

Adverb Placement An Optimality Theoretic Approach

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INTRODUCTION

This thesis examines the placement of adverbs in general (Part I) and in particular constructions, called *gap constructions* below (Part II). On the basis of the investigation of adverb distribution in English, French, and German, an Optimality Theoretic (OT) approach to adverb positioning is developed in Part I. The languages examined here differ in various aspects of their placement of adverbs. In English, the ordering of adverbs and finite verbs depends on the type of verb: a medial adverb precedes a finite lexical verb while it may occur on either side of a finite aspectual auxiliary. The linearization of adverbs and non-finite verbs/auxiliaries is subject to scope-based restrictions: an adverb outscopes a following non-finite verb while it takes narrow scope relative to a preceding one. In French, the reverse pattern holds: while a medial adverb has to follow a finite verb irrespective of verb type (lexical or auxiliary) - adverb intervention between the subject and the finite verb is strictly prohibited -, adverb placement relative to a non-finite verb is more variable than in English, permitting an adverb to follow a non-finite verb that it outscopes. In contrast to English and French, finite verb placement in German depends on the type of clause (V2 in matrix clauses vs. V-final in embedded ones), with non-finite verbs occurring in right-peripheral position; consequently, adverb positioning relative to verbs/auxiliaries is rather restrained. Yet as an OV-language, German displays a greater flexibility in the ordering of adverbs and arguments than English and French. A survey of the basic phenomena of adverb placement is presented in chapter 1.

Section 2.1 reviews various approaches to the variability of and restrictions on the ordering of adverbs and verbs/auxiliaries in English and French, analyzing the cross-linguistic contrasts as resulting from differences in the movement behavior of lexical verbs and auxiliaries (Emonds 1976, Pollock 1989, 1997, Baker 1991), contrasts in the flexibility of subject placement (Belletti 1990, 1994) and/or verb positioning (Cinque 1999) as well as from differences in the availability of I'-adjunction (Ernst 2002). However, approaches applying purely syntactic principles do not cover the fact that semantic factors may influence adverb placement as well: whether or not a particular position is available for a certain adverb may depend on the other items involved in the clause. In view of the fact that alternations in adverb placement may give rise to differences in scopal interpretation, adverb positioning seems to be restrained by the availability of scope options (see section 2.2). Ernst (1998,

2002) traces back these semantic restrictions on the placement of adverbs to their lexical properties: in his approach, an adverb can only occur in a position in which it may satisfy its selectional requirements, predicting adverb placement to be influenced by the co-occurring elements.

Chapter 3 develops an Optimality Theoretic (OT) approach to adverb placement. In OT (Prince & Smolensky 1993), grammaticality is determined by optimal satisfaction of a hierarchy of violable constraints. For some input i_k , a set of output candidates is produced by the function GEN out of which the function EVAL selects that candidate o_k as grammatical output which optimally satisfies the constraint hierarchy: the candidate o_k is the optimal output if there is no candidate o_l such that o_l violates the highest ranking constraint o_k and o_l disagree on less often. The correlation between the availability of particular scope options and the acceptability of certain adverb positions is captured by restrictions on the input and its realization in the output candidates (see section 3.1): the input is taken to be a semantic structure, which is subject to compositional principles based on Ernst's analysis, guaranteeing that only representations that reflect acceptable scopal relations may enter the syntactic competition. Moreover, an inviolable constraint in GEN is assumed to restrain the base positioning of an adverb in the output candidates in accordance with its scope: an adverb has to be merged as sister to its semantic argument specified in the input. However, the surface position of an adverb is decided on by the candidates' evaluation with regard to the violable constraints. Since the hierarchic relation between these constraints is crucial in determining grammaticality, cross-linguistic contrasts in word ordering can be traced back to alternations in the language-specific constraint rankings. Adverb placement will be shown to be subject to syntactic, semantic, and pragmatic factors the diverse effects of which in English, French, and German are accounted for by the distinct constraint rankings.

As will be illustrated in section 3.2, the various constraints and their relative ranking regulate the availability of particular movement operations and the accessibility of certain adverb positions, accounting for the differences in the ordering of adverbs and finite as well as non-finite verbs/auxiliaries in English and French. The inviolable requirement on scope-dependent base positioning of an adverb together with the violable constraints predicts that an adverb takes scope over a verb/auxiliary following it in these languages; inverse scope may only arise by verb movement across an adverb which is restricted to finite auxiliaries in English, but may also affect lexical and non-finite verbs in French.

Section 3.3 focuses on finite verb placement and the occupation of the prefield position in German. The necessity to fill the prefield position in German matrix clauses will be argued to result in V-to-C movement. Adverb adjunction to CP or C' being prohibited, German matrix clauses are thus expected to display V2. The choice of which constituent is placed in prefield position and, consequently, which position an adverb occupies is assumed to depend on the featural composition of C⁰. English and French not having to fill Spec,CP (these languages rank the relevant constraint lower than German), projection of CP is usually suppressed in matrix declarative clauses, predicting that these languages do not necessarily exhibit V2.

Section 3.4 concentrates on the placement of focus-sensitive frequency and sentence adverbs. These types of adverbs will be shown to give rise to focus-dependent interpretative effects

and to tend to occur in focus-initial position: an argument following such an adverb within the German middle field is usually perceived as the adverb's associated constituent; unfocused arguments should precede the adverb, which thus seems to partition the sentence into focus and background. Effects of the constraints demanding for focus-adjacent placement of these adverbs are also visible in the word ordering of the other languages under discussion, e.g. giving rise to pre-auxiliary adverb placement in English or non-finite verb movement in French. Moreover, focus apparently plays a crucial role in the distribution of sentence adverbs in Italian: a sentence adverb may occur behind a finite or non-finite lexical verb only in case a narrowly focused constituent follows it.

The fronting of topical arguments and adverbs is examined in section 3.5. Topic placement in the leftmost position within the German middle field and in clause-initial position in English and French will be argued to follow from a constraint requiring [+top] elements to appear in left-peripheral position within IP. Adverbs in topic position are subject to an additional restriction, which prohibits them to move across a scope-bearing element, thereby accounting for the different distributional patterns of topical arguments and adverbs in English and French interrogative clauses: pre-subject placement of some phrase being disallowed in these contexts, an argument but not an adverb that is within the scope of the question may move on to clause-initial position in matrix clauses. Finally, besides information structure, the reading of an indefinite or quantified argument will be shown to be decisive for its positioning relative to an adverb within the German middle field. Section 3.6 summarizes the results of Part I.

Part II specializes in a particular phenomenon of adverb positioning: the distribution of adverbs in constructions in which the sister constituent of an adverb is deprived of its phonetic material by movement or ellipsis, henceforward *gap constructions*. The OT approach advanced in chapter 3 is extended to the analysis of the different patterns of adverb placement in these constructions in English, French, and German. As presented in chapter 4, the distribution of adverbs in gap constructions in English is influenced by the type of adverb, its scope, and the syntactic construction (*wh*-question vs. Topicalization / VP Fronting / VP Ellipsis; inverted vs. non-inverted clauses). A wide scope adverb of any type cannot precede a gap in non-inverted clauses: the order *finite auxiliary - adverb* is ungrammatical in case the adverb's sister constituent does not include any phonetic material; some overt element has to intervene between the adverb and the gap. Yet in case the adverb has narrow scope or subject-auxiliary inversion takes place, adverb placement in front of an overt element such as the subject or finite auxiliary is impossible: placement of an adverb in pre-gap position might be acceptable, depending on the type of adverb and the type of gap. Note that the examination of adverb distribution in gap constructions is restricted to five types of adverbs: epistemic, evidential, subject-oriented, frequency, and temporal adverbs. Though other types of adverbs such as evaluative and discourse-oriented ones exhibit a similar pattern in that they prohibit placement in front of a gap in non-inverted clauses as well, they are excluded from the investigation since they do not allow for a narrow scope reading relative to a modal verb or negation nor may they appear within the scope of a question. As discussed in section 4.2, approaches to adverb positioning in gap constructions relying exclusively on conditions on the auxiliary (e.g. Baker 1971, 1981, Lobeck 1987, 1995, Zagona 1988, Potsdam 1997a) or

restrictions on adverb placement (Sag 1978, 1980b, Sag & Fodor 1994, Kim & Sag 1995a, 2002) fail to account for the complete distributional pattern. Assuming that the avoidance of pre-gap placement of an adverb results from a violable constraint that prohibits adverb adjunction to a phonetically empty constituent, the analysis of adverb positioning in gap constructions can be embedded in the OT approach to adverb placement laid out in Part I: the influence of adverb type, scope, and syntactic construction on the acceptability of adverb positioning in front of a gap follows from the interaction of the violable constraints. Their relative ranking decides on whether or not an adverb may escape pre-gap placement by e.g. exceptional positioning or omission of movement/ellipsis.

Since constraints are universal, it is expected that an effect of the constraint prohibiting pre-gap adverb placement can be observed in other languages as well. In fact, adverb type, scope, and syntactic construction also play a role in the distribution of adverbs in French gap constructions, as shown in chapter 5: the various types of adverbs differ in which type of gap (CLLD or Cleft) they may precede, following a finite or non-finite lexical or modal verb. Although the same factors as in English obviously influence adverb placement in French, their effects on the distributional pattern differ in the two languages: English and French diverge in which strategies may be pursued to prevent a certain type of adverb from preceding a gap, as captured by their distinct constraint hierarchies.

However, although constraints are active in every language, it depends on their relative ranking whether or not they are able to impose their requirement on the word order of a given language. In German, the constraint against pre-gap adverb placement apparently does not have any visible effect: adverb positioning in front of a gap never yields to ungrammaticality (see chapter 6). Rather, word ordering is carried out on the basis of the syntactic, semantic, and pragmatic principles discussed in chapter 3; whether it results in adverb adjunction to a phonetically empty constituent seems to be irrelevant, indicating that the corresponding syntactic, semantic, and pragmatic constraints conceal the effect of that prohibition.

The Optimality Theoretic framework proves to be suitable to capture the various factors affecting adverb placement as well as their distinct instantiations in the diverse languages. The work closes with a conclusion followed by an appendix which lists the constraints as well as their complete rankings in English, French, and German.

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PART I

ADVERB PLACEMENT

CHAPTER 1.

THE DATA

This chapter introduces some of the fundamental properties of adverb distribution in English, French, and German which will be further examined in the following chapters. Section 1.1 focuses on the ordering of adverbs and verbs/auxiliaries. It will be shown that the three languages under investigation may differ in adverb placement relative to finite and non-finite verbs as well as in the scopal interpretations the various orders permit. Section 1.2 looks at the linearization of adverbs and arguments. Pragmatic (focus-background structure, topic-comment structure) as well as semantic considerations (e.g. reading of quantified or indefinite DPs) will be argued to be decisive for adverb placement within the German middle field; these factors also have an effect on adverb positioning in English and French.

1.1 The Ordering of Adverbs and Verbs/Auxiliaries

1.1.1 *Adverbs and Finite Verbs/Auxiliaries*

In English adverb placement relative to a finite verb depends on the type of verb, lexical verb vs. auxiliary: while a sentence adverb, such as the epistemic or subject-oriented one in (1.1), has to precede a finite lexical verb, it may occur on either side of a finite aspectual auxiliary.¹

- (1.1) a. Bill (probably / wisely) kissed Mary.
b. Bill kissed (*probably / *wisely) Mary.
c. Bill (probably / wisely) looked at Mary.
d. *Bill looked (probably / wisely) at Mary.

¹ Note that some types of adverbs (e.g. manner or temporal ones) may appear in a position following a lexical verb (and DP-object). However, post-verbal occurrences of adverbs as in (i) will not be investigated here.

- (i) a. Rick read (*carefully) the book (carefully).
b. Rick read (*yesterday) the book (yesterday).

- (1.2) a. Bill (probably / wisely) has kissed Mary.
 b. Bill has (probably / wisely) kissed Mary.

The choice between pre- and post-auxiliary adverb positioning seems to be influenced by stress. An unstressed auxiliary normally precedes an adverb; the sequence *adverb - auxiliary*, by contrast, is most natural if the auxiliary is stressed (see e.g. Baker 1971, 1981, 1991, and Wilder 1997).

- (1.3) a. John is often in his office. (Wilder 1997: 327)
 b. John often IS in his office. (Wilder 1997: 328)

However, the variability in the placement of finite aspectual auxiliaries relative to adverbs is not necessarily shared by modal verbs. While adverbs which may precede a certain modal can generally also follow it, the reverse generalization does not hold: an adverb which can follow a particular modal may not be acceptable in front of it. For example, an evaluative adverb may precede or follow a modal - irrespective of the modal's reading, deontic (1.4a) or epistemic (1.4b). By contrast, a modal verb following a frequency adverb may only receive a deontic reading; if the modal is to be interpreted as epistemic as in (1.5b), it has to precede the adverb. Furthermore, subject-oriented adverbs must follow both types of modal verb (1.6).²

- (1.4) a. Charles (unfortunately) must (unfortunately) see the doctor.
 b. Sue (unfortunately) must (unfortunately) have hit the dog.
 (1.5) a. Charles (frequently) must (frequently) see the doctor.
 b. Sue (*frequently) must (frequently) have hit the dog.
 (1.6) a. Charles (*wisely) must (wisely) see the doctor.
 b. Sue (*wisely) must (wisely) have hit the dog.

Note that the various adverb positions are associated with different interpretations. Preceding a modal auxiliary as in (1.7a), an adverb is interpreted as taking wide scope. The order *auxiliary - adverb*, by contrast, is ambiguous: the adverb in (1.7b) may receive a wide or narrow scope reading with respect to the deontic modal.

- (1.7) a. David often can lift 200 pounds.
 i) 'David is often able to lift 200 pounds.'

² Note that a subject-oriented or frequency adverb in prefield position may precede an epistemic modal in German.

- (i) a. Klugerweise wird Hans nach Hamburg gefahren sein.
 cleverly will Hans to Hamburg driven be
 'Hans will cleverly have gone to Hamburg.'
 b. Sehr oft kann er nicht beim Chinesisch-Unterricht gewesen sein.
 very often can he not at the Chinese course been be
 'He cannot have been at the Chinese course very often.'

- ii) #'David is able to lift 200 pounds several times (in a row).'
- b. David can often lift 200 pounds.
 - i) 'David is often able to lift 200 pounds.'
 - ii) 'David is able to lift 200 pounds several times (in a row).'

Hence, while narrow scope reading of an adverb is restricted to the post-auxiliary position, its wide scope reading is accessible in pre- and post-auxiliary position. By contrast, the linear order of an adverb and a finite auxiliary with cliticized negation unambiguously reflects their scopal relation: an adverb may only be interpreted as taking scope over negation if it precedes the negation marker, whereas the adverb receives a narrow scope reading if placed behind the negation marker. (1.8a) expresses that there was a regularity of John's not taking his medicine while it is stated in (1.8b) that there was no regularity in John's taking his medicine. As (1.9) shows, adverbs which outscope negation, such as e.g. epistemic adverbs, have to precede the negation marker.

- (1.8) a. John regularly didn't take his medicine.
 - i) 'It was regularly the case that John did not take his medicine.'
 - ii) #'It is not the case that John took his medicine regularly.'
- b. John didn't regularly take his medicine.
 - i) #'It was regularly the case that John did not take his medicine.'
 - ii) 'It is not the case that John took his medicine regularly.'
- (1.9) a. John probably hasn't done his work.
- b. John has probably not done his work.
- c. *John hasn't / has not probably done his work.

Similarly, linearization among several medial adverbs corresponds to scope. Frequency and subject-oriented adverbs, for example, may co-occur in either order with distinct interpretations: what is considered to be wise of Richard in (1.10a) is the frequency of his calls, whereas every single call is judged as wise in (1.10b). Other combinations of adverbs are restricted in their ordering. Like the epistemic modal in (1.5b, 1.6b), an epistemic adverb has to precede a frequency or subject-oriented adverb, while it follows an evaluative one.

- (1.10) a. Richard wisely has often called his rich aunt.
- b. Richard often has wisely called his rich aunt.
- (1.11) a. Ed probably has (wisely / often) called Bob.
- b. Ed (*wisely / *often) has probably called Bob.
- (1.12) a. Carol unfortunately has probably broken her leg in the car crash.
- b. *Carol probably has unfortunately broken her leg in the car crash.

While finite lexical verbs and auxiliaries differ in their ability to precede an adverb in English, both finite lexical verbs and finite auxiliaries have to precede a medial adverb in French. Intervention of an adverb between the subject and the finite verb is ungrammatical:

- (1.13) a. Jean (*probablement / *souvent) embrasse Marie.
 Jean probably often kisses Marie
 'Jean (probably / often) kisses Marie.'
- b. Jean embrasse (probablement / souvent) Marie.
- (1.14) a. Jean (*probablement / *souvent) a embrassé Marie.
 Jean probably often has kissed Marie
 'Jean has (probably / often) kissed Marie.'
- b. Jean a (probablement / souvent) embrassé Marie.

As in English, an adverb following a modal may take wide or narrow scope in French (1.15) whereas the scopal relation among various medial adverbs is unambiguously represented in their linear order (1.16, 1.17):

- (1.15) Louis peut souvent soulever 200 kilos.
 Louis is.able.to often lift 200 kilos
 i) 'Louis is often able to lift 200 kilos.'
 ii) 'Louis is able to lift 200 kilos several times (in a row).'
- (1.16) a. Maggie sourit encore toujours à Stéphane. (Ernst 2002: 361)
 Maggie smiles still always at Stéphane
 'Maggie still always smiles at Stéphane.'
- b. Maggie sera toujours encore à son bureau après la fermeture.
 Maggie will.be always still at her office after the closing
 'Maggie will always still be at her office after closing time.'
- (1.17) a. Jean a probablement souvent appelé sa tante à héritage.
 Jean has probably often called his aunt of heritage
 'John has probably often called his rich aunt.'
- b. *Jean a souvent probablement appelé sa tante à héritage.

Likewise, adverb placement relative to a negative element such as *pas* ('not'), *plus* ('anymore'), or *rien* ('nothing') is dictated by scope: if negation is within the scope of the adverb, the negation marker must follow the adverb, whereas it precedes the adverb if the adverb takes narrow scope. Note that the negation marker *ne* cliticizes onto the finite verb and thus precedes a medial adverb, independent of the scope of negation.

- (1.18) a. Charles n' a souvent pas appelé Marie.
 Charles not has often not called Marie
 i) 'Charles has often not called Marie.'
 ii) #'Charles has not often called Marie.'
- b. Charles n'a pas souvent appelé Marie.
 i) #'Charles has often not called Marie.'
 ii) 'Charles has not often called Marie.'

- (1.19) a. Claudine n' a probablement rien fait.
 Claudine not has probably nothing done
 'Claudine probably hasn't done anything.'
- b. *Claudine n'a rien probablement fait.

In German, finite verb placement depends on the type of clause: the finite verb usually occurs in second position in matrix clauses and in final position in embedded clauses. Hence, a medial adverb trivially precedes the finite verb in embedded clauses, (1.20). Since only one single constituent should precede the finite verb in matrix clauses, clause-initial placement of an adverb gives rise to subject-auxiliary inversion in German (in contrast to English and French, compare (1.21a) vs. (1.21b,c)). An adverb cannot appear in front of the prefield constituent (1.22a), nor may it intervene between the prefield constituent and the finite verb (1.23b).³

- (1.20) a. ... weil Karl wahrscheinlich Maria liebt.
 because Karl probably Maria loves
 '... because Karl probably loves Maria.'
- b. ... weil Karl gestern Maria geküßt hat.
 because Karl yesterday Maria kissed has
 '... because Karl has kissed Maria yesterday.'
- (1.21) a. Gestern hat Karl diese Bücher gelesen.
 yesterday has Karl these books read
 'Yesterday, Karl read these books.'
- b. *Yesterday has Karl read these books.
- c. *Hier a Karl lu ces livres.
 yesterday has Karl read these books
 'Yesterday, Karl read these books.'
- (1.22) a. *Gestern Karl hat diese Bücher gelesen.
- b. Yesterday Karl has read these books.
- c. Hier, Karl a lu ces livres.
- (1.23) a. Karl liebt wahrscheinlich Maria.
 Karl loves probably Maria
 'Karl probably loves Maria.'
- b. *Karl wahrscheinlich liebt Maria.

³ Note that (a) the finite verb may appear in clause-initial position in *yes/no*-questions as in (i) and (b) some types of adverbs may precede a focused constituent in prefield position, compare example (1.43c) below.

- (i) Hat Frank das Geschirr gespült?
 has Frank the dishes washed.up
 'Did Frank do the dishes?'

An adverb within the German middle field may take wide or narrow scope relative to the finite verb - independent of the verb's position, V2 or V-final. For example, the adverb in (1.24) can be construed with the matrix or the embedded verb; likewise, the scopal relation between the adverb and the modal verb in (1.25) is ambiguous. By contrast, the relative scope between an adverb and negation (1.26) as well as among several adverbs (1.27) is unambiguously reflected in linear order within the middle field.

- (1.24) a. Fritz bittet inbrünstig zu singen. (Öhlschläger 1989: 94)
 Fritz asks fervently to sing
 i) 'Fritz is fervently asking to sing.'
 ii) 'Fritz is asking to sing in a fervent way.'
- b. ... daß Fritz inbrünstig zu singen bittet.
 that Fritz fervently to sing asks
 i) '... that Fritz is fervently asking to sing.'
 ii) '... that Fritz is asking to sing in a fervent way.'
- (1.25) a. Karl möchte sie häufig küssen.
 Karl would.like.to her often kiss
 i) 'Karl often wants to kiss her.'
 ii) 'Karl wants to kiss her several times.'
- b. ... weil Karl sie häufig küssen möchte.
 because Karl her often kiss would.like.to
 i) '... because Karl often wants to kiss her.'
 ii) '... because Karl wants to kiss her several times.'
- (1.26) a. Otto ist regelmäßig nicht zum Unterricht erschienen.
 Otto is regularly not to.the lesson appeared
 'Otto regularly didn't come to the lesson.'
- b. Otto ist nicht regelmäßig zum Unterricht erschienen.
 'Otto didn't regularly come to the lesson.'
- (1.27) a. Bernd hat sie öfters absichtlich angerempelt.
 Bernd has her often intentionally bumped.into
 'Bernd has often intentionally bumped into her.'
- b. Bernd hat sie absichtlich öfters angerempelt.
 'Bernd has intentionally often bumped into her.'

1.1.2 Adverbs and Non-Finite Verbs/Auxiliaries

While adverbs may always follow a finite auxiliary in English, the acceptability of adverb placement behind a non-finite auxiliary depends on the type of adverb.⁴ For example, epistemic and evaluative sentence adverbs cannot follow a non-finite auxiliary, let alone a

⁴ Note that Standard English lacks non-finite forms of modal auxiliaries; i.e., there are only non-finite aspectual auxiliaries in that language. By contrast, French and German have non-finite forms of modals.

non-finite lexical verb. By contrast, subject-oriented and frequency adverbs may appear behind a non-finite auxiliary. Note that adverb placement in front of the auxiliary and behind it as in (1.30) gives rise to different interpretations: (1.30a) states that the event of their being knocked off their feet occurred frequently while (1.30b) describes one event in which they were knocked off their feet many times during one training session (see Ernst 2002).

- (1.28) a. *Oskar had been luckily leaving the office at the time. (Ernst 2002: 100)
 b. John (probably) has (probably) been (*probably) elected (*probably) by the majority of the candidates.
- (1.29) a. She has been wisely insisting on total control of her films. (Ernst 2002: 106)
 b. All during that time, they had been cleverly attending every church meeting they could find, as a way of bolstering their social standing.
- (1.30) a. They have frequently been knocked off their feet during training.
 (Ernst 2002: 348)
 b. They have been frequently knocked off their feet during training.

Unlike English, both participial lexical verbs and auxiliaries may precede a sentence adverb in French.

- (1.31) a. Jean a mangé probablement une pomme. (Laenzlinger 2000: 115)
 Jean has eaten probably an apple
 'Jean has probably eaten an apple.'
 b. Marc avait été peut-être refusé par la majorité des candidates.
 Marc had been perhaps refused by the majority of the candidates
 (Ernst 2002: 375)
 'Marc had perhaps been refused by the majority of the candidates.'

It was shown in the previous section that in English an adverb outscopes a finite modal it precedes while the sequence *finite modal - adverb* is ambiguous (compare (1.7) above). In French, the same pattern arises with non-finite modals: preceding the modal, the adverb may only be interpreted as taking wide scope whereas it may receive a wide or narrow scope reading when following the non-finite modal.

- (1.32) a. Jean a régulièrement du prendre son remède.
 Jean has regularly had.to take his medicine
 i) 'Jean has regularly had to take his medicine.'
 ii) #'Jean has had to take his medicine regularly.'
 b. Jean a du régulièrement prendre son remède.
 i) 'Jean has regularly had to take his medicine.'
 ii) 'Jean has had to take his medicine regularly.'

In German, non-finite verbs normally appear in sentence-final position, following a medial adverb. They may only precede an adverb if placed in prefield position by (remnant) VP Fronting as in (1.33b,c).

- (1.33) a. Gestern hat Paul wahrscheinlich Maria geküßt.
 yesterday has Paul probably Maria kissed
 'Paul has probably kissed Maria yesterday.'
- b. Geküßt hat Paul wahrscheinlich gestern Maria.
 c. Maria geküßt hat Paul wahrscheinlich gestern.
 d. *Gestern hat geküßt Paul wahrscheinlich Maria.
 e. *Gestern hat Maria geküßt Paul wahrscheinlich.

As with finite verbs in final position (see (1.24b, 1.25b) above), an adverb within the middle field may take wide or narrow scope relative to a following non-finite verb in final position:

- (1.34) a. Karl hat öfters anzurufen versprochen.
 Karl has often to.call promised
 i) 'Karl has often promised to call.'
 ii) 'Karl has promised to call often.'
- b. Karl hat sie mehrmals küssen wollen.
 Karl has her several.times kiss want.to
 i) 'Karl has repeatedly wanted to kiss her.'
 ii) 'Karl has wanted to kiss her several times.'

In summary, English, French, and German differ in which orders of adverbs and verbs/auxiliaries they permit and which interpretations the various sequences may receive.

1.2 The Ordering of Adverbs and Arguments

1.2.1 Focus-Background Structure

At first glance, a sentence adverb may apparently appear in any position within the German middle field, preceding or following the various arguments:

- (1.35) ... weil (angeblich) Peter (angeblich) Maria (angeblich) das Buch (angeblich)
 because allegedly Peter allegedly Maria allegedly the book allegedly
 geklaut hat.
 pinched has
 '... because Peter has allegedly pinched the book from Maria.'

However, adverb positioning seems to be sensitive to information structure: sentence adverbs are often described as partitioning the clause into focus and background, with unfocused arguments having to precede the adverb (see Jacobs 1986, Haftka 1988, Hetland 1992, Büring 1996, among others). Accordingly, variation in adverb placement is expected to correlate with alternations in the information structure of the clause, compare (1.36) vs. (1.37) and (1.38) vs. (1.39). Especially in VP Fronting constructions, it is evident that an argument may only follow a sentence adverb if it is focused, (1.38a) vs. (1.39a). Inthetic sentences such as (1.40), in which the whole clause is focal, a sentence adverb precedes all arguments.

- (1.36) (What has Mary done to forget John?)
 a. Sie hat wahrscheinlich seine Liebesbriefe verbrannt.
 she has probably his love.letters burnt
 'She probably burnt his love letters.'
 b. ?*Sie hat seine Liebesbriefe wahrscheinlich verbrannt.
- (1.37) (What did Mary do with John's love letters?)
 a. *Sie hat wahrscheinlich seine Liebesbriefe verbrannt.
 b. Sie hat seine Liebesbriefe wahrscheinlich verbrannt.
- (1.38) (Who kicked down the door?)
 a. Die Tür eingetreten hat vermutlich Herbert.
 the door kicked.down has presumably Herbert
 'Herbert presumably kicked down the door.'
 b. ??Die Tür eingetreten hat Herbert wahrscheinlich.
- (1.39) (What did Herbert do?)
 a. *Die Tür eingetreten hat wahrscheinlich Herbert.
 b. Die Tür eingetreten hat Herbert wahrscheinlich.
- (1.40) (What is happening?) (Frey 2000b: 142)
 a. Gerade wird wahrscheinlich der neue Präsident gewählt.
 at.the.moment is probably the new president elected
 'Probably, the new president is being elected at the moment.'

- b. *Gerade wird der neue Präsident wahrscheinlich gewählt.

Placement of the unfocused material in front of the adverb normally results in its focus-initial occurrence. Yet the focused constituent does not have to follow the adverb. As Frey (2000b) notes, due to the independence of topic-comment and focus-background structure an element which belongs to the focus may be conceived of as topic. Although pertaining to the focus, the topical subject in (1.41) precedes the sentence adverb (see next section).

- (1.41) (What happened today?) (Frey 2000b: 149)
 Heute hat [[der Studentenvertreter]_[+top] leider heftig protestiert]_[+foc].
 Today has the student.representative unfortunately vehemently protested
 'Today, the student representative unfortunately protested vehemently.'

Similarly, the example in (1.42) from Pittner (1999) shows that a focused constituent may precede a sentence adverb within the German middle field.

- (1.42) (Who does this nice car belong to?) (Pittner 1999: 176)
 Ich habe gehört, daß [Otto]_[+foc] diesen Wagen angeblich geschenkt bekommen hat.
 I have heard that Otto this car allegedly given got has
 'I heard that Otto allegedly got this car as a present.'

Pittner (1999) concludes that focused phrases which introduce new referents may very well precede a sentence adverb; however, phrases focused by the adverb (here: *geschenkt* 'got as present') have to follow it.

Although a focus-sensitive adverb has to be placed behind unfocused arguments within the middle field, it may appear in prefield position, preceding the unfocused material within the middle field as in (1.43a). Moreover, the focused constituent can occur in prefield position, with the focus-sensitive adverb appearing within the middle field (1.43b) or preceding the focused phrase in prefield position (1.43c). In the latter case, the adverb seems to relate to the focused constituent only: what is judged as regrettable is not the fact that Maria confided in someone, but that it was Otto she confided in.

- (1.43) a. Unglücklicherweise hat sich Maria [dem Otto]_[+foc] anvertraut.
 unfortunately has herself Maria the Otto confided.in
 'Maria has unfortunately confided in Otto.'
 b. [Dem Otto]_[+foc] hat sich Maria unglücklicherweise anvertraut.
 c. Unglücklicherweise [dem Otto]_[+foc] hat sich Maria anvertraut.
 (Frey 2000b: 140)

The tendency to place an adverb to the left of the focus (or, rather, to the left of the constituent it focuses on) can also be observed in other languages. Recall that a sentence adverb may follow a non-finite verb in French (see example (1.31) above). This placement seems to be

most natural if the object is focused, i.e. in case adverb placement behind the non-finite verb results in left-adjacency between the adverb and the focus.

(1.44) (Who did Paul hit?)

Paul a frappé probablement [Marie]_[+foc].

Paul has hit probably Marie

'Paul probably hit Marie.'

In English, by contrast, adverb placement immediately in front of a focused object is not acceptable: a sentence adverb has to precede the lexical verb, see (1.45). Yet, while occurrence of a focus-sensitive adverb in front of an unfocused subject requires comma-intonation (1.46a), the adverb may - but does not have to - appear clause-initially in case the subject is focused in English, (1.47).

(1.45) (Who does Mary love?)

a. Mary presumably loves [Paul]_[+foc].

b. *Mary loves presumably [Paul]_[+foc].

(1.46) (What did John do?)

a. Presumably *(,) John has [solved the mystery]_[+foc].

b. John has presumably [solved the mystery]_[+foc].

(1.47) (Who has solved the mystery?)

a. Presumably [John]_[+foc] has solved the mystery.

b. [John]_[+foc] has presumably solved the mystery.

1.2.2 Topic-Comment Structure

In contrast to focused constituents, which should follow a sentence adverb, topics precede adverbs within the German middle field (see e.g. Frey & Pittner 1998, Pittner 1999, Frey 2000a,b, 2004, and Svenonius 2002). According to Reinhart (1981, 1995), a cataphoric pronoun relates to a topic; as illustrated by the sentences in (1.49), the expression co-referential with the pronoun has to precede the adverb.

(1.48) (Concerning Karl, did you know ...)

a. ... daß Maria diesen Idioten morgen heiraten wird.

... that Maria this Idiot tomorrow marry will

'... that Maria will marry this idiot tomorrow.'

b. *... daß Maria morgen diesen Idioten heiraten wird.

(1.49) a. Weil er_i gut vorbereitet ist, wird Fred_i wahrscheinlich einen interessanten
because he well prepared is will Fred probably an interesting
Vortrag halten. (Frey 2000b: 141)
talk give
'Since he_i is well prepared, Fred_i will probably give an interesting talk.'

- b. *Weil er_i gut vorbereitet ist, wird wahrscheinlich Fred_i einen interessanten Vortrag halten.

While topical arguments and adverbs are strictly ordered within the middle field, both an adverb or a topic may occur in prefield position.

- (1.50) a. Voraussichtlich wird diesem Lügner bald keiner mehr glauben.
Probably will this liar soon nobody anymore believe
'Probably nobody will believe this liar anymore soon.'
b. Diesem Lügner wird voraussichtlich bald keiner mehr glauben.

According to Frey (2000a), all phrases preceding a sentence adverb within the German middle field are topics (except discourse-oriented adverbs and phrases pronounced with I-contour). Hence, arguments that cannot be topics are expected to follow a medial sentence adverb. For example, the non-referential subject in (1.51a) cannot precede the adverb; likewise, the existentially interpreted plural DP in (1.52a), which introduces a new discourse referent, must follow the adverb. Note that the same pattern arises with non-topical subjects in English, French, and Italian: a sentence adverb has to precede them.

- (1.51) a. ... weil (wahrscheinlich) keiner (*wahrscheinlich) Zeit hat.
because probably nobody probably time has
(Pittner 1999: 175)
'... because probably nobody has time.'
b. (Probably) nobody has (*probably) left. (Belletti 1990: 51)
c. (Probablement) personne n' a (*?probablement) abordé le problème.
probably nobody not has probably spoken.about the problem
(Belletti 1990: 51)
'Probably nobody has spoken about the problem.'
d. (Probabilmente) nessuno ha (*probabilmente) sbagliato troppe volte.
probably nobody has probably made.mistakes too.many times
(Belletti 1990: 50)
'Probably nobody has made mistakes too many times.'
- (1.52) a. ... weil (glücklicherweise) Mädchen (*glücklicherweise) geboren wurden.
because fortunately girls fortunately born were
(Frey & Pittner 1999: 30)
'... because fortunately girls were born.'
b. (Luckily) boys (??luckily) were born.

Furthermore, a topical object may be fronted to clause-initial position in English, French, and Italian, without giving rise to subject-verb/auxiliary inversion. Note that in the Romance languages, the fronted object is resumed by a clitic pronoun that attaches to the finite verb.

- (1.53) a. *Mary has John probably kissed.
 b. Mary, John has probably kissed.
- (1.54) a. Jean_i, Marie l_i' aime.
 Jean Marie him loves
 'Jean, Marie likes.'
 b. Il tuo libro_i, lo_i ho letto. (Rizzi 1997: 286)
 the your book it I.have read
 'Your book, I have read.'

Yet while a topic is placed in pre-subject position in declarative clauses, it is ungrammatical in that position in questions; rather, the topic occurs in clause-initial position preceding the *wh*-phrase in English, French, and Italian. In German, by contrast, topic fronting within the middle field is acceptable in interrogative clauses, just as it is in declarative ones.

- (1.55) a. *What did, to Mary, John give?
 b. As for Mary, what did John give to her?
- (1.56) a. Où (*le biberon_i) faut-il (*le biberon_i) le_i mettre?
 where the bottle must it the bottle it put
 'Where does the bottle go?'
 b. Le biberon_i, où faut-il le_i mettre? (De Cat 2002: 94)
- (1.57) a. *A chi, il premio Nobel_i, lo_i daranno?
 to whom the Nobel.prize it they.will.give
 'To whom will they give the Nobel prize?'
 b. Il premio Nobel, a chi lo daranno? (Rizzi 1997: 289)
- (1.58) a. Was hat dem Fritz diese Frau geschenkt? (Müller & Sternefeld 1990: 40)
 what has the Fritz this woman given.as.a.present
 'What did this woman give to Fritz?'
 b. *Dem Fritz, was hat diese Frau geschenkt?

1.2.3 Frequency and Temporal Adverbs and the Reading of Arguments

Just as the scopal relation among several adverbs is unambiguously encoded in surface order within the German middle field (compare example (1.27) above), frequency adverbs and quantified arguments are linearized according to their scope: the sentences in (1.59) differ in interpretation. Yet, in cases where one of the phrases occurs in prefield position, the sentence is ambiguous (though the scopal interpretation corresponding to surface order is preferred).

- (1.59) a. ... daß wer jeden Angeklagten oft beleidigte. (Frey & Pittner 1998: 515)
 that someone every defendant often insulted
 i) '... that every defendant was insulted several times (in a row).'
 ii) #'... that someone often insulted every defendant.'
 b. ... daß wer oft jeden Angeklagten beleidigte.

- (1.60) a. i) #'... that every defendant was insulted several times (in a row).'
 ii) '... that someone often insulted every defendant.'
- Jeden Angeklagten hat der Staatsanwalt oft beleidigt.
 every defendant has the public.prosecutor often insulted
- i) 'The prosecutor insulted every defendant several times (in a row).'
 ii) ?'The prosecutor often insulted every defendant.'
- b. Oft hat der Staatsanwalt jeden Angeklagten beleidigt.
 i) ?'The prosecutor insulted every defendant several times (in a row).'
 ii) 'The prosecutor often insulted every defendant.'

Similarly, the interpretation of an indefinite DP in English seems to depend on its placement relative to a frequency adverb: while *some linguists* in (1.61a,b) has to be interpreted as a specific subset of linguists, it may receive an unspecific reading in (1.61c); according to Haider (2002), this contrast vanishes in (1.61a), but not in (1.61b) if the frequency adverb is dropped, indicating that besides position (subject vs. topic), ordering with respect to an adverb might be decisive for the interpretation of a DP.

- (1.61) a. Some linguists often were treated badly. (Haider 2002: 59)
 b. Some linguists they often treated badly.
 c. They often treated some linguists badly.

In contrast to frequency adverbs, placement of a quantified temporal adverbial behind a quantified argument gives rise to ambiguity (1.62a) while its occurrence in front of the argument (1.62b) restricts it to a wide scope interpretation (see Frey & Pittner 1998, Pittner 1999, and Frey 2000a,b).

- (1.62) a. ... weil mindestens einer an fast jedem Tag nichts tat.
 because at.least one on almost every day nothing did
 (Pittner 1999: 157)
 i) '... because almost every day there was at least one person who did nothing.'
 ii) '... because at least one person did nothing almost every day.'
- b. ... weil an fast jedem Tag mindestens einer nichts tat.
 i) '... because almost every day there was at least one person who did nothing.'
 ii) #'... because at least one person did nothing almost every day.'

Furthermore, an indefinite argument may only receive a strong reading if it precedes a temporal adverbial whereas it is ambiguous if following the adverbial. For example, the subject in (1.63a) has to be interpreted as generic while it may be existentially bound in (1.63b).

- (1.63) a. ... weil Väter an Weihnachten mit der Eisenbahn spielen.
because fathers at Christmas with the train.set play
(Frey 2000b: 152)
'... because fathers play with the train set at Christmas.'
- b. ... weil an Weihnachten Väter mit der Eisenbahn spielen.

Summing up, the ordering of adverbs and arguments is obviously guided by semantic and pragmatic considerations in the languages under investigation.

CHAPTER 2.

PREVIOUS APPROACHES TO THE ORDERING OF ADVERBS AND VERBS

This chapter reviews various approaches to the variability in and restrictions on the ordering of adverbs and verbs/auxiliaries. Special attention is paid to the cross-linguistic contrast in the acceptability of adverb occurrence in front of a finite verb. As shown in chapter 1, finite lexical verbs and finite auxiliaries differ with respect to whether or not they may precede an adverb in English, while both types of verbs have to precede a medial adverb in French. These contrasts have been analyzed as resulting from differences in the movement behavior of lexical verbs and auxiliaries (Emonds 1976, Pollock 1989, 1997, Baker 1991), contrasts in the variability of subject placement (Belletti 1990, 1994) and/or verb positioning (Cinque 1999) as well as from differences in the availability of I'-adjunction (Ernst 2002). These syntactic approaches will be discussed in turn in section 2.1.

Section 2.2 points out that semantics plays a role in adverb positioning as well. Though pre-auxiliary adverb placement is permitted in English in principle, it is unacceptable for certain combinations of adverbs and auxiliaries. Moreover, the various types of adverbs differ in whether or not they may follow a non-finite auxiliary in English and French. In view of the fact that differences in adverb placement may correlate with differences in scopal interpretation, restrictions on the base ordering of adverbs and auxiliaries will be argued to arise from restrictions on scope options. Scopal relations and thus adverb positions are considered to be restricted by the selectional properties of the lexical items in Ernst's (1998, 2002) approach presented in that section. The results are summarized in 2.3.

2.1 Syntactic Approaches

2.1.1 *(In)Variable Verb Positioning: Emonds (1976), Pollock (1989, 1997), Baker (1991)*

Recall that in English, adverb positioning with respect to a finite verb depends on the type of verb: while an adverb has to precede a lexical verb (2.1), it may occur on either side of a finite

auxiliary (2.2). In French, by contrast, intervention of an adverb between the subject and the finite verb is unacceptable; irrespective of the type of verb, a medial adverb has to follow the finite verb, as illustrated in (2.3, 2.4).¹

- (2.1) a. John probably likes linguistics. (Pollock 1997: 258)
 b. *John likes probably linguistics.
- (2.2) a. John probably has made many mistakes. (Pollock 1997: 259)
 b. John has probably made many mistakes.
- (2.3) a. *Jean probablement aime la linguistique. (Pollock 1997: 258)
 Jean probably likes the linguistics
 'Jean probably likes linguistics.'
 b. Jean aime probablement la linguistique.
- (2.4) a. *Jean probablement a fait beaucoup d'erreurs. (Pollock 1997: 259)
 Jean probably has made many of mistakes
 'Jean has probably made many mistakes.'
 b. Jean a probablement fait beaucoup d'erreurs.

Note that the ungrammaticality of adverb placement behind a lexical verb in English cannot solely be due to a requirement on case adjacency: the adverb may not intervene between a lexical verb and a PP-object to which the verb does not assign case either.²

- (2.5) a. Bill probably spoke to his mother.
 b. *Bill spoke probably to his mother.

Emonds (1976) proposes that the contrast in the acceptability of finite verb placement in front of an adverb in English is due to a difference between lexical verbs and auxiliaries in the ability to move to a higher head position. Under the assumption that the adverb has to be merged above the base position of the finite verb, verb movement is necessary to derive the order *finite verb - adverb*³: the ungrammaticality of (2.1b) then indicates that a lexical verb

¹ Due to the peculiarities of finite verb placement in German - V2 vs. V-final depending on the type of clause -, this language is not taken into consideration in this chapter; see Vikner (1995) and section 3.3 on verb positioning in German.

² Nevertheless, case adjacency seems to play a role in adverb positioning in English: manner adverbs that occupy VP-internal positions (see footnote 26 below) cannot immediately precede a DP-object either whereas they may be placed in front of a PP-object.

- (i) a. Carol read (*carefully) the book (carefully).
 b. Carol spoke (nicely) to her mother (nicely).

³ At least for some types of adverbs, it seems reasonable to assume that they have to c-command the base position of the finite verb. For example, evaluative and epistemic adverbs cannot follow a non-finite auxiliary in English. Requiring that they be merged above the base position of the finite verb, their occurrence behind a non-finite auxiliary is excluded if non-finite verb movement is prohibited (compare section 2.2).

- (i) John (unfortunately / probably) has (unfortunately / probably) been (*unfortunately / *probably) talking about the problem stupidly.

cannot move in English whereas raising of a finite auxiliary is possible (2.2b). In French, by contrast, both finite lexical verbs and auxiliaries have to be placed in front of a medial adverb (2.3, 2.4). Hence, the contrasts in the ordering of adverbs and finite verbs might be considered

According to e.g. Haider & Rosengren (1998), Frey & Pittner (1998), Frey (2000a), and Haider (2002), the hypothesis that sentence adverbs have to c-command the finite verb is also supported by the fact that they cannot be fronted together with a VP in German. Under the assumption that the fronted VP cannot contain the trace of the finite verb (iii), it follows that the adverb may not be included within the fronted VP.

- (ii) a. *Glücklicherweise viel gelacht wird in diesem Land. (Frey & Pittner 1998: 518)
 fortunately much laughed is in this country
 'Fortunately, there is a lot of laughter in this country.'
- b. *Vermutlich gratuliert hat sie zu früh. (Haider 2002: 64)
 presumably congratulated has she too early
 'She has presumably congratulated too early.'
- (iii) a. Ein Fehler einem Linguisten aufgefallen ist dabei noch nie. (Haider & Rosengren 1998: 35)
 an error a linguist stricken is at.that yet never
 'In this connection, no linguist ever noticed an error.'
- b. *Ein Fehler einem Linguisten auf-t_i fiel_i dabei noch nie.
 an error a linguist onto fell at.that yet never
 'In this connection, no linguist ever noticed an error.'

Though the sentences in (ii) are clearly marked, they are not ungrammatical according to my intuition. Yet, even if they are considered to be acceptable, this does not disprove the assumption that sentence adverbs need to be merged above the base position of the finite verb. Besides the fact that there is disagreement on whether or not the trace of the finite verb may be included in a fronted VP (see e.g. Müller 1998a), sentence adverbs seem to be able to adjoin to CP in case the phrase in Spec,CP is focused (compare section 3.4); i.e., the adverbs in (ii) might not be contained in the fronted VP. In addition, note that the acceptability of adverb placement in front of the prefield constituent seems to be influenced by prosody: clause-initial positioning of the adverb improves the more overt material appears within the middle field (I thank Gisbert Fanselow for pointing that out to me and for providing the example in (vb)).

- (iv) a. ?*Vermutlich Thunfisch ißt sie.
 presumably tuna eats she
 'She presumably eats tuna.'
- b. ?Vermutlich Thunfisch ißt sie sonntags immer zum Frühstück.
 presumably tuna eats she Sundays always to.the breakfast
 'She presumably always has tuna for breakfast on Sundays.'
- (v) a. ?*Vermutlich viel zu früh gratuliert hat er.
 presumably much too early congratulated has he
 'Presumably, he congratulated much too early.'
- b. Vermutlich viel zu früh gratuliert hat der Bürgermeister seiner Frau nicht nur aus
 presumably much too early congratulated has the major his wife not only from
 Sicht der Opposition, sondern auch nach Meinung der Presse.
 point.of.view the opposition but also in opinion the press
 'Not only from the point of view of the opposition, but also in the opinion of the press, the major presumably congratulated his wife much too early.'

In addition, note that the availability of a wide scope reading of an adverb placed behind a finite modal supports the view that the order *finite auxiliary - adverb* may be derived by auxiliary movement across the adverb. In case the modal originates in a position below the adverb and moves in front of it, the wide scope reading of the adverb is encoded by c-command in syntactic structure, as required by the Scope Principle (Aoun & Li 1989, Ernst 1992, see (2.72) below): the adverb c-commands the base position of the modal and is thus expected to be able to outscope it.

- (vi) Sue must_i frequently t_i see the doctor.
 'Sue is frequently forced to see the doctor.'

to reflect differences in the movement behavior of finite verbs and auxiliaries in English and French.

According to Pollock (1989), restrictions on finite verb movement are ultimately due to θ -theory (Chomsky 1993): lexical verbs have to θ -mark their arguments. Agr^0 being opaque to θ -role assignment in English, a finite lexical verb cannot move (through Agr^0) to T^0 , the highest clausal head position; staying in VP, the finite lexical verb thus follows a V'-adjoined adverb. The auxiliaries *have* and *be*, by contrast, have no θ -roles to assign: they are able to move to T^0 and, consequently, precede an adverb.

- (2.6) a. [TP John e [AgrP e [VP often kisses Mary]]]
 b. [TP John has_i [AgrP t_i [VP often t_i kissed Mary]]]

Unlike in English, Agr^0 and [+finite] T^0 are transparent to θ -role assignment in French; i.e., the θ -Criterion can be satisfied even if the lexical verb occurs in T^0 . Hence, both finite auxiliaries and finite lexical verbs move to T^0 , preceding a medial adverb.

- (2.7) a. [TP Jean embrasse_i [AgrP t_i [VP souvent t_i Marie]]]
 Jean kisses often Marie
 'Jean often kisses Marie.'
 b. [TP Jean a_i [AgrP t_i [VP souvent t_i embrassé Marie]]]
 Jean has often kissed Marie
 'Jean has often kissed Marie.'

Pollock supposes that verb movement is obligatory if possible. Therefore, intervention of an adverb between the subject and the finite verb is ruled out in French: the finite verb/auxiliary has to raise to T^0 , compare (2.7) vs. (2.8). In addition, English *do*-Support as in (2.9) is predicted to be impossible in the presence of a finite auxiliary, (2.10). Furthermore, a low adverb, such as the degree-of-precision adverb in (2.11), is expected to follow a finite auxiliary, although it is considered to be merged above the auxiliary's base position in Pollock's analysis.

- (2.8) a. *[TP Jean e [AgrP e [VP souvent embrasse Marie]]]
 Jean often kisses Marie
 'Jean often kisses Marie.'
 b. *[TP Jean e [AgrP e [VP souvent a embrassé Marie]]]
 Jean often has kissed Marie
 'John has often kissed Marie.'
 (2.9) a. *[TP John e [NegP not e [AgrP e [VP left]]]]
 b. [TP John did_i [NegP not t_i [AgrP t_i [VP leave]]]]
 (2.10) a. [TP John has_i [NegP not t_i [AgrP t_i [VP t_i left]]]]
 b. *[TP John does_i [NegP not t_i [AgrP t_i [VP have left]]]]
 (2.11) a. [TP John e [AgrP e [VP completely lost his mind]]] (Pollock 1989: 396)

- b. * $[_{TP} \text{John } e [_{AgrP} e [_{VP} \text{completely is losing his mind}]]]]$
 c. $[_{TP} \text{John } i_s [_{AgrP} t_i [_{VP} \text{completely } t_i \text{ losing his mind}]]]]$

However, in contrast to the degree-of-precision adverb in (2.11), other types of adverbs may occur in pre-auxiliary position in English (2.12), but not in French (2.13). I.e. the contrast between English and French in the acceptability of adverb placement in front of a finite lexical verb is mirrored by finite auxiliaries. Yet while an adverb has to precede a finite lexical verb in English, adverb placement in front of an auxiliary is optional.

- (2.12) a. John probably has made many mistakes. (Pollock 1997: 259)
 b. John has probably made many mistakes.
 (2.13) a. *Jean probablement a fait beaucoup d'erreurs. (Pollock 1997: 259)
 Jean probably has made many of mistakes
 'John has probably made many mistakes.'
 b. Jean a probablement fait beaucoup d'erreurs.

In Pollock's (1989) approach, the cross-linguistic contrast in the grammaticality of pre-auxiliary adverb positioning cannot be due to a difference in the availability of verb movement, as assumed for the contrast in adverb positioning in front of a finite lexical verb, (2.1) vs. (2.3): movement of a finite auxiliary to T^0 is taken to be obligatory in both languages.

Pollock (1997) proposes a further functional projection MoodP, dominating TP. The contrast in pre-auxiliary adverb occurrence is considered to result from a disparity in the featural composition of the auxiliaries: while the English auxiliaries *have* and *be* come in two varieties - one form which is only marked for tense and one in which they are reanalyzed as indicative mood markers -, French auxiliaries which show overt mood distinctions are claimed always to be associated with a mood feature. Sticking to the hypothesis that verb movement has to target the highest possible position (because morphologically "identified", i.e. strong, functional heads have to be checked overtly), French finite auxiliaries must move to Mood⁰ and thus precede an adverb adjoined to TP, (2.14). By contrast, a finite auxiliary in English may target Mood⁰ or T⁰, depending on its morphological composition; consequently, it precedes (2.15a) or follows (2.15b) a TP-adjoined adverb, respectively.

- (2.14) a. $[_{MoodP} \text{Jean } a_i [_{TP} \text{probablement } [_{TP} t_i [_{AgrP} t_i [_{VP} t_i \text{fait beaucoup d'erreurs}]]]]]]$
 Jean has probably made many of mistakes
 'Jean has probably made many mistakes.'
 b. * $[_{MoodP} \text{Jean } e [_{TP} \text{probablement } [_{TP} a_i [_{AgrP} t_i [_{VP} t_i \text{fait beaucoup d'erreurs}]]]]]]$
 (2.15) a. $[_{MoodP} \text{John } has_i [_{TP} \text{probably } [_{TP} t_i [_{AgrP} t_i [_{VP} t_i \text{made many mistakes}]]]]]]$
 b. $[_{MoodP} \text{John } e [_{TP} \text{probably } [_{TP} has_i [_{AgrP} t_i [_{VP} t_i \text{made many mistakes}]]]]]]$

An alternative view on the order alternations of adverbs and finite auxiliaries in English is presented by Baker (1991). Like Pollock, he supposes that adverbs in pre- and post-auxiliary

position occupy the same structural position - adjoined to V' above the base position of the finite verb. However, in contrast to Pollock (1997) who traces back the order alternations to differences in the target position of auxiliary movement, Baker considers the variability in the order of adverb and finite auxiliary to be due to an optionality in whether or not auxiliary movement takes place at all. Auxiliary movement is supposed to be triggered by a rule that places an unstressed auxiliary in the left periphery of its phrase; an unstressed auxiliary is thus expected to precede an adverb, (2.16a). Yet, if the auxiliary is stressed, it is not affected by the rule; consequently, it cannot move and, therefore, follows the adverb (2.16b).⁴

- (2.16) a. John [_{V'} has_i [_{V'} probably [_{V'} t_i [_{V'} made many errors]]]]
 b. John [_{V'} probably [_{V'} HAS [_{V'} made many errors]]]

Under the assumption that adverbs preceding and following a finite auxiliary occupy the same structural position and that the order alternations are subject to a variability of auxiliary placement in accordance with the application of auxiliary movement (Baker 1991) or its target position (Pollock 1997), co-occurrence of adverbs in pre- and post-auxiliary position is predicted to be impossible, contrary to fact.

- (2.17) John probably can often lift 200 pounds.

The sentence in (2.17) points to the conclusion that adverbs preceding and following a finite auxiliary may differ in structural position.⁵ Note that neither Baker (1991) nor Pollock (1997) explicitly excludes that an adverb may appear in a position following the lower position of the auxiliary, i.e. below the base position of the auxiliary or below T⁰, respectively. Yet, analyzing *often* as merged below the base position of the finite auxiliary seems unreasonable (compare footnote 3): the sentence in (2.17) may express that John is probably often able to lift 200 pounds; i.e. *often* may take wide scope over the modal verb which is to be reflected by its placement above the modal's base position according to the Scope Principle (Aoun & Li 1989, Ernst 1992; see (2.72) below).⁶ Similarly, adverb positioning needs to be restrained in

⁴ By restricting auxiliary movement to unstressed forms, Baker is able to capture the influence of stress on the choice between pre- and post-auxiliary adverb placement mentioned in section 1.1, example (1.3). Note that a "special" rule is assumed to trigger movement of a finite auxiliary in front of *not* in negated clauses. Hence, adverb occurrence in pre-auxiliary position does not necessarily correlate with the omission of auxiliary movement in Baker's approach.

(i) John [_{V'} probably [_{V'} has_i [_{V'} not [_{V'} t_i [_{V'} made many errors]]]]]

⁵ As Ernst (2002) notes, under the assumption that adjunction to Mood' is impossible, the existence of another empty functional head above MoodP has to be postulated to account for the co-occurrence of adverbs in pre- and post-auxiliary position in Pollock's approach: the adverb in pre-auxiliary position might then be analyzed as MoodP-adjunct, with the subject occurring in the specifier position of the higher functional projection. Correspondingly, French finite verbs/auxiliaries would have to move to this higher functional head rather than to Mood⁰ (or, alternatively, adverb adjunction to MoodP would need to be excluded in French).

⁶ Note that Pollock (1989) assumes that modals are inserted under T⁰ since they do not show any agreement features. Hence, wide scope of an adverb over a preceding modal is not reflected by c-command in his approach.

Pollock's approach. In fact, an adverb occupying a position below TP, e.g. adjoined to AgrP or VP, would c-command the base position of the finite auxiliary within VP. But, if adverbs were free to occur as low as AgrP or VP, their placement behind a negation marker that surfaces in NegP dominating AgrP in Pollock's analysis might falsely be predicted to be acceptable (unless it is ruled out on other grounds, e.g. by restrictions on the order among adverbial elements).

- (2.18) a. [MoodP John e [TP unfortunately [TP has_i [AgrP probably [AgrP t_i [VP t_i made a lot of mistakes]]]]]]
 b. *[MoodP John e [TP fortunately [TP has_i [NegP not t_i [AgrP probably [AgrP t_i [VP t_i made a lot of mistakes]]]]]]]
 c. [MoodP John e [TP fortunately [TP has_i [NegP probably [NegP not t_i [AgrP t_i [VP t_i made a lot of mistakes]]]]]]]

In addition, as mentioned above, some types of adverbs (e.g., degree-of-precision and manner adverbs) cannot precede a finite auxiliary while they may precede a finite lexical verb. However, a prohibition against their adjunction to TP, as proposed by Pollock, will not suffice to capture their distribution: these adverbs may neither precede a non-finite auxiliary, severely calling into question Pollock's analysis in which adverbs - irrespective of their type - are merged above the base position of the finite auxiliary.

- (2.19) a. [MoodP John e ... [VP completely lost his mind]]
 b. *[MoodP John e [TP completely [TP is_i ... [VP t_i losing his mind]]]]
 c. [MoodP John e [TP is_i ... [VP completely t_i losing his mind]]]
 d. *[MoodP John e [TP has_i ... [VP completely t_i been losing his mind]]]
 (2.20) a. Paul loudly proclaimed his innocence.
 b. Paul (*loudly) has (loudly) proclaimed his innocence.
 c. Paul (*loudly) has (*loudly) been (loudly) proclaiming his innocence.

In summary, differences in the ordering between adverbs and verbs/auxiliaries cannot simply be traced back to contrasts in verb movement behavior. Restrictions on the base positioning of (different types of) adverbs relative to auxiliaries, negation, and other adverbs play a role as well.

2.1.2 (In)Variable Subject Positioning: Belletti (1990, 1994)

According to Belletti (1990, 1994), occurrence of a sentence adverb behind the subject involves subject topicalization: the subject moves from its canonic position within IP to a position in front of an IP-adjoined adverb. Hence, pre- and post-subject adverb positioning structurally coincide in her approach.

Unlike English, finite lexical verbs and auxiliaries precede negative and positive adverbs in Italian, indicating that as in French, Italian finite verbs target the highest head position in IP, AgrS⁰ in Belletti's approach.⁷

- (2.21) a. John (never / always) eats (*never / *always) apples.
 b. John has (never / always) eaten (*never / *always) apples.
- (2.22) a. [AgrSP Gianni_j non_k-parla_i [NegP (più) t_k [TP t_i [AgrOP t_i [AspP (più) [AspP t_i [VP t_j t_i]]]]]]]]]
 Gianni not speaks anymore anymore (Belletti 1994: 20)
 'Gianni doesn't speak anymore.'
- b. [AgrSP Gianni_j non_l-ha_i [NegP (più) t_l [TP t_i [AuxP t_i [AgrOP parlato_k [AspP (?più) [AspP t_k [VP t_j t_k]]]]]]]]]
 Gianni not has anymore spoken anymore (Belletti 1994: 26)
 'Gianni hasn't spoken anymore.'
- (2.23) a. Maria parlava (pur / già / sempre) di lui. (Belletti 1994: 30)
 Maria spoke indeed already always of him
 'Maria (indeed / already / always) spoke about him.'
- b. Gianni avrà (pure / già / sempre) risposto (?pure / ?già / ?sempre).
 Gianni will.have indeed already always answered indeed already always
 'Gianni will (indeed / already / always) have answered.'

Yet, while English and Italian obviously differ in the occurrence of V-to-I movement of lexical verbs, they are similar in the placement of sentence adverbs with respect to finite verbs. As in English, sentence adverbs may precede or follow a finite auxiliary in Italian while they have to precede a finite lexical verb⁸; in addition, these adverbs may appear in clause-initial position.

- (2.24) a. (Probably) John (probably) has (probably) made many mistakes.
 b. (Probably) John (probably) made (*probably) many mistakes.
- (2.25) a. Gianni probabilmente ha sbagliato molte volte. (Belletti 1994:33)
 Gianni probably has made.mistakes many times
 'Gianni has probably often made mistakes.'
- b. Gianni ha probabilmente sbagliato molte volte.
 c. Probabilmente Gianni ha sbagliato molte volte.
- (2.26) a. Gianni probabilmente sbaglierà. (Belletti 1994: 34)
 Gianni probably will.make.mistakes
 'Gianni will probably make mistakes.'

⁷ Occupying AgrO⁰, non-finite verbs may precede or follow a negative or positive adverb in Spec,NegP/Spec,PosP or AspP-adjoined position in Italian. Yet, note that adverb placement behind the non-finite verb is marked.

⁸ Note that in Italian, placement of a sentence adverb behind a lexical verb is possible in certain cases, namely if a narrowly focused constituent follows the adverb, see section 3.4.4.

- (2.28) a. *Nessuno, l' ho incontrato ieri. (Belletti 1990: 130)
 nobody him I.have seen yesterday
 'I have seen nobody yesterday.'
- b. *A nessuno, gli daranno il premio.
 to nobody to.him they.will.give the prize
 'They won't give the prize to anybody.'
- (2.29) a. (Probabilmente) nessuno (*probabilmente) arriverà domani.
 probably nobody probably will.arrive tomorrow
 (Belletti 1994: 31)
 'Probably nobody will arrive tomorrow.'
- b. (Probabilmente) nessuno (*probabilmente) ha sbagliato.
 probably nobody probably has made.mistakes
 'Probably nobody has made mistakes.'
- (2.30) a. (Probably) nobody (*probably) left. (Belletti 1990: 132)
 b. (Probably) nobody (*probably) has left.

Hence, being restricted to AgrSP-adjoined position, sentence adverbs are expected to precede a finite verb - with their positioning relative to the subject depending on whether or not subject topicalization takes place. Yet, while a sentence adverb has to be placed in front of a lexical verb in Italian and English, it may occur on either side of a finite auxiliary (see examples (2.24, 2.25) above). Belletti accounts for the availability of post-auxiliary adverb placement by assuming that AgrSP is recursive. Targeting the higher AgrS⁰, a finite auxiliary may precede or follow a sentence adverb that is adjoined to the lower (2.31a) or higher AgrSP (2.31b,c), respectively. By contrast, a finite lexical verb is restricted to move only as high as the lower AgrS⁰ (which hosts the agreement features), predicting it to be unable to precede a sentence adverb, as shown in (2.32).¹¹

- (2.31) a. [_{AgrSP1} Gianni_j ha_i [_{AgrSP2} probabilmente [_{AgrSP2} t_j t_i ... sbagliato]]]
 Gianni has probably made.mistakes
 'Gianni probably made mistakes.'
- b. [_{AgrSP1} Probabilmente [_{AgrSP1} Gianni_j ha_i [_{AgrSP2} t_j t_i ... sbagliato]]]
 c. Gianni_j ... [_{AgrSP1} probabilmente [_{AgrSP1} t_j ha_i [_{AgrSP2} t_j t_i ... sbagliato]]]
- (2.32) a. * [_{AgrSP1} Gianni_j sbaglierà_i [_{AgrSP2} probabilmente [_{AgrSP2} t_j t_i ... t_j t_i]]]
 Gianni will.make.mistakes probably
 'Gianni will probably make mistakes.'
- b. [_{AgrSP1} [_{AgrSP2} Probabilmente [_{AgrSP2} Gianni_j sbaglierà_i ... t_j t_i]]]
 c. Gianni_j ... [_{AgrSP1} [_{AgrSP2} probabilmente [_{AgrSP2} t_j sbaglierà_i ... t_j t_i]]]

¹¹ The subject is assumed to appear in the specifier position of that AgrSP whose head is lexically filled; consequently, it precedes the finite verb.

Consequently, the target position of verb movement - higher or lower AgrS⁰ - is crucial for the ability of a finite verb to precede a sentence adverb, (2.31a) vs. (2.32a).¹² In addition, occurrence of subject topicalization decides on whether an adverb appears in front of the subject or behind it, (2.31b, 2.32b) vs. (2.31c, 2.32c).

In contrast to English and Italian, intervention of an adverb between the subject and the finite verb is unacceptable in French - irrespective of the type of verb, auxiliary or lexical verb (2.33). According to Belletti, this is due the lack of a topicalization process in that language: topicalization allegedly being unavailable in French (2.34b), the subject cannot move in front of the AgrSP-adjoined adverb, predicting adverb occurrence between the subject and the finite verb to be impossible, as illustrated in (2.34c).

- (2.33) a. Jean (*probablement) a (probablement) fait plusieurs erreurs.
 Jean probably has probably made several mistakes
 (Belletti 1994: 32)
 'Jean has probably made several mistakes.'
- b. Jean (*probablement) aime (probablement) la linguistique.
 Jean probably likes probably the linguistics
 'Jean probably likes linguistics.'
- (2.34) a. John, I have seen. (Belletti 1990: 43)
- b. *Jean j'ai vu.
 Jean I have seen
 'Jean, I have seen.'
- c. *Jean_j [_{AgrSP} probablement [_{AgrSP} t_j a fait plusieurs erreurs]]
 Jean probably has made several mistakes
 'Jean has probably made several mistakes.'

Yet note that contrary to Belletti's claim, argument fronting is possible in French. Just as in Italian, a topical object in clause-initial position requires the presence of a resumptive clitic (but see also footnote 82 in section 3.5 below).¹³ Similarly, placement of a topical subject in

¹² Remember that English lexical verbs should be considered to be unable to move out of VP due to the contrast in (2.21).

¹³ Note that neither in Italian nor in French does a resumptive pronoun co-occur with a focalized argument.

- (i) a. IL TUO LIBRO (*lo) ho comprato (non il suo). (Rizzi 1997: 290)
 the your book it I.have bought not the his
 'I bought your book, not his one.'
- b. LA CHAIR FRAICHE il (*l') a sentie. (De Cat 2002: 51)
 the flesh fresh he it has smelt
 'He smelt raw flesh.'
- c. URSULE (*elle) l' a fait.
 Ursule she it has done
 'Ursule did it.'

The strict prohibition against adverb intervention between the subject and the finite verb in French thus calls into question Belletti's hypothesis that pre-verbal/auxiliary adverb occurrence as in Italian (and English) may result from movement of a focalized subject across an AgrSP-adjoined adverb. Rather, the French data seem to suggest

front of a sentence adverb is acceptable if the subject is resumed by a pronoun, see (2.35c). In view of the fact that Italian lacks resumptive subject pronouns, the cross-linguistic contrast in the acceptability of adverb placement between the subject and the finite verb might not be due to a difference in the availability of (subject) topicalization, but rather to a contrast in the need for its overt resumption (compare (2.31c, 2.32c) above).

- (2.35) a. Il tuo libro, *(lo) ho comprato. (Rizzi 1997: 290)
 the your book it I.have bought
 'Your book, I bought.'
- b. Jean, je *(l') ai vu.
 Jean I him have seen
 'Jean, I have seen.'
- c. Jean, probablement *(il) aime la linguistique. (Belletti 1994: 39)
 Jean probably he likes the linguistics
 'Linguistics, Jean probably likes.'

In addition, French differs from English and Italian in that a sentence adverb can follow a finite lexical verb (compare (2.33b) vs. (2.24b, 2.26b) above). To allow for the occurrence of a sentence adverb behind a lexical verb in Belletti's analysis, one would need to assume that, for some reason or other, French lexical verbs may appear in the higher AgrS⁰.¹⁴ Consequently, French apparently differs from English and Italian in the target position of verb movement.

Furthermore, note that no subject topicalization is involved in post-auxiliary adverb placement: the subject and the finite auxiliary occur in the higher AgrSP, the adverb is adjoined to the lower AgrSP (see (2.31a) above). An indefinite negative quantifier subject is thus expected to be able to precede a sentence adverb in post-auxiliary position, contrary to fact.

- (2.36) a. *?[AgrSP1 Nessuno_j ha_i [AgrSP2 probabilmente [AgrSP2 t_j t_i ... sbagliato
 nobody has probably made.mistakes
 troppe volte]]] (Belletti 1990: 50)
 too.many times
 'Probably nobody has made mistakes too often.'
- b. *?Nobody has probably left (Belletti 1990: 51)
- c. *?Personne n' a probablement abordé le problème.
 nobody not has probably spoken.about the problem
 'Probably nobody has spoken about the problem.'

that a focalized subject occurs in the canonic subject position (see also footnote 83 in section 3.5) and, consequently, that adverb interpolation between the subject and the finite verb/auxiliary in Italian and English bases on some other structural configuration.

¹⁴ Alternatively, adjunction of a sentence adverb to a projection dominated by AgrSP could be taken to be allowed in French, but prohibited in Italian.

Belletti (1990) rules out the sentences in (2.36) by assuming that both the negative subject as well as the sentence adverb have to undergo LF movement: the adverb moves to Spec,CP at LF, the negative subject to an A'-position within AgrSP, giving rise to Relativized Minimality violations (Cinque 1990, Rizzi 2001, among others). Solely if the adverb precedes the subject in surface order, there is a derivation in which LF movement of the adverb does not interfere with the negative subject moved subsequently.¹⁵ Note that placement of a (non-focalized) negative quantifier subject in front of a sentence adverb as in (2.29, 2.30, 2.36) would generally be ruled out by such LF movements; i.e., its unacceptability does not necessarily point to the conclusion that post-subject adverb placement arises from topicalization of the subject, as assumed by Belletti.¹⁶

In addition, Haegeman (2002b) provides several arguments against the hypothesis that adverb placement between the subject and the finite verb/auxiliary is derived by movement of the subject in front of an IP-adjoined adverb. First, sentence adverbs may follow expletive subjects, which one would not claim to be topicalized or focalized.

- (2.37) a. There will next week be further committee meetings to prepare the
implementation of the ruling. (Haegeman 2002b: 97)
b. There recently emerged additional problems concerning refugee issues.
(Haegeman 2002b: 102)
c. There probably will be further proposals put forward at the meeting.

Second, while pre-subject adverbs block subject-auxiliary inversion, medial ones do not; given that their structural positions coincide, this contrast is unexpected.

- (2.38) a. Why did Mr. Mandelson yesterday blow open your real intentions on the Euro.
(Haegeman 2002b: 98)
b. If tomorrow you should meet John, tell him that the meeting is cancelled.
c. *Should tomorrow you meet John, tell him that the meeting is cancelled.
(2.39) a. *Which film does actually John like?

¹⁵ Note that a focalized negative subject can precede a sentence adverb in Italian. Its placement in front of the adverb in English, by contrast, is unacceptable.

- (i) a. NESSUNO probabilmente sbaglierà (Belletti 1990: 50)
nobody probably will.make.mistakes
'Probably nobody will make mistakes.'
b. *?Nobody probably left. (Belletti 1990: 132)

According to Belletti (1990), this contrast results from a difference in the target position of topicalization: while English topicalization is adjunction to AgrSP, Italian topicalization is movement to the specifier of TopP (dominating AgrSP). Hence, LF movement of the focalized subject takes place outside the domain of LF movement of the adverb in Italian, but not in English (but see also footnote 13).

¹⁶ As pointed out to me by Gisbert Fanselow, placement of a negative quantifier in front of a sentence adverb might be impossible due to intervention effects in overt syntax, prohibiting movement of the indefinite quantifier subject across another operator; it is thus expected that the adverb has to be merged above the target position of subject movement.

- b. Which film does John actually like?

Furthermore, topicalization cannot take place in certain adjunct clauses. Hence, post-subject adverb placement is predicted to be unacceptable, if involving topicalization of the subject. This prediction is not borne out:

- (2.40) a. *Before this book, Mary read, John had already read it. (Haegeman 2002b: 92)
 b. There should be a series of hustings, or debates, even before the MPs next month decide the two names to be put to party members.
 c. If John definitely won't come to the party, we don't need another crate of beer.

Moreover, a resumptive clitic is obligatory in case of subject topicalization in Paduan. In (2.41a) where the subject precedes a topicalized object and thus must have undergone topicalization itself the clitic has to occur. By contrast, if an adverb intervenes between the subject and the finite verb as in (2.41b), the clitic is optional, indicating that subject topicalization has not necessarily taken place.

- (2.41) a. Mario, na casa, no *(l) la compra. (Haegeman 2002b: 100)
 Mario a house not he it will.buy
 'Mario is not going to buy a house.'
 b. Mario doman (l) compra na casa. (Haegeman 2002b: 101)
 Mario tomorrow he buys a house
 'Mario is going to buy a house tomorrow.'

