunct classes</th>
<th>(a) process-related adjuncts: means and manner</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(b) event-internal adjuncts: instrument and comitative, local adverbials, mental attitude adverbs</td>
</tr>
<tr>
<td></td>
<td>(c) event-external adjuncts: temporal, causal adverbials</td>
</tr>
<tr>
<td></td>
<td>(d) sentence adjuncts: evidentials, evaluatives, epistemic adverbs</td>
</tr>
<tr>
<td></td>
<td>(e) frame adjuncts: local and temporal adverbials restricting the validity of the proposition</td>
</tr>
</tbody>
</table>

These five adjunct classes engage into varying c-command relationships with the verb, the arguments and each other. This is formulated in Frey (2003) as follows:
(60)  

(a) the base position of a *frame adjunct* c-commands the base positions of all arguments and of all remaining adjunct types except sentence adjuncts.\(^\text{13}\)

(b) the base position of a *sentence adjunct* c-commands the base positions of all arguments and of all other adjuncts and the base position of the finite verbal form.

(c) the base position of an *event-external adjunct* minimally c-commands the base position of the highest ranked argument and the base positions of the event-internal arguments.

(d) the base position of an *event-internal adjunct* is minimally c-commanded by the base position of the highest ranked argument.

(e) the base position of a *process-related adjunct* minimally c-commands a base position of the main predicate.

Some rules refer to “the highest ranked argument”. Most of the time, this is the subject, but, certainly in German, not in all cases. As F&P’s papers deal primarily with German, they choose this more precise formulation. Thus the provisions in (60) determine the position of adverbials in relation to the verb, the arguments and other adverbial classes. The order between adverbials of the same class is established by semantics. That does not mean that adverbials always show up in these positions. The order between arguments and adverbials can be mixed up by scrambling (in German). In other words, F&P only try to derive syntactic base positions and use tests about focus projection, theme-rheme articulation, the position of indefinite w-pronominals and Principle C effects to prove their point. Since their claims will be dealt with extensively in chapter 5, I will not add further comments on the justification of their approach here.


The proposals by Laenzlinger are, in fact, very similar to Cinque’s. Laenzlinger also argues that adverbs should be considered as operators, i.e. A’-elements occupying a specifier position. As in Cinque’s framework, adverbs fill the specifier of the projection whose head is endowed with the appropriate features. The only difference is that Laenzlinger does not assume the whole bulk of Cinque’s functional projections.

\(^{13}\)With regard to frame adjuncts, Frey & Pittner (1998a, b) and Frey (2003) differ. In the former, frame adjuncts are claimed to c-command all other adjuncts. In the more recent version, it is added that sentence adjuncts constitute an exception. This is probably more correct.
but restricts himself to a smaller number of projections. In Laenzlinger (1996, 1998),
different adverbial types are linked to fairly generally accepted projections (only the
distinction between IP-aspect and VP-aspect might be less common). The adverbials
in Spec-position are checked with the relevant feature of their heads:

(61) \[ CP \   \text{Adv}_\text{modal} \  \text{TP} \   \text{Adv}_\text{event} \  \text{Asp}_\text{IP} \   \text{Adv}_\text{frequency} \  \text{Asp}_\text{VP} \   \text{Adv}_\text{quantification} \  \text{VP} \   \text{Adv}_\text{manner} \] 

(62) \[ CP \  C^o \  \text{truthvalues} \  \text{TP}^o \  \text{event} \  \text{Asp}_\text{S} \  \text{Asp}^o \  \text{process/state} \  \text{Asp}_\text{VP} \  \text{Asp}^o \  \text{activity} \] 

The hierarchy of adverbs presented in (61) is derived, not directly from their semantic
properties, but from the ordering of the clausal projections in which these adverbs are
independently licensed. The tree from Laenzingler (1998: 292) is a nice illustration:

(63) \textbf{Adverb hierarchy}
Laenzlinger also notes that not all adverbs always occur in their licensing domain. In the following French example, he suggests that the modal adverb is able to undergo Quantifier Raising to its scope position at LF, along the lines of Travis (1988).

(64) \[[\text{AgrsP} \text{ Ils n’ont} [?P \text{ probablement} [\text{NegP pas} [\text{AspP/IP souvent} [\text{AspP/VP trop mangé}]])]]\]

Laenzlinger (2000) takes a slightly different stance on the nature of the functional projection. The more traditional labels from his earlier writings are substituted by the tree in (65).

(65) MoodP
    \hspace{1cm} ModP
    \hspace{1cm} TP
    \hspace{1cm} AspP
        \hspace{1cm} vP
    \hspace{1cm} VP

Essentially, he takes the functional projections from Cinque (1999) (see (12)) and groups them into a couple of domains.¹⁴ Clause structure is composed of only this set of root functional categories, each of which is associated with functional features. The order between adverbials belonging to the same domain is regulated by the feature hierarchy below.

(66) MoodP >> ModP >> AspP(high) >>

<table>
<thead>
<tr>
<th>F1=speech-act</th>
<th>F1=epistemic</th>
<th>F1=habitual</th>
<th>F1=perfect(I)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;F2=evaluative</td>
<td>&gt;F2=repetitive</td>
<td>&gt;F2=continuative</td>
<td>&gt;F2=continuative</td>
</tr>
<tr>
<td>&gt;F3=epistemic</td>
<td>&gt;F3=frequentative</td>
<td>&gt;F3=perfect(II)</td>
<td>&gt;F3=perfect(II)</td>
</tr>
<tr>
<td>&gt;F4=epistemic</td>
<td>&gt;F4=retrospective</td>
<td>&gt;F4=retrospective</td>
<td>&gt;F4=retrospective</td>
</tr>
<tr>
<td>&gt;F5=epistemic</td>
<td>&gt;F5=proximative</td>
<td>&gt;F5=proximative</td>
<td>&gt;F5=proximative</td>
</tr>
<tr>
<td>&gt;F6=epistemic</td>
<td>&gt;F6=duратive</td>
<td>&gt;F6=duратive</td>
<td>&gt;F6=duратive</td>
</tr>
<tr>
<td>&gt;F7=generic/progressive</td>
<td>&gt;F7=generic/progressive</td>
<td>&gt;F7=generic/progressive</td>
<td>&gt;F7=generic/progressive</td>
</tr>
<tr>
<td>&gt;F8=prospective</td>
<td>&gt;F8=prospective</td>
<td>&gt;F8=prospective</td>
<td>&gt;F8=prospective</td>
</tr>
<tr>
<td>&gt;F9=completive</td>
<td>&gt;F9=completive</td>
<td>&gt;F9=completive</td>
<td>&gt;F9=completive</td>
</tr>
<tr>
<td>&gt;etc.</td>
<td>&gt;etc.</td>
<td>&gt;etc.</td>
<td>&gt;etc.</td>
</tr>
</tbody>
</table>

¹⁴ In chapter 7 Laenzlinger’s domains are compared with the FG hierarchy.
In other words, not all of Cinque’s functional projections are considered syntactically relevant, only a couple of ‘domains’. Further discriminations are handled semantically, as in Frey & Pittner’s theory.

3.4.3 Tenny 2000

Tenny’s approach is very much in line with Laenzlinger’s. Like Laenzlinger she divides Cinque’s hierarchy into a couple of semantic zones. The proposal is that each of the semantic zones corresponds to a functional projection in syntax. She distinguishes the following six semantic zones:

(67)  
point of view  \[\text{point of view} \quad \text{[Frankly Mood}\_\text{speech act} \quad \text{[fortunately Mood}\_\text{evaluative} \quad \text{[allegedly Mood}\_\text{evidential} \quad \text{[probably Mod}\_\text{epistemic}}\]

(deictic time) \[\text{(speaker deixis)} \quad \text{[once T(Past) \quad [then T(Future)\]

(truth value) \[\text{[perhaps Mood}\_\text{irrealis} \quad \text{[necessarily Mod}\_\text{necessity} \quad \text{[possibly Mod}\_\text{possibility}}\]

(subject-oriented) \[\text{[willingly Mod}\_\text{volitional} \quad \text{[inevitably Mod}\_\text{necessity} \quad \text{[cleverly Mod}\_\text{ability/permission}}\]

(middle aspect) \[\text{[usually Asp}\_\text{habitual} \quad \text{[again Asp}\_\text{repetitive(I)} \quad \text{[often Asp}\_\text{frequentative(I)} \quad \text{[quickly Asp}\_\text{celerative(I)} \quad \text{[already T(Anterior)} \quad \text{[no longer Asp}\_\text{terminative} \quad \text{[still Asp}\_\text{continuative} \quad \text{[always Asp}\_\text{perfect(?)}} \quad \text{[just Asp}\_\text{proterospective} \quad \text{[soon Asp}\_\text{proximative} \quad \text{[briefly Asp}\_\text{durate} \quad \text{[characteristically (?)}} \quad \text{Asp}\_\text{generic/progressive} \quad \text{almost Asp}\_\text{proterospective}}\]

(core event) \[\text{[completely Asp}\_\text{completive(I)} \quad \text{[tutto Asp}\_\text{completive}} \quad \text{well Voice} \quad \text{[fast/early Asp}\_\text{celerative(I)} \quad \text{[again Asp}\_\text{repetitive(I)} \quad \text{[often Asp}\_\text{frequentative(I)}}\]

These zones correspond to functional projections in the tree below.
3.5 Summary

In this chapter I have offered a short overview of the major trends in generative adverb syntax. After discussing some early accounts, I distinguished the different existent approaches into three groups: tight-fit theories, loose-fit theories and a group taking an intermediate position, which I call domain theories. It is obvious that this classification is not always straightforward. It might be objected, for instance, that the proposals by Travis (1988) and Bowers (1993) are very much related to Laenzlinger’s concepts. As a matter of fact, only Svenonius (2002) and Ernst (2002) are hardcore proponents of a loose-fit theory. They argue that adverbials are not exclusively related to a specific position in phrase structure, but can, in principle, be inserted everywhere in the structure as long as their semantic requirements are met. Thus adverbial
distribution is primarily determined by semantics and little is left over to syntax. Cinque’s theory (1999) is probably the best example of the tight-fit hypothesis, which assumes that adverbials take fixed positions in the sentence. However, this camp is again divided into two parties. Larson (1988, 1990) and Stroik (1990) assume that adverbials should be considered innermost complements, while Cinque (1999) and Nilsen (2000) take them to be specifiers of functional heads. Alexiadou (1997) takes a mid-position in this debate by allowing adverbials into both positions. Rosengren (2003) follows Larson, but does not treat adverbials on a par with arguments by assuming the existence of an empty VP (outside the MAC).

Finally, three approaches can be classified as ‘domain theories’. Frey & Pittner, Laenzlinger and Tenny recognize that adverbials belong to a certain domain of clause structure and that these domains are syntactically marked off. However, further domain-internal distinctions are established by the semantic properties of the relevant adverbials.

The theory developed in this dissertation will chiefly follow the path of domain theories and will eventually be quite similar to Laenzlinger’s approach. It will be assumed that adverbials occupy fixed syntactic positions without recurring to the extensive functional hierarchy of Cinque (1999). Instead, it will be argued that adverbials belong to different ‘fields’ or ‘domains’, which are essentially the layers proposed in the FG framework. However, before I elaborate such a theory, some aspects of the relation between adverb syntax and phrase structure must be fleshed out.
Chapter 4: Analyzing the left periphery

One of the most striking observations when comparing the FG theory of adverbials from chapter 2 with the generative accounts in chapter 3, is the little interest shown in the difference between the propositional and the illocutionary levels in generative literature. The opposition between the levels is rarely touched upon and is usually considered irrelevant. Ernst’s (2002) FEO-calculus is one of the few instances treating speech act as a category of theoretical significance, as it constitutes the upper layer of the FEO-hierarchy (see section 3.3.4):

(1) Speech-Act > Fact > Proposition > Event > Specified Event

However, in developing his theory Ernst is “leaving speech-act aside for the moment” (2002: 53). In fact, it is hardly mentioned again in the following 400 pages. Some scholars even use notions such as ‘epistemic modality’ and ‘illocutionary force’ as synonyms (see for instance the discussion on emphatic topicalization in Bayer (2001: 26)). In my opinion the conflation of these concepts is a theoretical drawback in generative linguistics and in this chapter I hope to show that the difference between the propositional and the illocutionary level does have linguistic relevance and should therefore not be ignored.

A great deal of work on different levels of embedding of adverbial clauses has been done by Liliane Haegeman (1984a, b, c, 1991, 2002a, 2003a, b, c). Her research focuses on the varying degree of integration of adverbials, which she exemplifies with the following contrasting pair:

(2) (a) If it rains we will all get terribly wet and miserable
(b) If it is going to rain this afternoon, why don’t we just stay at home and watch a video?

The conditional clause in (2a) is more integrated than that in (2b). In FG theory the subordinate clause would be said to modify the SoA or event in the former sentence, while in the latter the conditional clause is attached at the illocutionary level. In other words, we are dealing with the contrast between a $\sigma_2$ predicational and a $\sigma_4$
Illocutionary satellite. However, when elaborating her theory on structure truncation (see section 4.3.1), Haegeman resorts to other types of sentences, as in (3).

(3)  
(a) If it was already four o’clock when he left, John will never make it.
(b) If John lives in Rome, he probably never uses his bike.

The sentence in (3a) is different from that in (2b). In the former, the subordinate clause modifies the proposition and not the illocutionary force. Although Haegeman acknowledges this distinction (Haegeman 1991: 247), it never receives any theoretical importance. Propositional and illocutionary satellites are treated on a par and are both associated with the Force field. ‘Force’ is a term borrowed from Rizzi’s (1997) framework and in Haegeman’s theory it is said to “encode the point of view of the speaker”. In FG terms the point of view of the speaker is more likely to be associated with the propositional level rather than with illocutionary force. Haegeman admits in footnotes (Haegeman 2002, fn. 4; 2003c: fn. 26) that in some cases, epistemic modality is involved rather than illocutionary force. The use of the term ‘Force’ to refer to the speaker’s point of view or epistemic modality may therefore be somewhat misleading. In any case, the distinction between the propositional and the illocutionary layer is irrelevant in the conceptualization of Haegeman’s theory.\footnote{At least in her papers up until 2003. Haegeman (2004b) pays more attention to the possibility of further distinctions.}

In the following two sections, I will address the question whether this approach is legitimate and I will look at the evidence in support of Haegeman’s claims. Section 4.1 brings together the facts which point to a unitary treatment of the interpersonal satellites (i.e. \(\sigma_3\) and \(\sigma_4\)) or, in Haegeman’s terms, peripheral clauses, in contrast with the representational satellites (\(\sigma_1\) and \(\sigma_2\)) and central clauses, respectively. The evidence in section 4.2, however, reveals how debatable it is to ignore the distinction between the propositional and the illocutionary layer.
4.1 Peripheral vs. central adverbial clauses

Haegeman (1984a, b, 1991, 2002a, 2003a, b, c, 2004a) offers a couple of criteria for distinguishing between peripheral and central adverbial clauses. In her examples she always contrasts an event-related subordinate clause (σ2) on the one hand with a proposition-related (σ3) or illocutionary clause (σ4) on the other, without testing whether the same results are obtained with both propositional and illocutionary clauses. This section offers an overview of those tests for which this result applies.

4.1.1 Comma intonation

Comma intonation is mentioned as a criterion for distinguishing central from peripheral adverbial clauses in Haegeman (1984a), but she does not actually offer examples. We can repeat the examples from section 2.2.2.1. The subordinate clauses in (4a-b) are central while those in (4c-d) are peripheral. We should add the proviso that measuring comma intonation is rather cumbersome, which reduces the reliability of the criterion.

(4)  
(a) They didn’t treat us as if we were babies (σ1)  
(b) They have been living here since their father returned (σ2)  
(c) He can’t speak Dutch well, because he lived most of his life in the US (σ3)  
(d) The book is on the second shelf, if you are interested (σ4)

4.1.2 Questioning

Central adverbial clauses can be questioned, while this is not possible for peripheral clauses, as shown by the sentence pairs in (5-6) (Haegeman 1984b). Example (7) demonstrates that propositional clauses behave like illocutionary clauses in this respect (see also section 2.2.2.6).
(5) (a) John will help you if you ask him kindly
      (b) Under what condition will John help me? If you ask him kindly
(6) (a) There is food in the fridge, if you’re hungry
      (b) Under what condition is there food in the fridge? *If you’re hungry
(7) (a) If John is a competent manager, I am the pope
      (b) Under what condition are you/am I the pope? *If John is a competent manager

4.1.3 Clefting

Apart from questioning, another device to focus a subordinate clause is clefting. Not surprisingly, we obtain the same result as with questioning: the central adverbial clause in (8) can be clefted. This contrasts with the propositional and the illocutionary clauses in (9) and (10) (see section 2.2.2.6).

(8) (a) If I drink too much wine I always get dizzy
      (b) It is always if I drink too much wine that I get dizzy
(9) (a) John studied mathematics in Cambridge, while his son is studying physics in Oxford
      (b) *It is while his son is studying physics in Oxford, that John studied mathematics in Cambridge
(10) (a) If you’re hungry, there’s food in the fridge
       (b) *It is if you’re hungry that there is food in the fridge

4.1.4 Scope of negation

As noted in Haegeman (1991), peripheral adverbials are outside the scope of the negative operator of their associated main clause, whereas central adverbials are within its scope (see section 2.2.2.2). This can be deduced from the fact that discourse continuation in (11a) is perfectly normal, while it becomes problematic in case of a propositional or an illocutionary clause, as in (11b) en (11c).

(11) (a) John does not study while his children are asleep, but rather while they are out in the playground
      (b) *John did not study mathematics in Cambridge, while his son is studying physics in Oxford, but while his daughter is studying classics in London
      (c) *John did not study mathematics in Cambridge, while you are talking about John, but while you are mentioning Cambridge
4.1.5 Adverbial scope

According to Haegeman (2002a), central adverbials may and peripheral adverbials may not be within the scope of adverbial adjuncts in the main clause. This is illustrated in (12), where a predicational ($\sigma_2$) and a propositional ($\sigma_3$) conditional are contrasted. In (12a), never has scope over the subordinate clause, which is not the case in (12b). We obtain a similar result with the focus operator only in (13). In the predicational conditional clause (13a), if is to be interpreted as ‘only if’, while the propositional conditional in (13b) is not in the scope of only.

(12)  

(a) There is no presumption that white professionals should set an example to young, white, working-class youths. If they fail, their failure is never understood in terms of racial disappointment (Guardian, G2, 27.3.2, page 10, col 5)  

(b) I was occasionally aware of Waters’s unstoppable appetite for detail, her determination to draw out every moment. Could it, should it, perhaps have been edited a little? But if the writer and critic in me asked these questions, the reader never did, not for a single moment. (Guardian, 2.2.2., page 14, col 4)

(13)  

(a) John will only finish the book if there is a lot of pressure on him (‘only if’).  

(b) John will only finish the book, if there is already such a lot of pressure on him (he won’t finish anything else).

We can construct the following examples to check these observations with illocutionary adverbials:

(14)  

(a) John has never been a catholic, if you are interested  

(b) John only eats vegetables, if you wanna know
4.1.6 Quantifiers and bound pronouns

Scope relations between quantifiers and pronouns also make a distinction between central and peripheral clauses. In (15) the pronouns *he* and *his* can be interpreted as variables bound by the quantifiers *no one* and *everyone*, while those in (16) can only have independent reference. Again, this is confirmed for illocutionary clauses by the examples in (17).

(15) (a) *No one* will answer the phone if *he* thinks it’s *his* supervisor
    (b) *Everyone* gets worried if *he* sees *his* mother on campus

(16) (a) Why does *no one* answer the phone, if *he* probably thinks it’s *his* supervisor?
    (b) *Every student* will be worried, if *he* may have seen *his* mother on campus yesterday.

(17) (a) *No one* is in his office, if you came to see *him*
    (b) *Everyone* is out of office, if you came to see *him*

4.1.7 Parasitic gaps

Parasitic gaps can be licensed in central adverbial clauses, as shown in (18), while they are not possible in peripheral clauses (see (19)). This can be explained if peripheral clauses fall outside and central clauses inside the c-command domain of the trace in the main clause. Example (20) shows that illocutionary adverbials should also fall outside the c-command domain of the trace.

(18) (a) Which book did you want to destroy *t* while you read *e*?
    (b) It is a book which you want to destroy *t* while you read *e*

(19) (a) *Which book did John teach *t* last year, while John’s wife will teach *e*
    next year?
    (b) *This is the subject which John taught *t* last year, while his wife will teach *e*
    next year

(20) (a) *Which book did you talk about *t* yesterday, because I need *e*
    (b) *That’s the book which I talked about *t*, if you want to read *e*
4.1.8 Summary

In this section we have listed a few tests for distinguishing predicational clauses (central adverbials) on the one hand from propositional and illocutionary clauses (peripheral adverbials) on the other. Peripheral clauses cannot be focused and, consequently, they do not tolerate questioning or clefting. Furthermore, they cannot be in the scope of and consequently should fall outside the c-command domain of certain elements in the main clause, as proved by the tests concerning negation, adverbial scope, binding of pronouns by quantifiers, and parasitic gaps. Finally, peripheral clauses are set off from the main clause by comma intonation. Propositional and illocutionary subordinate clauses behave similarly for all these criteria. Even from a FG angle this is not surprising, since both types belong to the interpersonal level. Therefore, it is expected that they have some properties in common. In the next section, however, I will draw attention to the ways in which the two types differ.

4.2 Propositional vs. illocutionary clauses

This section reviews those tests from Haegeman’s work for which a unitary treatment of propositional and illocutionary satellites appears to be questionable.

4.2.1 Constituent order

Haegeman (1984b: 488) states that, when peripheral and central adverbials co-occur, the former occurs less centrally than the latter. In other words, peripherality is represented iconically in constituent order:

---

16 I would like to recall the observations from section 2.3, which show that negation and intonation are not always reliable as empirical tests.
(21)  (a) If you like the country so much, why do you always go to London if you have time off?
(b) *Why do you always go to London if you like the country so much if you have time off?
(c) Why do you always go to London if you have time off, if you like the country so much?

However, this observation also holds for the relation between propositional and illocutionary clauses. Since the latter are more peripheral than the former, the order between the adverbial clauses is not free:

(22)  (a) John should know about wines if John’s wife is French, if I might say so
(b) *John should know about wines if I might say so, if John’s wife is French

This test proves that propositional and illocutionary clauses are different categories.

4.2.2 Coordination

Tests about coordination possibilities produce a similar result. Haegeman (2002a: 132) asserts that it is not “possible to co-ordinate an event-conditional with a premise-conditional. When two conditional clauses are conjoined they either both structure the event (23a) or they both structure the discourse (23b)”:

(23)  (a) The party is also in danger of alienating older people above the poverty line, Mr Cable argues; ‘Both these groups will swing to the Conservatives if the Tories are smart enough and if we have nothing much to offer them.’ (Guardian, 11.2.2., page 6, col 5)
(b) Not only has [Sir Richard] failed to keep his warring department in check but he is claimed to have swerved from readiness to do a deal with Mr Sixsmith to fury at a government ‘complete cock-up’, before finally throwing in his lot with Mr Byers…But if Sir Richard has been tainted by the affair, and if Mr Sixsmith’s role may not have been as entirely well-intentioned as he claims, the individual most damaged by the row remains Stephen Byers- (Guardian, 25.2.2, page 4, col 3)

From the viewpoint of FG, it would be quite inappropriate to say that the if-clauses in (23b) structure the discourse. They are propositional clauses and relate to the truth value of the main clauses rather than to the communicative strategy of the speaker.
That this distinction is relevant is shown by the examples in (24). Co-ordinating a propositional with an illocutionary clause is as cumbersome as co-ordinating a central and a peripheral clause.

(24)  
(a) *Why do you always go to London if you have time off and if you like the country so much?  
(b) *John should know about wines if John’s wife is French and if I might say so

4.2.3 Tags

As noted in Haegeman (2003a), predicational and propositional clauses take different question tags. When a predicational clause ($\sigma_2$) follows the main clause, the tag is formed on the matrix verb (see 25a). The propositional clause ($\sigma_3$) in (25b) demands its own tag and makes tagging of the matrix verb impossible.

(25)  
(a) Every student has to keep careful accounts while he is at university, doesn’t he/*isn’t he?  
(b) Bill took a degree at Oxford, while his son is studying at Cambridge, isn’t he/*didn’t he?

Remarkably, illocutionary adverbials do not tolerate tags:

(26)  
(a) John acts like an idiot, if he is familiar to you, ?doesn’t he/*isn’t he?  
(b) John is a complete idiot, if I can speak frankly, ?isn’t he/*can’t I?

4.2.4 If-then constructions

Haegeman (2003a, footnote 5), referring to Iatridou & Kroch (1992), notes that, in embedded contexts, central adverbial clauses resist the if-then construction while they

---

17 This is in line with what Hooper & Thompson (1973) note about their class A and class B verbs. A tag may be formed from the complement of class B verbs (e.g. suppose, guess), which are propositions or third order entities (see section 4.3.1), but not from the complement of class A verbs (e.g. say, claim), which are fourth order entities:
(i) I suppose that most embarrassing of all was falling off the stage, wasn’t it/*don’t I?  
(ii) I guess to read many comic books is a waste of time, isn’t it/*don’t I?  
(iii) I claim that deep structures are green, *aren’t they/don’t I?  
(iv) I say that Hannah is the best wrestler, *isn’t she/don’t I?  

95
are allowed in peripheral clauses. Example (27a) below is offered by Iatridou en Kroch. When we interpret Haegeman’s statement using examples from the preceding sections, this yields the judgements in (27b-c). Unfortunately, (27d) shows that *then cannot be combined with an illocutionary conditional.

(27)  
(a) Every boy wonders if his mother comes down (*then) what he will eat  
(b) Peter says that if it rains, (*then) the grass will be too wet to play on  
(c) Peter says that if John’s wife is French, (then) he should know about wines  
(d) Peter says that if you’re hungry, (*then) there is food in the fridge

Apparently, this deviant behaviour of illocutionary clauses is not specific to embedded contexts. The following sentences demonstrate that *then can occur with predicational and propositional clauses, but not with illocutionary ones (see Wakker 1996).

(28)  
(a) If it rains, then the grass will be too wet to play on  
(b) If John’s wife is French, then he should know about wines  
(c) *If you’re hungry, then there is food in the fridge

These findings are rather puzzling, since the presence of *then (or dan in Dutch) is generally associated with a detached status of the subordinate clause (see Dik 1990 and Rijksbaron 1986 for discussion). One would expect illocutionary conditionals to have the most detached status of all conditional clauses and consequently their intolerance towards *then comes as a surprise. In any case, the data show that propositional and illocutionary satellites differ radically in this respect.

4.2.5 Causational links

In Haegeman (1984b), it is observed that the causational link between the subordinate and the matrix verb is different in (29a) en (29b):

(29)  
(a) If it rains the grass will be too wet to play on  
(b) If you’re hungry, there’s food in the fridge
When interpreting examples such as (29a) one will easily conclude from ‘if P then Q’ that ‘if not P then not Q’, in this case: ‘If it doesn’t rain the grass won’t be too wet to play on’. This is an invited, though not a necessary inference. In (29b), however, the invited inference from ‘if P then Q’ that ‘if not P then not Q’ is not valid. There is food in the fridge anyway, whether the addressee is hungry or not. In other words, the causational link between matrix and subordinate clause in the first sentence is absent in the second. However, in the examples offered by Haegeman illocutionary adverbials (σ₄) are contrasted with predicational clauses (σ₂). If we look at propositional adverbials (σ₃), we have a different picture.

(30) John should know about wines, if John’s wife is French

In this type of sentences, the subordinate clause offers evidence for the proposition stated in the main clause. It would be difficult to say that there is no causational link between the two clauses. ‘If John’s wife is not French, John shouldn’t know much about wines’ seems to be a legitimate inference, i.e. if the speaker’s assumption that John’s wife is French appears to be false, the proposition in the matrix clause should also be false. The situation is different in (29b). The proposition in the main clause is always true, whether the presupposition in the subordinate clause is false or not. Of course, the link in (30) is different from that in (29a). In the latter, two events are causally linked while we are dealing with the linkage of two propositions in the former sentence. Nevertheless, the relation between subordinate and main clause is entirely different in (29b). The if-clause merely provides the motivation for the speaker to make his statement.

4.2.6 Epistemic and illocutionary adverbials in the subordinate clause

Haegeman (2002a) observes that central adverbials cannot contain an expression of epistemic modality, whether it be a modal auxiliary or an adverb. This ban does not apply to peripheral clauses:

(31) (a) I will contact you if (and when) there is (*probably) any problem
     (b) If he probably is worried, why don’t you call him?
However, this observation has a broader range of application. Actually, epistemic adverbs are limited to propositional and illocutionary clauses and illocutionary adverbs occur only in illocutionary clauses, as can be seen in the following examples: 18

(32)  
(a) The flowers are growing well because I (*apparently/*frankly) gave them water  
(b) Peter is in Washington for he (apparently/*frankly) phoned his wife from there  
(c) If (apparently/frankly) I must say something about it, he doesn’t make a chance

It appears that all the four layers from FG theory should be considered when one tries to develop a theory on the occurrence of different types of adverbials in different types of subordinate clauses. Just stating that epistemic modality is banned in central adverbial clauses seems to be oversimplifying a complex matter. Section 4.3 and a great portion of the remainder of this dissertation will be devoted to this problem.

4.2.7 Principle C effects

From Haegeman (1984a) on, attention has been drawn to the different Principle C effects in central and peripheral clauses. This is illustrated by the following examples:

(33)  
(a) *John, did all the housework while John,’s wife was ill  
(b) *John, will know more about wine if John, has spent some time in France  
(c) *John, didn’t buy the wine because John, liked it  
(d) *John, has been away since John,’s wife left him

18 As already stated in section 2.3, the situation is even more complex than it is sketched here. Although there is certainly a relation between the internal and the external complexity of adverbial clauses, this relation is not one-to-one. It appears to be possible to construct clauses with a more complex internal make-up than their level of embedding. Consider for instance the following predicational (central) adverbial clause, which has the internal complexity of a proposition:  
(i) Sue went home because her sister would probably visit her
This problem cannot be solved easily (see also the tentative proposal in section 6.2.5).
(34) (a) John would study linguistics, while John’s father used to teach literature
(b) John should know about wines, if John’s wife is French
(c) John should know about wines, ’cos John spent a whole term in France
(d) John was fired, since John’s weird habit had finally reached an intolerable stage

Apparently Principle C does not apply in the peripheral clauses in (34), since the names can be co-referential with an element in the main clause. These data again suggest, as in some of the tests in the previous section, that the subordinate clause does not fall in the c-command domain of the subject NP in the main clause. All the examples in (34) contain propositional subordinate clauses. The observation is confirmed when we look at illocutionary clauses:

(35) (a) John is an alcoholic, if you want to know the truth about John
(b) Shut up about John, ’cos I don’t wanna hear about John’s bad behaviour

Thus, the behaviour of propositional and illocutionary clauses seems to be similar in this respect. Nevertheless, some differences emerge when we consider other data from Haegeman (1984a). She offers the following judgements:

(36) John/*He should know about language if John is a student of linguistics

Although John in the peripheral subordinate clause can be co-referential with a name in the main clause, backward pronominalization seems to be problematic. Strikingly, this does not hold for illocutionary clauses.