In addition, Pollock (1997) notes that pronominal objects may only be fronted if stressed. A subject pronoun preceding an adverb, by contrast, does not need to be stressed.

- (2.42) a. He probably has made many mistakes. (Pollock 1997: 276)
 b. HER / *her I will kiss.

Finally, as mentioned by Ernst (2002), not all types of adverbs which may follow the subject can also occur in clause-initial position, suggesting that adverbs preceding and following the subject do not share the same structural position:

- (2.43) a. (*Già) Maria (già) è di ritorno per l' una. (Ernst 2002: 404)
 already Maria already is returned at the one
 'Maria had already returned at one.'
 b. (*Quasi) Maria (quasi) cadde dall' emozione.
 almost Maria almost fell from emotion
 'Maria almost fell from emotion.'
 c. (*Almost / *Just / *Scarcely) Audrey (almost / just / scarcely) woke up.

Summing up, Belletti's analysis of post-subject adverb placement as involving subject topicalization is severely called into question by several phenomena. The main aim of her approach - to account for the contrasts in adverb placement between Italian and French without referring to differences in their verb syntax - fails in capturing the fact that, in contrast to Italian (and English), sentence adverbs may follow a finite lexical verb in French. As will be argued in section 3.4, the fact that sentence adverbs usually precede a lexical verb in Italian could be due to their sensitivity to focus; hence, this ordering restriction does not necessarily indicate that sentence adverbs may only adjoin to clause-initial projections. Moreover, the distributional pattern of adverbs in English suggests that lexical verb movement does not take place in that language; i.e., it does not support the hypothesis that sentence adverbs are restricted to AgrSP-modification. In addition, placement of an indefinite quantifier subject in front of a sentence adverb may be excluded on other grounds than its non-topicality. Belletti's approach to post-subject adverb placement as involving subject topicalization thus seems to be unfounded.

2.1.3 *(In)Variable Verb and Subject Positioning: Cinque (1999)*

In the approaches discussed so far, (parts of) the variability in adverb positioning is traced back to an optionality of finite auxiliary placement (Pollock 1989, 1997, Baker 1991) or to alternations in subject placement (Belletti 1990, 1994). Nevertheless, both Pollock and Belletti additionally have to postulate various structural positions for a single adverb class (i.e. clause-initial vs. pre-/post-auxiliary position in Pollock's analysis, clause-initial/post-subject vs. post-auxiliary position in Belletti's analysis). In contrast to these approaches which assume that adverbs are adjuncts to different projections, Alexiadou (1997) and Cinque (1999) suggest that adverbs occur in specifier positions. Cinque postulates a cascade of functional projections that host the various types of adverb in their specifiers.¹⁷ Hence, there is only a single structural position for a particular adverb class; distinct surface positions of one and the same type of adverb relative to subject and/or verb are considered to result from a variability in subject and verb/auxiliary placement.

According to Cinque, the fact that the subject may precede or follow certain types of adverbs indicates that there are several DP-related projections within the functional hierarchy which might be interpretatively specialized, e.g. strong vs. weak reading of an argument.¹⁸ Depending on which projection the subject targets, it precedes or follows a certain adverb.

¹⁷ Order restriction among adverbs result from the hierarchic relation of the functional heads in Cinque's (1999) approach. Correspondingly, in case the ordering of two adverbs may vary, Cinque has to assume that there are several functional projections which host the same type of adverb.

- (i) a. ... [AspP(frequentative I) often ... [ModP(volitional) intentionally ... [AspP(frequentative II) often ...]]]
 b. John has often intentionally hit Mary.
 c. John has intentionally often hit Mary.

¹⁸ The same type of DP may permit different interpretations depending on its position relative to certain adverbs. For example, a bare plural subject may receive an existential reading if it occurs to the right of an adverb such as

- (2.44) a. [ModP(possibility) Possibly e ... [AgrSP John_j has_i... [AspP(habitual) usually t_i ... t_i ... t_j eaten spinach]]]
- b. [MoodP(evaluative) Fortunately e ... [AgrSP John_j has_i ... [ModP(possibility) possibly t_i ... t_i ... t_j eaten spinach]]]
- c. [AgrSP John_j e ... [MoodP(evaluative) fortunately has_i ... [AspP(habitual) usually t_i ... t_i ... t_j eaten spinach]]]

However, Jónsson (2002) notes that a quantified subject such as *margir* ('many') may receive a partitive or existential reading in Icelandic double subject constructions, irrespective of its position relative to a sentence adverb (2.45), indicating that differences in the ordering of subject and adverb do not necessarily correlate with interpretative contrasts. Moreover, in view of the fact that under either reading, the thematic subject may occur in between several sentence adverbs as in (2.46), a whole bunch of subject positions would have to be assumed in Cinque's approach for which there is no semantic evidence and to which movement would have to be optional.

- (2.45) a. Það hafa sem betur fer margir lesið bókina. (Jónsson 2002: 79)
 there has fortunately many read the.book
 'Fortunately many people have read the book.'
- b. ?Það hafa margir sem betur fer lesið bókina.
- (2.46) a. Það hafa satt að segja sem betur fer sennilega margir lesið bókina.
 there have frankly fortunately probably many read the.book
 (Jónsson 2002: 81)
 'Frankly many people fortunately have probably read the book.'
- b. Það hafa satt að segja sem betur fer margir sennilega lesið bókina.
- c. Það hafa satt að segja margir sem betur fer sennilega lesið bókina.
- d. Það hafa margir satt að segja sem betur fer sennilega lesið bókina.

The variability in the placement of a finite auxiliary relative to an adverb is accounted for by optional verb movement in Cinque's analysis: the finite auxiliary may target any of the functional heads (within a certain range), as illustrated in (2.47).¹⁹ Though the subject and the

ja doch ('indeed') in German whereas it is restricted to a generic reading if placed to the left of the adverb (see Diesing 1992; compare example (1.63) above and section 3.5).

- (i) a. ... weil ja doch Haifische sichtbar sind. (Cinque 1999: 114)
 since indeed sharks visible are
 '... since there are sharks visible.'
- b. ... weil Haifische ja doch sichtbar sind.
 '... since (in general) sharks are visible.'

¹⁹ Likewise, Cinque (1999) accounts for the variability in the placement of a (finite or non-finite) lexical verb relative to particular types of adverbs in Italian by optional verb movement within a certain range of functional projections.

finite verb/auxiliary may, in principle, occur in different functional projection, placement of the finite verb in front of the subject is ruled out (in declarative clauses) by assuming that the finite verb must be in Spec-head relation with the subject or its trace in overt syntax; the finite verb is thus predicted to follow the subject, (2.48). Interpolation of an adverb between the subject and the finite verb in French may be excluded by requiring these elements to occur in Spec-head relation at Spell-out in this language, (2.49).

- (2.47) a. [AgrSP John_j e ... [MoodP(evaluative) fortunately has_i [MoodP(evidential) allegedly t_i ... t_i ... t_j eaten spinach]]]
 b. [AgrSP John_j e [MoodP(speech-act) frankly has_i [MoodP(evaluative) fortunately t_i ... t_i ... t_j eaten spinach]]]
 c. [AgrSP John_j has_i [MoodP(speech-act) frankly t_i [MoodP(evaluative) fortunately t_i ... t_i ... t_j eaten spinach]]]
- (2.48) a. [AgrSP John_j e [MoodP(evaluative) fortunately has_i ... t_i ... t_j eaten spinach]]
 b. *[MoodP(evaluative) Fortunately has_i ... [AgrSP John_j t_i ... t_i ... t_j eaten spinach]]
- (2.49) a. *[AgrSP Jean_j e ... [MoodP(evaluative) heureusement a_i ... [ModP(possibility) peut-être t_i ... Jean fortunately has perhaps t_i ... t_j mangé des épinards]]]
 eaten of.the spinach
 'Jean fortunately has possibly eaten some spinach.'
 b. [AgrSP Jean_j a_i ... [MoodP(evaluative) heureusement t_i ... [ModP(possibility) peut-être t_i ... t_i ... t_j mangé des épinards]]]

Note that adverb positioning might be variable not only relative to the finite auxiliary but also relative to a non-finite one. For example, the subject-oriented adverb in (2.50) may precede or follow both the finite and non-finite auxiliary.

- (2.50) a. She wisely has been insisting on total control of her films. (Ernst 2002: 106)
 b. She has wisely been insisting on total control of her films.
 c. She has been wisely insisting on total control of her films.

Given that there is only one structural position for *wisely* - which c-commands the base position of the finite auxiliary (2.50a) -, both the finite and the non-finite auxiliary must have moved across the adverb in (2.50c). Yet, it remains unclear how these movements could proceed: since movement of the finite auxiliary leaves a trace in every head position on its way, the non-finite auxiliary should not be able to raise without violating the Head Movement Constraint (see Travis 1984, Chomsky 1986, Baker 1988).

-
- (i) Da allora, non hanno (rimesso) disolito (rimesso) mica (rimesso) più (rimesso) sempre
 Since then not they.have put usually put at.all put any.longer put always
 (rimesso) completamente (rimesso) tutto bene in ordine. (Cinque 1999: 45)
 put completely put everything well in order
 'Since then, they haven't usually not any longer always put everything well in order.'

Summing up, Cinque's approach to the distribution of adverbs is restrictive insofar as adverbs of a certain class are restrained to occur in a single structural position. However, this restrictiveness comes at the expense of assuming a whole cluster of functional projections as well as (a certain) optionality in the movement of both subject and verb/auxiliary within these projections.²⁰

2.1.4 (Un)Availability of X'-Adjunction: Ernst (2002)

As different as the before-mentioned accounts may be, they agree on the assumption that there is no adjunction to I'. Ernst (2002), by contrast, allows for that option in principle; consequently, the various adverb positions are all structurally differentiated. Cross-linguistic contrasts in the acceptability of adverb adjunction to a certain category are claimed to result from differences in the ability of that category to license an adverb.²¹

Ernst suggests that the feature [\pm C(ontentful)] on a head X^0 decides on whether or not an adjunct may be merged within XP. If X^0 is [+C], adjuncts may be base-adjoined anywhere within XP, i.e. to XP and to X', while *in situ* interpretation and thus base-generation of an element is prohibited in [-C] categories. The contrast between English and French in the acceptability of adverb placement in front of a finite verb/auxiliary may thus be considered to arise from the distinct featural composition of T^0 in these languages. According to Ernst, in both languages, T^0 bears [+Disc] - a feature which specifies that the head encodes discourse-related notions; more precisely, [+Disc] enables T^0 to check [+top] and forces it to add a discourse interpretation to an element adjoined to T' or TP. In English, T^0 is [+C]: an adverb may thus be base-adjoined to T' and TP, and if so, a topic interpretation is imposed on it.^{22,23} Consequently, an adverb may occur in clause-initial (adjoined to TP), pre-auxiliary (adjoined to T'), or post-auxiliary position (adjoined below TP) in English, (2.50). In French, by contrast, T^0 is [-C]; hence, base-generation of an adverb as T'- or TP-adjunct is prohibited. Given that movement has to be triggered by the need for feature checking and feature checking takes place in specifier or XP-adjoined positions, only adjunction to TP (via movement) may arise in French (2.51); T'-adjunction being impossible, adverb intervention between the subject and the finite verb is excluded in that language.

- (2.51) a. (Obviously) Bob (obviously) has (obviously) impressed the judges with his
 accordion solo. (Ernst 2002: 397)

²⁰ On further arguments against Cinque's approach to adverb placement see e.g. Ernst (1998), Shaer (1998), and Haider (2000, 2002).

²¹ Additionally, semantic requirements of adverbs are assumed to restrain their positioning in Ernst's approach, see next section.

²² Note that while finite lexical verbs and auxiliaries differ in movement to T^0 in English, a finite verb has to occur in T^0 in French, irrespective of type (compare section 2.1.1). Hence, adverb placement in front of a finite lexical verb in English does not necessarily involve T'-adjunction; rather, the adverb may be adjoined somewhere above VP and thus precedes the lexical verb within VP.

²³ According to Ernst (2002: 397), adverbs in clause-initial and pre-auxiliary position "tend to be foregrounded, i.e. made salient or active in the mind of the speaker. In other words, they have the basic topic property of being activated ...".

- b. ([_{TP} Obviously) [_{TP} Bob_j (obviously [_{T'}] has_i-T_[+C] (obviously [_{AuxP}] [_{AuxP} t_i [_{VP} t_j impressed the judges with his accordion solo]])(])(])(])
- (2.52) a. (Evidemment) Bob (*évidemment) a (évidemment) enthousiasmé les juges
evidently Bob evidently has evidently impressed the judges
avec son accordéon solo.
with his accordion solo
'Bob has evidently impressed the judges with his accordion solo.'
- b. ([_{TP} *Evidemment) [_{TP} Bob_j (*évidemment [_{T'}] a_i-T_[-C] (évidemment [_{AuxP}] [_{AuxP} t_i [_{VP} t_j enthousiasmé les juges avec son accordéon solo]])(])(])(])
- c. [_{TP} Evidemment_k [_{TP} Bob_j a_i-T_[-C] [_{AuxP} t_k [_{AuxP} t_i [_{VP} t_j enthousiasmé les juges avec son accordéon solo]]]]]]
- d. *[_{TP} Bob_j évidemment_k [_{T'} a_i-T_[-C] [_{AuxP} t_k [_{AuxP} t_i [_{VP} t_j enthousiasmé les juges avec son accordéon solo]]]]]]

Ernst claims that adverbs with topic interpretation may adjoin to any projection which can license [+top] (i.e. all [+Disc] categories) whereas topical arguments originating in a specifier position have to occur in the specifier of a unique TopP. This structural difference is considered to be crucial for asymmetries between clause-initial adverbs and arguments. For example, while several adverbials may occur in pre-subject position, only one argument can be fronted in English. Given that features are not erased after checking, multiple feature checking is possible in adjoined positions and, consequently, adjunction to TP is iterable. By contrast, only one single [+top] argument can be placed in Spec,TopP.

- (2.53) a. Bill knew that maybe this year, on all the beaches, people will be dancing to your music. (Ernst 2002: 408)
- b. Bill knew that the necklace, Fred had given to Jeannette before he met Alice.
- c. *Bill knew that the necklace, to Jeannette, Fred had given before he met Alice.

Moreover, clause-initial adverbs may ameliorate the *that-t* effect; topicalization, by contrast, blocks argument extraction. Under the assumption that extraction has to pass through Spec,TopP, the contrast follows from the structural difference between clause-initial adverbs and arguments.

- (2.54) a. Who_j do you think t_j left?
b. *Who_j do you think that t_j left?
- (2.55) a. Who_j do you think that last year / luckily t_j sold this painting?
(Ernst 2002: 409)
b. *Who_j do you think that, this painting, t_j sold last year?
- (2.56) a. What_t did Lee insist that under normal circumstances Robin would give us t_j?
(Browning 1996: 250)
b. *Who_j did Leslie think that, this present, Kim gave to t_j?

Note that the subject does not c-command a preceding phrase in English, as shown by the lack of a Principle C violation in (2.58a). Hence, clause-initial occurrence of a subject-oriented adverb as in (2.58c) must be derived by movement.²⁵

- (2.58) a. On Rosa₁'s birthday she₁ took it easy. (Frey & Pittner 1998: 521)
 b. *[On Rosa₁'s lawn]_i she₁ took it easy t_i.
 c. (Cleverly_i / Wisely_i), they t_i stopped for the night. (Ernst 2002: 405)

Manner adverbs cannot precede finite or non-finite auxiliaries, indicating that they are restricted to VP-internal base positions. Hence, their clause-initial occurrence must involve movement as well.²⁶

²⁵ As Frey (1993) shows, the subject c-commands the prefield position in German. Accordingly, subject-oriented adverbs might be base-generated in clause-initial position in that language.

- (i) a. *An Rosas; Geburtstag hat sie_i es sich gut gehen lassen. (Frey & Pittner 1998: 521)
 at Rosa's birthday has she it herself well go let
 'At Rosa's birthday, she had a good time.'
 b. Sorgfältigerweise hat Paul unsere Buchhaltung geprüft.
 carefully has Paul our book-keeping checked
 'Paul carefully has checked our book-keeping.'

²⁶ Though there is agreement on the hypothesis that manner adverbs occupy positions close to the lexical verb, there are several proposals on their exact structural position which can only be briefly mentioned here: manner adverbs have been considered to be adjoined to VP (e.g. Travis 1988, Ernst 2002), to V⁰ (e.g. Frey & Pittner 1999, Pittner 1999, 2000a), or to occur in positions minimally c-commanding the lexical verb, i.e. in V'-adjoined positions or in the specifier or complement position of V⁰ (in a Larsonian VP-shell structure; e.g. Frey & Pittner 1998, Frey 2000a).

I will follow the last proposal in assuming that manner adverbs are merged in VP-internal positions, without adjoining to V⁰: (manner) adverbs can be modified (i); i.e., they may project to phrases and, as such, should not adjoin to heads (in accordance with the Structure Preserving Principle, Emonds 1976). Furthermore, manner adverbs differ from higher types of adverbs (e.g. temporal ones) in that they permit extraction out of a following PP-object; the acceptability of (iia) suggests that the PP-object is not extraposed - in contrast to (iib) in which a freezing effect arises - and, hence, that the manner adverb occupies a VP-internal position. Likewise, the facts that a manner adverb is placed behind a floating quantifier in French (compare (ii) in footnote 24) and that in the unmarked case, it follows all arguments in the German middle field (iii) point to the conclusion that manner adverbs are merged within VP.

- (i) a. Er ist sehr schnell gelaufen.
 he is very fast run
 'He ran very fast.'
 b. Charles spoke to his mother very nicely.
 (ii) a. Which painter did John look carefully at the pictures of? (Costa 1996: 26)
 b. *Which painter did John look yesterday at the pictures of?
 (iii) a. Sie hat jedes Hemd sorgfältig gebügelt. (Frey & Pittner 1998: 502)
 she has every shirt carefully ironed
 'She ironed every shirt carefully.'
 b. *Sie hat sorgfältig jedes Hemd gebügelt.

In addition, note that an adverb which is ambiguous between a manner and a clausal reading has to be interpreted as manner adverb if occurring within VP as in (ivb) (see section 3.2 on the ambiguity of (iva)); i.e., not only do manner adverbs have to be merged within VP, adverbs in VP-internal positions are also restricted to manner interpretation. (See Ernst 1984, 2000c, 2002 on how the manner reading of an ambiguous adverb might be derived from its clausal counterpart.)

- (iv) a. John nicely spoke to his mother.

(2.59) (Loudly,) he (*loudly) has (*loudly) been (loudly) singing the song (loudly).

Unlike the temporal and evaluative adverb in (2.55a), clause-initial subject-oriented and manner adverbs do not ameliorate the *that-t* effect (2.60, 2.61) and prohibit object extraction as in (2.62). Note that in case of subject extraction, the adverb could occupy the position in front of the subject trace in Spec,IP or behind it. If the adverb follows the subject trace as in (2.60a, 2.61a), the *that-t* effect is expected: as in the unacceptable sentence (2.54b), the trace of the subject appears adjacent to *that*. Base-generation of the adverbs as IP-adjuncts, preceding the subject trace as in (2.60b, 2.61b) - which would be expected to block the *that-t* effect as in (2.55a) - is ruled out by the adverbs' semantic requirements. Just like the topicalized argument in (2.55b, 2.56b), a fronted subject-oriented or manner adverb prohibits argument extraction, (2.60c, 2.61c, 2.62).

- (2.60) a. *Who_j do you think that t_j stupidly made no reply? (Frey 2000a: 122)
 b. *Who_j do you think that stupidly t_j made no reply?
 c. *Who_j do you think that stupidly_k t_j t_k made no reply?
- (2.61) a. *Who do you think that t_j loudly sang the song?
 b. *Who do you think that loudly t_j sang the song?
 c. *Who do you think that loudly_k t_j t_k sang the song?
- (2.62) a. *What did you say that cleverly_k, John t_k bought?
 b. *Which song did Leslie say that loudly_k, John t_k sang?

In addition, subject-oriented and manner adverbs cannot co-occur with each other or with a fronted argument in pre-subject position, indicating that they are also subject to the constraint that restricts the number of fronted elements in English.

- (2.63) a. Mary cleverly was singing her favorite song loudly in the bathroom.
 b. Cleverly, Mary was singing her favorite song loudly in the bathroom.
 c. Her favorite song, Mary cleverly was singing loudly in the bathroom.
 d. *Cleverly, loudly, Mary was singing her favorite song in the bathroom.
 e. *Loudly, her favorite song, Mary was singing in the bathroom.
 f. *Her favorite song, loudly, Mary was singing in the bathroom.
 g. *Cleverly, her favorite song, Mary was singing in the bathroom.
 h. *Her favorite song, cleverly, Mary was singing in the bathroom.

Hence what is decisive for the contrasts in the behavior of clause-initial phrases in English is obviously not the distinction between arguments and adverbs, but between elements merged

-
- b. John spoke nicely to his mother.
 i) 'It was nice of John to speak to his mother.'
 ii) 'John spoke to his mother in a nice way.'

in pre-subject position and ones moved to that position.²⁷ Therefore, either Ernst's assumption that the asymmetries between clause-initial adverbs and arguments in (2.53, 2.55, 2.56) are

²⁷ In addition, adverbs which may be merged in pre-subject position can occur clause-initially in factive complement (i), subject (ii), and (peripheral) adjunct clauses (iii), while argument topics and manner adverbs cannot. Similarly, adverb placement in front of infinitival *to* is acceptable, while topicalization is prohibited in English infinitives, (iv).

- (i) a. ?I resent that last year Tom gave a book to Mary.
 b. *I resent that to Tom, Mary gave a book. (Müller & Sternefeld 1990: 41)
 c. *I resent that loudly, Tom sang the song.
- (ii) a. ?That last year Tom gave a book to Mary surprised me.
 b. *That to Tom, Mary gave a book really surprised me. (Müller & Sternefeld 1990: 41)
 c. *That loudly, Tom sang the song surprised me.
- (iii) a. ... because last year Tom gave a book to Mary.
 b. *... because to Tom, Mary gave a book. (Müller & Sternefeld 1990: 41)
 c. *... because loudly, Tom sang the song.
- (iv) a. Kim seems never to be alone. (Kim & Sag 2002: 359)
 b. Kim seems not to enjoy reading Proust. (Kim & Sag 2002: 360)
 i) 'It seems that Kim does not enjoy reading Proust.'
 ii) #'It seems that Kim enjoys not reading Proust.'
 c. *My friends tend the more liberal candidates to support. (Müller & Sternefeld 1990: 54)
 d. ??My friends tend loudly to sing the song.

Like (2.60)-(2.63) above, the data in (i)-(iv) suggest that asymmetries in the behavior of clause-initial elements do not base on the distinction between arguments and adjuncts, but on a contrast between elements that may be merged in pre-subject position and ones that need to be moved there. As illustrated in (2.64, 2.65), there are no asymmetries between clause-initial adverbs and CLLDed arguments in French. Considering CLLD to be base-generated (see e.g. Cinque 1990, Rizzi 1997, De Cat 2002), the lack of a contrast in French follows if the asymmetries are somehow due to the distinction between Merge and Move. Note that in contrast to CLLD, Italian focalization - which involves movement as evidenced by the weak crossover effect in (vb) - may only place one argument in clause-initial position (vi) and is prohibited in e.g. infinitival and adjunct clauses (vii, viii), supporting the hypothesis that the distinction between Merge and Move is crucial for the behavior of clause-initial elements.

- (v) a. Gianni_i, sua_i madre lo_i ha sempre apprezzato. (Rizzi 1997: 290)
 Gianni his mother him has always appreciated
 'Gianni, his mother always appreciated (him).'
 b. *GIANNI_i sua_i madre ha sempre apprezzato t_i (non Piero).
- (vi) a. Il libro, a Gianni, domani, glielo darò senz'altro. (Rizzi 1997: 290)
 the book to Gianni, tomorrow to.him.it I.will.give for.sure
 'For sure, I will give the book to Gianni tomorrow.'
 b. *A GIANNI IL LIBRO darò (non a Piero, l'articolo).
- (vii) a. Ho deciso, il tuo libro, di rileggerlo. (Haegeman 2002c: 11)
 I.have decided the your book to reread.it
 'I decided to reread your book.'
 b. *Ho deciso, IL TUO LIBRO di rileggere (non il suo).
- (viii) a. Se il mio libro riesci a leggerlo, supererai l' esame. (Haegeman 2002c: 12)
 if the my book you.manage to read.it you.will.pass the exam
 'If you manage to read my book, you will pass the exam.'
 b. *Se IL MIO LIBRO riesci a leggere, supererai l'esame.

However, German does not show any differences between adverbs merged in and arguments scrambled to pre-subject position: they both permit extraction across them (ixa) and may appear in factive complement (ixb), subject (ixc), adjunct (ixd), and infinitival clauses (ixe). Furthermore, several adverbs as well as several arguments may appear in front of the subject in German (x) (see Müller & Sternefeld 1990):

- (ix) a. Warum meinst du, daß dieser Frau gestern Ede geholfen hat?
 why think you that this woman yesterday Ede helped has
 'Why do you think that Ede helped this woman yesterday?'

due to a structural difference (specifier vs. adjunct) or his assumption that adverb movement may target TP-adjoined position cannot be correct. In addition, remember that in Ernst's analysis, pre-subject placement of some element has to be derived by movement in French. However, clause-initial adverbs and arguments in French pattern with adverbs base-adjoined to TP in English. Contrary to what Ernst (2002) claims, not only several adverbs may occur in clause-initial position (2.64a): according to De Cat (2002), there is also no restriction on the number of argument topics in French, as illustrated in (2.64b). Similarly, Italian allows for multiple CLLD of arguments (see Cinque 1990 and Rizzi 1997, among others; compare (via) in footnote 27). Furthermore, neither clause-initial adverbs nor CLLDed arguments block extraction in French, (2.65).²⁸

-
- b. Ich bedaure, daß dem Fritz gestern diese Frau einen Heiratsantrag gemacht hat.
I regret that the Fritz yesterday this woman a marriage.proposal made has
'I regret that this woman has proposed to Fritz yesterday.'
- c. Mich hat überrascht, daß den Fritz offensichtlich keiner mag.
me has surprised that the Fritz obviously nobody likes
'It surprised me that obviously nobody likes Fritz.'
- d. ... weil den Fritz tatsächlich jeder mag.
'... because the Fritz in.fact everyone likes
'... because in fact, everybody likes Fritz.'
- e. (Gelegentlich) den Braten (gelegentlich) zu wenden hat der Chefkoch empfohlen.
occasionally the roast occasionally to turn.round has the chef recommended
'The chef recommended to turn the roast occasionally.'
- (x) a. ... weil unglücklicherweise gestern diese Frau den Fritz geküßt hat.
'... because unfortunately yesterday this woman the Fritz kissed has
'... because this woman unfortunately has kissed Fritz yesterday.'
- b. ... weil dieses Buch dem Fritz eine Frau geschenkt hat.
'... because this book the Fritz a woman given has
'... because a woman gave this book to Fritz.'

It will be supposed below that German scrambling is derived by movement (see Fanselow 1988, 1990, Müller & Sternefeld 1994, Haider & Rosengren 1998; for a base-generation approach to scrambling see Bayer & Kornfilt 1994, Bošković & Takahashi 1998, and Fanselow 2001). Moreover, elements merged in pre-subject position and ones moved there will be taken to appear in the same structural position (adjoined to IP). Hence, given that the distinction between Merge and Move is crucial for the asymmetries in English, it has to be assumed that the instantiation of this contrast is subject to cross-linguistic variation. Note that even if topics and adverbs merged clause-initially are considered to occur in distinct structural positions, e.g. in TopP vs. ModP/PolP (see e.g. Culicover 1993a,b, Rizzi 1997), cross-linguistic variation in the properties of these projections would have to be assumed, too. For example, the unacceptability of topicalization in English adjunct clauses (iiib) may be accounted for by assuming that Top⁰ is defective (Müller & Sternefeld 1990) or missing (Haegeman 2002a,c) in these clauses in English. Yet, in Italian (viiiia) and German (ixd), Top⁰ is obviously intact or present in adjunct clauses, respectively.

In addition, note that Culicover (1993a,b) shows that the suspension of the *that-t* effect by clause-initial adjuncts cannot be accounted for by ECP approaches which rely on the existence of a category Pol(arity) between C⁰ and IP. Though Pol⁰, in contrast to Top⁰, might be assumed to be able to license a subject trace, it is impossible to guarantee the occurrence of an adverbial in PolP, calling into question ECP approaches to the *that-t* effect in general.

For an account on (the blocking of) the *that-t* effect falling back upon the distinction between Merge and Move see Browning (1996).

²⁸ See De Cat (2002) on an information-structural approach to the occasional marginality of argument extraction across a topic.

- (2.64) a. Guillaume savait que peut-être cette année, sur toutes les plages, les gens
 Guillaume knew that perhaps this year on all the beaches the people
 vont danser à sa musique. (Ernst 2002: 408)
 will dance to his music
 'Guillaume knew that maybe, this year, on all the beaches, people will be
 dancing to his music.'
- b. De ce truc_i-là, David_j, j'ose pas trop lui_j en_i parler.
 of that thing there David I dare not too.much to.him of.it talk
 (De Cat 2002: 85)
 'I am not sure that I dare talk to David about that thing.'
- (2.65) a. Voici l' homme_j que je crois qui l' année prochaine, t_j pourra
 Here.is the man that I believe that the year next will.be.able
 nous aider. (Ernst 2002: 410)
 us help
 'Here is the man who I believe that next year will be able to help us.'
- b. J'ai un chien qui le soir, se transforme en chat.
 I have a dog that the evening himself transforms in cat
 (De Cat 2002: 201)
 'I have got a dog that transforms to a cat in the evening.'
- c. ?Il y a un truc que dans mon travail, j'aime pas du tout.
 there.is a thing that in my work I like not at all
 'There is something that in my work, I don't like at all.'
- d. ?Ce qui moi, me dérange le plus, c' est l' odeur. (De Cat 2002: 200)
 that that me me disturbs the most it is the smell
 'What disturbs me most is the smell.'
- e. ?C'est elle pour qui les gars, ils se battent tous.
 it is her for whom the lads they themselves fight all
 'She is the one for who all the lads fight'

Staying with the hypothesis that the need for placement in Spec,TopP results in limitations on the number of fronted elements as well as in the blocking of extraction, the sentences in (2.64, 2.65) indicate that neither clause-initial adverbs nor arguments occupy Spec,TopP in French; rather, both are expected to be adjoined to TP (or TopP), just as adverbs base-generated in clause-initial position in English. However, movement of an argument to XP-adjoined position is excluded in Ernst's analysis. Note that CLLD has been proposed to involve base-generation of the argument in topic position (Cinque 1990, Rizzi 1997, De Cat 2002, among others; see also section 3.5). Yet, base-generation of a CLLDed argument or an adverb as adjunct to TP or TopP is ruled out in Ernst's approach on the assumption that these phrases are [-C] in French. For base-adjunction to TP to be possible, T⁰ would need to be [+C], thereby predicting T'-adjunction and, thus, adverb intervention between the subject and the finite verb to be acceptable in French as well, contrary to fact. Hence Ernst's approach to the cross-linguistic difference in the acceptability of adverb placement in front of a finite

verb/auxiliary ultimately seems to rely on a stipulation on whether or not T'-adjunction is permitted in a given language.

Note that the analyses discussed in the previous section at best restrain particular types of adverbs to specific positions; however, they cannot capture the fact that the type of auxiliary may affect the acceptability of adverb placement in a certain position.

Recall from chapter 1 that different adverb positions may give rise to distinct scopal interpretations. A medial adverb preceding the finite auxiliary in English takes wide scope (2.67a) whereas the order *finite modal - adverb* may be ambiguous in English (2.67b), French (2.69a), and German (2.69b). Likewise, an adverb is restricted to a wide scope reading with respect to a following non-finite modal whereas its placement behind the non-finite modal may give rise to ambiguity in French (2.70). By contrast, the order of adverb and non-finite auxiliary unambiguously reflects their scopal relation in English, (2.71).

- (2.69) a. Jean peut souvent soulever 200 kilos.
 Jean can frequently lift 200 kilos
 i) 'Jean is often able to lift 200 kilos.'
 ii) 'Jean is able to lift 200 kilos several times (in a row).'
- b. Hans wollte sie mehrmals küssen.
 Hans wanted.to her several.times kiss
 i) 'Hans often wanted to kiss her.'
 ii) 'Hans wanted to kiss her several times (in a row).'
- (2.70) a. Jean a souvent pu soulever 200 kilos.
 Jean has often been.able.to lift 200 kilos
 i) 'Jean has often been able to lift 200 kilos.'
 ii) #'Jean has been able to lift 200 kilos several times (in a row).'
- b. Jean a pu souvent soulever 200 kilos.
 i) 'Jean has often been able to lift 200 kilos.'
 ii) 'Jean has been able to lift 200 kilos several times (in a row).'
- (2.71) a. They have frequently been knocked off their feet during training.
(Ernst 2002: 348)
 'It has often been the case that they were knocked off their feet during training.'
- b. They have been frequently knocked off their feet during training.
 'It has been the case that they were knocked off their feet several times during training.'

Taking into account that certain orders of adverbs and auxiliaries only allow for a particular scopal interpretation, ordering restrictions among these elements might reflect restrictions on their scope options. I.e., the acceptability of scopal relations apparently influences the grammaticality of adverb positioning. More precisely, in view of the fact that an adverb in pre-auxiliary position has to take wide scope, the ban on placement of a subject-oriented or frequency adverb in front of an epistemic and/or deontic modal might result from their inability to outscope these modals. Similarly, the unacceptability of positioning an epistemic or evaluative adverb behind a non-finite auxiliary in English might be due to the fact that they have to take scope over a non-finite verb.

According to Ernst's (1992) version of the Scope Principle (based on Aoun & Li 1989), adverbial scope is reflected by c-command in syntactic structure:

(2.72) Scope Principle: A scopal element A has scope over a scopal element B in case A c-commands a member of the chain containing B. (Ernst 1992: 139)

Hence, in accordance with the Scope Principle, an adverb c-commands (a trace of) an auxiliary it outscopes and is c-commanded by an auxiliary relative to which it takes narrow scope. Referring to chains, the Scope Principle predicts that surface order does not necessarily correlate with scopal interpretation: movement may give rise to inverse scope. Hence, the availability of a wide scope reading of an adverb in post-auxiliary position as in (2.67b, 2.69) indicates that the modal verb is moved across the adverb: the adverb c-commands the trace of the modal and may thus take scope over it.

(2.73) ... *finite auxiliary*_i *adverb* *t*_i ...

Similarly, wide scope of an adverb over a preceding non-finite modal in French as in (2.70b) points to the conclusion that non-finite verb movement is possible in French.

(2.74) ... *non-finite verb*_i *adverb* *t*_i ...

In English, by contrast, a non-finite auxiliary obviously cannot move: both possible sequences of an adverb and a non-finite auxiliary are unambiguous (compare (2.71) above). The hypothesis that English and French differ in the availability of non-finite verb movement is also supported by the fact that e.g. an epistemic sentence adverb may follow a non-finite verb/auxiliary in French while this placement is unacceptable in English (see (2.68b,c) above).²⁹ Given that the sentence adverb has to be merged above the base position of the finite verb (compare footnote 3), its occurrence behind a finite or non-finite verb/auxiliary may only arise by verb movement across it.

²⁹ Note, however, that not all types of sentence adverbs are excluded from the position behind a non-finite auxiliary in English: according to Ernst (2002), subject-oriented sentence adverbs may occur in that position.

(i) She has been wisely insisting on total control of her films. (Ernst 2002: 106)

It seems unwarranted to differentiate between the various types of sentence adverbs with respect to whether or not non-finite verb movement may cross them; rather, the hypothesis that *all* types of sentence adverbs have to c-command the base position of the finite verb (as held by e.g. Travis 1988, Frey & Pittner 1998, 1999, and Haider 2002) should be called into question.

- (2.75) Marc avait (peut-être) été (peut-être) refusé (peut-être) par la majorité
 Marc had perhaps been perhaps refused perhaps by the majority
 des candidates. (Ernst 2002: 375)
 of the candidates
 'Marc had perhaps been refused by the majority of the candidates.'

Summing up, inverse scope as in (2.67b, 2.69) and (2.70b, 2.75) may arise by movement of a finite or non-finite auxiliary across the adverb, respectively.³⁰ In addition, the Scope Principle predicts that narrow scope reading of an adverb is restricted to post-auxiliary position in English and French: for an auxiliary to take scope over the adverb, it has to c-command and, thus, to precede the adverb. Note that the fact that an adverb unambiguously outscopes a following auxiliary in English and French (2.67a, 2.70a, 2.71a) indicates that adverb movement is impossible (within the auxiliary range).³¹

- (2.76) *... *adverb_i (finite / non-finite) auxiliary t_i ...*

Yet while the Scope Principle prescribes which syntactic structure is necessary to express a certain scopal relation, not all of the c-command relations encoded in a particular syntactic structure correspond to accessible scope options. Assume that the sequence *finite auxiliary - adverb* is always derived by auxiliary movement across the adverb, as illustrated in (2.73).

³⁰ Note that an adverb may take wide or narrow scope with respect to a clause-final finite or non-finite verb in German:

- (i) a. Paul hat oft anzurufen versprochen.
 Paul has often to.call promised
 i) 'Paul often promised to call.'
 ii) 'Paul promised to call often.'
 b. ... weil Karl regelmäßig Sport treiben wollte.
 because Karl regularly sports do wanted.to
 i) '... since Karl regularly wanted to do sports.'
 ii) '... since Karl wanted to do sports regularly.'

Under the assumption that German verbal projections are head-final (see section 3.3), precedence relations do not necessarily correspond to c-command relations. I.e., the structural relation between the adverb in middle field position and the clause-final verb cannot be determined by surface order: the adverbs in (i) could be merged to the higher VP/AuxP (*versprochen* 'promised' or *wollte* 'wanted to') or the lower VP (*anzurufen* 'to call' or *Sport treiben* 'to do sports'), respectively. Hence, inverse scope does not necessarily involve movement. (Note that likewise right-adjunction of an adverb in English and French is expected to give rise to inverse scope, compare footnote 11 in chapter 3.)

³¹ The ban on adverb movement within the auxiliary range is also evidenced by the fact that the scopal relation of two medial adverbs is unambiguously encoded by their linear order:

- (i) a. The speaker never intentionally strays from the topic. (Ernst 1998: 140)
 b. The speaker intentionally never strays from the topic.
 (ii) a. Daniel avait stupidement parfois oublié de dire au service de sécurité qu' il partait.
 Daniel had stupidly sometimes forgotten to say to.the service of security that he left
 (Ernst 2002: 367)
 'Daniel had stupidly sometimes forgotten to say to the security service that he was leaving.'
 b. Daniel avait parfois stupidement oublié de dire au service de sécurité qu'il partait.
 'Daniel had sometimes stupidly forgotten to say to the security service that he was leaving.'

Since the auxiliary c-commands the adverb which in turn c-commands the trace of the auxiliary, it is expected that the adverb may receive a wide or narrow scope reading in that order. Yet it depends on the items involved which scope options the sequence may express. For example, the frequency adverb may take wide or narrow scope relative to the modal with deontic reading in (2.77a), while it is restricted to a narrow scope interpretation with respect to the modal with epistemic reading in (2.77b) and the evaluative adverb may only be interpreted as outscoping the deontic modal in (2.77c). Hence the sentences in (2.77) differ in whether the adverb takes wide and/or narrow scope: existing c-command relations do not necessarily correspond to accessible scopal interpretations.

- (2.77) a. John can frequently lift 200 kilos.
 i) 'John is frequently able to lift 200 kilos.'
 ii) 'John is able to lift 200 kilos several times (in a row).'
- b. John must frequently have seen the doctor.
 'It is predictable that John has frequently seen the doctor.'
- c. John may fortunately go to the party.
 'John is fortunately allowed to go to the party.'

Ernst (2000a) assumes that it is lexically specified whether base and/or surface position of a given auxiliary counts for scope with respect to a certain adverb. Even apart from the fact that such specifications add a lot of information to the lexical entries, this approach cannot be on the right track. At least, what would need to be specified is the scopal relation of the auxiliary to a certain adverb, not which of its positions counts for scope: no matter whether base and/or surface position of the auxiliary is specified as scope position, c-commanding both auxiliary positions the pre-auxiliary adverb in e.g. (2.67a) is expected to take wide scope due to the Scope Principle. However, the sequence *adverb - auxiliary* is ungrammatical in certain combinations, compare (2.66). What seems to exclude pre-auxiliary adverb positioning in these cases is that the adverb cannot take scope over the auxiliary. Under the assumption that acceptable scope relations are lexically specified, the ungrammatical orders could be ruled out: for example, to satisfy its lexical properties, an auxiliary that is specified as taking scope over a certain adverb must c-command the adverb and is thus expected to precede it; the lexical specifications bar pre-auxiliary placement of the adverb in that case. Though such an approach would predict the (un)grammaticality of *adverb - auxiliary* orders and the interpretation of *auxiliary - adverb* sequences depending on the items involved, it does not shed light on the question why some scope options are acceptable while others are not. Since the (un)availability of certain scopal relations seems to be crucial for the (un)grammaticality of adverb positioning, the source of these restrictions on scope options should be revealed in order to account for the influence of auxiliary type on adverb distribution.

Adverbs modify statements in various ways: e.g. evaluative adverbs like *unfortunately* and *surprisingly* express the speaker's evaluation of some state of affairs, epistemic adverbs like *probably* and *possibly* estimate the degree of certitude of the truth of a proposition, evidential adverbs like *obviously* and *clearly* describe the ease of perceiving the truth of a proposition,

subject-oriented adverbs like *wisely* and *cleverly* denote the speaker's judgement of the subject's attitude with respect to the event, etc. I.e., adverbs of different classes operate on different kinds of entities, such as propositions or events. Ernst (1998, 2002) proposes that adverbs and functional elements, like aspectual auxiliaries and modal verbs, are lexically specified for which type of semantic argument (so-called Fact/Event Objects, FEO, in Ernst's analysis) they take and that these semantic types are hierarchically ordered as in (2.79).

- (2.78) a. subject-oriented adverb: EVENT(controllable)
 b. frequency adverb: EVENT
 c. epistemic adverb: PROPOSITION
 d. aspectual auxiliary: EVENT
 e. deontic modal: EVENT
 f. epistemic modal: PROPOSITION

(2.79) SPEECH-ACT > FACT > PROPOSITION > EVENT > SPECIFIED EVENT

Assuming that syntactic sister relationships are mapped onto semantic representations and that a semantic (sub)type may freely be converted to a higher (sub)type³², the flexibility of and restrictions on adverb placement are accounted for by requiring that adverbs only occur in positions in which their selectional properties can be met.³³ Since two elements selecting for the same semantic type may be merged (i.e. may fulfill their requirements) in either order and, consequently, allow for either scope relation, an adverb may vary in its position relative to an element that takes the same semantic type. For example, both frequency adverbs and aspectual auxiliaries select for EVENTS; consequently, a frequency adverb may meet its

³² Type Shift is restricted by Ernst's FEO Calculus:

- (i) FEO Calculus: (Ernst 2002: 50)
 a. Any FEO type may be freely converted to any higher FEO type, but not lowered, except:
 b. Any FEO (sub)type may be converted to another FEO (sub)type as required by lexical items or coercion operators.
 c. Events may be interpreted as SPECIFIED EVENTS within PredP.

On (ib) see below.

The term SPECIFIED EVENT refers to events of the type specified by the verb. According to Ernst (2002), manner and clausal readings of ambiguous adverbs differ in comparison class: under the clausal reading of the adverb in (ii), Sue is judged as rude because of her leaving, as opposed to other events (of any sort, including not leaving) she could have done. By contrast, under the manner reading of the adverb, the way of Sue's leaving is modified; i.e., her leaving event is judged as rude compared to other leaving events (e.g. because she left without saying good-bye or by slamming the door).

- (ii) Sue rudely left.

By the condition in (ic), manner adverbs have to be (base-)positioned within VP; they are thus expected not to occur in front of (finite or non-finite) auxiliaries (compare example (2.68a) above). (Note, however, that SPECIFIED EVENT modification might also be possible in higher positions, see footnotes 43 as well as 121 in section 3.5 on discourse-oriented adverbs.)

³³ "Sentences whose semantic representation does not allow one or more Predicational adverb (more generally, any adjunct) to fulfill its requirements are ill-formed and ungrammatical." (Ernst 2002: 53)

lower type -, while they predict the scopal relation and linearization of two elements to be variable in case they select for the same semantic type.³⁶

Note that there may be no direct correspondence between dominance in the semantic hierarchy and surface precedence. A finite auxiliary may precede an adverb selecting for a higher semantic type due to its movement to I⁰.³⁷ the selectional requirements of the deontic

³⁶ Note that besides semantic hierarchy and selectional properties, there are obviously additional restrictions on the co-occurrence of adverbs and auxiliaries. For example, although both frequency adverbs and aspectual auxiliaries select for EVENTS and are thus expected to permit order alternations (compare example (2.80) above), placement of a frequency adverb behind a non-finite auxiliary might be unacceptable because of a semantic clash (see Ernst 2002): the time interval associated with the lower position might be too short for modification by a frequency adverb - either due to a semantic requirement on the adverb to quantify over a fairly large interval as in (i) or due to context as in (iia): a waltz is quite short so that it seems odd to stop occasionally or twice during such an event.

- (i) a. Tim was (usually / occasionally) being passed over for the best contracts. (Ernst 2002: 350)
 b. Tim was being (??usually / occasionally) passed over for the best contracts.
 (ii) a. Bob had been (?*occasionally / ?*twice) stopping in the middle of the waltz. (Ernst 2002: 349)
 b. Bob had been (occasionally / twice) stopping at the side of the road during each 1,000-mile leg of his cross-country drive.

In addition, Ernst notes that mapping events onto reference time, aspectual adverbs such as *still* and *already* are bound to T⁰; thus, they cannot follow e.g. non-finite progressive *be* in (iiib) and may only co-occur with particular temporal-aspectual verb forms, (iv).

- (iii) a. The workers are already leaving. (Ernst 2002: 342)
 b. *Carol has been already buying mangoes. (Ernst 2002: 343)
 (iv) a. They (still) are (still) refusing the treatments. (Ernst 2002: 345)
 b. *They (still) have (still) refused the treatments.

Moreover, the occurrence of a certain adverb might depend on the presence of a specific lexical item; e.g. German *unmöglich* ('impossibly') may only occur with *können* ('can').

- (v) a. Johann kann unmöglich weggegangen sein. (Ramat & Ricca 1998: 195)
 Johann can impossibly go.off be
 'It is impossible that it is possible that Johann went off.'
 b. *Johann ist unmöglich weggegangen.
 Johann is impossibly gone.off
 'It is impossible that Johann went off.'

Finally, co-occurrence of several adverbs may be restricted by morphological factors: two subsequent adverbs bearing the same adverbial suffix are stylistically marked (in English and German).

- (vi) a. Hazel probably (?frequently / often) goes there. (Ernst 1984: 47)
 b. Er wird (?möglichlicherweise / vielleicht) schlauerweise nicht kommen.
 he will possibly perhaps cleverly not come
 'He (possibly / perhaps) cleverly won't come.'

³⁷ According to Ernst (2002), there is no V-to-I movement in Chinese at all; hence, left-to-right order always reflects scopal interpretation unambiguously.

- (i) a. Ailing bu hui shuo Ewen. (Ernst 2002: 317)
 Ailing not can speak Russian
 'Ailing cannot speak Russian.'
 b. Ailing hui bu shuo Ewen.
 'Ailing is able to not speak Russian.'

modal in (2.82) are met in its base position; movement to a position whose sister constituent is of the wrong semantic type is not blocked.³⁸ Similarly, since only EVENT-selecting adverbs may be merged below an aspectual auxiliary, occurrence of e.g. a PROPOSITION-modifying epistemic adverb behind a non-finite auxiliary may solely arise by movement of the auxiliary. English and French differ in permitting non-finite verb movement, compare (2.68b,c) vs. (2.75) above.³⁹

- (2.82) [IP Mary_j must_i [AUXP probably [AUXP t_i [VP ... t_j read the book]]]]
 [PROP' [PROP [EVENT' [EVENT
 'Mary is probably obliged to read the book.'

Ernst's account presupposes that semantic structure is not directly anchored in syntactic structure, a specific syntactic category does not correspond to a specific semantic type; rather, it depends on the items involved which semantic type a syntactic constituent may be associated with.⁴⁰ For example, VP may be construed as a PROPOSITION (or some higher type), thereby allowing VP-adjunction of an adverb which selects for PROPOSITION (or a higher type), as long as no material merged above it requires a lower semantic type, compare (2.81) above.

- (2.83) a. [IP John_j e [VP probably [VP t_j ate the cake]]]
 [PROP' [PROP [EVENT
 b. [IP John_j e [VP obviously [VP t_j ate the cake]]]
 [EVENT' [FACT [PROP [EVENT

Similarly, if I⁰ hosts an aspectual auxiliary or a deontic modal, I' may correspond to an EVENT, permitting adverbs which take EVENTS (or higher semantic types) to occur in pre-auxiliary position, as illustrated in (2.84a). By contrast, in case I⁰ hosts an epistemic modal, I'

-
- c. Xiaolan (xianran) dei (*xianran) hui-jia.
 Xiaolan obviously must obviously go.home
 'Xiaolan obviously must go home.'

³⁸ Though the selectional requirements of an auxiliary may be satisfied by its trace as in (2.82) above, lexical properties apparently do not have to be met in D-structure in Ernst's (2002) approach. As discussed below, a subject-oriented adverb cannot precede a deontic modal; i.e., its special semantic requirements cannot be satisfied in a position preceding a modal. Nevertheless, Ernst considers the adverb to be merged above the modal's base position in (i), indicating that D-structural relations among the elements may be overlooked in semantic interpretation. Hence, either the head or the foot of a chain is obviously called upon for interpretation in Ernst's analysis, depending on the items involved.

- (i) Natasha_j [TP could_i [ModP wisely not t_i [VP t_j run]]] (Ernst 2002: 37)
 [PROP ABLE [EVENT WISE [EVENT ~ [EVENT R(e) & Agt(e,n)]]]]
 'Natasha is able to wisely avoid running.'

³⁹ On the procedure of non-finite verb movement see section 3.2 below.

⁴⁰ Except for SPECIFIED EVENT, see footnote 32.

2.3 Summary

Section 2.1 presented various approaches to the flexibility of and restrictions on the order of adverbs and verbs/auxiliaries which mainly aim to explain the cross-linguistic contrast in the acceptability of adverb placement in front of a finite verb and/or auxiliary. Relying on purely syntactic considerations, such as differences in the movement behavior of subjects and/or verbs or in the availability of I'-adjunction, these analyses may be able to predict whether or not adverb placement in a specific position is permitted at all in a given language. Yet, they may hardly account for the fact that the variability in the ordering of adverbs and auxiliaries is also influenced by the types of adverbs and auxiliaries involved. As discussed in section 2.2, the (un)availability of a certain scope option may be decisive for the (un)grammaticality of a particular order. Ernst's (1998, 2002) approach is capable of deriving restrictions on scopal relations, which restrain adverb positioning, predicting that among other things, linearization depends on the lexical items. In the next chapter, Ernst's approach to the ordering of adverbs and verbs/auxiliaries will be reformulated in an Optimality Theoretic framework.

CHAPTER 3.

AN OPTIMALITY THEORETIC APPROACH TO ADVERB PLACEMENT

This chapter develops an Optimality Theoretic account on the distribution of adverbs in English, French, and German. In Optimality Theory (Prince & Smolensky 1993), grammaticality is defined as optimal satisfaction of a hierarchy of violable constraints: for some input i_k , the function GEN produces a set of output candidates, $\{o_1, o_2, \dots, o_n\}$. These candidates are then evaluated with respect to their satisfaction of a set of violable constraints by the function EVAL. Since the constraints often make conflicting requirements on the output that cannot be met simultaneously, their hierarchical ranking is decisive in determining optimality: candidate o_k is optimal in case there is no competing candidate o_l such that o_l violates the highest ranking constraint o_k and o_l disagree on less often than o_k does; consequently, the optimal candidate o_k is considered to be the grammatical output to the given input i_k .

Some basic assumptions with regard to the input and the candidates which are crucial for restraining scopal relations and their syntactic encoding are presented in section 3.1. Section 3.2 is concerned with the ordering of adverbs and verbs/auxiliaries in English and French. Contrasts in adverb placement in these languages will be shown to result from differences in the language-specific ranking of the universal constraints. Section 3.3 deals with verb positioning in German, focusing on verb placement in second position in German matrix clauses and the filling of the prefield position. The serialization of adverbs and arguments is looked at in section 3.4 and 3.5. Information-structural considerations - focus-background structure (section 3.4) and topic-comment structure (section 3.5) - will be argued to be crucial for the linearization of adverbs and arguments within the German middle field as well as to have an effect on word ordering in English and French. The results are summarized in section 3.6.

3.1 Theoretical Assumptions

As argued in the previous chapter, restrictions on scope options might give rise to ordering restrictions. According to Ernst (1998, 2002), the distribution of adverbs is - among other things - determined by their lexical requirements: an adverb may only adjoin to a constituent which may be associated with the semantic type the adverb selects for. This interrelation will be considered to result from the conception of the input and its realization in the output in the analysis presented here. The input is regarded as a semantic representation which is subject to certain compositional principles, guaranteeing that only acceptable scope relations can be specified in the input (section 3.1.1). Moreover, an inviolable constraint in GEN will be assumed to regulate the syntactic encoding of adverbial scope in the output candidates (section 3.1.2).

3.1.1 The Input

As mentioned above, in an OT grammar the function GEN provides for a given input a set of output candidates from which EVAL selects the grammatical one on the basis of the candidates' satisfaction of a language-specific hierarchy of violable constraints. In a syntactic competition, the candidates typically differ in word order. Recall that variation in adverb positioning may correlate with contrasts in interpretation. Yet, the candidates are taken to be alternative forms competing for the same meaning which thus has to be specified in the input. Hence, grammaticality is defined with regard to a specific interpretation.¹ Outputs with distinct interpretations cannot arise from the same competition; they are subject to different inputs.

The input is conceived of as a semantic representation of the modificational relation, specifying the type and content of an adverb's semantic argument and, consequently, adverbial scope. For example, a frequency adverb may take wide or narrow scope relative to a deontic modal. The semantic structure in (3.1a) marks the adverb as outscoping the modal: the adverb's semantic argument is the event of John's being obliged to take his medicine; i.e., the modal verb is included in the modification domain of the adverb. By contrast, the modal is not part of the adverb's semantic argument in (3.1b): in this case, the adverb is to operate on the core event of John's taking his medicine; it takes narrow scope with respect to the modal.

¹ In view of the fact that certain adverb positions only allow for a particular scopal reading, linking grammaticality to interpretation seems reasonable. For example, an adverb preceding a finite modal in English is restricted to a wide scope reading; in other words, pre-auxiliary positioning is ungrammatical under a narrow scope reading of the adverb.

- (i) Eddie frequently can lift 200 kilos.
 i) 'Eddie is frequently able to lift 200 kilos.'
 ii) #'Eddie is able to lift 200 kilos several times (in a row).'

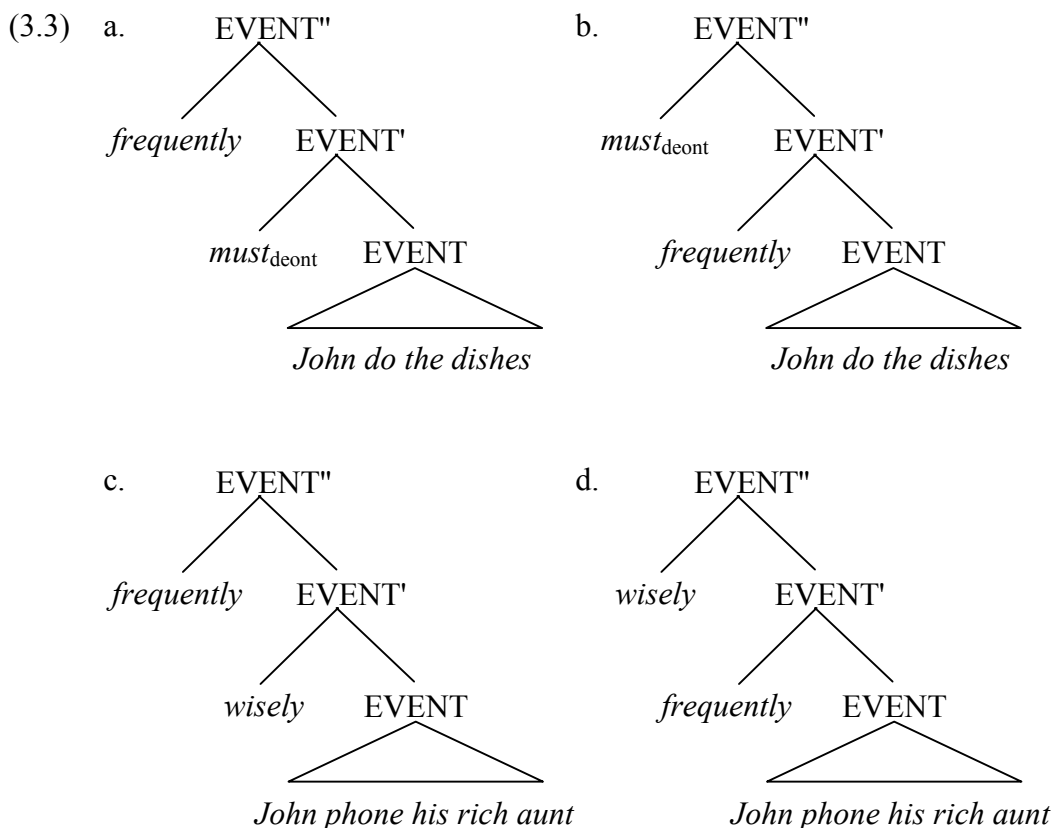
Moreover, optimization with regard only to a particular interpretation makes it possible to account for the fact that a certain surface order might be ambiguous, although the syntactic structures underlying the various meanings differ in their constraint profiles: they do not compete with one another such that each of them may be optimal within its candidate set.

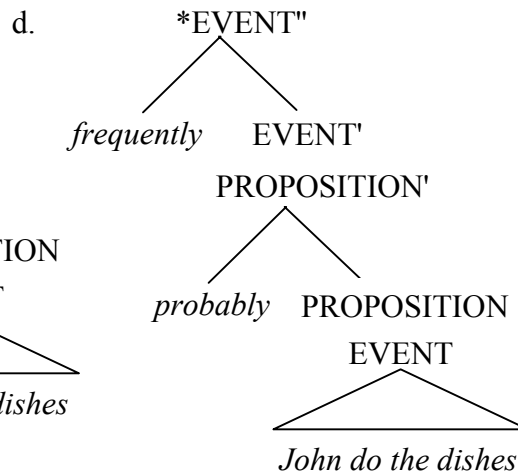
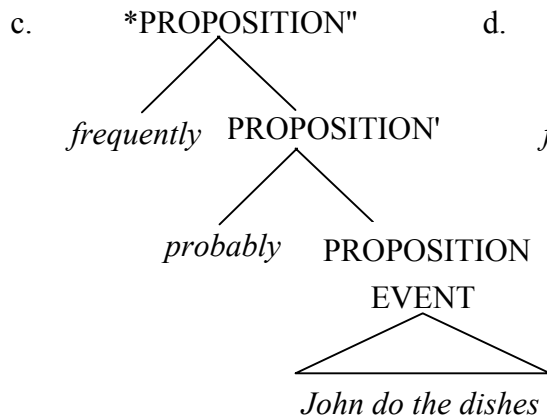
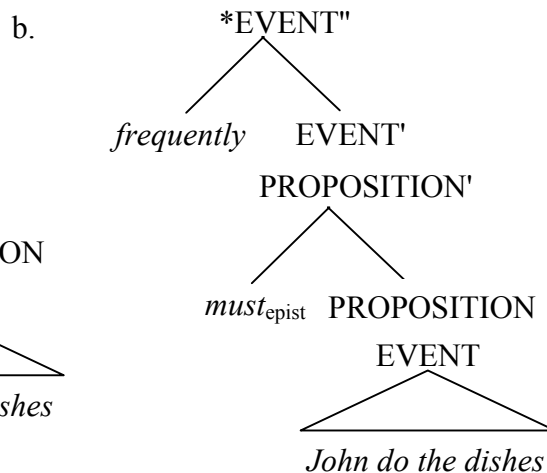
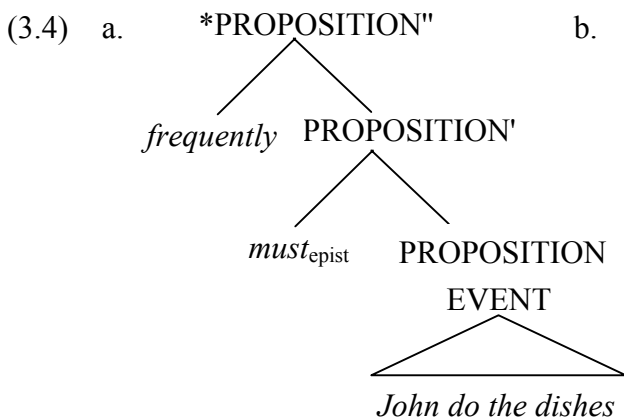
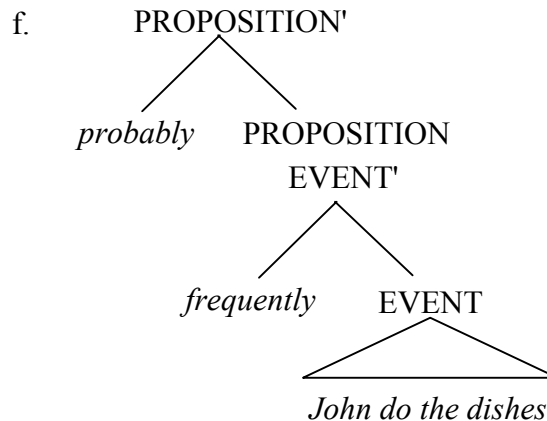
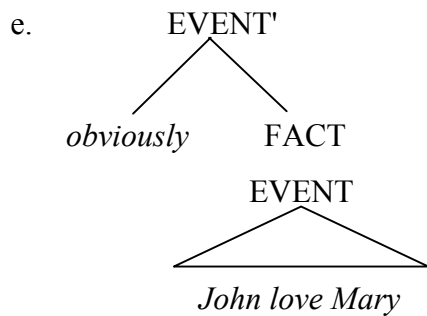
- (3.1) a. (EVENT" regularly (EVENT' must_{deontic} (EVENT John take his medicine)))
 b. (EVENT" must_{deontic} (EVENT' regularly (EVENT John take his medicine)))

Since as a semantic structure the input is a complex construct, the existence of a function Σ that builds up the representation has to be assumed. Σ picks the items out of the lexicon and combines them. Following Ernst's (1998, 2002) approach, Σ is considered to be subject to the principles in (3.2), which guarantee that the input embodies an acceptable interpretation.

- (3.2) a. Elements may only be combined with constituents which meet their lexical requirements.
 b. Semantic (sub)types may freely be converted to higher (sub)types.

Assuming that lexical items are specified for which type of semantic argument(s) they select and that semantic types are hierarchically ordered (compare (2.78, 2.79) in chapter 2), the function Σ may provide the structures in (3.3); the representations in (3.4), by contrast, cannot be produced:





As required by principle (3.2a), the sister constituents of the adverbs in (3.3) are of the semantic types the adverbs select for, respectively: the frequency and subject-oriented adverbs are merged to EVENTS in (3.3a-d), the evidential adverb is combined with a FACT (3.3e), and the epistemic one with a PROPOSITION (3.3f). To provide the right kind of semantic argument for the evidential and epistemic adverb in (3.3e,f), a semantic type is shifted to a higher one, as permitted by principle (3.2b). As shown in (3.3a-d), the elements selecting for the same semantic type, deontic modals as well as frequency and subject-oriented adverbs,

may be combined in either order; i.e., their selectional properties are met in either structural relation, predicting both scope options to be available (compare example (3.1) above). By contrast, the function Σ cannot produce the structures in (3.4): disobeying the principle (3.2a), the EVENT-selecting frequency adverb is merged with a PROPOSITION in (3.4a,c). In (3.4b,d), a semantic type is lowered to provide the right type of semantic argument for the frequency adverb.² However, type lowering is not an option for Σ ; hence, there is no mechanism in Σ that would facilitate these structures. Therefore, selecting for a lower semantic type, a frequency adverb may only be merged below an epistemic modal or an epistemic adverb as in (3.3f), predicting that frequency adverbs are restricted to a narrow scope reading relative to these elements. More generally, scope options between two elements are expected to be restrained in case the elements take different types of semantic arguments (with the element that selects for the higher semantic type taking scope over that selecting for the lower type).

In summary, variability in and restrictions on scope options result from the principles on the composition of semantic representations in (3.2). Since an element α selecting for a higher type than an element β may only be merged above β (unless its application produces a lower semantic type), two elements taking different types of semantic arguments are restricted in their scopal relation. By contrast, two elements selecting for the same semantic type may be merged in either order and, consequently, allow for both scope options. Hence, the restrictions on Σ ensure that only semantic structures reflecting acceptable scope relations constitute potential inputs. Accordingly, outputs may only encode acceptable scopal interpretations. The next section discusses how the modificational relations specified in the input are to be represented in syntactic structure.

3.1.2 *The Candidates*

Besides syntactic factors, such as the (un)availability of verb movement, semantic factors were argued to influence the distribution of adverbs in chapter 2: in view of the fact that alternations in adverb positioning may give rise to interpretative contrasts, restrictions on the ordering of adverbs and verbs/auxiliaries (as well as among adverbs) seem to be based on semantic restrictions on their scope options. As discussed in the previous section, the limitations on the function Σ that builds up the input semantic representations may restrain the scopal relations between two elements. Semantic meaning having to be reflected in syntactic form, these semantic restrictions are expected to be passed on to word order restrictions. The

² Remember that an evidential adverb takes a FACT to create an EVENT (3.3e), giving rise to a representation in which the semantic hierarchy is apparently disrespected: a node α dominates a node β which is of a higher semantic type than α . Yet, in contrast to the unacceptable structures in (3.4b,d), type lowering in (3.3e) is necessitated by the lexical properties of the adverb. Similarly, conversion to a lower semantic type should be possible by the application of e.g. the speech-act operator. I.e., as stated in Ernst's (2002) FEO Calculus, type lowering is considered to be allowed if required by lexical items or coercion operators (see footnote 32 in chapter 2).

See section 2.2 on how merging of an EVENT-selecting element (such as a frequency adverb or an aspectual auxiliary) above an evidential adverb might be excluded.

constraint MODIFIER in (3.5) determines how adverbial scope is to be encoded in the candidates.

(3.5) MODIFIER: The foot of an adverb chain is the sister of the foot of the chain of its semantic argument specified in the input.^{3,4}

³ Note that MODIFIER has to refer to an adverb's base position: some of the distributional phenomena of adverbs could not be accounted for in case MODIFIER would resort to their surface positions even if the constraint were taken to be violable. For example, recall that a manner adverb cannot precede a finite or non-finite auxiliary. Under the assumption that SPECIFIED EVENT-modification is only possible within VP (see footnote 32 in chapter 2), the unacceptability of the orders in (i) follows from the fact that the adverb is sister to a constituent that cannot be its semantic argument; i.e., the sentences in (i) would violate MODIFIER if the constraint related to surface positions (indicating that there is no constraint dominating MODIFIER that requires placement of a manner adverb in front of an auxiliary).

- (i) a. *Bill loudly has been proclaiming his innocence.
b. *Bill has loudly been proclaiming his innocence.

However, a manner adverb can occur in clause-initial position as in (ii). Pre-subject placement of the adverb might be taken to result from dominance of a constraint TOPIC (requiring IP-adjunction of a topical adverb, see section 3.5) over MODIFIER, predicting that a violation of MODIFIER is tolerated in case it helps to satisfy TOPIC.

- (ii) Loudly, Bill has been proclaiming his innocence.

Nevertheless, clause-initial placement of the adverb is unacceptable in case there is an element taking wider scope following the adverb as in (iii). Again, the sister constituent of the clause-initial adverb cannot correspond to its semantic argument; yet, satisfaction of TOPIC does obviously not license a violation of MODIFIER in this case.

- (iii) *Loudly, Bill has probably been proclaiming his innocence.

Regarding MODIFIER as referring to the base-positioning of adverbs, the contrasts in (i)-(iii) can be accounted for, see sections 3.2 and 3.5.

⁴ MODIFIER is similar to the Adjunction Projection Principle (e.g. Travis 1988, Sportiche 1988) in requiring adjacency of the adverb to its modifiee.

- (i) Adjunction Projection Principle:
If some semantic type X modifies some semantic type Y, and X and Y are syntactically realized as a and b, a is projected as adjacent either to b or to the head of b. (Sportiche 1988: 429)

Yet in contrast to the Adjunction Principle, MODIFIER does not allow for head-adjunction of an adverb; an adverb's sister constituent has to comprise all of its semantic argument, not only its head. Note that there are several phenomena which speak against the head status of adverbs and, consequently, against their adjunction to heads given Emond's (1976) Structure Preserving Principle (see Alexiadou 2002a): adverbs may be modified and should thus be able to project to phrases (ia,b), they can undergo XP-movement such as *wh*-movement and fronting (ic,d), they permit head movement to cross them (iie), and do not necessitate *do*-Insertion (iif). In addition, they may be separated from a head by parenthetical expressions as in (iig) although these should not break up a word.

- (ii) a. John dances very beautifully. (Alexiadou 2002a: 36)
b. George quite obviously is reveling in his new job. (Ernst 2002: 395)
c. How did he fix the car?
d. Carefully, he eased the violin out of its case. (Ernst 2002: 423)
e. Bill has probably kissed Sue.
f. He really loves her.
g. The judges always, it seems, had given a few extra points to their countrymen. (Ernst 2002: 395)

Since I do not know of any case in which MODIFIER can be clearly shown to be violated, the constraint is considered to be inviolable: as a constraint in GEN, MODIFIER has to be respected in all output candidates. Hence, in all candidates, an adverb is merged in a position c-commanding the base position of an element if and only if this element belongs to the adverb's semantic argument. Consequently, an adverb is expected to occupy distinct base positions, depending on its scope; i.e., different sets of candidates are produced for disparate inputs.⁵ For example, in case an adverb is specified in the input as taking narrow scope relative to a modal as in (3.6a), GEN provides candidates such as (3.6b-g), in which the adverb is merged below the base position of the modal. By contrast, if the adverb is to outscope the modal verb as in (3.7a), the candidate set may include the structures in (3.7b-h) in which the adverb is base-generated in a position above the base position of the modal. Assuming that there is no strict correspondence between semantic types and syntactic categories (see Ernst 2002), MODIFIER allows for placement of an adverb in any position whose sister constituent can be associated with its semantic argument⁶; consequently, even candidates of the same competition may vary in base-positioning of an adverb - e.g. above the surface position of the subject as in (3.7b) or below it (3.7c,d).⁷ In addition, referring to feet of chains, MODIFIER permits an adverb as well as (parts of) its semantic argument to be moved

In addition, note that MODIFIER explicitly refers to the base position of an adverb and its semantic argument; it thus does not require these constituents to occur in adjacent positions at the surface. In fact, it is the language-specific constraint ranking that is crucial for the surface order of the output (see next sections).

⁵ Note that the analysis presented here differs from Ernst (1998, 2002) in accounting for the alternations in the reading of a post-auxiliary adverb. Ernst permits both head and foot of an auxiliary chain to be used for semantic interpretation (compare section 2.2 and footnote 38 therein). Hence, the same syntactic structure may underlie the various scopal interpretations of the order *finite auxiliary - adverb*, as illustrated in (i). Depending on whether base or surface position of the auxiliary is semantically interpreted, the adverb receives a wide (ia) or narrow scope reading (ib).

- (i) a. [IP John_j must_i [AUXP regularly [AUXP t_i [VP t_j take his medicine]]]]
 [E" regularly [E" is.obliged [E John take his medicine]]]
 'John is regularly obliged to take his medicine.'
 b. [IP John_j [I' must_i [AUXP regularly [AUXP t_i [VP t_j take his medicine]]]]
 [E" is.obliged [E' regularly [E John take his medicine]]]
 'John is obliged to take his medicine regularly.'

By contrast, in the present analysis, an adverb has to be merged as sister to a constituent that represents its semantic argument specified in the input (MODIFIER); hence, elements (both adverbs and auxiliaries) are to be interpreted in their base positions. Consequently, contrasts in the scopal reading of an adverb are expected to correspond to differences in its base position, as shown in (ii).

- (ii) a. [IP John_j [I' must_i [AUXP regularly [AUXP t_i [VP t_j take his medicine]]]]
 [E" regularly [E' is.obliged [E John take his medicine]]]
 'John is regularly obliged to take his medicine.'
 b. [IP John_j [I' must_i [AUXP t_i [VP regularly [VP t_j take his medicine]]]]
 [E" is.obliged [E' regularly [E John take his medicine]]]
 'John is obliged to take his medicine regularly.'

⁶ Given that a PROPOSITION presupposes a completely specified EVENT, it is expected that a PROPOSITION may only be created in case all participants involved in the EVENT are integrated in the structure and, consequently, that a PROPOSITION-modifying adverb has to be merged above VP. Arguments preceding a PROPOSITION-modifying adverb thus have to be moved in front of the adverb.

⁷ Furthermore, competing candidates may not only differ in the positioning of adverbs relative to other clausal elements, but also in the structural configuration an adverb appears in - as specifier or as adjunct, see section 3.2.

around in the candidate structures; hence, adverbial scope is not necessarily reflected in a candidate's surface order. The language-specific ranking of the violable constraints determines which of the competing candidates is optimal in the respective case in a certain language (see next sections).

- (3.6) a. (EVENT" can_{deontic} (EVENT frequently (EVENT John lift 200 kilos)))
 b. [IP John_j can_i [AUXP t_i [VP frequently [VP t_j lift 200 kilos]]]]
 c. [IP John_j e [AUXP can [VP frequently [VP t_j lift 200 kilos]]]]
 d. [IP John_j frequently_k [I' can_i [AUXP t_i [VP t_k [VP t_j lift 200 kilos]]]]]
 e. [IP John_j e [AUXP frequently_k [AUXP can [VP t_k [VP t_j lift 200 kilos]]]]]
 f. [IP Frequently_k [IP John_j can_i [AUXP t_i [VP t_k [VP t_j lift 200 kilos]]]]]
 g. [IP [VP t_j Lift 200 kilos]_k [IP John_j can_i [AUXP t_i [VP frequently t_k]]]]
- (3.7) a. (EVENT" frequently (EVENT' can_{deontic} (EVENT John lift 200 kilos)))
 b. [IP Frequently [IP John_j can_i [AUXP t_i [VP t_j lift 200 kilos]]]]
 c. [IP John_j frequently [I' can_i [AUXP t_i [VP t_j lift 200 kilos]]]]
 d. [IP John_j can_i [AUXP frequently [AUXP t_i [VP t_j lift 200 kilos]]]]
 e. [IP John_j e [AUXP frequently [AUXP can [VP t_j lift 200 kilos]]]]
 f. [IP John_j frequently_k [I' can_i [AUXP t_k [AUXP t_i [VP t_j lift 200 kilos]]]]]
 g. [IP Frequently_k [IP John_j can_i [AUXP t_k [AUXP t_i [VP t_j lift 200 kilos]]]]]
 h. [IP [VP t_j Lift 200 kilos]_k [IP John_j can_i [AUXP frequently [AUXP t_i t_k]]]]

Since (a) the scope options that may be specified in the input are restrained due to the principles in (3.2), which the function Σ must fulfill in building up input semantic representations, and (b) adverbial scope has to be encoded in the candidates in accordance with MODIFIER, the (un)availability of scopal relations may affect the (un)acceptability of adverb positioning: if an adverb α cannot take scope over some element β , α cannot be merged above β in syntactic structure; by contrast, if α has to take scope over β , α must be generated above β 's base position. Hence, the function Σ and the inviolable constraint MODIFIER together guarantee that an adverb in its base position may only be sister to a constituent that can be construed with the semantic type the adverb selects for.

3.2 The Ordering of Adverbs and Verbs/Auxiliaries in English and French

The last section illustrated how potential inputs can be restrained to embody acceptable scopal relations only and how these are to be mapped onto the candidates' syntactic structures. The candidates represent alternative forms of expressing the meaning specified in the input; they typically show different word orders, e.g. due to contrasts in the occurrence of various movements or in the attachment site of an adverb. Output of an OT competition is that candidate which satisfies the constraint hierarchy better than all alternative candidates. Since the hierarchic ranking of the constraints is crucial for determining the grammatical output, cross-linguistic contrasts in word order are expected to result from differences in the language-specific ranking of the constraints. This section concentrates on the contrasts in adverb placement relative to finite and non-finite verbs/auxiliaries in English and French.

3.2.1 The Ordering of Wide Scope Adverbs and Finite Verbs/Auxiliaries

As mentioned in the previous chapters, an adverb may take scope over a preceding finite modal verb in English, French, and German.

- (3.8) a. The kids may often go to the movies.
'The kids are often allowed to go to the movies.'
- b. Charles voulait continuellement embrasser Carla.
Charles wanted.to continually kiss Carla
'Charles continually wanted to kiss Carla.'
- c. Elmar will mich andauernd ins Theater schleppen.
Elmar wants.to me continually in.the theater drag
'Elmar continually wants to drag me to the theater.'

In accordance with MODIFIER, adverbial scope specified in the input has to be reflected in the syntactic structure of a candidate. Under a wide scope reading, the adverb in the sentences in (3.8) must be merged above the base position of the modal, indicating that the sequence *finite auxiliary - adverb* can be derived by movement of the auxiliary: the modal is generated in its own projection AuxP (dominating VP) and moves to a higher head position. Grimshaw (1997) accounts for the availability of auxiliary movement by the constraints in (3.9a,b) below. Following the VP-internal subject hypothesis (Koopman & Sportiche 1985, 1991, Kitagawa 1986, among others), the sentences in (3.8a,b) also point out that the subject moves to a higher functional projection, IP.⁸ According to Samek-Lodovici (1998), subject placement in Spec,IP is triggered by the constraint in (3.9c):

- (3.9) a. ECONOMY OF MOVEMENT (STAY): Trace is not allowed. (Grimshaw 1997: 374)

⁸ It will be assumed that the subject occupies the specifier position of a higher functional projection, Spec,CP, in subject-initial matrix clauses in German; see section 3.3 below.

- b. OBLIGATORY HEADS (OBHD): A projection has a head.⁹
 c. SUBJECT: The highest A-specifier is structurally realized.

(Samek-Lodovici 1998: 4)

As will become clear in section 3.4, the constraint STAY in (3.9a) has to be differentiated according to the phrasal status of the moved element, X^0 vs. XP; hence, I will distinguish between STAY-X and STAY-XP.

The constraints in (3.9) make contradicting demands on an output structure. For example, while SUBJECT requires subject movement from Spec,VP to Spec,IP, STAY-XP opposes movement. Since optimality is determined on the basis of the hierarchical relation of the constraints, their ranking with respect to each other determines whether or not the subject is placed in Spec,IP in a given language. The ranking SUBJECT >> STAY-XP in English and French predicts that subject movement has to take place on cost of STAY-XP (see Tableau T3.1): candidate T3.1e is ruled out since the subject stays in VP, violating SUBJECT. IP thus being projected, OBHD demands for movement of the finite verb to I^0 . The ranking OBHD >> STAY-X gives rise to Aux-to-I movement in the two languages: candidate T3.1b is excluded since I^0 is empty. The candidates T3.1a and T3.1c in which both the subject and the finite auxiliary are moved to IP are optimal. The two candidates tie on the constraint profile, i.e. they arise as variants: since an adverb may be merged somewhere above the base position of the elements it outscopes (MODIFIER), a wide scope adverb may appear in front of the subject (adjoined to IP), or behind the finite auxiliary moved across it (adjoined to AuxP).¹⁰ As shown in candidate T3.1d, clause-initial occurrence of an adverb is base-generated if compatible with the adverb's semantic requirements due to STAY-XP. (Note that for ease of exposition, only those constraints are integrated in the Tableaux that are relevant for the phenomenon under consideration; constraints that are not violated by any of the competing candidates are omitted. For the complete ranking of the constraints in English, French, and German, see the Appendix.)

T3.1		SUBJECT	OBHD	STAY-X	STAY-XP
☞	a	[_{IP} The kids _i may _i [_{AuxP} often [_{AuxP} t _i [_{VP} t _i go to the movies]]]]]		*	*
	b	[_{IP} The kids _i e [_{AuxP} often [_{AuxP} may [_{VP} t _i go to the movies]]]]]	*!		*
☞	c	[_{IP} Often [_{IP} the kids _i may _i [_{AuxP} t _i [_{VP} t _i go to the movies]]]]]		*	*
	d	[_{IP} often _k [_{IP} the kids _i may _i [_{AuxP} t _k [_{AuxP} t _i [_{VP} t _i go to the movies]]]]]]]		*	**!
	e	[_{AuxP} Often [_{AuxP} may [_{VP} the kids go to the movies]]]	*!		

⁹ Like Vikner (2001a), I take OBHD to be satisfied if a head position is filled by an overt element or a trace. Likewise, SUBJECT is considered to be satisfied in case Spec,IP hosts an overt element or a trace.

¹⁰ As will be shown in section 3.4 and 3.5, the information-structural status of the subject may be decisive for the choice between adverb placement in pre-subject or post-auxiliary position. On pre-auxiliary adverb placement see below.

Note that OBHD and STAY-X predict that adverbs occur in adjoined positions: adverb placement in the specifier position of some functional projection necessitates the integration of a further head and, consequently, results in an additional violation of OBHD or STAY-X, depending on whether or not the finite auxiliary moves to or through this functional head (see Tableau T3.2). Hence, unless placement in the specifier position of some projection is explicitly required by some dominating constraint (as e.g. WHSPEC, see below), adverbs are expected to emerge as adjuncts to a projection compatible with their scope.¹¹

¹¹ Note that the constraints do not make any claim regarding the direction of adverb adjunction. Yet, while right-adjunction seems to be possible in English and French, it is not in German. For example, a clause-final adverbial may take wide scope relative to a medial element in English and French, (i). In German, by contrast, the clause-final adverb in (ii) has to be interpreted within the scope of the preceding adverb or negation marker. As illustrated in (iii), adverb placement behind a right-peripheral verb in German is only acceptable as a kind of afterthought.

- (i) a. John intentionally knocked on the door twice. (Cinque 1999: 25)
 b. They didn't understand us out of fear momentarily, but even after they calmed down they were still somewhat thrown off by our accents. (Ernst 2000a: 85)
 c. Danielle achète fréquemment un journal à cause de son travail. (Ernst 2002: 181)
 Danielle buys frequently a newspaper because of her work
 'Danielle frequently buys a newspaper because of her work.'
- (ii) a. Er stieß sie absichtlich mehrfach.
 he poked her intentionally repeatedly
 i) 'He intentionally repeatedly poked her.'
 ii) #'He repeatedly intentionally poked her.'
- b. Er belügt sie nicht oft.
 he lies her not often
 i) 'He doesn't often lie to her.'
 ii) #'He often doesn't lie to her.'
- (iii) a. Er hat sie (zu oft / vermutlich) belogen (*zu oft / *vermutlich).
 he has her too often presumably lied.to too often presumably
 'He (presumably) lied to her (too often).'
- b. Er hat sie belogen - (??zu oft / ?vermutlich).

The difference in the availability of right-adjunction between English/French and German presumably has to do with the contrast between VO- and OV-languages: only languages that license arguments to the right seem to be able to license adjuncts to the right as well (see e.g. Haider 2000 and Ernst 2002).

Yet even in VO-languages, right-adjunction is restricted to certain types of adverbs. According to Ernst (2000a), subjective adverbs cannot right-adjoin to a functional projection. "Subjective adverbs are (a) gradable adverbs, (b) on whose scale the members of its comparison class (event/proposition) may be (re)ranked according to the speaker's judgement of the context" (Ernst 2000a: 90). For example, sentence adverbs cannot right-adjoin (iv); their clause-final occurrence is only acceptable with comma-intonation, pointing to its parenthetical nature. Sentence adverbs are gradable and the members of their comparison class can be re-ranked; e.g., depending on the situation, Bob's going to Los Angeles might be judged as wise (he was offered a role in a Hollywood movie) or foolish (his wife and children live in Boston) in comparison to other events he might have done.

- (iv) a. Fred will discuss this question *(,) probably. (Ernst 2000a: 79)
 b. Patrick a perdu son chameau *(,) malheureusement. (Ernst 2002: 161)
 Patrick has lost his camel unfortunately
 'Patrick has unfortunately lost his camel.'
- c. Intelligently, Bob went to Los Angeles. (Ernst 2000a: 92)
 (i) Go to Los Angeles > Go to New York > Stay in Boston
 (ii) Stay in Boston > Go to New York > Go to Los Angeles

By contrast, some temporal and frequency adverbs can occur in clause-final position although they are gradable: the members of their comparison classes cannot be re-ranked.

T3.2		SUBJECT	OBHD	STAY-X	STAY-XP
☞	a	[_{IP} John _i has _i [_{AUXP} probably [_{AUXP} t _i [_{VP} t _i kissed Mary]]]]]		*	*
	b	[_{IP} John _i has _i [_{FP} probably e [_{AUXP} t _i [_{VP} t _i kissed Mary]]]]]	*!	*	*
	c	[_{IP} John _i has _i [_{FP} probably t _i [_{AUXP} t _i [_{VP} t _i kissed Mary]]]]]		**!	*
☞	d	[_{IP} Probably [_{IP} John _i has _i [_{AUXP} t _i [_{VP} t _i kissed Mary]]]]]		*	*
	e	[_{FP} Probably e [_{IP} John _i has _i [_{AUXP} t _i [_{VP} t _i kissed Mary]]]]]	*!	*	*
	f	[_{FP} Probably has _i [_{IP} John _i t _i [_{AUXP} t _i [_{VP} t _i kissed Mary]]]]]		**!	*

As discussed above, Aux-to-I movement takes place due to the requirement of OBHD and its dominance over STAY-X. Yet, in contrast to finite auxiliaries, a finite lexical verb cannot move to I⁰ in English: e.g. epistemic sentence adverbs, which are necessarily merged above the finite verb (see footnote 6), have to precede a lexical verb, but may occur on either side of a finite auxiliary. In French, by contrast, a finite verb moves to I⁰, irrespective of verb type: intervention of an adverb between the subject and the finite verb/auxiliary is unacceptable.

- (3.10) a. John (probably) has (probably) looked at Mary.
 b. John (probably) looked (*probably) at Mary.
- (3.11) a. Jean (*probablement) a (probablement) embrassé Marie.
 Jean probably has probably kissed Marie
 'Jean probably kissed Marie.'
 b. Jean (*probablement) aime (probablement) Marie.
 Jean probably loves probably Marie
 'Jean probably loves Marie.'

The contrast between English and French in the ordering of adverbs and lexical verbs has been taken to result from a difference in the availability of V-to-I movement (Emonds 1976, Pollock 1989, 1997; compare section 2.1.1). This cross-linguistic disparity can be accounted for by a difference in the ranking of OBHD relative to the following constraint.

- (3.12) NO LEXICAL HEAD MOVEMENT (*LXMV): A lexical head cannot move.
 (Grimshaw 1997: 374)

Dominance of *LXMV over OBHD in English blocks movement of a finite lexical verb to I⁰. An adverb left-adjoined above VP is thus expected to precede the lexical verb in V⁰ (see Tableau T3.3 below). Since *LXMV refers to lexical heads only, the dependence of finite verb

- (v) John will be home from school soon. (Ernst 2000a:93)
 1 PM Thursday > 3 PM Thursday > 10 AM Friday > 8 PM Friday

See Ernst (1994) on licensing of negative polarity items and binding of anaphors within right-adjoined adverbials.

On various analyses of clause-final adverbs not relying on right-adjunction see Barbiers 1995, Pesetsky 1995, Frey & Pittner 1998, Frey 2000a, Haider 2000, Rosengren 2000, Hinterhölzl 2002, and Phillips 2003.

movement on the type of verb in English is captured by the ranking *LXMV >> OBHD >> STAY-X: while a finite lexical verb cannot raise to I⁰, a finite auxiliary has to (compare Tableau T3.1 above). The reverse ranking OBHD >> *LXMV, STAY-X in French predicts that V-to-I movement takes place, irrespective of verb type (Tableau T3.4). Hence, the contrasts between English and French in the availability of lexical verb movement result from a difference in their language-specific ranking of *LXMV relative to OBHD.

However, dominance of OBHD over STAY-X and *LXMV alone does not guarantee that subject and finite verb/auxiliary occur in adjacent positions in French: so far, nothing rules out adjunction of an adverb to I'. The constraint in (3.13) prohibits adjunction to X'-level projections, penalizing adverb intervention between the subject and the finite verb in I⁰.¹²

(3.13) NO X'-ADJUNCTION (*X'-ADJ): There is no adjunction to the X'-level.

V-to-I movement being obligatory for all types of finite verbs in French (OBHD >> STAY-X, *LXMV), the finite verb is expected to appear in front of a medial adverb due to *X'-ADJ (compare candidate T3.4a vs. T3.4b,c). Remember that according to Belletti (1990, 1994), adverb placement between the subject and the finite verb/auxiliary involves subject movement across an IP-adjoined adverb (see section 2.1.2). Such movement of the subject is excluded by STAY-XP in the present analysis (see candidates T3.3e and T3.4e): movement may just take place if it is required by some constraint dominating STAY; more generally, a violation of some constraint is tolerated in an optimal output only if it helps to satisfy some higher ranking constraint. Hence, intervention of an adverb between the subject and the finite verb is predicted to be unacceptable in French.

T3.3		*LXMV	OBHD	STAY-X	STAY-XP	*X'-ADJ
	a	[_{IP} John _i looked _i [_{VP} probably [_{VP} t _i t _i at Mary]]]]	*!		*	*
☞	b	[_{IP} John _i e [_{VP} probably [_{VP} t _i looked at Mary]]]]		*		*
	c	[_{IP} John _i probably [_{I'} e [_{VP} t _i looked at Mary]]]]		*		*
☞	d	[_{IP} Probably [_{IP} John _i e [_{VP} t _i looked at Mary]]]]		*		*
	e	[_{IP} John _i [_{IP} probably [_{IP} t _i e [_{VP} t _i looked at Mary]]]]]]		*		**!

¹² Note that under a bare phrase structure approach (Chomsky 1994), *X'-ADJ opposes the occurrence of adverbs as "inner" specifiers; the constraint requires (*Merge with*) *Move* to precede *Merge (without Move)*.

Adjunction to X'-level projections has often been rejected for reasons of restrictiveness, limiting adverb adjunction to XPs. Yet as discussed in chapter 2.1, the renunciation of X'-adjunction necessitates the postulation of a cluster of functional projections and optional movement. Consequently, approaches allowing for X'-adjunction permit a more restrictive theory of empty functional heads and movement triggers - as captured by OBHD and STAY-X in the present analysis.

		OBHD	*X-ADJ	STAY-XP	STAY-X	*LXMV
T3.4	Jean aime probablement Marie. Jean likes probably Marie 'Jean probably likes Marie.'					
☞	a	[_{IP} Jean _i aime _i [_{VP} probablement [_{VP} t _i t _i Marie]]]]		*	*	*
	b	[_{IP} Jean _i e [_{VP} probablement [_{VP} t _i aime Marie]]]]	*!	*		
	c	[_{IP} Jean _i probablement [_T aime _i [_{VP} t _i t _i Marie]]]]		*!	*	*
☞	d	[_{IP} Probablement [_{IP} Jean _i aime _i [_{VP} t _i t _i Marie]]]]		*	*	*
	e	[_{IP} Jean _i [_{IP} probablement [_{IP} t _i aime _i [_{VP} t _i t _i Marie]]]]]]		**!	*	*

Note that the contrast between English and French with respect to V-to-I movement correlates with a contrast in the interpretation of an adverb in post-verbal position which is ambiguous between a sentential and a manner reading: in French, an adverb following a finite lexical verb is ambiguous in reading, while it may only receive a manner reading in English. Recall that manner adverbs have to be base-generated in VP-internal positions (see footnotes 26 and 32 in chapter 2). Since the finite verb moves to I⁰ in French, an adverb placed behind it could either be merged within VP (3.14a) or outside of VP (i.e. adjoined to VP as in (3.14b)), giving rise to the manner and sentential reading, respectively. By contrast, since V-to-I movement does not take place in English, an adverb following a lexical verb unambiguously occupies a right-peripheral position within VP and, consequently, may only be interpreted as manner adverb, (3.15a) vs. (3.15b).¹³ For the sentential reading to be accessible, the adverb has to occur in front of the lexical verb as in (3.15c).¹⁴

¹³ Subject-oriented adverbs cannot adjoin to the right, compare footnote 11. Hence, clause-final *cleverly* in (3.15) may only occupy a VP-internal position and thus has to be interpreted as manner adverb.

¹⁴ Just as French, German does not differentiate between lexical verbs and auxiliaries with regard to V-to-I/C movement; rather, finite verb placement depends on the type of clause, matrix vs. embedded (see section 3.3). For the majority of German adverbs, manner and sentential interpretation are distinguished morphologically (i), with the suffix *-(er)weise* marking sentential reading. (For an analysis of adverbial suffixes as a morphological reflex of the height of adverb attachment, see Alexiadou 2002b.) A morphologically ambiguous adverb, however, may receive either reading following a lexical verb in V2 position or preceding it in V-final position, (ii). Yet, adverb placement relative to arguments may disambiguate the reading or, at least, favor one of the interpretations, (iii). In addition, contrasts in the interpretation of a given order correlate with differences in intonation (see Pittner 1999).

- (i) a. Er hat schlauerweise geantwortet.
he has cleverly answered
'It was clever of him to answer.'
- b. Er hat schlau geantwortet.
he has cleverly answered
'He answered in a clever way.'
- (ii) a. ... weil er offensichtlich abgeschrieben hat.
because he obviously cheated has
i) '... because he obviously has cheated.'
ii) '... because he has cheated in an obvious way.'
- b. Ich gehe langsam.
I walk soon / slowly
i) 'I will leave soon.'
ii) 'I am walking in a slow way.'
- (iii) a. Du solltest langsam das Geschirr abspülen.
you should soon / slowly the dishes wash.up
i) 'You should wash up the dishes soon.'
ii) ?'You should wash up the dishes slowly.'

- (3.14) a. [IP Elle_j le_k repoussa_i [VP t_j (froide_{ment}) t_i t_k (froide_{ment})]] (De Cat 2000: 102)
 she him rejected coldly coldly
 'She rejected him in a cold way.'
- b. [IP Elle_j le_k repoussa_i [VP froide_{ment} [VP t_j t_i t_k]]]
 'It was cold of her to reject him.'
- (3.15) a. [IP She_j e [VP t_j (cleverly) answered (cleverly)]]
 'She answered in a clever way.'
- b. *[IP She_j answered_i [VP cleverly [VP t_j t_i]]]
 'It was clever of her to answer.'
- c. [IP She_j e [VP cleverly [VP t_j answered]]]

Hence, cross-linguistic contrasts in verb syntax may result in differences in adverb interpretation. Verb movement to I⁰ in French obscures the exact structural position of an adverb following the finite verb, giving rise to its ambiguous interpretation. By contrast, a post-verbal adverb in English must be merged within VP due to the lack of lexical verb movement and is thus restricted to a manner reading. Yet, placement of an adverb in front of the lexical verb in English is structurally ambiguous and, consequently, permits both clausal and manner interpretation of the adverb.¹⁵

-
- b. Du solltest das Geschirr langsam abspülen.
 i) ?'You should wash up the dishes soon.'
 ii) 'You should wash up the dishes slowly.'

¹⁵ Due to the structural ambiguity of the adverb's attachment site (VP-internal vs. VP-external), placement of an ambiguous adverb between a finite auxiliary and a lexical verb allows for both manner and sentential reading in both languages, English and French. (Yet, note that only subject-related manner adverbs may precede a lexical verb within VP, see e.g. Bowers 1993, Blight 1997, Ernst 2002, Pittner 2002.)

- (i) a. [IP Bill_j has_i [AUXP t_i [VP t_j carefully ironed his shirts]]]
 'Bill has ironed his shirts in a careful way.'
- b. [IP Bill_j has_i [AUXP carefully [AUXP t_i [VP t_j ironed his shirts]]]]
 'Bill carefully has ironed his shirts.'
- (ii) a. [IP Jean_j a_i [AUXP t_i [VP t_j intelligen_{ment} parlé avec sa mère]]] (Costa 1998: 78)
 Jean has intelligently spoken with his mother
 'Jean has spoken to his mother in an intelligent way.'
- b. [IP Jean_j a_i [AUXP intelligen_{ment} [AUXP t_i [VP t_j parlé avec sa mère]]]]
 'Jean intelligently has spoken to his mother.'

Note that unlike English, an adverb preceding a finite lexical verb in Italian may only receive a clausal reading, indicating that the finite verb leaves VP as in French, compare (iiia) vs. (iiib) (see also section 2.1.2). For an adverb to receive a manner interpretation, it has to follow the finite lexical verb as in (iiic).

- (iii) a. [IP Gianni_j cortesemente [I' saluta_i [VP t_j t_i il suo amico]]]
 Gianni nicely greets the his friend
 'It is nice of Gianni to greet his friend.'
- b. *[IP Gianni_j e [VP t_j cortesemente saluta il suo amico]]]
 'Gianni greets his friend in a nice way.'
- c. [IP Gianni_j saluta_i [VP t_j cordialmente t_i il suo amico]]]
 Gianni greets cordially the his friend
 'Gianni greets his friend cordially.'

Note that however low *X'-ADJ may be ranked, the constraint predicts pre-auxiliary adverb placement (as I'-adjunction) to be impossible unless some dominating constraint explicitly requires it. The fact that adverbs may intervene between the subject and the finite auxiliary in English points out that there are some constraints that motivate adverb placement in front of a finite auxiliary which will be introduced below (sections 3.2.2, 3.4, and 4.4). Recall that the various approaches to the cross-linguistic contrasts in the ordering of adverbs and finite verbs/auxiliaries discussed in section 2.1 all assume that adverb adjunction to I' is strictly prohibited (at least in French). OT permits regarding the prohibition against I'-adjunction as violable: depending on the ranking of *X'-ADJ, I'-adjunction of an adverb might be possible in a certain language. As will be shown in section 3.4, OBHD outranks *X'-ADJ in English; it is thus expected that Aux-to-I movement is obligatory and that pre-auxiliary occurrence of an adverb results from its adjunction to I'. The prediction that a finite auxiliary always moves to the highest head position in English matrix clauses made by the ranking OBHD >> STAY-X >> *X'-ADJ is supported by the fact that non-subject questions give rise to subject-auxiliary inversion. To account for the variability in pre- and post-auxiliary adverb placement in English by optional movement of the finite auxiliary (as in Baker 1991, compare 2.1.1), the constraints OBHD and STAY-X would need to be tied¹⁶: in case the tie is resolved as OBHD >> STAY-X, post-auxiliary adverb placement is optimal (see candidate T3.5a); if it is resolved as STAY-X >> OBHD, adverb occurrence in pre-auxiliary position as in candidate T3.5b is expected.

T3.5		OBHD	STAY-X
☞ a	[_{IP} John _i has _i [_{AuxP} probably [_{AuxP} t _i [_{VP} t _i kissed Mary]]]]		*
☞ b	[_{IP} John _i e [_{AuxP} probably [_{AuxP} has _i [_{VP} t _i kissed Mary]]]]	*	

Hence, the flexibility of adverb positioning relative to a finite auxiliary might be accounted for by a tie between OBHD and STAY-X, predicting auxiliary movement to be optional. Yet, subject-auxiliary inversion is obligatory in non-subject matrix questions.¹⁷ WHSPEC requires a

¹⁶ In the present analysis, a constraint tie is viewed as co-existence of multiple constraint rankings in a single language; i.e., in case two constraints A and B are tied in a language, the language allows for both of their relative rankings, A >> B and B >> A. Regarding other concepts of constraint ties, see Müller 2003.

In addition, note that a constraint tie between OBHD and STAY-X may hardly account for the influence of stress on the choice between pre- and post-auxiliary adverb placement (compare section 1.1). Moreover, though a prohibition against movement of a stressed auxiliary dominating OBHD could capture the fact that a wide scope adverb usually precedes a stressed auxiliary (the adverb is merged above the auxiliary which cannot move across it), such a prohibition would predict that a stressed auxiliary cannot undergo subject-auxiliary inversion, contrary to fact.

- (i) a. Not only DID he go to school, he wanted to as well.
b. Not only CAN I sing, I'm going to tonight.

¹⁷ Unlike matrix questions, embedded questions do not give rise to subject-auxiliary inversion.

- (i) a. What will John give to Mary?
b. *What John will give to Mary?

wh-phrase to occur in the highest specifier position of the clause in which it takes scope (see Grimshaw 1997, Müller 1997, Vikner 2001a). CP being projected in non-subject questions (WHSPEC >> STAY-XP), auxiliary movement to C⁰ is required by OBHD.¹⁸ However, a tie between OBHD and STAY-X would falsely predict subject-auxiliary inversion to be optional in questions: under the ranking STAY-X >> OBHD, subject-auxiliary inversion is expected not to take place as in candidate T3.6c. Only if OBHD unequivocally dominates STAY-X is Aux-to-C movement expected to be mandatory in non-subject matrix questions (compare Tableau T3.7).¹⁹

- (ii) a. *I wonder what will John give to Mary.
b. I wonder what John will give to Mary.

According to Grimshaw (1997), the contrast between matrix and embedded questions with regard to subject-auxiliary inversion is due to the constraint in (iii):

- (iii) PURITY OF EXTENDED PROJECTION (PUREEP): No adjunction takes place to the highest node in a subordinate extended projection; and no movement takes place into the highest head of a subordinate extended projection. (Grimshaw 1997: 374)

PUREEP referring to subordinate clauses only, the ranking PUREEP >> OBHD >> STAY-X predicts that subject-auxiliary inversion has to take place in matrix questions (see Tableau T3.7) whereas it is blocked in embedded questions, as shown in Tableau T(i): the finite auxiliary only raises up to I⁰.

T(i)	<i>I wonder ...</i>	WHSPEC	PUREEP	OBHD	STAY-X
a	[_{CP} what _k will _i [_{IP} John _i t _i [_{AuxP} t _i [_{VP} t _j give t _k to Mary]]]]]		*!		**
b	[_{CP} what _k e [_{IP} John _i will _i [_{AuxP} t _i [_{VP} t _j give t _k to Mary]]]]]			*	*
c	[_{CP} what _k e [_{IP} John _i e [_{AuxP} will [_{VP} t _j give t _k to Mary]]]]]			**!	

¹⁸ Since WHSPEC only requires that a *wh*-phrase occur in the highest specifier position of a clause (and not that it appear in Spec,CP), a *wh*-subject is expected to occur in Spec,IP in its clause: due to STAY-XP, further local movement of the *wh*-subject to Spec,CP is blocked and consequently, CP is not projected (OBHD, STAY-X). Assuming that expletive *do* is not inserted in I⁰ in affirmative clauses (compare (i) vs. (ii)), but needs to occur in C⁰ in the absence of another finite auxiliary (iii), the lack of *do*-Support in subject questions follows from the fact that they do not project CP (iv).

- (i) a. [_{IP} Bill_j e [_{VP} always [_{VP} t_j dances with Sue]]]
b. * [_{IP} Bill_j does [_{VP} always [_{VP} t_j dance with Sue]]] (* without emphasis)
- (ii) a. * [_{IP} Bill_j e [_{NegP} not [_{VP} t_j dances with Sue]]]
b. [_{IP} Bill_j does [_{NegP} not [_{VP} t_j dance with Sue]]]
- (iii) a. * [_{CP} Who_k e [_{IP} Bill_j e [_{VP} t_j danced with]]]
b. [_{CP} Who_k did_i [_{IP} Bill_j t_i [_{VP} t_j dance with]]]
- (iv) a. [_{IP} Who_j e [_{VP} t_j danced with Sue]]
b. * [_{IP} Who_j did [_{VP} t_j dance with Sue]] (* without emphasis)
c. * [_{CP} Who_j did_i [_{IP} t_j t_i [_{VP} t_j dance with Sue]]]

For an OT approaches to *do*-Support see Grimshaw 1997, Bresnan 2000, and Vikner 2001a,c.

¹⁹ In case OBHD were taken to be differentiated with regard to the syntactic category whose head is to be filled - e.g. OBHD_{Infl}, OBHD_{Comp} etc. -, the ranking OBHD_{Comp} >> STAY-X <<>> OBHD_{Infl} could predict that Aux-to-C movement is obligatory while Aux-to-I movement is optional in English. Nevertheless, a (violable or inviolable) constraint prohibiting adjunction to I' would still be necessary to rule out intervention of an adverb between the subject and the finite verb in French. Hence, the analysis presented above is simpler, relying on an undifferentiated constraint OBHD, and will thus be pursued here.

T3.6		WHSPEC	OBHD	STAY-X
☞	a	[_{CP} What _k has _i [_{IP} John _j t _i [_{AuxP} t _i [_{VP} t _j given t _k to Mary]]]]]		**
	b	[_{CP} What _k e [_{IP} John _j has _i [_{AuxP} t _i [_{VP} t _j given t _k to Mary]]]]]	*!	*
⊗	c	[_{CP} What _k e [_{IP} John _j e [_{AuxP} has [_{VP} t _j given t _k to Mary]]]]]	**	

T3.7		WHSPEC	OBHD	STAY-X
☞	a	[_{CP} What _k has _i [_{IP} John _j t _i [_{AuxP} t _i [_{VP} t _j given t _k to Mary]]]]]		**
	b	[_{CP} What _k e [_{IP} John _j has _i [_{AuxP} t _i [_{VP} t _j given t _k to Mary]]]]]	*!	*
	c	[_{CP} What _k e [_{IP} John _j e [_{AuxP} has [_{VP} t _j given t _k to Mary]]]]]	*!*	

Hence, accounting for the availability of pre-auxiliary positioning of a wide scope adverb in English by assuming that movement of the finite auxiliary is optional (i.e., that OBHD and STAY are tied) makes wrong predictions with regard to subject-auxiliary inversion in questions. Rather, OBHD should unequivocally outrank STAY-X, predicting that the finite auxiliary obligatorily targets the highest head position in a matrix clause - C⁰ in non-subject questions, I⁰ otherwise. As mentioned above, pre-auxiliary adverb placement may then arise by I'-adjunction in English if required by some constraint dominating *X'-ADJ. The fact that adverb intervention between the subject and the finite verb is strictly prohibited in French indicates that *X'-ADJ and OBHD outrank any constraint that could demand for adverb placement in front of the finite verb in that language.

3.2.2 Excursus: The Ordering of Adverbs and Negation

As shown in the last section, an adverb with wide scope reading may follow a finite modal verb (compare example (3.8) above): MODIFIER requires that the adverb is attached somewhere above the base position of the auxiliary; adjoined to AuxP, it follows the modal verb moved to I⁰ due to OBHD >> STAY-X. Yet while adverbs and finite auxiliaries do not necessarily reflect their scopal relation in surface order, linearization of adverbs and negation has to correspond to their relative scope in English and French as well as within the German middle field: if the adverb takes scope over negation, it has to precede a negation marker such as English *not*, French *pas* ('not'), or German *nicht* ('not'), whereas the adverb follows these negation markers in those cases in which it takes narrow scope. The sentences in (3.16, 3.17) are unambiguous.

- (3.16) a. Bill did regularly not go to school.
 b. Bill did not regularly go to school.

- (3.17) a. Karl ist regelmäßig nicht zur Schule gegangen.
 Karl is regularly not to.the school gone
 'Karl did regularly not go to school.'
- b. Karl ist nicht regelmäßig zur Schule gegangen.
 'Karl did not regularly go to school.'

Note that English sentential negation may be cliticized onto the finite auxiliary. Just as *not*, the complex *auxiliary+n't* has to precede or follow an adverb, depending on the relative scope between the adverb and negation.²⁰ By contrast, the French clitic negative marker *ne* always precedes a medial adverb: I'-adjunction being strictly prohibited in French, the adverb has to follow *ne*, which is attached to the finite verb; the scopal relation between the adverb and negation is reflected by the adverb's position relative to *pas* ('not') in (3.19).

- (3.18) a. John (probably) hasn't (*probably) kissed Mary.
 b. John often hasn't gone to the movies with us.
 c. John hasn't often gone to the movies with us.
- (3.19) a. Jean n' aime (probablement) pas (*probablement) Marie.
 Jean not likes probably not probably Marie
 'Jean probably doesn't like Marie.'
- b. Jean n' a souvent pas appelé Marie.
 Jean not has often not called Marie
 'Jean often hasn't called Marie.'
- c. Jean n'a pas souvent appelé Marie.
 'Jean hasn't often called Marie.'

According to MODIFIER, the adverb has to be merged somewhere above the base position of the negation marker(s) in case it outscopes negation; i.e., it has to be placed above NegP. In view of the fact that a modal verb may move across a wide scope adverb, the question arises why the complex *auxiliary+n't* in English cannot be placed in front of an adverb that takes scope over negation whereas this positioning is possible for French *ne+verb*. Assume that attachment of a clitic to its host is required by a constraint CLITIC.²¹ The ranking CLITIC >> STAY-X in English and French predicts cliticization to take place: being base-generated in NegP, English *n't* and French *ne* have to attach to the finite verb/auxiliary in I⁰ (see Tableaux T3.8 and T3.9).

²⁰ Note that just as in affirmative clauses, a finite auxiliary with cliticized *n't* may take narrow scope with respect to a following adverb which in turn is within the scope of negation:

- (i) Lionel can't often climb that tree. (Cormack & Smith 1998: 19)
 'Lionel is not often able to climb that tree.'

²¹ Presumably, morphosyntactic constraints regulate whether a clitic attaches to the right or to the left of its host in a given language.

		CLITIC	STAY-X
T3.8			
☞ a	$[_{IP} \text{John}_i \text{ has}_i \text{-n't}_k [_{NegP} t_k [_{AuxP} t_i [_{VP} t_j \text{ kissed Mary}]]]]]$		**
b	$[_{IP} \text{John}_i \text{ has}_i [_{NegP} \text{n't} [_{AuxP} t_i [_{VP} t_j \text{ kissed Mary}]]]]]$	*!	*

		CLITIC	STAY-X
T3.9	Jean n' aime pas Marie. Jean not likes not Marie 'Jean doesn't like Marie.'		
☞ a	$[_{IP} \text{Jean}_i \text{ ne}_k \text{-aime}_i [_{NegP} \text{pas } t_k [_{VP} t_j t_i \text{ Marie}]]]]]$		**
b	$[_{IP} \text{Jean}_i \text{ aime}_i [_{NegP} \text{pas ne} [_{VP} t_j t_i \text{ Marie}]]]]]$	*!	*

Apparently, English and French differ in whether or not movement of the negative clitic may cross an adverb. Note that just as clitic *n't* cannot move across an adverb in English, adverb movement cannot cross another scope-bearing element. For example, although movement of an adverb to clause-initial position is obviously possible - subject-oriented and manner adverbs which cannot be merged in this position may nonetheless appear clause-initially (see section 2.1.4) -, it is unacceptable if the adverb is to be interpreted within the scope of some element in the auxiliary range; in other words, in case the adverb would have to move across some scopal element on its way to clause-initial position, movement is prohibited. Arguments, by contrast, can be fronted across a scopal element, (3.21). Moreover, adverb fronting cannot cross a clause boundary (3.22), while argument topicalization as in (3.23) can.²²

- (3.20) a. Icily_i, he spoke to the lieutenant t_i. (Ernst 2002: 420)
 b. *Icily_i, he didn't speak to the lieutenant t_i. (Ernst 2002: 421)
 c. *Icily_i, he probably / craftily / always / still spoke to the lieutenant t_i.
 d. *Icily_i, you should speak to the lieutenant t_i.
- (3.21) a. Sophie_i, Edward likes t_i.
 b. Katie_i, Edward hasn't been engaged to t_i.
 c. Mary_i, Edward probably admires t_i.
 d. Susan_i, Edward should marry t_i.
- (3.22) a. Carefully_i, he eased the violin out of its case t_i. (Ernst 2002: 423)
 b. *Carefully_i, they saw him ease the violin out of its case t_i.
 c. *Carefully_i, they said that he eased the violin out of its case t_i.
- (3.23) a. The violin_i, he eased t_i out of its case. (Ernst 2002: 423)
 b. The violin_i, they saw him ease t_i out of its case.
 c. The violin_i, they said that he eased t_i out of its case.

Ernst (2002) accounts for the restrictions on adverb fronting by the following principle:

²² For more on adverb fronting, see section 3.5.2.

- (3.24) Scope Matching Constraint on Adjunct Topicalization (Ernst 2002: 420)
- a. The scope of a topicalized adjunct must match that of its base position.
 - b. Scope matching holds if the lexical material is identical except for "presupposed tense" and the base position copy of the adjunct.

Ernst's Scope Matching Constraint is not obeyed in the ungrammatical sentences in (3.20) and (3.22), the scope of the adverb's surface position differs from that of its base position: in the fronted position, the adverb in (3.20b,c,d) c-commands some scope-bearing element it does not take scope over in its base position; in (3.22b,c), the adverb is to modify the embedded predicate but c-commands the matrix verb.

Assume that the requirement on scope matching is more general, demanding the scope of the head and foot position of any chain of an adverbial to be identical.

- (3.25) SCOPEMATCHING (SCMA): The scope of the head of a chain of an adverbial matches the scope of its foot.²³

Remember that base-positioning of an adverb is determined by MODIFIER. The ban on adverb fronting across a scopal element may now be traced back to the dominance of SCMA over the constraint that requires adverb placement in pre-subject position, TOPIC (see section 3.5): in accordance with TOPIC, a topical phrase appears in clause-initial position unless that placement results in a violation of SCMA, compare Tableaux T3.10 and T3.11.²⁴

²³ As in Ernst (2002), it will be assumed that tense may be ignored by SCMA, see condition (3.24b) above. Adverb fronting across aspectual auxiliaries is thus expected to be possible:

- (i) a. ?Icily, he had spoken to the lieutenant. (Ernst 2002: 422)
 b. ?Icily, he would speak to the lieutenant.
 c. ??Icily, he was speaking to the lieutenant.

²⁴ Note that the Minimal Link Condition (MLC, Chomsky 1995) apparently fails to account for the prohibition against adverb fronting across a scope-bearing element. The MLC disallows movement of some element α in case there is a closer element β which could be attracted.

- (i) Minimal Link Condition: (Chomsky 1995: 311)
 K attracts α only if there is no β , β closer to K than α , such that K attracts β .

Wh-movement and focalization of an adverb across a scopal element is acceptable (compare examples (3.26) and (iii, iv) in footnote 25); they do not violate the MLC: K may attract the (lower) adverbial α since the intervening element β does not bear [+wh] or [+foc] triggering *wh*- and focus-movement, respectively. Yet, it remains unclear which kind of feature the fronted adverb in (3.20) could be endowed with that is shared by the intervening adverb, modal verb, and negation such that adverb fronting is ruled out by the MLC – especially in view of the fact that K would have to be indifferent with respect to the phrasal status of the attracted element, XP or X⁰. In addition, it seems to be impossible to rule out long-distance adverb fronting as in (3.22) by the MLC: which element qualifies as intervening element β such that movement of an adverb α (but not of an argument) out of a subordinate clause is excluded?

T3.10		SCMA	TOPIC	STAY-XP
a	[_{IP} John _i has _i [_{AuxP} t _i [_{VP} t _i spoken to the lieutenant icily _[+top]]]]]		*!	*
b	[_{IP} Icily _{[+top]k} [_{IP} John _i has _i [_{AuxP} t _i [_{VP} t _i spoken to the lieutenant t _k]]]]]]			**

T3.11		SCMA	TOPIC	STAY-XP
a	[_{IP} John _i has _i [_{NegP} not [_{AuxP} t _i [_{VP} t _i spoken to the lieutenant icily _[+top]]]]]]]		*	*
b	[_{IP} Icily _{[+top]k} [_{IP} John _i has _i [_{NegP} not [_{AuxP} t _i [_{VP} t _i spoken to the lieutenant t _k]]]]]]]]	*!		**

Note that in contrast to topicalization, *wh*-movement of an adverbial may cross another scope-bearing element as well as clause-boundaries in English (3.26): WHSPEC obviously outranks SCMA.²⁵

- (3.26) a. How loudly does she usually scream?
 b. How fast can you run?
 c. How quietly did you say that he had come in? (Ernst 2002: 423)
 d. When do you think that he will be there? (Nakajima 1991: 343)

Let's return to the negative clitics and suppose that negation markers are adverbial in nature and, consequently, affected by SCMA. Under this assumption, the language-specific ranking of SCMA to *X'-ADJ and CLITIC may account for the contrast in adverb placement relative to

²⁵ Similarly, the clause-initial adverb in Negative Inversion constructions may take narrow scope with respect to a following modal verb; i.e., the constraint requiring clause-initial placement of the negative adverb has to dominate SCMA. Likewise, the constraint triggering focus fronting outranks SCMA in English, permitting a focused adverb to be extracted out of its clause (see e.g. Nakajima 1991).

- (i) Never must you do such a thing. (Cormack & Smith 1998: 12)
 'It is necessary that you never do such a thing.'
 (ii) a. *Tomorrow I promised that he would be there t. (Nakajima 1991: 343)
 b. TOMORROW I promised that he would be there t. (Nakajima 1991: 360)

Furthermore, Rizzi (2001) claims that an adverb can be fronted across a higher adverb in Italian only in case it is focused (iii) and that in French, simple adverb fronting cannot cross another adverb while focalization of the lower adverb in a cleft construction is acceptable.

- (iii) a. Rapidamente, i tecnici hanno (*probabilmente) risolto il problema.
 rapidly the technicians have probably resolved the problem (Rizzi 2001: 102)
 'The technicians have probably resolved the problem rapidly.'
 b. RAPIDAMENTE i tecnici hanno (probabilmente) risolto il problema.
 (iv) a. *Energiquement, il a probablement travaillé.
 energetically he has probably worked (Rizzi 2001: 103)
 'He has probably worked energetically.'
 b. C'est énergiquement qu' il a probablement travaillé.
 it is energetically that he has probably worked
 'It is energetically that he has probably worked.'

clitic negation markers in English and French. In French, *X'-ADJ and CLITIC outrank SCMA (see Tableau T3.12): the clitic has to attach to the finite verb in I⁰, as required by CLITIC; I'-adjunction of an adverb being prohibited (*X'-ADJ), movement of the clitic is predicted to be able to cross a medial adverb (violating SCMA). In English, by contrast, SCMA and CLITIC seem to dominate *X'-ADJ: a wide scope adverb is merged above the surface position of the finite auxiliary to which *n't* attaches, giving rise to pre-auxiliary adverb positioning, as illustrated in Tableau T3.13.^{26,27}

		*X'-ADJ	CLITIC	SCMA
T3.12	Jean n' aime probablement pas Marie. Jean not likes probably not Marie 'Jean probably doesn't like Marie.'			
☞ a	[_{IP} Jean _i ne _k -aime _i [_{NegP} probablement [_{NegP} pas t _k [_{VP} t _j t _i Marie]]]]]			*
b	[_{IP} Jean _i aime _i [_{NegP} probablement [_{NegP} pas ne [_{VP} t _j t _i Marie]]]]]		*!	
c	[_{IP} Jean _i probablement [_{I'} ne _k -aime _i [_{NegP} pas t _k [_{VP} t _j t _i Marie]]]]]	*!		

		CLITIC	SCMA	*X'-ADJ
T3.13				
a	[_{IP} John _i has _i -n't _k [_{NegP} probably [_{NegP} t _k [_{AuxP} t _i [_{VP} t _j kissed Mary]]]]]]]		*!	
b	[_{IP} John _i has _i [_{NegP} probably [_{NegP} n't [_{AuxP} t _i [_{VP} t _j kissed Mary]]]]]]]	*!		
☞ c	[_{IP} John _i probably [_{I'} has _i -n't _k [_{NegP} t _k [_{AuxP} t _i [_{VP} t _j kissed Mary]]]]]]]			*

Moreover, the lack of inverse scope in (3.27)-(3.32) indicates that neither in English nor in French is there a constraint dominating SCMA that would permit movement of an adverb or a (non-clitic) negation marker to a position with different scope properties within the auxiliary range.

(3.27) a. John has often not phoned Mary.

b. *John has often_i not t_i phoned Mary.

(3.28) a. John has not often phoned Mary.

b. *John has not_i often t_i phoned Mary.

(3.29) a. The speaker never intentionally strays from the topic. (Ernst 1998: 140)

²⁶ As will be shown in the next sections, clause-initial placement of an adverb is ruled out in certain contexts; i.e., IP-adjunction of an adverb is disfavored by some constraints on information-structural ordering. Otherwise, in both English and French, strict clause-initial placement of a wide scope adverb would be expected in negative clauses because of SCMA and *X'-ADJ.

²⁷ As in English, a wide scope adverb should precede the negative clitic *non* in Italian. Assuming that Italian and French are similar in verb movement behavior, i.e. that both finite lexical verbs and auxiliaries occur in I⁰ (compare section 2.1.2 and footnote 15 above), the contrast in (i) indicates that Italian differs from French in the relative ranking of SCMA and *X'-ADJ, allowing for I'-adjunction to ensure that scopal relations of adverbial items are reflected in surface order (SCMA, CLITIC >> *X'-ADJ).

(i) a. Gianni (probabilmente) ha (probabilmente) sbagliato.

Gianni probably has probably made.mistakes
'Gianni probably made mistakes.'

b. Gianni (probabilmente) non ha (?*probabilmente) sbagliato.

Gianni probably not has probably made.mistakes
'Gianni probably hasn't made any mistakes.'

- (3.30) a. *The speaker never_i intentionally t_i strays from the topic.
 Jean n' a souvent pas appelé Marie.
 Jean not has often not called Marie
 'Jean often hasn't called Marie.'
- b. *Jean n'a souvent_i pas t_i appelé Marie.
- (3.31) a. Jean n'a pas souvent appelé Marie.
 'Jean hasn't often called Marie.'
- b. *Jean n'a pas_i souvent t_i appelé Marie.
- (3.32) a. Daniel avait stupidement parfois oublié de dire au service
 Daniel had stupidly sometimes forgotten to say to.the service
 de sécurité qu' il partait. (Ernst 2002: 367)
 of security that he left
 'Daniel had stupidly sometimes forgotten to say to the security service that he
 was leaving.'
- b. *Daniel avait parfois_i stupidement t_i oublié de dire au service de sécurité qu'il
 partait.

3.2.3 The Ordering of Narrow Scope Adverbs and Finite Verbs/Auxiliaries

While an adverb with wide scope reading may occur on either side of a finite auxiliary in English (3.33), a narrow scope adverb is restricted to the post-auxiliary position (3.34).²⁸ In case the adverb is specified in the input as taking narrow scope with respect to the finite auxiliary, GEN may only produce candidates in which the adverb is merged below the base position of the auxiliary due to the inviolable constraint MODIFIER. As illustrated in Tableau T3.14, movement of a narrow scope adverb to some position in front of the auxiliary is excluded by SCMA. Consequently, pre-auxiliary adverb occurrence may only be base-generated and is thus restrained to a wide scope interpretation.

- (3.33) a. [_{IP} Eddie_j can_i [_{AuxP} frequently [_{AuxP} t_i [_{VP} t_j lift 200 kilos]]]]
 b. [_{IP} Eddie_j frequently [_{I'} can_i [_{AuxP} t_i [_{VP} t_j lift 200 kilos]]]]
 'Eddie is frequently able to lift 200 kilos.'
- (3.34) a. [_{IP} Eddie_j can_i [_{AuxP} t_i [_{AuxP} frequently [_{VP} t_j lift 200 kilos]]]]
 'Eddie is able to lift 200 kilos several times (in a row).'
- b. *[[_{IP} Eddie_j frequently_k [_{I'} can_i [_{AuxP} t_i [_{AuxP} t_k [_{VP} t_j lift 200 kilos]]]]]]
 'Eddie is able to lift 200 kilos several times (in a row).'

²⁸ Note that even if the adverb is specified in the input as taking narrow scope relative to negation, but outscoping the finite auxiliary, its occurrence in post-auxiliary position is expected: though the auxiliary is merged below the adverb (MODIFIER), it has to move to I⁰ due to OBHD >> STAY-X; consequently, it precedes the adverb that is base-generated below negation and cannot move in front of it (SCMA).

(i) [_{IP} Lionel_j can_i-n't_k [_{NegP} t_k [_{AuxP} often [_{AuxP} t_i [_{VP} t_j climb that tree]]]]] (Cormack & Smith 1998: 19)

T3.14		SCMA	STAY-X	STAY-XP	*X'-ADJ
☞	a	[_{IP} John _j must _i [_{AuxP} t _i [_{VP} often [_{VP} t _j go to the gym]]]]]		*	*
	b	[_{IP} John _j often _k [_{I'} must _i [_{AuxP} t _i [_{VP} t _k [_{VP} t _j go to the gym]]]]]]]	*!	*	**
	c	[_{IP} Often _k [_{IP} John _j must _i [_{AuxP} t _i [_{VP} t _k [_{VP} t _j go to the gym]]]]]]]	*!	*	**

Note that different meanings may be reflected by the same surface order: adverb placement in post-auxiliary position is optimal under both wide and narrow scope reading of the adverb (compare Tableau T3.1 and T3.14). Giving rise to surface-identical orders, movement of the finite auxiliary obscures the fact that the adverb occupies distinct structural positions - adjoined above or below the base position of the auxiliary, depending on its scope.²⁹

Since two elements selecting for the same semantic type permit both scope options (see sections 2.2 and 3.1), it is predicted that an EVENT-selecting adverb might be specified in the input as taking wide or narrow scope relative to an aspectual auxiliary - just as it can take wide or narrow scope with respect to a deontic modal (compare (3.33, 3.34) above).³⁰ According to Shaer (2000), adverb positioning in front of a finite aspectual auxiliary and behind it may correlate with subtle interpretative contrasts (see also Ungerer 1988): while (3.35a) may express that Louisa has been rude to leave, (3.35b) is to be interpreted as 'Louisa is rude to have left'. Under the assumption that perfect forms specify the post-time of a situation designated by the main VP, the contrast in (3.35) is based on a difference in the temporal locations of the situations to which the adverb is related (see also Shaer 1998 and Kamp & Reyle 1993).

²⁹ Note that due to the fact that adverb placement in front of a finite auxiliary presupposes wide scope of the adverb, the reading of a modal verb (root vs. epistemic) may be restricted, depending on which type of adverb precedes it. For example, a frequency adverb restrains a following modal verb to its deontic reading: selecting for a lower semantic type than an epistemic modal, a frequency adverb cannot take scope over an epistemic modal (see section 3.1) and, consequently, cannot precede it. (Only adverbs selecting for the same or a higher type of semantic argument than the epistemic modal can outscope and thus precede the modal, such as the discourse-oriented adverb in (ii).) Wide scope of a frequency adverb over a deontic modal, by contrast, is permissible, and may give rise to the order *adverb - modal*. Post-auxiliary adverb placement being optimal under a wide and narrow scope reading of the adverb, a preceding modal may be interpreted as epistemic or deontic, (iii).

- (i) Carol frequently must be in her office.
'Carol is frequently forced to be in her office.'
- (ii) Carol honestly must be in her office.
i) 'I tell you honestly: It is predictable that Carol is in her office.'
ii) 'I tell you honestly: Carol is forced to be in her office.'
- (iii) Carol must frequently be in her office.
i) 'Carol is frequently forced to be in her office.'
ii) 'Carol is forced to be in her office frequently.'
iii) 'It is predictable that Carol is frequently in her office.'

³⁰ Remember that subject-oriented adverbs select for a specific subtype of EVENTS (namely, controllable ones), restricting them to narrow scope relative to modal verbs (compare section 2.2). Consequently, they are expected to be unable to precede a finite modal, while their placement in front of an aspectual auxiliary, which does not interfere with the controllability of EVENTS, is possible, (3.35b).

- (3.35) a. Louisa has rudely left the party without saying good-bye. (Shaer 2000: 277)
 b. Louisa rudely has left the party without saying good-bye.

3.2.4 The Ordering of Adverbs and Non-Finite Verbs/Auxiliaries

While an adverb takes scope over a following non-finite auxiliary in both English and French, these languages differ in the scope options of the order *non-finite auxiliary - adverb*. In English, an adverb may only be interpreted as taking narrow scope relative to a non-finite auxiliary it follows; both sentences in (3.36) are unambiguous: while (3.36a) expresses that the event of their being knocked off their feet occurred frequently, (3.36b) describes one event in which they were knocked off their feet many times during one training session (see Ernst 2002). In French, by contrast, an adverb may take wide or narrow scope with respect to a preceding non-finite modal: (3.37b) is ambiguous. Moreover, adverbs that take a propositional argument - such as the epistemic adverbs in (3.38) - may follow a non-finite verb in French, but not in English.

- (3.36) a. They have frequently been knocked off their feet during training.
 (Ernst 2002: 348)
 b. They have been frequently knocked off their feet during training.
- (3.37) a. Jean a régulièrement du prendre son remède.
 Jean has regularly had.to take his medicine
 i) 'Jean has regularly had to take his medicine.'
 ii) #'Jean has had to take his medicine regularly.'
- b. Jean a du régulièrement prendre son remède.
 i) 'Jean has regularly had to take his medicine.'
 ii) 'Jean has had to take his medicine regularly.'
- (3.38) a. Marc avait (peut-être) été (peut-être) refusé (peut-être) par la majorité
 Marc had perhaps been perhaps refused perhaps by the majority
 des candidates. (Ernst 2002: 375)
 of.the candidates
 'Marc had perhaps been refused by the majority of the candidates.'
- b. John (probably) has (probably) been (*probably) elected (*probably) by the majority of the candidates.

In case an adverb is specified in the input as taking narrow scope with respect to a non-finite auxiliary, it has to be merged below the auxiliary (MODIFIER). Narrow scope reading relative to a non-finite auxiliary is only possible for adverbs that select EVENTS (or SPECIFIED EVENTS), such as frequency or subject-oriented adverbs; adverbs that take higher semantic types necessarily outscope a non-finite verb (compare sections 2.2 and 3.1). As shown in the optimal candidate T3.15a, a narrow scope adverb surfaces in its base position behind the non-finite auxiliary. Although SCMA ignores tense and aspectual information for considerations of

scope matching (see footnote 23), movement of the narrow scope adverb to some position in front of the non-finite auxiliary is excluded by STAY-XP.

T3.15		SCMA	STAY-XP	*X'-ADJ
☞	a [IP They _j have _i [AuxP1 t _i [AuxP2 been [VP frequently [VP t _j knocked off their feet]]]]]]		*	
	b [IP They _j have _i [AuxP1 t _i [AuxP2 frequently _k [AuxP2 been [VP t _k [VP t _j knocked off their feet]]]]]]]]		**!	
	c [IP They _j have _i [AuxP1 frequently _k [AuxP1 t _i [AuxP2 been [VP t _k [VP t _j knocked off their feet]]]]]]]]		**!	
	d [IP They _j frequently _k [I' have _i [AuxP1 t _i [AuxP2 been [VP t _k [VP t _j knocked off their feet]]]]]]]]		**!	*

Adverb movement in the auxiliary range being ruled out by STAY-XP (or SCMA), an adverb is expected to take scope over a following auxiliary. In other words, adverb placement in front of an auxiliary may only arise by base-generation which presupposes wider scope of the adverb (MODIFIER). Yet the wide scope reading of an adverb is also accessible behind a non-finite auxiliary in French (3.37b), but not in English (3.36b), indicating that the two languages differ in the availability of non-finite verb movement: MODIFIER prescribes base-generation of the wide scope adverb above the base position of the auxiliary in both languages; hence, occurrence of an adverb with wide scope reading behind a non-finite auxiliary has to involve movement of the auxiliary.

Following Ernst's (2002) approach, it will be assumed that non-finite verbs may only adjoin to the next highest head occupied by a trace (due to a prohibition against excorporation). This adjunction process is considered to create an extended chain via co-indexation, allowing an adverb to take scope over the whole chain if it c-commands some member of the chain.³¹ As a consequence, an adverb may be merged below an auxiliary it is to outscope; i.e., the structures in (3.39) (compare (3.38a) above) may be produced by GEN although the PROPOSITION-selecting adverb is merged below the base positions of the EVENT-selecting auxiliaries.

³¹ In terms of MODIFIER, extended chain formation should permit an adverb to be construed as sister to that constituent that immediately dominates the head of the extended chain in case the adverb c-commands some lower member of it (i.e., if the adverb is sister to a constituent dominating some member of the extended chain). However, this mechanism should only affect the semantic relation between an adverb and the members of the extended chain; it should not allow an adverb to be interpreted as outscoping an intervening element. I.e., while *peut-être* ('perhaps') in (3.39) has to be able to take scope over the preceding auxiliaries, the unacceptability of (i) seems to indicate that it is impossible to interpret *peut-être* as taking scope over *souvent* ('often') in that order. The sentence in (i) would thus be excluded on the basis of the fact that the ordering among the adverbs does not reflect an acceptable scope option, i.e. that there is no input from which the order could arise.

(i) *Marc avait été souvent peut-être refusé par la majorité des candidates.
 Marc had been often probably refused by the majority of the candidates
 'Marc had probably often been refused by the majority of the candidates.'

- (3.39) a. [IP Marc_j avait_i [AuxP1 été_k-t_i [AuxP2 peut-être [AuxP2 t_k [VP refusé par la majorité
[PROP [E" [E' [E
des candidates]]]]]]]] (Ernst 2002: 375)
- b. [IP Marc_j avait_i [AuxP1 été_k-t_i [AuxP2 refusé_i-t_k [VP peut-être [VP t_i par la majorité
des candidates]]]]]]

A constraint that may require placement of the non-finite verb in front of the adverb will be introduced in section 3.4 below (-FOC<ADV); its ranking relative to STAY-X is crucial for the availability of non-finite verb movement in a given language. In English, non-finite verb movement is prohibited: the order *non-finite auxiliary - adverb* may exclusively arise by base-generation which is possible only in case the adverb takes narrow scope (compare Tableaux T3.15 vs. T3.16); consequently, adverb occurrence behind a non-finite auxiliary is restricted to adverbs selecting for EVENTS (or SPECIFIED EVENTS), ruling out the ungrammatical positions of the epistemic adverb in (3.38b). French, by contrast, permits non-finite verb movement. An adverb is thus able to take scope over a preceding non-finite verb, predicting that an adverb may select for a higher semantic type than the non-finite auxiliary it follows, see (3.38a) above.

		SCMA	STAY-X	-FOC<ADV
T3.16				
☞ a	[IP Bob _j will _i [AuxP1 probably [AuxP1 t _i [AuxP2 be _[-foc] [VP t _j waiting]]]]]]		*	*
b	[IP Bob _j will _i [AuxP1 probably [AuxP1 be _[-foc] -t _i [AuxP2 t _k [VP t _j waiting]]]]]]		**!	*
c	[IP Bob _j will _i [AuxP1 be _[-foc] -t _i [AuxP2 probably [AuxP2 t _k [VP t _j waiting]]]]]]		**!	

3.2.5 Summary

In this section, it was shown that contrasts between English and French in the ordering of adverbs and verbs/auxiliaries may be accounted for by differences in the language-specific constraint hierarchies in an OT framework. As argued in section 3.1, MODIFIER restrains GEN to produce only candidates in which an adverb's scope specified in the input is reflected by its base-positioning; hence, wide and narrow scope adverbs are expected to occupy distinct base positions. MODIFIER does not restrict adverb placement to a specific type of structural positions – adjunct vs. specifier; rather, the violable constraints OBHD and STAY-X predict that adverbs preferably appear in adjoined positions.

In both languages English and French, SUBJECT >> STAY-XP triggers movement of the subject from Spec,VP to Spec,IP. IP thus being projected, OBHD requires movement of the finite verb to I⁰. The dependence of V-to-I movement on the type of verb (lexical vs. auxiliary) in English can be regarded to result from the ranking *LXMV >> OBHD >> STAY-X, prohibiting movement of a lexical verb, but requiring that of a finite auxiliary. Consequently, an adverb merged above VP is expected to precede a lexical verb in English while it may follow a finite auxiliary it outscopes. Dominance of OBHD over STAY-X and

*LXMV in French, by contrast, predicts that the finite verb has to move to I⁰, irrespective of verb type. Due to *X'-ADJ, an adverb is expected not to intervene between the subject and the finite verb/auxiliary in I⁰ unless this placement is required for the satisfaction of some higher ranked constraint. I'-adjunction of an adverb might arise e.g. in English negated clauses where movement of the negative clitic *n't* cannot cross an adverb (CLITIC, SCMA >> *X'-ADJ). The strict prohibition against adverb interpolation between the subject and the finite verb in French points to the conclusion that OBHD and *X'-ADJ outrank any constraint that might require an adverb to occur in that position (see section 3.4 and chapter 5).

Because of the requirement of SCMA (and STAY-XP), it is expected that adverbial elements outscope following material: their movement in front of another scope-bearing element is prohibited (except for the French negative clitic *ne*, which may cross a wide scope adverb, CLITIC, *X'-ADJ >> SCMA). Yet, verbal movement may give rise to inverse scope. While Aux-to-I movement can cross a wide scope adverb in English and French, the two languages differ in the availability of non-finite verb movement, resulting in contrasts in the acceptability and interpretation of adverbs placed behind a non-finite verb/auxiliary.

3.3 German Verb Placement and the Prefield Position

This section concentrates on the V2 structure of German. The V2 property of German matrix clauses is derived in section 3.3.1 by assuming a constraint that requires matrix CP to be projected and thus necessitates V-to-C movement, thereby accounting for the dependence of German verb placement on the type of clause (V2 in matrix clauses vs. V-final in embedded ones). Section 3.3.2 deals with the prefield position and the constituents which occupy that position. The results are summarized in section 3.3.3.

3.3.1 Verb Placement in German

In German, finite verb placement depends on the type of clause: the finite verb appears in final position in embedded clauses (3.40d) whereas it normally occurs in second position in matrix clauses (3.40a,b,c), irrespective of the type of verb (lexical or auxiliary). This contrast has traditionally been taken to indicate that the verb moves to C^0 in case C^0 is not occupied by a complementizer (see e.g. Olsen 1985 and Grewendorf 1988; for a corresponding analysis on verb placement in Dutch see Koster 1975 and den Besten 1983).

- (3.40) a. Peter hat gestern den Fritz verprügelt.
 Peter has yesterday the Fritz beaten.up
 'Peter beat up Fritz yesterday.'
- b. Den Fritz hat Peter gestern verprügelt.
- c. Gestern hat Peter den Fritz verprügelt.
- d. ... daß Peter gestern den Fritz verprügelt hat.
 that Peter yesterday the Fritz beaten.up has
 '... that Peter beat up Fritz yesterday.'

For the finite verb in C^0 to be the second overt constituent of the clause, some phrase has to appear in Spec,CP, compare (3.41a); e.g. the subject (3.40a), an object (3.40b), or an adverb (3.40c) may occur in the prefield position. In addition, only one phrase precedes the finite verb in a matrix clause, i.e. adjunction to C' as in (3.40b) and to CP (3.40c,d) is obviously prohibited.³²

³² In *yes/no*-questions and inverted conditionals the finite verb may be the first overt element of the clause; however, it is usually assumed that an operator occupies Spec,CP in these cases so that the verb actually occurs in second position with regard to syntactic structure.

- (i) a. Hat Hans Maria geküßt?
 has Hans Maria kissed
 'Did Hans kiss Maria?'
- b. Hätte Hans Maria geküßt, ...
 had Hans Maria kissed
 'If Hans had kissed Maria, ...'

In addition, there seem to be cases of V3 which will be discussed in section 3.4.

- (3.41) a. *_[CP e Hat Peter gestern den Fritz verprügelt]
 has Peter yesterday the Fritz beaten.up
 'Peter beat up Fritz yesterday.'
- b. *_{[CP Peter gestern [_{C'} hat den Fritz verprügelt]]}
- c. *_{[CP Gestern [_{CP} Peter hat den Fritz verprügelt]]}
- d. *_{[CP Gestern [_{CP} den Fritz hat Peter verprügelt]]}

Note that under the assumption that finite verb movement generally targets C^0 in German matrix clauses, the subject occupies distinct positions in subject-initial and non-subject-initial clauses - Spec,CP in (3.40a) and Spec,IP in (3.40b,c,d).³³ The hypothesis that subject-initial and non-subject-initial clauses differ in the structural position of the subject is supported by

³³ Note that IP is assumed always to be projected within the German middle field in the present analysis, SUBJECT >> STAY-XP.

Subject-initial and non-subject-initial matrix clauses differ in some respects. First, a weak subject pronoun, but not an object pronoun may occur in prefield position in German (but see Gärtner & Steinbach 2001); the same is true for subject vs. object clitics in Dutch.

- (i) a. Sie hat ihn gesehen.
 she has him seen
 'She has seen him.'
- b. ?*Ihn hat sie gesehen.
- (ii) a. Ik / 'k zie hem. (Zwart 1993b: 303)
 I see him
 'I see him.'
- b. Hem / *'m zie ik.
 him see I
 'Him, I see.'

Secondly, subject-verb agreement in Dutch may differ depending on whether or not subject-verb inversion has taken place.

- (iii) a. ... dat jij naar huis gaat / *ga. (Zwart 1993b: 309)
 that you to house go
 '... that you are going home.'
- b. Jij gaat / *ga naar huis.
 you go to house
 'You are going home.'
- c. Vandaag *gaat / ga jij naar huis.
 today go you to house
 'Today, you are going home.'
- d. Wanneer *gaat / ga jij naar huis?
 when go you to house
 'When are you going home?'

According to Zwart (1993a,b, 1994), these contrasts indicate that subject-initial and non-subject-initial clauses differ in structure. He claims that the subject always occupies the same structural position, namely Spec,AgrSP. Assuming that weak pronouns in German and clitic pronouns in Dutch are barred from Spec,CP, the contrasts in (i, ii) are accounted for: the subject pronoun occurs in Spec,AgrSP. The distinct verb forms in (iii) are considered to base on differences in the structural position of the verb, V^0 /AgrS⁰ vs. C^0 . Note that the distinct forms could simply be a reflex of Spec-head agreement, alternating in accordance with the phrase with which the verb appears in Spec-head relation (subject or non-subject).

Note that in order to capture the fact that adverbs may only precede a subject in middle field position (compare (3.42)), Zwart would need to prohibit adjunction to AgrSP in case there is no higher functional projection. CP-adjunction, by contrast, has to be ruled out in general: an adverb cannot precede the prefield constituent, see (3.41c,d).

the fact that an adverb may only precede the subject in middle field positions: in contrast to CP-adjunction (3.41c,d), adverb adjunction to IP as in (3.42) is permitted.

- (3.42) a. ... [CP weil [IP wahrscheinlich [IP gestern [IP Peter ... den Fritz
because probably yesterday Peter the Fritz
verprügelt hat]]]]
beaten.up has
'... because Peter probably beat up Fritz yesterday.'
- b. [CP Wahrscheinlich hat [IP gestern [IP Peter ... den Fritz verprügelt ...]]]
'Probably, Peter beat up Fritz yesterday.'

Occurrence of some phrase in the German prefield position has been considered to be connected to the extended projection principle, EPP (Chomsky 1982, 1995). For example, Roberts & Roussou (2002) suggest that the EPP and V2 are manifestations of the same condition: the head containing T^0 must have a filled specifier.³⁴ In German matrix clauses, the finite verb moves to C^0 , taking T^0 along with it. Hence, the specifier of CP, but not that of TP requires overt filling, accounting for the fact that expletive *es* ('there') only emerges if no other phrase occupies Spec,CP (compare (3.43a) vs. (3.43b)). English (and French) differ from German in that T^0 does not move to C^0 in declarative clauses; consequently, Spec,TP has to be overtly filled in these languages, as illustrated in (3.43c).

- (3.43) a. [CP *(Es) wurde getrunken] (Roberts & Roussou 2002: 128)
it was drunk
'People were drinking.'
- b. [CP Gestern wurde [TP (*es) getrunken]] (Roberts & Roussou 2002: 128)
yesterday was it drunk
'Yesterday, people were drinking.'
- c. [TP *(It) appears that a fly is in my soup] (Roberts & Roussou 2002: 127)

In the previous section, it was assumed that placement of the subject in Spec,IP is triggered by SUBJECT (>> STAY-XP), requiring the specifier of IP to be filled. Correspondingly, I will assume that filling of Spec,CP is motivated by the constraint in (3.44):

(3.44) PREFIELD: The specifier position of matrix CP is filled.

³⁴ Filling of the specifier of the projection that hosts T^0 is claimed to be necessary to bind a tense variable in T^0 in Roberts & Roussou's (2002) approach. In the presence of a complementizer, C^0 is taken to be able to bind this variable in German, predicting that no expletive is inserted in Spec,TP in (i).

- (i) ... daß (*es) getrunken wurde. (Roberts & Roussou 2002: 128)
that it drunk was
'... that people were drinking.'