(37) (a) He is a complete idiot, if you want to know my opinion about John
(b) Hij is socialist, aangezien je blijkbaar Jans politieke overtuiging wil kennen

Judgements on Principle C effects are always a bit difficult, because interfering stylistic and pragmatic factors seem to be involved.19 When a context is provided, the

19 As Klaas Willems (p.c.) points out, this might even cast doubts on the judgements in (33-34). In his opinion, (33a) is an acceptable sentence. His point becomes clear, if we make some rearrangements:
(i) My father, did all the housework while my father’s aunt was ill
contrast between propositional and illocutionary clauses is even more prominent. Consider the following dialogue:

(38) A: Weet je wat Jan me daarnet komt vertellen? Hij beweerde dat het Japans een Indo-Europese taal is!
     B1: *Hij zou toch meer over taal mogen weten als Jan linguïstiek studeert
     B2: Hij zou beter wat meer opletten in de les, als ik mijn gedacht over Jan eens mag zeggen

The answer in B2, where a pronoun in the main clause is taken up by a proper name in the illocutionary subordinate clause, looks fine. The alternative in B1, however, which contains a propositional subordinate clause, is unacceptable. In other words, pronominalization and co-reference appear to obey different rules in illocutionary and propositional contexts. In the latter (the examples in (34)), two unrelated events are related by the speaker by making them into propositions and by linking them by means of a conjunction. In the former, an event is made into a proposition and confronted with the speech act situation. Since the participants in the illocutionary clause operate at another level than those in the main clause, co-reference rules apparently apply in different ways, which are not fully understood at this moment.

4.2.8 VP anaphora

VP anaphora were first discussed in Haegeman (1984a). It is claimed that Do-so substitution may cover the VP of the main clause as well as the if-clause in the central type (39a), but not the peripheral if-clauses (39b).

(39) (a) John will help you if you ask nicely and so will Mary
       = ‘Mary will help you if you ask nicely’
     (b) The fault – if it’s a fault – is to be found in the system, and so is its solution
       ≠ ‘its solution is to be found in the system if it’s a fault solution’

Subsequently Haegeman relates this fact to an example from Van Dijk (1977):

(40) Peter arrived yesterday and Harry knows it
This sentence should be paraphrased as: “There is a fact consisting of Peter’s arriving, and this fact occurred on the day before the day of this utterance and Harry knows (all) these facts” (Van Dijk 1977: 36). This line of thinking should be confronted with propositional adverbial clauses. Consider the following sentence:

(41) John should know about wines, if John’s wife is French, and the maître d’hôtel knows that

This statement could be paraphrased as: “There is an expectancy of John having some knowledge about wines and this expectancy is motivated by the fact that John’s wife is French, and the maître d’hôtel knows all these things.” This means that the propositional subordinate clause can be part of the entity referred to by it. This is not surprising, as the verb know takes a proposition as its complement. Consequently, VP anaphora can cover propositional clauses:

(42) John should know about wines, if John’s wife is French, and so should his children
   = ‘his children should know about wines, if John’s wife, i.e. their mother, is French’

The situation is completely different with illocutionary clauses. In (43a), the fact that you are wondering or not, cannot be one of the things that the maître d’hôtel knows. Similarly, the conditional clause in (43b) can under no circumstances be construed with the VP anaphor.

(43) (a) John’s wife is French, if you are wondering, and the maître d’hôtel knows that
    (b) John’s wife is French, if you are wondering, and so is his stepmother

This discussion opens the problem about sloppy identity readings in Haegeman (2002a, 2003a). In these papers the following examples are offered:

---

20 The propositional clause does not fall into the scope of a factive verb, as can be seen in the following example:

(i) John should know about wines, if John’s wife is French, but the maître d’hôtel doubts on it

21 The example in (39b) is somewhat misleading, as the conditional clause is not really referring to the illocutionary force. In Hengeveld (2004a), this type of sentences is called a metalinguistic conditional. The subordinate clause represents a referential act in which reference is made to a lexeme (belonging to the expression level, not to the interpersonal level).
If his children are at school, John works very efficiently and so does Mary
(a) ‘work very efficiently when his children are at school’
(b) ‘work very efficiently when her children are at school’

If his children aren’t in the garden, John will already have left home, and so will Mary
(a) ‘have left home if his children aren’t in the garden’
(b) ‘have left home if her children aren’t in the garden’

When interpreting the sentence in (44), so does Mary can be understood as in (44a) or (44b); in other words, the interpretation of the possessive pronoun need not be strictly identical to that in the antecedent VP (‘his’). However, it can also receive a sloppy reading with the possessive anaphoric referring to Mary (‘her’). The sloppy reading of the possessive is not possible in sentence (45), which contains a propositional instead of a predicational subordinate clause. However, it is important to take a look at illocutionary clauses too.

If you are wondering about his absence, John will already have left home, and so will Mary
(a) ‘have left home if you are wondering about his absence’
(b) ‘have left home if you are wondering about her absence’

As was observed above, illocutionary clauses cannot take part in VP substitution at all. Neither the sloppy reading nor the reading with identical reference are legitimate.

In conclusion, the VP anaphora criterion offers important data for making a distinction between at least three types of subordinate clauses. Illocutionary clauses are not construable with VP anaphora, while propositional and predicational clauses can be covered by the VP substitute. In the latter two types, sloppy identity readings are possible in predicational clauses but banned in propositional clauses. These observations could be tentatively explained in the following way. In a sentence containing a predicational subordinate clause, two events are logically related (e.g. the efficiency of John’s work and his children’s being at school). Consequently, the participants of both events can enter into co-reference and disjoint reference relationships, which can lead to sloppy readings of the VP substitute. When a sentence with a propositional clause occurs, two unrelated events (e.g. John having left and his children not being in the garden) are presented as one entity by the speaker. However, the events still do not interact, the participants cannot enter into relationships and sloppy readings are inappropriate. In the case of a sentence containing an illocutionary
adverbial, an event (e.g. John having left) is related to the speech situation. We are dealing with two completely different linguistic levels and this renders VP substitution, with sloppy or identical readings, impossible.

4.2.9 Tense Dependencies

Another recurring criterion relevant to the central-peripheral contrast in Haegeman’s work is the use of tenses. Haegeman (1984a) offers the following examples.

(47)  (a) John studied literature while he was/*is/*will be out of work (time)
      (b) John studied literature while his wife studied/is studying/will be studying linguistics (contrast)

It is clear that the choice of tense is more restricted in central clauses than in peripheral clauses. In later work (Haegeman 2002, 2003b) it is said that the tenses of central clauses are temporally subordinated to the tense of their associated main clause, which is not the case with the tenses in peripheral clauses. The peripheral clause in (47b) is a propositional one. Consider an example of an illocutionary subordinate clause:

(48) If you are/*were/*have been/*will be hungry, there is food in the fridge

It appears that the choice of tense is less flexible in illocutionary than in propositional clauses. However, this does not mean that illocutionary adverbials are temporally subordinate to the main clause. Their tense is as independent from the tense in the main clauses as in the case of propositional clauses, but they offer some comment on the speech situation and therefore the speaker is not completely free in choosing a tense. As illocutionary adverbials are added to make clear the relevance of the speech act, the tenses in subordinate and main clause should be compatible in some way. It would not be relevant if I told you that there is food in the fridge now when you were hungry two hours ago. In the same manner, it would be inappropriate to say: ‘If you are hungry, there was food in the fridge’, although an utterance like ‘If you were hungry, there was food in the fridge’ would make sense. On the other hand, there are illocutionary adverbials where the tense choice does not seem to have much influence.
on the relevance of the utterance, but even then restrictions do apply, as shown in (49d). The simple present tense in the main clause in (49) probably tolerates many possibilities because it is ambiguous, having a present and a future tense interpretation. The examples in (50) show that we have a different picture if we use a simple past in the main clause.

(49)  
(a) If it is going to rain this afternoon, why don’t we just stay at home and watch a video?  
(b) If it is still raining, why don’t we just stay at home and watch a video?  
(c) If it has been raining all morning, why don’t we just stay at home and watch a video?  
(d) *If it had rained this morning, why don’t we just stay at home and watch a video?  

(50)  
(a) *If it is going to rain this afternoon, why didn’t we just stay at home and watch a video?  
(b) If it is still raining, why didn’t we just stay at home and watch a video?  
(c) If it has been raining all morning, why didn’t we just stay at home and watch a video?  
(d) If it had rained this morning, why didn’t we just stay at home and watch a video?  

The situation seems to be different with propositional clauses. All sorts of tenses can be combined:

(51)  
(a) If, (as you say,) John is leaving now, he will be too late  
(b) If John left at three o’clock, he will be too late  
(c) If John had left at three o’clock, he will be too late  
(d) If John will leave at three o’clock, he will be too late  

(52)  
(a) If, (as you say,) John is leaving now, he was too late  
(b) If John left at three o’clock, he was too late  
(c) If John had left at three o’clock, he was too late  
(d) If John will leave at three o’clock, he was too late  

(53)  
(a) If, (as you say,) John is leaving now, he is too late  
(b) If John left at three o’clock, he is too late  
(c) If John had left at three o’clock, he is too late  
(d) If John will leave at three o’clock, he is too late  

etc.

How can this be explained? Again, we should investigate what happens when these different types of clauses are conjoined. When a speaker uses an illocutionary adverbal, he links some event in the world of the speech act situation with another event, most of the time external to the speech act situation. Although the tenses of main and subordinate clauses are in principle independent of each other, there should be a measure of compatibility, since the subordinate clause conveys the relevance of
the utterance in the main clause. In case of a propositional clause, two unrelated events are presented by the speaker as a unified entity to establish a certain truth value about the combination of these two events. The speaker can choose any event from the world, future, present or past. Consequently, the use of tenses is completely free.

4.2.10 Summary

In this section, we have continued our critical review of the tests offered by Haegeman. We have found that the opposition between propositional and illocutionary adverbial clauses has some relevance, as it causes certain syntactic effects concerning constituent order, coordination, the use of then, question tags, Principle C effects, VP anaphora and tense dependencies.

4.3 Left periphery and displacement

4.3.1 Truncated CP structure

Another recurrent theme in Haegeman’s work on adverbial clauses is the relation between their internal and their external syntax. There seems to be a correlation between the adverbial type (central and peripheral clauses in Haegeman’s terms) and the displacement possibilities inside these adverbial clauses. This can be seen in the following contrastive examples:

(54) (a) *If these final exams you don’t pass, you won’t get the degree
     (b) If his SYNTACTIC analysis we can’t criticize, there is a lot to be said against the SEMANTICS of the paper

(55) (a) *Mary listened to the radio while the dinner she was preparing
     (b) While YOUR book they are using in two courses, MINE they haven’t even ordered for the library

These sentences show that argument fronting is not possible in central adverbial clauses (the (a) examples), while peripheral clauses (the (b) sentences) tolerate displacement of the object for some pragmatic reason, such as focalization or topicalization. Haegeman hypothesizes that this contrast is to be attributed to a
difference in speaker anchoring. Central adverbial clauses are embedded in the
associated clause while peripheral adverbial clauses are more detached. Haegeman
suggests that a central adverbial clause is inserted with the IP of the associated matrix
clause, while a peripheral clause is merged outside the CP. This difference in
attachment level determines the semantic and pragmatic status of the subordinate
clause. While the central adverbial clause is part of the speech act of the matrix
clause, the peripheral adverbial clause has independent illocutionary force.
Apparently, the question if argument fronting is possible, is dependent on speaker
involvement. Peripheral clauses have some characteristics in common with root
clauses. Not only do both exhibit independent speaker anchoring, but they also allow
the same syntactic phenomena, such as topicalization and focalization. Actually, this
observation was already made with respect to complement clauses in the seminal
work by Hooper & Thompson (1973). They present a massive list of main clause
phenomena (MCP), i.e. syntactic phenomena that are typical of main clauses. Among
these MCP are topicalization and left dislocation. Hooper and Thompson also offer a
classification of verbs. In some classes of verbs (class A (say, claim, etc.), class B
(believe, think, etc.) and class E (realize, know)), the MCP can occur; in the other
classes they cannot (class C: be likely, etc.; class D: regret). Hooper & Thompson
associate these restrictions on the distribution of MCP with a semantic notion of
assertion. Operations like topicalization, focalization or left dislocation produce some
sort of emphasis and are therefore restricted to asserted clauses, because emphasis
would be unacceptable in clauses that are not asserted, but only presupposed, e.g. the
central adverbial clauses in (54-55). The absence of assertion would then explain the
illicit character of argument fronting in complement clauses selected by class C and D
verbs and in central adverbial clauses.
Haegeman reinterprets this line of reasoning in view of the split-CP hypothesis, as
introduced by Rizzi (1997). According to this hypothesis, the CP layer is decomposed
into a sequence of hierarchically organized functional heads schematically presented
in (56), where the head Force is occupied by subordinating conjunctions such as that,
the specifier of the Topic projection (TopP) hosts topicalized constituents, the
specifier of the Focus projection (FocP) hosts focalized constituents and the head
Finite determines the [+finiteness] feature of the selected IP.

(56) Force > Topic > Focus > Topic > Finite
In later work, Rizzi revises his theory to deal with the fact that adjuncts and arguments show different behaviour when they are fronted, as was also noted by Haegeman (2003a). Therefore, he introduces another functional projection to host fronted adjuncts, i.e. Mod (Rizzi 2001):

\[(57) \text{ Force Top* Focus Mod* Top* Fin IP} \]

This hierarchy was devised to cover Italian data and does not seem to work for all languages. At least in English the lower topic position (beneath Mod) appears to be unavailable and should be omitted in the CP hierarchy.\(^{22}\)

What Haegeman (2003a, b, c) does is to suggest linking the MCP from Hooper & Thompson (1973) with the articulated CP structure. She argues that the CP structure can be truncated in certain subordinate clauses. The examples in (54-55) suggest that in central adverbial clauses the TopP and the the FocP are unavailable, since fronting of the argument yields ungrammatical results. Fronting of adjuncts, however, does not seem to cause any problems in both central and peripheral adverbial clauses:

\[(58) \begin{align*}
(a) & \text{ If with these precautions you don't succeed, you should try again next week} \\
(b) & \text{ If during term time you don't work regularly, you will not pass the tests} \\
(c) & \text{ If by next week there is no improvement, we will have to take him to hospital}
\end{align*} \]

\[(59) \begin{align*}
(a) & \text{ If in secondary school John was a lazy student, at university he worked a lot} \\
(b) & \text{ In Oxford Mary was accepted, while in Cambridge she didn’t succeed}
\end{align*} \]

Consequently, the Mod projection in (57) should be present in all types of adverbial clauses. On the basis of these observations, Haegeman suggests the following functional hierarchies for the different types of clauses:

---

\(^{22}\) Haegeman (2004a) convincingly argues that Italian Clitic Left Dislocation (CLLD) should be distinguished from English topicalization. This could offer an obvious explanation for the cross-linguistic variance in this matter. Haegeman also suggests that the low Top position in Italian should be related to the IP-domain rather than to the CP-domain. However, the matter is still open to debate.
Central adverbial clauses are structurally defective and have a reduced functional hierarchy lacking TopP and FocP. Peripheral adverbial clauses and root clauses exhibit the complete structure. However, the generalized use of the label Force for the highest node hosting the subordinating conjunction is unfortunate. Haegeman claims that central and peripheral adverbials are distinguished by absence vs. presence of speaker anchoring, which she relates with the notion of illocutionary force. It would therefore be convenient if this could be represented in the functional structure. However, just eliminating the highest head and its projection in (60a) is impossible, because this projection is supposed to host the conjunction. On the other hand, no difference is made in (60) between peripheral adverbial and root clauses, although the former, and not the latter, are introduced by a subordinating conjunction. Haegeman tries to solve this problem by distinguishing ‘Force’ and ‘Sub’ (Cf. Bhat & Yoon 1992). The former encodes illocutionary force, while the latter is a head that subordinates the clause, independently of its force. This head also hosts the subordinating conjunction. In brief, the different clausal types display the following functional structures:

(61)  
(a) Central adverbials : Sub  Mod  Fin etc  
(b) Peripheral adverbials: Sub  Force  Top*  Focus  Mod*  Fin etc  
(c) Root clauses: Force  Top*  Focus  Mod*  Fin etc

It becomes clear that ‘Force’ is an important notion in Haegeman’s framework. As mentioned above, the term is rather misleading. Many of the peripheral adverbial clauses discussed by Haegeman do not contain illocutionary force in the strict (FG) sense. Instead it is the propositional layer that seems to be involved. Since the distinction between the illocutionary and the propositional level is not essential in Haegeman’s framework, the relations between speaker anchoring, the propositional level, concepts related to this level (such as epistemic modality) and the illocutionary layer are rather unclear. In a more recent paper (Haegeman 2004b) the misleading character of the label ‘Force’ is admitted. It is consequently replaced with the label ‘Speaker deixis’ (SD), the intention being that this projection is required to anchor a proposition to a speaker. This new label fits better in with the idea that the absence or
presence of speaker anchoring, embodied by the speaker deixis projection, can be equated with the absence or presence of a propositional layer, to put it in FG terms. Abandoning the term ‘Force’ to refer to speaker anchoring and the related theory about topicalization and focalization, leaves room for building another layer on top of the SDP, which could contain elements that are strictly speaking connected to illocutionary force. In section 4.2, I have tried to show that the distinction that FG makes between the propositional and the illocutionary layer has some relevance. Consequently, it would be appropriate if these insights could be integrated into the design of our phrase structure. The assumption of an additional illocutionary layer could be warranted if we find syntactic phenomena that are linked to this layer, in the same manner as topicalization and focalization seem to be related to Speaker Deixis/the propositional layer. This will be the topic of the next subsection.

4.3.2 Higher up in the left periphery

The work by Haegeman, following Hooper & Thompson (1973), shows that topicalization and focalization (in English these pragmatic processes seem to target the same sentence position) are related to Speaker Deixis. If we assume an illocutionary layer above SD, we should look for phenomena that occur even more to the left than topicalization (from now on abbreviated as Top). This means that we are looking for syntactic objects that are more detached from the clause than topocalized constituents. Phenomena like Left Dislocation (LD) and Hanging Topic (HT) come to mind. Furthermore, there appears to be cross-linguistic variance with regard to what is commonly called topicalization. For instance, Haegeman (2004a) argues that English topicalization cannot be equated with Italian Clitic Left Dislocation (CLLD). Therefore, all the left-peripheral phenomena (Top, Foc, CLLD, HT) should be submitted to further scrutiny. The search for projections designated to host left peripheral material should also be linked to the position of adverbials that occur at the left edge of the clause. Since the projections we have in mind are associated with a SD/propositional and an illocutionary layer, respectively, it is probable that the position of propositional and illocutionary satellites is also related to these projections.
As we are looking for the connection between left-peripheral phenomena on the one hand and the propositional and the illocutionary layer on the other, it is an appropriate method to compare contexts in which these layers are absent or present. If the absence of a layer co-occurs with the unacceptability of a given syntactic structure, these two are probably related. Consequently, we should look at embedded contexts, because subordinate clauses can in some cases exhibit an impoverished structure.\(^{23}\)

Subordinate clauses are of at least two kinds, complement and adverbial clauses. As for complement clauses, their internal structure is determined by the selecting verb, as demonstrated by Hengeveld (1990, 1996). Different classes of verbs select different portions of structure. This is illustrated in (62).

(62)  

\[
\begin{array}{ccc}
\text{Say} & \text{Illocution} \\
\text{Believe} & \text{Proposition} \\
\text{Regret} & \text{Predication}
\end{array}
\]

That this classification is correct can be proved by the acceptability of illocutionary and propositional satellites and operators in the embedded clause (cf. Hengeveld 1990).

(63)  

(a) John said that frankly, he couldn’t stand Peter  
(b) John said that Peter’s theory possibly could be wrong

(64)  

(a) *John believed that frankly, he couldn’t stand Peter  
(b) John believed that Peter’s theory possibly could be wrong

(65)  

(a) *John regretted that frankly, he couldn’t stand Peter  
(b) *John regretted that Peter’s theory possibly could be wrong

The classification is also very similar to the one offered by Hooper & Thompson (1973):

(66)  

\[
\begin{array}{ccc}
\text{Verb classes} & \text{Hengeveld (1990)} & \text{Hooper & Thompson (1973)} \\
\text{Say} & \text{Illocution} & \text{Class A} \\
\text{Believe} & \text{Proposition} & \text{Class B} \\
\text{Regret} & \text{Predication} & \text{Class D}
\end{array}
\]

\(^{23}\) Originally, the idea of structure truncation was devised to account for impoverished structures in main clauses, predominantly in child language and in diary registers. See the discussion in the introduction to Friedemann & Rizzi (2000) and the other contributions to that volume.
As Heycock (2002) notes, it is not clear why Hooper & Thompson make a distinction between class A and B at all, since both admit MCP. From the point of view of FG, the relevance of this distinction is obvious.

As far as adverbial clauses are concerned, we will look at the different types that we have discerned in the preceding sections, i.e. predicational, propositional and illocutionary satellites. Apparently, in a way that is not fully understood at the moment, there is a relation between the internal complexity of these adverbial clauses and their external level of embedding.

I have examined the distribution of left-peripheral phenomena in all these subordinate contexts, both complement and adverbial clauses. For this purpose, I presented a questionnaire to native speakers of English, Italian and Modern Greek. English has been the focus of interest of the work by Haegeman and Hooper & Thompson. Italian and Modern Greek are appropriate languages for our purposes, because they have a more elaborate set of left periphery phenomena than many other languages, as shown by Rizzi (1997, 2001), Benincà (2001) and Benincà & Poletto (2004) for Italian and by Roussou (2000) for Greek. The data and results of the questionnaire will be presented in the following subsections.

4.3.2.1 English

First, we will look at English complement clauses. The respondents were offered the following contrastive examples:24

(67) (a) John said that his syntactic arguments we couldn’t criticize
(b) John said that his syntactic arguments, we couldn’t criticize them
(c) John thought that his syntactic arguments we couldn’t criticize
(d) John thought that his syntactic arguments, we couldn’t criticize them
(e) John regretted that his syntactic arguments we couldn’t criticize
(f) John regretted that his syntactic arguments, we couldn’t criticize them

If verbs of the say-type selected a more extensive structure than verbs of the think/believe-type, we could suppose that the former are more hospitable to LD

24 In a first stage, all the examples discussed were randomly ordered in the questionnaire in order to avoid biased judgements. Subsequently I confronted the respondents with some of the minimal pairs to elicit clarifications about their judgements.
constructions than the latter, because LD structures are more detached and therefore presumably higher in the structure. However, this prediction is not borne out. According to my respondents, LD is as difficult to accept in (67b) as in (67d). As a matter of fact, the acceptability of both Top and LD is quite low in all contexts. Moreover, contrary to what Hooper & Thompson state, the examples in (67a-d) are not considered better than those in (67e-f). Needless to say, judgements on the acceptability of these utterances and interpretation of these judgments are a difficult issue, because we are dealing with very marked constructions that can only be used in very specific situations. Data on grammaticality or acceptability of given constructions are often less transparent than the linguistic literature would have us believe. Unfortunately, this is a reservation that must be made about many of the data discussed in this section.

Nevertheless, there are some interesting results when we look at adverbial clauses. In the propositional clauses in (68), Top is generally considered more acceptable than LD. The two constructions are judged equivalent in the illocutionary clause in (69).

(68)  
(a) His face not many admired, while his character still fewer felt they could praise  
(b) His face not many admired, while his character, still fewer felt they could praise it  
(c) If these problems we cannot solve, there are many others that we can tackle immediately  
(d) If these problems, we cannot solve them, there are many others that we can tackle immediately

(69)  
(a) Switch off the radio, ‘cos that song I don’t want to hear  
(b) Switch off the radio, ‘cos that song, I don’t want to hear it

Another interesting object of examination are predicational clauses which exhibit a 3rd order (propositional) internal complexity. This type of clause is exemplified in (70a). Although the causal clause is embedded at the predicational level, it has a propositional status as can be derived from the modal elements would and probably. Nevertheless, Top and LD in (70b-c) are not acceptable, for reasons which are actually inexplicable, since we would expect this sentence to have the same internal make-up as the clause in (68), which is propositional both internally and externally.

(70)  
(a) John went home ‘cos his sister would probably visit his parents  
(b) John went home ‘cos his parents his sister would probably visit  
(c) John went home ‘cos his parents, his sister would probably visit them
Finally, the complementary distribution of Top/LD and propositional/illocutionary adverbs also needs to be discussed. As they may be related to the same functional projection, it could be revealing to see what happens if both compete for the same position. It appears that argument fronting and an adverb in clause-initial position are incompatible (71a). However, even if the adverb is in clause-medial position, the combination of a fronted argument and an adverb seems to be difficult, perhaps because this yields a heavy sentence (71b). As a result the data are rather inconclusive. In any case, the most normal pattern consists of a clause-initial adverb and the argument in its canonical position (71c).

(71)  
(a) His face not many admired, while probably his character still fewer felt they could praise  
(b) His face not many admired, while his character still fewer probably felt they could praise  
(c) His face not many admired, while probably still fewer felt they could praise his character

Similar phenomena in illocutionary subordinate clauses yield even poorer results. The combination of argument fronting and adverbs appears to produce very marked sentences in any case.

In brief, there seems to exist some correlation between the acceptability of LD and the level of embedding of adverbial clauses, which, in turn is linked with their internal make-up. However, this correlation cannot be confirmed with respect to complement clauses. It is also unclear how to interpret the data concerning the complementary distribution of adverbs and Top/LD and those with respect to predicational satellites with a 3rd order internal complexity.

4.3.2.2 Italian

I have examined similar sentences in Italian. In English we have only Top and LD. Foc is identical to Top, if we disregard the difference in stress pattern. In Romance languages and in Greek, however, we have a broader array of left peripheral phenomena: Foc, CLLD and HT. Moreover, CLLD seems to be a disparate phenomenon. Haegeman (2004a) argues that Romance CLLD is mistakenly lumped
together with English Top. She observes that CLLD is possible in central adverbial clauses, in contrast with Top in English. Therefore, she suggests that CLLD should be placed lower in the structure, below Top and Foc, and if I understand her correctly, even below Mod. However, some occurrences of CLLD should be high in the structure, as they occur above Foc and Mod. The CLLD of *A Gianni* in (72a) should be higher than that in (72b).

(72)  (a) A Gianni, QUESTO, domani, gli dovremmo dire
To Gianni, this, tomorrow, to-him we-must say

(b) QUESTO, domani, a Gianni gli dovremmo dire
this, tomorrow, to Gianni to-him we-must say

In brief, it looks as if there are four constructions to be examined: the two types of CLLD, Foc and HT. CLLD is characterized by the resumptive clitic (*gli* in (72a, b)), while focalized elements are stressed and prohibit a resumptive clitic (72c) (Cf. Rizzi 1997). HT is signalled by the absence of a preposition in the fronted constituent in (72d), in contrast with the more usual CLLD of a PP in (71e) (Cf. Benincà 2001).

(72)  (c) IL TUO LIBRO (*lo*) ho comprato (non il suo)
your book       it   I-have bought (not his)

(d) Mario, non ne parla più nessuno
Mario, not of-him speaks anymore nobody

(e) Di Mario, non ne parla più nessuno
Of Mario, not of-him speaks anymore

All these Italian sentences have been tested in the same embedded constructions as for English.

(73)  (a) Gianni dice/pensa/A Gianni dispiace che questo esame non lo supererà
Gianni says/thinks/regrets that this exam not it he-will-pass

(b) Gianni dice/pensa/A Gianni dispiace che questo ESAME non supererà
(non quello TEST)
Gianni says/thinks/regrets that this exam not he-will-pass
(not that test)

(c) Gianni dice/pensa/A Gianni dispiace che a Paolo, QUESTO, domani,
gli dovremmo dire (non QUELLO)
Gianni says/thinks/regrets at to Paolo, that this, tomorrow
to-him we-must say (not that)

(d) Gianni dice/pensa/A Gianni dispiace che questo esame, domani non lo supererà
Gianni says/thinks/regrets that this exam, tomorrow not it
will-pass
Gianni dice/pensa/A Gianni dispiace che domani, questo esame non lo supererà
gianni says/thinks/regrets that tomorrow, this exam not it
he will pass

(f) Gianni dice/pensa/A Gianni dispiace che della guerra, non (ne) parla più nessuno
gianni says/thinks/regrets that of-the war, not (of-it) speaks anymore
nobody

(g) Gianni dice/pensa/A Gianni dispiace che la guerra, non ne parla più nessuno
gianni says/thinks/regrets that the war, not of-it speaks anymore
nobody

(h) Gianni dice/pensa/A Gianni dispiace la guerra, che non ne parla più nessuno
gianni says/thinks/regrets the war, that not of-it speaks anymore
nobody

The complement clauses are selected by three verbs, one from each of Hengeveld’s and Hooper & Thompson’s classes: dire (‘to say’), pensare (‘to think’) and A X dispiace (‘to regret’). In (73a), a standard CLLD is embedded. (73b) involves a Foc structure. This construction is also present in (73c), but here it is combined with a preceding CLLD, which should consequently be high in the structure. Since this yields a rather heavy sentence, I have also tried to obtain the “high” CLLD reading in (73d), where the dislocated element precedes the fronted adjunct, which should be located in Mod. Consequently, the CLLD should be higher up in the structure than that in (73e), where the dislocated element follows the adjunct in Mod. (73f) presents a standard CLLD of a PP della guerra. With PPs the clitic ne is optional. In (73g, h), HTs are intended, which can precede or follow the complementizer che (cf. Benincà 2001).

The results of the native speaker survey are rather chaotic. The respondents often contradict each other and quite often it is difficult to find any coherence in their judgements. HT is hardly ever accepted, except by one speaker, and even then only if the topic follows che. Many speakers have serious problems with embedded Foc, contrary to the claims by Rizzi (1997). Even CLLD is not unanimously accepted by all informants and no one indicates a difference in acceptability between “high” and “low” CLLD. In any case, no correlation can be found between the selecting verb class and the acceptability of left-peripheral material.
Unfortunately, things do not improve when we consider adverbial clauses. The sentences in (74) contain predicational adverbial clauses, those in (75) propositional clauses and those in (76) illocutionary clauses.

(74)  
(a) Se QUESTE COSE Maria non sa, non supererà l’esame  
If these things Maria not knows, not she-will-pass the exam  
(b) Se queste cose Maria non le sa, non supererà l’esame  
If these things Maria not them knows, not will-pass the exam  
(c) Se queste cose ora Maria non le sa, non supererà l’esame  
If these things now Maria not them know, not will-pass the exam  
(d) Se Mario, non ne parla più nessuno, è probabilmente morto  
If Mario, not of-him talks anymore nobody, he-is probably dead  
(e) Se di Mario non ne parla più nessuno, è probabilmente morto  
If of Mario, not of-him talks anymore nobody, he-is probably dead

(75)  
(a) Gianni è a casa, perché LA SUA MACCHINA vedo nel garage  
Gianni is at home, because his car I see in-the garage  
(b) Gianni è a casa, perché la sua macchina la vedo nel garage  
Gianni is at home, because his car it I-see in-the garage  
(c) Gianni è a casa, perché la sua macchina, nel garage la vedo  
Gianni is at home, because his car, in the garage it I-see  
(d) Era probabilmente un grande scandalo perché Mario, non ne parla più nessuno  
It-was probably a big scandal since Mario not of-him talks anymore nobody  
(e) Era probabilmente un grande scandalo perché di Mario non ne parla più nessuno  
It-was probably a big scandal since of Mario not of-him talks anymore nobody

(76)  
(a) Spegni la radio perché QUESTA CANZONE non voglio ascoltare  
Turn-off the radio because that song not I-want to-hear  
(b) Spegni la radio perché questa canzone non la voglio ascoltare  
Turn-off the radio because that song not it I-want to-hear  
(c) Spegni la radio perché questa canzone, ora non la voglio ascoltare  
Turn-off the radio because that song now not it I-want to-hear  
(d) Spegni la radio perché Mario, non ne voglio parlare in questo rumore  
Turn-off the radio because Mario, not of-him I-want to-speak in this noise  
(e) Spegni la radio perché di Mario non ne voglio parlare in questo rumore  
Turn-off the radio because Mario, not of-him I-want to-speak in this noise

The answers given by the native speakers are similar to the answers for complement clauses. HT is never accepted. The same respondents as before are reluctant to accept
Foc in embedded contexts. The acceptability grade of low and high CLLD is considered equal though it diverges from one speaker to another. Again, no link could be established with the different types of adverbial clauses.