Note that the constraint is only satisfied if some element occurs in Spec,CP; it cannot be fulfilled by not projecting CP at all, as in candidate T3.17e below.³⁵ Dominance of PREFIELD and OBHD over STAY-X and *LXMV predicts that (a) some phrase occupies Spec,CP in German matrix clauses - either merged in clause-initial position as the adverb in Tableau T3.17 or moved to that position as the object in Tableau T3.18 - and (b) the finite verb moves to C⁰, irrespective of verb type (see candidate T3.17b). As mentioned above, adjunction to CP and C' has to be ruled out in order to ensure that only one constituent precedes the finite verb in C⁰ (compare Tableau T3.18). C'-adjunction is excluded by the same constraint that prohibits adverb intervention between the subject and the finite verb in IP, *X'-ADJ. Adverb adjunction to CP is penalized by the constraint in (3.45), predicting that an adverb occurs within the middle field in case some other constituent occupies the prefield position (compare candidate T3.18d).³⁶

(3.45) NO-ADJUNCTION-TO-CP (*CP-ADJ): There is no phrase adjoined to CP.

		PREFIELD	SUBJECT	OBHD	STAY-X	*LXMV	STAY-XP
T3.17	Morgen reist Peter ab. tomorrow leaves Peter off 'Peter will leave tomorrow.'						
☞	a	[_{CP} Morgen reist _i [_{IP} Peter _i [_{VP} t _i ab-t _i] t _i]]			**	**	*
	b	[_{CP} Morgen e [_{IP} Peter _i [_{VP} t _i ab-t _i] reist _i]]		*!	*	*	*
	c	[_{CP} Morgen reist _i [_{VP} Peter ab-t _i]]	*!		*	*	
	d	[_{CP} e Reist _i [_{IP} morgen [_{IP} Peter _i [_{VP} t _i ab-t _i] t _i]]]	*!		**	**	*
	e	[_{IP} Morgen [_{IP} Peter _i [_{VP} t _i ab-t _i] reist _i]]	*!		*	*	*

		PREFIELD	*X'-ADJ	*CP-ADJ	STAY-XP
T3.18	Den Karl hat wahrscheinlich der Fritz verprügelt. the Karl has probably the Fritz beaten.up 'Fritz probably beat up Karl.'				
☞	a	[_{CP} Den K _{-k} hat _i [_{IP} wahrscheinlich [_{IP} der Fritz _j [_{AUXP} [_{VP} t _j verprügelt] t _j] t _i]]]]			**
☞	b	[_{CP} Den K _{-k} hat _i [_{IP} der Fritz _j [_{AUXP} wahrscheinlich [_{AUXP} [_{VP} t _j verprügelt] t _j] t _i]]]]			**
	c	[_{CP} Den K _{-k} wahrscheinlich [_{C'} hat _i [_{IP} der Fritz _j [_{AUXP} [_{VP} t _j verprügelt] t _j] t _i]]]]	*!		**
	d	[_{CP} Wahrscheinlich [_{CP} den K _{-k} hat _i [_{IP} der Fritz _j [_{AUXP} [_{VP} t _j verprügelt] t _j] t _i]]]]		*!	**

Hence, while according to Roberts and Roussou (2002) overt filling of Spec,CP in German matrix clauses has to take place since the verb - or, more precisely, T⁰ - is placed in C⁰, the necessity to fill Spec,CP triggers V-to-C movement in the present analysis: due to PREFIELD >> OBHD >> STAY-X, matrix CP is obligatorily projected and movement of the finite verb to C⁰ has to take place.³⁷ Because of the prohibition against adverb adjunction to C' and CP (*X'-ADJ, *CP-ADJ), the verb is expected to occur in second position in German matrix clauses.

³⁵ Likewise, SUBJECT calls for the occurrence of some element in Spec,IP (compare footnote 9 and Tableau T3.1). If the constraint could be satisfied by not projecting IP at all, the subject would be expected to appear in VP-internal position due to STAY-XP.

³⁶ See section 3.4 and 3.5 on adverb positioning relative to the subject within the middle field.

³⁷ Note that the contrast in (3.43) could be accounted for by a difference in the ranking of SUBJECT and PREFIELD relative to a constraint prohibiting the occurrence of expletive elements similar to Grimshaw's (1997) constraint

In contrast to German, English and French do not necessarily show V2 in matrix clauses: an adverb or an argument topic may be placed in clause-initial position without causing subject-verb/auxiliary inversion (see also section 3.5).

- (3.46) a. Presumably John has solved the mystery.
 b. *Presumably has John solved the mystery.
- (3.47) a. Mary, Charles likes.
 b. *Mary does Charles like.
- (3.48) a. Probablement Isabelle a mangé le gâteau.
 probably Isabelle has eaten the cake
 'Probably Isabelle ate the cake.'
 b. *Probablement a Isabelle mangé le gâteau.
- (3.49) a. Danielle, Pierre l' aime.
 Danielle Pierre her likes
 'Pierre likes Danielle.'
 b. *Danielle l'aime Pierre.

In these languages, the ranking OBHD >> STAY-X >> PREFIELD prohibits CP from being projected (unless required by some dominating constraint such as WHSPEC, compare section 3.2): neither moving a phrase to Spec,CP, nor merging one in that position is allowed since this would involve the integration of a further head, C⁰, which gives rise to an additional violation of OBHD or STAY-X, as shown in Tableau T3.19. Consequently, IP is usually the

FULL INTERPRETATION, which requires lexical conceptual structure to be parsed (see also Bresnan 2000). Under the ranking PREFIELD >> FULL INTERPRETATION >> SUBJECT, an expletive would be inserted to guarantee filling of Spec,CP, but not to ensure filling of Spec,IP in German. Note that in case an expletive is present, it is inserted under Spec,IP due to SUBJECT >> STAY-X (compare candidate T(i)-b,c vs. T(i)-d). By contrast, in case no expletive subject occurs, IP is not projected at all due to STAY-X (see candidate T(ii)-b vs. T(ii)-c). In addition, the ranking FULL INTERPRETATION >> SUBJECT predicts that expletive insertion does not emerge in embedded clauses, compare footnote 34.

T(i)	Es wurde getanzt. it was danced 'People were dancing.'	PREFIELD	FULL INT	SUBJECT	STAY-X	STAY-XP
a	[_{AUXP} [_{VP} Getanzt] wurde]	*!		*		
b	[_{CP} Es wurde _i [_{AUXP} [_{VP} getanzt] t _i]]		*	*!	*	
c	[_{CP} Es wurde _i [_{IP} e [_{AUXP} [_{VP} getanzt] t _i] t _i]]		*	*!	**	
☞ d	[_{CP} Es _j wurde _i [_{IP} t _j [_{AUXP} [_{VP} getanzt] t _i] t _i]]		*		**	*

T(ii)	Gestern wurde getanzt. yesterday was danced 'People were dancing yesterday.'	PREFIELD	FULL INT	SUBJECT	STAY-X	STAY-XP
a	[_{AUXP} Gestern [_{AUXP} [_{VP} getanzt] wurde]	*!		*		
☞ b	[_{CP} Gestern wurde _i [_{AUXP} [_{VP} getanzt] t _i]]			*	*	
c	[_{CP} Gestern wurde _i [_{IP} e [_{AUXP} [_{VP} getanzt] t _i] t _i]]			*	**!	
d	[_{CP} Gestern wurde _i [_{IP} es [_{AUXP} [_{VP} getanzt] t _i] t _i]]		*!		**	

highest clausal projection in English and French matrix declarative clauses. Since adjunction to IP is not prohibited by any constraint, placement of a wide scope adverb in front of the subject as in candidate T3.19e is expected to be acceptable and to alternate with its adjunction to AuxP as in T3.19f (see section 3.4 and 3.5 on the influence of information structure on the choice of adverb adjunction to IP vs. AuxP).³⁸ Hence, the difference in the ranking of PREFIELD relative to OBHD and STAY-X captures the cross-linguistic contrast between V2 and non-V2 (or, rather, residual V2) in terms of general V-to-C movement in matrix clauses (see Vikner 1995).

T3.19		OBHD	STAY-X	PREFIELD
a	[_{CP} Probably has _i [_{IP} Peter _i t _i [_{AuxP} t _i [_{VP} t _i beaten up Mary]]]]		**!	
b	[_{CP} Probably e [_{IP} Peter _i has _i [_{AuxP} t _i [_{VP} t _i beaten up Mary]]]]	*!	*	
c	[_{CP} e Has _i [_{IP} probably [_{IP} Peter _i t _i [_{AuxP} t _i [_{VP} t _i beaten up Mary]]]]]]		**!	*
d	[_{CP} e e [_{IP} Probably [_{IP} Peter _i has _i [_{AuxP} t _i [_{VP} t _i beaten up Mary]]]]]]	*!	*	*
e	[_{IP} Probably [_{IP} Peter _i has _i [_{AuxP} t _i [_{VP} t _i beaten up Mary]]]]		*	*
f	[_{IP} Peter _i has _i [_{AuxP} probably [_{AuxP} t _i [_{VP} t _i beaten up Mary]]]]		*	*

In contrast to matrix clauses, the finite verb appears in right-peripheral position in German embedded clauses. The ranking PUREP >> OBHD blocks V-to-C movement in subordinate interrogative clauses, OBHD might be satisfied by a complementizer in C⁰ (compare Tableau T3.20 and footnote 17 in section 3.2). Nevertheless, since it is assumed that IP is generally projected within the German middle field (SUBJECT >> STAY-XP, see footnote 33), V-to-I movement is expected to take place due to the ranking OBHD >> STAY-X (see candidates T3.20a vs. T3.20b).³⁹ Given that the finite verb moves to I⁰ in embedded clauses, its right-peripheral occurrence suggests that IP is right-headed in German. Likewise, the OV-structure indicates that verbal projections (i.e. VP, AuxP, IP) are generally head-final in this language:

³⁸ See sections 3.2, 3.4, and 4.4 for pre-auxiliary adverb placement in English.

³⁹ According to e.g. Haider (1993) and Vikner (2001a), the fact that German verbs like *uraufführen* ('to perform a play for the very first time') or *voranmelden* ('to preregister') cannot occur in second position testifies that a finite verb in clause-final position occupies its base position.

- (i) a. *Uraufführten sie das Stück? (Vikner 2001a: 100)
 perform.for.the.first.time they the play
 'Did they perform the play for the very first time?'
 b. *Führten sie das Stück urauf?
 c. ... daß sie das Stück uraufführten.
 that they the play perform.for.the.first.time
 '... that they performed the play for the very first time.'

As shown in (ia), the prefixes cannot accompany V-to-C movement. The fact that they may neither be stranded in clause-final position (ib) has been taken as evidence for the hypothesis that they cannot be separated from the verb by verb movement, pointing to the conclusion that finite verbs in V-final position as in (ic) do not undergo movement. Yet, the fact that verbs with non-separable prefixes may only occur in clause-final position could also be due to an adjacency condition: in contrast to a verb in V2 position, a finite verb in clause-final I⁰ appears adjacent to a prefix stranded within VP. Consequently, the data in (i) does not need to be regarded as evidence against V-to-I movement in German embedded clauses.

the complement occurs to the left of its head.⁴⁰ Hence, due to the ranking PREFIELD >> PUREEP >> OBHD >> STAY-X, the finite verb targets C⁰ in German matrix clauses while it only raises up to I⁰ in embedded clauses; since German verbal projections are right-headed, the finite verb emerges in final position in subordinate clauses whereas it occupies the second position in matrix clauses.

- (3.50) a. ... weil Hans Karla liebt.
 because Hans Karla loves
 '... because Hans loves Karla.'
- b. *... weil Hans liebt Karla.
- c. ... weil Hans Karla geküßt hat.
 because Hans Karla kissed has
 '... because Hans kissed Karla.'
- d. *... weil Hans geküßt Karla hat.
- e. ... weil Hans Karla geküßt haben soll.
 because Hans Karla kissed have should
 '... because Hans has allegedly kissed Karla.'
- f. *... weil Hans haben geküßt Karla soll.

		PUREEP	SUBJECT	OBHD	STAY-X	STAY-XP
T3.20	... weil Hans Karla geküßt haben soll. because Hans Karla kissed have should '... because Hans has allegedly kissed Karla.'					
☞ a	[_{CP} weil [_{IP} Hans _i [_{AuxP1} [_{AuxP2} [_{VP} t _j Karla geküßt] haben] t _i] soll _i]]]				*	*
b	[_{CP} weil [_{IP} Hans _i [_{AuxP1} [_{AuxP2} [_{VP} t _j Karla geküßt] haben] soll] e]]]			*!		*
c	[_{CP} weil [_{AuxP1} [_{AuxP2} [_{VP} Hans Karla geküßt] haben] soll]]]		*!			
d	[_{CP} soll _i -weil [_{IP} Hans _j [_{AuxP1} [_{AuxP2} [_{VP} t _j Karla geküßt] haben] t _i] t _i]]]	*!			**	*

As in English and French, an adverb in the middle field may take wide or narrow scope relative to a preceding finite verb in second position in German. In addition, adverb placement within the middle field is scopally ambiguous with respect to finite and non-finite verbs in right-peripheral position. The right-headedness of German verbal projections obscures the structural ambiguity. Given that the adverb has to be base-positioned relative to the verbs in accordance with its scope (MODIFIER), it is adjoined above AuxP under its wide scope reading as in (3.51a, 3.52a) and below AuxP under its narrow scope reading (3.51b, 3.52b).

- (3.51) a. [_{CP} Karl_j wollte_i [_{IP} t_j [_{AuxP} nie wieder [_{AuxP} [_{VP} t_j Schokolade essen] t_i] t_i]]]
 Karl wanted.to never again chocolate eat
 'Karl never again wanted to eat any chocolate.'
- b. [_{CP} Karl_j wollte_i [_{IP} t_j [_{AuxP} [_{VP} nie wieder [_{VP} t_j Schokolade essen]]] t_i] t_i]]]
 'Karl wanted never to eat any chocolate again.'

⁴⁰ For an OT analysis of the head direction parameter see e.g. Sells 1999 and Vikner 2001a.

- (3.52) a. ... [CP weil [IP Elmar_j [AUXP ständig [AUXP [VP t_j ins Theater gehen] t_i]] will_i]]
 because Elmar permanently in.the theater go wants.to
 '... because Elmar permanently wants to go to the theater.'
- c. ... [CP weil [IP Elmar_j [AUXP [VP ständig [VP t_j ins Theater gehen]] t_i]] will_i]]
 '... because Elmar wants permanently to go to the theater.'

The fact that linearization of adverbs and negation as well as among several adverbs within the middle field has to correspond to their scopal relation indicates that they occur in their base positions as expected by the requirements of SCMA and STAY-XP. An adverb in prefield position, by contrast, may take wide or narrow scope relative to a following element (though the interpretation corresponding to surface order seems to be preferred); i.e., movement of a narrow scope adverb to Spec,CP is obviously possible, as discussed in the next section.

- (3.53) a. Er ist oft nicht zum Unterricht gegangen.
 he is often not to.the course gone
 i) 'He often hasn't gone to the course.'
 ii) #'He hasn't often gone to the course.'
- b. Er ist nicht oft zum Unterricht gegangen.
 i) #'He often hasn't gone to the course.'
 ii) 'He hasn't often gone to the course.'
- c. Oft_(i) ist er nicht (t_i) zum Unterricht gegangen.
 i) 'He often hasn't gone to the course.'
 ii) ?'He hasn't often gone to the course.'
- (3.54) a. Tom hat sie absichtlich öfters angerempelt.
 Tom has her intentionally often bumped.into
 i) 'Tom intentionally often bumped into her.'
 ii) #'Tom often intentionally bumped into her.'
- b. Tom hat sie öfters absichtlich angerempelt.
 i) #'Tom intentionally often bumped into her.'
 ii) 'Tom often intentionally bumped into her.'
- c. Absichtlich_(i) hat Tom sie öfters (t_i) angerempelt.
 i) 'Tom intentionally often bumped into her.'
 ii) ?'Tom often intentionally bumped into her.'

3.3.2 The Prefield Position

In the previous section, it was argued that PREFIELD (and its dominance over OBHD and STAY-X) triggers overt filling of Spec,CP in German matrix clauses. Yet, this constraint does not make any prediction regarding which constituent is to be placed in prefield position. Different types of phrases may occur in Spec,CP: in *out-of-the blue* statements, subjects as well as temporal or sentence adverbials may occupy the prefield position (3.55); however,

given appropriate context, other phrases such as *wh*-elements, topical or focalized object DPs as well as (remnant) VPs may occur in clause-initial position as well, (3.56).

(3.55) (What's new?)

- a. Der Franz hat Susannes Hund überfahren.
the Franz has Susanne's dog run.over
'Franz ran over Susanne's dog.'
- b. Gestern / Überraschenderweise hat Fritz im Lotto gewonnen.
yesterday surprisingly has Fritz in.the national.lottery won
'Yesterday / Surprisingly, Fritz won the national lottery.'

(3.56) a. Wen hat Otto verprügelt?

- who has Otto beaten.up
'Who did Otto beat up?'
- b. (Have you heard the news about Karl?)
[Den Karl]_[+top] hat der Otto verprügelt.
the Karl has the Otto beaten.up
'Otto beat up Karl.'
- c. (Who did Otto beat up?)
[Den Karl]_[+foc] hat der Otto verprügelt.
- d. (What did Otto do?)
[Den Karl verprügelt]_[+foc] hat der Otto.
- e. (What did Otto do to Karl?)
[Verprügelt]_[+foc] hat der Otto den Karl.

According to Fanselow (2003a,b), filling of the German prefield position is guided by the Minimal Link Condition (MLC, Chomsky 1995).

(3.57) Minimal Link Condition: (Chomsky 1995: 311)

K attracts α only if there is no β , β closer to K than α , such that K attracts β .

C^0 may optionally bear [+wh], [+top], or [+foc]. In accordance with the MLC, C^0 attracts the closest phrase with appropriate features. Consequently, the fact that placement of a subject, but not of an object in prefield position is pragmatically neutral is accounted for: in case C^0 is not marked for any special feature, the subject as highest element within the middle field is moved to Spec,CP (3.58a); attraction of the object is blocked by the intervening subject in (3.58b). By contrast, placement of an object in prefield position presupposes that the object bears some information-structural feature not shared by the subject; it might then be attracted by a corresponding feature on C^0 , as illustrated in (3.59a). Alternatively, clause-initial occurrence of an object may arise without particular specifications on C^0 in case the object is topical since topics have to be fronted within the German middle field (see Frey 2000b, 20004, and Svenonius 2002, among others; compare also section 3.5). Occupying the leftmost

position within the middle field, a topical object might be moved to Spec,CP as in (3.59b) without violating the MLC.

(3.58) (What's new?)

- a. Der Franz_j hat t_j Susannes Hund überfahren.
 the Franz has Susanne's dog run.over
 'Franz ran over Susanne's dog.'
- b. ?*Susannes Hund_j hat der Franz t_j überfahren.

(3.59) a. (What did Franz run over?)

[Susannes Hund]_{[+foc]_j} hat-C⁰_[+foc] der Franz t_j überfahren.

b. (And what about Susanne's dog?)

[Susannes Hund]_{[+top]_j} hat t_j zum Glück keiner t_j überfahren.

Susanne's dog has fortunately nobody run.over

'Fortunately, nobody ran over Susanne's dog.'

The hypothesis that it is the highest middle field phrase that is fronted to Spec,CP in the unmarked case also seems to be supported by the fact that a negative quantifier subject in prefield position needs to be focused if a sentence adverb occurs in the middle field as in (3.60c). An indefinite negative quantifier has to follow a sentence adverb within the middle field, as illustrated in (3.60a). Since an indefinite negative quantifier cannot be a topic (it is non-referential, compare section 2.1.2), its movement to prefield position across an adverb may only be triggered by a [+foc] feature on C⁰ (see Frey 2000b). Note that in case there is no sentence adverb within the clause, placement of a negative quantifier subject in Spec,CP is contextually neutral (3.60d): as highest middle field constituent it can be fronted to clause-initial position. Yet remember that in English, French, and Italian, a sentence adverb likewise has to precede a (non-focused) negative quantifier subject in the specifier of IP – the head of which attracts [+nom], i.e. the specifier of which cannot be occupied by alternative phrases (compare examples (2.29, 2.30, 2.36) above). As mentioned in section 2.1.2 (footnote 16), this ordering restriction might be due to Relativized Minimality (see Cinque 1990, Rizzi 2001, among others), prohibiting movement of the quantifier subject across the adverb. Hence, the fact that the sentence in (3.60c) presupposes focus on the subject may merely reflect that the intervention effect can only be suspended in case the moved constituent is focused; i.e., it does not necessarily indicate that filling of the German prefield is subject to the MLC.⁴¹

⁴¹ Recall that likewise, a focused indefinite negative quantifier subject can precede a sentence adverb in Italian, see footnote 15 in chapter 2 above.

- (3.60) a. ... weil (bedauerlicherweise) keiner (*bedauerlicherweise) die Aufgabe
because regrettably nobody regrettably the problem
lösen konnte.
solve could
'... since regrettably nobody was able to solve the problem.'
- b. Bedauerlicherweise konnte keiner die Aufgabe lösen.
regrettably could nobody the problem solve
'Regrettably, nobody was able to solve the problem.'
- c. Keiner_[+foc] konnte bedauerlicherweise t_j die Aufgabe lösen. (Frey 2000b: 167)
- d. Keiner_j konnte t_j die Aufgabe lösen. (Frey 2000b: 166)

However, there are cases in which prefield positioning of a constituent that does not occupy the leftmost position of the middle field is contextually unmarked. For example, a sentence adverb has to follow a topic within the middle field (3.61)⁴²; nevertheless, it may precede a topic if placed in prefield position as in (3.62c), see also section 3.5.⁴³ Given that a constituent which does not occupy the leftmost position of the middle field may only occur in Spec,CP in case C⁰ is endowed with some feature attracting that constituent, the sentence in (3.62c) points to the conclusion that sentence adverbs can bear information-structural features. However, sentence adverbs are normally considered to be neutral to information-structure (see e.g. Pittner 1999 and Frey 2000a). Yet, as Gisbert Fanselow (p.c.) mentioned, the MLC might not be based on c-command relations; rather, closeness could be defined in terms of m-command, allowing non-highest middle field constituents to move on to prefield position without being attracted by some special feature on C⁰. Additional restrictions on the ordering of arguments that rely on the thematic hierarchy could predict which one of several arguments moves to Spec,CP while leaving open whether an argument or an adjunct is fronted (compare examples (3.58, 3.59) above).⁴⁴

⁴² An expression co-referential with a cataphoric pronoun as well as the dislocated part of a split DP are topics, see Frey 2000b, 2004 and references therein.

⁴³ Moreover, placement of a subject-oriented adverb in prefield position is contextually neutral although the adverb should follow the subject within the middle field:

- (i) a. ... weil (?*arroganterweise) Hans (arroganterweise) das Meeting abgesagt hat.
because arrogantly Hans arrogantly the meeting cancelled has
'... because Hans arrogantly cancelled the meeting.'
- b. Arroganterweise hat Hans das Meeting abgesagt.

The restriction on the ordering of subject-oriented adverbs and subjects within the middle field was argued to be due to a requirement on the adverb to be c-commanded by the subject (compare section 2.1.4). Given that the subject is able to c-command the prefield position in German, as claimed by Frey (1993), it is expected that the subject-oriented adverb can be merged in Spec,CP (see footnote 25 in chapter 2).

⁴⁴ However, note that under these assumptions, clause-initial placement of an object will presumably always have to be triggered by some feature on C⁰: although a topical object might occupy the leftmost position within the middle field, the subject is expected to be fronted to prefield position in case linearization is guided by thematic considerations. In addition, given that a sentence adverb and a following subject within the middle field are equally close to Spec,CP in terms of m-command, the fact that clause-initial placement of a negative quantifier subject is marked if co-occurring with a sentence adverb within the middle field might have to be accounted for by Relativized Minimality (see (3.60) above).

- (3.61) a. Sein_i Vater wird (*glücklicherweise) dem Hans_i (glücklicherweise) bei dem
his father will fortunately the Hans fortunately with the
Vorhaben helfen. (Frey 2004: 159)
project help
'His father will fortunately help Hans with the project.'
- b. ... weil Paul (*leider) Hemden_i (leider) [nur blaue t_i] gekauft
because Paul unfortunately shirts unfortunately only blue bought
hat. (Frey 2004: 160)
has
'... because Paul unfortunately only bought blue shirts.'
- (3.62) (Have you heard the news about Karl?)
- a. Klaus hat mir gestern erzählt, daß (*wahrscheinlich) dieser Idiot
Klaus has me yesterday told that probably this idiot
(wahrscheinlich) den Nobelpreis erhalten wird.
probably the Nobel.prize be.awarded will
'Yesterday, Klaus told me that this idiot will probably be awarded the Nobel
prize.'
- b. Dieser Idiot wird wahrscheinlich den Nobelpreis erhalten.
'This idiot will probably be awarded the Nobel prize.'
- c. Wahrscheinlich wird dieser Idiot den Nobelpreis erhalten.

Note that under the assumption that an adverb may be base-generated in various positions, the adverb in (3.62c) could have been merged in Spec,CP such that it is not the case that a non-highest middle field phrase is raised to prefield position in violation of the MLC in that sentence. In fact in the analysis pursued here, it is predicted that a clause-initial adverb is base-generated in prefield position for economy of movement (STAY-XP) if compatible with its semantic requirements. Moreover since PREFIELD does not demand for a specific phrase in Spec,CP, it is expected that base-generation of an adverb in prefield position is preferred over movement of some phrase to that position by STAY-XP (compare Tableau T3.21 below). However, the presence of an adverb that could be merged in Spec,CP does not block movement to clause-initial position; all of the sentences in (3.63, 3.64) are acceptable (though they may imply different contexts).

- (3.63) a. Wahrscheinlich ißt Peter morgens Müsli.
probably eats Peter in.the.morning muesli
'Peter probably eats muesli in the morning.'
- b. Peter ißt wahrscheinlich morgens Müsli.
- c. Morgens ißt Peter wahrscheinlich Müsli.
- d. Müsli ißt Peter wahrscheinlich morgens.
- (3.64) a. Gestern hat Franz Susannes Hund überfahren.
yesterday has Franz Susanne's dog run.over
'Yesterday, Franz ran over Susanne's Hund.'

- b. Franz hat gestern Susannes Hund überfahren.
- c. Susannes Hund hat Franz gestern überfahren.
- d. Susannes Hund überfahren hat Franz gestern.

Following Fanselow (2003b), I will assume that C^0 may optionally bear some information-structural feature such as [+top] or [+foc]. The constraint AGREE then requires placement of an appropriate phrase in Spec,CP.⁴⁵

(3.65) AGREE: Elements in Spec-head relation agree in featural composition.

The ranking AGREE >> STAY-XP allows for movement of some phrase to prefield position in case a corresponding feature on C^0 attracts it (see Tableau T3.22); otherwise, Spec,CP is expected to be occupied by an adverb merged clause-initially (compare candidate T3.21a vs. T3.21b). Hence, the various sentences in (3.63, 3.64) arise as outputs to distinct inputs, differing in the featural composition of C^0 .^{46,47}

⁴⁵ Similar to PREFIELD, SUBJECT does not explicitly state which phrase should occur in Spec,IP. Assuming that I^0 bears a feature [+nom], the ranking AGREE >> STAY-XP in German, English, and French predicts that it is the subject that occupies that position; base-generation of an adverb in subject position as in candidate T(i)-b is thus ruled out.

T(i)		SUBJECT	AGREE	STAY-X	STAY-XP
a	[_{AUXP} Probably [_{AUXP} has [_{VP} John kissed Mary]]]	*!			
b	[_{IP} Probably has _i [_{AUXP} t _i [_{VP} John kissed Mary]]]		*!	*	
☞ c	[_{IP} Probably [_{IP} John _j has _i [_{AUXP} t _i [_{VP} t _j kissed Mary]]]]]			*	*
☞ d	[_{IP} John _j has _i [_{AUXP} probably [_{AUXP} t _i [_{VP} t _j kissed Mary]]]]]			*	*

Keeping apart the requirements that some phrase occupy Spec,IP (SUBJECT) and that this phrase bear [+nom] (AGREE), it is possible to account for cases in which a non-nominative phrase occurs in subject position (satisfying SUBJECT, but violating AGREE). For example, in Icelandic a dative argument may occur in subject position in spite of the presence of a nominative argument (ii).

- (ii) Henni leiddust / leiddist their. (Fanselow 2002: 238)
 she.DAT be.bored.3pl be.bored.3sg they.NOM
 'She was bored with them.'

⁴⁶ Recall that adjunction of an adverb is preferred over its placement in a specifier position by OBHD and STAY-X (see section 3.2). However, adverb occurrence in a specifier position is not ruled out *per se*; as in case of filling of the German prefield position, it is optimal if some higher constraint demands for it (here: PREFIELD). Hence, whether some adverb arises as adjunct or as specifier depends on the requirements and ranking of the various constraints.

⁴⁷ Note that the analysis presented above predicts that in the presence of an adverb, the subject always needs to be attracted to Spec,CP by some feature on C^0 due to STAY-XP; i.e. the (a)-sentences, but not the (b)-sentences in (3.63, 3.64) are expected to be contextually neutral. Yet, given that a subject referent is easily accommodated as topic (see e.g. Lambrecht 1994, Erteschik-Shir 1997), this prediction may hardly be tested empirically.

T3.21	Gestern hat Franz Susannes Hund überfahren. yesterday has Franz Susanne's dog run.over 'Yesterday, Franz ran over Susanne's dog.'	PREFIELD	AGREE	STAY-X	STAY-XP
☞ a	[_{CP} Gestern hat _i [_{IP} Franz _j [_{AuxP} [_{VP} t _j [Susannes Hund] _[+foc] überfahren] t _i] t _j]]]			**	*
b	[_{CP} Gestern _k hat _i [_{IP} t _k [_{IP} Franz _j [_{AuxP} [_{VP} t _j [Susannes Hund] _[+foc] überfahren] t _i] t _j]]]]]			**	**!
c	[_{CP} [_{DP} Susannes Hund] _{[+foc]k} hat _i [_{IP} Franz _j [_{AuxP} gestern [_{AuxP} [_{VP} t _j t _k überfahren] t _i] t _j]]]]]			**	**!
T3.22	Susannes Hund hat Franz gestern überfahren. Susanne's dog has Franz yesterday run.over 'Yesterday, Franz ran over Susanne's dog.'	PREFIELD	AGREE	STAY-X	STAY-XP
a	[_{CP} Gestern hat _i -C ⁰ _[+foc] [_{IP} Franz _j [_{AuxP} [_{VP} t _j [Susannes Hund] _[+foc] überfahren] t _i] t _j]]]		*!	**	*
☞ b	[_{CP} [_{DP} Susannes Hund] _{[+foc]k} hat _i -C ⁰ _[+foc] [_{IP} Franz _j [_{AuxP} gestern [_{AuxP} [_{VP} t _j t _k überfahren] t _i] t _j]]]]]			**	**

Note that base-generation of an adverb in prefield position is only possible if compatible with its semantic requirements. For example, in case several adverbs are contained in the input, only the one with widest scope can be merged clause-initially due to MODIFIER. An adverb taking narrow scope has to be base-generated below the wide scope element; consequently, its clause-initial occurrence must involve movement, violating SCMA and STAY-XP. Hence, placement of a narrow scope adverb in prefield position has to be triggered by some outranking constraint (AGREE). Clause-initial occurrence of a narrow scope adverb thus implies that the adverb is endowed with some information-structural feature that might be attracted by C⁰. For example, the temporal adverb *morgen* ('tomorrow') in (3.66) may be accommodated as a topic (see e.g. Erteschik-Shir 1997): it can be interpreted in relation to the time of utterance, which is always given. As Pittner (1999) mentions, although a manner adverb as non-referential expression may normally not function as a topic, the adverb in (3.67) could be regarded as topical since it is previously mentioned in the discourse. Similarly, the manner and frequency adverb in (3.68, 3.69) might be moved to prefield position due to a [+foc] feature (compare Frey 2000a).

(3.66) a. Leider kommt Fritz morgen nicht zum Fußballtraining.
unfortunately comes Fritz tomorrow not to.the football.training
'Unfortunately, Fritz won't come to the football training tomorrow.'

b. Morgen_k kommt Fritz leider t_k nicht zum Fußballtraining.

(3.67) A: Was kann man still und leise machen? ('What may one do silently and quietly?')

B: Man kann z.B. still und leise lesen.
one can e.g. silently and quietly read
'For example, one may read silently and quietly.'

B': [Still und leise]_k kann man z.B. t_k lesen. (Pittner 1999: 187)

- (3.68) (Wie war dein Wiedersehen mit Paul? 'How was your reunion with Paul?')
- a. Er hat mich nicht gerade freundlich begrüßt.
he has me not exactly friendly greeted
'He didn't greet me friendly.'
 - b. Freundlich hat er mich nicht gerade begrüßt.
- (3.69) a. Leider hat Peter sehr oft gefehlt. (Frey 2000a: 123)
unfortunately has Peter very often been.absent
'Unfortunately, Peter has been absent very often.'
- b. [?(Sehr oft]_k hat Peter leider t_k gefehlt.

Hence, given an appropriate feature on C⁰, AGREE >> SCMA may trigger movement of a narrow scope adverb to Spec,CP, as illustrated in Tableau T3.23. Adjunction of the wide scope adverb to CP is ruled out by the ranking *CP-ADJ >> SCMA (see candidate T3.23b) Moreover, dominance of OBHD and STAY-X over SCMA predict that the wide scope adverb cannot be placed in a higher FP (see candidate T3.23c,d). The wide scope adverb has to occur within the middle field, giving rise to inverse scope.

T3.23	Sehr oft hat Peter leider gefehlt. very often has Peter unfortunately been.absent 'Unfortunately, Peter has been absent very often.'	AGREE	OBHD	STAY-X	*CP-ADJ	SCMA	STAY-XP
a	[_{CP} Leider hat _i -C ⁰ _[+foc] [_{IP} Peter _j [_{AuxP} sehr oft [_{AuxP} [_{VP} t _j gefehlt] t _j] t _i]]]	*!		**			*
b	[_{CP} Leider [_{CP} [sehr oft] _{[+foc]k} hat _i -C ⁰ _[+foc] [_{IP} Peter _j [_{AuxP} t _k [_{AuxP} [_{VP} t _j gefehlt] t _j] t _i]]]			**	*!		**
c	[_{CP2} Leider e [_{CP1} [sehr oft] _{[+foc]k} hat _i -C ⁰ _[+foc] [_{IP} Peter _j [_{AuxP} t _k [_{AuxP} [_{VP} t _j gefehlt] t _j] t _i]]]		*!	**			**
d	[_{CP2} Leider hat _i [_{CP1} [sehr oft] _{[+foc]k} t _i -C ⁰ _[+foc] [_{IP} Peter _j [_{AuxP} t _k [_{AuxP} [_{VP} t _j gefehlt] t _j] t _i]]]			***!			**
e	[_{CP} [Sehr oft] _{[+foc]k} hat _i -C ⁰ _[+foc] [_{IP} Peter _j [_{AuxP} leider [_{AuxP} t _k [_{AuxP} [_{VP} t _j gefehlt] t _j] t _i]]]			**		*	**

Since placement of a narrow scope adverb in prefield position has to be motivated by some information-structural feature on C⁰, it is expected to be acceptable only for adverbs which may bear such a feature. Sentence adverbs are usually viewed as being neutral to information structure, implying that they are not able to carry some information-structural feature (see e.g. Pittner 1999, Frey 2000a, among others). Their occurrence in Spec,CP is thus expected to arise via Merge, but not via Move. Consequently, it is predicted that the scope-based order among sentence adverbs (3.70) cannot be deviated from (see e.g. Frey & Pittner 1998, Cinque 1999, Pittner 1999, and Ernst 2002): only the adverb taking widest scope may be base-generated in clause-initial position; placement of an adverb taking narrow scope in Spec,CP has to involve movement (MODIFIER), i.e. would have to be triggered by some feature on C⁰. Yet, though the (d)-sentences in (3.71)-(3.75) are surely marginal, they are - to my intuition - much better than rearrangement of the adverbs within the middle field as in the (b)-sentences, pointing to the conclusion that sentence adverbs can move to Spec,CP and, hence, that they

can be endowed with some feature that might cause their attraction to C⁰ (AGREE >> SCMA >> STAY-XP).⁴⁸ The nature of this feature cannot be clarified here; its investigation has to be left for future research.

(3.70) conjunctive > evaluative > evidential > epistemic > subject-oriented > *wirklich* / *tatsächlich* ('really') (Pittner 1998: 180)

⁴⁸ Likewise, a subject-oriented adverb in prefield position may precede a modal verb that outscopes it, indicating that movement of a sentence adverb to prefield position is possible.

- (i) Klugerweise wird Berta nach Hamburg gefahren sein.
cleverly will Berta to Hamburg drove be
'Berta will cleverly have gone to Hamburg.'

Furthermore, subject-oriented sentence adverbs may occur in clause-initial position although they have to follow the subject when they appear within the middle field; i.e., at least in English, they must be able to move to clause-initial position, violating STAY-XP (compare section 2.1) and, hence, there must be some trigger for that placement. Yet, note that the scope-based order of sentence adverbs cannot be deviated from by placing a narrow scope adverb in clause-initial position in English, French, or Italian (compare section 3.5 below).

- (ii) a. Frankly, he evidently has a very bad opinion of you.
b. *Evidently, he frankly has a very bad opinion of you.
- (iii) a. Honnêtement, il va probablement épouser Charlotte.
honestly he goes probably marry Charlotte
'Honestly, he is probably going to marry Charlotte.'
b. *Probablement, il va honnêtement épouser Charlotte.
- (iv) a. Francamente ho purtroppo una pessima opinione di voi. (Cinque 1999: 12)
frankly I.have unfortunately a very.bad opinion of you
'Frankly, I have unfortunately a very bad opinion of you.'
b. *Purtroppo ho francamente una pessima opinione di voi.

Remember that a clause-initial adverb in these languages does not occupy Spec,CP; hence, AGREE is expected not to affect clause-initial placement of adverbs in these languages (see (3.46, 3.48) above). However, in Dutch, the clause-initial constituent obviously occurs in Spec,CP: non-subject-initial clauses give rise to subject-verb inversion. Yet according to Koster (1978), a narrow scope sentence adverb may never precede a wide scope one - neither in prefield position (vb), nor within the middle field (vd), possibly indicating that SCMA outranks AGREE in Dutch:

- (v) a. Helaas is hij waarschijnlijk ziek. (Koster 1978: 206)
unfortunately is he probably sick
'Unfortunately, he is probably sick.'
b. *Waarschijnlijk is hij helaas ziek.
c. Het is zo dat hij helaas waarschijnlijk ziek is.
it is so that he unfortunately probably sick is
'It is the case that he is unfortunately probably sick.'
d. *Het is zo dat hij waarschijnlijk helaas ziek is.

Note that although a (narrow scope) sentence adverb might be placed in the prefield position of the clause it is construed with in German, long-distance topicalization of a sentence adverb is ungrammatical, in contrast to argument fronting.

- (vi) a. *Leider_i sagte Maria, daß t_i Otto das Spiel verloren hat. (Frey 2000a: 124)
unfortunately said Maria that Otto the game lost has
'Maria said that Otto unfortunately lost the game.'
b. Den Otto_i behauptete Maria, daß eine Norwegerin t_i geheiratet hat. (Frey 2000b: 163)
the Otto claimed Maria that a Norwegian married has
'Maria claimed that a Norwegian woman has married Otto.'

- (3.71) a. Peter hat leider arroganterweise abgesagt. (Pittner 1999: 178)
 Peter has unfortunately arrogantly declined
 'Unfortunately, Peter arrogantly has declined.'
 b. *Peter hat arroganterweise leider abgesagt.
 c. Leider hat Peter arroganterweise abgesagt.
 d. ?Arroganterweise hat Peter leider abgesagt.
- (3.72) a. Peter hat ärgerlicherweise wahrscheinlich den Schlüssel vergessen.
 Peter has annoyingly probably the key forgotten (Pittner 1999: 179)
 'Annoyingly, Peter has probably forgotten the key.'
 b. ??Peter hat wahrscheinlich ärgerlicherweise den Schlüssel vergessen.
 c. Ärgerlicherweise hat Peter wahrscheinlich den Schlüssel vergessen.
 d. ?Wahrscheinlich hat Peter ärgerlicherweise den Schlüssel vergessen.
- (3.73) a. Es besteht allerdings leider wenig Hoffnung. (Pittner 1998: 178)
 it exists though unfortunately little hope
 'Though, there is unfortunately little hope.'
 b. ??Es besteht leider allerdings wenig Hoffnung.
 c. Allerdings besteht leider wenig Hoffnung.
 d. ?Leider besteht allerdings wenig Hoffnung.
- (3.74) a. ... daß Petra leider wahrscheinlich verreist ist.
 that Petra unfortunately probably gone.on.holiday is (Frey & Pittner 1998: 519)
 '... that Petra unfortunately has probably gone on holiday.'
 b. *... daß Petra wahrscheinlich leider verreist ist.
 c. Leider ist Petra wahrscheinlich verreist.
 d. ?Wahrscheinlich ist Petra leider verreist.
- (3.75) a. Er hat sich unglücklicherweise wahrscheinlich ein Bein gebrochen.
 he has himself unfortunately probably a leg broken
 'He unfortunately has probably broken his leg.'
 b. *Er hat sich wahrscheinlich unglücklicherweise ein Bein gebrochen.
 c. Unglücklicherweise hat er sich wahrscheinlich ein Bein gebrochen.
 d. ?Wahrscheinlich hat er sich unglücklicherweise ein Bein gebrochen.

The analysis so far does not make any predictions concerning which phrase occurs in prefield position if the input does not contain an adverb that could be merged in Spec,CP and C⁰ does not attract a special constituent, i.e. in case any phrase would need to move to Spec,CP and AGREE does not require for a particular phrase. As Tableau T3.24 shows, the ranking PREFIELD >> STAY-XP permits any constituent to appear in prefield position in this case: various candidates tie on the constraint profile. However, as mentioned above, placement of an object or a (remnant) VP in Spec,CP is marked.

(3.76) (What happened?)

- a. Der Karl hat der Maria einen Heiratsantrag gemacht.
the Karl has the Maria a proposal.of.marriage made
'Karl has proposed to Maria.'
- b. #Der Maria hat der Karl einen Heiratsantrag gemacht.
- c. #Einen Heiratsantrag hat der Karl der Maria gemacht.
- d. #Der Maria einen Heiratsantrag gemacht hat der Karl.

		PREFIELD	AGREE	STAY-X	STAY-XP
T3.24	Der Karl hat der Maria einen Heiratsantrag gemacht. the Karl has the Maria a proposal made 'Karl has proposed to Maria.'				
☞	a [CP Der Karl _j hat _i [IP t _j [AUXP [VP t _j der M. einen Heiratsantrag gemacht] t _i] t _i]]			**	**
⊗	b [CP Der M. _k hat _i [IP der Karl _j [AUXP [VP t _j t _k einen Heiratsantrag gemacht] t _i] t _i]]			**	**
⊗	c [CP Einen Heiratsantrag _k hat _i [IP der Karl _j [AUXP [VP t _j der M. t _k gemacht] t _i] t _i]]			**	**
⊗	d [CP [VP t _j der M. einen Heiratsantrag gemacht] _k hat _i [IP der Karl _j [AUXP t _k t _i] t _i]]			**	**

According to Fanselow (2003b), filling of Spec,CP proceeds by fronting of the closest constituent within the middle field due to the MLC. Yet, the MLC is sensitive to identity of features (compare (3.57) above). The requirement that only phrases with matching features be attracted is already captured by AGREE. Hence, the MLC presupposes satisfaction of the constraint AGREE which is considered to be violable (compare footnote 45). The MLC thus seems to be unsuitable as OT constraint.⁴⁹

As mentioned above, filling of Spec,CP might as well be guided by thematic structure, predicting that the subject rather than an object appears clause-initially in the unmarked case. This idea may be expressed by a constraint THEMATICSTRUCTURE requiring either thematic structure (see Williams 2003, Vogel t.a.) or D-structural relations (compare Müller 2001) to be reflected at the surface. The ranking AGREE >> THEMSTRUC would then predict that subject movement to Spec,CP is preferred over object movement unless C⁰ explicitly attracts the object, compare examples (3.58, 3.59) above.⁵⁰

⁴⁹ Legendre, Smolensky & Wilson (1998) reformulate the MLC as a power hierarchy of a constraint BARRIER (BAR) in an OT framework: BAR^k prohibits a chain link to cross *k* barriers and is dominated by BAR^{k+1}. Likewise, the idea that the leftmost middle field constituent is fronted to prefield position might be captured by a power hierarchy of a constraint NODE prohibiting movement to cross XP-nodes. Hence, placement of an object in prefield position is expected to be suboptimal to subject movement to Spec,CP: the subject in (ia) undergoes cyclic movement from Spec,VP through Spec,IP to Spec,CP, violating NODE¹ twice whereas object movement to Spec,CP as in (ib) violates the higher ranked constraint NODE² by crossing VP and IP in one movement step.

- (i) a. [CP Franz_j haßt_i [IP t_j [VP t_j Susannes Hund t_i] t_i]]
Franz hates Susanne's dog
'Franz hates Susanne's dog.'
- b. [CP Susannes Hund_k haßt_i [IP Franz_j [VP t_j t_k t_i] t_i]]

Yet, such a constraint possibly makes unwarranted predictions on adverb placement and is therefore rejected in the present analysis: attachment of an adverb above the target position of movement would be expected to be preferred to adverb attachment below it in order to reduce the number of XP-nodes crossed by movement.

⁵⁰ Note that in case the input includes an adverb which can be merged in prefield position, the adverb is still predicted to occur clause-initially: referring to arguments only, THEMSTRUC has no influence on the choice of

3.3.3 Summary

PREFIELD >> OBHD >> STAY-X requires that some constituent occur in Spec,CP in German matrix clauses. Which phrase occupies the prefield position depends on the featural composition of C^0 : if C^0 bears some information-structural feature, a corresponding phrase has to appear in its specifier position; otherwise, if present, an adverb that can be base-generated in clause-initial position or the subject is expected to occur in Spec,CP due to AGREE >> THEMSTRUC >> STAY-XP. Matrix CP being projected, the finite verb has to move to C^0 , irrespective of verb type (OBHD >> STAY-X, *LXMV). Obligatory V-to-C movement together with the prohibitions against CP- and C'-adjunction (*CP-ADJ, *X'-ADJ) account for the second position phenomenon of finite verb placement in German matrix clauses. In embedded clauses, by contrast, the finite verb is only raised up to I^0 , which is clause-final in German (PUREEP >> OBHD >> STAY-X). Unlike German, the ranking OBHD >> STAY-X >> PREFIELD in English and French prohibits that matrix CP is projected (unless required by some outranking constraint such as e.g. WHSPEC); consequently, there is trivially no general V-to-C movement in matrix clauses, permitting some phrase to appear in front of the subject without causing subject-verb/auxiliary inversion.

whether an argument or an adverb is placed in prefield position, so that the decision is expected to be made by STAY-XP in favor of the latter option (see Tableau T3.21 above).

3.4 Adverb Placement and Focus-Background Structure

In this section it will be shown that sentence adverbs are sensitive to focus-background structure, with alternations in focus inducing differences in interpretation (section 3.4.1). As discussed in 3.4.2, the focus-sensitivity of sentence adverbs affects their positioning relative to arguments within the German middle field: unfocused arguments are placed in front of a sentence adverb to ensure its focus-initial occurrence. Yet a focus-sensitive item does not have to follow unfocused arguments or to precede the focused constituent: an adverb in Spec,CP or adjoined to CP may precede unfocused material within the middle field, and an adverb in middle field position may follow the focused constituent in prefield or V2 position. Furthermore, focus-background structure seems to affect adverb placement in English and French as well, giving rise to e.g. pre-auxiliary adverb positioning in English or non-finite verb movement in French (section 3.4.3). Moreover, the distribution of sentence adverbs in Italian can be traced back to their tendency to occur adjacent to the focus (see section 3.4.4). The section concludes with a summary in section 3.4.5.

3.4.1 Focus-Sensitivity of Sentence Adverbs

Sentence adverbs have often been described as being sensitive to information structure, partitioning the sentence into focus and background (Lang 1979, Jacobs 1983, 1986, Koktova 1986a,b, 1987, Hetland 1992, Büring 1996). A sentence adverb should immediately precede the focus within the German middle field; unfocused arguments are placed in front of it.

- (3.77) a. (What happened yesterday?)
 Gestern hat (vermutlich) Karl (??vermutlich) Fritz (??vermutlich)
 yesterday has presumably Karl presumably Fritz presumably
 ein Auto (*vermutlich) geschenkt.
 a car presumably given
 'Yesterday, Karl has presumably given a car to Fritz.'
- b. (What did Karl do yesterday?)
 Gestern hat (*vermutlich) Karl (vermutlich) Fritz (??vermutlich) ein Auto
 (*vermutlich) geschenkt.
- c. (What did Karl give to Fritz yesterday?)
 Gestern hat (*vermutlich) Karl (*vermutlich) Fritz (vermutlich) ein Auto
 (*vermutlich) geschenkt.

Jacobs (1986) supposes that sentence adverbs can be focus inducing: like focus particles such as *sogar* ('even') or *nur* ('only'), they may bind a focused constituent. He claims that focus and background are relations between parts of a sentence: a focus/background in a sentence is the focus/background of the focus inducer. Due to that relation, the meaning of focus and background depends on the choice of the focus inducer, while the semantic contribution of the

focus inducer depends on the choice of its focus and background. Hence, alternating focus is expected to give rise to semantic differences.

- (3.78) a. Peter traf nur [Luises jüngste Schwester]_[+foc]. (Jacobs 1986: 104)
 Peter met only Luise's youngest sister
 'Peter only met Luise's youngest sister.'
- b. Peter traf nur Luises [jüngste]_[+foc] Schwester.
 'Peter only met the youngest of Luise's sisters.'
- (3.79) a. Peter hat sich leider [ein grünes Auto]_[+foc] gekauft.
 Peter has himself unfortunately a green car bought
 (Jacobs 1986: 108)
 'Unfortunately, Peter has bought a green car.'
- b. Peter hat sich leider ein [grünes]_[+foc] Auto gekauft.
 'Unfortunately, Peter has bought a green car.'

The sentences in (3.78) express different quantifications: the sentence in (3.78b), but not the one in (3.78a) is compatible with Peter's meeting some other person than Luise's youngest sister (as long as it is not a sister of Luise's). The sentences in (3.79) differ in which aspect of the proposition is presented as regrettable, that it is a car what Peter bought in (3.79a) or that its color is green in (3.79b).

Considering sentence adverbs as optionally focus inducing, Jacobs' analysis implies that they have a second use in which they are not interpreted in relation to the focus. Frey (2000b, 2004) explicitly differentiates between two uses of sentence adverbs: a neutral use in which they characterize the whole proposition without any presuppositions, and a focusing one in which they relate to one narrowly focused constituent of the clause, the rest of the clause being presupposed. According to Frey (2000b), these uses exhibit different distributions: only in its focusing usage, an adverb may co-occur with the focused constituent in prefield position.

- (3.80) Bedauerlicherweise [dem Otto]_[+foc] hat sich die Maria anvertraut.
 regrettably the Otto has herself the Maria confided in
 (Frey 2000b: 140)
 'It was regrettably Otto who Maria confided in.'

Lang (1979), by contrast, does not distinguish between different uses of sentence adverbs. He supposes that there is always some constituent the adverb relates to. The associated constituent of the sentence adverb is the constituent that bears main stress (i.e. is the focus) or immediately dominates the focus. Since it necessarily comprises the focus, constituents that cannot be focused, such as indefinite pronouns or sentence adverbs, cannot be the associated constituent of a focus-sensitive adverb. Furthermore, sentences may be ambiguous with regard to which constituent a sentence adverb relates to. For example, both the proposition

Hans schläft hier ('Hans is sleeping here') or its subject may be the focus of the sentence adverb in (3.81), as elucidated by the contexts.

- (3.81) a. Das Zimmer ist belegt. ('The room is taken.') (Lang 1979: 203)
 Leider [schläft hier Hans]_[+foc].
 unfortunately sleeps here Hans
 'Unfortunately, Hans is sleeping here.'
- b. Wer schläft hier? ('Who is sleeping here?')
 Leider schläft hier [Hans]_[+foc].
 'It is unfortunately Hans who is sleeping here.'

In (3.82), intonation disambiguates which constituent is associated with the adverb. Main stress on the object as in (3.82a) allows for focus projection (see Höhle 1982), i.e. the adverb may be considered to relate to the whole sentence. By contrast, a stressed subject as in (3.82b) has to be interpreted as narrowly focused.

- (3.82) a. Was war das für ein Krach? ('What was that noise?')
 Wahrscheinlich hat [dein Junge die Scheibe eingeworfen]_[+foc].
 probably has your boy the window smashed
 (Lang 1979: 204)
 'Probably, your boy has smashed the window.'
- b. Wer hat das Fenster kaputt gemacht? ('Who smashed the window?')
 Wahrscheinlich hat [dein Junge]_[+foc] die Scheibe eingeworfen.
 'It was probably your boy who smashed the window.'

The (a)- and (b)-sentences in (3.81, 3.82) seem to mirror the two uses of sentence adverbs distinguished by Frey (2000b, 2004). For example, *wahrscheinlich* ('probably') in (3.82a) relates to the whole proposition; it is not presupposed that the window was broken at all. By contrast, (3.82b) presupposes that someone has broken the window; the doubts expressed by the adverb focus on whether it was really your son who did it. Hence, alternations in focus correlate with variation in the associated constituent of the adverb and thus give rise to differences in interpretation (on focus semantics see Rooth 1992a, 1996, von Stechow 1994, Schwarzschild 1999, among others). Yet according to Lang (1979), varying the focus of a sentence adverb does not affect the propositional meaning of the clause⁵¹; rather, it has an

⁵¹ According to Rooth (1992a, 1996), focus evokes a set of alternatives, recorded by the focus semantic value $[[\alpha]]^f$, and thereby gives rise to presuppositions; this focus semantic value varies in accordance with focus. In combinations with e.g. a focusing particle such as *only* or a quantificational adverb, focus may have a truth-conditional effect: *only* requires that the proposition it appears in is the only true one out of all propositions in the alternative set. Since alternating focus evokes distinct sets of alternatives, the sentences in (i, ii) may differ in truth value.

- (i) a. John only introduced [Bill]_[+foc] to Sue. (Rooth 1996: 272)
 'John introduced Bill and no one else to Sue.'

impact on whether or not a certain utterance is appropriate in a given context. I.e., the adverb *wahrscheinlich* ('probably') estimates the degree of the truth of the proposition in both sentences in (3.82); however, it focuses on different aspects of that proposition.⁵² Presuming that focus substitutes for a variable in an open proposition and that a sentence adverb relates to the identification of the variable, it follows that semantic differences emerge depending on the associated constituent of the adverb. Consequently, it does not seem to be necessary to distinguish between various uses of sentence adverbs (i.e. neutral vs. focusing usage); rather, these emerge as a function of the breadth of focus. Hence, independent of its associated constituent, a sentence adverb such as *wahrscheinlich* ('probably') may be considered to be a PROPOSITION-modifier, which thus is expected to adjoin to a verbal projection of the appropriate type (see below).

3.4.2 Positioning of Focus-Sensitive Adverbs in German

The special semantic relation between a focus-sensitive item and the focused constituent may be reflected in syntactic structure. As mentioned above, a sentence adverb should immediately precede the focus in the German middle field; non-focused arguments appear in front of the adverb, see (3.83, 3.84).⁵³ Note, however, that although focus-sensitive items aim to occur

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- (ii) a. John only introduced Bill [to Sue]_[+foc].
'John introduced Bill to Sue and to no one else.'
b. In Saint Petersburg, [officers]_[+foc] always escort ballerinas. (Rooth 1996: 272)
'If a ballerina is escorted by someone, then she is escorted by an officer.'
b. In Saint Petersburg, officers always escort [ballerinas]_[+foc].
'If an officer escorts someone, he escorts a ballerina.'

⁵² As Pittner (1999) mentions, focus and scope of a sentence adverb cannot be equated; i.e. although sentence adverbs are sensitive to focus-background structure, it is not the case that the adverb only operates on the focus: an individual cannot be judged by *leider* ('unfortunately') etc., only the state of affairs in which the individual plays a role may be modified by adverbs. Hence, the adverb always modifies a proposition.

⁵³ Similarly, focus particles occur focus-initially within the German middle field (see Buring & Hartmann 2001); only elements that cannot scramble may intervene between a focus particle and e.g. the focused verb in clause-final position (ii).

- (i) a. Gestern hat Rufus sogar [dem Mädchen]_[+foc] Blumen geschenkt.
yesterday has Rufus even the girl flowers given (Buring & Hartmann 2001: 234)
'Yesterday, Rufus has even given flowers to the girl.'
b. *Gestern hat sogar Rufus [dem Mädchen]_[+foc] Blumen geschenkt.
c. Gestern hat sogar [Rufus]_[+foc] dem Mädchen Blumen geschenkt.
'Yesterday, even Rufus has given flowers to the girl.'
- (ii) a. ... weil man den Wagen (nur) in die Garage (*nur) [fahren]_[+foc] darf.
because one the car only in the garage only drive may (Buring & Hartmann 2001: 242)
'... because one may only drive the car into the garage.'
b. ... weil sie sich (nur) ungeschickt (*nur) [anstellt]_[+foc].
because she herself only clumsy only acts
'... because she only acts clumsy.'
c. ... weil ich sie (sogar) in den Schlaf (*sogar) [singen]_[+foc] würde.
because I her even in the sleep even sing would (Buring & Hartmann 2001: 243)
'... because I would even sing her to sleep.'

left-adjacent to the focus, neither an adverb nor a focus particle may occur within a DP or PP (compare Jacobs 1986, Bayer 1996, and Buring & Hartmann 2001; but see also Alexiadou 2001, Müller 2004, 2005, and Reis t.a. on DP-internal adverbs).⁵⁴ The unacceptability of

In addition, note that besides sentence adverbs, frequency adverbs are focus-sensitive (compare Buring 1996 and footnote 51); they have to follow unfocused arguments within the middle field as well:

- (iii) (What did Capone always do with the corpses?) (Buring 1996: 21)
 Capone hat (*immer) die Leichen (immer) [vergraben]_[+foc].
 Capone has always the corpses always buried
 'Capone always buried the corpses.'

⁵⁴ Yet, Müller (2004, 2005) presents counterexamples to the hypothesis that focus particles may only adjoin to verbal projections. In contrast to the occurrence of the focus particle in front of the complex DP (ia), its occurrence within the DP is unambiguous: the particle in (ib) may only be interpreted as focusing on the following DP *des Gehirns* ('the brain'). Hence, in written language, which lacks prosodic information, placement of a focus particle within DP might be possible in order to facilitate interpretation. However, attachment of a sentence adverb to a DP is strongly marked, if not unacceptable.

- (i) a. "Hirntod" aber bezeichnet nur einen Zustand des Gehirn, nämlich ... (Müller 2004: 6)
 brain.death however denotes only a state the brain namely
 i) 'However, "brain death" denotes only [one]_[+foc] state of the brain, namely ...'
 ii) 'However, "brain death" denotes only [a state]_[+foc] of the brain, namely ...'
 iii) 'However, "brain death" denotes only a state of [the brain]_[+foc], namely ...'
 b. "Hirntod" aber bezeichnet einen Zustand nur des Gehirns, nämlich ... (Müller 2004: 3)
 'However, "brain death" denotes a state of only the brain, namely ...'
 c. ?*"Hirntod" aber bezeichnet einen Zustand leider des Teils des Gehirn, der ...
 brain.death however denotes a state unfortunately the part the brain which
 'However, "brain death" unfortunately denotes a state of that part of the brain which ...'

As shown in (ii) and (iii), focus particles differ from focus-sensitive adverbs in English in that the former, but not the latter ones obviously can attach to non-verbal projections. Focus particles may intervene between a lexical verb and a DP object as well as between an inverted auxiliary and the subject; focus-sensitive sentence adverbs, by contrast, are unacceptable in these positions, indicating that focus particles, but not sentence adverbs may adjoin to a DP (compare sections 3.2 and 3.5).

- (ii) a. We will (possibly / only) meet John.
 b. We will meet (*possibly / only) John.
 (iii) a. Were only men wearing ties admitted? (Ernst 1984: 35)
 b. *Has (possibly / already) [any student]_[+foc] read the book? (Svenonius 2002: 220)

Note that a sentence adverb may co-occur with attributive adjectives within DP (see Haider 2000, Alexiadou 2002a, among others). Like focus particles (ia,b), DP-external and DP-internal occurrences of adverbs differ in interpretation: while in (va) it is not certain which kind of dog Laura will buy (or whether she will buy a dog at all), the uncertainty expressed by *wahrscheinlich* ('probably') in (vb) only concerns the maturity of the great Dane Laura will buy.

- (iv) a. der vermutlich an seinem Arbeitsplatz immer höchst anständige Kollege
 the presumably at his work.place always extremely decent colleague
 (Alexiadou 2002a: 46)
 'the colleague who is presumably always extremely decent at his work place'
 b. die vielleicht tatsächlich jetzt hier noch nicht wirklich ganz reife Banane
 the maybe indeed now here yet not really fully ripe banana
 'the banana which may indeed not yet be really fully ripe here and now'

(3.85b, 3.86b) indicates that the adverb has to adjoin to a verbal projection, supporting the hypothesis that even in its focusing usage, the adverb operates on a propositional semantic argument.⁵⁵ Hence, a focus-sensitive item does not necessarily occur to the immediate left of the focus; rather, it is placed as close to the focus as possible.

(3.83) Wen hat gestern Karl verprügelt? ('Who did Karl beat up yesterday?')

- a. *Gestern hat vermutlich Karl [Fritz]_[+foc] verprügelt.
 yesterday has presumably Karl Fritz beaten.up
 'Yesterday, Karl presumably beat up Fritz.'
- b. Gestern hat Karl vermutlich [Fritz]_[+foc] verprügelt.

(3.84) Was hat Karl gestern Fritz angetan? ('What did Karl do to Fritz?')

- a. *Gestern hat vermutlich Karl Fritz [verprügelt]_[+foc].
 yesterday has presumably Karl Fritz beaten.up
 'Yesterday, Karl presumably beat up Fritz.'
- b. *Gestern hat Karl vermutlich Fritz [verprügelt]_[+foc].
- c. Gestern hat Karl Fritz vermutlich [verprügelt]_[+foc].

(3.85) a. Peter träumt vermutlich von [Luise]_[+foc]. (Jacobs 1986: 112)

Peter dreams presumably of Luise
 'Peter presumably dreams of Luise.'

- b. *Peter träumt von vermutlich [Luise]_[+foc].

(3.86) a. ... weil Kim sogar gegen [Margrets]_[+foc] Mutter aussagte.

because Kim even against Margret's mother testified

(Büring & Hartmann 2001: 239)

'... because Kim even testified against Margret's mother.'

- b. *... weil Kim gegen sogar [Margrets]_[+foc] Mutter aussagte.

The need for placing an unfocused argument in front of a sentence adverb is especially evident in (remnant) VP Fronting constructions: an argument following a sentence adverb is interpreted as its associated constituent. As illustrated in (3.87, 3.88), the subject may only follow the adverb if it is focused; otherwise the order *adverb - subject* is inappropriate. Likewise, the object *den Fritz* in (3.89, 3.90) has to precede the adverb if it does not pertain to the focus.

-
- (v) a. Obwohl Paul sich ein Pudelbaby gewünscht hat, wird Laura ihm wahrscheinlich
 although Paul himself a poodle.baby wanted has will Laura him probably
 eine bereits ausgewachsene Dogge kaufen.
 an already fully-grown great.Dane buy
 'Although Paul wanted a baby poodle, Laura will probably buy him an already fully-grown
 great Dane.'
- b. Obwohl Paul sich ein Pudelbaby gewünscht hat, wird Laura ihm eine wahrscheinlich bereits
 ausgewachsene Dogge kaufen.
 'Although Paul wanted a baby poodle, Laura will buy him a great Dane which probably is
 already fully-grown.'

⁵⁵ Given that the adverb *vermutlich* ('presumably') in (3.85) selects for a PROPOSITION, GEN cannot produce a candidate in which it is attached to DP or PP because of MODIFIER.

- (3.87) Wer hat die Scheibe eingeworfen? ('Who smashed the window?')
- a. Die Scheibe eingeworfen hat wahrscheinlich [Karl]_[+foc].
the window smashed has probably Karl
'Probably Karl has smashed the window.'
- b. ??Die Scheibe eingeworfen hat [Karl]_[+foc] wahrscheinlich.
- (3.88) Was hat Karl getan? ('What did Karl do?')
- a. *[Die Scheibe eingeworfen]_[+foc] hat wahrscheinlich Karl.
b. [Die Scheibe eingeworfen]_[+foc] hat Karl wahrscheinlich.
- (3.89) Wen hat Klaus verprügelt? ('Who did Klaus beat up?')
- a. *Verprügelt hat vermutlich der Klaus [den Fritz]_[+foc].
beaten.up has presumably the Klaus the Fritz
'Klaus presumably beat up Fritz.'
- b. Verprügelt hat der Klaus vermutlich [den Fritz]_[+foc].
c. ??Verprügelt hat der Klaus [den Fritz]_[+foc] vermutlich.
- (3.90) Was hat Klaus Fritz angetan? ('What did Klaus do to Fritz?')
- a. *[Verprügelt]_[+foc] hat vermutlich der Klaus den Fritz.
b. *[Verprügelt]_[+foc] hat der Klaus vermutlich den Fritz.
c. [Verprügelt]_[+foc] hat der Klaus den Fritz vermutlich.

Though unfocused arguments should precede a sentence adverb within the middle field, focused ones do not necessarily follow it. As Pittner (1999) notes, a focused phrase which introduces a new referent may be placed in front of a sentence adverb within the middle field; yet a phrase focused by an adverb, i.e. its associated constituent (here: *geschenkt* 'got as present'), has to follow it.

- (3.91) (Who does this nice car belong to?) (Pittner 1999: 176)
- Ich habe gehört, daß Otto diesen Wagen angeblich geschenkt bekommen hat.
I have heard that Otto this car allegedly given.as.present got has
'I heard that Otto allegedly got this car as a present.'

While unfocused arguments usually precede a sentence adverb in middle field position, unfocused verbs may follow a focus-sensitive item: non-finite verbs in matrix clauses as well as finite and non-finite ones in embedded clauses occur in right-peripheral positions in German (see section 3.3); they cannot be placed in front of the adverb.

- (3.92) a. Christian wird wahrscheinlich [Sophie]_[+foc] heiraten.
Christian will probably Sophie marry
'Christian will probably marry Sophie.'
- b. *Christian wird heiraten wahrscheinlich [Sophie]_[+foc].
- (3.93) a. Christian wird sie vermutlich heiraten [müssen]_[+foc].
Christian will her presumably marry must
'Christian will presumably have to marry her.'

may follow a focused finite verb in second position (3.95a) or a focused constituent in prefield position (3.96a). In addition, while a focus-sensitive adverb has to follow unfocused arguments within the middle field, it may precede them if occurring in Spec,CP as in (3.95b) or in front of the focused constituent in Spec,CP as in (3.96b).

- (3.95) a. Er [liebt]_[+foc] sie wahrscheinlich.
 he loves her probably
 'He probably loves her.'
 b. Wahrscheinlich [liebt]_[+foc] er sie.
- (3.96) a. [Dem Otto]_[+foc] hat sich die Maria bedauerlicherweise anvertraut.
 the Otto has herself the Maria unfortunately confided.in
 'Maria has unfortunately confided in Otto.'
 b. Bedauerlicherweise [dem Otto]_[+foc] hat sich die Maria anvertraut.

(Frey 2000b: 140)

Note that placement of the adverb in prefield position (3.95b) or in front of the focused element in prefield position (3.96b) is unexpected in Jacobs' (1986) approach: there is a position farther to the right from which the adverb c-commands the trace of the focused element, (3.95a) and (3.96a) respectively.⁵⁸

Given that a focus-sensitive item may only attach to a verbal projection (compare examples (3.85, 3.86) above), the adverb in (3.96b) should not form a constituent with the DP in prefield position; rather, it is expected to be adjoined to CP, with the sentence displaying V3. As Buring and Hartmann (2001) mention, considering the focus particle in (3.97a) to be attached to the PP in prefield position, the sentence represents a "source-less" topicalization: *nur* ('only') cannot occur adjacent to the PP in its DP-internal base position, as shown in (3.97b). In addition, they argue that the CP-adjunction analysis of the clause-initial particle is supported by the fact that the particle cannot undergo reconstruction together with the fronted object: as illustrated in (3.98b), it may only take wide scope.

⁵⁸ Actually, Jacobs (1986) only discusses the occurrence of a focused subject in prefield position. He claims that placement of the focus inducer within the middle field as in (ia) does not block its positioning in front of the subject as in (ib). Given that focus-sensitive items can be base-generated in various positions, (ia) should exhibit non-normal base order: the particle c-commands the trace of the focused subject merged below the objects and is thus able to bind it. Consequently, (ia) does not compete with (ib) since the sentences differ in more than just the position of the focus inducer - namely, in the base position of the subject (compare footnote 56). As a result, both sentences are predicted to be possible in Jacobs' analysis.

- (i) a. [Luise]_[+foc] empfiehlt ihm das Buch auch t_j. (Jacobs 1986: 120)
 b. Auch [Luise]_[+foc] empfiehlt t_j ihm das Buch. (Jacobs 1986: 123)

However, in the sentences in (3.95) and (3.96), the focused element presumably originates from the same structural position; hence, the (a)- and (b)-sentences only differ in placement of the focus-sensitive item, predicting the (b)-sentences to be blocked by the (a)-sentences, respectively, in Jacobs' approach.

- (3.97) a. Nur [vom Grafen]_i habe ich [jeden Sohn t_i] bewundert.
 only of.the count have I every son admired
 (Büring & Hartmann 2001: 246)
 'I have only admired every son of the count.'
- b. *Ich habe jeden Sohn nur vom Grafen bewundert.
- (3.98) a. Einen Fehler hat vermutlich jeder gemacht.
 a mistake has presumably everyone made
 (Büring & Hartmann 2001: 260)
 i) 'Presumably, everyone made some mistake.'
 ii) 'Presumably, some mistake was made by everyone.'
- b. Nur Maria liebt jeder.
 only Maria loves everyone
 i) #'Everyone only loves Mary.'
 ii) 'Only Mary is loved by everyone.'

Though the focus particle in (3.98b) is surely restricted to a wide scope reading, there are sentences in which a narrow scope reading of the clause-initial particle is available. As Reis (t.a.) observes, I-contour is required for the narrow scope interpretation in these cases.

- (3.99) a. Nur die Bibel liest kein frommer Christ.
 only the bible reads no religious Christian
 i) 'The only thing no religious Christian does is read the bible.'
 ii) 'No religious Christian reads only the bible.'
- b. Nur zu Weihnachten geht jeder dritte in die Kirche.
 only at Christmas goes every third to the church
 i) 'Only at Christmas it is true that every third person goes to church.'
 ii) 'For every third person it is true that he goes to church only at Christmas.'
- c. Nur Maria liebt keiner. (Reis t.a.: 18)
 only Maria loves nobody
 i) 'Only Maria is loved by nobody.'
 ii) 'Nobody loves only Maria.'
- d. Nur mit Eiern wird es nicht belegt. (Reis t.a.: 18)
 only with eggs will it not topped
 i) 'The only thing it will not be topped with is eggs.'
 ii) 'It will not be topped with eggs only.'

Note that the narrow scope reading of the focus particle does not inevitably point to the conclusion that it is attached to the DP/PP in prefield position; focus particle and focused phrase might as well be moved to Spec,CP together by remnant VP Fronting. As shown in (3.100, 3.101), a focus particle preceding a fronted VP may take wide or narrow scope, indicating (a) that adjunction to CP is possible (wide scope reading) and (b) that a focus particle can be contained within a fronted VP (narrow scope reading).

- (3.100)a. Nur mit Eiern belegen will ich es nicht. (Reis t.a.: 17)
 only with eggs top want.to I it not
 i) 'The only thing I do not want to top it with is eggs.'
 ii) 'I do not want to top it with eggs only.'
- b. Nur Spanisch zu sprechen fiel uns leicht. (Büring & Hartmann 2001: 263)
 only Spanish to speak fell us easy
 i) 'It was only easy for us to speak Spanish.'
 ii) 'It was easy for us to only speak Spanish.'
- (3.101)a. Nur Gerda geküßt zu haben bereut niemand. (Büring & Hartmann 2001: 258)
 only Gerda kissed to have regrets nobody
- b. [CP Nur [CP [VP Gerda geküßt zu haben] bereut niemand]]
 'The only thing nobody regrets is to have kissed Gerda.'
- c. [CP [VP Nur Gerda geküßt zu haben] bereut niemand]]
 'Nobody regrets that he has kissed only Gerda.'

Under the assumption that the focus particle (with narrow scope reading) is placed in Spec,CP together with the focused DP/PP by remnant VP Fronting in (3.99), the fronted VP must include a trace of the verb. However, the unacceptability of the sentence in (3.102a), in which a verb particle is part of a complex prefield and the verb is stranded in final position, has been taken as evidence for the hypothesis that a fronted VP cannot contain a verb trace (Fanselow 1993, Haider & Rosengren 1998, among others). Yet, Müller (2005) quotes several counterexamples with a particle in prefield position.