The least one can say is that these results are disappointing. Not one of our expectations is confirmed and our findings about the occurrence of LD in English adverbial clauses cannot be extended to Italian. Still, the inquiry produces data that also contradict other views on the left periphery. The fact that speakers either accept Foc in all contexts or in no context at all, is unexpected in Rizzi’s (1997) theory and even more so for the subsequent work of Haegeman (2003a, b, c). The subordinate clauses in (74) are central adverbial clauses and should have a truncated structure, in contrast with the examples in (75-6). If one accepts Foc in the latter cases, one should not tolerate it in (74), since Foc does not occur in the truncated structure of central adverbials. Haegeman (2004a) offers an adequate explanation for the cross-linguistic difference between Italian CLLD and English Top. As our inquiry confirms, Italian CLLD is certainly not less grammatical in central than in peripheral clauses. This contrasts with English, where embedded Top is reserved for peripheral adverbials. Haegeman therefore argues that English Top and Italian CLLD are different, i.e. CLLD can be inserted in a lower portion of the structure (possibly the IP area), so that the CLLD position is preserved when the structure is truncated. In (74c), however, the dislocated element inevitably occurs in a high position, because it precedes the fronted adjunct in Mod. Consequently its position should be unavailable in a truncated structure. Nevertheless, the judgements are the same in (74c), (75c), (76c) and in (74b). In brief, the data obtained present problems for every available theory on the left periphery.

4.3.2.3 Greek

Fortunately, the results of the Greek questionnaire are more positive. The structure of Modern Greek is, to a large extent, comparable to Italian. The language also displays CLLD and a Foc structure without a clitic. HTs can also occur and can be traced by their case: the dislocated constituent has default nominative case, even if the resumptive has been assigned another case (cf. Anagnostopoulou 1997).
(77) (a) Τον Πέτρο τον είδα χθες στο καφενείο (low) CLLD
the Peter-ACC him-ACC saw-1sg yesterday in-the pub
(b) Τον ΠΕΤΡΟ (*τον) είδα χθες στο καφενείο (not the Nikos-ACC)
(foc) the Peter-ACC (*him) saw-1sg yesterday in-the pub (not the Nikos-ACC)
(c) Στον Πέτρο, ΕΝΑ ΒΙΒΛΙΟ, χθες του έδωσε (όχι ένα ΚΙΝΗΤΟ) high CLLD
to Peter, a book, yesterday him-GEN give-3sg (not a mobile)
(d) Ο Πέτρος, τον είδα χθες στο καφενείο HT
the Peter-NOM, him-ACC saw-1sg yesterday in-the pub

Like for the other languages I have tested these left-peripheral constructions by embedding them in different types of complement clauses. Class A is represented by λέω (‘to say’, past tense: είπε), class B by νομίζω (‘to think’, νόμισε) and class D by λυπάμαι (‘to regret’, λυπήθηκε).

(78) (a) Ο Γιάννης είπε/νόμισε/λυπήθηκε που ΤΟΝ ΠΕΤΡΟ είδε χθες στο καφενείο (foc)
The Giannis-NOM said/thought/regretted that the Peter-ACC saw-3sg yesterday in-the pub
(b) Ο Γιάννης είπε/νόμισε/λυπήθηκε που τον Πέτρο τον είδε χθες στο καφενείο (low) CLLD
The Giannis-NOM said/thought/regretted that the Peter-ACC him-ACC saw-3sg yesterday in-the pub
(c) Ο Γιάννης είπε/νόμισε/λυπήθηκε που στον Πέτρο, ΕΝΑ ΒΙΒΛΙΟ, χθες του έδωσε (όχι ένα ΚΙΝΗΤΟ) high CLLD
The Giannis-NOM said/thought/regretted that to Peter, a book, yesterday him-GEN gave-3sg (not a mobile)
(d) Ο Γιάννης είπε/νόμισε/λυπήθηκε που ο Πέτρος, τον είδε χθες στο καφενείο HT
The Giannis-NOM said/thought/regretted the Peter-NOM that him-ACC saw-3sg yesterday in-the pub
(e) Ο Γιάννης είπε/νόμισε/λυπήθηκε, ο Πέτρος, που τον είδε χθες στο καφενείο HT
The Giannis-NOM said/thought/regretted the Peter-NOM that him-ACC saw-3sg yesterday in-the pub

Surprisingly, the left-peripheral phenomena are better tolerated in the complement clauses following the regret-type than in those following the think- and the say-type.25

25 It should be noted that a complicating factor may have put the informants on the wrong track. There exist two complementizers in Greek: ‘pou’ and ‘oti’. In the questionnaire I have always used ‘pou’. However, ‘pou’ seems to be a less felicitous choice following verbs of saying and thinking than following the verb regret. This may explain the lower scores for the think- and say-type. Nevertheless, left-peripheral phenomena are accepted quite well after regret, also foc and high CLLD, which is rather unexpected in view of Hooper & Thompson (1973).
This is in strong contrast with Hooper & Thompson (1973) and related work. The English data also question the different status of the regret-type as far as Top and LD are concerned, a different status which is assumed in these theories. Let us consider adverbial clauses.

(79) (a) Ο Γιάννης είναι ευχαριστημένος γιατί είδε τη νέα ταινία του Walt Disney χθες
The Giannis-NOM is happy because saw-3sg the new film-ACC of Walt Disney yesterday

(b) Ο Γιάννης είναι ευχαριστημένος γιατί θΗ ΝΕΑ ΤΑΙΝΙΑ ΤΟΥ WALT DISNEY είδε χθες (OXI ΤΗ ΣΥΝΑΥΛΙΑ ΤΗΣ BRITNEY SPEARS) foc
The Giannis-NOM is happy because the new film-ACC of Walt Disney saw-3sg yesterday (not the concert of Britney Spears)

(c) Ο Γιάννης είναι ευχαριστημένος γιατί τη νέα ταινία του Walt Disney την είδε χθες (low) CLLD
The Giannis-NOM is happy because the new film-ACC of Walt Disney it-ACC saw-3sg yesterday

(d) Ο Γιάννης είναι ευχαριστημένος γιατί τη νέα ταινία του Walt Disney χθες την είδε high CLLD
The Giannis-NOM is happy because the new film-ACC of Walt Disney yesterday it-ACC saw-3sg

(e) Ο Γιάννης είναι ευχαριστημένος γιατί η νέα ταινία του Walt Disney, την είδε χθες HT
The Giannis-NOM is happy because the new film-NOM of Walt Disney it-ACC saw-3sg yesterday

(80) (a) Ο Γιάννης μετακομίζει αφού βλέπω τον καναπέ του στο δρόμο
The Giannis-NOM is-moving since see-1sg his couch-ACC in-the street

(b) Ο Γιάννης μετακομίζει αφού ΤΟΝ ΚΑΝΑΠΕ ΤΟΥ βλέπω στο δρόμο, (οχι το ΑΥΤΟΚΙΝΗΤΟ του) foc
The Giannis-NOM is-moving since his couch-ACC see-1sg in-the street (not his car)

(c) Ο Γιάννης μετακομίζει αφού τον καναπέ του τον βλέπω στο δρόμο (low) CLLD
The Giannis-NOM is-moving since his couch-ACC it-ACC see-1sg in-the street

(d) Ο Γιάννης μετακομίζει αφού τον καναπέ του στο δρόμο τον βλέπω high CLLD
The Giannis-NOM is-moving since his couch-ACC in-the street it-ACC see-1sg

(e) Ο Γιάννης μετακομίζει αφού ο καναπές του, τον βλέπω στο δρόμο HT
The Giannis-NOM is-moving since his couch-NOM, it-ACC see-1sg in-the street
(81) (a) Αν θέλεις να βρεις τον Πέτρο, είναι στο δεύτερο ορόφο
If want-2sg that find-2sg the Peter-ACC, he-is on-the second floor
(b) Αν ΤΟΝ ΠΕΤΡΟ θέλεις να βρεις, είναι στο δεύτερο ορόφο
If the Peter-ACC want-2sg that find-2sg, he-is on-the second floor
(c) Αν τον Πέτρο θέλεις να τον βρεις, είναι στο δεύτερο ορόφο
If the Peter-ACC want-2sg that him-ACC find-2sg, he-is on-the second floor
(d) Αν τον Πέτρο σήμερα θέλεις να τον βρεις, είναι στο δεύτερο ορόφο
If the Peter-ACC today want-2sg that him-ACC find-2sg, he-is on-the second floor
(e) Αν ο Πέτρος, θέλεις να τον βρεις, είναι στο δεύτερο ορόφο
If the Peter-NOM want-2sg that him-ACC find-2sg, he-is on-the second floor

Apparently, the acceptability of left-peripheral constructions increases consistently with the level of embeddedness. That is, the respondents considered the instances of CLLD in the propositional clauses in (80) to be better than those in the predicational clauses in (79). Similarly, the illocutionary clauses containing dislocated elements in (81) are more acceptable than the propositional clause in (80) (and consequently the propositional clauses in (79)). There thus seems to be a connection between the FG typology of adverbial clauses and the licitness of left-peripheral phenomena. However, high and low CLLD and HT apparently do not exhibit different properties in these different environments.

4.3.2.4 Summary and theoretical speculations

In the preceding sections I have examined the left periphery of (embedded) clauses hoping to find links between the propositional and the illocutionary layer on the one hand and, on the other, those positions at the left edge of the phrase structure that possibly host displaced elements. We clearly cannot speak of compelling evidence in this respect. However, we may draw some cautious conclusions. In English adverbial clauses, there seems to be a correlation between the propositional layer and Top and between the illocutionary layer and LD. The theoretical intuition behind this could be described as follows. The propositional layer can be considered to be the layer where the speaker interacts with his text. He can express his beliefs about the event presented, make a statement about its objectivity, etc. He can also choose how to
present the event, i.e. decide about the information-structural make-up of the clause, single out a specific constituent and put it in topicalization position to obtain the appropriate topic-comment structure. The illocutionary layer, by contrast, addresses the interaction between speaker and addressee. The LD-position could be regarded as the pre- eminent syntactic translation of this interaction, because of its predominantly deictic nature. In a sentence such as “That man, I saw him yesterday at the concert”, for instance, it is easy to imagine how the speaker nudes the addressee and points to the man about whom he is making a statement. This picture would be less obvious in a topicalization structure “That man I saw yesterday at the concert.” In this utterance the speaker makes a choice about the organization of his sentence without explicitly addressing the addressee.

This idea is more or less confirmed by pragmatic inquiries on the use of Top and LD. Lambrecht (1994: 181ff) argues that LD serves to promote a referent from non-active to active status. The LD-construction establishes a new topic, which, although its referent is not activated, is nevertheless already cognitively accessible (in contrast with representational structures, which introduce brand new topics). This is corroborated by the findings of Gregory & Michaelis (2001). They analyze a spoken corpus and observe that Top is used to maintain an established topic. LD, by contrast, introduces a new topic, which has not yet been talked about in the most recent discourse and serves as topic of the next portion of discourse. According to Lambrecht, the syntactically detached position of the NP in LD-position is due to The Principle of the Separation of Reference and Role (PSSR). The lexical representation of a topic referent (i.e. in the dislocated position) takes place separately from the designation of the referent’s role as an argument in a proposition (since this is done by the resumptive pronoun). Lambrecht states that the communicative motivation of this Principle can be captured in the form of a simple pragmatic maxim: “Do not introduce a referent and talk about it in the same clause.” It thus appears that LD intensifies the speaker-addressee interaction, as if the speaker is signalling: “Watch out, addressee, I am introducing a new topic.” Top, on the other hand, merely serves to maintain the appropriate topic-comment structure. 26

26 This is probably also in line with Frey (2004), who states that German Left Dislocation (GLD) signals a shift of sentence topic but maintains the discourse topic, while Hanging Topic Left Dislocation (HTLD) signals a shift of discourse topic. As Frey Notes, GLD functions like topicalization
The above conjectures tentatively explain the relation between left-peripheral constructions and the propositional and illocutionary levels. This hypothetical relation is confirmed by the Greek data, since the acceptability of left-peripheral material increases as more and more layers, i.e. a propositional and an illocutionary one, are built. The Italian data, however, remain unexplained.

Another problem, already mentioned in section 4.3.2.1, is the fact that we should be careful not to confuse internal and external complexity. Apparently, the internal complexity of subordinate clauses is never less elaborate than their level of embedding (cf. section 2.3). For example, a propositional satellite, embedded in its matrix at the third level, will be itself at least a 3rd order entity (a proposition). Nevertheless, it is always possible that a subordinate clause is internally more complex than the level at which it is embedded. This can be seen in example (70a), repeated here as (82) for the reader’s convenience.

(82)  John went home ‘cos his sister would probably visit his parents

Here we are dealing with a predicational satellite (embedded at level 2), but the adverb and the auxiliary point out that the subordinate clause is a proposition, and not a predication. Examples (70b, c) show that Top and LD positions are not available, which is unexpected (i.e., as I see it, unexpected for Top only), since these sentences should exhibit the same internal complexity as propositions embedded at the propositional level of their main clauses. This is not only a problem in my own approach, but also in Haegeman’s (2003a, b, c) theory. We should therefore carefully compare these two types of clauses. A representative example of a propositional satellite is offered in (83).

---

in English and German HTLD is similar to English LD. See also de Swart & de Hoop (2000:111-112) and Aissen’s (1992) discussion on external and internal topics in Mayan languages.

27 This obscures the interpretation of some of Haegeman’s examples. Consider, for instance, the following example, in which the subordinate clause has a 4th order internal structure but is embedded at the propositional level (it relates to the truth value and not to the communicative strategy):

(i)  No one would have been upset about her bad behaviour, because wasn’t that what writers were put on earth to do? (Observer, 20.8.2000 page 27, col. 8)
Both (82) and (83) contain an expression of epistemic modality, i.e. *probably*, but the sentences differ with regard to the person to which this modality is to be attributed. In (83) the probability is judged by the speaker, while in (82) it is John who assigns a modal value to the predication: “his sister visits his parents”. The speaker only echoes a statement by John which already contained this epistemic judgement. Perhaps this difference in modality attribution can also explain why our results for complement clauses are far less transparent than those for adverbial clauses. The modal expressions in complement clauses must be ascribed to the (secondary) speaker of the complement clause who coincides with the subject of the main verb. In the following examples, the primary speaker only echoes the epistemic judgements made by John:

(84)  
(a) John said that Sue would probably be home  
(b) John thought that Sue certainly should be home by now

In brief, the relation between internal and external complexity of subordinate clauses still leaves many questions open, but the difference between primary and secondary speakers may shed some light on the problem.²⁸

4.3.3 Truncation of CP in Barbiers (2002)

Finally I would like to draw attention to another proposal, according to which the CP, in given circumstances, is truncated. Barbiers (2002) presents the following examples:

(85)  
(a) *Jan zal denken [welke boeken (dat) Marie welke boeken leest]  
(b) Jan zal meedelen [welke boeken (dat) Marie welke boeken leest]  
(c) *Jan zal betreuren [welke boeken (dat) Marie welke boeken leest]

(86)  
(a) *Jan zal denken [of (dat) Marie deze boeken leest]  
(b) Jan zal meedelen [of (dat) Marie deze boeken leest]  
(c) *Jan zal betreuren [of (dat) Marie deze boeken leest]  
(d) Jan zal meedelen [wat (of) (dat) Marie wat leest]

²⁸ The discussion in Speas (2004) might be useful in this respect. She discerns speaker, evaluator, witness and perceiver and relates them to the Spec-positions from Cinque’s functional projections.
Barbiers argues that the (im)possibility of embedded Wh in (85) correlates with the (im)possibility of the complementizer of (‘whether’) in (86a-c). He suggests that Wh-movement and of are prohibited in (85a) and (86a) because they contain propositional complement clauses. Barbiers calls the other complement clauses ‘factives’. This is clearly not the standard use of the term ‘factive’, which is reserved to Hooper & Thompson’s class D (cf. Haegeman 2004b). This class is represented by betreuren (‘to regret’) in Barbiers’ examples. The verb meedelen (‘to tell’) is not a factive according to this classification, because it belongs to class A and, speaking in FG terms, selects an illocution. All terminologies are in agreement about denken (‘to think’): the verb is a member of class B and selects a propositional complement clause. Barbiers goes on to argue that the difference between factive and propositional complement clauses is the presence of a Force feature. He assumes that factive clauses have ForceP dominating CP, whereas propositional clauses are CPs lacking Force. Lexical specification determines whether a verb selects ForceP or just CP. If of (‘whether’) is a realization of Force, it follows that it cannot occur in propositional CPs. Barbiers, then, relies on Chomsky’s (1999) theory, according to which clauses containing a Force feature are complete phases and only the head of a phase can be assigned an EPP feature, triggering movement to the left edge of the phase. In Barbiers’ proposal, factive clauses can trigger movement to Spec,ForceP because Force is complete and may be assigned an EPP feature. By contrast, propositional clauses are defective in that they lack Force. CP is not a phase. Therefore the head C of a propositional clause cannot be assigned an EPP feature, and this explains why embedded Wh is impossible in propositional clauses. To capture the difference between meedelen and betreuren in (86b-c), Barbiers suggests that within the class of factive clauses we should further distinguish between clauses with a [+Q] Force head which allow of (‘whether’) and embedded Wh, and clauses with a Force head specified as [-Q] which disallow this.

In other words, Barbiers suggests that some subordinate clauses have Force and others lack it. This is, of course, very similar to the theory set forth in Haegeman (2003b, c). However, the use of the term Force obviously differs in Barbiers’ and Haegeman’s accounts. In Barbiers’ (and Chomsky’s) framework, ForceP hosts a complementizer, which is more in line with the spirit of Rizzi’s (1997) label Force. In Haegeman (2003a, b) Force is related to speaker anchoring. However, the term Force is replaced by Speaker Deixis in Haegeman’s later (2004b) paper. Consequently, we can re-use
the term Force to refer to illocutionary force (*strictu sensu*) as a level occurring above SD, and this Force could, in the spirit of Barbiers (2002), host the complementizer *of* and provide a landing site for Wh movement. Without any doubt the interrogative complementizer *of* and Wh material are formal expressions of illocutionary force. With this in mind, we should reconsider Barbiers’ account of the data in (85-86). In my opinion, it would be more illuminating to dispense with Barbiers’ classification of factive vs. propositional complement clauses and to stick to the FG/Hooper&Thompson classes. This would mean that only *medelen* (*to tell*) selects a complement clause with illocutionary Force that can contain *of* and Wh. The propositional clause following *denken* (*to think*) and the factive clause following *bentreuren* (*to regret*) lack Force and for this reason *of* and Wh is prohibited. Factive clauses would be expected to have even less structure than propositional clauses, as argued in Haegeman (2004b), Grewendorf (2002) and related work. The assignment of a [-Q] Force feature to factive complements (following verbs of the *regret*-type), as proposed by Barbiers, appears to be unfortunate. It is far simpler to state that only class A verbs (as *medelen* in (84-5)) select Force, and that in class B (*denken*, ‘to think’) and class D (*bentreuren*, ‘to regret’) Force is banned. In Haegeman’s (2004b) view, factive clauses are even expected to lack SD. This reasoning makes Barbiers [±Q] distinction superfluous.

To conclude, the evidence offered by Barbiers lends support to my hypothesis that the difference between the propositional and the illocutionary level is syntactically relevant. Only verbs that select Force (class A verbs) permit the interrogative complementizer *of* and embedded Wh. These are banned in the other verb classes, because these verbs select propositional or predicational complement clauses, which lack ForceP.
Chapter 5: Going lower in the structure

In chapter 4 I have extensively analyzed the left periphery and the adverbials related to the upper part of the clause. In chapter 5 I will briefly discuss a lower portion of the adverbial hierarchy and focus on the position of adverbials such as temporals, locatives, instruments, adverbials of means and manner, etc. The major point of interest will be the work of Frey & Pittner (1998a, b), Pittner (1999), and Frey (2003). As already mentioned in section 3.4.1, these authors take an intermediate position between the semantics-biased adverbial theories, exemplified by Ernst (2002), and the more syntactic views, such as that taken by Cinque (1999). In their proposals syntax distinguishes five adjunct classes which differ with regard to their base position in the phrase structure. The five classes are represented in the left column of table 1 and their base positions are defined in (1a-e) (definitions are taken from Frey (2003)).

Table 1

<table>
<thead>
<tr>
<th>Frey &amp; Pittner (1998a, b)</th>
<th>Dik e.a. (1990)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADJUNCT CLASSES</strong></td>
<td><strong>SATELLITES</strong></td>
</tr>
<tr>
<td>process-related adjuncts:</td>
<td>predicate ($\sigma_1$): means and manner, beneficiary, company, instrument, ...</td>
</tr>
<tr>
<td>event-internal adjuncts:</td>
<td>predication ($\sigma_2$): location, time, duration, frequency, cause, condition, purpose, ...</td>
</tr>
<tr>
<td>instrument and comitative, local adverbials, mental attitude adverbs</td>
<td>proposition ($\sigma_3$): attitudinal, source, evidence, motivation</td>
</tr>
<tr>
<td>event-external adjuncts:</td>
<td>illocutionary ($\sigma_4$): manner, beneficiary, time, reason, condition</td>
</tr>
<tr>
<td>temporal, causal adverbials</td>
<td></td>
</tr>
<tr>
<td>sentence adjuncts:</td>
<td></td>
</tr>
<tr>
<td>evidentials, evaluatives, epistemic adverbs</td>
<td></td>
</tr>
<tr>
<td>frame adjuncts:</td>
<td></td>
</tr>
<tr>
<td>local and temporal adverbials restricting the validity of the proposition</td>
<td></td>
</tr>
</tbody>
</table>
(1)  

(a) **Process-related adjuncts**  
The base position of a process-related adjunct minimally c-commands a base position of the main predicate

(b) **Event-internal adjuncts**  
The base position of an event-internal adjunct $\alpha$ is minimally c-commanded by the base position of the highest ranked argument $\beta$, i.e. there is, modulo adjuncts of the same class, no $\gamma$ whose base position is c-commanded by $\beta$ and c-commands $\alpha$.

(c) **Event-external adjuncts**  
The base position of an event-external adjunct $\alpha$ minimally c-commands the base position of the highest ranked argument $\beta$, i.e. there is, modulo adjuncts of the same class, no $\gamma$ whose base position is c-commanded by $\beta$ and c-commands $\alpha$.

(d) **Sentence adjuncts (SADJ)**  
The base position of a SADJ has to c-command  
(i) the base positions of all arguments and of all other adjuncts and 
(ii) the base position of the finite verbal form

(e) **Frame adjuncts**  
The base positions of a frame adjunct c-commands the base positions of all arguments and of all remaining adjunct types except SADJ

The order between adverbials and arguments is regulated by the principles in (1) and further ordering restrictions between adverbials from the same class are determined semantically according to Frey & Pittner’s theory.

Table 1 confronts the classes described by Frey & Pittner (F&P) with the satellite classes from the FG framework. There are some striking differences. First, temporals and locals are attributed to different classes in F&P’s proposal, while they are considered to be of the same type in the FG classification. Second, adverbials of means and manner are in one class with instruments, comitatives (company), etc., in the FG framework. In F&P’s theory, however, they constitute a separate group. These problems will be dealt with in the next sections.

### 5.1 Instrument vs. manner

In F&P’s framework instrument and manner adverbials occupy different base positions, i.e. they argue that manner adverbials are base-generated after the object, while the base position of all other adverbials is above the object.\(^{29}\) This claim is,

---

\(^{29}\) F&P’s considerations are based on German data and they assume that $V$ is in final position in German.
amongst other things, based on tests considering focus projection and accentuation. However, I believe that the observations made by F&P are too superficial and that a more thorough theory about focus and accentuation must be developed to deal with this matter.

According to Lambrecht (1994), there are three types of focus structure. The unmarked topic-comment sentence type, in which the predicate is the focus and in which the subject (plus any other topical elements) is in the presupposition, is said to have a *predicate-focus structure* (see (2a)). In an *argument-focus structure* (2b), the focus identifies the missing argument in a presupposed open proposition, and the event-reporting or presentational sentence type, in which the focus extends over both the subject and the predicate (minus any topical non-subject elements), will be said to have *sentence-focus structure* (see 2c).

(2) (a) **PREDICATE-FOCUS STRUCTURE**
What happened to your car? – My car/it broke DOWN.
(b) **ARGUMENT-FOCUS STRUCTURE**
I heard your motorcycle broke down? – My CAR broke down.
(c) **SENTENCE-FOCUS STRUCTURE**
What happened? My CAR broke down.

F&P present the following examples, when they discuss the base position of instruments:

(3) (a) weil Otto heute mit dem Schraubenzieher die Wohnungstür öffnete
because Otto today with the screwdriver the front door opened
(b) weil Otto heute die Wohnungstür mit dem SCHRAUbenzieher öffnete

The authors claim that the sentence in (3a) can have a broad focus reading, while this is not possible in (3b). This could mean that the object is in base position in the former sentence and is moved in the latter. What is called ‘narrow focus’ by F&P is, in fact, argument-focus in Lambrecht’s terms. ‘Broad focus’ can be equated with predicate-focus or even sentence-focus. The ambiguity in (3a) to which F&P refer, is caused by the fact that accents mark the end of a semantic domain, as expressed in the *General Phrasal Accent Principle* (Lambrecht 1994: 247):

30 Note that ‘argument-focus’ does not refer to arguments in the strict sense. Lambrecht’s term subsumes both arguments and adjuncts.
(4) **General Phrasal Accent Principle**

A phrasal accent marks the right boundary of a syntactic domain expressing a pragmatically construed portion of a proposition.

This means that we can easily detect the end of a focus domain, but it is less evident to determine the beginning. The statement that a stress marks the right boundary of a semanto-syntactic domain is in line with Cinque’s (1993) Null Hypothesis on stress. To elucidate the discussion, we should quote Cinque (1993: 258):

> The sentence grammar procedure of phrase stress assignment can be conceived of as a formal means for locating the main stress of a phrase (the most deeply embedded constituent under the null theory), and for marking the relative degree of prominence of the various stresses in the phrase (…). The discourse grammar procedure instead may be taken to impose the requirement that the main stress of the phrase in focus be more prominent than the main stress of the presupposition (in absolute terms).

With this in mind we should look more thoroughly at the stress patterns in (5), which are similar to the German examples in (3).³¹

(5)  
(a) Ik zag dat Otto vanmorgen met zijn schroevendraaier de VOORdeur opende  
(b) Ik zag dat Otto vanmorgen met zijn SCHROEvendraaier de voordeur opende  
(c) Ik zag dat Otto vanmorgen de voordeur met zijn SCHROEvendraaier opende  
(d) Ik zag dat Otto vanmorgen de voordeur met zijn SCHROEvendraaier opende

(a’) Ik zag [F dat Otto [F vanmorgen [F met zijn schroevendraaier [F de voordeur] opende  
(b’) Ik zag dat Otto vanmorgen [F met zijn schroevendraaier] de voordeur opende  
(c’) Ik zag dat Otto vanmorgen [de voordeur], [F met zijn schroevendraaier] [F t_i opende  
(d’) Ik zag dat Otto vanmorgen [de voordeur opende], [F met zijn schroevendraaier] [F t_i

As Cinque notes, stress is commonly assigned to the most embedded constituent (above the verb in Dutch and German) by the sentence grammar procedure. This is

---

³¹ Being a native speaker of Dutch I use Dutch data. I assume that German and Dutch are similar in this respect, but I cannot guarantee that this assumption is correct.
indicated by underlining the stressed syllable in (5a’). Since the stress determines only
the right boundary of the focus structure, the focus domain can have different sizes, as
marked by the F-indices. However, this stress pattern can be overridden by the
discourse grammar procedure, as in (5b’). In this way argument focus is assigned and
I indicate this type of accent by putting the stressed syllable in italics. The focus is
unambiguously restricted to the instrument *met zijn schroevendraaier*. The ambiguity
in (5a) and (3a) arises because the two procedures yield the same result. If we want
argument focus on *de voordeur*, it should receive stress following the discourse
grammar procedure (see (6a)). The sentence grammar procedure, evoking predicate
focus, puts stress on the same syllable (see (6b)).

(6)  (a) Ik zag dat Otto vanmorgen met zijn schroevendraaier de *voordeur*
    opende
(b) Ik zag dat Otto vanmorgen met zijn schroevendraaier de *voordeur*
    opende

This double interpretation is excluded in (5b): the accent can only be obtained by the
discourse grammar procedure, producing argument focus. Obviously, the order
between object and instrument can be reversed, as in (5c). This example is the
equivalent of F&P’s example in (3b). Although the instrument is at the surface the
most rightward constituent, the focus domain seems to be the same as in (5b): the
instrument receives argument focus. It is therefore not improbable that the object is
scrambled across the instrument, as suggested by F&P and as indicated in (5c’).
Because the object has topic status, it is ‘evacuated’ to the front part of the clause,
which is the designated position for topic material. Another possibility to mark the
focus on the instrument more prominently is by extraposing it across the verb (this is
represented technically in (5d’) by leftward movement of the remnant VP across the
instrument, as suggested by proponents of the Kaynean framework).

At this point, we should ask whether it is admissible to compare the two types of
stress produced by the different procedures. In other words, is it legitimate to
neutralize the underlined sentence procedure stress pattern and the italicized discourse
procedure stress pattern into one capitalized stress pattern, as in (5a-d) and in F&P’s
work? It appears that a stress marking argument focus, is stronger than a predicate-
focus marking stress, and, if the instrument receives weak stress, a broad focus
reading does not seem to be excluded:
If these reservations are justified, appealing to focus structure for determining syntactic base positions is highly questionable and the whole approach should be abandoned. The interaction of focus structure, stress assignment and word order, then, would be too complex to provide a sound theory on syntactic base positions and movement processes that regulate the required pragmatic constellations. Let us, however, assume that the observed problems are negligible and that the analysis sketched in (5) is correct. Then we can compare the behaviour of the instrument in (5) with manner adverbials in the same context.