- (3.102)a. *Die Anette an sollte man lieber nicht mehr rufen. (Fanselow 1993: 69)
 the Anette up should one better not anymore ring
 'One should better not phone Anette anymore.'
- b. Los damit geht es schon am 15. April. (Müller 2005: 14)
 off with.that goes it already on.the 15 April
 'It will already start on April, 15th.'
- c. Ich bin alleinstehende Mutter und so gut klar komm ich nicht.
 I am living.alone mother and that well by get I not
 'I'm a single mother and I don't get by that well.'

It is conspicuous that in the grammatical sentences in (3.102b,c), the lexical verb is finite and thus occurs in second position (though not necessarily adjacent to its particle). Hence, the unacceptability of (3.102a) might be due to an adjacency condition requiring a verb particle to align with the verb in final position (see also footnote 39).

Like the focus particles in (3.100, 3.101), also adverbs within a complex prefield may take narrow scope relative to a following element, pointing out that they are raised from some position within the middle field.

- (3.103)a. Gezielt Mitglieder im Seniorenbereich wollen die Kendoka allerdings
selectively members in.the elderly.sphere want.to the Kendoka though
nicht werben. (Müller 2005: 3)
not recruit
'The Kendoka do not want to recruit members selectively from the sphere of
senior citizens.'
- b. Alle Träume gleichzeitig lassen sich nur selten verwirklichen.
all dreams simultaneously let themselves only rarely realize
'Only rarely can one realize all dreams simultaneously.'
- c. Immer Maria will keiner küssen.
always Maria want.to nobody kiss
i) 'It is always Maria that nobody wants to kiss.'
ii) 'It is Maria that nobody wants to kiss exclusively.'

The fact that only arguments that are clause-mates may co-occur in front of the finite verb in matrix clauses supports the hypothesis that remnant VP Fronting may give rise to complex prefields.

- (3.104)a. [_{VP} Den Kindern Bonbons t_i]_k gibt_i man lieber nicht t_k. (Müller 1998a: 260)
the children candies give one better not
'One better doesn't give candies to the children.'
- b. *Dem Linguisten_i einen Nobelpreis_j glaube ich t_i nicht, t_j gewonnen zu haben.
the linguist a nobel.prize believe I not won to have
(Fanselow 1993: 67)
'I don't believe the linguist that he won a Nobel prize.'
- c. *Den Mann_i in den Kasten_j habe ich t_i gebeten, den Brief t_j zu werfen.
the man in the box have I asked the letter to put
'I asked the man to put the letter in the box.'

Though complex prefields may involve remnant VP Fronting, placement of a focus-sensitive item in front of a focused constituent in Spec,CP does not necessarily do so. The availability of a wide scope reading of the focus particle in (3.99)-(3.101) shows that adjunction to CP is possible. In addition, in case a clause-initial adverb takes scope over a following element within the middle field, there is apparently no basis for remnant VP Fronting. For example, the adverb in (3.105) has to precede the negation marker within the middle field; consequently, its clause-initial occurrence should result from base-generation.

- (3.105)a. Der Karl wird (wahrscheinlich) nicht (*wahrscheinlich) die Maria küssen.
the Karl will probably not probably the Maria kiss
'Karl will probably not kiss Maria.'
- b. Wahrscheinlich die Maria wird der Karl nicht küssen.

Similarly, a focus-sensitive adverb or particle may precede an argument clause in prefield position whereas it cannot in medial position (see also footnote 65). Moreover, the fact that the focus particle in (3.107b) is restricted to a wide scope reading points out that it cannot adjoin to the fronted CP, but may only attach to the matrix CP.

- (3.106)a. *David hat behauptet, [_{CP} angeblich [_{CP} daß Corinna lügt]]
 David has claimed allegedly that Corinna lies
 'David allegedly claimed that Corinna is lying.'
- b. [_{CP} Angeblich [_{CP} [_{CP} dass Corinna lügt], hat David behauptet]]
- (3.107)a. *Jeder versucht zu verheimlichen, nur daß er Marihuana raucht.
 everybody tries to hide only that he marihuana smokes
 'Everybody tries only to hide that they smoke marihuana.'
- b. Nur daß er Marihuana raucht, versucht jeder zu verheimlichen.
 (Büring & Hartmann 2001: 264)
 i) 'The only thing that everybody tries to hide is that they smoke marihuana.'
 ii) #'Everybody tries only to hide that they smoke marihuana.'

Finally, note that a sentence adverb that precedes a focused argument raised to prefield position out of a subordinate clause can be construed with the matrix clause; i.e. adverb and argument co-occurring in front of the finite verb do not have to be clause-mates, refuting a remnant VP Fronting analysis.

- (3.108) Logischerweise in den Kasten hab ich den Mann gebeten, den Brief zu werfen.
 logically in the box have I the man asked the letter to put
 'Of course, I asked the man to put the letter in the box.'

Summing up, it was shown that besides remnant VP Fronting, adverb adjunction to CP may give rise to complex prefields. I will assume that (at least) adverbs are restricted to attach to verbal projections only; they do not adjoin to DP/PP (compare footnotes 52, 54, and 55).

Büring (1996) presents an OT approach to the distribution of focus-sensitive items. The constraints in (3.109) ensure that these elements occur focus-initially in the German middle field.

- (3.109)a. FOCUSADJACENCY: Focus particles and Focus Sensitive Adverbials want to be left-adjacent to the focus. (Büring 1996: 2)
- b. FINALFOCUS: Focus should be sentence final.⁵⁹

⁵⁹ Since certain phrases cannot be fronted within the middle field (compare footnote 53), FINALFOCUS has to be gradient, counting the phrases intervening between the focused element and the right edge of the clause. The requirement on clause-final occurrence of focus is captured by several conditions on prosodic phrasing in e.g. Samek-Lodovici (1998, 2002) and Truckenbrodt (1999).

Presuming that focus-sensitive items are merged above VP, the ranking FOCUSADJACENCY >> STAY predicts that movement may take place in order to place these elements in a position adjacent to the focused constituent. FINALFOCUS thereby guarantees that adjacency between the focus-sensitive element and the focused constituent is established by movement of the non-focused constituent in front of the adverb (3.110c); a focused constituent does not move (3.110b), see Tableau T3.25. In addition, the interaction of FOCUSADJACENCY and FINALFOCUS accounts for the fact that an object which is moved in order to place the focused subject farther to the right targets a position in front of a focus-sensitive adverb (compare example (3.111) and Tableau T3.26). Note that Büring (1996) assumes that FINALFOCUS and STAY-XP are tied; consequently, movement of an unfocused argument does not have to take place as long as adjacency between a focus-sensitive item and the focus is guaranteed. Hence, while the unfocused subject has to move in front of the adverb in (3.110), movement of the unfocused object in (3.111) is optional: since the adverb appears left-adjacent to the focused subject in either case, object movement may, but does not need to take place; both candidates T3.26a and T3.26c are optimal in Büring's analysis, depending on how the constraint tie is resolved.⁶⁰

- (3.110)a. *... weil vermutlich Karl [Maria]_[+foc] heiraten wird.
 because presumably Karl Maria marry will
 '... because Karl will presumably get married to Maria.'
 b. *... weil vermutlich [Maria]_[+foc]_i Karl t_j heiraten wird.
 c. ... weil Karl_i vermutlich t_j [Maria]_[+foc] heiraten wird.

		FOCADJ	FINFOC	STAY-XP
T3.25	... weil Karl vermutlich [Maria] _[+foc] heiraten wird. because Karl presumably Maria marry will '... because Karl will presumably marry Maria.'			
a	... weil vermutlich Karl [Maria] _[+foc] heiraten wird.	*!	**	
b	... weil vermutlich [Maria] _[+foc] _i Karl t _j heiraten wird.		***!	*
c	... weil Karl _i vermutlich t _j [Maria] _[+foc] heiraten wird.		**	*

⁶⁰ Note that Büring's (1996) analysis does not account for the fact that an unfocused right-peripheral verb may follow a focused argument (ia) or intervene between a focus-sensitive item and a focused verb (iia); i.e., neither can an unfocused verb be fronted (within the middle field) nor may the focus move rightwards to satisfy FINFOC or FOCADJ.

- (i) a. Karl wird vermutlich [Maria]_[+foc] heiraten.
 Karl will presumably Maria marry
 'Karl will presumably marry Maria.'
 b. *Karl wird heiraten vermutlich [Maria]_[+foc].
 (ii) a. Karl wird sie vermutlich heiraten [müssen]_[+foc].
 Karl will her presumably marry have.to
 'Karl will presumably have to marry her.'
 b. *Karl wird sie heiraten vermutlich [müssen]_[+foc].

- (3.111)a. ?Gestern hat wahrscheinlich [der Karl]_[+foc] den Fritz verprügelt.
 yesterday has probably the Karl the Fritz beaten.up
 'Yesterday, Karl probably beat up Fritz.'
- b. *Gestern hat wahrscheinlich den Fritz_j [der Karl]_[+foc] t_j verprügelt.
- c. Gestern hat den Fritz_j wahrscheinlich [der Karl]_[+foc] t_j verprügelt.

T3.26	Gestern hat wahrscheinlich [der Karl] _[+foc] den Fritz verprügelt. yesterday has probably the Karl the Fritz beaten.up 'Probably Karl beat up Fritz yesterday.'	FOCADJ	FINFOC	STAY-XP
☞	a Gestern hat wahrscheinlich [der Karl] _[+foc] den Fritz verprügelt.		**	
	b Gestern hat wahrscheinlich den Fritz _j [der Karl] _[+foc] t _j verprügelt.	*!	*	*
☞	c Gestern hat den Fritz _j wahrscheinlich [der Karl] _[+foc] t _j verprügelt.		*	*

In case the focused constituent occurs in prefield position (see section 3.3), both FOCUSADJACENCY and FINALFOCUS favor placement of a focus-sensitive element to its left: in the sentences in (3.112a, 3.113a), the adverb appears adjacent to the focus and the focused constituent occurs farther to the right than it would if the adverb were placed within the middle field as in (3.112b,c) and (3.113b,c), respectively. However, a focus-sensitive adverb does not have to be placed in front of the focused constituent in Spec,CP; it may as well appear within the middle field following the unfocused arguments, (3.112b, 3.113b) vs. (3.112c, 3.113c). In fact, a prohibition against adjunction to CP (*CP-ADJ, see section 3.3) that is tied with FOCUSADJACENCY would predict that the adverb may optionally be placed in front of the focus in Spec,CP or within the middle field (see Tableau T3.27). Yet the fact that an adverb in middle field position has to follow the unfocused arguments would still be unexpected: due to STAY-XP, movement of an argument in front of a VP-adjoined focus-sensitive item is only permitted if it helps to satisfy FOCUSADJACENCY or FINALFOCUS; consequently, rearrangement of unfocused arguments within the middle field is predicted not to be possible in case the focused constituent occurs in prefield position in Buring's approach (compare candidates T3.27b vs. T3.27c).⁶¹

⁶¹ Note that even if it were assumed as in Jacobs (1986) that the sentence adverb could be base-adjoined below the arguments in (3.112b, 3.113b), the sentences in (3.112c, 3.113c) cannot be excluded in Buring's approach. In case the tie is resolved as *CP-ADJ >> FOCADJ, requiring the adverb to occur within the middle field, adverb placement with respect to the unfocused arguments would at best be optional: candidate T(i)-b and T(i)-c do equally well on STAY-XP. Moreover, in section 3.2 the existence of a constraint that prohibits adjunction to X'-level projections (*X'-ADJ) was assumed. If this constraint is considered to penalize X'-adjunction irrespective of syntactic category (especially to disallow V'-adjunction as well), adverb placement behind an unfocused argument as in candidate T(i)-b will again be suboptimal to its placement in front of the argument as in T(i)-c.

- (3.112)a. Bedauerlicherweise [dem Otto]_[+foc] hat die Maria vertraut.
 regrettably the Otto has the Maria trusted.in
 'Maria regrettably trusted in Otto.'
- b. [Dem Otto]_[+foc] hat die Maria bedauerlicherweise vertraut.
 c. ?*[Dem Otto]_[+foc] hat bedauerlicherweise die Maria vertraut.
- (3.113)a. Auch [Luise]_[+foc] empfiehlt ihm das Buch. (Jacobs 1986: 123)
 too Luise recommends him the book
 'Luise, too, recommends the book to him.'
- b. [Luise]_[+foc] empfiehlt ihm das Buch auch.
 c. *[Luise]_[+foc] empfiehlt auch ihm das Buch.

		*CP-ADJ	FOCADJ	FINFOC	STAY-XP
T3.27	Bedauerlicherweise [dem Otto] _[+foc] hat die Maria vertraut. regrettably the Otto has the Maria trusted.in 'Maria regrettably trusted in Otto.'				
☞	a Bedauerlicherweise [dem Otto] _[+foc] hat die Maria t _j vertraut.	*		***	*
	b [Dem Otto] _[+foc] hat die Maria _k bedauerlicherweise t _k t _j vertraut.		*	****	*!
☹	c [Dem Otto] _[+foc] hat bedauerlicherweise die Maria t _j vertraut.		*	****	*

Hence, in order to be able to capture the fact that focus-sensitive items may optionally occur in clause-initial position in front of the focus or within the middle field behind the unfocused arguments, it seems to be necessary to assume two separate constraints: one requiring them to precede the focused constituent and the other demanding them to follow unfocused material. The structural relations between a focus-sensitive adverb and an (un)focused element required by the constraints in (3.114) are regarded as a syntactic reflex of the special semantic relation of the adverb to its associated constituent in the present analysis.⁶²

- (3.114)a. -FOC<ADV: A constituent that is not focused by a focus-sensitive adverb c-commands the adverb.
 b. ADV<+FOC: A constituent that is focused by a focus-sensitive adverb does not c-command the adverb.

		(*X'-ADJ)	*CP-ADJ	FOCADJ	FINFOC	STAY-XP
T(i)	Bedauerlicherweise [dem Otto] _[+foc] hat die Maria vertraut. regrettably the Otto has the Maria trusted.in 'Maria regrettably trusted in Otto.'					
☞	a [_{CP} Bedauerlicherweise [dem Otto] _[+foc] hat [_{VP} die Maria [_{V'} t _j vertraut]]]		*		***	*
	b [_{CP} [Dem Otto] _[+foc] hat [_{VP} die Maria [_{V'} bedauerlicherweise [_{V'} t _j vertraut]]]]]	(*!)		*	****	*
☹	c [_{CP} [Dem Otto] _[+foc] hat [_{VP} bedauerlicherweise [_{VP} die Maria [_{V'} t _j vertraut]]]]]			*	****	*

⁶² Alternatively, these constraints could be considered to be prosodic in nature, demanding deaccented unfocused material to precede the adverb and accented focused elements to follow it, respectively.

Under the assumption that a focus-sensitive sentence adverb has to be merged above VP due to its selectional requirements, placement of an argument in front of the adverb must involve movement. In contrast to Jacobs' (1986) principles on the placement of focus-sensitive items, the constraints in (3.114) refer to surface structure. Yet due to the violability of OT constraints, they do not *per se* exclude placement of a focused constituent in front of a focus-sensitive item or positioning of unfocused material behind it.

In section 3.3 it was assumed that the subject occupies Spec,IP in non-subject-initial clauses in German. Remember that an adverb that takes scope over the whole proposition can be merged to IP or AuxP/VP (MODIFIER) and may thus precede or follow the subject in Spec,IP, as shown in Tableau T3.1 in section 3.2 for English. The focus constraints predict that the choice between pre- and post-subject placement of a focus-sensitive adverb within the German middle field is made on the basis of the information-structural status of the subject (compare Tableau T3.28 vs. Tableau T3.29 below): the adverb adjoins to IP in case the subject in Spec,IP is focused (ADV<+FOC), while it should follow an unfocused subject according to -FOC<ADV. Due to *X'-ADJ, the adverb is expected to attach to AuxP/VP rather than to I' in the latter case (see candidate T3.29c). Moreover, the ranking -FOC<ADV >> STAY-XP accounts for the fact that other non-focused arguments such as the object *den Fritz* ('the Fritz') in T3.28 are moved in front of the adverb; the adverb thus optimally emerges in focus-initial position within the middle field.⁶³ A focused object, by contrast, surfaces in its base position due to STAY-XP (see candidate T3.29g). In section 3.3, it was noted that there might be a constraint THEMSTRUC that requires serialization of arguments in accordance with their thematic roles; the fact that thematic relations of arguments need not be reflected in linear order - an unfocused object can precede a focused subject as in the optimal output T3.28c - indicates that THEMSTRUC is outranked by -FOC<ADV.⁶⁴

⁶³ In section 3.1 (footnote 6) it was assumed that a PROPOSITION-selecting sentence adverb may only be merged above VP since all arguments have to be integrated into the structure for type shift to PROPOSITION to be possible. Given that *X'-ADJ prohibits adjunction to the X'-level in general irrespective of category, the ranking *X'-ADJ >> -FOC<ADV >> STAY-XP likewise predicts that the order *argument - sentence adverb* is derived by movement: adverb adjunction below the base position of an argument, i.e. V'-adjunction violating *X'-ADJ in (ia), is suboptimal to movement of the argument across the VP-adjoined adverb as in (ib), violating STAY-XP:

- (i) a. [CP weil [IP Tim_j [VP t_j [V' Charlotte [V' wahrscheinlich [V' [ein Buch]_[+foc] t_i]]]]] schenkt_i]]
 because Tim Charlotte probably a book gives
 '... because Tim probably gives Charlotte a book.'
 b. [CP weil [IP Tim_j [VP Charlotte_k [VP wahrscheinlich [VP t_j [V' t_k [V' [ein Buch]_[+foc] t_i]]]]]]] schenkt_i]]

Note that certain phrases cannot scramble; i.e., they may intervene between a focus-sensitive adverb and a narrowly focused constituent (compare footnote 53). Since the focus constraints are conceived of as applying to any phrase irrespective of category, movement of phrases that do not allow for scrambling has to be excluded by some other constraint than STAY-XP that outranks -FOC<ADV.

⁶⁴ Note that variation in the relative order of certain objects is only permitted if the objects precede a sentence adverb. Following a sentence adverb, they may be placed in front of some other adverb or a focused subject, but their relative order cannot be altered (see Frey 2000b, Fanselow 2003b), indicating that it might depend on the type of fronting device whether or not a violation of THEMSTRUC is tolerated.

T3.28		SUBJECT	ADV<+FOC	-FOC<ADV	THEMSTRUC	STAY-XP
Heute verprügelt den Fritz vermutlich [der Karl] _[+foc] . today beats.up the Fritz presumably the Karl 'Presumably Karl will beat up Fritz today.'						
a	[_{CP} Heute _i verprügelt _i [_{VP} den Fritz _k [_{VP} vermutlich [_{VP} t _i [_{VP} [der Karl] _[+foc] t _k t _i]]]]]]	*!			*	**
b	[_{CP} Heute _i verprügelt _i [_{IP} vermutlich [_{IP} [der Karl] _[+foc] [_{VP} t _i [_{VP} t _j den Fritz t _j]] t _i]]]			*!		**
☞ c	[_{CP} Heute _i verprügelt _i [_{IP} den Fritz _k [_{IP} vermutlich [_{IP} [der Karl] _[+foc] [_{VP} t _i [_{VP} t _j t _k t _i]] t _i]]]]]				*	***
d	[_{CP} Heute _i verprügelt _i [_{IP} vermutlich [_{IP} den Fritz _k [_{IP} [der Karl] _[+foc] [_{VP} t _i [_{VP} t _j t _k t _i]] t _i]]]]]			*!	*	***
e	[_{CP} Heute _i verprügelt _i [_{IP} den Fritz _k [_{IP} [der Karl] _[+foc] [_{VP} vermutlich [_{VP} t _i [_{VP} t _j t _k t _i]] t _i]]]]]		*!		*	***
f	[_{CP} Heute _i verprügelt _i [_{IP} [der Karl] _[+foc] [_{VP} den Fritz _k [_{VP} vermutlich [_{VP} t _i [_{VP} t _j t _k t _i]] t _i]]]]]		*!			***

T3.29		SUBJECT	*X'-ADJ	ADV<+FOC	-FOC<ADV	THEMSTRUC	STAY-XP
Heute verprügelt der Karl vermutlich [den Fritz] _[+foc] . today beats.up the Karl presumably the Fritz 'Karl will presumably beat up Fritz today.'							
a	[_{CP} Heute _i verprügelt _i [_{VP} vermutlich [_{VP} t _i [_{VP} der Karl [den Fritz] _[+foc] t _i]]]]]]	*!			*		*
☞ b	[_{CP} Heute _i verprügelt _i [_{IP} der Karl _j [_{VP} vermutlich [_{VP} t _i [_{VP} t _j [den Fritz] _[+foc] t _i]] t _i]]]]]						**
c	[_{CP} Heute _i verprügelt _i [_{IP} der Karl _j vermutlich [_{IP} [_{VP} t _i [_{VP} t _j [den Fritz] _[+foc] t _i]] t _i]]]]]		*!				**
d	[_{CP} Heute _i verprügelt _i [_{IP} vermutlich [_{IP} der Karl _j [_{VP} t _i [_{VP} t _j [den Fritz] _[+foc] t _i]] t _i]]]]]				*!		**
e	[_{CP} Heute _i verprügelt _i [_{IP} vermutlich [_{IP} [den Fritz] _[+foc] [_{IP} der Karl _j [_{VP} t _i [_{VP} t _k t _i]] t _i]]]]]]]				*!	*	***
f	[_{CP} Heute _i verprügelt _i [_{IP} [den Fritz] _[+foc] [_{IP} der Karl _j [_{VP} vermutlich [_{VP} t _i [_{VP} t _k t _i]] t _i]]]]]]]			*!		*	***
g	[_{CP} Heute _i verprügelt _i [_{IP} der Karl _j [_{VP} vermutlich [_{VP} [den Fritz] _[+foc] [_{VP} t _i [_{VP} t _k t _i]] t _i]]]]]]]						*** !

- (i) a. ... weil Otto leider die Kandidaten dieser Prüfung ausgesetzt hat.
because Otto unfortunately the candidates this exam exposed.to has
(Fanselow 2003b: 30)
'... because Otto unfortunately exposed the candidates to this exam.'
- b. *... weil Otto leider dieser Prüfung die Kandidaten ausgesetzt hat.
- c. ... weil Otto dieser Prüfung leider die Kandidaten ausgesetzt hat.
- d. ... daß er glücklicherweise die Kandidaten der schwersten Prüfung immer nur
that he fortunately the candidates the most.difficult examination always only
am Vormittag unterzog.
in.the morning subjected.to
(Fanselow 2003b: 31)
'... that he fortunately always subjected the candidates to the most difficult examination only in the morning.'
- e. ... daß glücklicherweise die Kandidaten einer schweren Prüfung am Vormittag
that fortunately the candidates a difficult examination in.the morning
nur der FRITZ unterziehen wollte.
only the Fritz subject.to wanted.to
'... that fortunately only Fritz wanted to subject the candidates to a difficult examination in the morning.'

Hence, the focus constraints predict that sentence adverbs partition the sentence into focus and background: due to $-FOC < ADV >> STAY-XP$, unfocused arguments are moved in front of a sentence adverb within the middle field, giving rise to its focus-initial occurrence in case the focus appears within the middle field. Though $ADV < +FOC$ requires the adverb to precede its associated constituent, placement of the focused constituent in front of the adverb is not ruled out *per se*. For example, the focused constituent in prefield position may precede a focus-sensitive adverb within the middle field; alternatively, the adverb can be placed in front of the focused constituent in Spec,CP, (3.115a). The fact that both adverb positions are acceptable points to the conclusion that $*CP-ADJ$ and $ADV < +FOC$ are tied (compare Tableau T3.30): placement of an adverb in front of the focus in prefield position and its positioning behind the unfocused arguments within the middle field may thus arise as variants from the same competition.⁶⁵ Thereby, dominance of OBHD and $STAY-X$ over $*CP-ADJ$ predicts that the adverb is adjoined to CP as in candidate T3.30a rather than placed in the specifier of some higher projection as in candidate T3.30b,c in order to satisfy $ADV < +FOC$. Note that the tie of $ADV < +FOC$ and $*CP-ADJ$ has to be outranked by AGREE for placement of the focus in prefield position to be possible at all: both constraints can be simultaneously satisfied if the focused phrase appears within the middle field (see candidate T3.30e). Furthermore, the option to

⁶⁵ Note that the ranking $PUREEP >> ADV < +FOC$ predicts that adverb adjunction to an embedded CP is prohibited. Adjoined to the matrix CP, the adverb may precede the subordinate clause in prefield position (compare examples (3.106, 3.107) above).

- (i) a. *David hat behauptet, [_{CP} angeblich [_{CP} daß Corinna lügt]]
David has claimed allegedly that Corinna lies
'David allegedly claimed that Corinna is lying.'
- b. [_{CP} Angeblich [_{CP} [_{CP} daß Corinna lügt], hat David behauptet]]
- (ii) a. *Er wird einen Schirm kaufen, [_{CP} wahrscheinlich [_{CP} wenn es regnet]]
he will an umbrella buy probably when it rains
'He will probably buy an umbrella when it rains.'
- b. [_{CP} Wahrscheinlich [_{CP} [_{CP} wenn es regnet], wird er einen Schirm kaufen]]
- (iii) a. *Gustav spricht nicht mehr mit Inga, [_{CP} vielleicht [_{CP} weil sie ihn beleidigt hat]]
Gustav speaks not anymore with Inga maybe because she him insulted has
'Gustav maybe doesn't speak to Inga anymore because she insulted him.'
- b. [_{CP} Vielleicht [_{CP} [_{CP} weil sie ihn beleidigt hat], spricht Gustav nicht mehr mit Inga]]

However, focus-sensitive adverbs differ from focus particles in that the latter may adjoin to adjunct clauses (but not to argument clauses (v); see Büring & Hartmann 2001). On differences between focus-sensitive adverbs and focus particles see also footnote 54.

- (iv) a. Karl hat sein Fenster mit Styropor verklebt, nur damit er Ruhe hat.
Karl has his window with styropor glued only so.as he peace has
(Büring & Hartmann 2001: 268)
'Karl has glued styropor to his windows only so as to have a bit of peace.'
- b. Maria will kommen, auch wenn sie nicht eingeladen ist. (Büring & Hartmann 2001: 269)
Maria wants.to come even if she not invited is
'Maria wants to come, even if she is not invited.'
- (v) a. *Niemand wagt zu hoffen, nur daß wir je wieder gewinnen.
nobody dares to hope only that we ever again win.
'Nobody dares only to hope that we ever win again.'
- b. Nur daß wir je wieder gewinnen, wagt niemand zu hoffen. (Büring & Hartmann 2001: 265)
i) 'The only thing nobody dares to hope is that we'll ever win again.'
ii) '#Nobody dares only to hope that we ever win again.'

place the adverb in front of the focused constituent in Spec,CP indicates that ADV<+FOC and *CP-ADJ dominate -FOC<ADV: the unfocused arguments within the middle field follow the clause-initial adverb, they cannot adjoin to CP above the adverb (see candidate T3.30d).

- (3.115)a. Bedauerlicherweise [dem Otto]_[+foc] hat die Maria das Auto geliehen.
 unfortunately the Otto has the Maria the car lent
 'Maria unfortunately lent the car to Otto.'
- b. [Dem Otto]_[+foc] hat die Maria das Auto bedauerlicherweise geliehen.
- c. ??[Dem Otto]_[+foc] hat die Maria bedauerlicherweise das Auto geliehen.
- d. ??[Dem Otto]_[+foc] hat bedauerlicherweise die Maria das Auto geliehen.

T3.30	Bedauerlicherweise [dem Otto] _[+foc] hat die Maria regrettably the Otto has the Maria das Auto geliehen. the car lent 'Maria regrettably lent the car to Otto.'	AGREE	OBHD	STAY-X	*CP-ADJ	ADV<+FOC	-FOC<ADV	THEMSTRUC	STAY-XP
☞ a	[_{CP} Bedauerlicherweise [_{CP} [dem Otto] _[+foc] hat _i [_{IP} die Maria _j [_{AuxP} [_{VP} t _j t _k das Auto geliehen] t _i] t _i]]]			**	*		****	*	**
b	[_{FP} Bedauerlicherweise e [_{CP} [dem Otto] _[+foc] hat _i [_{IP} die Maria _j [_{AuxP} [_{VP} t _j t _k das Auto geliehen] t _i] t _i]]]		*!	**			****	*	**
c	[_{FP} Bedauerlicherweise hat _i [_{CP} [dem Otto] _[+foc] t _i [_{IP} die Maria _j [_{AuxP} [_{VP} t _j t _k das Auto geliehen] t _i] t _i]]]			***!			****	*	**
d	[_{CP} Die Maria _j [_{CP} das Auto _l [_{CP} bedauerlicherweise [_{CP} [dem Otto] _[+foc] hat _i [_{IP} t _j [_{AuxP} [_{VP} t _i t _k t _i geliehen] t _i t _i]]]]]]]			**	**!*		**	*	****
e	[_{CP} Das Auto _l hat _i -C ⁰ _[+foc] [_{IP} die Maria _j [_{AuxP} bedauerlicherweise [_{AuxP} [_{VP} t _j [dem Otto] _[+foc] t _i geliehen] t _i]] t _i]]]	*!		**			*	**	**
f	[_{CP} [Dem Otto] _[+foc] hat _i [_{IP} die Maria _j [_{AuxP} bedauerlicherweise [_{AuxP} [_{VP} t _j t _k das Auto geliehen] t _i]] t _i]]]			**		*	**!	*	**
g	[_{CP} [Dem Otto] _[+foc] hat _i [_{IP} das Auto _l [_{IP} die Maria _j [_{AuxP} bedauerlicherweise [_{AuxP} [_{VP} t _j t _k t _i geliehen] t _i]] t _i]]]]]			**		*	*	**!	***
h	[_{CP} [Dem Otto] _[+foc] hat _i [_{IP} die Maria _j [_{IP} das Auto _l [_{IP} bedauerlicherweise [_{IP} t _j [_{AuxP} [_{VP} t _j t _k t _i geliehen] t _i]]]]]]]]]			**		*	*	*	**** !
☞ i	[_{CP} [Dem Otto] _[+foc] hat _i [_{IP} die Maria _j [_{AuxP} das Auto _l [_{AuxP} bedauerlicherweise [_{AuxP} [_{VP} t _j t _k t _i geliehen] t _i]]]] t _i]]]			**		*	*	*	***

Adverb adjunction to CP is only acceptable if the prefield position is occupied by the focused phrase; otherwise, i.e. in case the focus occurs within the middle field and some other constituent appears in Spec,CP, the requirement of ADV<+FOC can be fulfilled by middle field positioning of the adverb, satisfying *CP-ADJ (compare Tableaux T3.30 and T3.31).

Hence, V3-structures may only arise if the focused constituent is to be placed in prefield position (AGREE).^{66,67}

		AGREE	*CP-ADJ	ADV<+FOC	-FOC<ADV	THEMSTRUC	STAY-XP
T3.31	Die M. hat das Auto bedauerlicherweise [dem Otto] _[+foc] geliehen. the M. has the car regrettably the Otto lent 'Maria regrettably lent the car to Otto.'						
a	[_{CP} Bedauerlicherweise [_{CP} die Maria _j hat _i [_{IP} t _j [_{AUXP} [_{VP} t _j [_{dem Otto}] _[+foc] das Auto geliehen] t _i] t _i]]]		*!		****		**
b	[_{CP} Bedauerlicherweise hat _i [_{IP} die Maria _j [_{AUXP} [_{VP} t _j [_{dem Otto}] _[+foc] das Auto geliehen] t _i] t _i]]]				**!*		*
c	[_{CP} Die Maria _j hat _i [_{IP} t _j [_{AUXP} bedauerlicherweise [_{AUXP} [_{VP} t _j [_{dem Otto}] _[+foc] das Auto geliehen] t _i] t _i]]]				**!		**
d	[_{CP} Die M. _j hat _i [_{IP} t _j [_{AUXP} das Auto ₁ [_{AUXP} bedauerlicherweise [_{AUXP} [_{VP} t _j [_{dem Otto}] _[+foc] t _i geliehen] t _i] t _i]]]				*	*	***
e	[_{CP} [Dem Otto] _{[+foc]k} hat _i [_{IP} die Maria _j [_{AUXP} das Auto ₁ [_{AUXP} bedauerlicherweise [_{AUXP} [_{VP} t _j t _k t _i geliehen] t _i] t _i]]]			*!	*	*	***
f	[_{CP} Bedauerlicherweise [_{CP} [dem Otto] _{[+foc]k} hat _i [_{IP} die Maria _j [_{AUXP} [_{VP} t _j t _k das Auto geliehen] t _i] t _i]]]		*!		****	*	**
g	[_{CP} Das Auto ₁ hat _i [_{IP} die Maria _j [_{AUXP} bedauerlicherweise [_{AUXP} [_{VP} t _j [_{dem Otto}] _[+foc] t _i geliehen] t _i] t _i]]]				*	**!	**

⁶⁶ In addition, there seems to be a prosodic restriction on adverb adjunction to CP: an adverb may only precede the focused constituent in prefield position if there is sufficient phonetic material within the middle field (compare footnote 3 in chapter 2).

- (i) (What is she drinking?)
- a. ?*Wahrscheinlich naturtrüben Apfelsaft trinkt sie.
probably nature.cloudy apple.juice drinks she
'She is probably drinking naturally cloudy apple juice.'
- b. Wahrscheinlich naturtrüben Apfelsaft trinkt die Gesundheitsministerin
probably nature.cloudy apple.juice drinks the health.minister
bei Veranstaltungen der Lebensmittelindustrie.
at events the food.industry
'The minister of health is probably drinking naturally cloudy apple juice at events of the food industry.'

⁶⁷ Note that the ranking -FOC<ADV>> STAY-XP predicts that movement of an unfocused constituent to Spec,CP is preferred over base-generation of a focus-sensitive adverb in this position (compare candidate T3.31b). However, adverb placement in Spec,CP is possible even if unfocused constituents follow.

- (i) a. Wahrscheinlich wird er sie [vermissen]_[+foc].
probably will he her miss
'He will probably miss her.'
- b. Vermutlich wird er [Maria]_[+foc] verprügeln.
presumably will he Maria beat.up
'He will presumably beat up Maria.'
- c. Leider hat [mein Sohn]_[+foc] die Scheibe eingeworfen.
unfortunately has my son the window smashed
'Unfortunately my son has smashed the window.'

As already mentioned in section 3.3, C⁰ may apparently bear some feature that demands for the occurrence of a sentence adverb in prefield position; consequently, the ranking AGREE >> -FOC<ADV allows for clause-initial adverb placement as in (i) in case C⁰ bears the corresponding feature.

The ranking AGREE >> -FOC<ADV follows from the partial rankings AGREE >> ADV<+FOC and ADV<+FOC >> -FOC<ADV established above, predicting a focused constituent to be able to occur in Spec,CP in the presence of a focus-sensitive item, compare Tableau T3.30.

Note that the focus constraints are underspecified for morphosyntactic category; i.e. just as for arguments, they predict placement of verbs relative to focus-sensitive adverbs to depend on focus-background structure. Similar to a focused phrase in Spec,CP, a focused finite verb in V2 position may be preceded or followed by a focus-sensitive adverb in prefield or middle field position, respectively (compare example (3.95) above). The finite verb has to occur in matrix C⁰ due to OBHD >> ADV<+FOC, irrespective of focus.⁶⁸ Because of the ranking ADV<+FOC >> -FOC<ADV, it is expected that the adverb appears in prefield position unless C⁰ attracts some other constituent (compare Tableaux T3.32 vs. T3.33). Dominance of *X'-ADJ over ADV<+FOC predicts that adjacency between the adverb and the focus cannot be established by C'-adjunction of the adverb (see candidates T3.32c and T3.33b).

T3.32	Wahrscheinlich [liebt] _[+foc] Tom Johanna. probably loves Tom Johanna 'Tom probably loves Johanna.'	AGREE	OBHD	*X'-ADJ	STAY-X	*CP-ADJ	ADV<+FOC	-FOC<ADV	STAY-XP
☞ a	[CP Wahrscheinlich [liebt] _[+foc] _i [IP Tom _j [VP t _j Johanna t _i t _i]]]				**			**	*
b	[CP Tom _j [CP Johanna _k [CP wahrscheinlich [liebt] _[+foc] _i [IP t _i [VP t _j t _k t _i t _i]]]]]				**	*!*			***
c	[CP Tom _j wahrscheinlich [C' [liebt] _[+foc] _i [IP t _j [VP t _j Johanna t _i t _i]]]			*!	**			*	**
d	[FP Tom _j e [CP wahrscheinlich [liebt] _[+foc] _i [IP t _j [VP t _j Johanna t _i t _i]]]		*!		**			*	**
e	[CP Tom _j [liebt] _[+foc] _i [IP t _j [VP Johanna _k [VP wahrscheinlich [VP t _j t _k t _i t _i]]] t _i]]]				**		*!		***

T3.33	Tom [liebt] _[+foc] Johanna wahrscheinlich. Tom loves Johanna probably 'Tom probably loves Johanna.'	AGREE	OBHD	*X'-ADJ	STAY-X	*CP-ADJ	ADV<+FOC	-FOC<ADV	STAY-XP
a	[CP Wahrscheinlich [liebt] _[+foc] _i -C ⁰ _[+top] [IP Tom _[+top] _j [VP t _j Johanna t _i t _i]]]	*!			**			**	*
b	[CP Tom _[+top] _j wahrscheinlich [C' [liebt] _[+foc] _i [IP t _j [VP t _j Johanna t _i t _i]]]			*!	**			*	**
c	[CP Tom _[+top] _j e [IP wahrscheinlich [IP t _j [VP t _j Johanna t _i [liebt] _[+foc] _i]]]		*!		*			*	**
d	[CP Tom _[+top] _j [[liebt] _[+foc] _i [IP t _j [VP wahrscheinlich [VP t _j Johanna t _i t _i]]] t _i]]]				**		*	*!	**
☞ e	[CP Tom _[+top] _j [[liebt] _[+foc] _i [IP t _j [VP Johanna _k [VP wahrscheinlich [VP t _j t _k t _i t _i]]] t _i]]]				**		*		***

In contrast to unfocused objects, clause-final verbs cannot be fronted within the middle field, compare (3.92, 3.93) above, repeated here as (3.116, 3.117):

⁶⁸ The ranking OBHD >> ADV<+FOC follows from OBHD >> STAY-X, triggering finite verb movement, and STAY-X >> *CP-ADJ <<>> ADV<+FOC, permitting CP-adjunction in case the focus occurs in Spec,CP.

(3.116)a. Christian wird wahrscheinlich [Sophie]_[+foc] heiraten.
 Christian will probably Sophie marry
 'Christian will probably marry Sophie.'

b. *Christian wird heiraten wahrscheinlich [Sophie]_[+foc].

(3.117)a. Christian wird sie vermutlich heiraten [müssen]_[+foc].
 Christian will her presumably marry must
 'Christian will presumably have to marry her.'

b. *Christian wird sie heiraten vermutlich [müssen]_[+foc].

In accordance with the Structure Preserving Principle (Emonds 1976), heads only move to X^0 positions; movement of the verbs in (3.116, 3.117) to an XP position is excluded.⁶⁹ As discussed in section 3.2, X^0 -movement is restricted to target the next highest head position occupied by a trace, thereby forming an extended chain. Since verbal projections are head-final in German (see section 3.3), it cannot be deduced from surface order whether or not non-finite verb movement takes place. Yet, remember that the focus constraints refer to the c-command relation between a focus-sensitive item and the constituent that is (not) associated with it, not to their linear order; hence, head movement could help to satisfy -FOC<ADV. However, the ranking STAY-X >> -FOC<ADV predicts that movement of a non-finite verb cannot be triggered by information-structural considerations in German⁷⁰: an unfocused verb cannot move in order to escape the c-command domain of a focus-sensitive item (see Tableau T3.34).

⁶⁹ Note that Müller's (1998a) principle of Unambiguous Domination prohibits scrambling of a remnant VP to an XP-adjoined position within the middle field as in (ii).

- (i) Unambiguous Domination: (Müller 1998a: 241)
 An α -trace must not be α -dominated.
 (whereby α -trace means a trace with a (not necessarily c-commanding) antecedent in a position α , and α -dominated means dominated by a category in a position of type α)
- (ii) *[_{CP} Christian_j wird_i [_{IP} t_j [_{AuxP} [_{VP} t_j t_k heiraten]_i [_{AuxP} wahrscheinlich [_{AuxP} [_{VP} Sophie_k t_j] t_i]]]]]
 Christian will marry probably Sophie
 'Christian will probably marry Sophie.'

Placement of a remnant VP in the specifier of some intermediate FP is excluded by the dominance of OBHD and STAY-X over -FOC<ADV, prohibiting the integration of an additional functional projection.

⁷⁰ The ranking STAY-X >> -FOC<ADV follows from the partial rankings STAY-X >> *CP-ADJ, prohibiting CP-recursion in favor of adverb adjunction to CP in case the focused element appears in Spec,CP (compare candidate T3.30a), and *CP-ADJ >> -FOC<ADV, accounting for the fact that (unfocused) arguments cannot adjoin to CP (see candidates T3.30d, T3.32b).

T3.34	... weil K. Maria wahrscheinlich [ein Buch] _[+foc] schenken wird. because K. Maria probably a book give will '... because Klaus will probably give Maria a book.'	STAY-X	*CP-ADJ	ADV<+FOC	-FOC<ADV	STAY-XP
a	[_{CP} weil [_{IP} Klaus _j [_{AuxP} wahrscheinlich [_{AuxP} [_{VP} t _j Maria [ein Buch] _[+foc] schenken] t _i] wird _i]]]]]	*			*!*	*
☞ b	[_{CP} weil [_{IP} Klaus _j [_{AuxP} Maria _k [_{AuxP} wahrscheinlich [_{AuxP} [_{VP} t _j t _k [ein Buch] _[+foc] schenken] t _i] wird _i]]]]]	*			*	**
c	[_{CP} weil [_{IP} Klaus _j [_{AuxP} Maria _k [_{AuxP} wahrscheinlich [_{AuxP} [_{VP} t _j t _k [ein Buch] _[+foc] t _i] schenken _{i-t_i}] wird _i]]]]]	**!			*	**
d	[_{CP} weil [_{IP} Klaus _j [_{AuxP} [_{VP} Maria _k [_{VP} wahrscheinlich [_{VP} t _j t _k [ein Buch] _[+foc] t _i] schenken _{i-t_i}] wird _i]]]]]	**!				**

Since the finite verb in right-peripheral position in embedded clauses occurs in I⁰ (compare section 3.3), its information-structural properties may be taken into consideration in adverb positioning (i.e. adverb adjunction to IP vs. adjunction to AuxP/VP). Because of the ranking ADV<+FOC >> -FOC<ADV, a focus-sensitive adverb is expected to adjoin to AuxP/VP only if neither the subject in Spec,IP nor the finite verb in I⁰ is focused (see Tableau T3.34 vs. T3.35, T3.36). In case either of the two constituents is focused, the adverb has to attach to IP to satisfy ADV<+FOC. As illustrated in Tableau T3.35, an unfocused subject adjoins to IP above the adverb, in accordance with -FOC<ADV >> STAY-XP if the finite verb is focused. An unfocused finite verb, by contrast, cannot escape the c-command domain of an IP-adjoined adverb: the ranking STAY-X >> -FOC<ADV prohibits that a further FP is projected above IP whose head the verb could target (see candidate T3.36e).

T3.35	... weil Tina wahrscheinlich [lügt] _[+foc] . because Tina probably lies '...because Tina is probably lying.'	SUBJECT	OBHD	*X'-ADJ	STAY-X	ADV<+FOC	-FOC<ADV	STAY-XP
a	[_{CP} weil [_{IP} wahrscheinlich [_{IP} Tina _j [_{VP} t _j t _i] [lügt] _[+foc]]]]]]				*		*	*
b	[_{CP} weil [_{IP} Tina _j wahrscheinlich [_r [_{VP} t _j t _i] [lügt] _[+foc]]]]]]			*!	*			*
c	[_{CP} weil [_{IP} Tina _j [_{VP} wahrscheinlich [_{VP} t _j t _i] [lügt] _[+foc]]]]]]				*	*!		*
d	[_{CP} weil [_{IP} Tina _j [_{VP} wahrscheinlich [_{VP} t _j [lügt] _[+foc]] e]]]]]		*!					*
☞ e	[_{CP} weil [_{IP} Tina _j [_{IP} wahrscheinlich [_{IP} t _j [_{VP} t _j t _i] [lügt] _[+foc]]]]]]]]				*			**

T3.36	... weil wahrscheinlich [Tina] _[+foc] lügt. because probably Tina lies '...because probably Tina is lying.'	SUBJECT	OBHD	*X'-ADJ	STAY-X	ADV<+FOC	-FOC<ADV	STAY-XP
☞ a	[_{CP} weil [_{IP} wahrscheinlich [_{IP} [Tina] _[+foc] [_{VP} t _j t _i] lügt _i]]]]]				*		*	*
b	[_{CP} weil [_{IP} [Tina] _[+foc] [_{VP} wahrscheinlich [_{VP} t _j t _i] lügt _i]]]]]				*	*!		*
c	[_{CP} weil [_{IP} e [_{VP} wahrscheinlich [_{VP} [Tina] _[+foc] t _i] lügt _i]]]]]	*!			*			*
e	[_{CP} weil [_{FP} [_{IP} wahrscheinlich [_{IP} [Tina] _[+foc] [_{VP} t _j t _i] t _i] lügt _i]]]]]				**!			*

3.4.3 Positioning of Focus-Sensitive Adverbs in English and French

Let's have a look at how the focus constraints affect word ordering in English and French. In these languages, an object may never precede a sentence adverb within the auxiliary range, suggesting that STAY-XP outranks -FOC<ADV: in contrast to German, -FOC<ADV thus cannot trigger movement of an unfocused object to a position c-commanding a focus-sensitive adverb, as illustrated in Tableau T3.37 for English.

(3.118)(What has John done to Mary?)

- a. John has probably [hit]_[+foc] Mary.
- b. *John has Mary_j probably [hit]_[+foc] t_j.

(3.119)(What has Jean done to Marie?)

- a. Jean a probablement [frappé]_[+foc] Marie.
Jean has probably hit Marie
'Jean probably hit Marie.'
- b. *Jean a Marie_j probablement [frappé]_[+foc] t_j.

T3.37		STAY-XP	-FOC<ADV
☞	a [IP John _i has _i [AuxP probably [AuxP t _i [VP t _j [stolen] _[+foc] the book]]]]	*	*
	b [IP John _i has _i [AuxP [DP the book] _k [AuxP probably [AuxP t _i [VP t _j [stolen] _[+foc] t _k]]]]]	**!	

While an object cannot be placed in front of an adverb due to STAY-XP >> -FOC<ADV in English and French, positioning of the subject relative to an adverb might be sensitive to focus. Since the subject has to move to Spec,IP (SUBJECT >> STAY-XP), the various orders of a wide scope adverb and the subject do not have to involve additional movement penalized by STAY-XP, but may result from differences in the attachment site of the adverb: a sentence adverb may be merged above (IP-adjoined) or below (AuxP-/VP-adjoined) the target position of subject movement. As illustrated in (3.120, 3.121), an adverb should follow an unfocused subject; placement of the adverb in front of the subject requires comma-intonation (3.120b, 3.121b), pointing to its parenthetical usage.⁷¹ -FOC<ADV prefers adverb attachment below the surface position of the unfocused subject and finite verb/auxiliary (see Tableau T3.38).

⁷¹ In parenthetical usage, sentence adverbs can appear in positions in which they are unacceptable otherwise; adverb occurrence in parenthetical positions will not be discussed here.

- (i) a. Charles loves, probably, Susan.
- b. Hans hat im Lotto gewonnen, erfreulicherweise.
 Hans has in.the national.lottery won happily
 'Happily, Hans won the national lottery.'
- c. Jean, probablement, a rencontré Marie.
 Jean probably has met Marie
 'Jean has probably met Marie.'

(3.120)(What has John done?)

- a. John has probably [kissed Mary]_[+foc].
- b. Probably *(,) John has [kissed Mary]_[+foc].

(3.121)(What has Jean done?)

- a. Jean a probablement [embrassé Marie]_[+foc].
Jean has probably kissed Marie
'Jean has probably kissed Marie.'
- b. Probablement *(,) Jean a [embrassé Marie]_[+foc].

T3.38		STAY-XP	ADV<+FOC	-FOC<ADV	*X'-ADJ
☞	a [IP John _i has _i [AUXP probably [AUXP t _i [VP t _j [kissed Mary] _[+foc]]]]]	*			
	b [IP John _i probably [I' has _i [AUXP t _i [VP t _j [kissed Mary] _[+foc]]]]]	*		*!	*
	c [IP Probably [IP John _i has _i [AUXP t _i [VP t _j [kissed Mary] _[+foc]]]]]	*		*!*	
	d [IP John _i [IP probably [IP t _j has _i [AUXP t _i [VP t _j [kissed Mary] _[+foc]]]]]]]	**!		*	

By contrast, in case the subject is narrowly focused, a focus-sensitive adverb may precede or follow it in English, indicating that the two focus constraints are tied: ADV<+FOC requires the adverb to precede the focused subject whereas -FOC<ADV demands for its placement behind the unfocused finite auxiliary (see Tableau T3.39).

(3.122)(Who has solved the mystery?)

- a. Presumably [John]_[+foc] has solved the mystery.
- b. [John]_[+foc] has presumably solved the mystery.

T3.39		SUBJECT	STAY-X	STAY-XP	ADV<+FOC	-FOC<ADV	*X'-ADJ
☞	a [IP [John] _[+foc] has _i [AUXP presumably [AUXP1 t _i [VP t _j solved the mystery]]]]		*	*	*	**	
☞	b [IP Presumably [IP [John] _[+foc] has _i [AUXP t _i [VP t _j solved the mystery]]]]		*	*		***	
	c [IP [John] _[+foc] presumably [I' has _i [AUXP1 t _i [VP t _j solved the mystery]]]]		*	*	*!	***	*
	d [IP e Has _i [AUXP presumably [AUXP t _i [VP [John] _[+foc] solved the mystery]]]]	*!	*			**	

In section chapter 5, it will be argued that the focus constraints are tied in French as well. However, a focused subject usually does not occur in its canonic position in that language; rather, a cleft construction is used (see e.g. Lambrecht 1994, 2001).

- (3.123)(How do you know?) (Lambrecht 2001: 490)
- a. #[Huma]_[+foc] me l' a dit.
 Huma me it has said
 'Huma has told me that.'
- b. C'est [Huma]_[+foc] qui me l' a dit.
 it is Huma who me it has said
 'It was Huma who told me that.'

Clefts express a single proposition via biclausal syntax: the copula in the matrix clause together with its subject marks the complement as focus, which is assigned a semantic role by the verb in the relative clause (see Collins 1991a,b, Fichtner 1993, Lambrecht 1994, 2001, Jucker 1997, and Katz 2000).⁷² Cleft formation apparently serves two functions: first, it results in the placement of syntactic constituents and prosodic accents in cognitively preferred positions: the focused constituent, which bears main stress, occurs at the right edge of a prosodic phrase, as favored by phonological principles (on OT approaches to prosodic phrasing see e.g. Samek-Lodovici 1998, 2002, Truckenbrodt 1999, Féry & Herbst t.a., among others). Second, cleft constructions unambiguously mark the focal range.⁷³

If the subject is focused, focus-presupposition structure could be unambiguously marked by stress on the subject in canonical order; in this case however, accent does not appear at the right edge of a phonological phrase. Since only elements at the end of a rhythmic group can be stressed in French, placement of a focused subject in its canonical position Spec,IP is blocked (see Katz 2000 and Féry 2001). English, by contrast, is more variable in stress placement: a pitch accent may be inserted at any point in an utterance to highlight a certain

⁷² The subordinate clause of a cleft differs from an ordinary relative clause in that (a) a relative element functioning as subject can be deleted in clefts, (ia) vs. (ib), and (b) the antecedent of the subordinate clause of a cleft can be an NP, PP, finite clause, non-finite clause, AdvP, AdjP, particle, quantifier and zero (see e.g. Collins 1991a).

- (i) a. Well it's Bill Gravy wants to speak to him. (Collins 1991a: 52)
 b. *Bill Gravy, wants to speak to him, is waiting outside.

Note that the highlighted element in a cleft is to be considered to be the antecedent of the relative clause: the verb in the relative clause agrees with the focus rather than with *it*:

- (ii) It is the tenants of the pre-1880 houses who are / *is to be rehoused in the new houses. (Collins 1991a: 51)

⁷³ Lambrecht (2001) summarizes these functions in the following principles:

Principle I (Formal Motivation):

The occurrence of cleft constructions in a language correlates with the degree of positional freedom of prosodic accents and syntactic constituents in that language. (Lambrecht 2001: 488)

Principle II (Functional Motivation):

Cleft constructions are focus-marking devices used to prevent unintended predicate-focus construal of a proposition. Clefts serve to mark as focal an argument that might otherwise be construed as nonfocal, or as nonfocal a predicate that might otherwise be construed as focal, or both. (Lambrecht 2001: 489)

element. Consequently, while cleaving is obligatory in French in case of a focused subject (3.124), it is optional or even odd in English (3.125).⁷⁴

(3.124) *Quelle belle chemise! Où est-ce que tu l'as achetée?* (Katz 2000: 258)

('What a nice shirt! Where did you buy it?')

a. C'est [ma mère]_[+foc] qui me l' a offerte.

it is my mother who me it has given

'It's my mother who gave it to me.'

b. #[Ma mère]_[+foc] me l' a offerte.

my mother me it has given

'My mother gave it to me.'

(3.125) *What a nice shirt! Where did you buy it?*

a. #It's [my mother]_[+foc] who gave it to me.

b. [My mother]_[+foc] gave it to me.

Unlike focus on the subject, focus on the object may satisfy the prosodic conditions in canonical order: the stressed constituent occurs at the end of a prosodic phrase in (3.126). However, the focal range is not unambiguously marked by stressing the object. As illustrated in (3.126a), accent on the object is compatible with various focus-presupposition structures due to the availability of focus projection (see Höhle 1982); the sentence may be used to answer all of the questions in (3.127). In the cleft construction in (3.126b), by contrast, the object *the moonlight sonata* is clearly marked as narrowly focused; the sentence may only answer (3.127a).

(3.126)a. [Elaine [started [to play [the moonlight sonata]_[+foc]]. (Jucker 1997: 190)

b. It is [the moonlight sonata]_[+foc] that Elaine started to play.

(3.127)a. What did Elaine start to play?

b. What did Elaine start to do?

c. What did Elaine do?

d. What happened?

To account for the two functions cleft constructions obviously perform, assume that the constraint in (3.128) motivates cleft formation:

(3.128) CLEFT: (a) The focal range is marked unambiguously and (b) the focused constituent is placed at the right edge of a phonological phrase.⁷⁵

⁷⁴ Collins (1991a) observes that in English, cleft constructions with focused subjects occur less often in spoken language than in written language where stress cannot be exploited to mark focus. In addition, he notes that clefts are very rare in German where focal constituents are placed rightmost in a clause by scrambling of the nonfocal ones, thereby establishing the focal range.

⁷⁵ The two conditions on cleft formation should possibly be stated in separate constraints since they seem to be mutually dependent: as noted above, the stressed constituent does not need to occur in right-peripheral position in English while it has to in French. Hence, a subject may be unambiguously marked as focal in canonic order in

As will be shown in chapter 5, CLEFT outranks the focus constraints in French. Hence, to ensure occurrence of the accent at the end of a prosodic phrase, a cleft structure has to be used in case the subject is focused in French.

Moreover, as noted in chapter 1, focus seems to have an effect on the choice between pre- and post-auxiliary adverb placement in English: an adverb follows an unstressed auxiliary while it should precede a stressed one.

- (3.129)a. John can certainly speak Chinese.
 b. John certainly [can]_[+foc] speak Chinese.

Since OBHD outranks ADV<+FOC in English (see footnote 77), it is predicted that a focused finite auxiliary has to move to I⁰ (compare Tableau T3.40). Adverb placement in front of the finite auxiliary as in (3.129b) must thus be a result of I'-adjunction of the adverb, indicating that ADV<+FOC dominates *X'-ADJ. Note that pre-auxiliary adverb positioning is predicted not to arise by subject movement across an IP-adjoined adverb as assumed by Belletti (1990, 1994), see section 2.1.2: such movement is ruled out by the ranking STAY-XP >> -FOC<ADV established above (see candidate T3.40e).

T3.40	OBHD	STAY-X	STAY-XP	ADV<+FOC	-FOC<ADV	*X'-ADJ
a [IP John _i [can] _[+foc] _i [AuxP certainly [AuxP t _i [VP t _i speak Chinese]]]]		*	*	*!	**	
b [IP John _i certainly [r [can] _[+foc] _i [AuxP t _i [VP t _i speak Chinese]]]]		*	*		**	*
c [IP John _i e [AuxP certainly [AuxP [can] _[+foc] _i [VP t _i speak Chinese]]]]	*!		*		**	
d [IP certainly [IP John _i [can] _[+foc] _i [AuxP t _i [VP t _i speak Chinese]]]]		*	*		***!	
e [IP John _i [IP certainly [IP t _j [can] _[+foc] _i [AuxP t _i [VP t _j speak Chinese]]]]]]		*	**!		**	

The ranking ADV<+FOC >> *X'-ADJ allows for I'-adjunction of a wide scope adverb only in case the finite auxiliary is focused. For narrow scope adverbs, by contrast, pre-auxiliary placement is unacceptable irrespective of focus. Under a narrow scope reading, an adverb has to be merged below the base position of the modal verb (MODIFIER). SCMA (as well as STAY-XP) penalizes adverb movement in front of the focused auxiliary; consequently, the ranking SCMA >> ADV<+FOC predicts that the narrow scope adverb has to follow the wide scope element, as illustrated in Tableau T3.41.

- (3.130)a. It [must]_[+foc] often rain here. (Wilder 1997: 327)
 b. *It often [must]_[+foc] rain here.

English, but not in French. In addition, condition (b) might be viewed as resulting from the interaction of several constraints on prosodic phrasing (see Samek-Lodovici 1998, 2002, Truckenbrodt 1999, among others). These subtleties, however, go beyond the scope of this thesis, which is therefore content with the constraint in (3.128).

T3.41		SCMA	STAY-X	STAY-XP	ADV<+FOC	-FOC<ADV	*X'-ADJ
☞	a [IP it [must] _{[+foc]i} [AuxP t _i [VP often [VP rain here]]]]		*		*	**	
	b [IP it often _k [I' [must] _{[+foc]i} [AuxP t _i [VP t _k [VP rain here]]]]]	*!	*	*		**	*

While it depends on an adverb's scope whether or not its placement in front of a focused finite auxiliary is acceptable in English, an adverb may never intervene between the subject and the finite verb in French, pointing out that both OBHD and *X'-ADJ dominate ADV<+FOC in that language: irrespective of focus, a finite verb has to occur in I⁰ and an adverb cannot adjoin to I' (see Tableau T3.42). As in English, subject movement in front of an IP-adjoined adverb is ruled out by STAY-XP >> -FOC<ADV (see candidate T3.42d).

- (3.131)a. Jean [veut]_[+foc] probablement rester à la maison.
 Jean wants.to probably stay at the house
 'Jean probably wants to stay at home.'
- b. *Jean probablement [veut]_[+foc] rester à la maison.

T3.42		OBHD	*X'-ADJ	STAY-XP	ADV<+FOC	-FOC<ADV	STAY-X
Jean [veut] _[+foc] probablement rester à la maison. Jean wants.to probably stay at the house 'Jean probably wants to stay at home.'							
☞	a [IP Jean _j [veut] _{[+foc]i} [AuxP probablement [AuxP t _i [VP t _j rester à la maison]]]]			*	*	**	*
	b [IP Jean _j probablement [I' [veut] _{[+foc]i} [AuxP t _i [VP t _j rester à la maison]]]]		*!	*		**	*
	c [IP Jean _j e [AuxP probablement [AuxP [veut] _[+foc] [VP t _j rester à la maison]]]]	*!		*		**	
	d [IP Jean _j [IP probablement [IP t _j [veut] _{[+foc]i} [AuxP t _i [VP t _j rester à la maison]]]]]			**!		**	*

Hence, the difference between English and French in the acceptability of adverb placement in front of a (focused) finite verb can be captured by a contrast in the ranking of *X'-ADJ with respect to ADV<+FOC. Moreover, English and French also differ in whether or not they allow for placement of a wide scope adverb behind a non-finite verb/auxiliary.

- (3.132)a. Oskar had luckily been leaving the office at the time.
- b. *Oskar had been luckily leaving the office at the time. (Ernst 2002: 100)
- (3.133)a. Jean a mangé probablement une pomme. (Laenzlinger 2000: 115)
 Jean has eaten probably an apple
 'Jean has probably eaten an apple.'

- b. Marc avait été peut-être refusé par la majorité des candidates.
 Marc had been perhaps refused by the majority of the candidates
 (Ernst 2002: 375)
 'Marc had perhaps been refused by the majority of the candidates.'

As discussed in section 3.2, the order *non-finite verb/auxiliary - wide scope adverb* may only arise by movement of the non-finite verb. The constituent following the adverb being narrowly focused, movement of a non-finite verb across a wide scope adverb in French may be considered to be an effect of -FOC<ADV (and its dominance over STAY-X and *LX-MV, see Tableau T3.43).⁷⁶ Correspondingly, the fact that non-finite auxiliary movement is prohibited in English points to the ranking STAY-X >> -FOC<ADV (see Tableau T3.44).⁷⁷

T3.43	Jean a résolu probablement [tes problèmes] _[+foc] . Jean has resolved probably your problems 'Jean has probably resolved your problems.'	-FOC<ADV	STAY-X	*LX-MV
a	[_{IP} Jean _i a _i [_{AuxP} probablement [_{AuxP} t _i [_{VP} t _j résolu [tes problèmes] _[+foc]]]]]]	*!	*	
☞ b	[_{IP} Jean _i a _i [_{AuxP} résoluk-t _i [_{VP} probablement [_{VP} t _j t _k [tes problèmes] _[+foc]]]]]]		**	*

T3.44		STAY-X	-FOC<ADV
☞ a	[_{IP} Oskar _j had _i [_{AuxP1} luckily [_{AuxP1} t _i [_{AuxP2} been [_{VP} t _j [leaving the office] _[+foc]]]]]]]]	*	*
b	[_{IP} Oskar _j had _i [_{AuxP1} been _k -t _i [_{AuxP2} luckily [_{AuxP2} t _k [_{VP} t _j [leaving the office] _[+foc]]]]]]]]	*!*	

Hence, neither unfocused objects nor non-finite verbs/auxiliaries may be placed in front of a focus-sensitive adverb in English; both STAY-constraints outrank -FOC<ADV in that language. In French, by contrast, a non-finite verb may precede a sentence adverb, whereas an object cannot be fronted within the auxiliary range. Assuming that STAY is differentiated according to the phrasal status of the moved item, X⁰ vs. XP, this pattern can be captured by a difference in the ranking of the two STAY-constraints relative to -FOC<ADV: STAY-XP >> -FOC<ADV >>

⁷⁶ However, movement of an unfocused non-finite verb does not seem to be obligatory: narrow focus on the object also permits adverb placement in front of a non-finite verb, indicating that -FOC<ADV and STAY-X are tied. Yet, since the variants involving non-finite verb movement are of interest here, only these will be taken into consideration in the following, and solely the ranking -FOC<ADV >> STAY-X is given in the Tableaux.

⁷⁷ Since *LX-MV dominates STAY-X in English, it is expected that unfocused (finite or non-finite) lexical verbs cannot be placed in front of a focus-sensitive adverb either (*LX-MV >> STAY-X >> -FOC<ADV), as supported by the data in (i):

- (i) a. John (probably) hit (*probably) [Mary]_[+foc].
 b. John has (probably) hit (*probably) [Mary]_[+foc].

Note that the partial rankings OBHD >> STAY-X (triggering Aux-to-I movement), STAY-X >> -FOC<ADV (prohibiting non-finite verb movement), and the tie between the two focus constraints -FOC<ADV and ADV<+FOC (allowing for optional adverb placement relative to a focused subject) predict that OBHD outranks ADV<+FOC and, consequently, that a pre-auxiliary adverb must be adjoined to I' (in violation of *X'-ADJ).

STAY-X. Note that the ranking of STAY-X and STAY-XP relative to -FOC<ADV is exactly the reverse in German (STAY-X >> -FOC<ADV >> STAY-XP): unfocused arguments, but not non-finite verbs may move out of the c-command domain of a focus-sensitive adverb.

3.4.4 *Excursus: Placement of Sentence Adverbs in Italian*

As in English, a finite or non-finite lexical verb usually follows a sentence adverb in Italian (3.134a, 3.135a) although V-to-I movement apparently takes place irrespective of the type of verb (OBHD >> STAY-X, *LXMV), mirroring the verb movement behavior of French (compare sections 2.1 and 3.2). Occurrence of a sentence adverb in clause-final position as in (3.134b, 3.135b) is ungrammatical (without comma-intonation); in case some constituent follows the adverb placed behind a lexical verb (3.134c, 3.135c), the adverb is interpreted as focusing on that constituent (compare section 3.4.1).

- (3.134)a. Gianni probabilmente sbaglierà. (Belletti 1994: 34)
 Gianni probably will.make.mistakes
 'Gianni will probably make mistakes.'
- b. Gianni sbaglierà *(,) probabilmente.
- c. In vita sua Gianni leggerà probabilmente molti racconti d' avventura.
 In life his Gianni will.read probably many novels of adventure
 (Belletti 1990: 130)
 'It is probably many adventure novels that Gianni will read in his life.'
- (3.135)a. Gianni è probabilmente uscito. (Cinque 1993: 265)
 Gianni is probably left
 'Gianni has probably left.'
- b. Gianni è uscito *(,) probabilmente.
- c. Gianni avrà parlato ben di lui. (Belletti 1994: 30)
 Gianni will.have talked indeed about him
 'It is indeed of him that Gianni will have talked.'

As mentioned in section 2.1.2, the distributional pattern of sentence adverbs in Italian might be viewed as an effect of focus. Given that Italian does not differ from French in the ranking of the focus constraints relative to the STAY-constraints (STAY-XP >> ADV<+FOC <<>> -FOC<ADV >> STAY-X, predicting V-to-I movement to take place independent of focus), the fact that a sentence adverb may intervene between the subject and the finite verb in Italian indicates that ADV<+FOC dominates *X'-ADJ.⁷⁸ Consequently, if the lexical verb belongs to the focus, a focus-sensitive adverb is expected to adjoin to I' (see Tableau T3.45). Yet if the object is narrowly focused, the ranking -FOC<ADV >> STAY-X predicts that the finite or non-

⁷⁸ Otherwise, it could be assumed that Italian and French do not differ in the ranking of *X'-ADJ relative to ADV<+FOC, but in that of STAY-XP relative to -FOC<ADV: adverb occurrence between the subject and the finite verb would then be a result of subject movement in front of an IP-adjoined adverb as assumed by Belletti (1990, 1994), compare candidate T3.45e.

finite lexical verb is placed in front of the adverb to escape its c-command domain (see Tableau T3.46 and T3.47). The fact that a sentence adverb placed behind a lexical verb is interpreted as relating to the following constituent only is thus accounted for: the order *lexical verb - sentence adverb* may only arise if the following constituent is narrowly focused.⁷⁹

		OBHD	STAY-XP	ADV<+FOC	-FOC<ADV	*X'-ADJ	STAY-X
T3.45	Gianni probabilmente [sbaglierà] _[+foc] . Gianni probably will.make.mistakes 'Gianni will probably make mistakes.'						
☞ a	[_{IP} Gianni _i probabilmente [_{I'} [sbaglierà] _[+foc] _i [_{VP} t _i t _i]]]		*			*	*
b	[_{IP} Gianni _i e [_{VP} probabilmente [_{VP} t _j [sbaglierà] _[+foc]]]]	*!	*				
c	[_{IP} Gianni _i [sbaglierà] _[+foc] _i [_{VP} probabilmente [_{VP} t _j t _j]]]		*	*!			*
d	[_{IP} probabilmente [_{IP} Gianni _i [sbaglierà] _[+foc] _i [_{VP} t _j t _j]]]		*		*!		*
e	[_{IP} Gianni _i [_{IP} probabilmente [_{IP} t _j [sbaglierà] _[+foc] _i [_{VP} t _j t _j]]]]]		**!				*
T3.46	Gianni leggerà probabilmente [molti racconti d' avventura] _[+foc] . Gianni will.read probably many novels of adventure 'Gianni will probably read many adventure novels.'						
a	[_{IP} Gianni _j probabilmente [_{I'} leggerà _i [_{VP} t _j t _i [molti racconti d' avventura] _[+foc]]]]		*		*!	*	*
b	[_{IP} Gianni _j e [_{VP} probabilmente [_{VP} t _j leggerà [molti racconti d' avventura] _[+foc]]]]	*!	*		*		
☞ c	[_{IP} Gianni _j leggerà _i [_{VP} probabilmente [_{VP} t _j t _i [molti racconti d' avventura] _[+foc]]]]		*				*
T3.47	Gianni avrà parlato ben [di lui] _[+foc] . Gianni will.have spoken indeed about him 'Gianni will indeed have spoken about him.'						
a	[_{IP} Gianni _i avrà _i [_{AuxP} ben [_{AuxP} t _i [_{VP} t _j parlato [di lui] _[+foc]]]]]]		*		*!		*
b	[_{IP} Gianni _i avrà _i [_{AuxP} ben [_{AuxP} parlato _{k-t_i} [_{VP} t _j t _k [di lui] _[+foc]]]]]]		*		*!		**
☞ c	[_{IP} Gianni _i avrà _i [_{AuxP} parlato _{k-t_i} [_{VP} ben [_{VP} t _j t _k [di lui] _[+foc]]]]]]		*				**

3.4.5 Summary

Summing up, sentence adverbs are focus-sensitive in the sense that they highlight the focused constituent, with alternations in focus giving rise to differences in interpretation. This property of sentence adverbs seems to affect their positioning: they tend to occur left-adjacent to their associated constituent, following unfocused material. The influence of focus-background structure on adverb placement in the various languages can be accounted for by the focus constraints, ADV<+FOC and -FOC<ADV, and their language-specific ranking.

⁷⁹ For the reason why movement of an unfocused verb may not result in clause-final placement of a sentence adverb, see section 5.4 below.

The ranking of -FOC<ADV relative to the STAY-constraints determines which elements may be moved for information-structural reasons. While unfocused arguments have to precede a focus-sensitive adverb within the German middle field, (non-finite) unfocused verbs cannot be moved out of the c-command domain of the adverb (STAY-X >> -FOC<ADV >> STAY-XP). By contrast, in French unfocused verbs but not unfocused objects can be fronted within the auxiliary range (STAY-XP >> -FOC<ADV >> STAY-X), whereas neither non-finite verbs nor objects can be placed in front of a medial adverb in English (STAY-X, STAY-XP >> -FOC<ADV). Yet the information-structural status of an element that moves for some other reason such as the subject (SUBJECT) or the finite auxiliary (OBHD) may be decisive for the choice of an adverb's attachment site - above or below the target position of movement. For example, -FOC<ADV predicts an adverb to follow an unfocused subject (i.e. to adjoin to AuxP/VP) while ADV<+FOC favors adverb adjunction to IP in case the subject is focused. Likewise, ADV<+FOC may trigger pre-auxiliary adverb placement in English if the finite auxiliary is focused (OBHD >> ADV<+FOC >> *X'-ADJ), while adverb intervention between the subject and the finite verb is strictly prohibited in French (OBHD >> *X'-ADJ >> ADV<+FOC). Moreover, the requirement for focus-initial placement of a sentence adverb may give rise to V3 structures in German whenever the focused constituent occurs in prefield position (AGREE >> *CP-ADJ <<>> ADV<+FOC). Finally, the distribution of sentence adverbs in Italian can be accounted for by the focus constraints, preferring occurrence of a focus-sensitive adverb in front of a finite or non-finite lexical verb unless a following constituent is narrowly focused.

3.5 Adverb Placement and Topic-Comment Structure

This section examines the fronting of topical arguments (3.5.1) and adverbs (3.5.2). Placement of [+top] phrases in clause-initial position in English and French as well as in the leftmost position of the German middle field will be assumed to be due to a constraint TOPIC requiring [+top] phrases to occur in left-peripheral position within IP. Moreover, the unacceptability of the occurrence of some element intervening between a *wh*-phrase and the subject in English and French will be accounted for (section 3.5.3 and 3.5.4). It will be shown that adverb fronting is more restricted than argument topicalization in that an adverb may only occur in pre-subject or clause-initial position if this placement is consistent with the adverb's scopal properties. Finally, a brief look at indefinite and quantified arguments will reveal that their reading may also necessitate pre-subject placement of certain types of adverbs (see section 3.5.5). Section 3.5.6 presents a summary of the results.

3.5.1 Topic Fronting in Declarative Clauses

In the last section, it was shown that an unfocused object cannot be placed in front of a medial adverb in English and French (STAY-XP >> -FOC<ADV). However, topical arguments may occur in clause-initial position in these languages, as illustrated in (3.136). In German, a topic does not necessarily appear clause-initially: both fronting within the middle field (3.137a) and to prefield position (3.137b) is acceptable.⁸⁰

(3.136)a. John, Mary doesn't like.

- b. Jean, Marie l' aime.
Jean Marie him likes
'Jean, Marie likes (him).'

(3.137) Hast du schon das Neuste über Hans gehört? ('Did you hear the news about Hans?')

- a. Nächstes Jahr wird den Hans eine Schwedin heiraten.
next year will the Hans a Swede marry
'A Swede will marry Hans next year.'
- b. Den Hans wird nächstes Jahr eine Schwedin heiraten.

Frey (2000a,b, 2004) notes that a topic has to precede a sentence adverb within the German middle field (as well as lower types of adverbs such as the temporal adverbial in (3.138) below).⁸¹ An expression co-referential with a cataphoric pronoun is a topic (see Reinhardt

⁸⁰ On the pragmatic properties of topic constructions, see Prince 1985, 1998 and Frey t.a.

Note that according to Frey (2000b), topics in middle field position and ones in prefield position differ in that the latter make special demands on the context while the former do not.

⁸¹ According to Frey (2000a), all phrases preceding a sentence adverb within the German middle field are topics (except discourse-oriented adverbs and phrases pronounced with I-contour). For example, negative quantifiers which cannot be topics due to their non-referentiality cannot precede a sentence adverb within the middle field (ia). Similarly, existentially interpreted bare plurals which introduce new discourse referents (ib) as well as the subject of a presentational construction (ic) which cannot be a topic have to follow a sentence adverb.

1981, 1995); accordingly, the sentences in (3.19) differ in interpretation: the pronoun may only relate to the expression preceding the sentence adverb. In addition, the dislocated part of a split DP in German has topic status (see Frey 2004 and references therein); as shown in (3.140), it must be placed in front of the sentence adverb.

(3.138) Ich erzähl dir mal was von Otto. ('I'll tell you something about Otto.')

- a. Nächsten Monat wird den Otto erfreulicherweise die Botschafterin von
 next month will the Otto happily the ambassador of
 Norwegen heiraten. (Frey 2000b: 141)
 Norway marry
 'Happily, the ambassador of Norway will marry Otto next month.'
- b. #Nächsten Monat wird erfreulicherweise den Otto die Botschafterin von
 Norwegen heiraten.

- (i) a. Während des Vortrags hat (anscheinend) keiner (*anscheinend) geschlafen. (Frey 2000b: 141)
 during the talk has apparently nobody apparently slept
 'Apparently nobody was sleeping during the talk.'
- b. ... weil (glücklicherweise) Mädchen (*glücklicherweise) geboren wurden.
 because fortunately girls fortunately born were
 (Frey & Pittner 1999: 30)
 '... because fortunately girls were born.'
- c. Es spielt (erfreulicherweise) Erwin Lehn (*erfreulicherweise) die ganze Nacht hindurch.
 it plays happily Erwin Lehn happily the whole night throughout
 (Frey 2000b: 143)
 'Happily, Erwin Lehn is playing throughout the night.'

However, as mentioned in the last section, even focused constituents may precede a sentence adverb, as accounted for by the focus constraints which require the adverb to occur left-adjacent to its associated constituent, not necessarily to the whole focus (compare example (3.91) above). In addition, note that topics have to precede all sentence adverbs, (ii). Yet intervention of an argument between several sentence adverbs is acceptable in e.g. German (iiia) and Norwegian (iiib), indicating that there is some device for argument placement in front of a sentence adverb other than topic fronting (see also the Icelandic data in (2.46) above). The sentences in (iii) might be interpreted to suggest that the various sentence adverbs may differ in their associated constituent, supporting the hypothesis that it is not the focus-background structure itself but rather the constituent focused by the adverb that is crucial for adverb placement, as stated by the constraints ADV<+FOC and -FOC<ADV in section 3.4.

- (ii) a. Sein_i Vater wird (*leider) dem Hans_i (leider) anscheinend nicht helfen.
 his father will unfortunately the Hans unfortunately apparently not help
 (Frey 2004: 187)
 'Unfortunately, his father will apparently not help Hans.'
- b. ... weil Paul (*leider) Hemden_i (leider) offensichtlich [nur blaue t_i]
 because Paul unfortunately shirts unfortunately obviously only blue
 gekauft hat.
 bought has
 '... because unfortunately Paul obviously only bought blue shirts.'
- (iii) a. Während des Seminars haben (leider) mindestens zwei (*leider) anscheinend
 during the seminar have unfortunately at least two unfortunately apparently
 nicht zugehört. (Frey 2004: 186)
 not listened
 'Unfortunately, at least two (students) have apparently not listened during the seminar.'
- b. Det hadde uheldigvis en student kanskje allerede brøt i går. (Svenonius 2002: 230)
 that had unfortunately a student maybe already broken yesterday
 'A student unfortunately had maybe already violated it yesterday.'

- c. Erfreulicherweise wird den Otto nächsten Monat die Botschafterin von Norwegen heiraten.
- d. #Erfreulicherweise wird nächsten Monat den Otto die Botschafterin von Norwegen heiraten.
- (3.139)a. Weil er_{i/*j} betrunken ist, wird der Max_i wahrscheinlich den Felix_j
because he drunk is will the Max probably the Felix
beschimpfen. (Frey 2000b: 141)
abuse
'Since he is drunk, Max will probably abuse Felix.'
- b. Weil er_{*i/j} betrunken ist, wird den Felix_j wahrscheinlich der Max_i beschimpfen.
- c. Weil er_{i/j} betrunken ist, wird der Max_i den Felix_j wahrscheinlich beschimpfen.
- (3.140)a. ... weil Hans Volvos leider nur blaue gekauft hat.
because Hans Volvos unfortunately only blue bought has
(Frey 2000b: 144)
'... because Hans unfortunately only bought blue Volvos.'
- b. *... weil Hans leider Volvos nur blaue gekauft hat.

An effect of topicality on the ordering of arguments and sentence adverbs may also be observed in other languages: elements which cannot be topics such as negative quantifiers or existentially interpreted bare plurals do not precede a sentence adverb in e.g. English, French, and Italian (compare section 2.1.2).

- (3.141)a. (Probably) nobody (*probably) has (*probably) left. (Belletti 1990: 51)
- b. (Probablement) personne n' a (*probablement) abordé le problème.
probably nobody not has probably touched the problem
'Probably nobody touched the problem.'
- c. (Probabilmente) nessuno (*probabilmente) ha (*probabilmente)
probably nobody probably has probably
sbagliato troppe volte. (Belletti 1990: 50)
made.mistakes too.many times
'Probably nobody has made mistakes too many times.'
- (3.142)a. Luckily boys were born. (Frey & Pittner 1999: 30)
- b. ??Boys luckily were born.

In French - and in Romance languages in general -, a resumptive clitic that is co-referential to the topic emerges in the topic-comment articulation, so-called Clitic Left Dislocation (CLLD, see Cinque 1990, Rizzi 1997, Barbosa 2000, De Cat 2002, among others).⁸² De Cat (2002)

⁸² According to De Cat (2002), a resumptive pronoun does not necessarily co-occur with a left dislocated object in French. In fact, a generically interpreted CLLDed object even prohibits a resumptive clitic: (ib) only allows for a specific reading of *les gâteaux* ('the cakes').

argues that the resumptive pronoun has argument status.⁸³ I.e., it is regarded to be base-generated in argument position and, as a clitic element, attaches to the finite verb; in case of a

-
- (i) a. Les gâteaux, j'adore (ça). (De Cat 2002: 149)
 the cakes I adore that
 'I love cakes.'
 b. Les gâteaux, je les adore.
 the cakes I them adore
 'I love the cakes.'

Apart from the fact that there are no subject clitics in Italian (compare section 2.1.2), Rizzi (1997) points out that a resumptive clitic is optional if the topic is a pronominalizable PP (iia) and absent if the PP cannot be pronominalized as the benefactive in (iib).

- (ii) a. A Gianni, Maria (gli) ha parlato recentemente. (Rizzi 1997: 294)
 to Gianni Maria to.him has spoken recently
 'To Gianni, Maria spoke to him recently.'
 b. Per Gianni, Maria lavora da molto tempo.
 for Gianni Maria worked for long time
 'For Gianni, Maria has worked for a long time.'

⁸³ Resumptive subject pronouns have been considered to be mere agreement markers in case the DP occurs adjacent to the clitic; i.e. the DP subject in (i) is analyzed as occurring in its canonic position Spec,IP while the clitic is attached to the finite verb (see De Cat 2002 for references).

- (i) [_{IP} Les Montréalais; [_I ils aiment]_i] [_{VP} t_i t_i ça] (De Cat 2002: 40)
 the montrealise they like that
 'The Montrealers like that.'

The hypothesis that the subject in (i) does not appear in a dislocated position is based on the fact that some speakers accept co-occurrence of a subject pronoun with a non-referential quantifier as in (ii) which cannot be dislocated (compare section 2.1.2).

- (ii) Tout le monde il est beau. (De Cat 2002: 46)
 all the people he is beautiful
 'Everybody is beautiful.'

Yet according to De Cat (2002), the sentence in (ii) is only acceptable in the expression *Tout le monde il est beau, tout le monde il est gentil* ('Everybody's beautiful and nice'). She claims that the argument status of resumptive clitics is supported by the fact that focusing of a dislocated phrase is only acceptable in the absence of a co-referential pronoun. If the clitic were a mere agreement marker without argument status, the availability of a focus reading should not be blocked by the presence of a clitic because in either case the subject would be in Spec,IP. However, the presence of a clitic necessitates an analysis of the co-referential DP as dislocated, indicating that the clitic cannot be a mere agreement marker.

- (iii) a. *LA CHAIR FRAICHE_i, il l'_i a sentie. (De Cat 2002: 51)
 the flesh fresh he it has smelt
 'He smelt raw flesh.'
 b. LA CHAIR FRAICHE, il a senti.
 (iv) a. *URSULE_i, elle l'_i a fait.
 Ursule she it has done
 'Ursule did it.'
 b. URSULE l'a fait.

Moreover, De Cat mentions that subject clitics are significantly more likely to appear in matrix clauses than in embedded clauses which might be interpreted as a restriction on subject left-dislocation in embedded clauses. By contrast, under an agreement marker analysis of the pronouns, the influence of clause type on the occurrence of a clitic remains unexplained.

Having argument status, a resumptive pronoun is to be merged within VP; consequently, the dislocated phrase has to be base-generated in clause-initial position. Note that CLLD does not display properties typical to A'-

subject topic, the resumptive pronoun surfaces in Spec,IP. The VP-internal argument position thus being occupied by the pronoun's trace, the topic DP must be merged in clause-initial position.

- (3.143)a. Jean_i, Marie I_i' aime t_i.
 Jean Marie him likes
 'Marie likes Jean.'
- b. Marie_i, elle_i aime Jean.
 Marie she likes Jean
 'Marie likes Jean.'

In the Germanic languages by contrast, no resumptive pronoun has to co-occur with a topic.⁸⁴ Under the assumption that in the absence of a resumptive element, an argument is base-generated in its θ -positions within VP, topic fronting in English and German must involve movement. (Remember that sentence adverbs have to be merged above VP, predicting a preceding argument to have moved in front of the adverb as well, compare footnote 6).⁸⁵ Frey (2004) supposes that there is a special functional projection FP above TP, which hosts topics in the German middle field (see Fanselow (2003b) for a critique on Frey's analysis). Assuming that adverbs cannot adjoin to a projection dominating TP, their placement behind a

movement (see Cinque 1990, Barbosa 2000, among others): for example, it does not give rise to weak crossover effects (va), does not license parasitic gaps (vb), and does not obey subjacency (vc).

- (v) a. Gianni_i, sua_i madre lo_i ha sempre apprezzato. (Barbosa 2000: 47)
 Gianni his mother him has always appreciated
 'Gianni, his mother always appreciated (him).'
- b. *Gianni, I' ho cercato per mesi senza trovare e. (Cinque 1990: 62)
 Gianni him I.have looked.for for months without finding
 'Gianni, I looked for (him) for months without finding.'
- c. Loro, il libro, credo che a Carlo sia sicuro che non glielo daranno mai.
 they the book I.think that to Carlo it.would.be certain that not to.him.it they.will.give never
 (Cinque 1990: 63)
 'I think that it is certain that they will never give the book to Carlo.'

⁸⁴ In fact, there are topic marking devices, such as Left Dislocation (ia,b) or Hanging Topic constructions (ic), involving resumptive pronouns in English and German as well the investigation of which is beyond the scope of this thesis (see Frey t.a. and Prince 1985, 1998).

- (i) a. Mary, Peter admires her very much. (Frey t.a.: 4)
 b. Den Hans, den mag jeder. (Frey t.a.: 2)
 the Hans that.one likes everyone
 'Hans, everyone likes him.'
- c. Den Hans, jeder mag ihn. (Frey t.a.: 2)
 the Hans everyone likes him
 'Hans, everyone likes him.'

⁸⁵ Note that there are various approaches to topic fronting in English, differing in whether topicalization is regarded as arising via movement or via base-generation (see Cinque 1990 and references therein), as well as in the structural position the topic is assumed to occupy, adjoined to IP (e.g. Baltin 1982, Rochemont 1989, Lasnik & Saito 1992) or placed in Spec,CP or CP-adjoined position (e.g. Higgins 1973, Bowers 1976, Chomsky 1977, Authier 1992, Watanabe 1993).

topic within the middle field as in (3.138)-(3.140) follows from the hierarchy of the functional heads in Frey's approach.⁸⁶

Not differentiating between specifiers and adjuncts, Svenonius (2002) suggests that the various orders of sentence adverbs and subjects arise by adverb attachment above or below the subject in IP. Assuming that I^0 bears a strong D-feature triggering subject movement to IP and that I^0 may simultaneously check a [+top] feature on the subject, the influence of topicality on the ordering of arguments and adverbs follows from the restriction on adverb positioning in (3.144).^{87,88}

(3.144) An adverb may not attach to IP with a checked [+top] feature. (Svenonius 2002: 232)

Due to the restriction in (3.144), an adverb has to attach to IP prior to movement of a [+top] subject and is thus predicted to follow the subject; by contrast, if the subject is [-top], an adverb is adjoined to IP above the subject and, consequently, precedes it. Note that Svenonius' analysis presupposes that there is no functional projection dominating IP to which a sentence adverb could attach. However, the fact that a sentence adverb may follow a finite auxiliary in English and French suggests that adverb adjunction to a projection lower than IP is possible (compare e.g. examples (3.8a,b) in section 3.2 above). Hence, the assumption that the various orders of subject and adverb are due to differences in the sequence of Merge (of the adverb) and Move (of the subject) seems to be unfounded: the adverb could as well be adjoined to the

⁸⁶ However, in the work on adverbs by Frey and Pittner (e.g. Frey & Pittner 1998, 1999, Pittner 1999, Frey 2000a), adverbs are not assumed to be restrained to specific categories; rather, adverbs are considered to be free to be merged to any projection as long as they obey certain syntactic conditions on the placement relative to other clausal elements. For example, the restriction in (i) permits sentence adverbs to adjoin to IP (pre-subject position), I' (pre-auxiliary position), or AuxP (post-auxiliary position), but prohibits their placement in any lower position.

- (i) The base position of a [sentence adverb] has to c-command
 a. the base positions of all arguments and all other adjuncts (except of discourse-oriented adjuncts) and
 b. the base position of the finite verbal form. (Frey 2000a: 110)
- (ii) (Obviously) John (obviously) has (obviously) been (*obviously) reading (*obviously) a book (*obviously).

Note that the condition in (i) does not rule out adjunction of a sentence adverb to a topic hosting FP dominating IP and thus does not predict the strict order between topics and adverbs. I.e., additional restrictions on adverb placement (prohibiting their adjunction to certain functional projections) would need to be assumed to account for that ordering.

⁸⁷ Svenonius (2002) claims that assignment of [+top] is sensitive to different indicators of potential topicality in the Germanic languages: while in German and Norwegian actual continued topics are marked [+top], in Icelandic definite subjects, in Swedish non-focused subjects, and in English and Danish all subjects are assigned [+top]. Consequently, sentence adverbs are expected to follow continued topics in German and Norwegian, definite subjects in Icelandic, non-focused subjects in Swedish, and all types of subject DPs in English and Danish due to the principle in (3.144). Yet recall that a sentence adverb can precede a focused subject DP in English declarative clauses; compare example (3.122) above.

Objects bearing the feature [+top] are considered to adjoin to IP below the subject in Svenonius' (2002) analysis.

⁸⁸ See Ernst (2002) on a similar approach considering I^0 to be able to check a [+top] feature on adverbials; compare also section 2.1.4.

lower projection in case it follows the subject, adverb adjunction above a [+top] subject being excluded by the restriction in (3.144).

Vikner (2001a) presents an OT account on topicalization in which topic fronting is motivated by the constraint in (3.145).

(3.145)OPSCOPE: Operators (*wh*-phrases and topics) occur in scope position.

(Vikner 2001a: 228)

Any position c-commanding IP is considered to count as scope position in Vikner's analysis. IP being the highest clausal projection, a topic is expected to appear in clause-initial position in English and French declarative clauses. Similarly, OPSCOPE would be satisfied if a topic is fronted to IP-adjoined position within the German middle field or occurs in prefield position.⁸⁹ Yet the constraint OPSCOPE makes no claim regarding topic placement relative to an adverb: presupposing that adverb adjunction to IP is possible in principle - a wide scope adverb may precede a (focused) subject (compare section 3.4) -, nothing rules out placement of an adverb in front of an IP-adjoined topic. As shown in Tableau T3.48, the strict order *topic - adverb* within the German middle field is thus unexpected (see (3.138)-(3.140) above); OPSCOPE is satisfied as soon as the topic is adjoined to IP above or below the IP-adjoined adverb (see candidate T3.48b vs. T3.48c).

		OPSCOPE	STAY-XP
T3.48	Nächsten Monat wird den Otto erfreulicherweise die Botschafterin empfangen. next month will the Otto happily the ambassador meet 'Happily, the ambassador will meet Otto next month.'		
	a [CP Nächsten Monat _i wird _i [IP erfreulicherweise [IP die Botschafterin _j [AuxP t _i [VP t _j den Otto _[+top] empfangen] t _i] t _i]]]	*!	*
☞	b [CP Nächsten Monat _i wird _i [IP den Otto _{[+top]k} [IP erfreulicherweise [IP die Botschafterin _j [AuxP t _i [VP t _j t _k empfangen] t _i] t _i]]]		**
⊕	c [CP Nächsten Monat _i wird _i [IP erfreulicherweise [IP den Otto _{[+top]k} [IP die Botschafterin _j [AuxP t _i [VP t _j t _k empfangen] t _i] t _i]]]		**

As outlined in section 3.1, the present analysis assumes that GEN may merge an adverb to any projection which is compatible with its semantic requirements (MODIFIER). To ensure not only that a topical object occurs in pre-subject position as in (3.137), but also that it precedes an adverb within the German middle field, the requirement on topic placement will be conceived of as in (3.146):

⁸⁹ Actually, Vikner (2001a) does not look at German middle field topics; rather, he presumes that topics have to occur in prefield position in German. This placement is motivated by an additional constraint OPSPEC that requires occurrence of a topic in specifier position. In satisfaction of OPSPEC and OPSCOPE, a topic appears in a specifier position c-commanding IP - namely Spec,CP - in German. By contrast, topic placement in Spec,CP in English and French is ruled out by the dominance of the constraints on head positions over OPSPEC, predicting topicalization to target IP-adjoined position and, consequently, to lack subject-verb/auxiliary inversion.

A topic may also appear in the German prefield position (compare (3.137) above). Since TOPIC explicitly requires left-peripheral positioning of a [+top] phrase within IP, it is predicted that the occurrence of a topic in Spec,CP has to be triggered by a corresponding feature on C⁰: though it is assumed that TOPIC may be satisfied by a trace in the appropriate position, i.e. topic placement in prefield position does not necessarily violate TOPIC (see section 3.5.3), the violation of STAY-XP caused by movement of the topic from IP-internal position to Spec,CP has to be legitimized by a dominating constraint (AGREE).^{92,93}

In English and French, a topical object is expected to occur in clause-initial position, without triggering subject-verb/auxiliary inversion: to satisfy TOPIC, a topical object has to adjoin to IP; since these languages do not project CP in matrix declarative clauses (compare section 3.3), a fronted object appears clause-initially without causing subject-verb/auxiliary inversion, see Tableau T3.50. Clause-initial placement of a topic in English and French declarative clauses thus mirrors topic fronting within the German middle field in that the topic occurs in left-peripheral position within IP in both cases. The difference in the existence of CP (i.e. in the ranking of PREFIELD relative to OBHD and STAY-X) accounts for the fact that the IP-adjoined topic necessarily occupies the clause-initial position in English and Romance declarative clauses, but not in German ones.⁹⁴

⁹² Recall that there are pragmatic differences between topics in middle field position and those in prefield position, possibly suggesting that [+top]-marking on C⁰ is admissible only in special contexts (compare footnote 80).

Furthermore, note that a VP may occur in prefield position as (contrastive) topic in German. Its fronting within the middle field, however, is unacceptable, indicating that middle field topicalization in German is subject to additional restrictions which cannot be investigated here. By contrast, VP Fronting to IP-adjoined position is grammatical in English and French.

- (i) War er Anarchist? ('Was he an anarchist?')
- a. Häuser in Brand gesteckt hat er jedenfalls nicht.
houses on fire set has he anyhow not
'In any case, he hasn't set houses on fire.'
- b. *Er hat Häuser in Brand gesteckt jedenfalls nicht.
- (ii) Ist er fromm? ('Is he religious?')
- a. Die Bibel gelesen hat er sicherlich schon.
the bible read has he certainly all.right
'He has certainly read the bible.'
- b. *Er hat die Bibel gelesen sicherlich schon.
- (iii) a. (John intends to read the book, and) read the book, he certainly will.
b. Manger des escargots, Jean le veut.
eat of.the snails Jean it wants
'Jean wants to eat snails.'

⁹³ Similarly, occurrence of a topic in front of the prefield constituent in Left Dislocations and Hanging Topic constructions has to be triggered by some constraint other than TOPIC (see footnote 84). Given that the topic is adjoined to CP in these cases, the relevant constraint has to outrank *CP-ADJ, which will be shown to dominate TOPIC below.

⁹⁴ Remember that pre-subject adverbs whose semantic requirements permit clause-initial base-generation and topics differ in their syntactic behavior in English (but not in German and French, compare section 2.1.4). Since both pre-subject adverbs and topics are considered to adjoin to IP in the present analysis, these contrasts are expected to arise from a factor other than their structural position.

T3.50		OBHD	TOPIC	STAY-X	STAY-XP	PREFIELD
a	[_{IP} Mary _j has _i [_{AuxP} t _i [_{VP} t _j kissed John _[+top]]]]]		*!*	*	*	*
b	[_{IP} John _{[+top]k} [_{IP} Mary _j has _i [_{AuxP} t _i [_{VP} t _j kissed t _k]]]]]			*	**	*
c	[_{CP} John _{[+top]k} e [_{IP} t _k [_{IP} Mary _j has _i [_{AuxP} t _i [_{VP} t _j kissed t _k]]]]]]]	*!		*	***	
d	[_{CP} John _{[+top]k} has _i [_{IP} t _k [_{IP} Mary _j t _i [_{AuxP} t _i [_{VP} t _j kissed t _k]]]]]]]			**!	***	
e	[_{CP} Mary _j e [_{IP} John _{[+top]k} [_{IP} t _j has _i [_{AuxP} t _i [_{VP} t _j kissed t _k]]]]]]]	*!		*	***	
f	[_{CP} Mary _j has _i [_{IP} John _{[+top]k} [_{IP} t _j t _i [_{AuxP} t _i [_{VP} t _j kissed t _k]]]]]]]			**!	***	

As Rochemont (1989) mentions, the IP-adjunction analysis of topicalization is supported by the difference in the reading and acceptability of the coordinate sentences in (3.147) and (3.148), respectively. The topic may be construed with the second conjunct only if the complementizer is absent: (3.147a), but not (3.147b) can be interpreted as 'Mary would like to get John drunk'. This contrast is accounted for under an IP-adjunction analysis whereas it is not if the topic were to be placed in Spec,CP or CP-adjoined position (see e.g. Higgins 1973, Bowers 1976, Chomsky 1977, Authier 1992, and Watanabe 1993). In addition, the IP-adjunction analysis of topicalization predicts that a topic follows the complementizer in embedded clauses, (3.149). Note that the complementizer is mandatory in embedded topicalizations, as illustrated in (3.150).

- (3.147)a. Mary says that John, she doesn't know but she'd like to get drunk.
(Rochemont 1989: 149)
- b. Mary says that John, she doesn't know but that she'd like to get drunk.
- (3.148)a. Mary says that John, she doesn't know but she'd like to see drunk.
(Rochemont 1989: 149)
- b. *Mary says that John, she doesn't know but that she'd like to see drunk.
- (3.149)a. Bills says that John, Mary doesn't like. (Rochemont 1989: 147)
- b. *Bills says John, that Mary doesn't like.
- (3.150)a. Bill says (that) Mary doesn't like John.
- b. Bill says *(that) John, Mary doesn't like.

The fact that a complementizer obligatorily precedes a topic in embedded clauses is accounted for by the requirement of PUREEP. Assume that an embedded clause is IP or CP, depending on the presence of a complementizer (i.e., CP is not projected in the absence of a complementizer because of OBHD; see Baković 1997, Keer & Baković 1997, Grimshaw 1997). Prohibiting adjunction to the highest node of a subordinate extended projection, PUREEP predicts that IP-adjunction of a topic is only possible in an embedded clause if CP is projected so that IP is not the highest extended projection of the embedded clause (compare candidate T3.51b); due to OBHD, C⁰ cannot be empty, but has to be occupied by a complementizer (candidate T3.51c vs. T3.51d).

T3.51	<i>John says ...</i>	PUREP	*LXMV	OBHD	TOPIC	STAY-XP
a	[_{IP} Mary _i e [_{VP} t _i likes Bill _[+top]]]			*	*!*	*
b	[_{IP} Bill _[+top] k [_{IP} Mary _i e [_{VP} t _i likes t _k]]]	*!		*		**
c	[_{CP} e [_{IP} Bill _[+top] k [_{IP} Mary _i e [_{VP} t _i likes t _k]]]]]			**!		**
☞ d	[_{CP} that [_{IP} Bill _[+top] k [_{IP} Mary _i e [_{VP} t _i likes t _k]]]]]			*		**
e	[_{CP} Bill _[+top] k [_{CP} that [_{IP} t _k [_{IP} Mary _i e [_{VP} t _i likes t _k]]]]]]]	*!		*		***

Remember that a fronted argument is resumed by a pronoun in the Romance languages. As laid out above, the topic is viewed as being merged in clause-initial position while the pronoun is base-generated in argument position. A clitic object pronoun moves to its host due to CLITIC >> STAY-X (compare section 3.2) whereas a resumptive subject pronoun is assumed to occur in Spec,IP in French (SUBJECT).

- (3.151)a. [_{IP} Jean_k [_{IP} Marie_j l_k' aime_i [_{VP} t_j t_i t_k]]]
 Jean Marie him likes
 'Jean, Marie likes (him).'
- b. [_{IP} Marie_j [_{IP} elle_j aime_i [_{VP} t_j t_i Jean]]]
 Marie she likes Jean
 'Marie likes Jean.'

In contrast to Vikner's (2001a) constraint OPSCOPE, TOPIC may be satisfied by placement of a [+top] subject in its canonic position (in the absence of a resumptive pronoun): TOPIC is fulfilled by subject positioning in Spec,IP if there is no element adjoined to IP, predicting that a [+top] subject is the clause-initial element (see Tableau T3.52).⁹⁵

⁹⁵ Note that Vikner (2001a) assumes that subject topics appear in the canonic subject position in English and French as well: dominance of OPSPEC (see footnote 89) over OPSCOPE prefers occurrence of a topical subject in Spec,IP over its adjunction to IP.

Unlike subject pronouns, object pronouns may only occur in clause-initial position if focused. Given that the unacceptability of weak object pronouns in pre-subject position is due to a structural restriction (e.g. prohibiting pronouns to adjoin to IP) and that a pronoun is to be regarded as topical due to its familiarity, the contrast in (i) suggests that subject topics differ from object topics in their structural position (Spec,IP vs. IP-adjoined position).

- (i) a. HER / *Her I will kiss. (Pollock 1997: 276)
 b. He probably has made many mistakes.

Furthermore, as mentioned in section 2.1.4 (footnote 27), the unacceptability of multiple topicalization in English could be due to a prohibition against multiple adjunction to IP (via movement; compare example (3.152d) below). The fact that argument fronting is possible in the presence of a topical subject as in (ii) then shows that the subject is not adjoined to IP but occurs in its canonic position.

- (ii) (I know that Mary hates Bill, but what does she think about John?)
 John, Mary adores.

Finally, as noted in section 2.1.4 above, extraction across an embedded topic is impossible in English, see example (2.56b). Given that this ban on argument extraction is due to some structural restriction (e.g. no

T3.52		TOPIC	STAY-X	STAY-XP	*X'-ADJ
☞ a	[_{IP} Sue _{[+top]_i] is_i [_{AuxP} probably [_{AuxP} t_i [_{VP} t_i sleeping]]]]}		*	*	
b	[_{IP} Sue _{[+top]_i] probably [_{I'} is_i [_{AuxP} t_i [_{VP} t_i sleeping]]]]}		*	*	*!
c	[_{IP} Probably [_{IP} Sue _{[+top]_i] is_i [_{AuxP} t_i [_{VP} t_i sleeping]]]]}	*!	*	*	
d	[_{IP} Sue _{[+top]_i] [_{IP} probably [_{IP} t_i is_i [_{AuxP} t_i [_{VP} t_i sleeping]]]]]]}		*	**!	

In case there are several topics within a clause, TOPIC is necessarily violated: only one phrase may occupy the leftmost position within IP, as required by condition (b) of TOPIC. Nevertheless, all [+top] phrases are fronted within the German middle field as in (3.152a). Likewise, several topics may precede the subject in French (3.152b) and Italian (3.152c). The availability of multiple topicalization is expected due to condition (a) of TOPIC: every phrase adjoined to IP left-aligns with a segment of IP (see Tableau T3.53 below).⁹⁶ Yet, recall that in

extraction across an element moved to IP-adjoined position), the acceptability of argument extraction across a topical subject indicates that the subject does not occupy the same structural position as a fronted object.

- (iii) (Paul gave the book to Mary.)
Who did Leslie think that this idiot gave the book to?

⁹⁶ As mentioned above, a topical subject may occur in its canonic position Spec,IP. In case it co-occurs with a [+top] object, the ranking of THEMSTRUC and STAY-XP will decide on their relative order: in case THEMSTRUC outranks STAY-XP, a [+top] subject is expected to adjoin to IP above the topical object. This ranking presumably holds in German where a sequence of two case-ambiguous DPs is preferably interpreted as *subject - object*. Note that dominance of TOPIC over THEMSTRUC (and STAY-XP) predicts that the subject may be placed in front of a topical, IP-adjoined object only in case it is marked for [+top], too; i.e. if solely the object bears [+top], it is expected to precede the subject as in (ib). IP-adjunction of the subject above the object would result in a violation of TOPIC - the [+top] object is not the leftmost element within IP -, its placement in the specifier of some extra functional projection is ruled out by OBHD and STAY-X (and the dominance of these constraints over THEMSTRUC).

- (i) a. ??In seinem_k Auto hat keine Frau_j dem Otto_k jemals einen Kuss gegeben. (Frey 2004: 177)
in his car has no woman the Otto ever a kiss given
'No woman has ever kissed Otto in his car.'
- b. In seinem_k Auto hat dem Otto_k keine Frau jemals einen Kuss gegeben.

Note that in Dutch, there are strict restrictions on the relative order among arguments within the middle field while their positioning relative to adverbs may vary, pointing out that THEMSTRUC is ranked higher in Dutch than in German.

- (ii) a. ... dat Jan (gisteren) Marie (gisteren) het boek (gisteren) gegeven heeft. (Zwart 1993a: 49)
that Jan yesterday Marie yesterday the book yesterday given has
'... that Jan gave Marie the book yesterday.'
- b. ??... dat Jan het boek Marie gegeven heeft.

According to De Cat (2002), there are no ordering restrictions on dislocated elements in French; several dislocated arguments may appear in either order, whether they occur in the same periphery of the clause (iii, iv) or not (v).

- (iii) a. Jean_j, Marie_k, il_j l_k' a demandée en mariage.
Jean Marie he her has asked for marriage
'Jean has proposed to Marie.'
- b. Marie_k, Jean_j, il_j l_k'a demandée en mariage.

English, multiple topicalization is ungrammatical (3.152d), possibly having to do with a restriction on the number of movements to IP-adjoined position, compare footnote 27 in section 2.1.4.⁹⁷

- (3.152)a. Weil er_i sie_j nicht leiden kann, wird (*voraussichtlich) Hans_i
because he her not like can will probably Hans
(*voraussichtlich) Maria_j (voraussichtlich) bei der Party ignorieren.
probably Maria probably at the party ignore
'Because he doesn't like her, Hans will probably ignore Maria at the party.'
- b. De ce truc_i-là, David_j, j'ose pas trop lui_j en_i parler.
of that thing there David I dare not too.much to.him of.it talk
(De Cat 2002: 85)
'I am not sure that I dare talk to David about that thing.'
- c. Il libro, a Gianni, domani, glielo darò senz'altro. (Rizzi 1997: 290)
the book to Gianni tomorrow to.him-it I.will.give for.sure
'I will give the book to Gianni tomorrow for sure.'
- d. *Bill knew that the necklace, to Jeannette, Fred had given before he met Alice.
(Ernst 2002: 408)

-
- (iv) a. Est-ce que tu_i la_j trouves, [la tête du lion]_j, toi_i? (De Cat 2002: 86)
is it that you it find the head of.the lion you
'Can you find the lion's head?'
- b. Tu_i vas la_j chercher, toi_i, Anne, [la feuille de capucine]_j.
you go it fetch you Anne the leaf of nasturtium
'Can you go and fetch the nasturtium leaf, Anne?'
- (v) a. Eh ben Gaëtan_i, il_i l'_j'a pris avec lui, le livre_j. (De Cat 2002: 86)
eh well Gaëtan he it has taken with him the book
'Gaëtan has taken the book with him.'
- b. Les moutons_j, je_i les_j ai déjà mis, moi_i.
the sheep I them have already put me
'I've already put the sheep (in the jigsaw).'

As mentioned in section 3.3, THEMSTRUC may be formulated as a condition on the representation of the lexically-specified thematic relations in syntactic structure (Williams 2003, Vogel t.a.) or as a condition on the mapping from D-structure to S-structure (requiring c-command relations on D-structure to hold on S-structure; see Müller 2001). Given that the dislocated phrase is base-generated in peripheral position in French, the optionality in the ordering of several dislocated elements supports the latter analysis: referring to the relation between D- and S-structure, THEMSTRUC does not make any demands on the ordering of arguments base-generated in dislocated position.

⁹⁷ Multiple topicalization being disallowed in English, two subsequent DPs in clause-initial position may only be interpreted as *object – subject*. Note that a left-dislocated subject resumed by a pronoun may precede a fronted object in English. Presupposing that left-dislocation involves IP-adjunction (as assumed for Romance CLLD) and that movement to IP-adjoined position may only take place once, the acceptability of (ib) indicates that the dislocated subject is placed in left-peripheral position via Merge.

- (i) a. John, Mary likes.
i) 'Mary likes John.'
ii) #'John likes Mary.'
- b. John, Mary, he likes. (Lasnik & Saito 1992: 80)

T3.53	Le livre, à Luc, Samuel le lui a donné. the book to Luc Samuel it him has given 'Samuel gave the book to Luc.'	CLITIC	TOPIC	STAY-XP	STAY-X
a	$[_{IP} \text{ Le livre}_{[+top]k} [_{IP} \text{ à Luc}_{[+top]l} [_{IP} \text{ Samuel}_j \text{ le}_k\text{-lui}_i\text{-a}_i [_{AuxP} \text{ t}_i [_{VP} \text{ t}_j \text{ donné } t_k \text{ t}_i]]]]]]]$		*	*	***
b	$[_{IP} \text{ Le livre}_{[+top]k} [_{IP} \text{ Samuel}_i \text{ le}_k\text{-a}_i [_{AuxP} \text{ t}_i [_{VP} \text{ t}_i \text{ donné } t_k \text{ à Luc}_{[+top]l}]]]]]]]$		**!	*	**
c	$[_{IP} \text{ Samuel}_j \text{ a}_i [_{AuxP} \text{ t}_i [_{VP} \text{ t}_j \text{ donné le livre}_{[+top]k} \text{ à Luc}_{[+top]l}]]]]]]]$		**!* *	*	*

Hence, by requiring topical arguments to occur in a left-peripheral position within IP, the constraint TOPIC predicts that [+top] phrases appear in clause-initial position in English and French and in the leftmost middle field position in German, thereby accounting for their strict ordering relative to adverbs.

3.5.2 Adverb Fronting in Declarative Clauses

As argued in the last section, an adverb should not adjoin to IP in case the subject is [+top]; the subject may thus satisfy TOPIC in its canonic position in Spec,IP without further movement. Likewise, an adverb should not be placed in front of an unfocused subject due to -FOC<ADV (see section 3.4). By contrast, a focus-sensitive item is required to precede a focused subject by ADV<+FOC. Yet adverbs which are not focus-sensitive such as e.g. temporal adverbs may also occur in pre-subject position (see also section 3.5.5 below). Furthermore as mentioned in chapter 2, clause-initial occurrence of an adverb may be derived by movement: adverbs may appear clause-initially even if they cannot be merged in that position.⁹⁸ For example, manner adverbs have to be base-generated within VP (they cannot

⁹⁸ Due to STAY-XP clause-initial occurrence of an adverb is expected to be base-generated if compatible with the adverb's semantic requirements.

Shaer (2003, t.a.) assumes that certain types of clause-initial adverbials (e.g. manner and instrumental ones) are to be analyzed as orphans, which are not integrated in the syntactic structure of the clause (see Espinal 1991 and Haegeman 1991). Since these adverbials differ in several respects from ones that have moved to left-peripheral position by e.g. *wh*- or focus-movement, Shaer concludes that the former ones do not undergo movement to clause-initial position, i.e. that they are not linked to some clause-internal position by a syntactic chain. For example, in contrast to the uncontroversially moved adverbial in (ia), the one in (ib) does not give rise to a Principle C violation. Yet, Principle C violations might arise with fronted adverbials (ic), indicating that they may originate from a clause-internal position. (Note that the depth of embedding of the involved R-expression seems to play a role for reconstruction effects (id), see Fischer 2004.)

- (i) a. *So much faster than John_i's personal best was he_i running ... (Shaer t.a.: 6)
- b. As fast as John_i's legs could carry him, he_i ran to warn the others.
- c. *With John_i's computer he_i began to write a book of poetry. (Frey & Pittner 1998)
- d. That John_i had seen the movie, he_i never admitted. (Fischer 2004: 4)

In contrast to the *wh*-moved adverbial in (iia), the fronted one in (iib) does not obey the island constraint. However, though clearly marked, argument fronting across a *wh*-island is possible as well (iiib) while extraction of a *wh*-argument is not (iiia). Similarly, VP Fronting out of an embedded question is acceptable (iv).

- (ii) a. *By what means exactly do you wonder who could wipe out terrorism? (Shaer t.a.: 6)
- b. Even using „spider powers“, you wonder who could wipe out terrorism.
- (iii) a. *What don't you know why John fixed? (Müller & Sternefeld 1990: 53)
- b. ??That book I wonder where John put.

immediately precede an auxiliary) and subject-oriented adverbs have to be merged below the surface position of the subject (see examples (2.57, 2.59) in section 2.1.4). Nevertheless, these types of adverbs can be placed in pre-subject position as in (3.153), suggesting that there is some constraint outranking STAY-XP that may require their clause-initial positioning.

(3.153)a. Icily_k, he spoke to the lieutenant t_k. (Ernst 2002: 420)

-
- (iv) a. They say that John is intelligent, but intelligent I wonder whether he really is. (Oku: 194)
 b. They say that Mary is proud of all her students, but proud of Bill I wonder whether she is.

Furthermore, while clause-initial adverbs involving subject-auxiliary inversion may co-occur with a sentence adverb in medial position (va), fronted ones cannot (vb). However, this contrast does not necessarily disprove the hypothesis that the adverb in (vb) is moved to clause-initial position; as discussed in section 3.2, the contrast might be due to differences in the types of movement – more precisely, differences in the ranking of the constraints triggering the various types of movement relative to SCMA.

- (v) a. So swiftly did John likely run that he didn't even notice the fire. (Shaer t.a.: 7)
 b. *Swiftly, John likely ran.

Moreover, according to Shaer (t.a.), the behavior of fronted adverbials with respect to VP Ellipsis indicates that they are not moved: they seem to be independent of the antecedent VP by not being interpreted in the second conjunct, just as parenthetical and afterthought occurrences of adverbials. Yet, there are also problems to interpret a stranded adjunct within an elliptical VP, see footnote 17 in section 4.4.

- (vi) a. With his X-ray vision, John located the documents and Bill did too. (Shaer 2003: 120)
 b. John, with his X-ray vision, located the documents and Bill did too.
 c. John located the documents, with his X-ray vision, and Bill did too.
 'Bill located the documents (*with John's / *his X-ray vision).'

Finally, Shaer argues that the fact that the fronted adverbial in (viic) is unable to license a negative polarity item - in contrast to the ones moved to initial position in (viia,b) – suggests that it is not integrated into the syntactic structure of the clause at all. Yet, note that a fronted temporal adverbial cannot license the NPI either, (viiiib,d). However, the suspension of the *that-t* effect in the presence of a temporal adverbial as in (viiiie) reveals that a left-peripheral temporal adverbial is syntactically integrated (being base-generated in clause-initial position, compare section 2.1.4).

- (vii) a. Only quietly did John ever got drunk. (Shaer t.a.: 9)
 b. ?Only QUIETLY John ever got drunk.
 c. *Only quietly, John ever got drunk.
 (viii) a. At no time would Leslie run for any public office. (Culicover 1993: 101)
 b. *At no time(,) Leslie would run for any public office.
 c. Only then did Leslie see anything moving.
 d. *Only then(,) Leslie saw anything moving.
 e. Who_j do you think that *(last year) t_j sold this painting? (Ernst 2002: 409)

Hence, the failure to license the NPI in (viiiib,d) should not be traced back to a lack of syntactic integration of the adverbials. Likewise, the unacceptability of (viic) does not necessarily support Shaer's orphan analysis of fronted (manner and instrumental) adverbials: the adverb's inability to license the NPI might be due to some other reason than its status as a syntactic orphan, just as in (viiiib,d). By contrast, restrictions on the number of fronted adverbials as well as the prohibition against argument extraction across them suggest that these adverbials are, in fact, moved to clause-initial position and, consequently, that they are integrated into the syntactic structure (see section 2.1.4 above). Moreover in Catalan, a resumptive pronoun co-occurs with a (left- or right-) dislocated manner adverb, overtly linking the peripheral adverb to the clause.

- (ix) a. Obertament, la Maria no hi ha parlat mai. (Xavier Villalba, p.c.)
 Overtly the Maria not LOC has talked never
 'Maria has never talked overtly.'
 b. La Maria no hi ha parlat mai, d'obertament. (Xavier Villalba, p.c.)

- b. Wisely_k, they t_k stopped for the night. (Ernst 2002: 405)

Since adverb fronting as in (3.153) targets the same position as argument topicalization and is subject to the same restrictions in English (compare section 2.1.4), it will be assumed that it is triggered by the constraint TOPIC as well; i.e., adverbs are considered to be able to bear a feature (equivalent to) [+top] so that TOPIC (>> STAY-XP) may necessitate their clause-initial placement.⁹⁹ Likewise, prefield positioning of an adverb whose semantic requirements

⁹⁹ De Cat (2002) supposes that all peripheral elements are dislocated, but that not all dislocated phrases are topics; rather, they all have to serve some discourse function. However, the discourse functions she assigns to clause-initial adverbs - such as expressing some discourse-link (ia), encoding a judgement on the predication (ib), or defining a spatio-temporal frame (see (3.166, 3.167) below) - seem to be lexical properties of the adverbs: an evaluative adverb expresses the speaker's judgement about the proposition, independent of its position; hence, these discourse functions cannot be the trigger for adverb placement in peripheral position.

- (i) a. Tu le sais bien, en plus. (De Cat 2002: 116)
 you it know well in more
 'What's more, you know that well.'
 b. Heureusement, Bruno est venu. (De Cat 2002: 117)
 happily Bruno is come
 'Luckily, Bruno has come.'

Ernst (2002: 397) claims that "adverbs in clause-initial projections tend to be foregrounded, i.e. made salient or active in the mind of the speaker. In other words, they have the basic topic property of being activated [...] more emphasis is placed on them". Hence, the adverbs in (iib) are considered to bear [+top] in Ernst's analysis (compare also section 2.1.4).

- (ii) a. Bob has obviously impressed the judges with his accordion solo. (Ernst 2002: 397)
 b. (Obviously) Bob (obviously) has impressed the judges with his accordion solo.

The hypothesis that clause-initial adverbs are topics seems to be supported by the fact that certain adverbs ("B-class" adverbs in Jackendoff's (1972) terms) cannot occur in clause-initial position, (iii). Note that these adverbs do not block the *that-t* effect in English (iv), unlike adverbs that can be merged clause-initially (see example (2.55) in section 2.1). According to Ernst (2002), the pre-subject position is reserved for topics and topics are to be heavy; since these adverbs are inherently [+lite], their occurrence in topic position would require them to have too much weight and is thus excluded. Likewise, these adverbs cannot undergo rightward movement requiring weight either, (v).

- (iii) a. (*Almost / *Just / *Scarcely) Audrey (almost / just / scarcely) woke up. (Ernst 2002: 404)
 b. (*Quasi) Maria (quasi) cadde dall'emozione.
 almost Mary almost fell from emotion
 'Mary almost fell from emotion.'
 c. (*Presque) Jean-Claude est (presque) tombé la première fois.
 almost Jean-Claude is almost fallen the first time
 'Jean-Claude almost fell the first time.'
 (iv) a. *Who do you think that (almost / just / scarcely) t_i kissed Mary?
 b. *Who_i do you think that t_i (almost / just / scarcely) kissed Mary?
 (v) *Audrey woke up (almost / just / scarcely). (Ernst 2002: 405)

Moreover, clitic attachment in European Portuguese points to a certain similarity between clause-initial adverbs and topics, too. Verb-initial clauses, CLLDed arguments, and clause-initial adverbs require enclitics (vi) whereas *wh*-movement and quantificational operators give rise to proclisis (vii).

- (vi) a. Viu-o / *O viu o Pedro. (Barbosa 2000: 35)
 saw.him him saw the Pedro
 'Peter saw him.'

prohibit base-generation in Spec,CP presupposes that the adverb is endowed with some feature; the adverb may then be attracted by a corresponding feature on C⁰ (AGREE >> STAY-XP; compare section 3.3). Remember that adverb movement to prefield position in German can cross another scope-bearing element as in (3.154c, 3.155c, 3.156c) below, accounted for by the ranking AGREE >> SCMA. By contrast, adverbial scope has to be reflected in linear order within the German middle field¹⁰⁰; i.e., while a topical argument has to precede a sentence adverb within the middle field, an adverb cannot be placed in front of an element taking wider scope, (a)- vs. (b)-sentences in (3.154)-(3.156). Similarly, adverb occurrence in clause-initial position is only acceptable in English (3.157, 3.158) and French (3.159) if there is no following element that outscopes the adverb.¹⁰¹ This restriction on adverb fronting can

-
- | | | | |
|-------|----|---|--------------------|
| | b. | Esses livros, dei-os / *os dei à Maria.
those books I.gave.them them I.gave to Maria
'Those books, I gave them to Maria.' | (Barbosa 2000: 35) |
| | c. | Generalmente vejo-a / *a vejo de manhã.
generally I.see.her her I.see the morning
'Usually, I see her in the morning.' | (Barbosa 2000: 36) |
| (vii) | a. | Quem o viu / *viu-o?
who him saw saw.him
'Who saw him?' | (Barbosa 2000: 36) |
| | b. | Nenhuma resposta me deram até hoje.
no answer to.me they.gave until today
'No answer, they gave to me until today.' | (Barbosa 2000: 60) |

Barbosa (2000) claims that Portuguese clitics cannot appear at the left edge of an intonational phrase (IntP) and that topics are assigned their own IntP; enclisis is thus necessary in verb-initial clauses and topic constructions. The fact that unlike *wh*-phrases and quantificational operators, clause-initial adverbs prohibit proclisis indicates that they are similar to argument topics in that they are to be wrapped in a separate IntP as well.

Finally, note that even if clause-initial occurrence of the adverbs in (3.153) were triggered by some constraint other than TOPIC, this constraint would need to be ranked similar to TOPIC in English (see below).

¹⁰⁰ However, so-called T-scrambling is able to place an adverb in front of a wide scope element within the German middle field as well as to extract an adverbial out of its clause. (On T-scrambling and its distinction from scrambling see Haider & Rosengren 1998.)

- | | | |
|-----|----|--|
| (i) | a. | *... daß man den Mann [freundlich] _i ja nicht t _i behandelt hat.
that one the man friendly indeed not treated has
(Haider & Rosengren 1998: 23) |
| | | '... that one (indeed) hasn't treated the man friendly.' |
| | b. | ... daß [FREUNDlich] _i man den Mann ja NICHT\ t _i behandelt hat. |
| | c. | ... daß [/SO freundlich] _i sie NICHT\ glaubte, [_{CP} daß sie t _i behandelt würde]
that so friendly she not thought that she treated would.be
(Haider & Rosengren 1998: 24) |
| | | '... that she did not think that she would be treated so friendly.' |

Given that a manner adverb is merged below all arguments (see footnote 26 in chapter 2), the sentences in (ii) indicate that adverb fronting within the middle field is possible.

- | | | | |
|------|----|---|-----------------------|
| (ii) | a. | ... daß Peter seine Zähne gründlich putzt.
that Peter his teeth carefully brushes
'... that Peter brushes his teeth carefully.' | (Rosengren 2000: 222) |
| | b. | ?... daß Peter gründlich seine Zähne putzt. | |
| | c. | ?... daß gründlich Peter seine Zähne putzt. | |

¹⁰¹ In addition, adverb fronting in imperative and generic clauses is unacceptable. Ernst (2002) assumes that they involve a covert operator so that fronting of the adverb would not obey the Scope Matching Constraint on

be accounted for by the constraint SCMA and its dominance over TOPIC: the ranking SCMA >> TOPIC predicts that an adverb cannot be fronted in case it is to take narrow scope with respect to a following element (compare also section 3.2, Tableaux T3.10 vs. T3.11). In addition, this ranking captures the fact that adverb fronting is clause-bound; as evidenced by the data in (3.160)-(3.162), an adverb construed with a subordinate predicate cannot adjoin to the matrix IP where it c-commands the matrix verb. Since SCMA does not affect arguments, their extraction out of an embedded clause is expected to be acceptable (3.160b, 3.163).

- (3.154)a. ... daß der Arzt gern einen Patienten gut behandelt.
 that the doctor willingly a patient well treats
 (Rosengren 2000: 222)
 '... that the doctor likes to treat a patient well.'
- b. *... daß der Arzt gut gern einen Patienten behandelt.
 c. ?Gut behandelt der Arzt gern einen Patienten.
- (3.155)a. Angeblich haben die Kinder gestern still und leise gemalt.
 allegedly have the children yesterday silently and quietly painted
 'Allegedly, the kids have painted silently and quietly yesterday.'
- b. ?*Angeblich haben still und leise die Kinder gestern gemalt.
 c. Still und leise haben die Kinder angeblich gestern gemalt.
- (3.156)a. Peter hat leider arroganterweise abgesagt. (Pittner 1999: 178)
 Peter has unfortunately arrogantly declined
 'Unfortunately, Peter arrogantly has declined.'
- b. *Peter hat arroganterweise leider abgesagt.
 c. ?Arroganterweise hat Peter leider abgesagt.
- (3.157)a. Icily_i, he spoke to the lieutenant t_i. (Ernst 2002: 420)
 b. *Icily_i, he didn't speak to the lieutenant t_i. (Ernst 2002: 421)
 c. *Icily_i, he probably / craftily / always / still spoke to the lieutenant t_i.

Adjunct Topicalization, on which the constraint SCMA in the present analysis is based (see (3.24, 3.25) in section 3.2).

- (i) a. *Tightly, hold on to the railing or you will fall! (Ernst 2002: 422)
 b. *Tightly, a cardinal grips the branch that it lands on.

Furthermore, measure adverbs cannot be topicalized at all. According to Ernst (2002), they modify a predicate internal to the one expressed by the verb; in fronted position however, the adverb takes scope over CAUSE and BECOME.

- (ii) *Partway, Karen filled the glass. (Ernst 2002: 422)

Remember that CLLDed arguments are considered to be base-generated in dislocated position in French. Yet to be able to account for the restriction on clause-initial adverbs by the constraint SCMA, their left-peripheral occurrence should be derived by movement: MODIFIER predicts that an adverb may only be merged in clause-initial position if compatible with its semantic requirements. Hence, in contrast to arguments, adverbs may have to move to dislocated position.

Finally, recall that focus movement of an adverb may cross a scope-bearing element in English, French, and Italian, see footnote 25 in section 3.2.

- d. *Icily_i, you should speak to the lieutenant t_i.
- (3.158)a. Frankly, I have unfortunately a very bad opinion of you. (Cinque 1999: 12)
- b. *Unfortunately, I have frankly a very bad opinion of you.
- (3.159)a. Jean ne s' est probablement pas dirigé calmement vers la sortie.
Jean not himself is probably not moved quietly to the exit
'Jean probably didn't move quietly to the exit.'
- b. Calmement, Jean s'est dirigé vers la sortie. (Laenzlinger 2000: 110)
- c. *Calmement, Jean s'est probablement dirigé vers la sortie.
- d. *Calmement, Jean ne s'est pas dirigé vers la sortie.
- (3.160)a. *... dass er morgen dem Kind zu kommen versprochen hatte.
that he tomorrow the child to come promised had
(Fanselow 2003b: 24)
'... that he had promised the child to come tomorrow.'
- b. ... dass dem Fritz niemand zu widersprechen wagte. (Fanselow 2003b: 23)
that the Fritz nobody to contradict dared
'... that nobody dared to contradict Fritz.'
- (3.161)a. I promised that he would be there tomorrow. (Nakajima 1991: 343)
- b. I promised that tomorrow he would be there.
- c. *Tomorrow I promised that he would be there.
- (3.162)a. Carefully, he eased the violin out of its case. (Ernst 2002: 423)
- b. *Carefully, they saw him ease the violin out of its case.
- c. *Carefully, they said that he eased the violin out of its case.
- (3.163)a. The violin, he eased out of its case. (Ernst 2002: 423)
- b. The violin, they saw him ease out of its case.
- c. The violin, they said that he eased out of its case.

Note that in contrast to adverb fronting, *wh*-movement of an adverbial may cross another scope-bearing element. Furthermore, an adverb may be extracted out of a subordinate clause by *wh*-movement; for example, the sentence in (3.164c) is ambiguous, asking either for the speed (or suddenness) of her speaking or for the speed of his drinking the coffee. These contrasts between fronting and *wh*-movement of an adverbial can be captured by the ranking WHSPEC >> SCMA >> TOPIC (compare Tableau T3.54 vs. T3.55):

- (3.164)a. How fast can you run?
- b. How quickly does Carl usually drink his coffee in the morning?
- c. How quickly did she say he drank his coffee? (Nakajima 1991: 343)
- d. When do you think that he will be there? (Nakajima 1991: 343)
- (3.165)a. Comment veut-il préparer les escargots?
how wants.to.he prepare the snails
'How does he want to prepare the snails?'

- b. Comment prépare-t-il normalement des escargots?
how prepares.he normally of.the snails
'How does he usually prepare snails?'
- c. Quand a-t-il dit qu' il arrive?
when has.he said that he arrives
'When did he say that he will arrive?'

T3.54		WHSPEC	SCMA	TOPIC	STAY-X	STAY-XP
☞	a [IP John _j has _i [AUXP usually [AUXP t _i [VP t _j proclaimed his innocence loudly _[+top]]]]]]			**!	*	*
	b [IP Loudly _{[+top]k} [IP John _j has _i [AUXP usually [AUXP t _i [VP t _j proclaimed his innocence t _k]]]]]		*!		*	**

T3.55		WHSPEC	SCMA	TOPIC	STAY-X	STAY-XP
	a [IP John _j has _i [AUXP usually [AUXP t _i [VP t _j proclaimed his innocence how loudly]]]]]	*!			*	*
☞	b [CP How loudly _k has _i [IP John _j t _i [AUXP usually [AUXP t _i [VP t _j proclaimed his innocence t _k]]]]]		*		**	**

The sentences in (3.154)-(3.162) showed that an adverb cannot adjoin to IP in case it takes narrow scope relative to a following element. Yet fronting of certain types of adverbials across a scope-bearing element within the German middle field and to clause-initial position in English and French seems to be acceptable; i.e. the various types of adverbs apparently differ in whether or not their occurrence in topic position tolerates a violation of SCMA. For example, temporal and locative adverbials (with a frame or event-related reading) may precede a sentence adverb or an epistemic modal although they are to be merged below these elements.¹⁰²

- (3.166)a. In Germany, Carl is probably famous.
- b. In London, John must have met Mary.
- c. In the Middle Ages, spices were presumably very precious.
- d. Yesterday, John has probably won the race.
- (3.167)a. ... weil im Mittelalter erstaunlicherweise die Mönche
because in.the Middle.Ages amazingly the monks
viel Bier tranken. (Frey & Pittner 1998: 520)
much beer drank
'... because amazingly, the monks drank a lot of beer in the middle ages.'

¹⁰² Yet although these types of adverbs may be moved across a scopal element, they obviously cannot be extracted out of the clause they are construed with, compare examples (3.160a, 3.161c) above.

- b. Otto muß morgen hier wahrscheinlich eine Rede halten. (Frey 2000b: 156)
 Otto must tomorrow here probably a talk give
 'Otto probably has to give a talk here tomorrow.'
- c. Tu sais, hier, Catherine a probablement vu un magicien.
 you know yesterday Catherine has probably seen a magician
 (De Cat 2002: 156)
 'You know, yesterday, Catherine probably saw a magician.'
- (3.168)a. Otto ist (erstaunlicherweise) in keinem Land (*erstaunlicherweise)
 Otto is amazingly in no country amazingly
 sehr berühmt. (Frey 2000a: 111)
 very famous
 'Amazingly, in no country is Otto very famous.'
- b. Otto ist (erstaunlicherweise) in Deutschland (erstaunlicherweise) sehr berühmt.
 Otto is amazingly in Germany amazingly very famous
 'Amazingly, in Germany, Otto is very famous.'
- (3.169)a. Paul wird (vermutlich) niemals (*vermutlich) ein Auto klauen.
 Paul will presumably never presumably a car steal
 'Paul presumably will never steal a car.'
- b. Paul hat (vermutlich) letzten Dienstag (vermutlich) ein Auto geklaut.
 Paul has presumably last Tuesday presumably a car stolen
 'Last Tuesday, Paul probably stole a car.'

Defining some spatio-temporal frame, temporal and locative adverbs may serve as stage topics (see Maienborn 1996, Erteschik-Shir 1997, among others): they may determine a window in space or time within which the proposition is to hold true. However, the contrasts in (3.168, 3.169) indicate that these types of adverbials are not topical in themselves; the acceptability of their placement in front of a sentence adverb depends on their referentiality, indicating that it has to do with their topicality: just as arguments (compare examples (3.141, 3.142) in section 3.5.1), these adverbials must follow a sentence adverb if they cannot be topical due to non-referentiality.

The ranking SCMA >> TOPIC established for the languages under discussion above predicts that adverb fronting cannot be motivated by TOPIC in case it involves movement across a scopal element, compare examples (3.154)-(3.159) above. Hence, placement of the temporal and locative adverbs in front of a wide scope element as in (3.166, 3.167) has to be triggered by some constraint other than TOPIC; it cannot be subject to the same constraint that causes clause-initial positioning of a manner or subject-oriented adverb as in (3.153): the various types of adverbs differ in their ability to cross a scope-bearing element on their way to topic position, in violation of SCMA. Consequently, fronting of the various types of adverbs has to be driven by distinct constraints, presumably referring to different features. In the analysis so far, the ranking SCMA >> TOPIC is only motivated by the restrictions on adverb fronting. In chapter 4 however, this ranking will be proved to be correct on independent grounds: pre-gap placement of a narrow scope adverb cannot be prevented by adverb placement in front of a

wide scope element (violating SCMA), but by refraining from fronting of an argument or VP - i.e. a non-adverbial phrase - in English (violating TOPIC). Hence, even if TOPIC were not responsible for the clause-initial placement of subject-oriented or manner adverbs as in (3.153), TOPIC (as well as a potentially different constraint triggering adverb fronting) are to be outranked by SCMA, predicting these constraints to be unable to motivate adverb movement across a scope-bearing element. Consequently, fronting of a temporal or locative adverb as in (3.166, 3.167) has to be legitimized by some other constraint outranking SCMA the nature of which cannot be investigated here and remains open for future research.

3.5.3 Topic Placement in Questions

As discussed above, a topical object is expected to adjoin to IP in declarative clauses due to the requirement of TOPIC. However, IP-adjunction of a topic is obviously ungrammatical in Romance (e.g. French, Italian, and European Portuguese) and English matrix questions: a topic cannot immediately precede the subject in interrogatives; rather, it occurs in clause-initial position, preceding the *wh*-phrase in *wh*-questions or the inverted auxiliary in *yes/no*-questions (compare (3.170)-(3.175) below).¹⁰³ Likewise, placement of an argument in pre-subject position is unacceptable in English Negative Inversion constructions; as in matrix questions, a topical argument may occur in clause-initial position, (3.176).

- (3.170)a. Les lanternes_i, je les_i ai mises dans la cuisine.
the lanterns I them have put in the kitchen
'I put the lanterns in the kitchen.'
- b. *Où est-ce que les lanternes_i, tu les_i as mises? (De Cat 2002: 188)
where is it that the lanterns you them have put
'Where did you put the lanterns?'
- c. Les lanternes_i, où est-ce que tu les_i as mises?
- (3.171)a. Le biberon_i, il faut le_i mettre dans la cuisine.
the bottle it must it put in the kitchen
'One has to put the bottle in the kitchen.'
- b. Où (*le biberon_i) faut il (*le biberon_i) le_i mettre?
where the bottle must it the bottle it put
'Where does the bottle go?'
- c. Le biberon_i, où faut-il le_i mettre? (De Cat 2002: 94)

¹⁰³ Note that argument fronting in English questions is only acceptable with a resumptive pronoun for most speakers, see Rochemont (1989) and Prince (1998). According to Pesetsky (1997), resumption involves pronunciation of a movement trace in English, necessary to prevent an island violation, ISLAND >> SILENTTRACE (see also Prince 1985):

- (i) a. This is the guy who I thought that Mary and *(him) were going to the movies.
(Pesetsky 1997: 163)
- b. This is the guy who I wondered whether *(he) was going to the movies.
- c. There is one worker who the company fired the employee that treated *(him) badly.

- (3.172)a. Il tuo libro_i, lo_i ho letto. (Rizzi 1997: 286)
 the your book it I.have read
 'I have read your book.'
- b. *A chi, il premio Nobel_i, lo_i daranno? (Rizzi 1997: 289)
 to whom the Nobel.prize it they.will.give
 'To whom will they give the Nobel prize?'
- c. Il premio Nobel_i, a chi lo_i daranno?
- (3.173)a. Esses livros_i, dei-os_i à Maria. (Barbosa 2000: 35)
 those books I.gave.them to Maria
 'I gave those books to Maria.'
- b. quem (*o Carlos_i) o_i viu (*o Carlos_i)?
 who the Carlos him saw the Carlos
 'Who saw Carlos?'
- b. O Carlos_i, quem o_i viu?
- (3.174)a. To Mary, John gave a book.
 b. *What did, to Mary, John give?
 c. As for Mary, what did John give to her?
- (3.175)a. John, Mary likes.
 b. *Does, John, Mary like? (Rochemont 1989: 148)
 c. John, does Mary like (him)?
- (3.176)a. That book, I will read.
 b. *On no account will that book I read.
 c. That book, on no account will I read.

By contrast, argument fronting to IP-adjoined position is possible in German questions: just as in declarative clauses, an object may precede the subject within the middle field in interrogative clauses, (3.177). If the topic is placed in front of the *wh*-phrase in Spec,CP, a resumptive pronoun has to occur.¹⁰⁴

- (3.177)a. Was hat dem Fritz diese Frau geschenkt? (Müller & Sternefeld 1990: 40)
 what has the Fritz this woman given.as.a.present
 'What did this woman give to Fritz?'
- b. Und dem Fritz, was hat Cornelia *(dem_i / ihm_i) geschenkt?
 and the Fritz_i what has Cornelia that.one him given.as.a.present
 'And to Fritz, what did Cornelia give to him?'

As in matrix questions, a topic cannot precede the subject in embedded questions in English and French; yet its placement in front of the embedded *wh*-phrase is also unacceptable in these languages: i.e. topicalization is impossible within English and French embedded

¹⁰⁴ Note that similarly, a pronoun occurs in German Left Dislocations and Hanging Topic constructions, in which the topic precedes the prefield constituent (compare footnote 84).

questions while it is acceptable in embedded declarative clauses, (3.178, 3.179). However, a topic can be placed in front of the negative element in English embedded Negative Inversion constructions as in (3.180). Moreover, a topic may precede an embedded *wh*-phrase in Italian (3.181a); in addition, the order *wh* - *topic* is marginally acceptable in Italian (3.181b) and fully grammatical in European Portuguese (3.182) and German (3.183).

- (3.178)a. *Jean m' a demandé le livre_i, à qui Marie l_i' a donné.
Jean me has asked the book to whom Marie it has given
'Jean asked me who Marie has given the book to.'
- b. *Jean m'a demandé à qui, le livre_i, Marie l_i'a donné.
- c. Jean m' a dit que le livre_i, Marie l_i' a donné à Pierre.
Jean me has told that the book Marie it has given to Pierre
'Jean told me that Marie has given the book to Pierre.'
- (3.179)a. *I wonder to Mary, what John gave (to her).
b. *I wonder what to Mary, John gave (to her).
c. I know that to Mary, John gave a book.
- (3.180)a. *I said this book, that on no account would I read.
b. I said that this book, on no account would I read.
c. *I said that on no account would this book I read.
- (3.181)a. Mi domando, il premio Nobel_i, a chi lo_i potrebbero dare.
me I.wonder the Nobel.prize to whom it they.could give
(Rizzi 1997: 289)
'I wonder to whom they could give the Nobel prize.'
- b. ?Mi domando a chi, il premio Nobel_i, lo_i potrebbero dare.
- (3.182)a. *Sabes ao Pedro_i, quando mais lhe_i convém que marquemos
you.know to.the Pedro when more to.him is.convenient that we.schedule
a reunião?
(Barbosa 2000: 66)
the meeting
'Do you know when it is more convenient to Pedro that we schedule the meeting?'
- b. Sabes quando ao Pedro_i, mais lhe_i convém que marquemos a reunião?
- (3.183)a. *Ich weiß nicht, dem Karl was schon wieder die Maria (dem / ihm)
I know not the Karl what already again the Maria that.one him
erzählt hat.
told has
'I don't know what Maria told Karl again.'
- b. Ich weiß nicht, was dem Karl schon wieder die Maria erzählt hat.

Rochemont (1989) argues that under the assumption that an element in pre-subject position is adjoined to IP, topic placement in pre-subject position as in (3.174b, 3.176b, 3.179b) may be ruled out in English questions by subjacency: IP is a barrier; since adjunction to IP creates a further instance of IP, it produces a second barrier (compare Lasnik & Saito 1992). As a

result, *wh*-movement as well as auxiliary movement across an IP-adjoined topic would violate subadjacency and is thus excluded. Supposing that topicalization is unconstrained with respect to its landing site, a subadjacency violation can be prevented by topic fronting to CP-adjoined position in matrix questions as in (3.174c, 3.175c). According to Rochemont, the unacceptability of topic placement in front of an embedded *wh*-phrase (3.179a) or a complementizer (3.184a) might be due to the prohibition against adjunction to argumental XPs (Chomsky 1986): the topic may adjoin to matrix CP, but not to an embedded CP, excluding topic fronting in embedded questions altogether. Similarly, a topic cannot precede the complementizer *che* ('that') in Italian (3.184b), suggesting that Chomsky's restriction on adjunction to non-argumental XPs also holds in this language; yet a topic may precede an embedded *wh*-phrase in Italian (compare (3.181a) above), a phenomenon that is unexpected given that topics occur in adjoined positions and adjunction to embedded CP is prohibited.

- (3.184)a. *Bill says John, that Mary doesn't like. (Rochemont 1989: 147)
 b. Credo (*il tuo libro,) che (il tuo libro,) loro lo apprezzerebbero molto.
 I believe the your book that the your book they it would appreciate much
 (Rizzi 1990: 288)
 'I believe that your book, they would appreciate it a lot.'

Note that Rochemont's (1989) analysis also predicts extraction out of embedded topicalizations to be unacceptable, as supported by the English data in (3.185): *wh*-movement would have to cross two segments of IP, violating subadjacency. However, as will be discussed in the next section, adverb placement in pre-subject position in English questions is also ungrammatical whereas extraction across an adverb merged in the initial position of an embedded clause is not (3.186), severely calling into question the subadjacency approach. Correspondingly, extraction across an embedded topic as in (3.187) is acceptable in French according to De Cat (2002) whereas topic placement behind a *wh*-phrase is not (3.178b). In addition, the contrast between matrix and embedded questions in the acceptability of the order *wh* - *topic* in Italian and Portuguese cannot be accounted for by subadjacency: assuming that the topic in pre-subject position is adjoined to IP, placement of the topic behind the *wh*-phrase is expected to be unacceptable in both matrix and embedded questions, contrary to fact (compare (3.172, 3.173) vs. (3.181, 3.182) above). Finally, the ungrammaticality of topicalization within English *if/whether*-questions such as (3.178), in which neither *wh*-movement nor subject-auxiliary inversion takes place, remains unexplained under a subadjacency account.¹⁰⁵

- (3.185)a. *What does John think that Bill, Mary gave to? (Rochemont 1989: 147)

¹⁰⁵ Note that case adjacency fails to capture the phenomena of topic placement as well (cf. Belletti 1990): though topic positioning in front of the subject in subject-verb/auxiliary inversion constructions might be ruled out on the basis of a requirement that the inverted verb has to occur adjacent to the subject to be able assign case, pre-subject placement of a topic is also unacceptable in English embedded questions, in which subject-verb/auxiliary inversion does not take place.

- b. *This is the man who that book, Mary gave to.
 (3.186)a. *What did for all intents and purposes Mary buy?
 (Pesetsky & Torrego 2000: 410)
- b. What_{tj} did Lee insist that under normal circumstances Robin would give us t_j?
 (Browning 1996: 250)
- (3.187)a. ?Ce qui moi, me dérange le plus, c'est l'odeur.
 that that me me disturbs the most it is the smell
 'What disturbs me most is the smell.'
- b. ?C'est elle pour qui les gars, ils se battent tous.
 it is her for whom the lads they themselves fight all
 'She is the one for who all the lads fight'
- (3.188)a. *I wonder if Bill, Mary gave the book to.
 b. *I wonder whether Bill, Mary gave the book to.

In summary, the unacceptability of topic placement behind a (matrix) *wh*-phrase cannot simply be captured by a categorical prohibition against movement across an IP-adjunct. However since grammaticality is defined by best satisfaction of a hierarchy of violable constraints in the OT framework, cross-linguistic differences in the acceptability of topic placement in front of (or behind) a *wh*-phrase in matrix and embedded questions can be accounted for by contrasts in the language-specific ranking of such a prohibition. Following Laenzlinger (2000), it will be assumed that subject-verb/auxiliary inversion across a pre-subject phrase is disallowed, as stated by the constraint *INVERSION in (3.189). Yet it depends on the hierarchic ranking of *INVERSION relative to other constraints such as TOPIC, PUREEP, and *CP-ADJ which position is optimal for a topic in the various constructions and, hence, whether or not IP-adjunction of a topic is possible in the respective cases.

- (3.189)*INVERSION: X^0 and Y^0 cannot be co-indexed if there is an overt phrase ZP, ZP c-commanding a segment of IP, and X^0 c-commands ZP and ZP c-commands Y^0 .