For manner adverbials the permutations in word order and stress pattern seem to yield the same results as for instrumental adverbials. Consequently, F&P’s claim that instruments and adverbials of means and manner should take a different base position in the phrase structure loses weight. A review of the other criteria used by F&P to demonstrate the post-object position of adverbials of means and manner reveals a few more weak points in their theory. The following examples are offered to demonstrate that the adverbial can be fronted along with the verb, while this is not possible for the object:
(9) (a) *Einige Artikel gelesen hat Hans heute sorgfältig
    Some articles read has Hans today carefully
(b) Sorgfältig gelesen hat Hans heute einige Artikel

This proves that the base position of the manner adverbial is closer to the verb than
the base position of the object. However, judgements about (9) are rather shaky (and
this goes for F&P’s paper as a whole, according to Klaas Willems, p.c.). In any case,
when translated in Dutch the examples are generally considered to be odd. Fronting of
a participle seems awkward for many speakers of Dutch (see (10a-b)). A more natural
way in Dutch to front the verb is obtained by using the infinitive and a pro-verb doen
(a resumptive pronoun may be added to create a left dislocation structure; see (10c-
d)). However, this test shows that is better to front the object with the verb than the
adverbial with the verb.32 Thus, the tests yield contradictory results.

(10) (a) ??Enkele artikels gelezen heeft Hans vandaag zorgvuldig
(b) ??Zorgvuldig gelezen heeft Hans vandaag enkele artikels
(c) Die artikels lezen, (dat) doet Hans zorgvuldig
(d) ??Zorgvuldig lezen, (dat) doet Hans die artikels

F&P acknowledge that the analysis is not straightforward, because there are examples
in which the most natural order is adverbial-object:

(11) (a) weil Lotti schüchtern einen Prinzen küsste
    because Lotti shyly a prince kissed
(b) weil Hans sorgfältig ein Hemd bügelte
    because Hans carefully a shirt ironed

F&P claim that these facts are misleading, because the objects are ‘integrated’, in the
sense of Jacobs (1993), on the basis of their prototypical patient features. Therefore,
they offer data with ‘real’ objects that cannot be integrated and are, consequently,
more reliable if the base position of objects and adverbials is to be determined.

32 This is a classical and reliable test to distinguish arguments from adjuncts. In fact, it does not test the
valency of lezen, but rather the compatibility of doen with objects vs. adverbials (see Ros (2003)).
(12)  (a) Ich habe den Mann abgrundtief verachtet
     I have the man whole-hearted despised
(b) *Ich habe abgrundtief den Mann verachtet
(c) Sie hat jedes Hemd sorgfältig gebügelt
     She has every shirt carefully ironed
(d) *Sie hat sorgfältig jedes Hemd gebügelt
(e) Ze heeft elk hemd zorgvuldig gestreken
(f) Ze heeft zorgvuldig elk hemd gestreken

The judgements in (12c-d) are refuted by some native speakers. Both sentences are considered as grammatical and, in any case, the Dutch translations in (e-f) are equally acceptable. In my opinion, it is rather the manner adverbial *abgrundtief* that is integrated in (12a-b) than the objects in (11). ‘Abgrundtief verachten’ appears to be something like an idiomatic expression in which the adverbial is heavily anchored to the verb. This can be shown by trying to cleft the adverbial. This proves to be far more difficult than with other manner adverbials.

(13)  (a) ??Het is hartgrondig dat ik die man heb gehaat
(b) Het is op een handige manier dat Otto die deur heeft opengedaan
(c) ??Het is zorgvuldig dat ik elk hemd heb gestreken

Another factor that seems to be involved in (12a-b) is the fact that *den Mann* shows a strong preference to be of a topical nature. It is hard to imagine a context in which *den Mann* is in focus and in which *abgrundtief* is background information. This fact, together with theidiomatically motivated inseparability of *abgrundtief verachten*, could explain the unacceptability of (12b). Information structure is in any case an important factor in this matter and it should be carefully investigated. The (un)identifiability of referents has a manifest influence on what is considered as ‘natural’ word order. This can even been shown with the examples in (11). If the referent is made identifiable by means of a definite article, the position of the object before the adverbial is natural (see also Eckhardt 2003).

(14)  (a) weil Lotti den Prinzen schüchtern küsste
     because Lotti the prince shyly kissed
(b) weil Hans das Hemd sorgfältig bügelte
     because Hans the shirt carefully ironed

Distinguishing adverbials by comparing their supposed base position to the object position seems to miss the point. Topic-focus articulation appears to be the most
important factor in determining the order between adverbials and objects. The frequent occurrence of manner adverbials after the object is probably an artefact of the preponderant focal nature of manner adverbials. It looks as if deriving syntactic base positions from these data is not feasible. Too many factors, such as varying stress assignment, identifiability of referents, the use of (in)definite articles, the choice of adverbial and verb, etc., are involved and the issue goes far deeper than the few examples that F&P present, can show.33

By way of conclusion, it is worth adding some critical remarks on F&P’s remaining arguments. A recurring test in their paper is the use of ‘w-indefinita’. For some reason these indefinites cannot move and the example in (15) is thought to prove that objects occur before manner adverbials. Eckhardt (2003), however, offers sentences in which we have the opposite order (see (16)).

(15) weil Maria heute was (nicht) sorgfältig durchgearbeitet hat
    because Maria today something (not) carefully worked-through has
(16) (a) Alicia hat dann gierig was gegessen
    Alicia has then eagerly something eaten
    (b) Peter hat dann vorsichtig wen gefragt
    Peter has then carefully somebody asked
    (c) Claudia hat demonstrativ was gelesen
    Claudia has ostentatiously something eaten
    (d) Eberhard zog schüchtern was aus
    Eberhard took shyly something off

The last test mentioned by F&P involves scope. The sentence in (17a) is unambiguous. The example in (17b), however, has two possible readings. It can mean that he used at least one method (say, buying flowers) to court every woman. In an alternative interpretation, he courted every woman using at least one method for each woman (he bought flowers for Mary, he took Ann to the pictures, bought Sally a drink, etc.). According to F&P, this ambiguity can be explained if we assume that the manner adverbial is moved, as presented in (17c). The scope difference would then depend on the fact whether the existential quantifier is interpreted in its base or in its derived position.

33 It is also telling that subordinate and main clauses randomly alternate in F&P’s paper. The order of elements is certainly influenced by this factor; one should therefore handle one’s data more carefully when trying to derive basic positions.
Unfortunately, the test breaks down in other applications. Consider the examples in (18).

(18) (a) Hans heeft minstens één dag met elke computer gewerkt [EA, AE]
(b) Hans heeft met minstens één computer elke dag gewerkt [EA]
(c) Hans heeft [minstens één dag], met elke computer ti gewerkt

The sentence in (18b) is unambiguous. The example in (18a), however, can be interpreted in two ways. It can mean that Hans worked with every computer on at least one day, say Tuesday. Another possible interpretation is that he used every single computer during one day, e.g. on Monday computer A, on Tuesday computer B, etc. If we extend F&P’s explanation of (17) to the sentences in (18a-b), this would mean that the temporal adverbial is moved from a verb-adjacent position, as represented in (18c). The ambiguity would then arise from the fact that the temporal adverbial can be interpreted in its base and its derived position for scope assignment. Nevertheless, it is completely unnatural for the base position of temporals to be closer to the verb than that of instruments. This does not comply with any theory on adverbial syntax nor does it comply with F&P’s views. Instruments are event-internal adjuncts and temporals event-external. The base position of the former is c-commanded by the subject while the position of the latter c-commands the subject.34 Consequently, temporals can never be c-commanded by instruments.

To sum up, the scope test, used to prove that instruments and manner adverbials take a different position, ruins other parts of F&P’s theory. Therefore, the validity of this test should be questioned. As a matter of fact, it has now been shown that all of F&P’s arguments are rather weak. It would, then, be a good idea to give up the proposed separation between manner adverbials and instruments. The order between adverbials and objects seems to be a matter of information structure. In the remainder of this dissertation, I will assume that the base position of all adverbials is c-commanding the

34 The definitions in (1) use the term ‘highest ranked argument’ instead of subject, because, certainly in German, the subject is not always the highest ranked argument. However, in most cases it is, and I use the term subject here for convenience’s sake.
object and that order rearrangements can be carried out for information-structural
needs (which, eventually, may or may not be formalized as movement operations).
Instead of comparing adverbials to objects, I feel it is better to investigate the mutual
order restrictions between adverbials. This will be the topic of the next section.

5.2 Locative/temporal vs. instrument

In this section we will explore the relationship between temporal, local and instrument
adverbials. We again turn to the test in which material is fronted together with the
verb to the beginning of the clause. We have already noticed that fronting of a
participle, as in (19), is considered problematic by most speakers of Dutch.

(19) (a) *Twee dagen lang gewerkt heeft Hans met de computer
(b) ??Met de computer gewerkt heeft Hans twee dagen lang
(c) *Op het bureau gewerkt heeft Hans met de computer
(d) ??Met de computer gewerkt heeft Hans op het bureau
(e) ??Op het bureau gewerkt heeft Hans twee dagen lang
(f) ??Twee dagen lang gewerkt heeft Hans op het bureau

All these sentences are rather marginal, but if speakers indicate a difference in
acceptability, (19a) and (19c) are considered worse than the other examples. This
could mean that instruments are more linked with the predicate than locals and
temporals. There is no real difference between (19e) and (19f), which makes it likely
that temporals and locals are not mutually ordered. If the judgements in (19) are a bit
murky, the conclusions are confirmed more clearly in (20), where infinitives are
fronted.

(20) (a) Met de computer werken, dat doet Hans twee dagen lang
(b) ??Twee dagen lang werken, dat doet Hans met de computer
(c) Met de computer werken, dat doet Hans op het bureau
(d) ??Op het bureau werken, dat doet Hans met de computer
(e) Op het bureau werken, dat doet Hans twee dagen lang
(f) Twee dagen lang werken, dat doet Hans op het bureau

Fronting the instrument with the infinitive and stranding the temporal or the local is
completely normal. However, stranding the instrument and fronting the temporal or
the local is awkward. This demonstrates again that instruments are more closely related to the predicate than temporals and locals. Fronting a local and stranding a temporal or vice versa (as in (20e-f)) does not cause any problems.

Finally, let us have a look at the preferred orders in argument-focus structures. In the following examples, a context is created that forces argument-focus on one of the adverbials.

(21) Waarmee heeft hij gisterenavond gewerkt?
    (a) ??Hij heeft met de comPUter gisterenavond gewerkt
    (b) Hij heeft gisterenavond met de comPUter gewerkt

(22) Wanneer heeft hij met de computer gewerkt?
    (a) Hij heeft gisterenAvond met de computer gewerkt
    (b) ??Hij heeft met de computer gisterenAvond gewerkt

(23) Waarmee heeft hij op het bureau gewerkt?
    (a) ??Hij heeft met de comPUter op het bureau gewerkt
    (b) Hij heeft op het bureau met de comPUter gewerkt

(24) Waar heeft hij met de computer gewerkt?
    (a) ??Hij heeft op het buREAU met de computer gewerkt
    (b) ??Hij heeft met de computer op het buREAU gewerkt

It appears that instruments should remain in final position, even if they are in focus (see (21) and (23)). Temporals and locals, on the other hand, prefer initial position, whether they are presupposed background information (as in (21) and (23)) or in focus (as in (22) and (24)). This can be easily explained if the base position of temporals and locals precedes the base position of instruments. That is also the basic order in “focus-neutral” contexts, i.e. predicate- and sentence-focus structures:

(25) Wat heeft Marnix gedaan?/Wat is er gebeurd?
    (a) Hij heeft gisterenavond met de comPUter gewerkt
    (b) ??Hij heeft met de computer gisterenAvond gewerkt
    (c) Hij heeft op het bureau met de comPUter gewerkt
    (d) ??Hij heeft met de computer op het buREAU gewerkt

However, if we compare temporals and locals by means of these same tests, we get the impression that temporals are base-generated before locals. Consider the data in (26-28):

35 I would not know why the instrument cannot be scrambled across the local or temporal adverbial, although it is clearly presupposed background information.
(26) Waar heeft hij gisterenavond gewerkt?
   (a) Hij heeft gisterenavond op het buREAU gewerkt
   (b) ??Hij heeft op het buREAU gisterenavond gewerkt

(27) Wanneer heeft hij op het bureau gewerkt?
   (a) Hij heeft gisterenAvond op het bureau gewerkt
   (b) ??Hij heeft op het bureau gisterenAvond gewerkt

(28) Wat heeft Marnix gedaan? Wat is er gebeurd?
   (a) Hij heeft gisterenavond op het het buREAU gewerkt
   (b) ??Hij heeft op het bureau gisterenAvond gewerkt

To sum up, there is evidence that instrumental adverbials are more closely related to the predicate than temporal and local adverbials. The relationship between temporals and locals is not very clear. Some data show that they should be treated on a par, while other examples point out that temporals are more external than locals. Our findings are certainly not consistent with the framework proposed in Frey & Pittner (1998a, b), as presented in table 1. In this framework, instruments and locals are taken together as members of the event-internal class and separated from temporals which are event-external. Our data demonstrate that the difference between instruments and locals is rather striking and if two of the three types are joined, it should be temporals and locals. Frey (2003), however, takes another stance. Locals, temporals and instruments are all considered as event-internal adverbials. The picture is clouded, however, by the possible occurrence of temporals and locals as frame adverbials. An important improvement in Frey (2003), in comparison with Frey & Pittner (1998a, b), is his more illuminating view on the use of frame adverbials. The contrast is illustrated by Principle C effects:

(29) (a) *In Peters Büro las er den Artikel durch
   In Peter’s office read he the paper through
   (b) In Peters Firma ist er der Schwarm aller reiferen Damen
   In Peter’s office is he the favorite of all older ladies
   (c) An Peters 18. Geburtstag hatte er bereits zwei Romane geschrieben
   At Peter’s 18th birthday has he already two novels written
   (d) *An Peters 18. Geburtstag hat er Maria umarmt
   At Peter’s 18th birthday has he Maria embraced
   (e) An Peters 18. Geburtstag hat Maria ihn umarmt
   At Peter’s 18th birthday has Maria him embraced

Examples (29b) and (29c) contain a frame adverbial. These adverbials c-command the subject and consequently no Principle C violation is induced. In (29a) and (29d), however, Principle C is violated because we are dealing with an event-internal
adverbial, in other words, the adverbial is moved and its trace causes the Principle C violation. (29e) illustrates that the base position of the event-internal local c-commands the object and consequently Principle C is respected.

Although Frey’s observations are illuminating, his new framework still tends to collide with our findings above. Temporals, locals and instruments constitute one group of event-internal adverbials, although we have observed that instruments differ in non-trivial ways from locals and temporals. Considering the temporals and locals in (22) and (24) as frame adverbials is untenable, since they are in focus and the essential characteristic of frame adverbials is that they cannot be focused.

The Frey (2003) framework suffers from other flaws as well. Although temporals are not longer regarded as event-external adverbials, the category is maintained to handle causal and concessive adjuncts. Nevertheless, the evidence offered by Frey is rather weak. The following examples are given to prove that causal adjuncts c-command the subject:

(30)  (a)  Wegen Peters’ hervorragenden Beziehungen hat er gute Chancen für den Auftrag
       Because-of Peter’s excellent contacts has he good chances for the assignment

       (b)  Dass wegen fast jedem Vorschlag mindestens einer aufgeschrieen hat
            (only AE)
            That because-of almost every proposal at least one yelled has

       (c)  Dass mindestens einer wegen fast jedem Vorschlag aufgeschrieen hat
            (AE or EA)
            That at least one because-of almost every proposal yelled has

We have already stated our reservations about the scope test in (30b-c). Nevertheless, the lack of a Principle C effect in (30a) can prove Frey’s point that causals c-command the subject. However, Frey goes on to argue that the causal adjuncts cannot be frames and provides the following evidence:
(31)  
(a) Eva ist wegen mindestens einem Lied in fast jedem Land weltberühmt  
(EA or AE)  
Eva is because-of at least one song in almost every country world-famous  
(b) Eva ist in mindestens einem Land wegen fast jedem Lied weltberühmt  
(only EA)  
Eva is in at least one country because-of almost every song world-famous  
(c) weil wo wegen was ein Kollege weltberühmt ist  
because somewhere because-of something a colleague world-famous is  
(d) *weil wegen was wo ein Kollege weltberümt ist  
because because-of something somewhere a colleague world-famous is

The argument is again based on the scope test and on w-indefinita, the credibility of  
which was disputed above, but even so Frey’s conclusions appear to be misguided. To  
begin with it is difficult to accept that the local adverbials *in fast jedem Land and *in  
imindestens einem Land in (31) are frame adverbials. It is more likely that they are  
event-internal adverbials, because they are very well able to be in focus, and, more  
importantly, because they are c-commanded by the subject. In my opinion, the data in  
(31) say nothing about the relation with frame adverbials because the locals are  
simply not frame adverbials in these contexts. Frey’s examples on concessives do not  
fare much better.

(32)  
(a) Trotz der guten Beziehungen von Peters Frau hat er1 den Job nicht  
bekommen  
Inspite-of the good contacts of Peter’s wife has he the job not got  
(b) Sie sind in fast jedem Land trotz mindenstens eines Flops weltberühmt  
(only AE)  
They are in almost every country in-spite-of at least one flop world-famous  
(c) Sie sind trotz mindestens eines Flops in fast jedem Land weltberühmt  
(EA or AE)  
They are in-spite-of at least one flop in almost every country world-famous

In my opinion, the conclusion must be that causals and concessives, just like locals  
and temporals, can be both frame adverbials and event-internal adverbials. None of  
Frey’s tests compare the frame use of locals or temporals with the use of causals and  
concessives. In most instances, both adverbials are event-internal. In (30a) and (32a),  
the adverbials are probably frame adverbials.
In brief, I believe that temporals, locals, causals and concessives (and yet other adverbials) constitute one group of adverbials that can occur in an ‘event-internal’ position or, alternatively, can be used as frame adverbials. Consequently, the category of event-external adverbials becomes superfluous. It is likely that instrument and manner adverbials (and yet other adverbials we have not discussed, such as beneficiary, company, etc.) should be separated from this group to form a category of their own. However, since the matter is not entirely clear-cut, and in order not to complicate technical issues, we will not take into account this possible separation in the following chapter, but rather will insist on the difference between the frame and the event-internal use of the ‘low’ adverbials discussed in the present chapter.
Chapter 6: Drawing a tree

In the preceding chapters we have discussed several layers of sentence structure that can be distinguished in the area of adverbial syntax. In chapter 4 we have insisted on the distinction between the propositional and the illocutionary level and suggested that the former should be associated with topicalization and the latter with left dislocation. Somewhat lower in the structure, a position designed for scene setting seems to be appropriate, a position in which certain types of local and temporal adverbials can reside. It is not immediately clear whether lower adverbials should be further split up into different groups (e.g. temporals and locals in their non-scene setting use vs. instrumentals and means and manner). From now on, it will be assumed that they constitute one group, without claiming that this assumption is correct but expecting that it is harmless in view of the theoretical considerations that will follow. The layers thus assumed are summarized in (1). It is clear that this analysis owes a great deal to FG, as can be seen from the classification of satellite types in the second column.

<table>
<thead>
<tr>
<th>Layers</th>
<th>Adverbial types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illocution</td>
<td>$\sigma_4$ satellites</td>
</tr>
<tr>
<td>Proposition</td>
<td>$\sigma_3$ satellites</td>
</tr>
<tr>
<td>Scene setting</td>
<td>$\sigma_2$ satellites (frame readings)</td>
</tr>
<tr>
<td>Predication</td>
<td>$\sigma_2, \sigma_1$ satellites</td>
</tr>
<tr>
<td>Argument structure</td>
<td>arguments</td>
</tr>
</tbody>
</table>

A tentative representation is found in the tree in (2).

---

36 When discussing English adverbs (section 6.2.4), we will observe that it might be appropriate to distinguish manner adverbs from local/temporal adverbs. See footnote 75 in particular.
The tree in (2) may look a little unusual and one may wonder where all the old labels such as CP, TP and IP have gone and why we need the new labels. First, I would like to emphasize that my proposals are tentative and remain open to many questions. This chapter is merely a first attempt at exploring the possibilities for a technical representation of the observations from the preceding chapters and, in fact, for integrating concepts of the FG framework into a generative phrase structure theory. Of course, what I am proposing here is not entirely new to the generative framework. There are varying proposals in generative literature that deal with aspects of the theory laid out here. In the following section, I will try to show the overlaps between my line of thinking and other generative accounts.

6.1 Embedding the theory in the generative framework

First, I would suggest that the Scene-setting Phrase (ScsP) in (2) can be replaced by TP. The ScsP is supposed to contain adverbials that provide a frame in which the event is taking place. Most of these adverbials are of a temporal or local nature and thus establish a spatio-temporal framework. This is also the function of the TP. The typical adverbials residing in the TP (ScsP), by contrast, are relatable to the Mod from Rizzi (2001) and Haegeman’s recent work. Normally, Mod is at the low edge of the CP domain and not in the IP (TP) domain. However, TP and the other phrases in the tree are not really regarded as simple functional projections, but rather as “domains”, which can exhibit a rather complex structure. This is, in fact, the spirit of the cartographic approach developed by Rizzi (1997) and Cinque (1999), in which CP

37 Compare with the ScP from Haegeman (2000).
and IP are considered as domains with a rich internal structure. In my framework, TP, just like PropP and IIIP, is a functional domain and, in comparison with the more traditional approach, its structure is stretched upward in order to contain Rizzi’s Mod.\(^{38}\) As we will see later on, my account also differs from the cartographic approach with respect to the internal make-up of the different domains. The latter are not concatenations of functional projections in a Cinque/Rizzi style but rather single functional projections with a more elaborate structure (an analysis which is, to a great extent, adopted from Laenzingler (1996)).

Let us now concentrate on the Proposition Phrase (PropP). The PropP is devoted to speaker anchoring. This is translated into two aspects. On the one hand, speaker involvement is represented by evaluative, evidential and epistemic adverbs, i.e. the \(\sigma_3\) satellites from FG. On the other, the clause is organized by the speaker into a topic-comment structure. PropP is thus also the locus for information structurally marked constituents, i.e. Top (and probably also Foc) from Rizzi’s split CP. The comment, then, is the VP-internal (or PredP-internal) material (cf. Meinunger 2000). The resemblance between the PropP and the SD idea from Haegeman (2004b) is obvious. Both are related to topical material. My framework adds the link with \(\sigma_3\) adverbials. It has also been shown that both aspects are related. Verhagen (1986) and Frey (2004) argue that in Dutch and German \(\sigma_3\) adverbials are used as boundaries between the topic and the comment part of the sentence\(^{39}\). Therefore, it could really make sense if both these manifestations of speaker involvement are merged into one functional projection.

The additional stipulation of an illocutionary level might seem novel to generative phrase structure theory. Although speech act was an important concept in Ross (1970) and related work from the generative semantics era, generativists have lost interest in this subject since the emergence of the Government and Binding framework and its X-bar theory. The matter has regained importance, however, as can be derived from some recent proposals. Meinunger (2004) postulates a Speech Act Phrase, while Edmonds (2004) develops a theory about Discourse Projections and Discourse Shells. Although the latter are category-neutral XPs in Edmonds’ account and IPs are

\(^{38}\) The question how the functional projections are to be demarcated into larger domains is still open to debate for proponents of the Cinque/Rizzi approach. Apparently, ModP is somewhere between CP and TP.

\(^{39}\) This is also to a certain extent corroborated by the data offered in Svenonius (2002).
considered Discourse Projections in all languages, it becomes clear that the interest in discourse-related phrase structure projections is growing. As a matter of fact, the split CP hypothesis from Rizzi (1997) somehow reflects the split between an illocutionary and a propositional layer. As Platzack (2004: 193) puts it, “the outward facing part called ForceP by Rizzi (1997), is a sentence type or clause type projection where the head contains information about the type of the clause. The inward facing part, Fin(ite)P(hrase) has a head hosting a feature [finite] which relates this phrase to tense and mood. This phrase has also been assumed to contain information on the speaker’s point of view.” In other words, the Force field resembles the IIIP in (2) – since clause type is the essential feature of illocutionary force – and the Fin field is comparable with the PropP, because both are related to the speaker’s point of view. I would like to repeat once more that the phrases in (2) are to be taken as “fields” or “domains”, which strengthens their kinship with the approach of Rizzi (1997).

Finally, I use the label PredP to designate the phrase containing the lower adverbials. This label has already been used by Bowers (1993, 2002), Ernst (2002) and others, though with a slightly different meaning. What I have in mind here could be compared with (the combination of) AspP or VoiceP from Alexiadou (1997).\(^40\) I merely use ‘Pred’ as a mnemonic to establish a link with the term ‘predication’. The main concern is to reserve the VP for theta-selected arguments only and expelling other material to a higher projection, called PredP for the sake of convenience. In brief, the tree in (2) can be replaced by that in (3).

\(^40\) Compare also with TP and AspP in Nilsen (2000), which are similar to TP en PredP in my approach.
Needless to say, the phrase structure in (3) is also designed to capture elements from the preceding chapters, more specifically the ideas on structure truncation in chapter 4. We can assume that not all subordinate clauses exhibit the complete structure. In other words, some clauses are only PropPs or TPs and lack the IIIP projection. The central adverbial clauses from Haegeman’s work or the second order entities from the FG framework are TPs, they are exempted from the Prop and the Ill layer, and, consequently, are not independently anchored to the discourse or the speaker. This means that they cannot contain Top or LD, $\sigma_3$ and $\sigma_4$ adverbials and that they do not have an independent topic-comment structure (cf. Pittner 1999: 234). Similarly, 3rd order entities are PropPs and do not have an illocutionary layer. It is even conceivable that some subordinate constructions only consist of a PredP and lack the scene setting domain. Consider the following infinite subordinate clause in which a scene setting adverbial is illicit (the example is taken from Rizzi (2001)):41

---

41 It should be noted that the ill-formedness of the example could be attributed to other factors, i.e. an alleged adjacency requirement between the complementizer and the subject, probably for case
Summing up: the proposed structure makes it possible to present clearly how clauses can differ with regard to their structural make-up. The data reviewed in the preceding chapters show that certain syntactic phenomena are related to subparts, so-called ‘domains’, of syntactic structure. I have identified these domains hypothetically as discourse anchoring, speaker anchoring, scene setting and comment. The gist of my proposal consists of clustering all phenomena pertaining to a specific domain around one functional projection. It has also become obvious that not all domains are present in every subordinate clause, i.e. some clauses are truncated. This is easy to explain in the present framework. In certain contexts, some functional projections may be absent and the advantage of clustering a group of phenomena around one projection is that the illicitness of all these phenomena is explained in one go by the absence of the functional projection in question. It should also be noted that I adopt Rizzi’s idea on structure truncation, which states that projections cannot be skipped when the functional hierarchy is built up, i.e. one always projects up to a certain level and then the projection stops. This is in line with FG thoughts on clausal hierarchy. All levels are always embedded into the next level up or the creation of further layers simply stops at a certain level, but one cannot, for instance, embed a predication into an illocutionary level without assuming a proposition.

The next task, of course, is to put all lexical material on the right spot in the tree. In the following sections we will suggest a technical implementation for the suggestions above.

---

assignment (see footnote 5 in Rizzi (2001), where it is also shown that judgements are different in other languages).
6.2 Exploring the technical tools

We start with a sketch of the situation facing us. The assumption is that we have the projections listed in (5) (four functional ones and one lexical projection VP).

(5)  
(a) IllP  
(b) PropP  
(c) TP  
(d) PredP  
(e) VP

This is all the material we have to deal with the following issues:

(A) The FPs (at least IllP and PropP) contain two types of lexical material: adverbial adjuncts and displaced (i.e. topicalized, focalized, scrambled) arguments. In which position do these different items reside? Are they adjoined? Are they in a Spec-position?

(B) The adverbials are linked to an FP according to their type, i.e. \(\sigma_4\) satellites are related to IllP, \(\sigma_3\) satellites to PropP, etc. This typology is derived from their scope properties: \(\sigma_4\) have scope over the illocution, \(\sigma_3\) over the proposition, etc. However, they can occupy different positions in the clause. How can we deal with this flexibility in word order?

(C) We associate a whole group of adverbials with one functional domain. Nevertheless, it is possible that two adverbials of one group co-occur in one clause. How can the structural relationships between these two adverbials be appropriately expressed?

These questions will be tackled one by one in the following subsections.
6.2.1 Locating the adverbials: an adjunction position?

In the present theory we would like to relate adverbial types with the appropriate functional projection in order to represent the scope properties of the different adverbial types with regard to the different subparts of the clause. Adjunction is an obvious technical instrument to implement this. Hoffman (2000) offers a helpful theory about this issue, which also seeks to explain the relatively free position of adverbials in linear word order. The interesting aspect of adjunction consists in the fact that the adjoined phrase does not asymmetrically c-command (from now on: ac-command) the complement of its head.\(^{42}\) According to Hoffman, this offers an opportunity for adverbials to have scope over the appropriate projection, but simultaneously to move freely at PF. In more concrete terms, adverbials are adjoined to their designated projections: illocutionary and propositional adverbials are adjoined to AgrSP, manner adverbs, etc., to VP. However, since they are adjoined, they do not ac-command the elements lower in the tree and are consequently sent to PF unordered. At this level they can reach different positions in the clause by adjunct-scrambling (a-scrambling). Hoffman makes the following assumptions:

(6) If \(\alpha\) and \(\beta\) do not enter into an ac-command relation, they are sent to PF unordered
(7) An element \(\alpha\) of tree T may appear anywhere in T provided that it does not violate ordering constraints and that it does not violate adjacency constraints.
(8) Elements \(\alpha\) and \(\beta\) must be adjacent if they enter into a strong-feature-checking relation.
(9) If \(\alpha\) or a phrase containing \(\alpha\) ac-commands \(\beta\) or a phrase containing \(\beta\), then \(\alpha\) must appear linearly before \(\beta\) at PF.

In other words, ac-command is the primary mechanism which the syntax uses to order elements of a sentence (as in Kayne (1994)). A-scrambling is the result of merged but unordered elements such as adverbials. The tree in (10) demonstrates how this mechanism works.

\(^{42}\) This is the reason why adjunction is prohibited in Kayne’s LCA theory. If two constituents do not ac-command each other, they cannot be ordered because the LCA cannot apply.
This tree permits the following five pronunciations:

(11) \((\alpha)\beta_1(\alpha)\beta_2(\alpha)\beta_3(\alpha)\beta_4(\alpha)\)

At least, this is true as long as none of the elements of \(\beta P\) enter into a strong feature checking relation. If a strong feature checking relation obtains between, say, \(\beta_3\) and \(\beta_4\), then \(\alpha\) cannot appear between those two elements (see (8)). This restriction accounts for adjacency requirements between the subject and the verb in French and between the verb and the object in English, as can be seen in the following contrastive example:

(12) (a) (often) John (often) has (often) kissed (*often) Mary (often)
(b) (souvent) Jean (*souvent) a (souvent) embrassé (souvent) Marie (souvent)

Pollock’s (1989) observation that the verb raises in French but not in English will account for the impossibility of the French adverb appearing between the subject and the verb. The overt raising of the verb must result from strong feature checking, and strong feature checking creates an adjacency requirement that cannot be violated by a-scrambling. It is important to note that, when a-scrambling changes the relative order of two words, relative scope is not affected. When we try to apply this theory to our provisional tree, we obtain the following:
The different adverbial types are adjoined to their corresponding FP, where they have scope over the relevant subpart of the clause and at PF they can a-scramble to the right to reach all their possible positions. In fact, the spirit of this proposal is somewhat reminiscent of the earlier Travis (1988) approach. According to her theory, adverbs are licensed by different head features of V, INFL and, possibly, C. Furthermore, she claims that in English the effect of transportability comes about through feature percolation from the head to the maximal projection. Adverbs may appear anywhere along the projection line of the licensing head. This is illustrated in (14) (taken from Travis 1988: 293). Example (15) presents the adverb types to which the roman numerals in the tree refer.
What both approaches have in common is the fact that adverbial types are linked to a specific projection and that the adverbials can move freely in this maximal projection. Hoffman presents this technically by adjoining the adverbial and introducing a-scrambling. However, the question is whether Hoffman’s mechanism is not too liberal and whether all adjacency issues can be solved by resorting to strong feature checking. Apparently, Hoffman adopts a broader view of the concept of strong/weak features and distinguishes strong and weak LF and PF features. This may guarantee the validity of his claims. However this may be, I feel that the formalism fails to preclude illicit orders between the adverbials themselves. Consider the following phrase structure:43

---

43 In (16) I try to imitate the representations in Hoffman (2000). The dotted arrows represent covert movement and the full arrows overt movement. In English, V and the object are moved covertly (at surface structure they stay in VP), only the subject moves overtly to Spec,AgrSP.
In figure (16), *probably* does not ac-command *carefully*, and consequently both adverbs are sent unordered to PF. Nothing prevents *probably* to a-scramble to the right of *carefully*, yielding the ungrammatical order in (17), neither can I imagine a strong feature that guarantees the adjacency between *carefully* and the verb.

At this point, it might be a good idea to present the answer which Hoffman gives to question C above. When discussing the sentences in (18), Hoffman argues that the hierarchy between the adverbs should be presented as in (20) rather than as in (19).

\begin{enumerate}
\item[(18)]
\begin{enumerate}
\item Sometimes usually Bill buys semi-sweet chocolate
\item Usually sometimes Bill buys semi-sweet chocolate
\end{enumerate}
\end{enumerate}
As Hoffman notes, scope between adverbs is uniquely indicated by word order in these sentences. In his view surface word order is not determined by syntax and only at the PF level, since the former only presents the LF scope order. In the examples in (18), word order is crucial for understanding the scope relations correctly. Hoffman accounts for this by assuming that multiple adjunction of adverbs (as in (19)) is impossible, but that adjunction of multiple adverbs is possible (as in (20)). The (disallowed) structure in (19) would allow both *sometimes* and *usually* to a-scramble throughout the sentence. By contrast, as Hoffman argues, (20) requires that the two remain in their fixed order. Unfortunately, it is unclear whether this is technically correct. As *sometimes* is adjoined to *usually*, the former does not ac-command the latter and the adverbs are therefore unordered rather than fixed in position. One could imagine that *sometimes* a-scrambles across *usually* at PF, at least as long as it remains unclear what is meant by “appear anywhere in tree T” in (7).^{44}

Summing up it can be stated that, although Hoffman’s theory seems to deal nicely with the difficult issue of transportability of adverbials across the clause, it has problems to account for the restrictive mutual order between adverbials. Perhaps we are on the wrong track when we assume that the adverbials move. Let us therefore

---

^{44} It is obvious that *sometimes* cannot a-scramble across *Bill*, because the former ac-commands the latter. Consequently the adverb cannot “appear somewhere” in the lower AgrP node. However, it could a-scramble to a position in the AdvP node to the right of *usually*. I have no idea what sort of position this would be (a complement position?), but one would expect that things like complement or specifier position are irrelevant at the PF level, which is generally conceived as a non-hierarchical level.
turn our attention to another aspect of the problem: the location of displaced argumental material.

6.2.2 Locating the arguments: the double specifier analysis

We have suggested earlier that the PropP and the IIIP should not only contain adverbials but also “displaced” arguments, i.e. topicalized and left-dislocated phrases. The question is where those phrases could be located in the tree, certainly if one wants to allocate them a position different from adverbials. A promising approach might be Laenzlinger’s (1996, 2000, 2004) proposal (see section 3.4.2). Laenzlinger develops a phrase structure model which, in a sense, combines Kayne’s (1994) Antisymmetry hypothesis with the multiple specifier approach of Chomsky (1995). He argues for a double specifier analysis in which a higher A’-like specifier can co-occur with a lower A-like specifier within the same projection. The former is merged for adjunct and operator attachment, while the latter is merged for argument attachment. This approach furnishes an appropriate structure to combine adverbials and arguments into one projection, exactly the structure we are looking for. My approach to adverbs is actually quite similar to Laenzlinger’s theory. He also tries to make Cinque’s (1999) proposal more compact by stipulating a limited set of functional projections and grouping adverbial types around these FPs. The following hierarchy is postulated in Laenzlinger (2000):
Each of the FPs in (21) is associated with a bundle of functional features (listed in (22)) which stand in an ordering organization with respect to each other and which are borrowed from the hierarchy of FPs in Cinque’s (1999) model. The pre-defined hierarchical feature organization established with respect to a global semantic hierarchy (i.e. MoodP >> ModP >> AspP) can guarantee the appropriate clause structure hierarchy in the case of various co-occurring Mood/Mod/Asp-related categories. Laenzlinger suggests that the adverbials are situated in the A’-Spec of the FPs, where they can be licensed by feature checking. Arguments can reach the A-Spec positions by movement, as illustrated in (23).
This type of structure can be easily accommodated in our basic tree. The different adverbial types reside in the A'-Spec of the FPs and the A-Specs provide landing sites for moved arguments.\footnote{In (24), I use XP and X' instead of the notation without bar-levels and X_{\text{max/min}} which Laenzlinger adopts from Chomsky’s (1995) multiple specifier model.}
In a sense the A-Spec positions replace the AgrPs from earlier accounts (Laenzlinger 1998, Meinunger 2000, Pereltsvaig 2004) or the DP-related projections which Cinque (1999) is forced to assume but is reluctant to call AgrPs, following the general trend to ban Agr projections. Cinque needs the DP-related projections to account for the different order permutations between adverbs and arguments. Since in his theory the adverbs stay in fixed positions, all the other lexical material has to move around them. This can only be managed by postulating additional DP-related functional projections, but the exact status of these FPs remains unclear in Cinque’s framework. The double specifier analysis may offer a viable solution.

As a matter of fact, the present model is also not very different from Hoffman’s (2000) approach, since the latter suggests that multiple adjunction is prohibited (see above). Claiming that each projection contains only one adjoined position for adverbials and one specifier position, or defending the double specifier analysis with an A’-Spec for adverbials and an A-Spec essentially boils down to the same thing. One could only object that the adjunction analysis is less suitable to account for the ordering properties between adverbials, as was already noted in the preceding subsection. Moreover, as Laenzlinger (2000: 106-7) argues, the licensing condition on adverb attachment cannot be straightforwardly formalized in an adjunction-based framework, since the status of adjunction positions remains unclear with respect to formal licensing relations, such as c-command, government or checking. Therefore, checking in a spec-head configuration appears to be the best environment for adverb licensing. More importantly, Laenzlinger’s and my own approach differ from Hoffman’s with regard to which elements are moved in the clause. While the latter argues that the adverbials are moved by a-scrambling, I prefer to follow Cinque’s claim that the adverbial positions are fixed and that all the other elements move around them. The availability of A-Spec positions in the double specifier analysis offers an adequate number of landing sites for these movements. This requires, however, that the analysis should be extended to all projections, more particularly to AdvPs, as illustrated in (25).
If we assume this type of structure, we can deal with the mutual scope relations between adverbials of the same class (i.e. problem C from above). When two adverbs co-occur, say *fortunately* and *apparently* (two σ3 adverbials to be linked to PropP), the higher-ranked adverb can reside in the A’-spec of the lower adverb. This is similar to adjunction of multiple adverbs in Hoffman’s account (see (20)). The most important difference is that the higher adverb in A’-Spec,AdvP ac-commands the lower adverb in Adv° and consequently the adverbs are ordered, a desirable result. Moreover, the A-spec positions offer the opportunity for other lexical material to intervene between the adverbs by movement from lower positions. This is illustrated in (26).

---

46 It might be felt to be a problem that the lower adverb occupies a head position, which is unexpected if the adverbials have a complex structure (e.g. *very probably, no doubt*, etc.). As a matter of fact, the tension between an alleged head status for adverbs and the possible complexity of adverbials is a recurring problem in this chapter and will be dealt with in section 6.2.5.

47 Presumably, these movement operations apply in steps: the subject reaches the A-Spec of *fortunately* via the A-Specs of PropP and *apparently*. In any case, the representation in (26) is provisional and merely seeks to show the general idea.
The phrase structure in (26) shows how the word order variations in (27) can be derived by moving John to different A-Spec positions. The equivalent Dutch examples in (28) demonstrate that the movement properties required by this approach can be quite complicated. In (28c), heeft Jan should be moved across the adverb to its A-Spec while in (28b) it is only the auxiliary that lands in the A-Spec. The example in (28a) illustrates that the V2 property of Dutch will be something to worry about. In the remainder I will tentatively suggest that these problems could be handled by remnant movement.

However, before tackling that issue I would like to draw attention to another point. Proponents of the split CP hypothesis by Rizzi (1997) will wonder what happened to the articulated CP structure in the present framework. The fact is that TopP and FocP as independent FPs are absent from the phrase structure and it is suggested that A-Spec positions in PropP are the convenient site for topics.\textsuperscript{48} This is in line with López’

\textsuperscript{48} Naturally, PropP has only one A-Spec position. However, the A’-Spec of PropP can be filled by AdvPs which have their own A-Spec positions. As we will propose later on, the latter too are possible landing sites for topics.
(2003) claim that the theory of grammar is better off without FocP or TopP. In his view, the left periphery should only include ForceP and FinP and wh-phrases, focus phrases and dislocated phrases should occupy stacked specs of Fin, as represented in (29) (López’ (27)).

\[
\text{ForceP} \\
+ \text{FinP} \\
\text{CLLD} + \text{Fin'} \\
\text{FF/wh} + \text{Fin'} \\
\text{Fin} \quad \text{TP}
\]

This is quite similar to our own approach, certainly if, as I hinted above, we consider ForceP as an equivalent of IllP and FinP as an equivalent of PropP. López also uses stacked specs, but in a slightly different way. In the double specifier framework, there is only one A’-Spec and one A-Spec, while the analysis of López seems to require multiple A-specs for argumental material. To be honest, at this moment I do not know exactly how to deal with the details of the left periphery data, especially with the multiple occurrence of Top and Foc. This is in fact a consequence of generalizing the idea of relating topic-comment structure to phrase structure. In other words, the link between PropP and topic is not restricted to topicalization structures in Rizzi’s sense. The Prop projection is meant to contain also the topical material preceding *blijkbaar* in the Dutch examples in (28). As I argued above, following Verhagen (1986) and Frey (2004), σ₃ adverbials can be considered as the boundary between the topic and the comment. I would suggest that the topic moves to an A-spec of PropP and strands the comment in PredP. This means that the presence of topic-comment structure is dependent on the availability of a PropP. This idea embodies the concept

---

49 López speaks about dislocated phrases, because he discusses Spanish data which exhibit the same properties as Italian, i.e. CLLD-structures. I would prefer the term topical phrases, since I identify dislocation with IllP (or ForceP). Nevertheless, chapter 4 shows that the equivalence between CLLD in Romance and Top/LD in English is not a straightforward issue.

50 To avoid any misunderstandings I use the term topic here in a more general sense expressing the idea of information structure dividing a sentence into a topic and a comment. When referring to a structure where a certain constituent is fronted in a more traditional (Rizzi) sense, I use the term topicalization or Top.

51 It is not obvious how the topic material ends up before the σ₃ adverbial, because the A’-Spec hosting the adverbial is attached higher than the A-Spec. This problem will be dealt with later on.
of structure truncation. Pittner (1999:241) argues that subordinate clauses can have their own topic-comment structure or be integrated in the topic-comment structure of the main clause. She discusses different types of *weil*-clauses in German, which are similar to Haegeman’s central and peripheral adverbial clauses, and claims that the former are integrated in the general topic-comment structure while the latter have an independent topic-comment articulation (which would explain the V2 word order in these subordinate clauses). This could be explained in the spirit of structure truncation if the central clauses lack a PropP and consequently have no landing site(s) for topics. If there is no A-Spec in PropP to which topical material can evacuate, topic-comment articulation becomes impossible. Hence, the subordinate clause does not have an independent information structural make-up. This reasoning, however, supposes that topic constituents occurring to the left of σ3 adverbials in Dutch or German are moved to the PropP. This means that PropP as the locus for topics must be given a broader interpretation than what is generally understood under the function of TopP in a Rizzian framework. Consequently, some problems arise concerning technical details about movement, the properties of multiple Tops, the diversification between Top and Foc, etc., which will not be solved in the present framework right away. It should be kept in mind, however, that a loss of some descriptive adequacy is the inevitable result of relating and generalizing about different aspects of grammar in the hope of obtaining new results.

Summing up: in this section the actual shape of our phrase structure tree has become apparent. On the one hand, the tree is organized by a semanto-pragmatical scheme consisting of four FPs (IllP, PropP, TP and PredP), all dominating the VP. The different adverbial types are linked to one of these FPs. On the other, each FP is structured according to the double specifier approach introduced by Laenzlinger (1996, 2000). Every projection consists of a head, a complement and two specifiers. The A-Spec is the host for moved material, while the A’-Spec contains phrases (predominantly adverbials) that have semantic scope over the respective heads. The semantic hierarchy between AdvPs belonging to the same FP is formalized by putting the higher AdvP is the A’-Spec of the lower AdvP. In this way the A’-Spec is the representative of lexico-semantic selection while the cascade of FPs offers a more fundamental semantic structure on which the adverbial hierarchy is projected.
6.2.3 What and how to move? A movement theory for Dutch

In this section I will try to develop a movement theory that derives the word order data following the above assumptions that the adverbials are in fixed positions and that all the other material moves around them. The Dutch examples adopted from Verhagen (1986) show that we need a flexible movement theory.

(30) (a) Waarschijnlijk hebben alle aandeelhouders hun stukken vandaag verkocht
(b) Vandaag hebben waarschijnlijk alle aandeelhouders hun stukken verkocht
(c) Vandaag hebben alle aandeelhouders waarschijnlijk hun stukken verkocht
(d) Vandaag hebben alle aandeelhouders hun stukken waarschijnlijk verkocht
(e) Vandaag hebben alle aandeelhouders hun stukken verkocht, waarschijnlijk
(f) Alle aandeelhouders hebben waarschijnlijk vandaag hun stukken verkocht
(g) Alle aandeelhouders hebben vandaag waarschijnlijk hun stukken verkocht
(h) Alle aandeelhouders hebben vandaag hun stukken waarschijnlijk verkocht
(i) Alle aandeelhouders hebben hun stukken vandaag waarschijnlijk verkocht
(j) Alle aandeelhouders hebben hun stukken waarschijnlijk vandaag verkocht
(k) Alle aandeelhouders hebben vandaag hun stukken verkocht, waarschijnlijk
(l) Alle aandeelhouders hebben hun stukken vandaag verkocht, waarschijnlijk

We would like to assume that waarschijnlijk occupies a fixed position in PropP. Vandaag can be located in two positions: in TP (in its scene-setting use in (30b-e)) or in PredP. This means that, in (30), heterogeneous material (often non-constituents) has been moved around the adverbs. An evident solution is, of course, remnant movement. This type of movement has often been criticized as unmotivated, though it has also received a good deal of attention since it follows logically from Kayne’s (1994) framework and its ban on rightward movement. Some scholars, such as Koopman & Szabolcsi (2000), Müller (1998, 2004), Zubizarreta (1998), Kayne (1998), Haegeman (2000b, 2001, 2002c) and Nilsen (2003), make extensive use of
remnant movement in their attempt to avoid rightward and covert movement (cf. Alexiadou et.al. 2002). It is often claimed that remnant movement is triggered by a pragmatic feature Topic or Focus. This may explain why many syntacticians are reluctant to accept remnant movement: the movement operations are pragmatically motivated and consequently less restricted than ‘hardcore’ syntactic movements. Yet there are others (Haegeman, Kayne, Müller 2004) who do consider remnant movement to be a genuine syntactic operation. I for one would not be very unhappy if the pragmatically motivated remnant movement operations are not considered genuine syntactic movement, but as a sort of PF-movement. The p-movement which is introduced in Zubizarreta (1998) is considered to be PF-movement. My proposals are similar to hers and the question whether the remnant movements are pre- or post-Spell-Out does not really challenge the core of my theory. Perhaps one should worry about scope effects if the proposed remnant movements are taken to occur at PF. These movements would not affect scope, which might be an undesirable result. We could overcome the problem by adopting López’ (2003) analysis, which argues that the pragmatic values ‘presupposition’ and ‘contrast’ are linguistic features that trigger syntactic movement. However, López states these features are assigned by an interpretive component called pragmatics. In any case, the exact status of these movement operations (syntactic or pragmatic) is of minor importance and I will put the question aside for the moment.

The core of my proposal is constituted by the pragmato-semantical scheme from (3) and the idea that the actual order between the elements in this scheme is mixed up in surface structure by remnant movement. The remnant movements are geared to fulfil two information-structural purposes. First, we assume that σ₃ adverbials constitute a natural boundary between the topic and the comment of the clause. Remnant TP-movement is designed to move the topical part of the TP across the adverbial. Second, in some cases the arguments must be evacuated from the VP across an adverbial in PredP in order to put the focus on the adverbial alone. This can be done by remnant VP movement. In the spirit of López (2003), these movements could be triggered by a [+presuppositional] feature assigned to the topical parts of the clause. I will try to illustrate this by deriving the word order alternations in (30). Let us start with the following sentence:

(31) Alle aandeelhouders hebben vandaag waarschijnlijk hun stukken verkocht
I would suggest that this sentence is derived as in (32). First the VP is formed in (32a).\textsuperscript{52} Next the adverb *vandaag* is merged in the A'-Spec of PredP (32b).\textsuperscript{53} When the PredP is completed, the TP should be formed. The auxiliary is merged as the head of TP and the subject has to move to A-Spec,TP (see (32c)). At the moment it remains unclear how and why the subject reaches this position. As for the trigger, it could be assumed that the subject moves to A-Spec,TP to check features with the auxiliary in T. However, subject movement is optional in Dutch, and therefore it is questionable which features should be checked (Case, Number?) if this checking operation is not obligatorily local.\textsuperscript{54} Alternatively, it could be argued that the subject moves for information structural reasons\textsuperscript{55}, as in most of the movements we will propose in this chapter. This would entail that the movement is of the remnant VP type. Another question is whether the subject can move from the VP to A-Spec,TP in one step. Perhaps it should pass through the A-Specs of PredP and even of AdvP in A'-Spec,PredP. However, the latter approach and the remnant VP procedure would make the derivation far more complex and very difficult to read. For the time being we will use a simplified notation, merely moving the subject to A-Spec,TP and we will come back to the problematic issues later.

Let us now proceed with the derivation. In the next step we want to move *alle aandeelhouders hebben vandaag* across the adverb *waarschijnlijk*, stranding the VP *hun stukken verkocht*. Therefore, we have to assume that the VP first moves out from the TP, as an artefact of common theoretical considerations that we cannot move incomplete categories and that only leftward movement is admitted. The theoretical status of the landing site for this VP-movement is unclear, however, and we will adopt the idea from Koopman & Szabolcsi (2000) en Nilsen (2003) that a particular projection is created for this type of movement. Nilsen uses the symbol ΣP, but we

\begin{itemize}
  \item \textsuperscript{52} I assume OV order in the VP, predominantly for convenience’ sake. Considering OV order as basic was the standard analysis in the eighties and it is still maintained in Haider (2000, 2004). There are two versions of basic SVO order in languages like Dutch and German: one proposed by Zwart (1997) and one elaborated in Haegeman (2000b, 2001, 2002c) and Koopman & Szabolcsi (2000). Clearly, the matter is not settled yet.
  \item \textsuperscript{53} The difference between A'-Spec and the A-Spec can be read from the labeled bracketing notation using bar-levels. This is the general format: \([\text{XP} A' \text{-Spec} [\text{X \text{-Spec} [\text{X \text{Compl}}]]]}\).
  \item \textsuperscript{54} Müller (2004) does not consider optional subject raising to Spec,T to be a problem and argues that it is triggered by an optional [D] feature on T.
  \item \textsuperscript{55} This movement could be triggered by a feature like [+p(resuppositional)] from López (2003). However, there are some further peculiarities about assigning pragmatic features and I will postpone the discussion for the time being.
\end{itemize}
will follow Koopman & Szabolcsi, who introduce LP (for Licensing Position). This is only a technical instrument to make sure that all words end up at the right spot. After moving the VP to LP (see (32d)), the PropP is formed. The adverb *waarschijnlijk* is merged into A’-Spec, PropP and the remnant TP is moved into the A-Spec of the adverb. The essential point in all this is that the remnant TP contains topical material (bearing [+p(resuppositional)] features) only and is moved across the $\sigma_3$ adverbial. The comment part remains in the VP, which has to move to LP first to end up in the final position at the end of the derivation.

(32)  (a)  [VP alle aandeelhouders hun stukken verkocht]
(b)  [PredP vandaag [Pred [Pred [VP alle aandeelhouders hun stukken verkocht]]]]
(c)  [TP [T alle aandeelhouders [T hebben [PredP vandaag [Pred [Pred [VP alle aandeelhouders hun stukken verkocht]]]]]]]
(d)  [LP [VP alle aandeelhouders hun stukken verkocht], [TP [T alle aandeelhouders [T hebben [PredP vandaag [Pred [Pred [VP alle aandeelhouders hun stukken verkocht]]]]]]]]

Let us continue with the word order alternative in (30f), repeated here as (33):

(33)  Alle aandeelhouders hebben waarschijnlijk vandaag hun stukken verkocht

56 See Koopman & Szabolcsi (2000: 44) on the (lack of) theoretical status of the stacking LPs.
57 It is inconvenient that constituents should always move to the A-Spec of AdvPs and that they never fill the A-Spec of the functional projection itself. Furthermore, it is troublesome that the adverbials in our derivations always occupy the head position of AdvP. This is fine for the simple adverbs that we use in the examples, but turns into a problem if the adverbials are more complex. This has already been observed in section 6.2.2 and will be a recurring theme in the following sections. The problems will be addressed in section 6.2.5.
The derivation in (34) proceeds in the same manner as in (32) up to the formation of the TP (the representation in (34c)). Afterwards the derivations in (32) and (34) diverge. The adverb vandaag takes part in the comment of the clause in (33) and should bear a [-p(resuppositional)] feature (cf. López 2003). Therefore it should not move across waarschijnlijk along with TP. Consequently we assume that not only VP but also PredP is moved to the LP ((34d)), so that the remnant TP moving to A'-Spec,AdvP does not contain vandaag. The final result is represented in (34e).

Another possibility to order the elements in the clause is illustrated in (35). The derivation is represented in (36).

(35) Alle aandeelhouders hebben vandaag hun stukken waarschijnlijk verkocht
(36) (a) [VP alle aandeelhouders hun stukken verkocht]
(b) [LP [V verkocht] [VP alle aandeelhouders hun stukken verkocht]]
(c) [PredP vandaag [Pred' [VP alle aandeelhouders hun stukken verkocht]]]
(d) [TP [T' alle aandeelhouders [T hebben [PredP vandaag alle aandeelhouders hun stukken verkocht]]]
(e) [LP [[LP verkocht] [VP alle aandeelhouders hun stukken verkocht]] [TP [T' alle aandeelhouders [T hebben [PredP vandaag alle aandeelhouders hun stukken verkocht]]]]
(f) [PropP [AdvP [Adv' [TP [T' alle aandeelhouders [T hebben [PredP vandaag alle aandeelhouders hun stukken verkocht]]]] waarschijnlijk]]
[Prop' Prop] [LP [VP alle aandeelhouders hun stukken verkocht] [TP [T' alle aandeelhouders [T hebben [PredP vandaag alle aandeelhouders hun stukken verkocht]]]]]

In (36a) the VP is formed. Next, we want to evacuate the arguments from the VP, because only the V is included in the comment. This can be done by remnant VP
movement. We first move the verb to an LP ((36b)), and, subsequently, the remnant VP containing the arguments only (probably bearing a [+p] feature) is moved to A-Spec,PredP ((36c)). Then, the TP is created in the same manner as above. The auxiliary is merged in T and the subject is moved to A-Spec,TP ((36d)). In a final move the PropP is formed. As a preparatory step the verb is moved for a second time to an LP ((36e)) to permit the remnant TP to move to the A-Spec of waarschijnlijk (see (36f)). Obviously, the derivation becomes more complex than in the previous examples as a result of the remnant VP movement. The subject and the object are pushed out of the VP to guarantee that the latter contains only comment ([−p]) material. Since the subject and the object are moved here by remnant movement, one should put aside the earlier simplifications and wonder whether the subject should not reach A-Spec,TP also by remnant VP movement. Furthermore, it would not be inappropriate to propose that the subject moves to TP in smaller steps. Derivation (36) already indicates that the subject moves together with the object to A-Spec,PredP. If the subject cannot evacuate from its basic position to A-Spec,TP in one move, it should probably pass all A-Spec positions on its way to TP, i.e. A-Spec,PredP and the A-Spec of vandaag. This is illustrated in (37). When the TP is created in (37d), the subject moves from the remnant VP in A-Spec,PredP to A-Spec,AdvP and further to A-Spec,TP. \textsuperscript{58} Copies created by remnant movement make the derivations hard to read. From now on I will represent derivations more transparently by using traces for remnant movement and copies for the more ‘regular’ types of movement. \textsuperscript{59}

\textsuperscript{58} Technically, the subject does not move upwards in (37) by remnant movement after the object is stranded in A-Spec,PredP. This would force the object to be moved to an LP so that the remnant VP contains only the subject and is moved upwards to TP. This type of analysis would make the derivation more complex and, moreover, it will be argued later on that remnant movement is not the appropriate mechanism to move the subject to TP, because this would yield sentences that violate the V2 rule.

\textsuperscript{59} For the sake of simplicity I will also follow Koopman & Szabolcsi (2000) when LPs are embedded into new LPs. They will be labeled as LP only once and we will avoid notations such as [LP [LP ...]]
The next variation in (30) to be discussed is the sentence repeated in (38). The derivation is represented succinctly in (39).

(38) Alle aandeelhouders hebben hun stukken vandaag waarschijnlijk verkocht

(39) (a) [VP alle aandeelhouders hun stukken verkocht]

  preparatory step for remnant VP movement

(b) [LP [V verkocht] [VP alle aandeelhouders hun stukken verkocht]]

  Merge PredP and remnant VP movement to A-Spec,AdvP

(c) [PredP [AdvP [Adv’ [VP alle aandeelhouders hun stukken verkocht]; vandaag]] Pred [LP [V verkocht] VP]]

  Merge TP and subject movement to A-Spec,TP

(d) [TP [T’ [alle aandeelhouders] hebben [PredP [AdvP [Adv’ [VP alle aandeelhouders hun stukken verkocht]; vandaag]] Pred [LP [V verkocht] VP]]]]

  preparatory step for remnant TP movement

(e) [LP [verkocht VP]] [TP [T’ [alle aandeelhouders] hebben [PredP [AdvP [Adv’ [VP alle aandeelhouders hun stukken verkocht]; vandaag]] Pred [LP [verkocht VP]]]]]

  Merge PropP and remnant TP movement to A-Spec,AdvP

(f) [PropP [AdvP [Adv’ [TP [T’ [alle aandeelhouders] hebben [PredP [alle aandeelhouders hun stukken verkocht; vandaag]] Pred [LP [verkocht VP]]]k waarschijnlijk] Prop [LP [verkocht VP]] TPk]]

The subject and the object are moved across vandaag by remnant VP movement. This proves that the analysis in (37), moving the subject first to A-Spec,AdvP, is useful. Here both the subject and the object should cross the adverb vandaag. This can be done by remnant VP movement. The remnant VP probably first moves to A-Spec,PredP (which is not represented in the derivation) and then across the adverb to
A-Spec,AdvP. Then the subject alone is moved to A-Spec,TP. Finally, the whole TP except the verb is moved across *waarschijnlijk* bij remnant TP movement.

The derivation of the next sentence is rather cumbersome.