*INVERSION forbids co-indexation of two heads across an intervening phrase in pre-subject position. The constraint is trivially satisfied in English and French simple declarative matrix clauses: no XP being projected above IP, there is no X^0 c-commanding IP that could need to be co-indexed with I^0 (or some lower Y^0); hence, IP-adjunction of a topic is predicted to be acceptable (compare Tableau T3.50). In non-subject questions however, CP is projected: the *wh*-element occurs in Spec,CP, as predicted by WHSPEC >> STAY-XP (see section 3.2).¹⁰⁶ As a consequence, OBHD >> STAY-X requires subject-verb/auxiliary inversion in matrix questions. Now, *INVERSION becomes relevant: it prohibits V/Aux-to-C movement across a

¹⁰⁶ Since matrix *yes/no*-questions give rise to subject-verb/auxiliary inversion, it is assumed that Spec,CP is occupied by a null question operator in these clauses; otherwise, there would be no reason to project CP in English and French, predicting inversion to be blocked. In addition, the null operator in Spec,CP may satisfy PREFIELD; hence, no other constituent is expected to occur in prefield position in German *yes/no*-questions, the finite verb being the first overt element.

pre-subject phrase.¹⁰⁷ As illustrated in the candidates T3.56a, T3.56b, and T3.56c below, neither *wh*-movement nor subject-auxiliary inversion nor topic fronting might be omitted to satisfy *INVERSION. The unacceptability of pre-subject topic placement in English and Romance matrix questions indicates that a violation of *INVERSION is not tolerated in an optimal output; rather, the topic precedes the *wh*-phrase (compare (3.170)-(3.175) above). Note that topic fronting has to be triggered by some constraint; otherwise, it would be suppressed by STAY-XP (or STAY-X in French).¹⁰⁸ Yet TOPIC explicitly requires left-alignment of a [+top] phrase with IP.¹⁰⁹ It thus seems necessary to assume that TOPIC can be satisfied by a trace of the [+top] element in the appropriate position. Under this assumption a topic adjoined to IP might be forced to move on to some higher position in order to prevent a violation of *INVERSION, which is sensitive to overt phrases only.¹¹⁰ Its placement in the specifier of some FP intervening between CP and IP (candidates T3.56e and T3.56f) or dominating CP (candidate T3.56h) is ruled out by *INVERSION, OBHD, and WHSPEC and their dominance over *CP-ADJ, respectively.

¹⁰⁷ More precisely, *INVERSION disallows the finite verb/auxiliary in C⁰ to be co-indexed with its trace as is necessary for proper government.

¹⁰⁸ Though a dislocated DP is considered to be merged in IP-adjoined position in French, CLLD gives rise to an extra violation of STAY-X by the movement of the clitic, indicating that TOPIC outranks STAY-X in that language.

¹⁰⁹ Note that TOPIC cannot be conceived of as requiring left-alignment of a topic with the left edge of *IP* or a dominating *XP*. TOPIC outranks STAY-X in French (see footnote 108). Hence, if TOPIC were not restricted to IP, multiple topicalization would be expected to give rise to subject-verb inversion: for best satisfaction of TOPIC, a second topic would be placed in an extra functional projection to whose head position movement of the finite verb is predicted to take place by OBHD >> STAY-X, contrary to fact (compare example (3.152b) above). Likewise, the constraint TOPIC should not be formulated as requirement on left-alignment with the highest clausal projection since topic fronting may target a position within the German middle field (3.137a) as well as pre-subject position in Italian and Portuguese embedded questions (3.181, 3.182). Hence, the requirement of TOPIC has to be restricted to left-alignment with IP, which necessitates an analysis of the order *topic* - (*non-subject*) *wh* as involving movement of the topic from IP-adjoined position to CP-adjoined position.

¹¹⁰ Presupposing that VP Ellipsis involves VP Fronting, which is triggered by TOPIC (see section 4.3), the hypothesis that *INVERSION only refers to overt pre-subject phrases intervening between two co-indexed heads is supported by the fact that VP Ellipsis is possible in English embedded questions whereas VP Fronting is not: while IP-adjunction of an overt VP is ruled out by the violation of *INVERSION, an elided VP in IP-adjoined position does not violate the constraint, predicting VP Ellipsis to be acceptable in embedded questions (compare Tableau T4.9 in section 4.4).

- (i) a. We never know what Omar will order, but we can always guess what you will.
(Potsdam 1997a: 364)
- b. We never know what Omar will order, but we can always guess (*order) what (*order) you will.

T3.56		WHSPEC	OBHD	*INVERSION	TOPIC	STAY-X	STAY-XP	*CP-ADJ
a	[_{IP} The book _{[+top]k} [_{IP} John _j has _i [_{AuxP} t _i [_{VP} t _j given (it _k / t _k) to who]]]]]	*!				*	**	
b	[_{CP} Who ₁ e [_{IP} the book _{[+top]k} [_{IP} John _j has _i [_{AuxP} t _i [_{VP} t _j given (it _k / t _k) to t _i]]]]]]]		*!			*	***	
c	[_{CP} Who ₁ has _i [_{IP} John _j t _i [_{AuxP} t _i [_{VP} t _j given the book _[+top] to t _i]]]]]				*!*	**	**	
d	[_{CP} Who ₁ has _i [_{IP} the book _{[+top]k} [_{IP} John _j t _i [_{AuxP} t _i [_{VP} t _j given (it _k / t _k) to t _i]]]]]]]			*!		**	***	
e	[_{CP} Who ₁ e [_{FP} the book _{[+top]k} t _i [_{IP} t _k [_{IP} John _j t _i [_{AuxP} t _i [_{VP} t _j given (it _k / t _k) to t _i]]]]]]]]]			*!		***	****	
f	[_{CP} Who ₁ e [_{FP} the book _{[+top]k} has _i [_{IP} t _k [_{IP} John _j t _i [_{AuxP} t _i [_{VP} t _j given (it _k / t _k) to t _i]]]]]]]]]		*!			**	****	
g	[_{CP} The book _{[+top]k} [_{CP} who ₁ has _i [_{IP} t _k [_{IP} John _j t _i [_{AuxP} t _i [_{VP} t _j given (it _k / t _k) to t _i]]]]]]]]]					**	****	*
h	[_{FP} The book _{[+top]k} e [_{CP} who ₁ has _i [_{IP} t _k [_{IP} John _j t _i [_{AuxP} t _i [_{VP} t _j given (it _k / t _k) to t _i]]]]]]]]]	*!	*			**	****	

As in questions, topic placement in front of the subject in English Negative Inversion constructions is excluded by *INVERSION. The finite auxiliary must move to the head of that projection whose specifier hosts the negative element (OBHD >> STAY-X). An IP-adjoined topic thus has to move on to a position preceding the negative element. In embedded questions, subject-auxiliary inversion is ruled out by PUREEP >> OBHD >> STAY-X (compare footnote 17 in section 3.2). Since pre-subject placement of a topic is unacceptable in English and French embedded questions in any case, it will be assumed that a subordinate [+wh] C⁰ has to be co-indexed with I⁰: *INVERSION thus prohibits topic placement between C⁰ and IP (see Tableau T3.57).¹¹¹ In contrast to matrix questions, a violation of *INVERSION cannot be prevented by adjoining the topic to the embedded CP because of the outranking constraint PUREEP; rather, dominance of PUREEP and *INVERSION over TOPIC rules out topicalization in embedded questions altogether.

¹¹¹ Note that although the verb does not undergo subject-verb/auxiliary inversion, pre-subject topic placement in French *est-ce que*-questions such as (3.170) is unacceptable, suggesting that co-indexation of I⁰ with some higher head is necessary in these constructions as well: the topic is thus expected to move on to clause-initial position due to *INVERSION >> *CP-ADJ.

T3.57		WHSPEC	PUREP	OBHD	*INVERSION	TOPIC	STAY-X	STAY-XP
☞	a	[_{CP} what _i e [_{IP} John _j has _i [_{AuxP} t _i [_{VP} t _j given t _i to Sue _[+top]]]]]]		*		**	*	**
	b	[_{CP} what _i e [_{IP} to Sue _[+top] k [_{IP} John _j has _i [_{AuxP} t _i [_{VP} t _j given t _i t _k]]]]]		*	*!		*	***
	c	[_{CP} to Sue _[+top] k [_{CP} what _i e [_{IP} t _k [_{IP} John _j has _i [_{AuxP} t _i [_{VP} t _j given t _i t _k]]]]]	*!	*			*	***

Note that topicalization is acceptable in embedded declarative clauses, pointing to the conclusion that declarative C⁰ does not require co-indexation with I⁰: not violating *INVERSION, topic fronting to IP-adjoined position is expected to take place (see examples (3.178c, 3.179c) above).¹¹² In embedded Negative Inversion constructions, *INVERSION is only violated in case the topic surfaces in IP-adjoined position; the topic may be moved on to a position between the complementizer and the negative element (compare Tableau T3.58).

¹¹² As Haegeman (2002a,c) shows, central and peripheral adverbial clauses in English differ in the acceptability of argument topicalization, (ia) vs. (ib). Yet in contrast to argument topics, adverbs may appear in pre-subject position even in central adverbial clauses if their semantic requirements allow for base-generation in that position. Hence, the unacceptability of argument fronting in these clauses should not be traced back to the requirement of *INVERSION; in other words, the acceptability of adverb placement in front of the subject in central adverbial clauses indicates that conditional *if* and I⁰ do not have to be co-indexed. (Recall that the same pattern arises with subject and factive clauses: merging an adverb in topic position is acceptable whereas moving it to that position is not; compare chapter 2, footnote 27.)

- (i) a. *If these final exams you don't pass, you won't get the degree. (Haegeman 2002c: 7)
 b. If those three exams he has already passed, then why is he registering again?
 c. If during term time you don't work regularly, you will not pass the tests. (Haegeman 2002c: 10)

Unlike *if*-conditionals, inverted conditionals do not allow for adverb placement in front of the subject. The inverted auxiliary has to be co-indexed with its trace: pre-subject placement of the adverb is excluded by the violation of *INVERSION, see section 3.5.4.

- (ii) a. If yesterday John had done that, ... (Rizzi 1997: 303)
 b. *Had yesterday John done that, ...

T3.58	Carol said ...	PUREEP	OBHD	*INVERSION	TOPIC	STAY-X	STAY-XP
a	[CP ₁ that [CP ₂ under no circumstances would _i [IP she _j t _i [AuxP t _i [VP t _j kiss Ernie _[+top]]]]]]]				*!*	**	*
b	[CP ₁ that [CP ₂ under no circumstances would _i [IP Ernie _[+top] k [IP she _j t _i [AuxP t _i [VP t _j kiss t _k]]]]]]			*!		**	**
c	[CP ₁ that [CP ₂ under no circumstances e [IP Ernie _[+top] k [IP she _j would _i [AuxP t _i [VP t _j kiss t _k]]]]]]		*!			*	**
d	[CP ₁ that [CP ₂ Ernie _[+top] k [CP ₂ under no circumstances would _i [IP t _k [IP she _j t _i [AuxP t _i [VP t _j kiss t _k]]]]]]]]					**	***
e	[CP ₁ Ernie _[+top] k [CP ₁ that [CP ₂ under no circumstances would _i [IP t _k [IP she _j t _i [AuxP t _i [VP t _j kiss t _k]]]]]]]]	*!				**	***

In contrast to English and French, topic fronting is possible in embedded questions in Italian and European Portuguese. As in English and French, dominance of TOPIC and *INVERSION over *CP-ADJ and STAY-XP rules out intervention of a topic between a matrix *wh*-phrase and the subject in these languages; the topic is moved on to CP-adjoined position (compare examples (3.172, 3.173) above). The ranking of TOPIC relative to PUREEP and *INVERSION is decisive for the availability of topicalization in embedded questions: *INVERSION being outranked by both TOPIC and PUREEP in Portuguese, a topic may adjoin to IP in embedded questions, giving rise to the order *wh* - *topic*, (3.182). In Italian, PUREEP and *INVERSION are apparently tied and dominated by TOPIC: a topic may precede or follow an embedded *wh*-phrase, (3.181).¹¹³

In German, occurrence of a topic in pre-subject position obviously does not interfere with subject-verb inversion, indicating that TOPIC and *CP-ADJ outrank *INVERSION: several phrases may occur in IP-adjoined position in both matrix and embedded declarative and interrogative clauses (see e.g. examples (3.177a, 3.183) above). Adjunction of a topic to CP, by contrast, is only acceptable in the presence of a resumptive pronoun in matrix clauses (compare (3.177b) and footnote 84) and unacceptable in subordinate clauses, PUREEP >> *INVERSION (see (3.183a)).

¹¹³ Note that while a *wh*-operator in matrix questions is compatible with a topic in a fixed order in Italian, it is incompatible with a fronted focus.

- (i) a. (A Gianni,) che cosa (*a Gianni,) gli hai detto? (Rizzi 1997: 291)
to Gianni what to Gianni to.him you.have told
'What did you tell Gianni?'
b. (*A GIANNI) che cosa (*A GIANNI) hai detto?

The unacceptability of (ib) might be taken to indicate that the constraint triggering focalization is outranked by *INVERSION and *CP-ADJ. The ranking WHSPEC >> TOPIC >> *INVERSION >> *CP-ADJ >> FOCALIZATION predicts that a topic is fronted to CP-adjoined position in questions whereas focus movement cannot take place: the focused phrase may neither intervene between IP and C⁰ (*INVERSION) nor adjoin to CP (*CP-ADJ) nor be placed in an extra functional projection above CP (WHSPEC).

		OBHD	STAY-X	*CP-ADJ	TOPIC	THEMSTRUC	*INVERSION	STAY-XP
T3.59	Was hat dem Fritz diese Frau geschenkt? what has the Fritz this woman given 'Whas did this woman give to Fritz?'							
a	[_{CP} Was _i hat _i [_{IP} diese Frau _j [_{AuxP} [_{VP} t _j dem Fritz _[+top] t _i geschenkt] t _j t _i]]]		**		*!*	*		**
b	[_{CP} Was _i hat _i [_{IP} dem Fritz _{[+top]k} [_{IP} diese Frau _j [_{AuxP} [_{VP} t _j t _k t _i geschenkt] t _j t _i]]]]]		**			**	*	***
c	[_{CP} Was _i e [_{IP} dem Fritz _{[+top]k} [_{IP} diese Frau _j [_{AuxP} [_{VP} t _j t _k t _i geschenkt] t _j hat _i]]]]]	*!	*			**		***
d	[_{CP} Dem Fritz _{[+top]k} [_{CP} was _i hat _i [_{IP} t _k [_{IP} diese Frau _j [_{AuxP} [_{VP} t _j t _k t _i geschenkt] t _j t _i]]]]]]]		**	*!		**		****

Summing up, though topics surface in pre-subject position in English and French declarative clauses, they are ungrammatical in that position in interrogative clauses: *INVERSION may enforce their movement to CP-adjoined position in matrix questions while that constraint (together with PUREP) excludes topicalization in embedded questions altogether. In German, by contrast, topics may precede the subject in middle field position in all types of clauses; i.e. a topic can be adjoined to IP despite the violation of *INVERSION.

3.5.4 Adverb Placement in Questions

*INVERSION does not only penalize pre-subject placement of a topic argument if I⁰ has to be co-indexed with some higher head, it also opposes IP-adjunction of an adverb in this case. Yet in German, not only objects but also adverbs may precede the subject within the middle field (3.190). In English, by contrast, an adverb cannot precede the subject in questions (3.191, 3.192), inverted conditionals (3.193), and Negative Inversion constructions (3.194) while it may occur in pre-subject position in simple declarative clauses. Likewise, pre-subject placement of an adverb is ungrammatical in French questions, as illustrated in (3.195).¹¹⁴

¹¹⁴ Similarly, placement of a topic in pre-subject position is unacceptable in inverted conditionals in English.

- (i) *Had that book, Mary read, she would have passed the exam.

Moreover, an adverb may follow an embedded *wh*-phrase in Portuguese (iia) and Italian (iib); yet in contrast to argument topics, positioning of an adverb in front of an embedded *wh*-phrase as in (iic) is unacceptable in Italian. In matrix questions, pre-subject placement of an adverb is not possible (iie).

- (ii) a. Não sei com quem amanhã deverei falar. (Barbosa 2000: 65)
not I.know with whom tomorrow I.should speak
'I don't know with whom I should speak tomorrow.'
- b. ?Non so che cosa normalmente Gianni mangia a colazione.
not I.know what usually Gianni eats for breakfast
'I don't know what Gianni usually eats for breakfast.'
- c. *Non so normalmente che cosa Gianni mangia a colazione.
- d. Non so che cosa Gianni normalmente mangia a colazione.
- e. *A chi domani daranno il premio Nobel?
to whom tomorrow they.will.give the Nobel.prize
'Who will they give the Nobel prize to tomorrow?'

- (3.190)a. Den Karl hat (gestern / angeblich) die Maria verprügelt.
the Karl has yesterday allegedly the Maria beaten.up
'(Allegedly / Yesterday) Maria beat up Karl.'
- b. Wen hat (gestern / angeblich) die Maria verprügelt?
who has yesterday allegedly the Maria beaten.up
'Who did Maria (allegedly) beat up (yesterday)?'
- c. Heinz meint, daß den Karl (gestern / sicherlich) die Maria verprügelt hat.
Heinz thinks that the Karl yesterday surely the Maria beaten.up has
'Heinz thinks that (yesterday / surely) Maria beat up Karl.'
- d. Heinz hat herausgefunden, wen (gestern / gewöhnlich) die Maria
Heinz has found.out who yesterday usually the Maria
verprügelt hat.
beaten.up has
'Heinz found out who Mary (usually) beat up (yesterday).'
- (3.191)a. At the party, Mary said nothing.
- b. *Did at the party Mary say anything? (Rochemont 1989: 148)
- c. Bill claimed that at the party, Mary said nothing.
- d. *I wonder whether at the party Mary said anything.
- (3.192)a. Yesterday, Bill gave a book to Mary.
- b. *What did yesterday Bill give to Mary?
- c. John claimed that yesterday Bill gave a book to Mary.
- d. *I wonder what yesterday Bill gave to Mary.
- (3.193)a. If yesterday John had done that, ... (Rizzi 1997: 303)
- b. *Had yesterday John done that, ...
- (3.194)a. Not only did John usually do the dishes, he also cleaned the windows.
- b. *Not only did usually John do the dishes, he also cleaned the windows.
- c. Bill claimed that under no circumstances would Susan regularly go to school.
- d. *Bill claimed that under no circumstances would regularly Susan go to school.
- (3.195)a. Demain, je vais à la plage.
tomorrow I go to the beach
'I will go to the beach tomorrow.'
- b. Quel livre (*hier) a-t-il (*hier) lu?
which book yesterday has.he yesterday read
'Which book did he read yesterday?'
- c. *Où est-ce que demain on va?
where is.it that tomorrow we go
'Where are we going tomorrow?'
- d. Louis m' a dit que demain, on va à la plage.
Louis me has said that tomorrow we go to the beach
'Louis told me that we are going to the beach tomorrow.'

- e. *Louis m' a demandé où demain on va.
 Louis me has asked where tomorrow we go
 'Louis asked me where we are going tomorrow.'

The ordering of subject and adverb was shown to be influenced by information structure: while an adverb should follow a topical or unfocused subject (TOPIC, -FOC<ADV), ADV<+FOC requires focus-sensitive adverbs to precede a focused constituent (compare section 3.4). In addition, it was argued in 3.5.2 that adverbs might bear a feature (equivalent to) [+top] so that TOPIC may cause their adjunction to IP. The fact that an adverb can intervene between an inverted finite verb and the subject in German points to the ranking ADV<+FOC, TOPIC >> *INVERSION: in case the subject is marked for [+foc] or the adverb is marked for [+top], an adverb is expected to adjoin to IP, preceding the subject in Spec,IP. In English and French, by contrast, adverb placement in front of the subject is always ungrammatical in case (a trace in) I⁰ has to be co-indexed with some higher head as in questions, inverted conditionals, or Negative Inversion constructions, indicating that *INVERSION outranks the information-structural constraints, TOPIC and ADV<+FOC.^{115,116} Yet in contrast to argument topics, an

¹¹⁵ The ranking *INVERSION >> ADV<+FOC in English is already expected because of the rankings *INVERSION >> TOPIC (prohibiting IP-adjunction of a topic in embedded questions), TOPIC >> STAY-XP (permitting movement of topical elements), STAY-XP >> -FOC<ADV (prohibiting placement of an unfocused object in front of a medial adverb) and -FOC<ADV <<>> ADV<+FOC (accounting for the optionality of adverb placement relative to a focused subject in declarative clauses).

Note that in contrast to adverbs, focus particles are able to intervene between the subject and the inverted auxiliary, indicating that they may attach to the subject DP (compare footnote 54 in section 3.4).

- (i) a. *Has possibly ANY STUDENT read the book? (Svenonius 2002: 220)
 b. Were only men wearing ties admitted? (Ernst 1984: 35)

¹¹⁶ Note that pre-subject placement of an adverb is unacceptable in Danish (i) while it is possible in e.g. Swedish (ii) in case the subject is focused.

- (i) a. Næste eftermiddag laa stenene endnu urørte. (Svenonius 2002: 219)
 next afternoon lay the.stones still unmoved
 'The next afternoon the stones still lay unmoved.'
 b. *Næste eftermiddag laa endnu stenene urørte.
 (ii) a. Denna boken har Johan tyvärr inte läst. (Vikner 1995: 104)
 this book has Johan unfortunately not read
 'This book, Johan unfortunately didn't read.'
 b. Denna boken har tyvärr Johan inte läst.

Remember that Svenonius (2002) supposes that topicality is sensitive to different features in the Germanic languages (e.g. topicality, focus, definiteness; compare footnote 87): for example, while every subject DP is considered to bear [+top] in Danish, only unfocused DPs are marked [+top] in Swedish. Due to the prohibition against adverb adjunction to IP with checked [+top] feature (see (3.144) above), the sequence *adverb - subject* may only arise if the subject is focused in Swedish whereas it is ruled out entirely in Danish in Svenonius' account. Here, the contrast in the acceptability of pre-subject adverb placement between Danish and Swedish may be traced back to a difference in the ranking of ADV<+FOC and *INVERSION (Danish: *INVERSION >> ADV<+FOC; Swedish: ADV<+FOC >> *INVERSION).

In addition, because of the ban on pre-subject adverb placement in questions, Svenonius claims that as in Danish, all subject DPs are [+top] in English, wrongly excluding clause-initial adverb placement in declarative clauses (compare (3.191a, 3.192a) above). In the analysis presented here, by contrast, it is possible to differentiate between English declarative and interrogative clauses: there being no head that requires co-indexation with I⁰, *INVERSION does not penalize pre-subject placement of adverbs in declarative clauses while it does in questions.

adverb cannot simply be placed in front of a matrix *wh*-phrase to escape pre-subject positioning in English or French; rather, it depends on the type of adverb whether it may precede a *wh*-phrase. For example, while both the discourse-oriented adverb in (3.196, 3.197) and the epistemic or frequency one in (3.198)-(3.201) may occur in clause-initial position in declarative clauses, the former type of adverb has to precede a matrix *wh*-phrase, whereas the latter ones cannot.

- (3.196)a. Briefly, Sebastian held the pistol.
 b. Briefly, why did Sebastian hold the pistol? (Ernst 2002: 427)
 c. *Why briefly did Sebastian hold the pistol? (Ernst 2002: 429)
 d. *Why did Sebastian briefly hold the pistol?
- (3.197)a. *Honnêtement*, Jean a gagné.
 honestly Jean has won
 'Honestly, Jean won.'
 b. *Honnêtement*, qui a gagné?
 honestly who has won
 'Tell me honestly: who won?'
 c. **Qui honnêtement a gagné?*
 d. **Qui a honnêtement gagné?*
- (3.198)a. Apparently the dog had gone. (Ernst 2002: 429)
 b. *Apparently, where had the dog gone?
 c. *Where apparently had the dog gone?
 d. Where had the dog apparently gone?
- (3.199)a. Often John eats cornflakes for breakfast.
 b. *Often, what does John eat for breakfast?
 c. *What often does John eat for breakfast?
 d. What does John often eat for breakfast?
- (3.200)a. *Souvent* Isabelle a mangé des escargots.
 often Isabelle has eaten of.the snails
 'Often Isabelle ate snails.'
 b. **Souvent*, qu' est-ce qu' elle a mangé?
 often what is.it that she has eaten
 'What did she often eat?'
 c. **Qu'est-ce que souvent elle a mangé?*
 d. *Qu'est-ce qu'elle a souvent mangé?*

Note that according to Erteschik-Shir (1997), *wh*-movement requires that the subject be interpreted as topic. As discussed above, a [+top] subject should precede an adverb due to the requirement of TOPIC. The prohibition against pre-subject positioning of focus-sensitive adverbs in questions could thus be considered to result from the subject's topicality (TOPIC >> ADV<+FOC). Nevertheless, *INVERSION is necessary to account for the fact that IP-adjunction of an argument topic is ruled out in favor of CP-adjunction in English and Romance matrix questions. In addition, since (at least some types of) adverbs should be able to bear [+top] (or some equivalent feature affected by TOPIC), the unacceptability of adverb placement in pre-subject position in English questions cannot solely be explained by a default topic interpretation of the subject in questions.

- (3.201)a. Souvent, elle a été chez Pierre.
 often she has been at Pierre
 'Often, she has been at Pierre's house.'
- b. *Souvent, où a-t-elle été?
 often where has she been
 'Where has she often been?'
- c. *Où souvent a-t-elle été?
- d. Où a-t-elle souvent été?

The contrast in whether or not an adverb can precede a matrix *wh*-phrase may be traced back to differences in the semantic selection of the adverbs. Ernst (2002) suggests that *wh*-questions are associated with a two-part operator, with the locus of illocutionary force ('give me the value for *x*') in Comp and specification of the range for *x* in Spec,CP. Specifying how a speech-act is to be expressed, discourse-oriented adverbs have to take scope over the question operator. Therefore, they have to be merged in clause-initial position (MODIFIER); placement behind the *wh*-phrase as in (3.196c,d, 3.197c,d) does not allow the discourse-oriented adverb to take wide enough scope. By contrast, the epistemic and frequency adverbs in (3.198)-(3.201) do not take scope over the interrogative operator. Consequently, they must be base-generated in a position c-commanded by C⁰. Movement to CP- or C'-adjoined position is ruled out by SCMA.¹¹⁷ Hence, the influence of adverb type on its placement in questions results from the distinct scopal relations of the adverb with respect to the interrogative operator: depending on its scope, an adverb has to precede the *wh*-phrase or to follow the subject in English and French questions (pre-subject placement being excluded by *INVERSION).

Similar to questions, an adverb which takes scope over a conditional clause has to precede the inverted auxiliary in English (3.202), whereas an adverb which is in the scope of the conditional must occur in clause-internal position (3.203). By contrast, in Negative Inversion constructions, an adverb taking scope over the negative element is free to appear in clause-

¹¹⁷ Note that even if the adverb were to bear [+top], its movement in front of the *wh*-phrase is excluded by SCMA >> TOPIC. Hence, while an argument topic may precede a *wh*-phrase, this positioning is ruled out for narrow scope adverbs. Consequently, the ranking SCMA >> TOPIC can account for the fact that ordering options among topics, adverbs, and *wh*-elements may not be transitive: while an adverb may precede an argument topic (ia) and an argument topic may precede a *wh*-phrase (ib) in Italian, adverb placement in front of the *wh*-phrase as in (ic) is unacceptable.

- (i) a. Rapidamente, i libri, li hanno rimessi a posto. (Haegeman 2002c: 6)
 quickly the books them they.have put in place
 'Quickly, they have put the books back in their place.'
- b. Il mio libro, chi lo ha preso?
 the my book who it has taken
 'My book, who has taken it?'
- c. ?*Improvvisamente, chi è tornato a casa?
 suddenly who is turned to home
 'Who suddenly turned up at home?'

initial or medial position (3.204), whereas an adverb taking narrow scope with respect to the negative element has to follow the subject (3.205).

- (3.202)a. Honestly, had Susan stolen the jewelry, she would have been taken into custody.
 b. *Had Susan honestly stolen, she would have been taken into custody.
- (3.203)a. *Regularly, had Bill taken his medicine, he would be cured by now.
 b. Had Bill regularly taken his medicine, he would be cured by now.
- (3.204)a. Honestly, under no circumstances would Ed lend me his car.
 b. ?Under no circumstances would Ed honestly lend me his car.
- (3.205)a. *Regularly, never in his life will Max do any sports.
 b. Never in his life will Max regularly do any sports.

Because of MODIFIER, an adverb is expected to be merged within a conditional clause or outside of it in accordance with its scope. A narrow scope adverb cannot precede the inverted auxiliary due to the constraints PUREP and SCMA (and their dominance over TOPIC and ADV<+FOC): PUREP prohibits its adjunction to the embedded CP (3.206b), SCMA its movement out of the embedded clause as in (3.206c); a narrow scope adverb is thus predicted to occur within the conditional clause, following the subject (*INVERSION).¹¹⁸ In case the adverb takes scope over the conditional, it may base-adjoin to the matrix clause, as illustrated in (3.206d). In Negative Inversion constructions, movement of a narrow scope adverb across the negative adverbial as in (3.207b) is likewise ruled out by SCMA (>> TOPIC, ADV<+FOC); the adverb has to occur within the auxiliary range (3.207a). Hence, adverb positioning in front of the negative element is expected to be acceptable only if it can be base-generated (3.207c), presupposing wide scope of the adverb.¹¹⁹

- (3.206)a. [IP [CP Had Bill regularly taken his medicine] [IP he would ...]]
 b. *[IP [CP Regularly [CP had Bill taken his medicine]] [IP he would ...]]
 c. *[IP Regularly_k [IP [CP had Bill t_k taken his medicine] [IP he would ...]]]
 d. [IP Honestly [IP [CP had Susan stolen the jewelry] [IP she would ...]]]
- (3.207)a. [CP Never in his life will [IP Max regularly do any sport]]
 b. *[CP Regularly_k [CP never in his life will [IP Max t_k do any sport]]]
 c. [CP Honestly [CP under no circumstances would Ed lend me his car]]

¹¹⁸ Likewise, PUREP prohibits adverb adjunction to an embedded question. However, since an argument topic may precede or follow an embedded *wh*-phrase in Italian whereas an adverb is only acceptable behind the embedded *wh*-phrase (see (3.181) and (ii) in footnote 114, respectively), adverb adjunction to an embedded CP seems to be excluded by the violation of SCMA. Just as argument topicalization, adverb fronting is expected to be impossible in English and French embedded questions due to PUREP >> *INVERSION, SCMA >> TOPIC >> ADV<+FOC, compare (3.178, 3.179) above.

¹¹⁹ Note that the ranking SCMA >> *CP-ADJ favors clause-initial occurrence of a wide scope adverb over its clause-internal placement. Yet the marginal acceptability of wide scope adverb placement within the auxiliary range as in (3.204b) indicates that the constraint triggering Negative Inversion constructions outranks SCMA (compare footnote 25 in section 3.2) and that adverb placement in medial position might be required by some constraint dominating SCMA.

Although IP-adjunction is generally possible in German - and in case of topic fronting is preferred over CP-adjunction, *CP-ADJ >> *INVERSION - an adverb taking scope over the question operator, such as the discourse-oriented adverb in (3.208), has to precede a *wh*-phrase: MODIFIER demands for its placement above the interrogative operator located in C⁰. (Positioning of the wide scope adverb in the specifier of an FP dominating CP is ruled out by the constraint WHSPEC that requires the *wh*-phrase to occupy the specifier position of the highest clausal projection; the wide scope adverb is thus predicted to adjoin to CP, compare Tableau T3.60.) By contrast, an adverb that is within the scope of the question has to occur in clause-internal position; SCMA (>> TOPIC, ADV<+FOC) prohibits its movement across the *wh*-phrase.¹²⁰ Correspondingly, the adverb *ehrlich* ('honestly') placed in front of the *wh*-phrase in (3.210a) may only receive a discourse-oriented reading whereas it is interpreted as manner adverb in clause-internal position in (3.210b).¹²¹ As illustrated in (3.211), contrasts in the ordering of the subject and a sentence adverb may give rise to interpretative differences due to the focus-sensitivity of the adverb (compare section 3.4). Moreover, as in English, adverb placement in German conditionals depends on adverbial scope, (3.212). An adverb may precede the inverted auxiliary only if it takes wide scope (MODIFIER); clause-initial placement of a narrow scope adverb is ruled out by PUREP and SCMA.

- (3.208)a. Er hat ehrlich ??(gesagt) gelogen.
 he has honestly said lied
 'I tell you honestly: he lied.'
- b. Mal ehrlich, warum hast du das gemacht?
 once honestly why have you that done
 'Honestly, why did you do that?'
- c. *Warum hast du mal ehrlich das gemacht?

¹²⁰ Note that those types of adverbs which can be fronted across another adverb taking wider scope apparently also permit clause-initial placement in questions (in the presence of a resumptive pronoun within the middle field in German) although they are within the scope of the question, supporting the hypothesis that fronting of these types of adverbs can be triggered by a constraint outranking SCMA (compare section 3.5.2).

- (i) a. Und letztes Jahr, wer hat *(da) den Nobelpreis erhalten?
 and last year who has then the Nobel.prize been.awarded
 'And who has been awarded the Nobel prize last year?'
- b. Und in deinem Bettchen, wer hat *(da) geschlafen?
 and in your little.bed who has there slept
 'And who has been sleeping in your bed?'
- c. (In Washington / Yesterday), why was this problem so hard? (Ernst 2002: 427)
- d. (A Washington / Hier), pourquoi ce problème a-t-il été si difficile? (Ernst 2002: 427)
 in Washington yesterday why this problem has.it been so difficult
 '(In Washington / Yesterday), why was this problem so hard?'

¹²¹ Given that discourse-oriented adverbs modify the SPECIFIED EVENT *Express introduced by the speech-act operator, the fact that they precede a *wh*-phrase suggests that SPECIFIED EVENT-modifiers do not have to be base-generated in VP-internal positions (compare footnote 32 in chapter 2): adverb movement to clause-initial position is prohibited, as supported by the unambiguity of the sentences in (3.210). Hence, the discourse-oriented adverb in (3.210a) must be merged in clause-initial position, as expected by MODIFIER.

- (3.209)a. Karla hat Erwin oft im Krankenhaus besucht.
 Karla has Erwin often in.the hospital visited
 'Karla often visited Erwin in the hospital.'
- b. Wen hat (oft) Karla (oft) im Krankenhaus besucht?
 who has often Karla often in.the hospital visited
 'Who did Karla often visit in the hospital?'
- c. *Oft, wen hat Karla im Krankenhaus besucht?
- (3.210)a. Ehrlich, wer hat deine Fragen beantwortet?
 honestly who has your questions answered
 i) 'Tell me honestly: Who answered to your questions?'
 ii) #'Who answered to your questions in an honest way?'
- b. Wer hat deine Fragen ehrlich beantwortet?
 i) #'Tell me honestly: Who answered to your questions?'
 ii) 'Who answered to your questions in an honest way?'
- (3.211)a. Hat Peter tatsächlich Pauls Nachbarn angezeigt?
 has Peter really Paul's neighbour reported
 'Did Peter really report Paul's neighbour to the police?'
- b. Hat tatsächlich Peter Pauls Nachbarn angezeigt?
 'Was it really Peter who reported Paul's neighbour to the police?'
- c. *Tatsächlich, hat Peter Pauls Nachbarn angezeigt?
- (3.212)a. Ehrlich, hätte Karl nur eine ihrer Fragen beantwortet, hätte Susanne ihm verziehen.
 honestly had Karl only one her question answered had Susanne him forgiven
 i) 'Honestly: had Karl answered only one of her questions, Susanne would have forgiven him.'
 ii) #'Had Karl answered only one of her questions honestly, Susanne would have forgiven him.'
- b. Hätte Karl nur eine ihrer Fragen ehrlich beantwortet, hätte Susanne ihm verziehen.
 i) #'Honestly, had Karl answered only one of her questions, Susanne would have forgiven him.'
 ii) 'Had Karl answered only one of her questions honestly, Susanne would have forgiven him.'

T3.60	Schnell, wer ist gegangen ... quickly who is gone 'Quickly, who has left ...?'	WHSPEC	OBHD	STAY-X	*CP-ADJ	STAY-XP
☞ a	[_{CP} Schnell [_{CP} wer _i ist _i [_{IP} t _i [_{AUXP} [_{VP} t _i gegangen] t _i] t _i]]]			**	*	*
b	[_{FP} Schnell e [_{CP} wer _i ist _i [_{IP} t _i [_{AUXP} [_{VP} t _i gegangen] t _i] t _i]]]	*!	*	**		*
c	[_{FP} Schnell ist _i [_{CP} wer _i t _i [_{IP} t _i [_{AUXP} [_{VP} t _i gegangen] t _i] t _i]]]	*!		***		*

Hence, adverb placement in questions as well as in inverted conditionals and Negative Inversion constructions depends on adverbial scope. In contrast to argument topics, adverbs cannot simply be moved on to clause-initial position to escape pre-subject placement; rather, an adverb that is within the scope of a question (or a conditional or a negative element) has to follow the subject in English and French (SCMA, *INVERSION >> TOPIC >> ADV<+FOC), while its placement within the German middle field depends on information structure (ADV<+FOC >> SCMA >> TOPIC >> *INVERSION). Only when an adverb takes wide scope may it occur in clause-initial position, preceding a matrix *wh*-phrase, an inverted auxiliary, or a negative element.

3.5.5 Adverb Placement and the Reading of Arguments

As discussed in the last section, placement of some phrase in pre-subject position is prohibited by the constraint *INVERSION in case I⁰ has to be co-indexed with some higher head, ruling out IP-adjunction of topical arguments and adverbs in English and French questions. In German, matrix CP is obligatorily projected; hence, *INVERSION affects all matrix clauses. Yet placement of a phrase in front of the subject is possible within the middle field. Dominance of the information-structural constraints TOPIC and ADV<+FOC over *INVERSION predicts that elements can be adjoined to IP if they are [+top] or, for focus-sensitive items, if the subject is focused. However, recall from chapter 1 that positioning of a temporal or frequency adverb relative to an indefinite or quantified argument may influence the reading of the argument (see Diesing 1992, Frey & Pittner 1998, Pittner 1999, Frey 2000a,b, Haider 2002, Svenonius 2002, among others). An indefinite argument preceding a temporal adjunct receives a strong reading whereas it is ambiguous in reading if it is placed behind the adverbial.¹²² For example, the subject has to be interpreted as generic in (3.213a) while it may be existentially bound in (3.213b). Likewise, the bare plural object in (3.214) is interpreted generically if it precedes the temporal adjunct while its positioning relative to a locative adverbial does not affect the availability of the existential reading. Furthermore, a

¹²² Similarly, the reading of DPs differs in accordance with their positioning relative to an adverb of a higher type, such as e.g. the sentence adverb in (i).

- (i) a. ... weil Männer wahrscheinlich bewundert werden wollen. (Pittner 1999: 176)
 because men probably admired be want.to
 i) '... because men (in general) probably want to be admired.'
 ii) #'... because probably (some) men want to be admired.'
 b. ... weil wahrscheinlich Männer bewundert werden wollen.
 i) '... because men (in general) probably want to be admired.'
 ii) '... because probably (some) men want to be admired.'

Haider (2002: 68) notes that a bare plural in front of a temporal adverbial may receive an existential interpretation if "the temporal adverbial is interpreted distributively across potential instantiations of event types".

- (ii) Hat denn wer Linguisten_i an deren_i Geburtstag photographiert? (Haider 2002: 68)
 has then someone linguists on their birthday photographed
 'Did anyone photograph linguists on their birthday?'

quantified argument is scopally ambiguous in case it precedes a quantified temporal adverbial as in (3.215a, 3.216a) whereas it takes narrow scope following the adjunct as in the sentences in (3.215b, 3.216b).

- (3.213)a. ... weil Väter an Weihnachten mit der Eisenbahn spielen.
because fathers at Christmas with the train.set play
(Frey 2002b: 152)
i) '... because fathers (in general) play with the train set at Christmas.'
ii) #'... because (some) fathers play with the train set at Christmas.'
- b. ... weil an Weihnachten Väter mit der Eisenbahn spielen.
i) '... because fathers (in general) play with the train set at Christmas.'
ii) '... because (some) fathers play with the train set at Christmas.'
- (3.214)a. Die Polizei hat Linguisten vor zwei Tagen im Universitätspark befragt.
the police has linguists before two days in.the university.park questioned
(Frey 2000a: 114)
'Two days ago, (quasi-)all linguists got questioned by the police in the university park.'
- b. Die Polizei hat vor zwei Tagen (im Universitätspark) Linguisten (im Universitätspark) befragt.
'Two days ago, the police questioned some linguists in the university park.'
- (3.215)a. ... weil mindestens einer an fast jedem Tag nichts tat.
because at.least one on almost every day nothing did
(Pittner 1999: 157)
i) '... because almost every day there was at least one person who did nothing.'
ii) '... because at least one person did nothing almost every day.'
- b. ... weil an fast jedem Tag mindestens einer nichts tat.
i) '... because almost every day there was at least one person who did nothing.'
ii) #'... because at least one person did nothing almost every day.'
- (3.216)a. Der Professor beschimpft mindestens einen Studenten fast jeden Tag.
the professor abuses at.least one student almost every day
i) 'Almost every day, the professor abuses at least one student.'
ii) 'At least one student is abused almost every day by the professor.'
- b. Der Professor beschimpft fast jeden Tag mindestens einen Studenten.
i) 'Almost every day, the professor abuses at least one student.'
ii) #'At least one student is abused almost every day by the professor.'

According to Frey & Pittner (1998, 1999), Pittner (1999), Frey (2000a), and Haider (2000, 2002), the domain of existential closure is restricted to VP (see also Diesing 1992).

- (3.217)The domain of existential closure is restricted by the base position of the highest argument. Indefinite NPs outside this domain have to be interpreted as strong, e.g. as generic.
(Frey 2000a: 114)

The ambiguity of (3.215a, 3.216a) suggests that a temporal adverbial is merged above the base position of the highest argument: the order *argument - temporal adverb* has to involve movement of the argument across the adverb for both scopal interpretations to be encoded in syntactic structure as required by the Scope Principle (see (2.72) above).^{123,124} Hence, an argument preceding a temporal adjunct as in (3.213a, 3.214a) appears outside of the domain of existential closure, enforcing its strong reading.¹²⁵

In accordance with the principle in (3.217), an existentially interpreted argument should occur within VP. Yet in the present analysis, it is assumed that the subject generally moves to Spec,IP in German (SUBJECT >> STAY-XP, see section 3.3). As shown in (3.218), an indefinite subject in Spec,IP may receive a weak interpretation in English, indicating that weak DPs are able to move. However, adverb placement relative to the subject in Spec,IP may affect the reading of the subject: if the subject precedes the adverb, it may only receive a strong reading, giving rise to the marginality of (3.219a).

- | | | |
|-----------|--|---------------------------|
| (3.218)a. | (Luckily) boys were born. | (Frey & Pittner 1999: 30) |
| b. | (Some) linguists were treated badly. | (Haider 2002: 59) |
| (3.219)a. | ??Boys luckily were born. | (Frey & Pittner 1999: 30) |
| c. | (Some) linguists were often treated badly. | (Haider 2002: 59) |

¹²³ According to Frey & Pittner (1998, 1999) and Pittner (1999), the hypothesis that temporal adverbs are merged above the base position of the subject is also supported by the fact that they precede an indefinite *wh*-subject that is assumed to be unable to move.

- (i) ... weil (morgen) wer (??morgen) den Balken abstützen sollte.
 because tomorrow someone tomorrow the prop shore.up should
 '... because someone should shore up the prop tomorrow.'

¹²⁴ Note that the unambiguity of (3.215b) indicates that the adverbial is merged above the surface position of the subject. Though movement of the adverbial from VP- to IP-adjoined position as in (ia) does presumably not violate SCMA - the adverbial already takes scope over the subject in its base position -, it is ruled out by STAY-XP: the adverb has to be base-adjoined to IP if it is to precede the subject (for e.g. pragmatic or semantic reasons); i.e., the structure in (ia) that is expected to allow for a narrow scope reading of the adverbial is suboptimal to (ib) and consequently excluded.

- (i) a. *... [_{CP} weil [_{IP} [_{PP} an fast jedem Tag]_k [_{IP} mindestens einer [_{VP} t_k [_{VP} t_j nichts t_i] tat_i]]]]
 since on almost every day at.least one nothing did
 '... since almost every day at least one person did nothing.'
 b. ... [_{CP} weil [_{IP} [_{PP} an fast jedem Tag] [_{IP} mindestens einer_j [_{VP} t_j nichts t_i] tat_i]]]]

¹²⁵ As Frey (2004) mentions, strong reading of an argument does not imply its topicality. Preceding the temporal adverbial, the bare plural subject in (i) has to be interpreted generically although it is not a topic, as exhibited by its placement behind the sentence adverb.

- (i) ... weil erfreulicherweise Väter an Weihnachten mit der Eisenbahn spielen. (Frey 2004: 172)
 because fortunately fathers at Christmas with the model.railway play
 '... because fathers fortunately play with the model railway at Christmas.'

Furthermore, note that given the condition on existential closure in (3.217), the fact that placement of an indefinite argument in front of a locative adverbial does not enforce a strong reading of the argument indicates that the adverbial occupies a VP-internal position (see Maienborn 1996, 1998, 2000, Frey & Pittner 1998, 1999, Pittner 1999, Frey 2000a).

Assuming that a subject with weak reading occurs in Spec,IP in German as well, a constraint which restricts that reading to positions following a temporal adverb (or an adverb of a higher type, see footnote 122) would be necessary to account for the interpretative contrasts in (3.213, 3.214). IP-adjunction of an adverb, causing a violation of *INVERSION, might thus be enforced by the reading of the subject.¹²⁶

In contrast to temporal adverbials, the scope of a frequency adverb relative to a quantified argument is unambiguously reflected in linear order within the German middle field; the sentences in (3.220a,b) and (3.221a,b) differ in interpretation. Occurrence of one of these elements in prefield position, however, gives rise to ambiguity (but note that scopal interpretation corresponding to surface order seems to be preferred).

- (3.220)a. ... daß wer jeden Angeklagten oft beleidigte. (Frey & Pittner 1998: 515)
 that someone every defendant often insulted
 i) '... that every defendant was insulted several times.'
 ii) #'... that someone often insulted every defendant.'
- b. ... daß wer oft jeden Angeklagten beleidigte.
 i) #'... that every defendant was insulted several times.'
 ii) '... that someone often insulted every defendant.'
- c. Jeden Angeklagten beleidigte der Staatsanwalt oft.
 every defendant insulted the public.prosecutor often
 i) 'The prosecutor insulted every defendant several times.'
 ii) ?'The prosecutor often insulted every defendant.'
- d. Oft beleidigte der Staatsanwalt jeden Angeklagten.
 i) ?'The prosecutor insulted every defendant several times.'
 ii) 'The prosecutor often insulted every defendant.'
- (3.221)a. Zu Daniels Seminar kam zweimal kein Student.
 to Daniel's course came twice no student
 i) 'Twice, no student came to Daniel's course.'
 ii) #'No student came to Daniel's course a second time.'
- b. Zu Daniels Seminar kam kein Student zweimal.
 i) #'Twice, no student came to Daniel's course.'
 ii) 'No student came to Daniel's course a second time.'
- c. Zweimal kam kein Student zu Daniels Seminar.
 i) 'Twice, no student came to Daniel's course.'
 ii) ?'No student came to Daniel's course a second time.'
- d. Kein Student kam zweimal zu Daniels Seminar.
 i) ?'Twice, no student came to Daniel's course.'
 ii) 'No student came to Daniel's course a second time.'

¹²⁶ Note that under the assumption that existential closure is restricted to VP - i.e. that there is a constraint outranking SUBJECT in German that requires existentially interpreted arguments to occur within VP -, adverb placement in front of a weakly interpreted subject DP does not violate *INVERSION.

According to Frey & Pittner (1998, 1999), Pittner (1999), and Frey (2000a), the unambiguity of the sentences in (3.220, 3.221) indicates that frequency adverbs may be base-generated in different positions - above or below the arguments within VP. The hypothesis that they may be merged in various positions is supported by the fact that several frequency adverbs may co-occur in one clause. In addition note that frequency adverbs may precede or follow indefinite *wh*-phrases.¹²⁷

- (3.222)... weil häufig wer mehrmals Schrauben zu oft anzog. (Frey 2000a: 129)
 because often someone several.times screws too often tightened
 '... because frequently someone tightened screws too often several times.'

Following Frey and Pittner in the assumption that frequency adverbs are base-generated in distinct positions depending on their scope, the unambiguity of the sequence *frequency adverb - quantified argument* may be traced back to the requirement of SCMA: a narrow scope adverb merged below an argument cannot be moved in front of it. In other words, there is no constraint outranking SCMA that could trigger movement of the narrow scope frequency adverb in front of the quantified argument; the order may solely arise by base-generation of the adverb above the DP which is only possible in case the adverb takes wide scope. Remember that SCMA only relates to adverbials; i.e., the constraint does not prohibit movement of a quantified argument across an adverb. However, the order *quantified argument - frequency adverb* as in (3.220a, 3.221b) is unambiguous as well. Frey & Pittner seem to presuppose that a quantified DP does not move within the middle field, excluding that the argument originates in a position below the adverb. Yet as noted above, the subject is assumed to move to Spec,IP in the present analysis. In chapter 2 (footnote 16), it was suggested that movement of an indefinite negative quantifier across a sentence adverb might yield to interference effects and is thus prohibited, accounting for the strict ordering *sentence adverb - negative quantifier*. If such a prohibition were to hold for frequency adverbs and

¹²⁷ The hypothesis that frequency adverbs belong to various adverb classes (process-related, event-internal, or event-external) and may thus be merged in different positions within and outside of VP is supported by the English sentences in (i). While (ia) is ambiguous, (ib) only has the reading in which *twice* takes scope over *intentionally*.

- (i) a. John intentionally knocked on the door twice. (Cinque 1999: 25)
 b. John twice knocked on the door intentionally.

According to Frey & Pittner (1999), *twice* in (ia) may be analyzed as process-related adverb (merged within VP, (iia)) or as event-related adverb (merged above VP, (iib)); it is thus able to take wide or narrow scope with respect to the event-internal mental-attitude adverb *intentionally*.

- (ii) a. [_{IP} John_j e [_{VP} intentionally [_{VP} t_j knocked on the door twice]]]
 b. [_{IP} John_j e [_{VP} [_{VP} intentionally [_{VP} t_j knocked on the door]]] twice]]

By contrast, *twice* in (ib) must be adjoined above VP (only adverbs with subject-orientation may be placed in front of the lexical verb within VP, compare footnote 15 in section 3.2) and is thus restricted to the event-external reading; consequently, it has to take scope over the event-internal mental-attitude adverb.

quantified arguments as well¹²⁸, it would be expected that the subject cannot cross a frequency adverb on its way to Spec,IP, forcing a wide scope adverb to adjoin above the target position of subject movement; i.e. the frequency adverb might have to occur in pre-subject position to ensure narrow scope reading of the subject. Consequently, the order *quantified argument - frequency adverb* may only arise by merging the adverb below the argument's base position which presupposes narrow scope of the adverb.

Hence, besides pragmatic factors (TOPIC, ADV<+FOC), semantics seems to be able legitimize a violation of *INVERSION in an optimal output: IP-adjunction of an adverb might be necessary to allow for a certain reading of an argument.

3.5.6 Summary

This section concentrated on fronting of arguments and adverbs. The constraint TOPIC was considered to require a left-peripheral position within IP for [+top] phrases. Adjoined to IP, topical elements are thus expected to occur in clause-initial position in English and French declarative clauses, without giving rise to subject-verb/auxiliary inversion. Yet pre-subject placement of a topic is ungrammatical in questions and Negative Inversion constructions in these languages, as accounted for by the constraint *INVERSION, which prohibits co-indexation of two heads across an intervening phrase that c-commands IP. The ranking PUREEP >> *INVERSION >> TOPIC >> *CP-ADJ in English and French predicts that a topical argument is moved on to clause-initial position in matrix questions and Negative Inversion constructions while it excludes topicalization in embedded questions. In German by contrast, objects and adverbs may precede the subject within the middle field in declarative and interrogative clauses, indicating that the information-structural constraints (TOPIC, ADV<+FOC, -FOC<ADV) as well as *CP-ADJ dominate *INVERSION in that language. Though TOPIC was argued to be able to trigger pre-subject occurrence of an adverb as well, adverb fronting is more restricted than argument topicalization: an adverb cannot be placed in topic position in case an element relative to which the adverb takes narrow scope follows it, as captured by the ranking SCMA >> TOPIC. Hence, placement of an adverb in front of a matrix *wh*-phrase, the negative element in Negative Inversion constructions, or in left-peripheral position within IP is expected to be acceptable only if the adverb outscopes all following material.

¹²⁸ But note that movement of a quantified argument across a temporal adverbial is obviously possible: the sentences in (3.205, 3.206) are ambiguous. This contrast between frequency and temporal adverbials might have to do with the fact that the former are quantificational inherently whereas the latter ones are not.

3.6 Summary

As discussed in chapter 2, the distribution of adverbs cannot be accounted for on the basis of purely syntactic principles such as conditions on the application of verb/auxiliary movement or restrictions on adverb adjunction (e.g. a prohibition against adjunction to I'); rather, the placement of adverbs is obviously also influenced by semantic factors, with restrictions on scope options restraining adverb positioning relative to finite and non-finite verbs/auxiliaries as well as other scopal elements, and pragmatic factors, with e.g. information-structural considerations guiding the ordering of adverbs and arguments. Section 2.2 reviewed Ernst's (1998, 2002) approach to adverb placement according to which adverbs may only occur in positions in which they may satisfy their semantic requirements.

Chapter 3 presented an OT account to the distribution of adverbs in English, French, and German. The correlation between the (un)availability of particular scope options and the (un)acceptability of certain adverb positions was captured by restrictions on the semantic input and its realization in the output candidates (section 3.1). Following Ernst's analysis, scopal relations of adverbs relative to other clausal elements were considered to be restrained by the adverbs' selectional requirements, which have to be respected in the semantic structures that constitute the inputs to syntactic competitions. Input semantic representations thus being restricted to reflect acceptable scope options only, their encoding in syntactic structure is regulated by the inviolable constraint MODIFIER in GEN: in all output candidates, an adverb is base-generated as sister to its semantic argument specified in the input. Consequently, adverbs are restricted to be merged in positions in which their semantic requirements are met. Yet surface positioning of an adverb is determined by the violable constraints in the syntactic competition. Since grammaticality is conceived of as optimal satisfaction of a constraint hierarchy in OT, cross-linguistic contrasts in adverb placement crucially rely on differences in the language-specific ranking of the constraints, illustrated in (3.223) for the three languages under investigation.

- (3.223)a. English: SUBJECT, WHSPEC, PUREEP, *LXMV, AGREE >> OBHD, CLITIC, SCMA, *INVERSION >> TOPIC >> STAY-X, STAY-XP >> ADV<+FOC <<>> - FOC<ADV >> *X'-ADJ >> *CP-ADJ, PREFIELD, THEMSTRUC
- b. French: SUBJECT, PUREEP, AGREE >> OBHD >> *X'-ADJ >> CLITIC >> CLEFT >> *INVERSION, SCMA >> TOPIC >> STAY-XP >> ADV<+FOC <<>> - FOC<ADV >> STAY-X >> *LXMV, *CP-ADJ, PREFIELD, THEMSTRUC
- c. German: PREFIELD >> WHSPEC, PUREEP >> SUBJECT >> AGREE >> OBHD >> *X'-ADJ >> STAY-X >> *CP-ADJ <<>> ADV<+FOC >> SCMA >> - FOC<ADV, TOPIC >> THEMSTRUC >> *INVERSION >> *LXMV, STAY-XP

Section 3.2 focused on the ordering of adverbs and verbs/auxiliaries in English and French. Adverb movement within the auxiliary range being prohibited (SCMA, STAY-XP), an adverb is expected to take scope over following material, predicting a narrow scope adverb to be placed behind the element that outscopes it (modal verbs, negation). Inverse scope may only

arise by movement of a finite or non-finite verb/auxiliary whose availability in the two languages depends on the ranking of STAY-X relative to the constraints that may require verb movement (OBHD, -FOC<ADV). Finally, the contrast between English and French in the acceptability of adverb placement between the subject and the finite verb/auxiliary is captured by differences in the ranking of *LXMV (relative to OBHD) and *X'-ADJ (relative to SCMA, CLITIC, and ADV<+FOC).

The dependence of finite verb positioning on the type of clause in German was investigated in section 3.3. Assuming that verbal projections (VP, AuxP, IP) are right-headed in German, clause-final placement of the finite verb in embedded clauses as well as right-peripheral occurrence of non-finite verbs follows. The V2 structure of German matrix clauses was traced back to the necessary projection of matrix CP, triggering V-to-C movement (PREFIELD >> OBHD >> STAY-X). Due to the prohibitions against adjunction to CP and C' (*CP-ADJ, *X'-ADJ), a single constituent is expected to precede the finite verb in C⁰, with the choice of which phrase is placed in prefield position resting on the featural composition of C⁰ (AGREE >> SCMA >> STAY-XP).

Section 3.4 and 3.5 examined the influence of information structure on word ordering. Sentence adverbs were shown to tend to occur in a focus-initial position due to their focus-sensitivity, motivating unfocused arguments to move in front of them within the German middle field (-FOC<ADV >> STAY-XP) and allowing for adverb placement in front of a focused constituent in prefield position (AGREE >> *CP-ADJ <<>> ADV<+FOC). Though placement of an unfocused object in front of a medial adverb is unacceptable in English and French (STAY-XP >> -FOC<ADV), focus may affect adverb placement relative to the subject in Spec,IP. Moreover, the requirement for focus-adjacency of sentence adverbs may give rise to pre-auxiliary positioning of a wide scope adverb in English (SCMA >> ADV<+FOC >> *X'-ADJ) and non-finite verb movement in French (-FOC<ADV >> STAY-X). Topical phrases were assumed to require placement in left-peripheral position within IP, predicting their occurrence in clause-initial position in English and French declarative clauses and in the leftmost middle field position in German. Pre-subject placement of [+top] arguments and adverbs in English and French questions was excluded by the constraint *INVERSION, necessitating a topical argument to move on to CP-adjoined position in matrix questions and ruling out topicalization within embedded clauses (PUREEP >> *INVERSION >> TOPIC >> *CP-ADJ). Adverb fronting however, is more restricted: an adverb may only occur in clause-initial position if it takes wide scope with respect to the following elements. Hence, an adverb can only precede a *wh*-phrase if it takes scope over the interrogative operator; in case the adverb is within the scope of a question, it has to occur in medial position, following the subject (SCMA, *INVERSION >> TOPIC, ADV<+FOC). In German, placement of arguments and adverbs in front of the subject within the middle field is acceptable under the appropriate pragmatic and semantic conditions (ADV<+FOC >> SCMA >> TOPIC >> *INVERSION). Yet unlike adverb placement in prefield position, adverb placement in front of a *wh*-phrase in Spec,CP or a scopal element within the middle field is only acceptable under a wide scope reading of the adverb, similar to English and French.

PART II

ADVERB PLACEMENT IN GAP CONSTRUCTIONS

CHAPTER 4.

ENGLISH

This chapter examines the distribution of adverbs in English constructions in which the VP in its base position is deprived of all phonetic material - henceforward *gap constructions* - by e.g. VP Ellipsis, VP Fronting, or extraction of the complement of a copula by Topicalization or *wh*-movement. The grammaticality of adverb placement in front of a gap will be shown to be influenced by three factors: the type of adverb, its scope, and the syntactic construction (subject-auxiliary inverted vs. non-inverted clauses; *wh*-questions vs. topicalization / VP Fronting / VP Ellipsis). In constructions in which subject-auxiliary inversion does not arise, e.g. declarative clauses or embedded questions, some phonetic material has to follow a medial adverb with wide scope reading; i.e. the order *finite auxiliary - adverb* is ungrammatical if no overt element intervenes between the adverb and the gap. By contrast, if the adverb has narrow scope or subject-auxiliary inversion takes place (e.g. matrix questions), the acceptability of adverb occurrence in front of a gap depends on the type of adverb and the type of gap: all types of adverbs may precede a *wh*-gap, whereas only epistemic, frequency, and temporal adverbs, but not subject-oriented and evidential ones may appear in front of a gap induced by Topicalization, VP Fronting, or VP Ellipsis.

Section 4.1 presents the relevant data. Previous approaches to adverb placement in gap constructions are reviewed in section 4.2. The OT account on adverb placement developed in Part I will be extended to account for the distribution of adverbs in gap constructions in sections 4.3 - 4.7. Section 4.8 summarizes the results.

4.1 The Data

As mentioned in the previous chapters, under a wide scope reading an adverb may precede or follow a finite auxiliary in English, with post-auxiliary adverb placement being preferred over pre-auxiliary positioning unless the auxiliary is stressed.

- (4.1) a. Bill has probably kissed Mary.
 b. ?Bill probably has kissed Mary.

However, this order variability is missing in gap constructions: in non-inverted clauses, some phonetic material has to appear between an adverb with wide scope reading and a gap. Independent of whether the adverb or the finite auxiliary is stressed (see Baker 1971), pre-auxiliary adverb positioning is obligatory if no other overt element precedes the gap. This is illustrated for epistemic, temporal, frequency, evidential, and subject-oriented adverbs in VP Ellipsis and VP Fronting constructions in (4.2, 4.3) as well as in copula constructions from which the complement is extracted by Topicalization (4.4, 4.5, 4.6) or *wh*-movement (4.7, 4.8, 4.9).¹ Note that since both VP Fronting and Topicalization of the complement of the copula *be* involve movement of some constituent to clause-initial position and have the same effect on adverb placement, they will be summarized as *Fronting*.

- (4.2) Fred has never been rude to Grandfather, but _____ (Baker 1981: 309)
 a. John (probably / always / often / clearly / wisely) has ____.
 b. John has (*probably / *always / *often / *clearly / *wisely) ____.
- (4.3) John promised to tell her the truth, and tell her the truth,
 a. he (probably / always / often / clearly / wisely) did ____.
 b. he did (*probably / *always / *often / *clearly / *wisely) ____.
- (4.4) They used to be Socialists, but Communists _____ (Sag 1978: 148)
 a. they never were ____.
 b. *they were never ____.
- (4.5) They used to be Socialists, and Communists
 a. they (probably / clearly) were ____ (, too).
 b. they were (*probably / *clearly) ____ (, too).
- (4.6) John isn't a heartthrob, but a flatterer
 a. he (wisely / usually) is ____.
 b. he is (*wisely / *usually) ____.
- (4.7) I don't know how happy _____ (Sag 1978: 148)
 a. they (ever / really) were ____.
 b. they were (*ever / *really) ____.
- (4.8) [Everywhere Mary goes there is a disaster so that nobody wants to be near her.] I wonder where
 a. they (usually / wisely) were ____ (when Mary was in London).
 b. they were (*usually / *wisely) ____ (when Mary was in London).
- (4.9) [They always state that a cardiac transplantation is a routine operation, but they never speak about its long-term consequences.] I wonder how harmless

¹ Other types of adverbs, such as discourse-oriented or evaluative ones, show the same distributional pattern. However, they are not investigated here since they may neither take narrow scope nor occur in the scope of questions for semantic reasons (see Ernst 2002).

- a. such an operation provably is ___.
- b. *such an operation is provably ___.

The sentences in (4.10) and (4.11) show that the occurrence of an overt element preceding the gap allows for post-auxiliary adverb positioning, while overt material following the gap does not. These facts support the view that it is the placement of the adverb in front of the gap that rules out the order *finite auxiliary - wide scope adverb* in (4.2)-(4.9):

- (4.10) a. John's often been arrested, although Mary's never been ___. (Wilder 1997: 348)
 b. Bill is living in France, but John is probably not ___.
- (4.11) I wonder (Baker 1971: 170)
 a. where Gerard usually is ___ at this time of day.
 b. *where Gerard is usually ___ at this time of day.

In avoiding pre-gap placement, adverbs pattern like contracted auxiliaries. The acceptability of auxiliary contraction seems to depend on the phonological context: a contracted form requires the presence of a stressed syllable to its right preceding the gap; as illustrated in (4.14), a weak pronoun does not suffice (see e.g. Baker 1971, 1981, and Wilder 1997).

- (4.12) I wonder (Zagona 1988: 106)
 a. where the party is ___ tonight.
 b. *where the party's ___ tonight.
- (4.13) a. I don't know where John's been ___. (Wilder 1997: 348)
 b. They said that Paul would be polite, but polite, he's actually not ___.
- (4.14) a. What's that ___? (Wilder 1997: 351)
 b. What's it for ___?
 c. *What's it ___?
 d. *What's it ___ now?

Hence, neither auxiliary contraction nor the sequence *finite auxiliary - adverb* is ruled out in gap constructions *per se*: rather, adverbs and contracted auxiliaries should not occur in pre-gap position. Pre-auxiliary placement may prevent a wide scope adverb from preceding a gap. Consequently, no adverb that takes wide scope may appear in front of any type of gap in non-inverted constructions.

Note that post-auxiliary adverb placement is only blocked in case there is no phonetic material at all within the constituent the adverb attaches to; i.e., the mere occurrence of movement out of the adverb's sister constituent does not necessarily have this effect. For example, according to the VP-Internal Subject Hypothesis (Koopman & Sportiche 1985, 1991, Kitagawa 1986, among others), the subject originates within VP; as shown in (4.15a), its movement to Spec,IP does not necessitate pre-auxiliary adverb placement. Similarly, the

subject trace in Spec,VP does not prevent auxiliary contraction in (4.15b).² Correspondingly, *pre-gap* positioning is meant to refer to placement of an adverb in a position whose sister does not contain any phonetic material at all.

- (4.15) a. John_j probably t_j kissed Mary.
 b. Mary_j's t_j left.

Remember that narrow scope reading of an adverb is restricted to post-auxiliary position (compare section 3.2): the adverb has to be merged below the base position of the finite auxiliary or negation and cannot be moved in front of it.

- (4.16) a. Carl should often see the doctor.
 b. *Carl often_k should t_k see the doctor.
 c. *Often_k Carl should t_k see the doctor.
 (4.17) a. John hasn't regularly gone to school.
 b. *John regularly_k hasn't t_k gone to school.
 c. *Regularly_k John hasn't t_k gone to school.

Similarly, a narrow scope adverb cannot be placed in some position preceding a modal verb or a negation marker in gap constructions either; i.e. pre-gap adverb placement cannot be avoided by pre-auxiliary or pre-subject positioning of the adverb: the (b)- and (c)-sentences in (4.18)-(4.27) are ungrammatical under a narrow scope reading of the adverb. (However, some of these sentences, such as e.g. (4.19, 4.20), are acceptable under a wide scope reading of the adverb.) Placement of the narrow scope adverb in front of some overt element being impossible, it depends on the type of adverb and the type of gap whether adverb placement in front of the gap is acceptable. While all types of adverbs may occur in front of a *wh*-gap (4.18)-(4.21), temporal (4.22, 4.23) and frequency adverbs (4.24), but not subject-oriented (4.25) and evidential ones (4.26, 4.27) may precede a gap induced by VP Ellipsis or Fronting.³

- (4.18) [Harry plans to go on holiday with his mother who travels a lot.] He asks his father
 where

² As will be shown in section 4.4 below, the clause-final adverbial in (4.11, 4.12) has to (right-)adjoin above the finite auxiliary. The sentences in (4.11, 4.12) and (4.15) thus differ in whether or not VP contains any phonetic material, giving rise to the contrast in the acceptability of post-auxiliary adverb placement and auxiliary contraction.

³ Epistemic adverbs do not take narrow scope with respect to negation or auxiliaries (see Bellert 1977, Ernst 2002). They are thus not taken into consideration in that condition.

According to Ernst (2002: 479), subject-oriented adverbs are acceptable within the scope of negation "(a) when the event constituted by the adverb and its sister argument is presupposed [...] and (b) in more formal/journalistic styles where more information is often packed into one clause than in casual, spoken styles".

- (i) a. They haven't willingly gone out of their way to say nasty things. (Ernst 2002: 105)
 b. Carol isn't cleverly telling people about the party (as she claimed she would).

- a. she wasn't already __.
- b. *she already wasn't __.
- c. *already she wasn't __.
- (4.19) [Bill wants to go to a pub, but he fears to run into his ex-girlfriend who hangs out in pubs most of her time.] He wonders where
- a. she isn't often __.
- b. *she often isn't __.
- c. *often she isn't __.
- (4.20) [Despite all precautions, Bill ran into his ex-girlfriend.] I wonder where
- a. he wasn't wisely __.
- b. *he wisely wasn't __.
- c. *wisely he wasn't __.
- (4.21) [George's fingerprints were found at most, but not at all scenes of crime.] George's advocate inquired of the prosecutor's secretary where
- a. he wasn't evidently __.
- b. *he evidently wasn't __.
- c. *evidently he wasn't __.
- (4.22) He's gotten along well with Fred in the past few weeks, but ... (Baker 1981: 313)
- a. he hasn't always __.
- b. *he always hasn't __.
- c. *always he hasn't __.
- (4.23) Fred performed excellently on the exam, but such a good student,
- a. he wasn't always __.
- b. *he always wasn't __.
- c. *always he wasn't __.
- (4.24) [Carl is ill and can only be cured if he takes his medicine twice a day.] Carl has to take his medicine, and (take his medicine,)
- a. he must regularly __.
- b. *he regularly must __.
- c. *regularly he must __.
- (4.25) Bill intends to visit his ex-girlfriend, and (visit his ex-girlfriend,)
- a. *he should wisely __.
- b. *he wisely should __.
- c. *wisely he should __.
- (4.26) [There is evidence that George stole the jewelry, but there is no clue who killed the jeweller.] The police suspect George of having killed the jeweller, but (killed the jeweller,)
- a. *he hasn't clearly __.
- b. *he clearly hasn't __.
- c. *clearly he hasn't __.
- (4.27) George is a burglar, but a murderer,

- a. *he isn't clearly __.
- b. *he clearly isn't __.
- c. *clearly he isn't __.

Placement of an adverb in front of some overt element in inverted gap constructions is ruled out, irrespective of scope: the adverbs under discussion may neither precede the *wh*-phrase nor the finite auxiliary nor the subject in questions.

- (4.28) a. *Usually where is he __ (at this time of day)?
- b. *Where usually is he __ (at this time of day)?
- c. *Where is usually he __ (at this time of day)?

The distributional pattern of adverbs in gap constructions with subject-auxiliary inversion mirrors the one of narrow scope adverbs in non-inverted constructions: the acceptability of pre-gap adverb placement depends on the type of adverb and the type of gap. All types of adverb may precede a *wh*-gap, (4.29)-(4.33). However, epistemic (4.34), temporal (4.35), and frequency adverbs (4.36), on the one hand, and subject-oriented (4.37) and evidential adverbs (4.38), on the other hand, differ in whether or not they allow for VP Ellipsis in matrix questions.⁴

- (4.29) [Mary told me that John was at the movies yesterday, but I don't believe her.] Where was he really __?
- (4.30) [Harry plans to go on holiday with his mother who travels a lot.]
 - a. Where was she already __?
 - b. Where wasn't she already __?
- (4.31) [Bill wants to go to a pub, but he fears to run into his ex-girlfriend who hangs out in pubs most of her time.]
 - a. Where is she often __?
 - b. Where isn't she often __?
- (4.32) a. [Bill wanted to meet his ex-girlfriend.] Where was he wisely __?
- b. [Despite all precautions, Bill ran into his ex-girlfriend.] Where wasn't he wisely __?
- (4.33) [George's fingerprints were found at most, but not at all scenes of crime.]
 - a. Where was he evidently __?
 - b. Where wasn't he evidently __?
- (4.34) Terry knows how to build an H-bomb. No - does he really __? (Ernst 1983: 548)
- (4.35) a. John hasn't gotten along well with Grandpa lately. Has he ever __?
(Baker 1981: 313)
- b. John has gotten along well with Grandpa lately. Hasn't he always __?

⁴ Note that only certain epistemic adverbs - ones that carry some implication - may occur in questions (see Bellert 1977 and Ernst 2002).

- (4.36) a. Carl had to go to the doctor yesterday. Must he often ___?
 b. If it was so much fun to go to the gym yesterday, why don't you regularly ___?
- (4.37) a. John intended to finish all he set out to do. *Has he wisely ___?
 (Ernst 1983: 548)
 b. John wants to move to London. *Should he wisely ___?
- (4.38) a. John intended to finish all he set out to do. *Has he clearly ___?
 (Ernst 1983: 548)
 b. I'm not quite sure whether John has done his work. *Hasn't he clearly ___?

Since the adverb in (4.18a)-(4.24a) and (4.29)-(4.36) is the final overt element in the clause, its position relative to the gap cannot be deduced from surface order. However, there is evidence that the adverb does precede the gap in these sentences. First, as Abels (2003) mentions, some of these adverbs cannot occur post-verbally.