(40) Alle aandeelhouders hebben hun stukken *waarschijnlijk* vandaag verkocht

(41) (a) \[ VP \text{alle aandeelhouders hun stukken verkocht} \]

\[ \text{preparatory step for remnant VP movement} \]

(b) \[ LP [ V \text{verkocht}] \text{alle aandeelhouders hun stukken verkocht} \]

\[ \text{Merge PredP and remnant VP movement to A-Spec,AdvP} \]

(c) \[ \text{PredP} \text{AdvP} \text{VP alle aandeelhouders hun stukken}, \text{vandaag]} \text{Pred} \]

\[ [LP \text{verkocht} \text{VP}]] \]

\[ \text{Merge TP and subject movement to A-Spec,TP} \]

(d) \[ TP [ T \text{alle aandeelhouders} [T \text{hebben} [\text{PredP} \text{AdvP} \text{VP alle aandeelhouders} \text{hun stukken}, \text{vandaag}]] \text{Pred} \]

\[ [LP \text{verkocht} \text{VP}]]]] \]

\[ \text{preparatory step for remnant TP movement} \]

(e) \[ LP [ \text{vandaag verkocht}][TP [ T \text{alle aandeelhouders} [T \text{hebben} [\text{PredP} \text{alle aandeelhouders} \text{hun stukken} [\text{vandaag verkocht}]]]]]] \]

\[ \text{Merge PropP and remnant TP movement to A-Spec,AdvP} \]

(f) \[ \text{PropP} \text{AdvP} \text{TP alle aandeelhouders hebben hun stukken}, \text{waarschijnlijk}] \text{Prop} \]

\[ [LP [\text{vandaag verkocht} \text{TP}]]] \]

The derivation in (41) proceeds in the same manner as in (39) up to the formation of the TP. The subject and the object are moved across *vandaag* by remnant movement and the subject is moved to A-Spec,TP. Unfortunately, we get into trouble when we want to move the topical part of the clause across the \( \sigma_3 \) adverb *waarschijnlijk* by remnant TP movement. Because *vandaag* ends up to the right of *waarschijnlijk* in the comment part of the clause, it cannot be moved along with the TP. This means that the temporal adverb should be moved together with the V to an LP in order to be able to be stranded after remnant TP movement, as indicated in (41e-f). The problem is, however, that *vandaag verkocht* does not form a constituent and consequently it is unclear how the adverb and the verb could be moved together. In this example, the split between the topic and the comment part of the TP is rather unusual, following our theoretical assumptions. We are forced to claim that the specifier of the AdvP is moved to the left, while the adverb itself stays in situ (in fact, to put it technically correct, the adverb is moved with its complement to an LP and afterwards the remnant TP is moved across the LP).\(^{60}\)

\(^{60}\) Hopefully, this problem will be resolved when we adopt the incremental approach (see section 6.2.6).
Next, let us discuss (30k-l), repeated here for the sake of convenience:

(42) Alle aandeelhouders hebben vandaag hun stukken verkocht, waarschijnlijk

(43) (a) \([\text{VP} \text{alle aandeelhouders hun stukken verkocht}]\) 

\(\text{Merge PredP} \rightarrow\)

(b) \([\text{PredP } \text{vandaag} [\text{Pred} [\text{VP alle aandeelhouders hun stukken verkocht}]]]\)

\(\text{Merge TP and subject movement to A-Spec, TP} \rightarrow\)

(c) \([\text{TP} [\text{T' alle aandeelhouders [T hebben] [PredP vandaag [Pred [\text{VP alle aandeelhouders hun stukken verkocht}]]]]]}\)

\(\text{Merge PropP and TP movement to A-Spec, AdvP} \rightarrow\)

(d) \([\text{PropP [AdvP [Adv' [TP [T' alle aandeelhouders [T hebben] [Pred [\text{VP alle aandeelhouders hun stukken verkocht}]]]]]]]}\)

\(\text{Merge PropP and TP movement to A-Spec, AdvP} \rightarrow\)

(e) \([\text{PropP [AdvP [Adv' [TP [T' alle aandeelhouders [T hebben] [Pred [\text{VP alle aandeelhouders hun stukken verkocht}]]]]]]]}\)

In (43) the TP is formed in the usual manner (see steps (43a-c)). Then the PropP is merged: the \(\sigma_3\) adverb is located in A’-Spec,PropP and the whole TP is moved to A-Spec,AdvP. In (45), we have to take care of the fact that the object ends up before the temporal adverb. This is done by remnant VP movement in (45b-c). The formation of the TP then continues (45d). Finally, at the stage of PropP formation, the whole TP is moved to A-Spec,AdvP, as in (43). TP movement in (43) and (45) is not really the result of topicalization. The adverb \text{waarschijnlijk} should rather be considered as a sort of afterthought and must be clearly set off by comma intonation. It would be unreasonable to say that in these sentences the \(\sigma_3\) adverbiaal constitutes a boundary between the topic and the comment part of the clause. It would mean that the comment is null and that the whole clause is topic. The focus is on \text{hun stukken} in (42) and on \text{vandaag} in (44), respectively. In other words, the TP movement in these cases differs from the remnant TP movement in the previous examples, as far as the information structural impact is concerned.
Let us proceed with the clauses in which the adverb *vandaag* is in initial position. I assume that in these cases the adverb is used in its scene-setting function. Consequently, it is merged in A’-Spec,TP and not in A’-Spec,PredP. This can be seen in the following example.

\[(46) \quad \text{Vandaag hebben alle aandeelhouders hun stukken verkocht, waarschijnlijk}\]

\[(47) \begin{align*}
\text{(a)} & \quad [\text{TP vandaag} [\text{T} [\text{T hebben}] [\text{VP alle aandeelhouders hun stukken verkocht}]]] \\
\text{(b)} & \quad [\text{PropP [AdvP [Adv' [TP vandaag hebben alle aandeelhouders hun stukken verkocht], waarschijnlijk]] Prop TP}_k]\end{align*}\]

The reader can observe in (47a) that the adverb *vandaag* is in A’-Spec,TP and the auxiliary is in T, followed by its complement VP.\(^{61}\) When the PropP is merged, the whole TP is moved to the A-Spec of *waarschijnlijk*, as in the two previous examples. For the sentence in (48), two derivations are possible. In any case, the verb should be stranded, but one can hesitate about the exact timing of this stranding procedure. We could assume that the TP is formed as above, with the scene-setting adverbial *vandaag* in A’-Spec,TP (see (49a)) and, in a next step, the verb is stranded by remnant TP movement, leaving the verb at the right edge of the \(\sigma_3\) adverb *waarschijnlijk* (technically, this is attained by moving the V to an LP in (49b)). Alternatively, the V is already stranded before the TP is formed, by remnant VP movement, as illustrated in the derivation in (50). The idea behind this proposal is that topical [+p] VP material is moved to the left, *in casu* to A-Spec-PredP, so that it is ‘high enough’ in the structure to be moved along with the TP across the adverb *waarschijnlijk*. In this reasoning, only the stranded part of the VP constitutes the comment and the topical [+p] arguments are evacuated by remnant VP movement. Rather inconveniently, the technical mechanism of remnant movement forces us to posit the existence of LPs. It would be simpler if the stranded part of the VP could remain *in situ* as the VP proper, containing only the comment, and if the topical [+p] elements are moved out. However, this would require the possibility of incomplete category movement, which is generally banned in generative literature.

---

\(^{61}\) We will try to explain further on why the subject does not move to A-Spec,TP. This, of course, is a consequence of the V2 phenomenon.
Vandaag hebben alle aandeelhouders hun stukken waarschijnlijk verkocht.

Derivation A
(a) \[
\begin{align*}
\text{TP} & \quad \text{vandaag} & \quad \text{T'} & \quad \text{T hebben} & \quad \text{VP} & \quad \text{alle aandeelhouders hun stukken verkocht}
\end{align*}
\]

--- preparatory step for remnant TP movement ---
(b) \[
\begin{align*}
\text{LP} & \quad \text{verkocht} & \quad \text{TP} & \quad \text{vandaag} & \quad \text{T'} & \quad \text{T hebben} & \quad \text{VP} & \quad \text{alle aandeelhouders hun stukken verkocht}
\end{align*}
\]

Merge PropP and remnant TP movement to A-Spec,AdvP ➔
(c) \[
\begin{align*}
\text{PropP} & \quad \text{AdvP} & \quad \text{Adv'} & \quad \text{TP} & \quad \text{vandaag} & \quad \text{T'} & \quad \text{T hebben} & \quad \text{VP} & \quad \text{alle aandeelhouders hun stukken verkocht} & \quad \text{ij} & \quad \text{waarschijnlijk} & \quad \text{TP} & \quad \text{i}
\end{align*}
\]

Derivation B
(a) \[
\begin{align*}
\text{VP} & \quad \text{alle aandeelhouders hun stukken verkocht}
\end{align*}
\]

--- preparatory step for remnant VP movement ---
(b) \[
\begin{align*}
\text{LP} & \quad \text{verkocht} & \quad \text{VP} & \quad \text{alle aandeelhouders hun stukken verkocht}
\end{align*}
\]

Merge PredP and remnant VP movement to A-Spec,PredP ➔
(c) \[
\begin{align*}
\text{PredP} & \quad \text{Pred'} & \quad \text{VP} & \quad \text{alle aandeelhouders hun stukken verkocht} & \quad \text{i} & \quad \text{Pred} & \quad \text{LP verkocht VP}_{i}
\end{align*}
\]

Merge TP ➔
(d) \[
\begin{align*}
\text{TP} & \quad \text{vandaag} & \quad \text{T'} & \quad \text{T hebben} & \quad \text{PredP} & \quad \text{Pred'} & \quad \text{VP} & \quad \text{alle aandeelhouders hun stukken verkocht} & \quad \text{i} & \quad \text{Pred} & \quad \text{LP verkocht VP}_{i}
\end{align*}
\]

--- preparatory step for remnant TP movement ---
(e) \[
\begin{align*}
\text{LP} & \quad \text{verkocht VP}_{i} & \quad \text{TP} & \quad \text{vandaag} & \quad \text{T'} & \quad \text{T hebben} & \quad \text{PredP} & \quad \text{Pred'} & \quad \text{VP} & \quad \text{alle aandeelhouders hun stukken verkocht} & \quad \text{i} & \quad \text{Pred} & \quad \text{LP verkocht VP}_{i}
\end{align*}
\]

Merge PropP and remnant TP movement to A-Spec,AdvP ➔
(f) \[
\begin{align*}
\text{PropP} & \quad \text{AdvP} & \quad \text{Adv'} & \quad \text{TP} & \quad \text{vandaag} & \quad \text{T'} & \quad \text{T hebben} & \quad \text{PredP} & \quad \text{Pred'} & \quad \text{VP} & \quad \text{alle aandeelhouders hun stukken verkocht} & \quad \text{i} & \quad \text{Pred} & \quad \text{LP verkocht VP}_{i} & \quad \text{ij} & \quad \text{waarschijnlijk} & \quad \text{TP} & \quad \text{i}
\end{align*}
\]

Example (51) presents yet another possible word order permutation. I would suggest the derivation in (52).

(51) Vandaag hebben alle aandeelhouders waarschijnlijk hun stukken verkocht
In fact, this type of derivation implies that we should prefer derivation B in (50) above derivation A in (49). In (52), the topical part of the VP (bearing [+p] features) is separated from the comment. This is realized by isolating the comment in an LP and moving the subject by remnant movement to the left, i.e. to A-Spec,PredP. After the TP is merged, the topical part of the TP can move across the adverb *waarschijnlijk* in PropP, stranding the comment, since the latter is already isolated in an LP by the remnant VP movement procedure. In other words, the topical part of the VP (bearing [+p] features) must always be moved to the left by remnant VP movement. I do not see any other way how the subject could be separated from the remainder of the VP by the $\sigma_3$ adverb. It would be implausible to assume that the subject remains in VP until the remnant TP movement procedure takes place. This would mean that only a part of the VP is isolated in the LP and that a very awkward TP category, containing the TP-part, the Pred-part and only the subject of the VP, is moved across the $\sigma_3$ adverb as a kind of remnant. This is illustrated in (53). As a result, it appears to be preferable for topical [+p] elements always to be evacuated from the VP by remnant VP movement (although, of course, technically, the topical elements are not evacuated. Actually, they are the only remnants of the moved VP and the comment is evacuated from the VP to an LP. I repeat that this is only an artefact of our theory on leftward and remnant movement, because this is the only theory at hand for moving incomplete categories). This should also hold for the sentence in (48), i.e. the topical
subject and object are moved, remnantwise, to strand the V, as in derivation B in (50). The suggestion made above about a possible remnant analysis of example (31) is thus strengthened. It is reasonable for the subject too to be moved in this fashion for information structural reasons and not to check features with the verb, at least in a language like Dutch. This is also corroborated by the next examples.

(53)

\[
\begin{array}{c}
\text{PropP} \\
\text{AdvP} & \text{Prop'} \\
\text{Adv'} & \text{Adv} \\
\text{A-Spec} & \text{A'-Spec} \\
T & T' \\
\end{array}
\]

\[
\begin{array}{c}
\text{TP} \\
\text{PredP} \\
\text{VP} \\
\text{subj} \\
\text{V'} \\
\text{waarschijnlijk} \\
vandaag \\
hebben \\
alle aandeelhouders \\
hun stukken verkocht \\
\end{array}
\]

(54) Vandaag hebben waarschijnlijk alle aandeelhouders hun stukken verkocht

(55) (a) \[
\begin{array}{c}
\text{TP vandaag [T' [T hebben [PredP [VP alle aandeelhouders hun stukken verkocht]]]]}
\end{array}
\]

preparatory step for TP movement \rightarrow

(b) \[
\begin{array}{c}
\text{LP [alle aandeelhouders hun stukken verkocht] [TP vandaag [T' [T hebben] [PredP [VP alle aandeelhouders hun stukken verkocht]]]]}
\end{array}
\]

Merge PropP and remnant TP movement to A-Spec,AdvP

(c) \[
\begin{array}{c}
\text{PropP [AdvP [Adv' [TP vandaag [T' [T hebben] [PredP [VP alle aandeelhouders hun stukken verkocht]]]] waarschijnlijk] Prop [LP [alle aandeelhouders hun stukken verkocht]]}
\end{array}
\]

In sentence (54), the VP as a whole constitutes the comment. We can therefore assume that the TP is formed without any prior movement operations, as in (55a). It is also important to note that the subject is not moved to the T-projection for feature checking. Actually, the subject cannot move to A-Spec,TP, as this is barred by the V2-requirement, which will be dealt with further on. To derive the word order in (54),
we have to strand the whole VP and to move the TP part ‘vandaag hebben’ remnantwise across the $\sigma_3$ adverb. This is indicated in (55b-c).

Finally, we should tackle the word order pattern in (30a), repeated here as (56).

(56) Waarschijnlijk hebben alle aandeelhouders hun stukken vandaag verkocht

(57) (a) \([\text{VP} \text{ alle aandeelhouders hun stukken verkocht}]\) 

\[\text{preparatory step for remnant VP movement} \rightarrow\]

(b) \([\text{LP} \text{ verkocht} [\text{VP} \text{ alle aandeelhouders hun stukken verkocht}]\]

\[\text{Merge PredP and remnant VP movement to A-Spec,AdvP} \rightarrow\]

(c) \([\text{PredP} [\text{AdvP} [\text{Adv'} [\text{VP} \text{ alle aandeelhouders hun stukken verkocht}, \text{vandaag}] \text{Pred [LP verkocht VPi]}]]\]

\[\text{Merge TP} \rightarrow\]

(d) \([\text{TP} [\text{T'} [\text{T hebben}] [\text{PredP} [\text{AdvP} [\text{Adv'} [\text{VP} \text{ alle aandeelhouders hun stukken verkocht}, \text{vandaag}] \text{Pred [LP verkocht VPi]}]]]]\]

\[\text{Merge PropP} \rightarrow\]

(e) \([\text{Prop} \text{ waarschijnlijk [Prop' Prop [TP [T' [T hebben]] [PredP [AdvP [Adv' [VP alle aandeelhouders hun stukken verkocht}, vandaag]] Pred [LP verkocht VPi]]]]]}\]

First, we have to guarantee that the subject and the object end up before the adverb *vandaag*. The latter is part of the comment (bearing a [-p] feature); it is not used in its scene-setting function and is consequently located in A’-Spec,PredP. The subject and the object are moved across *vandaag* by remnant VP movement, as illustrated in (57a-b). Subsequently the TP and the PropP are merged without any movement operations. Since the $\sigma_3$ adverb *waarschijnlijk* occurs clause-initially, it does not divide the clause in a topic and a comment part. As a result there is no remnant TP movement. Everything stays in place, while the auxiliary is merged in T and the adverb *waarschijnlijk* in A’-Spec,PropP. One could wonder why nothing is moved to A-Spec,TP when the TP is formed. We already observed in the preceding examples ((47), (52) and (55)) that the subject is not moved to TP, obviously because the adverb *vandaag* is present in the TP projection. This is, of course, due to the well-known V2 effect. As a first approximation, the V2 Principle Can be formulated in the sketched framework simply as in (58).
This works out neatly with all the examples offered. In (57), only the A'-Spec,PropP is filled above T by the adverb *waarschijnlijk*. It also explains why nothing can be merged in or moved to A'-Spec,TP or A-Spec,TP in (57d). The Specs cannot be filled because room must be left open for the adverb in A'-Spec,PropP in (57e). When a \( \sigma_3 \) adverbial competes with a scene-setting adverbial or the subject for sentence-initial position, the solution is offered by (remnant) TP movement.\(^{62}\) In other words, to satisfy the V2 Principle in (58), the TP may be forced to move (remnantwise) to A-Spec,PropP. After this movement, the condition is fulfilled: there is only one element in A/A'-Spec of the moved TP and there is only one spec filled above the original T, i.e. A-Spec,Prop, at least as far it is relevant to trace back this original T position, since the picture is obscured by the intervening LP projection.\(^{63}\) It certainly would make sense if the V2 phenomenon is related to remnant TP movement.\(^{64}\) We have claimed that remnant TP movement is triggered to move the topical part of the TP to Spec,PropP and to give the opportunity to \( \sigma_3 \) adverbials to serve as boundaries between the topic and the comment of the clause. It is generally acknowledged that V2 is important in topic-comment issues and consequently it would not be far-fetched if the V2 principle in (58) triggers topic-comment structuring by the technical instrument of remnant TP movement. It would also explain why both topic-comment structure and V2 are absent from subordinate clauses. As there is no PropP in these subordinate clauses for the remnant TP to move to, there cannot be topic-comment articulation, and V2, which triggers this remnant TP movement, must be absent.\(^{65}\)

62 In my opinion this also explains why some authors (e.g. Frey & Pittner 1998a, b; their point of view has changed in Frey (2003)) are misguided when they claim that scene-setting adverbials are hierarchically superordinate to sentence (\( \sigma_3 \)) adverbials. The scene-setting adverbials are moved across the \( \sigma_3 \) adverbials on the back of the moved TP and, at surface structure, precede them.

63 We should emphasize again that in most cases, technically speaking not A-Spec,PropP is filled, but A-Spec,AdvP. This means that the only filled Spec-position above the original T is A'-Spec,PropP filled by the AdvP. We will come back to this issue in section 6.2.5 when we suggest that the AdvS actually occupy the heads of the FPs.

64 Observe the similarities with the analysis by Müller (2004), who considers V2 as remnant vP-movement. I will come back to this further on.

65 It is an interesting question how the verb-final word order is reached in subordinate clauses according to this theory. Perhaps the tensed verb is in T and the whole PredP is moved to its A-Spec (cf. Haegeman 2000b, 2001, 2002c).
can occur and where the Prop-layer (and sometimes the Ill-layer) are available (cf. Meinunger 2004).

Unfortunately, the present analysis is still faced with a few problems. Even if we stipulate that only one Spec above T may be filled, we cannot guarantee that only one constituent ends up in preverbal position, because this Spec-position can contain a complex constituent. First, it is possible that the A’-Spec of TP or PropP is constituted by a concatenation of adverbs, since we proposed that adverbs can reside in each other’s A’-Spec recursively (section 6.2.2). This would cause a V2 violation and it is hard to see how this problem can be solved. Second, it cannot be excluded that the A-Spec,TP contains a remnant VP, holding, for instance, the subject and the object. In other words, we continue to be faced with the problematic status of subject movement to TP. If we generalize the remnant movement analysis, we cannot avoid the remnant VP in A-Spec,TP exhibiting too much material. On the other hand, we have observed that considering subject movement to TP as a feature checking mechanism is not very appealing either. Ultimately, it would seem that the A-Spec of TP is not filled by a moved remnant but by an ordinary XP constituent, at least as long as A’-Spec,TP is not occupied by an adverbial. It may be a relief that most of these problems also emerge in the similar analysis offered by Müller (2004). In Müller’s approach, V2 is considered as a sort of vP-First. Müller tries to establish a mechanism in which only the first constituent at surface structure shows up in Spec,vP and afterwards the vP containing only the first constituent and the verb or auxiliary in v moves to the front. This is similar to our own concern that only one constituent may occur in the Specs above T and the claim that the TP is remnantwise moved to initial position (in simple terms, Müller’s vP resembles our TP). Obviously, the trickiest part of Müller’s analysis is warranting that only one constituent moves along with the verb during remnant vP movement. For this purpose, he postulates the EPC:

(59) **Edge Domain Pied Piping Condition (EPC)**
A moved vP contains only the edge domain of its head

This constraint essentially meets the same needs as my Verb Second Principle (since edge domains contain only the small left-peripheral part of a phrase), formulated in a movement context. Furthermore, he proposes that subjects and adverbs occur

---

66 I would like to thank Liliane Haegeman for pointing this out.
naturally in Spec,vP, while other constituents (objects and VPs) move to the latter position by scrambling. It remains a little unclear how precisely this would work in the multiple specifier approach that Müller adopts from Chomsky (1995).

In any case, these observations may shed some light on the nature of the movement operations sketched in this section. Apparently, the constituent moved to TP moves qua XP constituent and not on the back of remnant movement, since the former is the only manner to guarantee that only one constituent shows up in preverbal position. We have assumed above that phrases are moved leftward because they have a ‘topical’ nature and we have suggested that the latter might be linked to the [+p] feature from López (2003). Now I would propose that the subject is moved to TP by another pragmatic feature. The [+p] feature can be assigned to large portions of the structure, as quite often more than one constituent is presuppositional. The other pragmatic feature, however, can only be assigned to one XP and forces this XP to move to A-Spec,TP. The XP is the subject in most cases, but can also be the object of the clause. If the latter is moved to A-Spec,TP and afterwards, on the back of remnant TP movement, moved to the front of the clause, we obtain an object fronting structure, as in (60).67

(60) Die man heb ik waarschijnlijk gisteren in de bibliotheek gezien

The appropriate pragmatic feature might be [+contrast], as proposed by López (2003) for CLLD or the [+op] feature from Müller (2004).68 In brief, [+op] is assigned to only one constituent and yields XP-movement of the latter to A-Spec,TP. The [+p] feature can be assigned to more constituents in the clause, which are moved leftward by remnant movement. However, one should note that not all types of remnant movement have the same effect. Following the suggestions above, remnant TP-movement moves the topical part of the clause bearing [+p] features across σ3 adverbs such as waarschijnlijk to PropP, dividing the sentence in a topic ([+p]) and a comment ([−p]) part. We have also observed that arguments can be moved across adverbials in PredP by remnant VP movement. Unfortunately, we cannot claim that this type of

67 In this analysis the difference between subject and object fronting vanishes, although the latter is often felt to be more marked. This is often accounted for by assuming an extra movement for object fronting (cf. Müller 2004).

68 [+contrast] seems a bit awkward for topical constituents, although López assigns it to CLLD constituents. In any case, focused constituents occupy the same sentence-initial position and contrast sounds appropriate there.
movement is triggered by the same feature, because in some cases arguments occur between the PropP-related and the PredP-related adverbial, as in (61):

(61) Alle aandeelhouders hebben waarschijnlijk hun stukken vandaag verkocht

Following the present framework, the subject and the object should be moved across *vandaag* by remnant VP movement. Subsequently the subject moves to A-Spec,TP to check the [+op] or [+contrast] feature. Finally, the remnant TP containing the subject and the auxiliary is moved across *waarschijnlijk*. If both remnant VP and remnant TP movement are triggered by a [+p] feature, we cannot explain why the object does not cross *waarschijnlijk*, as the subject does. If both subject and object bear the same feature, they should end up in the same position. Therefore I would suggest that remnant VP movement is triggered by yet another feature. As this procedure is mainly designed to put focus on the adverbial and to place the arguments more in the background, I tentatively call this feature [+background]. Summing up, there are three pragmatic features causing three types of movement: [+p] material is moved across σ₃ adverbials by remnant TP movement, [+background] material across PredP adverbials by remnant VP movement and the one XP bearing the [+op] feature is moved to A-Spec,TP by regular movement.

By way of conclusion I will summarize the most important results from this section and draw attention to some remaining problems. In this section, I have developed a theory about adverbial syntax and word order in Dutch making extensive use of remnant movement. I have argued that adverbials are located in fixed positions in the phrase structure and that other lexical elements are moved around them to meet the appropriate informational structural requirements. Remnant movement seems to be the best technical instrument to meet these requirements. It comes in two kinds: remnant VP movement serves to evacuate backgrounded elements in the VP to the left and to strand the information focus at the right edge of the clause; remnant TP movement can be used to move the topical [+p] part of the TP across a σ₃ adverbial in PropP, which constitutes the natural boundary between the topic and the comment of a clause. I have suggested that remnant TP movement is triggered by the V2 Principle in (58), a suggestion that may offer a theoretical base for the apparent coincidence between V2 and topic-comment articulation. We have also observed that the topic-comment structure is created only by remnant TP movement. Examples (42) and (44)
indicate that we obtain another pragmatic effect if the complete TP is moved across the adverbial: the adverbial is understood as a sort of afterthought. An important aspect of the framework sketched is the idea that the topic of the clause is moved to the left and the comment is stranded at the right edge. As comments differ in their sizes, it is inevitable that the stranded constituents are also different: V in derivation (36), VP in (32) and PredP in (34). The derivation in (41) appears to be rather peculiar, because we are forced to assume that the adverb and the verb are stranded together, while the subject and the object are moved upwards. This leads us to the awkward claim that the adverb, which is in A’-Spec,Pred, the Pred head and the latter’s complement containing only the V, are stranded (that means, technically, that they are moved together to an LP), while the remnant VP in the A-Spec of the adverb (containing the subject and the object) is moved along with the remnant TP. This is, of course, a very unusual portion of structure to be stranded (or to be moved), especially when compared to V, VP or PredP in the other derivations. One could say that we should not bother, since these remnant movement operations are quite unrestricted and pragmatically motivated, but, on the other hand, we have made some efforts to avoid movement of unusual, incomplete categories in derivation (52). At the moment, I am doubtful how to solve this problem. Finally, we have encountered some recurring technical inconveniences, such as the problematic status of LPs and the fact that constituents apparently do not move to the A-Spec of the functional heads Pred or Prop themselves but to the A-Spec of the Advs in the A’-Specs of these functional heads. These problems will be tackled in the following sections, but first we will try to apply the above framework to English data.

6.2.4 A movement theory for English

The word order possibilities in English are, of course, quite different. Generally speaking, the ordering of arguments and adverbials is more restricted than in Dutch because the scrambling properties of Dutch and German are absent. Very typical of English is the verb-object adjacency and the more restricted distribution of the subject. But then again, the language is not restrained by the bonds of V2. Nevertheless, adverbials can appear in multiple positions. Let us start with the following examples:
At the surface, the adverb seems to occur in different positions. However, according to our theory the adverbs are in fixed positions and the other material is moved around them. Let us try to derive the clauses in (62). In all cases we start with the VP in (63a). Going by our assumptions the following step consists in merging the PredP licensing the adverb *immediately* (as in (63b)). When the TP is formed, we encounter diverging possible derivations. In the examples quoted above we find that it is always the subject’s ambition to climb up in the tree and to reach the A-Spec of TP, most probably to check features with the tensed verb in T. Apparently, different procedures exist to achieve this goal. First, the subject can just move on its own as in (63). In (63c) the subject raises from the VP to A-Spec,AdvP and then moves on to A-Spec,TP in (63d). The resulting word order is identical to (62b). The second strategy is illustrated in (64). Here the subject is apparently not strong enough to move alone across the adverb and pied pipes the whole VP to A-Spec,AdvP (see (64c)). Then, in (64d), the subject continues its way to A-Spec,TP and we get the order in (62d) where the whole VP precedes the adverb. The most peculiar word order to derive is that in (62a). We must assume that the subject and the adverb move together to A-Spec,TP, since they both precede the auxiliary in T. The derivation proceeds in the same manner as in (63) up until (63c) (repeated in (65c)) where the subject is moved to A-Spec,AdvP. Then the adverb and the subject must be moved remnantwise and the VP must be stranded. The latter is moved to an LP in (65d) so that ‘all stockholders immediately’ can end up in A-Spec,TP by remnant PredP movement (see (65e)).

\[(63)\]

\[(a)\] \[\text{VP all stockholders sell their shares}\]
\[(b)\] \[\text{Adv immediately Pred VP all stockholders sell their shares}\]
\[(c)\] \[\text{PredP Adv all stockholders Adv immediately]}\text{Pred VP all stockholders sell their shares}\]
\[(d)\] \[\text{TP T all stockholders T will AdvP Adv all stockholders Adv immediately]}\text{Pred VP all stockholders sell their shares}\]

---

\[69\] I use the term ‘strong’ in quite a loose sense here, and not as in the technical opposition weak-strong, as for example used about pronouns or DPs.
In this way, all three possible word orders can be obtained. The illicit order in (62c) cannot be derived because this would imply remnant VP movement across the adverb. I would claim that remnant VP movement does not exist in English and even that the VP cannot be split by any type of remnant movement. This would explain the typical verb-object adjacency in English. Which of the three other orders is chosen is determined by the ‘degree of autonomy’ of the subject: either the subject moves by itself (derivation (63)) or it moves on the back of another category: PredP in (65) (which is moved remnantwise) or VP in (64) (in that case, the subject ‘uses’ the VP only to cross the adverb; afterwards it raises to TP autonomously). At the moment, I cannot say which factors are involved when the choice between these alternatives is made. In any case, the choice is severely restricted when we are dealing with more complex types of adverbials. This is illustrated below:

Things look easier than they are, because in our sample derivation an auxiliary is merged in T. If the auxiliary is absent, the tensed verb sell should move to T and in that case not all orders are possible. The following representations are the equivalents of (63d), (64d) and (65c), respectively, the only difference being that the V sell is moved to T:

(i) \[
\text{TP} \{T \text{ all stockholders [T sell]} \{\text{PredP} \[\text{AdvP} \[\text{Adv' all stockholders [Adv immediately]}\] \text{Pred} \[\text{VP all stockholders sell their shares}\]\]\]\]
\]

(ii) \[
\text{TP} \{T' \text{ all stockholders [T sell]} \{\text{PredP} \[\text{AdvP} \[\text{Adv' all stockholders [Adv immediately]}\] \text{Pred} \[\text{VP all stockholders sell their shares}\]\]\]\]\]
\]

(iii) \[
\text{TP} \{T' \{\text{PredP} \[\text{AdvP} \[\text{Adv' all stockholders [Adv immediately]}\] \text{Pred} \[\text{VP all stockholders sell their shares}\]\]\[\text{t will}\]\[\text{LP} \[\text{VP all stockholders sell their shares}\]\]\]\]\]
\]

Obviously, representation (i) yields the ungrammatical sentence ‘All stockholders sell immediately their shares’. So we must conclude that the subject cannot move by itself when V is moved to T. Only the other two possibilities, movement on the back of VP or remnant PredP, are legitimate. It is difficult to explain this difference. One could suggest that independent movement of the subject is hampered by V-to-T movement. The subject needs support to bridge this distance, while it does not need any support when an auxiliary is inserted into T without movement. See further on.

This does not preclude the subject from moving out from VP, since this is achieved by regular DP-movement to meet checking requirements, and not by remnant movement. Our approach may meet difficulties when the verb selects a prepositional object, because in that case an adverb can intervene, and this should most probably be explained by remnant VP movement.
(66)  (a) *All stockholders in three weeks will sell their shares
(b) *All stockholders will in three weeks sell their shares
(c) *All stockholders will sell in three weeks their shares
(d) All stockholders will sell their shares in three weeks

Apparently, only the strategy where the subject pied pipes the VP ((66d)) is admitted. The other cases are ungrammatical.\(^{72}\) This might be related to the ‘heaviness’ of the adverbial, which makes it impossible for the subject to move across the adverbial by itself.\(^{73}\) It needs the support of the whole VP to pass the heavy adverbial. Restrictions of the same kind apparently also hold for certain manner adverbials. Consider the following examples (taken from Ernst (2002)):

(67)  (a) Ken (*loudly) had spoken (loudly)
(b) Joe (*poorly) built the house (poorly)
(c) Mollie (*beautifully) played the violin (beautifully)
(d) Al (*horribly) performed the pirouette (horribly)

In these clauses the manner adverb must occur clause-finally, which means that only the pied-piping of the VP is a viable strategy. Clearly, this cannot be related to the heaviness of the adverbial. Perhaps this should be explained in information structural terms. The main difference between preverbal and postverbal manner adverbs is often thought to be their information structural status. Preverbal adverbs are more backgrounded, while clause-final adverbs are in focus.\(^{74}\) In the examples in (65), it is hard to imagine a context in which the manner adverbs are background information (see also section 5.1). Therefore the derivation strategy followed in (63) is blocked. That this explanation makes sense is confirmed by the following example:

(68)  The government has (hardly) proven its case (*hardly)

---

\(^{72}\) These adverbials can occur between the subject and the tensed verb in certain types of journalistic prose, though it is not clear whether these occupy the same position as simple adverbs. See the extensive discussion in Haegeman (2002b), which actually lends support to our idea that the VP is moved across the adverbial for information structural reasons. See also Ernst (2002: 173).

\(^{73}\) Cf. the Weight theory offered by Ernst (2002); see also Cinque (2004: 700), who argues that DPs, in contrast with AdvPs, need Case. Consequently, a preposition is inserted, which in Kayne’s system attracts the VP to its Spec, with the consequence that the PP will necessarily end up in postverbal position.

\(^{74}\) See Ernst (2002: 272).
In this sentence, *hardly* cannot very well be in focus and this may explain why it cannot appear in clause-final position. In such a context the pied-piping of the VP is blocked, because the latter strategy is essentially adopted to front the VP in order to put focus on the adverb. However, we are still faced with another problem. Manner adverbs cannot appear before auxiliaries, as can be seen in (67a) and also in (69). As a matter of fact, they can occur before the auxiliary (as in (69c)), but in that case they must be interpreted as sentence adverbs, i.e. σ₃ adverbs.

(69) (a) (*Elegantly) Superstring theory (*elegantly) will (*elegantly) have (elegantly) accounted for these
(b) She has cleverly disguised herself as a potted palm
(c) She cleverly has disguised herself as a potted palm

In other words, manner adverbs behave differently from the adverbial type illustrated by *immediately* in (62). The third strategy in (65), in which the subject moves to TP together with the adverb by remnant PredP movement, is prohibited when we are dealing with manner adverbs. If one tries to find an explanation for this, one could argue that it is forbidden to move manner adverbs into a tense-related projection, i.e. TP. 75 Adverbs as *immediately* are related to tense and are therefore admitted to move into TP by remnant PredP movement. This does not hold for manner adverbs. Apparently, similar restrictions also apply to non-complex temporal adverbs such as *today*, as we can see in the exact English equivalents of our Dutch data:

(70) (a) *Probably all stockholders today have sold their shares
(b) *Probably all stockholders have today sold their shares
(c) *Probably all stockholders have sold today their shares
(d) Probably all stockholders have sold their shares today
(e) All stockholders probably have sold their shares today
(f) All stockholders have probably sold their shares today
(g) *All stockholders have sold probably their shares today
(h) *All stockholders have sold their shares probably today
(i) All stockholders have sold their shares today, probably

75 Compare with the claim further on that PredP material cannot be moved into the PropP. Naturally, this questions our working hypothesis that all ‘lower’ adverbials (which are not used in a scene-setting sense), with no difference between temporal/local adverbials and adverbials of means and manner, are related to PredP. If manner and temporal adverbs clearly differ on this point, the hypothesis faces a strong challenge. I should emphasize that the hypothesis has been put forward without much argumentation in an attempt not to complicate the technical details unnecessarily.
The examples in (70a-d) illustrate that the subject obligatorily pied pipes the VP. This is represented in the first three steps of the derivation in (71). In (71d), the PropP is merged and the $\sigma_3$ adverb *probably* is licensed. This yields the sentence in (70d).

(71)  
(a) \[\text{subject pied pipes VP obligatory} \rightarrow \] 
(b) \[\text{TP and move subject to A-Spec,TP} \rightarrow \] 
(c) \[\text{Merge TP and move subject to A-Spec,TP} \rightarrow \] 
(d) \[\text{PropP probably Prop} \rightarrow \]

In the following derivations we will try to deduce the other possible positions of *probably*. In (70e), only the subject raises across the adverb. There is no reason for the subject to move autonomously, since there are no features to check. Therefore, we assume that the subject ends up before the adverb by remnant TP movement, just like in the Dutch cases. First, the part of the clause that has to be stranded moves to an LP in (72d). Subsequently, remnant TP movement yields the desired word order (see (72e)).

(72)  
(c) \[\text{preparatory step for remnant TP movement} \rightarrow \] 
(d) \[\text{Merge Prop and remnant TP movement to A-Spec,AdvP} \rightarrow \] 
(e) \[\text{Prop} \rightarrow \]

In (70f), the subject and the auxiliary appear before *probably*. We assume that this part of the TP is remnantwise moved across the adverb, as indicated in (73).
(73) (c) \[TP \{T' \text{all stockholders } [T \text{ have}] \left[ \text{PredP} \left[ \text{AdvP} \left[ \text{Adv'} \{ \text{VP all stockholders sold their shares}, \text{today} \} \right] \right] \right] \} \}\]

**preparatory step for remnant TP movement** \(\rightarrow\)

(d) \[LP \{sold their shares today Pred VP,} TP \{T' all stockholders [T have] \left[ \text{PredP} \left[ \text{AdvP} \left[ \text{Adv'} \{ \text{VP all stockholders sold their shares}, \text{today} \} \right] \right] \right] \} \]\]

Merge Prop and remnant TP movement to A-Spec,AdvP \(\rightarrow\)

(e) \[\text{PropP} \left[ \text{AdvP} \left[ \text{Adv'} \{ \text{TP all stockholders [T have]} \left[ \text{PredP} \left[ \text{AdvP} \left[ \text{Adv'} \{ \text{VP all stockholders sold their shares}, \text{today} \} \right] \right] \right] \right] \} \right] \text{probably} \} \text{Prop} \{LP \{sold their shares today Pred VP,} TP,}\]

Now we have to find an explanation for the ill-formedness of (70g-h). Apparently the verb cannot cross the \(\sigma_3\) adverb by remnant TP movement, although this is very well possible for the subject and the auxiliary.\(^{76}\) The answer to this problem might be the following. We could claim that in English PredP-material cannot cross PropP by remnant movement. This would explain why PredP must always be stranded and why the verb and material lower in the tree cannot pass \(\sigma_3\) adverbials. This is illustrated below.

---

\(^{76}\) Again, the matter is obscured when there is no auxiliary and V is moved to T. After this movement, V is evacuated from PredP and nothing should prevent it from moving across *probably*, resulting in the ungrammatical ‘All stockholders sell probably their shares today’. I have no answer to this problem.
As long as PredP-external material of the TP is moved across Prop, everything is alright. Material from inside the PredP cannot pass Prop. This could also be formulated in another way: the PredP cannot be split by remnant TP movement. This formulation is more in line with the above observations that the VP cannot be split by remnant movement. Of course, it is possible to move the whole TP across probably, yielding the word order in (70i). This demands a clear comma intonation and produces an afterthought feeling, as in the corresponding Dutch sentences from the previous section. The PredP can cross Prop without problems, because no remnant movement is involved: the TP moves as a whole.

Finally, we should look at the clauses where today occurs in a clause-initial position. Consider the following examples:

---

77 The strong comma intonation is essential, because the absence of a pause makes a sentence like (i) ungrammatical (see Ernst (2002: 73)): 

(i) *Sam has made an appointment probably
In these instances, today is used in a scene-setting sense, and consequently it is licensed in A’-Spec,TP. This is illustrated in (76a). When the PropP is merged without any movements, we have the representation in (76b), reflecting the word order in (75a). The word orders in (75b-d) can be obtained by remnant TP movement, as indicated in derivations (77-79). The adverb, the adverb and the subject, and the adverb, the subject and the auxiliary, respectively, are remnantwise moved across probably. As above, it is impossible to move the verb sold, since PredP cannot be split by remnant movement and PredP material is not allowed to cross Prop. Moving the whole TP yields the order in (70e), resulting in an afterthought interpretation.

(76)  
(a) \[TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP \text{all stockholders sold their shares}]]}]]

\text{Merge PropP} \rightarrow

(b) \[\text{PropP probably} \ [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP \text{all stockholders sold their shares}]]}]]

\text{preparatory step for remnant TP movement} \rightarrow

(77)  
(b) \[\text{LP [all stockholders have sold their shares]} \ [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP \text{all stockholders sold their shares}]]}]]

\text{Merge Prop and remnant TP movement to A-Spec,AdvP} \rightarrow

(c) \[\text{PropP [AdvP [Adv' [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP \text{all stockholders sold their shares}]]], probably]} \text{Prop [LP [all stockholders have sold their shares] TPi]}]]

\text{preparatory step for remnant TP movement} \rightarrow

(78)  
(b) \[\text{LP [have sold their shares]} \ [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP [AdvP [Adv' [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP [AdvP [Adv' [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP \text{all stockholders sold their shares}]]], probably]] Prop [LP [have sold their shares] TPi]]]}}]]]]]

\text{Merge Prop and remnant TP movement to A-Spec,AdvP} \rightarrow

(c) \[\text{PropP [AdvP [Adv' [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP [AdvP [Adv' [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP [AdvP [Adv' [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP \text{all stockholders sold their shares}]]], probably]] Prop [LP [sold their shares] TPi]]]]]]]]]]]]]

\text{preparatory step for remnant TP movement} \rightarrow

(79)  
(b) \[\text{LP [sold their shares]} \ [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP [AdvP [Adv' [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP [AdvP [Adv' [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP [AdvP [Adv' [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP \text{all stockholders sold their shares}]]], probably]] Prop [LP [sold their shares] TPi]]]]]]]]]]]]]

\text{Merge Prop and remnant TP movement to A-Spec,AdvP} \rightarrow

(c) \[\text{PropP [AdvP [Adv' [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP [AdvP [Adv' [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP [AdvP [Adv' [TP \text{today} \[T' \text{all stockholders} \[T \text{have}] \text{[PredP \text{all stockholders sold their shares}]]], probably]] Prop [LP [sold their shares] TPi]]]]]]]]]]]]]}

189
Summing this up: we have explored the possibilities for developing a word order theory for English along the same lines as the theory on Dutch in the previous section. The main differences between these two languages are illustrated in the table below.

<table>
<thead>
<tr>
<th>(80) Dutch</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>-V2 principle</td>
<td>-no V2 principle</td>
</tr>
<tr>
<td>-subject raises optionally to TP</td>
<td>-subject raises obligatory to TP</td>
</tr>
<tr>
<td>-remnant VP movement available</td>
<td>-no remnant VP movement</td>
</tr>
<tr>
<td>-no remnant PredP movement</td>
<td>-remnant PredP movement available</td>
</tr>
<tr>
<td>-remnant TP movement can split the TP anywhere</td>
<td>-remnant TP movement may not split the PredP</td>
</tr>
</tbody>
</table>

The first two properties are self-evident. English is, in contrast with Dutch or German, not a V2 language. Furthermore, the subject always precedes the tensed verb in English,78 while in Dutch the subject is free to move to a preverbal position, depending on information structural needs (if it bears the [+op] feature). In English, remnant PredP movement is designed to yield Subject-Adverb-Auxiliary orders. This order is not available in Dutch (since this would collide with the V2 principle) and consequently remnant PredP movement does not exist in this language.

The most crucial aspect of the current framework is probably the extensive use of remnant TP movement. Although the latter is available in both languages, its applicability is more restricted in English than in Dutch. In Dutch any portion of the TP may be moved across a σ3 adverbial, while the PredP is obligatorily stranded in English, which means that no PredP material can cross Prop (or a σ3 adverbial in PropP). At the same time, this restriction on remnant TP movement combines with the ban on remnant VP movement to achieve another goal, viz. to guarantee the typical verb-object adjacency in English. The provision that the PredP and the VP cannot be split by remnant movement keeps the verb and the object together.

Unfortunately, this point leads us to a brief survey of the remaining shortcomings of our approach. To start with, it seems that some facts contradict the ban on remnant VP movement. We have just mentioned that this restriction is designed to guarantee the verb-object adjacency in English. However, this adjacency requirement vanishes when we are dealing with prepositional objects, as can be observed in the following examples (from Ernst (2002)):

---

78 We ignore inversion patterns in questions, etc.
(81) (a) The senator has been talking foolishly to reporters
(b) Tim gave the money immediately to Ray
(c) Grubby hands reached greedily for the money

In these cases the adverb intervenes between the verb and the prepositional object. On the basis of our assumptions adverbs are generated in PredP, to the left of VP. We have claimed above that V (and the object in (81b)) should be moved across the adverb, because the subject pied pipes the VP. In the examples in (81), the prepositional object is apparently not affected by this pied piping, but instead it is stranded in clause-final position. Assuming a Kaynean framework, I cannot think of any other procedure than remnant VP movement to deal with this phenomenon. Of course, one could suggest that only PPs can be stranded by remnant VP movement.

(82) **Remnant VP movement in English**

Only PPs can be stranded by remnant VP movement

This formulation observes the verb-object adjacency requirement and admits prepositional objects to be stranded by remnant VP movement. However, the rule may be said to have a rather ad hoc nature.

The possible occurrence of multiple auxiliaries constitutes a second problem. Consider the following examples (from Ernst (2002)):

(83) (a) (Probably), they (probably) could (probably) have (probably) gone a long way before stopping
(b) Sue has carefully been occasionally letting her son win at chess

At the moment it remains unclear how the relation between auxiliaries and adverbs should be handled. In (83a) we could perhaps assume that the auxiliaries belong to the TP domain of the clause and that different portions of the TP are moved across the adverb *probably*. In (83b), however, it is hard to explain how the first auxiliary should end up before the first adverb, while the second auxiliary intervenes between the two adverbs, etc.\(^79\) Perhaps we should wait for an unified account of auxiliary licensing before we try to solve this problem.

---

\(^79\) Costa (1998, 2004) argues that adverbs are adjoined to verbal projections occupied by auxiliaries. In other words, the appearance of auxiliaries implies the creation of V-nodes and this process produces
Ironically, our account runs also in trouble when English topicalization is considered. I have argued above, making use of English data, that topicalization should be related to the PropP. During the development of the theory, however, the attention has turned towards topic-comment structuring as can be observed in Dutch. Therefore, the framework is designed in the first place to deal with those data and disfavours a satisfactory treatment of English topicalization, as can be seen in the following examples.

(84)  
(a) More roughly than necessary, they hauled him out of the courtroom  
(b) For his favorite cousin he bought a gold-plated can opener  
(c) Icely, he spoke to the lieutenant.  
(d) *Icely, he probably spoke to the lieutenant  
(e) Carefully, he eased the violin out of its case  
(f) *Carefully, he apparently eased the violin out of its case  
(g) Some of those statues, I really don’t want around

In (84a-f) one could argue that the topicalized adverbial resides in A-Spec,Prop and that the subject remains in A-Spec,TP. Actually, this is to a certain extent confirmed by the ungrammatical examples in (d) and (f). In these cases the subject should be moved across the $\sigma_3$ adverb by remnant TP movement to the same position where the topicalized constituent should be located. This looks impossible, unless the topicalized adverb is somehow moved to TP and subsequently moves remnantwise together with the subject to PropP, which is an awkward procedure. Nevertheless, it would be the only solution if we are to deal with the example in (84g), where an argument is topicalized. It is obvious that this problem will not be easily solved.

Perhaps many other objections could be added to the arguments above. It should be emphasized that this is only a first attempt to develop a new theory on adverb syntax and word order, based on a combination of several theoretical concepts. Consequently, many technical details may remain unresolved.

---

adjunct positions for adverbs. This means that adverb licensing is dependent on the lexical presence of auxiliaries. When we reverse this line of reasoning and adapt it to our adverb-centred approach, structure is created by the presence of adverbs and auxiliary licensing is dependent on the presence of AdvPs. I leave the question open how this is to be handled technically.
6.2.5 Adverbs as heads?

In the preceding sections I have several times suggested (mainly in footnotes) that things would be easier if we could assume that the adverbs reside in the head positions of the FPs and not in their A’-Specs. In this section I will investigate the pros and cons of this idea.

The present framework creates a complex structure much of which eventually remains ‘unused’. This is illustrated in (85a): all the elements in bold face are never filled with lexical material. We have assumed that the PropP is built up with a double specifier: an A’-Spec for semantically licensed adverbials and an A-Spec that provides a landing site for topical material. However, the latter has not only to cross Prop but also the σ₃ adverb and as a result it ends up in A-Spec,AdvP. This means that A-Spec,PropP has little raison d’être: perhaps it serves as a temporary landing for topical material, but the latter always moves further upwards in the tree. By contrast, the complement position of Adv is often empty. In other words, the representation would be much more simpler if the structure is as in (85b).

(85) Alle aandeelhouders hebben waarschijnlijk vandaag hun stukken verkocht

(a)
In this representation, the $\sigma_3$ adverb is actually in Prop and the remnant TP containing the topical material is moved to A-Spec,PropP. This approach converges more elegantly with our concepts about the Prop-layer as a level of information structuring, where the propositional $\sigma_3$ adverbs serve as a boundary between the topic and the comment in the clause. A few technical inconveniences which have cropped up are also avoided if we adopt this analysis. The notion of adverbs being heads is confirmed by data offered by other researchers.\(^80\) Costa (2004: 725ff) argues that certain adverbs in European Portuguese display a head-like behaviour.\(^81\) The arguments about the functional nature of adverbs in Cinque (2004) also lend support to our claim. Cinque states that in sign languages, lexical information conveyed by verbs and noun phrases is characteristically expressed manually, while functional information (e.g., negation, agreement, aspect, etc.) characteristically has both a manual and a non-manual marking. Apparently, adverbs in both American Sign Language and Italian Sign Language typically have both a manual and a non-manual marking. In Cinque’s opinion this similarity suggests that adverbs should be related to the functional rather than to the lexical portion of the clause. An even stronger claim, putting even more emphasis on the resemblance of these phenomena, is that these adverbs occupy

---

\(^{80}\) See also Travis’ (1988) adverb theory (section 3.3.1).

\(^{81}\) The discussion predominantly concerns so-called ‘weak’ adverbs (*there, here, already*), which are sometimes contrasted with *ontem* (‘yesterday’), *provavelmente* (‘probably’), etc. According to Costa, the latter clearly have an XP status.
functional heads, instead of the specifiers of lexically empty heads, as in Cinque’s framework. Even Alexiadou’s (1997) approach, or at least her motives, can be brought into line with this reasoning. One of her basic tenets is that bare adverbs are in Spec-positions while complex adverbs are in complement position. One could wonder why bare adverbs should be in Spec, since Specs are typically filled with XPs, i.e. complex phrases. The bare status of certain types of adverbs is more congruent with a head status than with a specifier status. The fact that complex adverbials often occur after the VP is also viewed from another angle in our framework. According to Alexiadou the adverbials are in complement position and move to Spec at a convenient stage. In our theory the VP is more like a complement of the adverbial – the adverbial is hierarchically superordinate to the VP – and, in a sense, the VP is forced to move to the A-Spec of the adverbial because of the complexity of the adverbial, resulting in a clause-final position for the latter. Actually, this idea is strengthened by the assumption that the adverbials are the most central elements of the FPs (and consequently that the phrase structure is built around them) and that they occupy head positions. When adverbials show a complex structure, they most probably have their own complements and this collides with their tendency to select a VP (or a TP, in the case of $\sigma_3$ adverbials). Therefore the VP is moved to the A-Spec of the adverbial/FP and the adverbial eventually surfaces in final position.

Although the intuition underlying this idea may be attractive, its technical elaboration is far from straightforward. As a matter of fact, at this point we have to cope with the arguments against an adverb-as-head analysis. Far more often than $\sigma_3$ adverbials, PredP-related adverbials exhibit a complex structure, which is problematic if we want to consider them as heads of PredP. The problem is illustrated in (86).
(a) All stockholders probably have immediately sold their shares

(b) All stockholders have sold their shares in three weeks
While the adverb-as-head analysis does not produce any problems with the bare adverbs in (86a), a conflict does emerge in (86b), where the adverbiaal is a PP. Following the adverb-as-head analysis, the preposition should be the head and, consequently, a tension arises between the DP *three weeks* and the VP with regard to the complement position of Pred/P. In a sense, one could argue that this tension is solved by the movement of the VP to A-Spec,PredP, but it remains unclear how the selectional link between PredP and VP is technically warranted. The picture becomes even more troublesome when we consider clauses such as the following:

(87)  
(a)  All stockholders have quite probably sold their shares today  
(b)  John very cleverly has answered the question (taken from Costa 1998: 75)  
(c)  *Fortunately that he left, he went to town  
(d)  *Possibly that it have explode, the bomb was ticking  
(e)  Unfortunately for our hero, he went into town as the asteroid was about to hit  
(f)  Quite obviously for (to) most of us, the referee missed the call  
(g)  He has [(much more) carefully (*than anyone else)] analyzed it  
(h)  He has [(much less) often (*than I (thought))] rehearsed it  
(i)  Er hat es [sehr viel sorgfältiger als jeder andere] analysiert  
(j)  Er hat es [viel weniger of als ich (dachte)] geprobt

The first two examples illustrate that \( \sigma_3 \) adverbials can have specifiers. Where are they to be licensed if the adverb is the head of of PropP? A’-Spec,PropP is not an option, because it would mean that the remnant TP which moves to A-Spec,PropP can intervene between *quite* and *probably*. Ernst (2002: 170) offers the examples in (87c-d) to show that \( \sigma_3 \) adverbs cannot take complements. This confirms our hypothesis that they are heads: they cannot take complements because TP is their complement. However, Ernst also presents the examples in (87e-f) where the adverbs do take complements. The data in (87g-j) are offered by Haider (2000). Apparently, there is a contrast between English and German adverbs. The latter are far more liberal in admitting complements than the former. It is very unclear how all these data can fall in place if adverbs are considered as heads of the FPs.

At this point we need to take into consideration an aspect that has gradually become unnoticed in the course of our discussion: the fate of adverbial clauses. Adverbial clauses have a far too complex structure to count as heads. As a matter of fact, most of them are attached at the TP level, and up to now we have never suggested that adverbs
should reside in T, since this position is occupied by the tensed verb. Therefore, we can assume that all $\sigma_2$ adverbial clauses are licensed in A'-Spec,TP, since all TP-related adverbs are. The status of $\sigma_3$ adverbial clauses, however, remains a problem.

(88) (a) If this paper is accepted by LI, they will eat marshmallows on Mars
(b) ??They, if this paper is accepted by LI, will eat marshmallows on Mars
(c) ??They will, if this paper is accepted by LI, eat marshmallow on Mars

These subordinate clauses are too complex to be heads of PropP. The only, though rather peculiar solution I can come up with is the following. The head of PropP is occupied by the conjunction of the subordinate clause, which is located in A'-Spec,PropP (because it is semantically licensed by if in Prop). Additionally, the conjunction is moved to the left edge of the subordinate clause. In this way, the subordinate clause is marked by the conjunction at the left and by the conjunction’s trace at the right. This is illustrated below.

(89)

---

82 The fact that TP is different from PropP and PredP may be related to Chomsky’s (2001) claim that TP is not a phase. Our PropP is similar to Chomsky’s CP and our PredP to his vP. In Chomsky’s theory, CPs and vP are phases. Interestingly, in line with our speculations Prop and Pred can and T cannot have an adverb as their head.

83 It is to be expected that some $\sigma_2$ adverbial clauses and $\sigma_1$ clauses are licensed in PredP, since not all adverbial clauses are scene-setting clauses and the adverbials associated with TP normally are framing adverbials. In that case, the situation is as problematic as with $\sigma_3$ adverbial clauses.
The data in (88b-c) suggest that the adverbial clause must occur sentence-initially and that it cannot be crossed by remnant TPs. This is explained in (89) by the fact that the subordinate clause is located in A’-Spec,PropP. This approach may also shed some light on the intriguing fact that high-attached subordinate clauses are obliged to have an equally elaborate internal structure, i.e. subordinate clauses attached at the PropP level should be at least PropPs themselves (see section 2.3 and 4.3.2). One could argue that clauses selected by a conjunction in Prop should be PropPs themselves. Nevertheless, the reader may feel that this is too far-fetched and that the above observations can hold equally well if these complex adverbial clauses simply reside in A’-Spec,PropP with no material in Prop.

Summing up: there are some conceptual advantages to the notion that adverbs are heads of PropP and PredP (not of TP, because the tensed verb occupies T). However, there are too many empirical counter-arguments to fully develop a theory in this vein. The problem is that some adverbials are too complex to be heads. Either we stick to the idea that complex adverbials are in the A’-Spec of the FP and that the heads remains empty, or we allow that complex phrases can reside in Prop or Pred. The latter option, however, would push us far away from general theorizing about phrase structure composition.

6.2.6 The incremental approach

In developing a movement theory for Dutch and English, we have several times been faced with the technical inconveniences of remnant movement, the necessary support of LPs, etc. In this section I would like to explore some ideas about an incremental approach of phrase structure, which might help to solve some of these problems. The concept of incremental phrase structure was introduced in generative grammar by Phillips (1995, 2003). It has also received some attention in Haider (2000, 2004) and has led to the Dynamic Syntax framework as developed in Kempson, Meyer-Viol & Gabbay (2001) and much related work. The latter approach offers a theory in which tree structures of Logical Forms are built and yields quite complex trees comprising lambda calculations and logical operators. In this section we will stick to fairly traditional phrase structure trees. The essence of incrementality is that sentence structures are built incrementally (i.e. in steps) from left to right. In my opinion the
most interesting aspect of this approach is that this type of structure building reflects
the chronological nature of language processing in real life. When interpreting the
sentences of this text, you start with the first word and you then move on to the
second, i.e. you process the words from left to right. It makes sense that the building
of a phrase structure tree should proceed in the same way. Another crucial element of
Phillips’s incremental framework is that temporary constituents are created which
may be destroyed during the derivation. This is quite probably also a characteristic of
natural language processing: we make provisional speculations about the structure of
the clause and these sometimes need to be revised at a later stage because more lexical
material presents itself.
In the preceding sections we have essentially followed standard assumptions about
tree building typical of Minimalism. The phrase structure tree is constructed
dynamically, i.e. step by step, but in fact the procedure runs from right to left. We
start with the VP (which is probably constructed departing from the V, at least in V-
final languages like Dutch) and gradually add the hierarchically higher levels (PredP,
TP, PropP, IIIP) which actually occur at the surface and chronologically before the
already existing structure. It looks as if sentences are derived in the opposite direction.
We have also adopted Kayne’s (1994) assumptions: the claim that ac-command
invariably maps into linear precedence (the LCA) and the ban on rightward
movement. As mentioned before, it is the latter stipulation in particular which
results in the procedure of remnant movement. If only movement to the left can occur,
we are often forced to assume movement of incomplete categories to deal with those
phenomena which have traditionally been explained by rightward movement. This is
exactly what remnant movement is designed for. In the preceding sections we have

---

84 See the characterization of the minimalist approach to phrase structure in Haegeman (1997: 14).
85 We disregard Kayne’s universal SVO-ordering and assume that the VP in Dutch is SOV, because the
Dutch data fit better into the latter analysis (pace Zwart (1997), Haegeman (2000b) and related work).
In my opinion, it is not a problem that all functional projections have a spec-head-complement structure
and the lexical VP is spec-complement-head. What the consequences are for the other lexical
projections (DP, AP, PP) remains an open question. From a language processing perspective SOV
would be a more natural make-up of the VP than SVO, even in English. If forming valency patterns is
considered as the primary function of VP-building (see below) and if the verb is the nucleus of valency
patterns, it is more natural that the valency pattern is either closed off by V (the SOV order) or initiated
by V (VSO or VOS order). During the processing of a sentence the appearance of the V is essential for
understanding the valency pattern, as the number of arguments is dependent on the features of V.
Consequently, the English SVO pattern is rather confusing, because, when the V comes in, part of the
arguments (the subject) has already been processed while the other arguments (the objects) are still
waiting to be processed. See also Haider (2000, 2004) on the clash between incremental and structural
compositionality in English.
noticed now and then that the remnant movement procedure exhibits certain technical inconveniences. For theoretical concerns, the lower portion of a constituent must be first moved leftwards to a licensing position (LP) and afterwards the constituent containing a trace of the moved lower portion can be moved further upwards in the tree. In this manner the lower portion of the constituent ends up in the position where it started, while the higher portion is moved further to the left. We have argued that it would be far easier if the lower portion was simply stranded and the higher portion moved independently. The incremental approach offers the opportunity to elaborate such a simple account.

I would suggest that the construction of a sentence is oriented towards two purposes. On the one hand, a semanto-functional scheme in the vein of my proposals (i.e. the functional hierarchy IIIP, PropP, TP, PredP) is built up. On the other, a valency pattern is created representing the kernel of the state of affairs described in the sentence. This is the essence of building a VP. Both procedures occur simultaneously and are even entangled during the construction of a phrase structure tree. Actually, one procedure is suspended in order to deal with the other procedure, and afterwards the first procedure is taken up again. This process continues until both procedures are finished. I will try to demonstrate this with one of the Dutch examples above. In the following pages we will derive the sentence “Alle aandeelhouders willen waarschijnlijk vandaag hun stukken verkopen” in an incremental way. We start with the DP alle aandeelhouders. Since this is a DP, we can expect it to be an argument of the valency pattern built up in the VP. In (90) we can see how a VP is created which is waiting for further lexical material.

(90) Alle aandeelhouders ...

The next word that we encounter is willen. This is a tensed verb and demands the creation of a TP. Therefore the construction of the VP pauses. TP is formed and the incomplete VP is stored in A-Spec,TP. Willen is merged in T, as illustrated below.
In the next step we have to deal with the $\sigma_3$ adverb *waarschijnlijk*. This word signals that a proposition must be built. Consequently, the construction of the TP is delayed and the latter is inserted into the A-Spec of the newly created PropP. To keep the tree simple, we follow the assumption from the previous section that *waarschijnlijk* can occupy the head position Prop.

The following word in our sentence is the adverb *vandaag*, which should be merged in PredP (the temporal cannot be a scene-setting adverb, because the derivation has already evolved too far for that). Since we are already dealing with PredP-material,
the construction of the TP must be completed first. This is shown in (93). The previously constructed TP is copied from A-Spec,PropP to the complement position of Prop. The bold face and the deletion of the lexical material in (93) and (94) indicate that the structure has been copied. The adverb is merged in Pred.

(93) Alle aandeelhouders willen waarschijnlijk vandaag ...

Next the VP is completed by the object and the verb. This means that the temporarily suspended construction of the VP can be finished. The incomplete VP in A-Spec-TP is copied (indicated by italics and bold face, as this is a copy of a copy) and the object and the verb are merged in the VP. At this point the functional and the VP valency pattern are both completed. The tree in (94) represents the whole clause.
Alle aandeelhouders willen waarschijnlijk vandaag hun stukken verkopen

This incrementally constructed phrase structure tree represents in a very transparent fashion the movement operations which we postulated in the preceding sections. We have argued that the object and the verb are stranded in VP and that the subject moves upward.\textsuperscript{86} This is mimicked by the italicized part of the VP, which is moved to A-Spec,TP and leaves a copy in its original position. Afterwards remnant TP movement occurs across the \( \sigma_3 \) adverbial. The bold part of the TP is moved to A-Spec,PropP and leaves a copy. The main difference between the incremental and the more traditional approach is that the tree is not constructed bottom-up but top-down. This avoids all problems with remnant movement producing lots of traces, copies and LPs. In the incremental approach the problems with incomplete categories find a very natural solution. Incomplete categories are temporarily stored in the A-Spec of their dominating projection and are completed somewhere lower in the tree, resorting to a copy of the part of the category already created. The ban on leftward movement remains very important in this framework, but is viewed from another angle. Put in

\textsuperscript{86} There was some hesitation whether the subject moves to TP independently (to check features) or by remnant VP-movement. The incremental approach looks more like a remnant movement approach, although we have argued above that the subject should move to TP by regular movement triggered by an [+op] feature.
incremental terms, a copied structure cannot precede its original structure. The latter must be higher in the tree than the former. As a matter of fact, this is quite logical from a language processing point of view, since one cannot posit a copy of a string of words that has not even been produced yet at the relevant stage of derivation. The incrementally constructed phrase structure trees also obey the LCA from Kayne (1994).\textsuperscript{87}

I hope this brief illustration highlights the advantages that an incremental approach may offer. In the remainder of this section I will present two more derivations of Dutch examples quoted above. Let us start with a sentence in which the elements of the VP are interspersed over the whole clause. The first two steps are completely similar to the previous derivation.

(95) Alle aandeelhouders willen hun stukken waarschijnlijk vandaag verkopen
(96) Alle aandeelhouders ...

\[
\begin{array}{c}
\text{VP} \\
\text{DP} & \text{V'} \\
\text{alle aandeelhouders} \\
\end{array}
\]

(97) Alle aandeelhouders willen ...

\[
\begin{array}{c}
\text{TP} \\
\text{A'-Spec} & \text{T'} \\
\text{A-Spec} & \text{T'} \\
\text{VP} & \text{T} \\
\text{DP} & \text{V'} \\
\text{alle aandeelhouders} & \text{wollen} \\
\end{array}
\]

After formation of the TP, we come across the object. Consequently we assume that the construction of the VP is continued. We predict that the PredP remains lexically empty and that the object is inserted into the copy of the VP.

\textsuperscript{87} See Laenzlinger (1998: 77-79) where it is argued that the double specifier analysis satisfies the conditions of the LCA.
(98) Alle aandeelhouders willen hun stukken ...

The following word is a $\sigma_3$ adverbial which requires the formation of a PropP. The provisional TP is stored in A-Spec,PropP and $waarschijnlijk$ is located in Prop.
(99) Alle aandeelhouders willen hun stukken waarschijnlijk ...

However, the adverb vandaag shows up unexpectedly. This is PredP-material and contradicts our earlier assumptions about the structure of PredP. As a result this part of the tree is destroyed. The incomplete VP is stored in A-Spec,PredP and the PredP is left incomplete (waiting for lexical material). Prop needs a TP as its complement and therefore the TP in A-Spec,PropP is copied. The construction of the PredP is completed by the insertion of vandaag in Pred. This is illustrated in representation (100) on the next page. As a final step, the VP must be completed by the verb. The incomplete VP is copied from A-Spec,PredP to the complement position of Pred and verkopen is merged in V. The tree for the whole clause is represented in (101).
(100) Alle aandeelhouders willen hun stukken waarschijnlijk vandaag ...
As a final illustration, we will derive a sentence that starts with an adverbial, the example in (102). Since *vandaag* occurs sentence-initially, it should be interpreted as...
a scene-setting adverb. It is therefore inserted in A’-Spec,TP and the auxiliary occupies the T head position.

(102) Vandaag willen alle aandeelhouders waarschijnlijk hun stukken verkopen
(103) Vandaag willen ...

Next we should process a DP argument. We assume that a lexically empty PredP is projected and that the formation of the VP is started.

(104) Vandaag willen alle aandeelhouders ...

When we encounter the $\sigma_3$ adverb *waarschijnlijk*, a PropP must be construed. We store the incomplete TP in A-Spec,PropP and insert the adverb into Prop.
Finally, there are the missing parts of the VP. The TP is copied from A-Spec,PropP to the complement of Prop and is completed with the object and the verb in VP. The construction of both the functional scheme and the VP is finished.
Vandaag willen alle aandeelhouders waarschijnlijk hun stukken verkopen.

(106) Vandaag willen alle aandeelhouders waarschijnlijk hun stukken verkopen
6.2.7 Summary

In this chapter I have tried to elaborate a phrase structure theory which integrates my views on the hierarchical make-up of clauses as expounded in earlier chapters. To a large extent these views are inspired by the FG framework. Our assumptions are concisely illustrated in the table below.

<table>
<thead>
<tr>
<th>Projections</th>
<th>Layers</th>
<th>Adverbial types</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>IllP</td>
<td>Illocution</td>
<td>σ₄ satellites</td>
<td>discourse-anchoring</td>
</tr>
<tr>
<td>PropP</td>
<td>Proposition</td>
<td>σ₃ satellites</td>
<td>speaker-anchoring</td>
</tr>
<tr>
<td>TP</td>
<td>Scene-setting</td>
<td>σ₂ satellites (frame readings)</td>
<td>scene-setting (comment)</td>
</tr>
<tr>
<td>PredP</td>
<td>Predication</td>
<td>σ₂, σ₁ satellites</td>
<td></td>
</tr>
<tr>
<td>VP</td>
<td>Argument structure</td>
<td>arguments</td>
<td>comment</td>
</tr>
</tbody>
</table>

Four functional projections (IllP, PropP, TP and PredP) are hierarchically ordered and dominate the VP containing the arguments. Each FP is related to a type of adverbials and has its own function. By assumption, other grammatical phenomena are linked to a specific projection: Left Dislocation to IllP, Topicalization to Prop, Mod from Rizzi’s and Haegeman’s work to TP. The adverbials in PredP may or may not take part in the comment. VP-material normally belongs to the comment.

We have tried to find the most appropriate technical tools with which to elaborate a theory about adverbial syntax and word order following these lines of thinking. First, we took into account Hoffman’s (2000) arguments that adverbs are adjoined to the projection over which they take scope. Although the main thesis may appear attractive, we find that adjunction is not the ideal instrument to explore this concept. It turns out that the double specifier analysis from Laenzlinger (1996, 2000) fits better into our theory. According to this analysis, phrases have the following structure:
The A’-Spec is the location for semantically licensed material and hosts the different types of adverbials. The A-Spec is the landing site for moved material such as topics. Using these technical tools we have developed a tentative theory of adverbial syntax in Dutch and English. In this theory we take the adverbials to be in fixed positions and the other material to be moved around them. To achieve this goal, we make extensive use of remnant movement, arguing that these movement operations are motivated by information structural concerns. Remnant TP movement serves to move the topical part (furnished with [+p] features) of the TP across σ₃ adverbs, which form the natural boundary between topic and comment. Remnant VP movement is used to scramble backgrounded arguments to the left of PredP adverbials. We also observe that Dutch and English differ with regard to the licitness of these remnant movements. Remnant PredP movement is only available in English and not in Dutch, while remnant VP can only strand PPs in the latter language. English also seems to be more restricted as far as remnant TP movement is concerned. The PredP may not be split by this type of movement, while Dutch is more liberal in this respect.

In the discussion of Dutch, we had to worry about the question which types of structure can be moved by remnant movement. Especially the derivation in (41) seems awkward, because the specifier of Adv is moved leftward, while the Adv itself is stranded. However, our English data prove that this sort of movement (isolating specs from their heads, or heads from their complements) is quite normal. The illicitness of the movement illustrated in (53) must be attributed to the fact that a specifier of a lower node is moved together with its dominating projections, stranding the head of the lower node.

We have also explored some ideas which may simplify certain technical difficulties. First, we have looked at the analysis that adverbs might be heads of the functional projections. Although we see some conceptual advantages to this approach, there are too many empirical counter-arguments to fully pursue this idea. Second, we have sketched an incremental view on phrase structure theory. Although this approach is
still in its infancy, I believe that it offers more transparency to the theory developed in this chapter. The reader may have noticed that the illocutionary level has remained out of sight in the data discussed, although chapter 4 emphasizes the importance of this level. This is simply because the clauses under discussion do not contain lexical material belonging to the illocutionary level. At first sight, the data will not deliver many problems and the theory will be easily extended to the IlP projection. Most of the time, illocutionary adverbials occur at the beginning of the clause, as in (108a) (examples are taken from Ernst (2002: 45)). This means that the IlP is just projected on top of the PropP. Example (109a) shows that σ₄ adverbs can be crossed by remnant TPs precisely as σ₃ adverbs can. The (b) examples demonstrate that σ₃ adverbials cannot cross σ₄ adverbials, which points out that PropP-material cannot cross III or, to put it more technically, that remnant PropP movement does not exist.

(108)  (a)  Briefly, the new manager surprisingly has not moved quickly
       (b)  *Surprisingly, the new manager briefly has not moved quickly

(109)  (a)  Albert {frankly/honestly} will unfortunately have to return the Rolls-Royce
       (b)  *Albert unfortunately will {frankly/honestly} have to return the Rolls-Royce

As a final point, I would like to emphasize once more that the theory developed in this chapter remains very tentative. The main purpose consists in relating and generalizing about certain theoretical concepts in an attempt to offer a new perspective on adverbial syntax. This has produced a quite novel framework which might look a little exotic at first sight, but actually makes use of many current ideas in generative theory (e.g. Cinque, Rizzi, Haegeman, the double specifier analysis from Laenzlinger etc.). As the focus is on theoretical concepts, the framework may still suffer from many descriptive deficiencies. Some of them have already been touched upon in the course of the discussion, but many other questions can still be asked. What would be the location of complementizers and conjunctions in the tree? How should wh-movement be handled? And so on and so forth. Nevertheless, I hope that the present framework proves to be thought-provoking and that it may stimulate future research.
Chapter 7: Conclusions

7.1 Overview

In the preceding chapters I have tried to develop a theory on adverbial syntax which is located at the crossroads of Functional and Generative Grammar. This strategy was deliberately chosen inspired by the belief that a linguist should first define his research object and then look for the framework which serves his needs best and which fits best with his personal ideas on the subject, rather than the other way around. I am also convinced that combining linguistic frameworks can be very fruitful and can offer illuminating perspectives on the subject, thus benefiting all the frameworks involved.

Chapters 2 and 3 are an attempt to take stock of the adverbial theories in FG and GG, respectively. While the FG accounts are not too divergent among themselves, GG offers a quite diverse array of approaches to adverbials.

Most FG adherents follow the idea of the hierarchical make-up of the clause, which essentially goes back to Dik (1978). The standard FG approach to adverbials is settled in Hengeveld (1989) and Dik (1989), where four types of adverbials, called satellites, are linked to the four constituting layers of the hierarchical clause structure: predicate, predication, proposition and illocution. In the nineties FG circles began to be interested in discourse phenomena. This led to two tendencies regarding layer theory. Some authors advocated the upward layering stance: more and more layers (and their related satellites) are superimposed on the existing hierarchy to account for typical discourse phenomena. Others argued that two modules, a grammar and a discourse module, should be distinguished. In this way, discourse phenomena could be handled in another theoretical environment. The discussion culminated in the advent of a New Architecture for Functional Grammar (Hengeveld 2004a, b), which combines a multimodular and a layering approach. The status of satellites, however, remains unclear in this new framework and therefore, for the needs of this dissertation, I stuck to the earlier Dik (1997) framework. A typical feature of FG is the elegant elaboration of a more intuition- and semantics-based theory and the smaller interest in the formal-syntactic subtleties of its implementation. This is proven by the critical
review of criteria for distinguishing between satellite types, which constitutes the second part of chapter 2. We have found that the criteria for determining the exact status of satellites are often inadequate, particularly if subordinate clauses are taken into account. The third part of the chapter presents the results of an inquiry which confronted FG theorizing with a considerable amount of empirical data. I have examined the mutual order relationships between verbs, arguments and the different satellite types by means of a detailed analysis of Latin sentences. In general the FG statements are confirmed. Satellites exhibit the expected mutual scope relations. Ilocutionary and propositional satellites prefer a sentence-initial position, while predicate satellites tend to occur after the verb and the arguments. As for predication satellites, a bifurcation is observed (in particular with respect to subordinate clauses): temporal, conditional and concessive clauses prefer to be located at the beginning of the sentence, while purpose, consequence and causal clauses generally occur sentence-finally. This leads to the question whether the class of predication satellites should be split up.

Chapter 3 offers a survey of different generative accounts on adverbial syntax, which are divided in three major groups. ‘Loose fit’ theories, with Ernst (2002) as its most noteworthy representative, are predominantly geared to semantics, arguing that adverbials can take different positions according to their interpretation. By contrast, ‘tight fit’ theories, such as Cinque’s (1999), tend to be syntax-based, claiming that adverbials take fixed positions in the phrase structure, while the other elements in the clause are moved around them. A third group, which I have called ‘domain theories’, takes an intermediate position in the discussion, suggesting that adverbials are divided into a few groups taking a fixed syntactic position, with further distinctions between adverbials within each group being dealt with semantically.

The integration of FG and GG approaches is elaborated in chapters 4 to 6. In a sense the FG ideas have been cast in a generative formalism. To this end I have evaluated the FG hierarchy, which exhibits four levels of satellites, in the light of generative theorizing. Chapter 4 focuses on the left periphery. We have found that generative accounts tend to pay little attention to the difference between the propositional and the illocutionary satellites. A comparison with work by Haegeman proves that this opposition is syntactically relevant. Subsequently the discussion is linked to the concept of structure truncation, as elaborated by Haegeman, Rizzi and others. They argue that topicalization is related to the propositional layer (although they do not use
the term), which had us looking for syntactic phenomena that could be linked to the illocutionary level. After considering data from English, Modern Greek and Italian, we suggested that Left Dislocation and Hanging Topic might be viable candidates.

The lower part of the adverbial hierarchy is examined quite briefly in chapter 5, which concentrates on the work by Frey and Pittner in comparison with the FG hierarchy. The conclusion is that quite many of F&P’s arguments are based on a too superficial information structure theory that their adverbial classification cannot be accepted. Contrary to their claims, manner adverbials form one class with the other FG predicate satellites (instrument, etc.). Frame readings of adverbials should be kept distinct and the question whether non-frame predication satellites should be distinguished from the predicate satellites turns out to be inconclusive. In any case, in chapter 6 the distinction is disregarded.

In chapter 6 the ideas from the previous chapters have been formalized into a generative phrase structure theory. The theory presented can be best considered as a ‘domain theory’ and is in fact quite similar in spirit and in formal implementation to Laenzlinger’s (2000, 2004) account. The phrase structure is constituted by four functional projections (the labels of which are heavily inspired by FG theory) which all dominate the VP. All functional projections exhibit a double specifier structure, as proposed by Laenzlinger (1996, 2000). This is represented in the tree below.
As in Cinque (1999), adverbials take fixed positions in the specifiers of these FPs and all the other material is taken to move around them. Illocutionary adverbials (or satellites) are inserted in A’-Spec,IIIP, propositional adverbials in A’-Spec,PropP, frame readings of predicational adverbials in TP and the others in PredP. The A-Specs serve as landing sites for material that is moved leftward for information structural needs. In more concrete terms, it is suggested that most word order rearrangements in Dutch and English are handled by remnant TP and VP movement. It goes without saying that the technical implementation of these proposals produces a few problems, some of which are signalled in the discussion. At the end of chapter 6 it is suggested that an incremental approach to phrase structure might offer an illuminating perspective on the nature of remnant movement.

After this sketch of the results of my inquiry, I would like to evaluate my findings in the light of previous theories on adverbial syntax. First, I will compare my approach with the generative accounts offered by Ernst, Cinque, Laenzlinger and Tenny. In a second, and final, section, I will attempt to indicate briefly how FG can benefit from this inquiry.
7.2 Comparison with Ernst (2002)

It is obvious that Ernst’s perspective on adverbial syntax is quite different from mine. According to his framework, little about adverbials is syntactic and their distribution is defined by semantically driven scope rules. In this respect, my proposal is more in line with Cinque’s (1999) stance, since I consider adverbials to occupy fixed syntactic positions. Still, the pragmato-semantical scheme that I adopt from FG is very similar to Ernst’s FEO-Calculus, as can be seen below.

\[(111)\]

(a) FEO-Calculus
   \[\text{Speech Act} > \text{Fact} > \text{Proposition} > \text{Event} > \text{Specified event}\]
(b) Hierarchical structure of functional projections
   \[\text{Illocution} > \text{Proposition} > \text{Tense} > \text{Predication}\]

Only the Fact level is absent from the FG-based hierarchy. Thus the main difference between Ernst’s and my approach concerns the syntax-semantics interface. In my account the semantic hierarchy is mapped into a syntactic hierarchy of functional projections (much in the vein of Cinque) and adverbials are inserted into the phrase structure at the relevant spot. Ernst, however, argues that syntax is to a great extent blind to the fate of adverbials and that the distribution of adverbials is defined directly by semantics. This is, of course, a matter of beliefs and intuitions about what a good linguistic theory should look like and one can agree or disagree with the one or the other line of thinking.

However, I would like to draw attention to the arguments that Ernst offers in favour of his own approach in comparison with Kaynean views on adverbial syntax (such as Cinque’s, and, as a matter of fact, also mine). The most fundamental points of criticism on what he calls Linear Correspondence Hypothesis (LCH) accounts concern only the Larsonian versions of this approach.\(^{88}\) When the intraposition analysis is adopted (as in Cinque), many problems vanish. Nevertheless, Ernst offers the following list of drawbacks of the Cinquean framework:

\(^{88}\) See section 3.2.4. for some of Ernst’s arguments.
(112) (a) weakens movement theory by allowing unmotivated movement triggers
(b) must make several stipulations about the moved phrase, landing site, and optionality/obligatoriness of individual intrapositions
(c) lacks a plausible conceptual basis for the restriction on predicational adjuncts [i.e. why do illocutionary and proposition adverbials always occur to the left and can an intraposition analysis not be applied in this case?]
(d) does not capture the covariance of basic word order and possible adjunct positions in terms of cross-linguistic word order typology [i.e. head-final vs. head-initial order]
(e) cannot account simultaneously for scope interpretation and Barrs/Lasnik effects

I would argue that most of these points are countered in my framework. As for the first two objections, the movement theory that I propose is motivated by pragmatic features and, although the matter might not be fully understood at the moment, movement triggers are less arbitrary than Ernst assumes. The problem cited in (3c) also disappears, since illocutionary and propositional adverbials are located in the most leftward FPs and can only be crossed by topical [+p] TP material. I remained fairly silent on the point in (3d). Nevertheless, I do not adopt Kayne’s (1994) hypothesis that all languages are SVO. In the analyses in chapter 6 I consider Dutch as OV and English as VO, admittedly without much argumentation. Finally, as to (3e), it is true that Barrs/Lasnik effects (i.e. the phenomena that lead to Larson’s (1988) theory, see section 3.2.4) cannot be accounted for under the traditional c-command definition, but they can under the x-command definition, which Ernst himself proposes in order to support his own theory. All in all, Ernst’s objections appear to be less compelling than might be thought at first sight. Moreover, I believe that a more complex movement theory does not render the overall theory less attractive. I feel more uneasy about the awkward relation between syntax and semantics in Ernst’s account. To use a metaphor: in a Cinque-type of grammar the engineers from the semantics department draw a detailed map that is handed over to the construction workers from the syntax department. The latter build a sentence in correspondence with the map which they have been given by the semantics engineers, although certain aspects that are relevant to engineering/semantics are not essential to the work that the construction workers have to do and are therefore not included in the
In Ernst’s approach, the construction workers from syntax seem to construct sentences in a rather thoughtless and unplanned fashion and the resulting construction faults are remedied by recurrent interventions of the semantic engineers themselves. Assuming that linguistic theory should somehow mimic the online process of speaking and understanding, I find the latter approach rather unattractive, but of course this is a matter of conviction and not of linguistic evidence.

### 7.3 Comparison with Cinque (1999)

The framework I have developed in this dissertation is to a great extent inspired by Cinque’s ideas on adverbial syntax. As in Cinque’s approach, adverbials are regarded as specifiers of functional projections and the fixed mutual order between them is derived from the hierarchy of functional projections (although to a lesser extent than in Cinque’s framework, since adverbials are divided into four groups only). I also support Cinque’s claim that adverbials occur in fixed positions and that all the other material moves around them.

The main difference between Cinque’s and my account is the number of functional projections. I divide the whole bulk of FPs into four semantic zones. This strategy is meant to be an answer to the objection made against Cinque that his framework entails an unnecessary semantification of syntax (see section 3.2.1.2). Indeed, it may look as if every individual adverb requires its own functional projection. Obviously, my theory may also be considered a semantification of syntax: a semantic hierarchy is mapped into a syntactic hierarchy. The difference is that I suggest a semantic hierarchy which is far more coarse and basic than Cinque’s. Therefore, my approach is more like a syntactic translation of an abstract semantic scheme, while Cinque might be said to run the risk of syntactisizing lexical semantics, providing in a manner of speaking a functional projection for each word.

In other words, I would consider my account as an elaboration and a rationalization of Cinque’s framework.

---

89 Cf. Cinque (2004: 685) who states that there are many more semantic notions in our conceptual-intentional world than those that receive grammatical expression in the languages of the world.
### 7.4 Comparison with Laenzlinger (2000) and Tenny (2000)

Splitting Cinque’s hierarchy up into a couple of semantic zones is, of course, not a new idea: it has already been proposed by Laenzlinger and Tenny. However, I choose to rely on the FG hierarchy rather than on their proposals. The differences between these approaches can be read off below.

(113) **Laenzlinger’s hierarchy**

<table>
<thead>
<tr>
<th>MoodP &gt;&gt; ModP &gt;&gt; AspP(high) &gt;&gt; AspP(low)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1=speech-act</td>
</tr>
<tr>
<td>&gt;F2=evaluative</td>
</tr>
<tr>
<td>&gt;F3=evidential</td>
</tr>
<tr>
<td>F1=epistemic</td>
</tr>
<tr>
<td>&gt;F2=irrealis</td>
</tr>
<tr>
<td>&gt;F3=necessity</td>
</tr>
<tr>
<td>&gt;F4=possibility</td>
</tr>
<tr>
<td>&gt;F5=volitional</td>
</tr>
<tr>
<td>F1=habitual</td>
</tr>
<tr>
<td>&gt;F2=repetitive</td>
</tr>
<tr>
<td>&gt;F3=frequentative</td>
</tr>
<tr>
<td>&gt;F4=celerative</td>
</tr>
<tr>
<td>F1=perfect(II)</td>
</tr>
<tr>
<td>&gt;F2=continuative</td>
</tr>
<tr>
<td>&gt;F3=perfect(II)</td>
</tr>
<tr>
<td>&gt;F4=retrospective</td>
</tr>
<tr>
<td>&gt;F5=proximative</td>
</tr>
<tr>
<td>&gt;F6=generic/progressive</td>
</tr>
<tr>
<td>&gt;F7=prospective</td>
</tr>
<tr>
<td>&gt;F8=terminative</td>
</tr>
<tr>
<td>etc.</td>
</tr>
</tbody>
</table>

(114) **Tenny’s hierarchy**

<table>
<thead>
<tr>
<th>point of view</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Frankly Moodspeech act] [fortunately Moodevaluative]</td>
</tr>
<tr>
<td>allegedly</td>
</tr>
<tr>
<td>Moodevaluative [probably Modepistemic]</td>
</tr>
<tr>
<td>(speaker deixis)</td>
</tr>
<tr>
<td>[once T(Past)] [then T(Future)]</td>
</tr>
<tr>
<td>deictic time</td>
</tr>
<tr>
<td>[perhaps Moodirrealis] [necessarily Modnecessity] [possibly Modpossibility]</td>
</tr>
<tr>
<td>(temporal deixis)</td>
</tr>
<tr>
<td>[willingly Modvolitional] [inevitably Modobligation] [cleverly Modability/permission]</td>
</tr>
<tr>
<td>truth value</td>
</tr>
<tr>
<td>[usually Asphabitual] [again Asprepetitive(I)] [often Aspfrequentative(I)] [quickly Aspecelerative(I)] [already T(Anterior)] [no longer Aspterminative] [still Aspcontinuative] [always Aspperfect(II)] [just Aspretrospective] [soon Aspproximative]</td>
</tr>
<tr>
<td>middle aspect</td>
</tr>
<tr>
<td>[briefly Aspdurate] [characteristically (?)]</td>
</tr>
<tr>
<td>Aspgeneric/progressive [almost Aspprospective]</td>
</tr>
<tr>
<td>core event</td>
</tr>
<tr>
<td>[completely AspSgcompletive(I)] [tutto AspPlcompletive] [well Voice] [fast/early Aspcelerative(II)] [again Asprepetitive(II)] [often Aspfrequentative(II)]</td>
</tr>
</tbody>
</table>

(115) **FG hierarchy**

<table>
<thead>
<tr>
<th>illocution</th>
<th>speech act</th>
</tr>
</thead>
<tbody>
<tr>
<td>proposition</td>
<td>evalutative, evidential, epistemic</td>
</tr>
<tr>
<td>predication</td>
<td>spatial setting, temporal setting, cognitive setting</td>
</tr>
<tr>
<td>predicate</td>
<td>additional participants, means and manner, spatial orientation</td>
</tr>
</tbody>
</table>
Tenny’s and Laenzlinger’s hierarchies are slightly different with respect to the cut-off points between the zones. It remains rather unclear what exactly motivates Laenzlinger’s distinctions. It looks as if he merely adopts the labels Mood, Mod and Asp from Cinque without much motivation why the hierarchy should be split up in this way. Tenny, in contrast, does offer an intuitive discussion about the semantic zones. She distinguishes two zones of modality, with speech act adverbials located in the upper zone. This diverges from the FG hierarchy, where speech act adverbials are considered to be autonomous and all modality-related adverbials are assigned to the same class. In this dissertation I follow the FG line of thinking, as I feel that the framework, which clearly marks off the propositional domain with respect to the area of communicative strategy, has a solid theoretical base. However, I would not claim that Tenny’s hierarchy is inferior to this theory.

**7.5 The benefits for Functional Grammar**

A functionalist might remark that, in the course of the discussion, ideas from FG are integrated into the GG formalism and wonder what results are obtained that can be said to be to the benefit of FG. I would therefore like to end by making a few brief observations on this point.

First, some extra syntactic evidence has been offered confirming the FG layering theory, particularly the distinction between the propositional and the illocutionary levels. Chapter 4 deals with data concerning coordination, tags, Principle C effects, VP anaphora, tense dependencies and the availability of topicalization and dislocation structures inspired by the work of Haegeman and others.

In the inquiry on Latin word order the question has been raised whether predication satellites should be split up into two different types. In the generative formalization in chapter 6, this idea has been implemented by assuming that frame readings are related to TP while normal readings are linked to PredP.

Finally, one could consider the theory about syntactic derivations of phrase structure in chapter 6 as a suitable candidate for the elaboration of the Expression Module in FG. It is admitted in FG circles that the latter module is poorly developed. In other words, the proposals offered in this dissertation may lead to the integration of FG and GG concepts into an overall model of linguistic theory.
References

Adger, David, Cécile De Cat & George Tsoulas (eds.)

Aissen, Judith L.

Alexiadou, Artemis

Alexiadou, Artemis, Elena Anagnostopoulou, Sjef Barbiers & Hans-Martin Gärtner
2002a Dimensions of Movement. From features to remnants, John Benjamins, Amsterdam/Philadelphia.

Alexiadou, Artemis, Elena Anagnostopoulou, Sjef Barbiers & Hans-Martin Gärtner

Alexiadou, Artemis & Peter Svenonius (eds.)

Amacker, René

Anagnostopoulou, Elena

Andrews, Avery


Anstey, Matthew P.

Barbiers, Sjef
1995 The Syntax of Interpretation, HIL dissertation.


Bayer, Josef
2001 Asymmetry in Emphatic Topicalization, Caroline Fry & Wolfgang Sternefeld (eds.), Audiatur Vox Sapientiae, Studia Grammatica 52.

Benincà, Paola

Benincà, Paola & Cecilia Poletto

Bhatt, Rakesh & James Yoon
Bolkestein, A. Machtelt

Bowers, John

Chomsky, Noam

Cinque, Guglielmo

Connolly, John H., Roel M. Vismans, Christopher S. Butler & Richard A. Gatward (eds.)

Costa, João

Cuvalay, Martine

Devriendt, Betty, Louis Goossens & Johan Van Der Auwera (eds.)

Dijk, Teun van
Dik, Simon C., Kees Hengeveld, Elseline Vester & Co Vet

Eckhardt, Regine

Edmonds, Joseph
2004 Unspecified categories as the key to root constructions, Adger e.a. (2004): 75-120.

Ernst, Thomas

Fortescue, Michael, Peter Harder & Lars Kristoffersen (eds.)

Frey, Werner
2003 Syntactic conditions on adjunct clauses, in: Lang e.a.: 163-209.

Frey, Werner & Karin Pittner

Friedemann, Marc-Ariel & Luigi Rizzi (eds.)

Greenberg, Joseph H.

Gregory, Michelle L. & Laura A. Michaelis

Grewendorf, Günther

Haegeman, Liliane


2004b Notes on Speaker Deixis and the Left Periphery, ms., Silex du CNRS, Université de Lille.

Haider, Hubert


Hannay, Mike & A. Machtelt Bolkestein (eds.)

Harder, Peter

Hawkins, John A.

Hengeveld, Kees


1998 Adverbial clauses in the languages of Europe, Johan van der Auwera (ed.), *Adverbial Constructions in the Languages of Europe*, Mouton de Gruyter, Berlin/New York : 335-420.


Hesp, Cees

Heycock, Caroline

Hoffman, Joel M.

Hooper, Joan B., and Sandra E. Thompson

Iatridou, Sabine & Tony Kroch

Jackendoff, Ray


Jacobs, Joachim

Kayne, Richard S.


Kempson, Ruth, Wilfried Meyer-Viol & Dov Gabbay

Koopman, Hilda & Ann a Szabolcsi

Kroon, Caroline


Laenzlinger, Christopher


Lambrecht, Knud

Lang, Ewald, Claudia Maienborn & Cathrine Fabricius-Hansen (eds.)

Larson, Richard

Lohnstein Horst & Susanne Trissler (eds.)

López, Luis

Mackenzie, J. Lachlan & María de les Ángeles Gómez-González (eds.)

Marouzeau, Jules

Mauck, Simon & Jenny Mittelstaedt (eds.)

McCawley, James D.

Meinunger, André

Moutaouakil, Ahmed

Müller, Gereon

Nilssen, Øystein
2000 The Syntax of Circumstantial Adverbials, Novus, Oslo.

Nuyts, Jan
Nuyts, Jan, A. Machtelt Bolkestein & Co Vet (eds.)
1990 *Layers and levels of representation in language theory*, John Benjamins, Amsterdam/Philadelphia.
Panhuis, Dirk
John Benjamins, Amsterdam/Philadelphia.
Pereltsvaig, Asya
2004 Topic and Focus as Linear Notions: Evidence from Italian and Russian,
*Lingua* 114: 325-344.
Pérez Quintero, María Jesús
Phillips, Colin
Piitulainen, Marja-Leena
1980 *Zum Problem der Satzglieder in der deutschen Grammatik der Gegenwart*,
Universität Jyväskylä, Jyväskylä.
Pittner, Karin
Platzer, Christer
Pollock, Jean-Yves
Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech et al.
Rijkhoff, Jan
Rijkebaron, Albert
Rizzi, Luigi
Ros, Hilke
Rosengren, Inger
Ross, John R.
1970 On Declarative Sentences, Roderick A. Jacobs & Peter S. Rosenbaum (eds),
Readings in English: transformational grammar, Ginn, Waltham, Mass.: 221-272.

Roussou, Anna
2000 On the left periphery: Modal particles and complementisers, Journal of Greek
Linguistics 1: 65-94.

Siewierska, Anna

Speas, Margaret
2004 Evidentiality, logophoricity and the syntactic representation of pragmatic
features, Lingua 114: 255-277.

Stowell, Timothy

Stroik, Thomas

Svenonius, Peter
2002 Subject Positions and the Placement of Adverbials, Peter Svenonius (ed.),

Swart, Henricette de & Helen de Hoop
2000 Topic and focus, Lisa Cheng & Rint Sybesma (eds.), The First Glot

Tenny, Carol I.
2000 Core events and adverbial modification, Carol I. Tenny, James Pustejovski

Travis, Lisa
on Comparative Germanic Syntax, McGill University, Montreal: 280-310.

Verhagen, Arie
1986 Linguistic Theory and the Function of Word Order in Dutch. A Study of
Interpretive Aspects of the Order of Adverbials and Noun phrases, Foris,
Dordrecht.

Vester, Elseline
1990 The satellite status of gerund and gerundive in Latin, Mike Hannay & Elseline
Vester (eds.), Working with Functional Grammar: Descriptive and
Computational Applications, Foris, Dordrecht : 103-113.

Vet, Co
1998 The multilayered structure of the utterance: about illocation, modality and

Wakker, Gerry
1996 Conditionals at different levels of the clause, in : Devriendt e.a. (1996) : 177-199.

Zubizarreta, Maria Luisa

Zwart, C. Jan-Wouter