- (4.39) a. John hasn't gotten along with Grandpa lately. *Has he gotten along with
 Grandpa ever? (Abels 2003: 7)
 b. ??Fred has sometimes been rude to Grandfather, but he hasn't been rude to
 Grandfather always.

Second, contracted auxiliaries are acceptable in gap constructions in the presence of an adverb; as illustrated in (4.12)-(4.14), auxiliary contraction requires a stressed syllable to the left of the gap, pointing to the conclusion that the medial adverb precedes the gap.

- (4.40) a. Where's he usually ___ (when Mary is in London)?
 b. (The weather was bad yesterday.) How's it normally ___ in May?

In addition, note that it is the pre-gap placement of a subject-oriented or evidential adverb that is responsible for the ungrammaticality of the sentences in (4.25a, 4.26a, 4.27a, 4.37, 4.38). According to Ernst (1992, 2000a, 2002), negation may take scope over evidential adverbs (4.41), modal verbs must take scope over subject-oriented adverbs (4.42), and both types of adverbs may occur in questions (4.43), compare section 2.2.

- (4.41) a. They haven't clearly finished all their work yet. (Ernst 2002: 104)
 b. Sam will not obviously be in trouble. (Ernst 1992: 134)
- (4.42) a. The protagonist in your novel must cleverly solve the mystery by herself.
 (Ernst 2000: 82)
 b. *The protagonist in your novel cleverly must solve the mystery by herself.
- (4.43) a. Has she obviously finished her work? (Ernst 2002: 104)
 b. Did Frank easily beat all his opponents? (Travis 1988: 302)

In summary, the acceptability of pre-gap adverb placement depends on the type of adverb, its scope, and the syntactic construction. For the latter, it is important to distinguish the type of gap it involves (*wh*-movement vs. VP Ellipsis / Fronting) and the position of the finite auxiliary it requires (subject-auxiliary inversion vs. non-inversion). The interrelation of these factors is illustrated in Figure 4.1. Some overt element must intervene between a wide scope adverb and a gap in non-inverted constructions; i.e. an adverb of any type cannot immediately precede any type of gap under a wide scope reading. However, if the adverb is to be interpreted as having narrow scope or subject-auxiliary inversion takes place, all types of adverbs may occur in front of a *wh*-gap, whereas only epistemic, temporal, and frequency adverbs, but not subject-oriented and evidential ones permit a subsequent gap caused by VP Ellipsis or Fronting.

Figure 4.1: Adverb occurrence in front of a gap in English

adverb type	scope	syntactic construction				
		Fronting	VP Ellipsis		<i>wh</i> -question	
		non-inverted	non- inverted	inverted	non- inverted	inverted
epistemic	wide	*	*	✓	*	✓
temporal	wide	*	*	✓	*	✓
	narrow	✓	✓	✓	✓	✓
frequency	wide	*	*	✓	*	✓
	narrow	✓	✓	✓	✓	✓
evidential	wide	*	*	*	*	✓
	narrow	*	*	*	✓	✓
subject- oriented	wide	*	*	*	*	✓
	narrow	*	*	*	✓	✓

4.2 Previous Approaches to Adverb Placement in Gap Constructions

This section reviews various approaches to the distribution of adverbs in gap constructions. It will be shown that the influence of adverb type, scope, and syntactic construction on the acceptability of pre-gap adverb placement cannot be captured by pure restrictions on auxiliary movement or adverb positioning as proposed by the analyses under discussion.

4.2.1 Baker (1971, 1981)

Baker (1971, 1981) accounts for the flexibility of and restrictions on the order of adverb and finite auxiliary by assuming various auxiliary movement rules that apply at different stages in the derivation:

- (4.44) a. *Not Placement / Subject-Auxiliary Inversion*
 b. *VP Deletion*⁵
 c. *Stress Reduction* (blocked by deletion sites)
 d. *Auxiliary Shift / Auxiliary Contraction* (applying only to stress-reduced auxiliaries)

Auxiliary Shift is considered to optionally move an unstressed auxiliary across a (wide scope) adverb, giving rise to the variability in the order of adverb and finite auxiliary, compare example (4.1) above. Occurrence of a contracted auxiliary or an adverb in front of a gap is ruled out by the sensitivity of *Stress Reduction* to deletion sites: applying to stress-reduced auxiliaries only, *Auxiliary Shift* and *Auxiliary Contraction* cannot affect an auxiliary preceding a gap; hence, the auxiliary may neither move across the adverb, nor may it contract in case a deletion site follows.

According to Baker (1981), auxiliary movement in interrogative and negative sentences, by contrast, does not involve *Auxiliary Shift*, but *Subject-Auxiliary Inversion* and *Not Placement*, respectively - rules that force the finite auxiliary to move in front of the subject or sentential *not* prior to VP Ellipsis. Consequently, the auxiliary may occupy a position in which it can be affected by *Stress Reduction* and *Auxiliary Contraction* in these cases. Contracted forms of auxiliaries are thus predicted to be acceptable in gap constructions unless the auxiliary immediately precedes a gap. With regard to adverb placement, moving a finite auxiliary by the application of *Not Placement* or *Subject-Auxiliary Inversion* may result in adverb occurrence in front of a gap as in e.g. (4.22a) and (4.35a) above; (4.45) illustrates the derivation of (4.35a) according to Baker's approach.

- (4.45) a. he ever has gotten along with Grandpa (Baker 1981: 313)
 b. has he ever gotten along with Grandpa *Subject-Auxiliary Inversion*

⁵ Baker (1981) only discusses VP Ellipsis. However, his analysis may be extended to *wh*-movement and Fronting constructions by assuming that the gaps left behind by these operations also block *Stress Reduction*.

c. has he ever ___

VP Deletion

However, not all types of adverbs may precede all types of gaps even if they take narrow scope or subject-auxiliary inversion applies, see examples (4.18)-(4.38) above. The auxiliary movement rules cannot explain the dependence of adverb occurrence in front of a gap on the type of adverb and the type of gap: all types of adverbs allow for a following *wh*-gap; yet while epistemic, temporal, and frequency adverbs can precede a gap induced by VP Ellipsis or Fronting, subject-oriented and evidential ones cannot. As Ernst (1983) mentions, making Baker's rules sensitive to different types of adverbs does not solve the problem: for example, if the presence of a subject-oriented adverb would block *Subject-Auxiliary Inversion*, (4.46a) could not be derived; yet the corresponding sentence without elided VP (4.46b) would then be predicted to be unacceptable as well, contrary to fact.

- (4.46) a. *Has he wisely? (Ernst 1983: 548)
 b. Has he wisely finished all he set out to do?

What would need to be sensitive to different types of adverbs are the rules that trigger the occurrence of the various types of gaps: subject-oriented and evidential adverbs, but not epistemic, frequency, and temporal ones seem to block VP Ellipsis and Fronting if no phonetic material follows them because of prior auxiliary movement. By contrast, the presence of an adverb should never suppress *wh*-movement. Hence, the distributional pattern of adverbs in gap constructions cannot solely be accounted for by distinguishing various auxiliary movement rules. At least, highly specific rules regulating the availability of deletion and movement processes depending on co-occurring adverbs would also be necessary.

4.2.2 *Sag (1978, 1980b), Sag & Fodor (1994), Kim & Sag (1995a, 2002)*

Sag (1978, 1980b) accounts for the restrictions on adverb occurrence in gap constructions by supposing the filter in (4.47):

- (4.47) No surface structure is well-formed if it contains a sequence of the form *Adverb - Extraction site*. (Sag 1978: 149)

The filter correctly excludes pre-gap placement of an adverb with wide scope reading in non-inverted constructions. However, it is too strong, ruling out all adverb occurrences in front of a gap: some types of adverbs may precede some types of gaps if they have narrow scope or subject-auxiliary inversion takes place (see examples in section 4.1). Again, making the filter sensitive to different types of adverbs, i.e. applying only to subject-oriented and evidential adverbs, but not to epistemic, temporal, and frequency ones, would not suffice. On the one hand, subject-oriented and evidential adverbs would still be predicted to be unacceptable in front of a *wh*-gap, contrary to fact (compare (4.20, 4.21, 4.32, 4.33) above). On the other hand, epistemic, temporal, and frequency adverbs with wide scope interpretation would

wrongly be expected to be able to precede a gap also in non-inverted constructions (compare (4.2)-(4.9) above). Hence, in order to account for the complete distributional pattern of adverbs in gap constructions, Sag's filter would have to be sensitive not only to different types of adverbs, but also to their scope and the syntactic construction.

In later HPSG works, Sag and Fodor (1994) as well as Kim and Sag (1995a, 2002) assume that a gap is literally empty. Supposing that an adverb adjoins to the constituent it modifies, adverb placement in front of a gap is again incorrectly predicted to be strictly prohibited: no structure being projected at the gap site, there is nothing the adverb could attach to.⁶ Assuming the radical emptiness of gaps, there seems to be no way to account for why placement of (some types of) adverbs in front of (some types of) gaps is acceptable when the adverb has narrow scope or subject-auxiliary inversion takes place.

4.2.3 Empty Category Principle Approaches

ECP approaches (e.g. Lobeck 1987, 1995, Zagana 1988, Potsdam 1997a) fail to account for the restrictions on adverb placement in gap constructions as well. By requiring an elliptic VP to be properly governed, they ensure the presence of a finite auxiliary in VP Ellipsis constructions.⁷

(4.48) Pete isn't singing even though most of his friends *(are) __. (Lobeck 1995: 47)

However, the licensing conditions on VP Ellipsis cannot even explain the ungrammaticality of pre-gap placement of a wide scope adverb in non-inverted constructions. The Generalized Government Transparency Corollary in (4.49) correctly predicts VP Ellipsis to be acceptable in subject-auxiliary inversion contexts: the finite auxiliary governs its trace and thus licenses the elliptic VP in (4.50).

⁶ In addition, note that there are phenomena which severely challenge the hypothesis that there is no structure at an ellipsis site at all. First, an XP-trace contained in a VP antecedent may correspond to an unmoved constituent in the elided VP, (ia). Moreover, a trace within the elided VP does not need to have the same binder as the corresponding trace in the antecedent VP (ib), suggesting that the ellipsis site has internal parts.

- (i) a. Shoes_i, my son refuses to wear t_i. Of course, I do __, too. (Potsdam 1997a: 363)
 b. Chicken, she'll eat, but ostrich, she won't __. (Potsdam 1997a: 364)

Second, an elliptic VP recovers the semantic content of its antecedent rather than its referent (see Grinder & Postal 1971). Supposing that an ellipsis site is made up of linguistic material recovered in the antecedent, the elided VP in (ii) may introduce the referent of *he* (= *a spouse*).

- (ii) My uncle doesn't have a spouse but your aunt does __ and he is lying on the floor. (Johnson 2001: 456)

⁷ These papers only discuss VP Ellipsis constructions. Under the assumption that traces have to be head-governed, the corresponding pattern in VP Fronting constructions can be accounted for. Additionally, considering contracted auxiliaries to be no proper governors, the ungrammaticality of their occurrence in front of a gap follows. However, recall that contracted auxiliaries may appear in gap constructions as long as some appropriate overt element precedes the gap (compare examples (4.12)-(4.14) above).

(4.49) Generalized Government Transparency Corollary

An X^0 which is co-indexed with and governs an empty head governs everything that head would govern. (Lobeck 1995: 146)

(4.50) Why is Mary leaving, and why is_i John t_i [VP e]?

As argued in section 2.2 and 3.2, the fact that an adverb in post-auxiliary position can be interpreted as taking wide scope indicates that the sequence *finite auxiliary - wide scope adverb* is derived by movement of the auxiliary across the adverb: the adverb c-commands the trace of the finite auxiliary and is thus expected to be able to outscope the auxiliary by the Scope Principle (see (2.72) in chapter 2). Consequently, placement of a finite auxiliary in front of a wide scope adverb as in (4.51a) is falsely predicted to be also acceptable in a VP Ellipsis construction such as (4.51b) unless the adverb were considered to block licensing of the elliptic VP; yet under this assumption the sentences in (4.52) are expected to be unacceptable as well, contrary to fact.

(4.51) Joe can run 100 meters in 6 seconds, and ...

- a. [IP John can_i [AUXP probably [AUXP t_i [VP lift 200 pounds]]]]
- b. *[IP John can_i [AUXP probably [AUXP t_i [VP e]]]], too.

(4.52) John has gotten along well with Fred recently, ...

- a. but [IP he has_i [NegP not [AUXP always [AUXP t_i [VP e]]]]]]
- b. [CP Has_i [IP he t_i' [AUXP really [AUXP t_i [VP e]]]]]]

Hence, relying exclusively on requirements on the auxiliary, ECP approaches will not be capable to account for the dependence of pre-gap adverb placement on the type of adverb, its scope, and the syntactic construction.

4.2.4 Summary

Neither conditions on auxiliaries (Baker 1971, 1981, Lobeck 1987, 1995, Zagana 1988, Potsdam 1997a) nor restrictions on adverb placement (Sag 1978, 1980b, Sag & Fodor 1994, Kim & Sag 1995a, 2002) alone can capture the complete distributional pattern of adverbs in gap constructions, wrongly predicting (certain types of) adverbs to be (un)acceptable in front of (certain types of) gaps. The next sections aim to account for adverb positioning in gap constructions by the OT approach developed in Part I. The interrelation of the factors affecting the acceptability of pre-gap adverb placement will be shown to result from the hierarchic ranking of the violable constraints.

4.3 The Gaps

Recall that *wh*-movement and topic fronting are triggered by the dominance of WHSPEC and TOPIC over STAY-XP, respectively: a topical object adjoins to IP, a *wh*-object occurs Spec,CP (compare Tableaux T3.7 and T3.50 in chapter 3); depending on the type of question, matrix vs. embedded, subject-auxiliary inversion arises due to PUREEP >> OBHD >> STAY-X. As illustrated in the Tableaux T4.1 and T4.2, VP does not contain any phonetic material in case the complement of a copula is extracted by topicalization or *wh*-movement: the subject moves to Spec,IP and finite *be* occurs in I⁰ or C⁰, respectively (SUBJECT >> PUREEP >> OBHD >> STAY-X, STAY-XP). Hence, adverb adjunction to VP - which might otherwise be optimal - would result in pre-gap placement in case of extraction of the copula's complement.

T4.1		<i>they didn't used to be Communists, but ...</i>				
		SUBJECT	OBHD	TOPIC	STAY-X	STAY-XP
☞	a	[_{IP} Socialists _{[+top]k} [_{IP} they _i were _i [_{VP} t _i t _k]]]				**
	b	[_{IP} Socialists _{[+top]k} [_{IP} they _i e [_{VP} t _i were t _k]]]		*!		**
	c	[_{IP} Socialists _{[+top]k} [_{IP} e were _i [_{VP} they t _i t _k]]]	*!		*	*
	d	[_{IP} they _i were _i [_{VP} t _i t _k Socialists _[+top]]]]			*!*	*

T4.2						
		SUBJECT	WHSPEC	OBHD	STAY-X	STAY-XP
☞	a	[_{CP} where _k is _i [_{IP} John _i t _i [_{VP} t _i t _k]]]			**	**
	b	[_{CP} where _k e [_{IP} John _i e [_{VP} t _i is t _k]]]		*!*		**
	c	[_{CP} where _k is _i [_{VP} John t _i t _k]]]	*!		*	*
	d	[_{IP} John _i is _i [_{VP} t _i t _k where]]]		*!	*	*

Similarly, there is no phonetic material in the base position of VP if VP is fronted or elided. Like argument topicalization, VP Fronting will be considered to be triggered by TOPIC. Just as a topicalized argument, the fronted VP does not give rise to subject-auxiliary inversion, as expected if the fronted VP is adjoined to IP. The finite auxiliary having to occur in I⁰, AuxP does not dominate any phonetic matrices in the optimal output (see Tableau T4.3). Consequently, adjunction of an adverb to AuxP - which may otherwise be preferred over its adjunction to I' or IP (compare chapter 3) - might involve pre-gap adverb placement in VP Fronting constructions.

		OBHD	TOPIC	STAY-X	STAY-XP
T4.3	<i>Mary wants to win the race, and</i>				
☞ a	$[_{IP} [_{VP} t_j \text{ win the race}]_{[+top]k} [_{IP} she_i \text{ will}_i [_{AuxP} t_i t_k]]]$			*	**
b	$[_{IP} [_{VP} t_j \text{ win the race}]_{[+top]k} [_{IP} she_i e [_{AuxP} \text{ will } t_k]]]$	*!			**
c	$[_{IP} she_i \text{ will}_i [_{AuxP} t_i [_{VP} t_j \text{ win the race}]_{[+top]}]]]$		*!*	*	*

While in *wh*-movement and Fronting constructions some phrase is pronounced in a derived position, an elliptic VP is not phonetically realized at all. Since infinitival *to* may license VP Ellipsis unless the infinitival clause is an island, Johnson (2001) suggests that VP Ellipsis involves VP Fronting:

- (4.53) a. Mag Wildwood wants to read Fred's story, and I also want to __.
(Johnson 2001: 440)
- b. *Mag Wildwood came to read Fred's story, and I also came to __.
- (4.54) a. You shouldn't play with rifles because it's dangerous to __.(Johnson 2001: 442)
- b. *You shouldn't play with rifles because to __ is dangerous.

Under the assumption that the VP has to topicalize before its phonetic material is elided, the ungrammaticality of the sentences in (4.53b, 4.54b) can be explained: the VP cannot land within the infinitival clause, nor may it move out of the infinitival clause because of its islandhood.⁸

I do not know of any OT approach to VP Ellipsis. As in e.g. Hankamer & Sag (1976), Sag (1980a), and Chomsky (1995), VP Ellipsis will be considered to be a PF phenomenon (compare footnote 6): the phonetic material of VP is deleted at PF for economy of pronunciation.⁹ The constraint in (4.55) ensures that the elided VP is fronted.

⁸ Yet, note that a VP may be extracted out of a *wh*-island and VP Ellipsis is possible in embedded questions, compare footnotes 98 and 110 in chapter 3 as well as (4.70, 4.71) below.

⁹ To account for which VP can be elided and how an elliptic VP is interpreted, an additional condition is necessary:

- (i) Focus condition on VP-ellipsis:
A VP α can be deleted only if α is e-GIVEN. (Merchant 2001: 26)
- (ii) e-GIVENness:
An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo \exists -type shifting,
(a) A entails F-clo(E), and
(b) E entails F-clo(A). (Merchant 2001: 26)
- (iii) F-closure:
The F-closure of α , written F-clo(α), is the result of replacing F-marked parts of α with \exists -bound variables of the appropriate type (modulo \exists -type shifting). (Merchant 2001: 14)

E-GIVENness implies that the constituent containing the elided VP includes a focussed element that contrasts with some element in the constituent containing the antecedent VP; thereby, it accounts for the necessity of syntactic identity of antecedent and elliptic VP as well as for the availability of sloppy identity interpretation of pronouns (see Rooth 1992b, Fiengo & May 1994, Fox 2000, Johnson 2001, Merchant 2001).

(4.55) VP-ELLIPSIS (VP-E): If a VP α is deleted, α occurs in topic position.

Due to STAY-XP it is expected that an elliptic VP is marked for [+top]; TOPIC may then force its movement to topic position from which it can be elided in accordance with VP-E (see Tableau T4.4).¹⁰ Note that the constraint does not require that VP be deleted; rather, it determines in which position an elided VP appears (candidate T4.4b vs. T4.4f). Hence, overt realization of VP in its base position or in fronted position does not violate VP-E (see candidate T4.4a and T4.4e); rather, TOPIC is violated if VP is spelled out in its base position (compare candidate T4.4e).¹¹

T4.4		VP-E	OBHD	TOPIC	STAY-X	STAY-XP
☞	a	[IP [VP t_i win the race] _[+top] k [IP she _i will _i [AuxP t_i t_k]]]			*	**
☞	b	[IP [VP t_i win the race] _[+top] k [IP she _i will _i [AuxP t_i t_k]]]			*	**
	c	[IP [VP t_i win the race] _[+top] k [IP she _i e [AuxP will t_k]]]	*!			**
	d	[IP [VP t_i win the race] _[+top] k [IP she _i e [AuxP will t_k]]]	*!			**
	e	[IP she _i will _i [AuxP t_i [VP t_i win the race] _[+top]]]]		*!*	*	*
	f	[IP she _i will _i [AuxP t_i [VP t_i win the race] _[+top]]]]	*!	**	*	*

Hence, in VP Ellipsis constructions, the ellipsis site occurs in clause-initial position and a trace occupies the base position of VP. Concerning adverb placement in gap constructions, the question is thus not whether an adverb may precede the ellipsis site, but whether it may precede the trace left behind by VP Fronting.

To sum up, *wh*-movement, Fronting, and VP Ellipsis are similar in that they involve movement of some constituent to the clause-initial position. Non-subject questions require the projection of CP (WHSPEC >> STAY-XP); depending on the type of clause (matrix vs. embedded), subject-auxiliary inversion takes place (PUREP >> OBHD >> STAY-X). By contrast, a topical argument or VP has to left-align with IP in Fronting and VP Ellipsis constructions, predicting the lack of subject-auxiliary inversion. The following sections investigate the positioning of adverbs in these constructions.

¹⁰ Note that under a familiarity concept of topic, the requirement that an elided VP be e-GIVEN points to its topical nature (compare footnote 9).

¹¹ In the absence of a finite auxiliary, VP Ellipsis and VP Fronting give rise to *do*-Insertion.

- (i) a. John intended to phone Mary, and (phone Mary,) he certainly *(did).
 b. John (*did) phone Mary.

The investigation of why *do*-Support is mandatory in these cases (i.e. which constraint(s) trigger(s) *do*-Insertion) is beyond the scope of this thesis. However, note that although OBHD requires I^0 (and, if present, C^0) to be occupied by some element, the occurrence of *do* in (ia) cannot solely be an effect of this constraint: *do*-Support does not emerge in non-emphatic affirmative clauses (ib). Presumably, the obligatory occurrence of an auxiliary in VP Ellipsis and VP Fronting constructions has to do with the licensing of the trace left behind by these processes (see section 4.2.3 above).

On OT approaches to *do*-Insertion see e.g. Grimshaw 1997, Bresnan 2000, and Vikner 2001a,c. On which heads may license VP Ellipsis see e.g. Potsdam 1997a,b, Oku 1998, and Johnson 2001.

4.4 Wide Scope Adverb Placement in Non-Inverted Gap Constructions

Although post-auxiliary positioning of an adverb with wide scope reading as in (4.56a) is normally preferred over pre-auxiliary placement as in (4.56b) (see sections 1.1 and 3.2), it is unacceptable in case it coincides with adverb placement immediately in front of a gap: some element has to intervene between a wide scope adverb and a gap in non-inverted clauses (compare examples (4.2)-(4.9) above); i.e., the order *adverb - finite auxiliary* is obligatory if no other element precedes the gap.

- (4.56) a. John has probably gotten along well with Fred.
 b. ??John probably has gotten along well with Fred.
- (4.57) Mary has never gotten along well with Fred, but ...
 a. *John has always __.
 b. John always has __.

Since adverbs and contracted auxiliaries are similar in avoiding the pre-gap position and the acceptability of auxiliary contraction is clearly dependent on the phonological context to the left of a gap (see (4.12)-(4.14) above), it will be assumed that adverbs likewise demand for phonetic material that separates them from a gap, as expressed by the constraint in (4.58).¹²

- (4.58) ADJUNCT-CONTENT (ADJCON): Adjuncts are sisters to constituents which include phonetic material.

Movement of an element α deprives α 's mother node of phonetic material. Referring to surface structure, ADJCON penalizes adverb attachment to a constituent from which all

¹² Selkirk (1996) proposes an OT approach to the choice between weak and strong function words in various contexts. The occurrence of a contracted auxiliary in front of a gap is ruled out by prosodic phrasing. A final element within a morphosyntactic phrase should be final within a phonological phrase as well. Since a final element within a phonological phrase has to be a prosodic word, i.e. has to bear stress, weak forms of auxiliaries are excluded from pre-gap position; consequently, the strong form is obligatory if the auxiliary immediately precedes a gap.

Despite the similarity between adverbs and contracted auxiliaries in avoiding the pre-gap position, it seems to be impossible to account for the unacceptability of wide scope adverb placement in front of a gap by prosodic phrasing in the same way. As lexical elements, adverbs are expected to appear in a stressed unreduced form and, consequently, should be able to arise as final element within a (morphosyntactic as well as) phonological phrase. Furthermore, the avoidance of pre-gap adverb positioning does not seem to depend on focus. Even a focused adverb (with wide scope reading) cannot precede a gap in non-inverted clauses (although focused elements tend to occur in right-peripheral position, see e.g. Samek-Lodovici 1998, 2002 and Truckenbrodt 1999).

- (i) John has admired Sue only since last year, but (Baker 1971: 170)
 a. Bill ALWAYS has __.
 b. *Bill has ALWAYS __.

Moreover, focus-sensitivity of adverbs seemingly is not decisive for their refusal of pre-gap placement. The various types of focus-sensitive adverbs differ in whether or not they may precede a certain type of gap in inverted clauses or under a narrow scope reading, and also adverbs which are not focus-sensitive cannot appear in pre-gap position under a wide scope reading in non-inverted clauses (see section 4.1).

phonetic matrices are deleted; hence, it prohibits pre-gap placement.¹³ As will be shown in the next section, ADJCON is ranked similarly to TOPIC; together with the constraint hierarchy established for English in Part I, the ranking in (4.59) ensues.

- (4.59) SUBJECT, VP-E, WHSPEC, PUREEP, *LXMV, AGREE >> OBHD, CLITIC, SCMA, *INVERSION >> TOPIC, ADJCON >> STAY-X, STAY-XP >> ADV<+FOC <<>> - FOC<ADV >> *X'-ADJ >> *CP-ADJ, PREFIELD, THEMSTRUC

Remember that an adverb has to be merged somewhere above the base position of the auxiliary it outscopes (MODIFIER). Dominance of SUBJECT and OBHD over ADJCON predicts that the subject and the finite auxiliary occur within IP. ADJCON disallows post-auxiliary placement of a wide scope adverb in case no overt element follows the adverb because all phonetic material has been extracted by *wh*-movement or Fronting. The adverb has to be placed in front of some overt element, it cannot precede any type of gap in non-inverted clauses (see Tableau T4.5 and T4.6). The ranking ADJCON >> *X'-ADJ permits an adverb to adjoin to I' to escape pre-gap positioning; placement of the adverb in pre-subject position is expected to be possible only in declarative clauses with focus on the subject due to *INVERSION >> ADJCON >> -FOC<ADV >> *X'-ADJ.¹⁴ Moreover, adverb adjunction to C' or CP in embedded questions is excluded by the violation of SCMA and PUREEP (compare section 3.5).

(4.60) Carrie told me that she will run 100 meters in 10 seconds, and ...

- a. ??possibly she will ___.
- b. she possibly will ___.
- c. *she will possibly ___.

(4.61) Carrie isn't able to run 100 meters in 10 seconds, but ...

- a. possibly Jack is ___.
- b. Jack possibly is ___.
- c. *Jack is possibly ___.

¹³ Note that ADJCON does not make any claim on the timing of adverb integration into syntactic structure. Relating to the candidates' surface structures, the constraint is violated as soon as an adverb's sister constituent does not contain any phonetic material; hence, whether or not that constituent included phonetic matrices in base structure is not relevant for the candidates' evaluation with regard to ADJCON.

¹⁴ Recall that the tie between ADV<+FOC and -FOC<ADV predicts that placement of a wide scope adverb in front of a narrowly focused subject or behind the finite auxiliary is optional in non-gap constructions. Yet in gap constructions in which post-auxiliary adverb placement is excluded by ADJCON, pre-subject placement of the adverb is predicted to be obligatory: since -FOC<ADV cannot be satisfied - the adverb has to precede the unfocused finite auxiliary (ADJCON >> -FOC<ADV) -, placement of the adverb in front of the subject is preferred over pre-auxiliary positioning, independent of how the constraint tie is resolved; pre-subject placement of the adverb fulfills ADV<+FOC (and *X'-ADJ) whereas pre-auxiliary positioning does not. Hence, while placement of the adverb in front of the subject in (4.61a) is expected if the subject is [+foc], its occurrence pre-auxiliary position in (4.61b) presupposes a different information-structural marking: presumably, the finite auxiliary is considered to be (contrastively) focused in that case.

T4.5 <i>John promised to tell the truth, and</i>		OBHD	TOPIC	ADJCON	STAY-X	STAY-XP	-FOC<ADV	*X'-ADJ
a	[_{IP} [_{VP} t _j tell the truth] _{[+top]k} [_{IP} he _j will _i [_{AuxP} certainly [_{AuxP} t _i t _k]]]]]			*!	*	**		
⊗ b	[_{IP} [_{VP} t _j tell the truth] _{[+top]k} [_{IP} he _j certainly [_{I'} will _i [_{AuxP} t _i t _k]]]]]				*	**		*
c	[_{IP} [_{VP} t _j tell the truth] _{[+top]k} [_{IP} certainly [_{IP} he _j will _i [_{AuxP} t _i t _k]]]]]				*	**	*!	
d	[_{IP} certainly [_{IP} [_{VP} t _j tell the truth] _{[+top]k} [_{IP} he _j will _i [_{AuxP} t _i t _k]]]]]		*!		*	**	*	
e	[_{IP} [_{VP} t _j tell the truth] _{[+top]k} [_{IP} he _j e [_{AuxP} certainly [_{AuxP} will t _k]]]]]	*!				**		
f	[_{IP} he _j will _i [_{AuxP} certainly [_{AuxP} t _i [_{VP} t _j tell the truth] _[+top]]]]]]		**		*	*		

T4.6 <i>I wonder...</i>		SUBJECT	WHSPEC	PUREEP	OBHD	SCMA	*INVERSION	ADJCON	STAY-X	STAY-XP	*X'-ADJ
a	[_{CP} where _k e [_{IP} John _j is _i [_{VP} usually [_{VP} t _j t _k]]]]]				*			*!	*	**	
⊗ b	[_{CP} where _k e [_{IP} John _j usually [_{I'} is _i [_{VP} t _j t _k]]]]]				*				*	**	*
c	[_{CP} where _k e [_{IP} usually [_{IP} John _j is _i [_{VP} t _j t _k]]]]]				*		*!		*	**	
d	[_{CP} where _k usually _i [_{C'} e [_{IP} John _j is _i [_{VP} t _j t _k]]]]]				*	*!			*	***	*
e	[_{CP} usually _i [_{CP} where _k e [_{IP} John _j is _i [_{VP} t _j t _k]]]]]			*!	*	*			*	***	
f	[_{CP} where _k e [_{IP} John _j e [_{VP} usually [_{VP} t _j is t _k]]]]]				**!					**	
g	[_{CP} where _k e [_{VP} usually [_{VP} John is t _k]]]]]	*!			*					*	
h	[_{IP} John _j is _i [_{VP} usually [_{VP} t _j t _k where]]]]]		*!	*					*	*	

However, by requiring some phonetic material in the constituent the adverb attaches to, ADJCON does not rule out the order *finite auxiliary - wide scope adverb* in gap constructions *per se*.¹⁵ Satisfying ADJCON, this order is correctly predicted to be acceptable if the sister constituent of the adverb contains some overt element such as a non-finite auxiliary or *not*, compare example (4.10) above. Hence, post-auxiliary placement of a wide scope adverb is expected to be acceptable as long as some phonetic material follows that sequence because of the requirement of ADJCON.

¹⁵ Accordingly, *wh*-movement and topicalization do not yield to pre-auxiliary adverb placement in itself. Some phonetic material being included in the adverb's sister constituent, adverb placement in post-auxiliary position is acceptable, satisfying ADJCON.

- (i) a. [_{IP} This book_k [_{IP} John_j will_i [_{AuxP} certainly [_{AuxP} t_i [_{VP} t_j read t_k]]]]]]]
- b. I wonder [_{CP} what_k e ((_{IP} [_{IP} Carl_j is_i [_{AuxP} usually [_{AuxP} t_i [_{VP} t_j doing t_k]]]])(at this time of day))]]]

		OBHD	TOPIC	ADJCON	STAY-X	STAY-XP	*X'-ADJ
T4.7	<i>John's often been lying, although ...</i>						
☞ a	$[_{IP} [_{VP} t_j \text{ lying}]_{[+top]k} [_{IP} \text{ Mary}_j \text{ has}_i [_{AuxP1} \text{ never} [_{AuxP1} t_i [_{AuxP2} \text{ been} t_k]]]]]]]$				*	**	
b	$[_{IP} [_{VP} t_j \text{ lying}]_{[+top]k} [_{IP} \text{ Mary}_j \text{ never} [_{I'} \text{ has}_i [_{AuxP1} t_i [_{AuxP2} \text{ been} t_k]]]]]]]$				*	**	*!
c	$[_{IP} [_{VP} t_j \text{ lying}]_{[+top]k} [_{IP} \text{ Mary}_j \text{ e} [_{AuxP} \text{ never} [_{AuxP1} \text{ has} [_{AuxP2} \text{ been} t_k]]]]]]]$	*!				**	
d	$[_{IP} \text{ Mary}_j \text{ has}_i [_{AuxP} \text{ never} [_{AuxP1} t_i [_{AuxP2} \text{ been} t_i [_{VP} t_j \text{ lying}]_{[+top]}}]]]]]$		*!*		*	*	

Furthermore, ADJCON does not exclude adverb placement in front of an extraction site. Following the VP-Internal Subject Hypothesis (Koopman & Sportiche 1985, 1991, Kitagawa 1986, among others), a VP-adjoined adverb immediately precedes the subject trace in Spec,VP in (4.62). Yet the structure in (4.62) does not violate ADJCON since VP includes the phonetic matrices of the verb and the object. Hence, ADJCON permits placement of an adverb in a position adjacent to a trace as long as its sister constituent contains some phonetic matrices.

(4.62) $[_{IP} \text{ John}_j \text{ e} [_{VP} \text{ probably} [_{VP} t_j \text{ kissed Mary}]]]]]$

Given that post-auxiliary placement of a wide scope adverb in a non-inverted gap construction such as (4.57a) is ruled out due to the lack of phonetic material in the sister constituent of the adverb, the fact that a medial adverb has to occur in pre-auxiliary position in case an adverbial follows a VP Ellipsis or VP Fronting site as in (4.63, 4.64) indicates that the clause-final adverbial must be merged above the finite auxiliary as well. Taking narrow scope relative to the medial adverb, the stranded adverbial is expected to be included in the sister constituent of the medial one and thus provides phonetic material that might prevent the medial adverb from violating ADJCON. Consequently, the unacceptability of post-auxiliary positioning of the medial adverb points to the conclusion that the stranded adjunct has to attach above I' itself.

(4.63) Mary has never met John in London, but

- a. she always has __ in New York.
- b. *she has always __ in New York.

(4.64) Carl promised to visit Susan, and visit Susan,

- a. he surely will __ on Monday.
- b. *he will surely __ on Monday.

Under the assumption that VP Ellipsis and VP Fronting may only affect a constituent, an adjunct stranded in clause-final position must be right-adjoined.¹⁶ Given that ADJCON also

¹⁶ Note that PP-adverbials presumably prefer to occur in (right-)peripheral positions for reasons of prosodic phrasing: placement of a PP-adjunct in pre-verbal position is acceptable if sufficient material follows it; i.e. left-

relates to the stranded adjunct, the pattern in (4.63, 4.64) follows from the fact that both adverbials have to attach above the surface position of the finite auxiliary in order to satisfy ADJCON, as illustrated in Tableau T4.8 (see also Kim & Sag 1995b).¹⁷

adjunction of a PP-adjunct is not prohibited *per se* (see also footnote 66 in section 3.4 on how the acceptability of CP-adjunction of a focus-sensitive adverb in German is influenced by prosodic considerations.)

- (i) a. Maureen (*for several days) walked (for several days). (Ernst 2002: 173)
 b. The relief officials have for several days tried to move tons of supplies into the devastated valley.

By contrast, for some types of adverbs (e.g. epistemic, evidential, and subject-oriented ones, compare footnote 11 in chapter 3.2), right-adjunction is prohibited in general; hence, these adverbs can never occur clause-finally (without comma-intonation). Yet, other types of adverbs such as frequency and temporal ones are not excluded from right-adjunction. Consequently, their occurrence as clause-final element in a non-inverted gap construction is expected to be acceptable, contrary to fact: just as left-adjunction, right-adjunction to I' (or IP) satisfies ADJCON and should thus be optimal.

- (ii) a. [_{IP} subject [_{I'} adverb [_{I'} auxiliary __]]]
 b. *[[_{IP} subject [_{I'} auxiliary __] adverb]]

It cannot be clarified here why left-adjunction (iia) is preferred over right-adjunction (iib) in these cases. However, note that even in contexts in which clause-final placement of these types of adverbs is acceptable (e.g. in inverted clauses), they are apparently left-adjoined: auxiliary contraction, which requires a stressed syllable to the left of the gap, is possible (compare (4.12)-(4.14) and (4.40) above).

¹⁷ The right-adjunction analysis of post-verbal and stranded adverbials is supported by the following two phenomena: first, any contiguous string including VP may be fronted or elided (i, ii); by contrast, stranding of the first of several post-verbal adverbials as in (iiib) is strongly marked. Second, in case the fronted or elided VP contains an embedded clause (iv), a clause-final adverbial may only be construed with the matrix clause.

- (i) [John intended to give candy to children in libraries on weekends, ...] (Phillips 2003: 73)
 a. ... and give candy to children in libraries on weekends he did.
 b. ... and give candy to children in libraries he did on weekends.
 c. ... and give candy to children he did in libraries on weekends.
- (ii) John gives candy to children in libraries on weekends, ... (Phillips 2003: 73)
 a. ... and Mary does (too).
 b. ... and Mary does on federal holidays.
 c. ... and Mary does in urban parks on federal holidays.
- (iii) John promised that he would visit them in Vienna on Friday, and (Hinterhölzl 2002: 135)
 a. visit them in Vienna, he did on Friday.
 b. ??visit them on Friday, he did in Vienna.
- (iv) a. Wallace confirmed that Gromit had prepared the porridge before breakfast, and Preston did late at night. (Phillips 2003: 73)
 i) 'Preston confirmed [the claim that Gromit had prepared the porridge] late at night.'
 ii) #'Preston confirmed [the claim that Gromit had prepared the porridge late at night].'
 b. Wallace wanted to confirm that Gromit had prepared the porridge, and confirm that Gromit had prepared the porridge, he did before breakfast.
 i) 'Wallace confirmed [the claim that Gromit had prepared the porridge] before breakfast.'
 ii) #'Wallace confirmed [the claim that Gromit had prepared the porridge before breakfast].'

Note that reconstruction of a fronted VP is possible: an object in a fronted VP may bind an anaphor or a pronoun in a stranded adjunct; yet binding fails in VP Ellipsis constructions such as (vi).

- (v) a. John said that he would give books to them, and give books to them_i he did on each other_i's birthday. (Phillips 2003: 56)
 b. Mary said that she would congratulate every boy, and congratulate every_i boy she did at his_i graduation.
- (vi) a. *John gave books to them_i on each other_i's birthdays, and Mary did on each other_i's first day of school. (Phillips 2003: 56)

		TOPIC	ADJCON	STAY-X	STAY-XP	*X-ADJ
T4.8	<i>Mary has never met John in London, but ...</i>					
☞ a	[_{IP} [_{VP} t _j met John] _[+top] _k [_{IP} she _j always [_Γ [_Γ has _i [_{AuxP} t _i t _k]] in NY]]]]			*	**	**
b	[_{IP} [_{VP} t _j met John] _[+top] _k [_{IP} she _j has _i [_{AuxP} always [_{AuxP} [_{AuxP} t _i t _j]] in NY]]]]		*!	*	**	
c	[_{IP} she _j has _i [_{AuxP} always [_{AuxP} [_{AuxP} t _i [_{VP} t _j met John] _[+top]]]] in NY]]]]	*!*		*	*	

Likewise, the unacceptability of post-auxiliary adverb placement and auxiliary contraction in constructions involving movement of the complement of copular *be* in (4.65)-(4.67) indicates that the adverbial in clause-final position does not occur within VP. In accordance with ADJCON, the clause-final adverbial is expected to right-adjoin somewhere above the finite verb, predicting pre-auxiliary placement of the medial adverb to be obligatory. Similarly, Pseudogapping does not allow for post-auxiliary adverb placement and auxiliary contraction, see (4.68, 4.69). Pseudogapping has been suggested to involve Remnant VP Ellipsis (see Kuno 1981, Jayaseelan 1990, Lasnik 1995, and Johnson 2001): the object moves out of VP prior to (VP Fronting and subsequent) VP Ellipsis.¹⁸ If this approach is on the right track, the fact that Pseudogapping prohibits placement of an adverb behind the finite auxiliary points to the conclusion that the object is right-adjoined above the finite auxiliary; post-auxiliary

- b. *Mary congratulated every_i boy at his_i graduation, and Sue did at his_i 21st birthday.

Under the assumption that binding options are determined by m-command and precedence (see Ernst 1994), the data in (v) is compatible with a right-adjunction analysis of stranded adverbials. The unacceptability of the sentences in (vi) shows that although the linguistic material of a deleted VP must be accessible for interpretation (compare footnote 6), it is apparently not accessible for purposes of binding. This hypothesis is supported by the fact that a Principle C violation is only induced in case a name occurs in an adverbial within the antecedent clause of VP Ellipsis, compare (vii) vs. (viib).

- (vii) a. *John gave the books to her_i on Mary_i's birthday and Jill did at Christmas. (Lechner 2003: 192)
b. (?)John gave the books to her_i at Christmas and Jill did on Mary_i's birthday.

However, the right-adjunction analysis of stranded adverbials cannot account for the fact that they are able to take narrow scope with respect to a quantified object in a fronted VP: according to Phillips (2003), the sentence in (viii) is ambiguous between a collective and a distributive reading of the adverb whereas (viii) involving VP Ellipsis is restricted to the collective interpretation. Under the right-adjunction approach, the stranded adverb c-commands the trace of the fronted or elided VP; consequently, the wide scope reading of the adverb is expected while the narrow scope reading is not.

- (viii) a. John said that he would read every book, and read every book he did at breakneck speed.
(Phillips 2003: 56)
b. Mary read all the books quickly, and John did slowly.

On Pesetsky's paradox see e.g. Ernst 1994, Pesetsky 1995, Phillips 1996, 2003, and Lechner 2003.

¹⁸ Pseudogapping seems to be subject to similar restrictions as Heavy NP Shift, indicating that it might involve movement of the object prior to deletion of the verb (or, rather, VP). For example, just as Heavy NP Shift out of a PP is unacceptable, Pseudogapping cannot strand parts of a PP.

- (i) a. *Sally will stand near Mag, but he won't __ Holly. (Johnson 2001: 460)
b. *Sam stood near yesterday every one of the women we'd been discussing.

adverb placement is then expected to be suboptimal to pre-auxiliary placement due to ADJCON.¹⁹

- (4.65) I wonder (Baker 1971: 170)
 a. where Gerard usually is ___ at this time of day.
 b. *where Gerard is usually ___ at this time of day.
- (4.66) John never used to be a Communist, but
 a. a Socialist, he certainly was ___ in his younger days.
 b. *a Socialist, he was certainly ___ in his younger days.
- (4.67) I wonder (Zagona 1988: 106)
 a. where the party is ___ tonight.
 b. *where the party's ___ tonight.
- (4.68) Joe quickly ripped up his paper, and (Abels 2003: 8)
 a. Sue slowly did ___ her essay.
 b. *Sue did slowly ___ her essay.
- (4.69) I'm living with Mary and (Wilder 1997: 348)
 a. Bill is ___ with Sue.
 b. *Bill's ___ with Sue.

Remember that topic fronting is ruled out in English embedded questions, as accounted for by the ranking PUREEP, *INVERSION >> TOPIC: a [+top] phrase may neither adjoin to IP nor to subordinate CP (see (4.70) and section 3.5.3). Yet VP Ellipsis, which was considered to involve VP Fronting, is possible in subordinate questions, (4.71). Since *INVERSION prohibits pre-subject placement of overt phrases only, it is expected that a VP may target IP-adjoined position in an embedded question in case its phonetic material is deleted (compare candidate T4.9c vs. T4.9d and footnote 110 in chapter 3).

- (4.70) I know that Susan has read the book, but ...
 a. *I wonder whether [read the book] Sophia has.
 b. *I wonder [read the book] whether Sophia has.
- (4.71) I know which book Max read and which book Oscar didn't. (Johnson 2001: 456)

¹⁹ Note that under the assumption that Pseudogapping involves (Remnant) VP Ellipsis and that VP Ellipsis, in turn, involves VP Fronting, Müller's (1998a) principle of Unambiguous Domination should be restricted to overt phrases: in contrast to Remnant VP Fronting, Pseudogapping is acceptable in English (compare footnote 69 in section 3.4).

(i) a. *_[VP t_j Kicked t_k] John_j never has the dog_k. (Müller 1998a: 6)
 b. (Mary kicked the cat and) _[VP t_j ~~kick~~ t_k] John_j did the dog_k.

T4.9	<i>I know which book Bill has read, but I wonder ...</i>	VP-E	PUREP	*INVERSION	TOPIC	STAY-XP
a	[_{CP} which book _k e [_{IP} John _i has _i [_{AuxP} t _i [_{VP} t _j read t _k] _[+top]]]]]				*!*	**
b	[_{CP} which book _k e [_{IP} John _i has _i [_{AuxP} t _i [_{VP} t _j read t _k] _[+top]]]]]	*!			**	**
c	[_{CP} which book _k e [_{IP} [_{VP} t _j read t _k] _[+top]] [_{IP} John _i has _i [_{AuxP} t _i t _j]]]]			*!		***
☞ d	[_{CP} which book _k e [_{IP} [_{VP} t _j read t _k] _[+top]] [_{IP} John _i has _i [_{AuxP} t _i t _j]]]]					***
e	[_{CP} [_{VP} t _j read t _k] _[+top]] [_{CP} which book _k e [_{IP} t _i [_{IP} John _i has _i [_{AuxP} t _i t _j]]]]]]		*!			****
f	[_{CP} [_{VP} t _j read t _k] _[+top]] [_{CP} which book _k e [_{IP} t _i [_{IP} John _i has _i [_{AuxP} t _i t _j]]]]]]		*!			****

Summing up, ADJCON predicts that an adverb with wide scope interpretation cannot precede any type of gap in non-inverted constructions: post-auxiliary adverb placement is ruled out in case it involves adverb adjunction to a phonetically empty constituent. The adverb has to precede some overt element; whether it is placed in front of the finite auxiliary or the subject depends on the information-structural status of the subject and the syntactic construction (declarative vs. interrogative clause; *INVERSION >> ADJCON >> -FOC<ADV >> *X'-ADJ). The fact that adverbials and objects (Pseudogapping) following a gap do not allow for pre-gap placement of a medial adverb suggests that these elements are right-adjoined above the finite auxiliary.

4.5 Excursus: *There-Gap* Constructions

In *there*-constructions, an adverb may optionally precede or follow the finite auxiliary if the second argument is elided (4.72, 4.73); however, post-auxiliary adverb placement is unacceptable in case the first argument is deleted, irrespective of whether or not the second argument is stranded (4.74, 4.75).²⁰

- (4.72) (Is there a seat in this row?)
- Yes, there certainly is a seat.
 - Yes, there is certainly a seat.
- (4.73) (Are there any first-year students angry about their grades?)
- No, but there surely are some second-year ones.
 - No, but there are surely some second-year ones.
- (4.74) (Is there a seat somewhere?)
- There certainly is in that row.
 - *There is certainly in that row.
 - There certainly is.
 - *There is certainly.
- (4.75) (Are there any first-year students angry about their grades?)
- No, but there surely are upset with their teachers.
 - *No, but there are surely upset with their teachers.
 - Yes, there surely are.
 - *Yes, there are surely.

Similarly, deletion of the first argument, but not of the second one prohibits auxiliary contraction, indicating that there is no phonetic material to the right of the auxiliary preceding the gap in (4.76a) whereas the DP-argument intervenes between the auxiliary and the gap in (4.76b).

- (4.76) (Is there a seat in this row?)
- *No, but there's in the next row.
 - Yes, there's a seat.

Oku (1998) argues that DP, PP, and AP cannot be deleted in English, as supported by the unacceptability of the sentences in (4.77). Rather, assuming that an ellipsis site is able to include the trace of auxiliary *have* / *be*, he claims that cases of apparent DP, PP, or AP Ellipsis

²⁰ On Ellipsis in *there*-constructions see Oku 1998, Warner 2000, and Kim & Sag 2002.

involve VP Ellipsis: the DP-, PP-, or AP-complement of the copula *be* is deleted by VP Ellipsis in (4.78).²¹

- (4.77) a. *You seem a good teacher, and John seems __, too. (Oku 1998: 39)
 b. *They sound intelligent, and John sounds __, too.
 c. *Mary looks in good shape, and John looks __, too.
- (4.78) a. You are a good teacher, and John is __, too. (Oku 1998: 40)
 b. They are intelligent, and John is __, too.
 c. Mary is in good shape, and John is __, too.

Accordingly, omission of an argument in *there*-constructions should arise by (Remnant) VP Ellipsis as well. Oku (1998) suggests that VP Ellipsis may affect both VP or V' (see also Lechner 2003). In case the first argument is stranded as in (4.72, 4.73), it occurs in its base position Spec,VP and V' is elided.²² By contrast, stranding of the second argument results from Remnant VP Ellipsis: the PP- or AP-argument is moved out of VP prior to VP Ellipsis in (4.74, 4.75).

Following Oku's analysis, post-auxiliary adverb placement is expected to be acceptable if the second argument of a *there*-construction is deleted but not if the first one is (compare Tableaux T4.10 and T4.11). In the former case, VP-adjunction of the adverb satisfies ADJCON: the sister constituent of the adverb contains phonetic material, namely the argument in Spec,VP.²³ Yet in case of deletion of the DP-argument, there is no phonetic material within VP: the second argument being right-adjoined above the finite auxiliary (as in

²¹ Potsdam (1997a) notes that in contrast to XP traces (compare footnote 6), an X⁰ trace in an elliptic VP must have the same binder as the X⁰ trace in the antecedent VP. The contrast in (i) supports the hypothesis that a DP may only be deleted by VP Ellipsis.

- (i) a. *I haven't t a dependable friend, unless you are t a dependable friend. (Potsdam 1997a: 365)
 b. I haven't t a dependable friend. Have you t a dependable friend? (Potsdam 1997a: 366)

²² However, remember that VP Ellipsis was considered to involve VP Fronting. On the basis of the fact that scrambling out of an incoherent infinitive is unacceptable (ia) and that incoherent infinitives do not allow for Remnant VP Fronting in German, Müller (1998a) concludes that there is no fronting of V'.

- (i) a. *... daß [das Buch]_k keiner [_{VP} t_k zu lesen] abgelehnt hat. (Müller 1998a: 17)
 that the book nobody to read refused has
 '... that nobody refused to read the book.'
 b. *[[_{VP} t_k Zu lesen]_i] hat keiner das Buch_k t_i abgelehnt.
 'Nobody refused to read the book.'
 c. *[[_{V'} Zu lesen]_i] hat keiner [_{VP} das Buch t_i] abgelehnt.

Yet see footnote 19 on the consideration that phrases with overt phonetic material and ones with elided phonetic matrices might differ in syntactic behavior.

Moreover, see Oku (1998) and Lechner (2003) on the assumption that VP Ellipsis and VP Fronting differ in that the former may affect VP and V' whereas the latter is restricted to VP.

²³ Note that the acceptability of post-auxiliary adverb placement in (4.72b, 4.73b) supports the hypothesis that co-indexation of two heads is only disturbed by a phrase preceding the subject in Spec,IP, as stated by *INVERSION: candidate T4.10b is optimal, movement of finite *be* across the adverb placed in front of the argument in Spec,VP does not violate *INVERSION.

Pseudogapping, see last section), pre-auxiliary placement of the adverb is obligatory (ADJCON >> *X'-ADJ).

T4.10		TOPIC	ADJCON	STAY-X	STAY-XP	*X'-ADJ	
	a	[_{IP} [_{VP} in this row t _i t _j] _[+top]] _k [_{IP} There probably [_{I'} is _i [_{VP} a seat t _k]]]]			*	*	*!
☞	b	[_{IP} [_{VP} in this row t _i t _j] _[+top]] _k [_{IP} There is _i [_{VP} probably [_{VP} a seat t _k]]]]			*	*	
	d	[_{IP} There is _i [_{VP} probably [_{VP} a seat [_{VP} t _i in this row]]]] _[+top]]]]	*!*		*		

T4.11		TOPIC	ADJCON	STAY-X	STAY-XP	*X'-ADJ	
☞	a	[_{IP} [_{VP} a seat t _i t _j] _[+top]] _k [_{IP} [_{IP} There probably [_{I'} is _i t _k]] [_{PP} in that row] _i]]]			*	**	*
	b	[_{IP} [_{VP} a seat t _i t _j] _[+top]] _k [_{IP} [_{IP} There is _i [_{VP} probably t _k]] [_{PP} in that row] _i]]]	*!		*	**	
	c	[_{IP} [_{IP} There is _i [_{VP} probably [_{VP} a seat t _i t _j]]]] _[+top]]] [_{PP} in that row] _i]]]	*!*		*	*	

4.6 Narrow Scope Adverb Placement in Gap Constructions

Recall that under a narrow scope reading, an adverb is merged below the element that takes scope over it (MODIFIER) and that adverb movement in front of the wide scope element is prohibited by SCMA and STAY-XP. Consequently, a narrow scope adverb usually surfaces in its base position following a finite auxiliary (compare section 3.2). Accordingly, a narrow scope adverb cannot be placed somewhere in front of a modal verb or a negation marker to escape pre-gap placement, indicating that SCMA dominates ADJCON.

(4.79) [Pete seldom eats spinach, but ...]

a. *he regularly_k should t_k.

b. *regularly_k he should t_k.

'It is advisable that Pete eats spinach regularly.'

Hence, while pre-auxiliary positioning may prevent an adverb with wide scope reading from preceding a gap in non-inverted constructions, this is not an option for adverbs with narrow scope interpretation. The acceptability of their occurrence in front of a gap depends on the type of adverb and the type of gap: temporal and frequency adverbs may precede any type of gap (compare (4.18, 4.19, 4.22, 4.23, 4.24) above). Narrow scope evidential and subject-oriented adverbs, by contrast, may occur in front of a *wh*-gap (4.20, 4.21), while they seem to prohibit VP Ellipsis and Fronting, see examples (4.25)-(4.27). Since it depends on the type of adverb whether or not it may precede a Fronting-gap, ADJCON will be assumed to be sensitive to the different types of adverbs; i.e. ADJCON is considered to constitute a family of subconstraints differentiated according to adverb type, ADJCON_{frequency}, ADJCON_{subject-oriented} etc. The dependency of pre-gap adverb occurrence on adverb type and gap type may now be accounted for by differences in the ranking of the ADJCON-subconstraints relative to the constraints motivating phrasal movement, WHSPEC and TOPIC.

(4.80) WHSPEC >> ADJCON_{sub-ori}, ADJCON_{evld} >> TOPIC >> ADJCON_{epis}, ADJCON_{temp},
ADJCON_{freq}

The ranking in (4.80) predicts that both *wh*-movement and Fronting may result in adjunction of a narrow scope temporal or frequency adverb to a phonetically empty constituent. WHSPEC and TOPIC dominating their ADJCON-subconstraints, movement has to take place even if it results in pre-gap placement of the adverb. As shown in Tableau T4.12, the adverb cannot move to a position preceding the modal verb due to SCMA >> ADJCON (compare candidates T4.12b and T4.12c). Consequently, the adverb appears in front of the gap.

T4.12 <i>John hasn't taken his medicine today, but ...</i>		SCMA	TOPIC	ADJCON _{freq}	STAY-X	STAY-XP	*X'-ADJ
☞ a	[_{IP} [_{VP} t _j take ...] _{[+top]k} [_{IP} he _j must _i [_{AuxP} t _i [_{VP} regularly t _k]]]]]			*	*	**	
b	[_{IP} [_{VP} t _j take ...] _{[+top]k} [_{IP} he _j regularly _l [_I must _i [_{AuxP} t _i [_{VP} t _k]]]]]]]	*!			*	***	*
c	[_{IP} [_{VP} t _j take ...] _{[+top]k} [_{IP} regularly _l [_{IP} he _j must _i [_{AuxP} t _i [_{VP} t _k]]]]]]]	*!			*	***	
d	[_{IP} he _j must _i [_{AuxP} t _i [_{VP} regularly [_{VP} t _j take ...] _[+top]]]]]]		*!*		*	*	

Note that while a temporal or frequency adverb may precede a gap if it takes narrow scope, it cannot do so under a wide scope reading. Pre-gap placement of an adverb that takes narrow scope with respect to a modal or negation is optimal in spite of the violation of ADJCON: *wh*-movement or fronting has to take place and the adverb cannot move to a position preceding some overt element (SCMA >> ADJCON). By contrast, pre-gap placement of a wide scope adverb in non-inverted constructions is excluded just because of the violation of ADJCON: pre-auxiliary or pre-subject positioning may prevent a wide scope adverb from adjoining to an empty constituent and is therefore mandatory, ADJCON >> -FOC<ADV >> *X'-ADJ (compare e.g. Tableau T4.5).

Unlike temporal and frequency adverbs, narrow scope evidential and subject-oriented ones cannot precede a gap caused by Fronting, while *wh*-movement may result in their pre-gap placement. Adverb movement in front of some overt element being excluded (SCMA >> ADJCON), the dominance of WHSPEC over the respective ADJCON-subconstraints predicts that *wh*-movement may give rise to adverb attachment to a phonetically empty constituent (see Tableau T4.13). Yet the relative ranking ADJCON_{sub-ori}, ADJCON_{evd} >> TOPIC blocks argument topicalization or VP Fronting to prevent these types of adverbs from preceding a gap (see Tableau T4.14).^{24,25}

²⁴ Note that the constraint on VP Ellipsis, VP-E, is not violated in the optimal candidate T4.14d since it only specifies which position an elliptic VP has to appear in, but does not require phonetic deletion.

²⁵ Note that the presence of a narrow scope subject-oriented or evidential adverb does not prohibit Fronting and VP Ellipsis *per se*: these operations are expected to be acceptable in case e.g. a non-finite auxiliary intervenes between the adverb and the gap.

- (i) a. John was in the vicinity of the scene of the crime at the time in question, but at the scene of the crime he hasn't provably been.
 b. Mary is moving to London, and Susan should wisely be, too.

T4.13		<i>I wonder...</i>		SUBJECT	WHSPEC	PUREP	OBHD	ScMA	ADJCON _{encl}	STAY-X	STAY-XP
☞	a	[CP where _k e [IP he _j was _i [NegP not [VP provably [VP t _j t _k]]]]]					*		*	*	**
	b	[CP where _k e [IP he _j was _i [NegP provably ₁ [NegP not [VP t _j [VP t _j t _k]]]]]]]					*	*!		*	***
	c	[CP where _k e [IP he _j e [NegP not [VP provably [VP t _j was t _k]]]]]					**!				**
	d	[CP where _k e [NegP not [VP provably [VP he was t _k]]]]]		*!			*				*
	e	[IP he _j was _i [NegP not [VP provably [VP t _j t _k where]]]]]			*!	*				*	*

T4.14		<i>John hasn't taken his medicine today, but ...</i>		VP-E	ScMA	ADJCON _{sub-ori}	TOPIC	STAY-X	STAY-XP	*X-Adj
	a	[IP [VP t _j take ...] _{[+top]k} [IP he _j should _i [AuxP t _i [VP wisely t _k]]]]]				*!		*	**	
	b	[IP [VP t _j take ...] _{[+top]k} [IP he _j wisely ₁ [I' should _i [AuxP t _i [VP t _j t _k]]]]]]]			*!			*	***	*
	c	[IP [VP t _j take ...] _{[+top]k} [IP wisely ₁ [IP he _j should _i [AuxP t _i [VP t _j t _k]]]]]]]			*!			*	***	
☞	d	[IP he _j should _i [AuxP t _i [VP wisely [VP t _j take ...] _{[+top]l}]]]]]					**	*	*	

Remember that manner adverbs selecting for SPECIFIED EVENTS have to be base-generated within VP (compare footnote 26 in section 2.1): they cannot precede a finite or non-finite auxiliary in non-gap contexts (4.81). Yet in VP Ellipsis constructions, placement of a manner adverb in front of an aspectual auxiliary is possible (4.82).²⁶ Given that the adverb is merged in VP-internal position, the sentences in (4.82) show that it may be moved out of VP prior to VP (Fronting and) deletion. In order to satisfy ADJCON, the adverb has to target a position in front of some overt element. Since ScMA ignores temporal-aspectual information (see (3.24) and footnote 23 in section 3.2), the adverb may be moved to a position in front of the aspectual auxiliary, as illustrated in Tableau T4.15. Consequently, an adverb in pre-auxiliary

²⁶ However, Abels (2003) observes that manner adverbs cannot appear in pre-auxiliary position in VP Fronting constructions; rather, they have to move along with the fronted VP. By contrast, higher types of adverbs may optionally be stranded within the auxiliary range in VP Fronting constructions, (ii).

- (i) He said that he would completely solve the problem, and (Abels 2003: 8)
- a. completely solve the problem he did.
 - b. *solve the problem he completely did.
- (ii) He said that he would always love her, and
- a. always love her he did.
 - b. love her, he always did.

Note that the fact that certain types of adverbs may appear in front of a gap under a narrow scope reading in VP Fronting constructions points to the conclusion that it must be specified in the input whether or not an adverb is to be taken along by VP Fronting; otherwise, ADJCON would predict that a narrow scope adverb is always fronted with VP to escape pre-gap placement.

position in a VP Ellipsis construction may be ambiguous in interpretation (clausal vs. manner reading) while it is restricted to the clausal reading in non-gap constructions, (4.83).²⁷

(4.81) John (*loudly) has (*loudly) been proclaiming his innocence.

(4.82) Joe partially revised his paper, and ... (Abels 2003: 8)

- a. Sue completely did.
- b. *Sue did completely.

(4.83) a. John carefully has ironed all his shirts.

- i) 'It was careful of John to iron all his shirts.'
- ii) #'John has ironed all his shirts in a careful way.'

b. Bill has ironed all his shirts and John carefully has, too.

- i) 'It was careful of John to iron all his shirts.'
- ii) 'John has ironed all his shirts in a careful way.'

		SCMA	ADJCON _{manner}	TOPIC	STAY-X	STAY-XP	*X'-ADJ
T4.15	<i>Joe has partially revised his paper, and ...</i>						
	a [IP [VP t _j t _i revised ...] _{[+top]k} [IP Bill _j has _i [AUXP completely ₁ [AUXP t _i t _k]]]]]		*!		*	***	
☞	b [IP [VP t _j t _i revised ...] _{[+top]k} [IP Bill _j completely ₁ [I' has _i [AUXP t _i t _k]]]]]				*	***	*
	c [IP Bill _j has _i [AUXP t _i [VP t _j completely revised his paper] _[+top]]]]			*!*	*	*	

²⁷ Recall that an aspectual auxiliary may take scope over an EVENT-selecting adverb (compare section 2.2). Yet even for adverbs which may precede a Fronting-gap in case they take narrow scope relative to a modal verb or negation as the frequency adverb in (4.24) (Tableau T4.12), pre-gap placement behind an aspectual auxiliary is ungrammatical. Temporal-aspectual information being ignored by SCMA, the ranking SCMA >> STAY-XP predicts that an adverb moves to a position in front of an aspectual auxiliary to escape pre-gap positioning.

- (i) Mary has left the meeting, and
 - a. *John has rudely __, too.
 - b. John rudely has __, too.
- (ii) During training, Mary has been knocked off once, but
 - a. *John has been frequently __.
 - b. John has frequently been __.

		SCMA	TOPIC	ADJCON _{freq}	STAY-X	STAY-XP
T(i)	<i>Mary claimed that she has been singing the song only once, but I know that ...</i>					
	a [IP [VP t _j singing ...] _{[+top]k} [IP she _j has _i [AUXP1 t _i [AUXP2 been [VP frequently t _k]]]]]]]			*!	*	**
☞	b [IP [VP t _j singing ...] _{[+top]k} [IP she _j has _i [AUXP1 t _i [AUXP2 frequently ₁ [AUXP2 been [VP t _k]]]]]]]]]				*	***
	c [IP she _j has _i [AUXP1 t _i [AUXP2 been [VP frequently [VP t _j singing ...] _[+top]]]]]]]]		*!*		*	*

However, note that just as the other types of adverbs under discussion, a manner adverb cannot be placed in front of a modal verb or negation that outscopes it; SCMA (\gg ADJCON_{manner}) rules out adverb movement to a position preceding an overt element in this case. The ranking ADJCON_{manner} \gg TOPIC is then expected to block VP Ellipsis: the adverb may neither precede the wide scope element nor the gap.

- (4.84) Bill has ironed the shirts, but ...
- a. *he carefully hasn't ___.
 - b. *he hasn't carefully ___.
 - c. he hasn't (carefully) done it (carefully).
- (4.85) John has to iron his shirts, and ...
- a. *he carefully should ___.
 - b. *he should carefully ___.
 - c. he should (carefully) do so (carefully).

Hence, the acceptability of pre-gap placement of a narrow scope adverb is also expected to be influenced by the nature of the wide scope element: an adverb cannot precede any type of gap if it takes narrow scope with respect to an aspectual auxiliary. However, if a modal auxiliary or negation outscopes the adverb, it depends on the type of adverb and the type of gap whether or not the adverb may precede the gap. This contrast can be accounted for by the ranking SCMA \gg ADJCON \gg STAY-XP, which prohibits adverb movement across modals and negation, but not across aspectual auxiliaries. A narrow scope adverb thus has to be placed in front of an aspectual auxiliary to escape pre-gap placement while it cannot precede a modal verb or a negation marker. The influence of adverb type and gap type on the acceptability of pre-gap adverb placement that show up in the latter case is captured by the differences in the ranking of the ADJCON-subconstraints with respect to WHSPEC and TOPIC: WHSPEC \gg ADJCON_{sub-ori}, ADJCON_{evld} \gg TOPIC \gg ADJCON_{frequ}, ADJCON_{temp}. *Wh*-movement is obligatory; due to the dominance of WHSPEC over all ADJCON-subconstraints, *wh*-movement has to take place even if it yields to pre-gap placement of an adverb. Fronting and VP Ellipsis, by contrast, are optional: they seem to be prohibited if they would result in placement of a subject-oriented or evidential adverb in front of a gap; the ADJCON-subconstraints of these types of adverbs outrank TOPIC, blocking Fronting in order to prevent these adverbs from adjoining to a phonetically empty constituent. VP Ellipsis and Fronting may take place as long as they do not give rise to pre-gap placement of these types of adverbs, as e.g. under a wide scope reading of the adverb (compare section 4.4).

The contrast between temporal / frequency adverbs and subject-oriented / evidential adverbs in permitting a subsequent Fronting-gap is captured by the difference in the ranking of their ADJCON-subconstraints with respect to TOPIC. Note that the hierarchical ranking of the ADJCON-subconstraints to each other does not correspond to the hierarchy of semantic types; i.e., the ability of an adverb to precede a Fronting-gap is apparently not influenced by the type of semantic argument the adverb selects for: while the ADJCON-subconstraints of FACT-

selecting evidential and EVENT-selecting subject-oriented adverbs dominate TOPIC, TOPIC outranks the ADJCON-subconstraint of PROPOSITION-selecting epistemic adverbs, as will be shown in the next section. Future research has to investigate the question of why TOPIC splits the ADJCON-subconstraints in the way that it does.

4.7 Adverb Placement in Inverted Gap Constructions

The distributional pattern of adverbs in inverted gap constructions parallels that of adverbs taking narrow scope with respect to a modal verb or negation. This similarity is not surprising: in both cases, the finite auxiliary has to precede the adverb because of either base-generation above it (MODIFIER) or movement across it (OBHD >> STAY-X). CP being projected in non-subject matrix question (WHSPEC >> STAY-XP), the finite auxiliary moves to C⁰ (OBHD >> STAY-X), and in contrast to non-inverted constructions, occurrence of an adverb in front of a gap cannot be avoided by its adjunction to I' (see section 4.4). The fact that subject-auxiliary inversion cannot be refrained from in order to avoid pre-gap placement is accounted for by the ranking OBHD >> ADJCON (compare (4.86a, 4.87a) and candidate T4.16f below). Furthermore, dominance of *INVERSION over ADJCON prohibits adverb placement in front of the subject in questions as in (4.86b, 4.87b), irrespective of information structure. Moreover, as argued in section 3.5, CP is associated with an interrogative operator in questions.²⁸ Being within the scope of the question, the adverbs under discussion can

²⁸ Remember that the lack of *do*-Support in subject *wh*-questions was taken to result from a failure to project CP: requiring a *wh*-phrase to occur in the highest specifier position of the clause in which it takes scope, WHSPEC may be satisfied by placing a *wh*-subject in Spec,IP; consequently, projection of CP is suppressed by STAY-X and OBHD. Assuming that *do* is not inserted under I⁰ in non-negative clauses, the difference in the emergence of *do*-Support between non-subject questions and subject *wh*-questions follows from the contrast in the presence vs. absence of CP (compare footnote 18 in section 3.2).

In contrast to non-subject questions as in (4.86, 4.87), subject *wh*-questions do allow for adverb placement in front of the finite verb. In case the finite verb is lexical, this is not surprising: lexical verb movement being prohibited in English (*LXMV >> OBHD), adjunction of an adverb to VP results in its occurrence to the immediate left of the finite verb.

- (i) a. Who for all intents and purposes bought the book? (Pesetsky & Torrego 2000: 411)
 b. Who to the rest of us seemed strange?
 c. [_{IP} Who_j e [_{VP} always [_{VP} t_j wants to play darts]]]?

However, an adverb may also precede a finite auxiliary in subject *wh*-questions, indicating that illocutionary force is not tied to IP in subject questions in the way it is to CP in non-subject questions. Under the assumption that interrogative force is encoded by the subject *wh*-phrase alone (i.e., that I⁰ is not associated with the question operator), the fact that an adverb which is within the scope of a question may precede the finite auxiliary (iiib), but not the *wh*-phrase (iiic) in subject questions may be captured by the constraint SCMA: placement of an adverb in front of the subject *wh*-phrase (i.e. IP-adjunction) is expected to be possible only if the adverb takes scope over the interrogative operator; movement of an adverb that takes narrow scope relative to the question operator to a position preceding the *wh*-phrase is ruled out by the violation of SCMA. By contrast, the adverb may be base-adjoined to I' without violating SCMA. According to Pesetsky and Torrego (2000), an adverbial in pre-auxiliary position in subject *wh*-questions is only acceptable if the finite auxiliary is focused; this pattern is expected due to ADV<+FOC >> *X'-ADJ (compare section 3.4). Furthermore, when VP is elided in a subject question, SCMA >> ADJCON >> *X'-ADJ predicts I'-adjunction of an adverb to be optimal, (iv).

- (ii) a. John has often solved a mystery.
 b. John often ??has / has_[+foc] solved a mystery.
 c. Often, John has solved a mystery.
 (iii) a. Who has often solved a mystery?
 b. ?Who often has solved a mystery?
 c. *Often, who has solved a mystery?
 (iv) John hasn't gotten along well with Fred.
 a. ??Who's ever?
 b. Who ever has?

neither be base-generated as sisters to C' or CP (MODIFIER) nor may they move to these positions (SCMA), (4.86c,d, 4.87c).²⁹

- (4.86) a. *Where John really is?
 b. *Where is really John?
 c. *Where really is John?
 d. *Really where is John?
- (4.87) a. *He certainly has?
 b. *Has certainly he?
 c. *Certainly has he?

Hence, just as with narrow scope adverbs in non-inverted clauses, an adverb cannot be placed in front of some overt element in gap constructions which involve subject-auxiliary inversion. Accordingly, the ranking of the ADJCON-subconstraints relative to WHSPEC and TOPIC is expected to determine whether or not a certain type of adverb may precede a certain type of gap, irrespective of adverbial scope. Both WHSPEC and TOPIC outranking the ADJCON-subconstraints of epistemic, temporal, and frequency adverbs, these types of adverbs are predicted to be able to precede both types of gap (compare examples (4.29)-(4.31) and (4.34)-(4.36) above); i.e., both *wh*-movement of the complement of the copula *be* as well as VP Ellipsis or Fronting in *yes/no*-questions may result in pre-gap placement of these types of adverbs, see Tableaux T4.16 and T4.17. Note that just like argument topicalization, VP Fronting is expected to target CP-adjoined position in matrix questions due to the ranking *INVERSION >> TOPIC >> *CP-ADJ (compare section 3.5.3). Yet an elliptic VP is expected to occur in IP-adjoined position: since *INVERSION only refers to overt phrases in pre-subject position, an elided VP in IP-adjoined position does not violate this constraint and is thus preferred over CP-adjunction of the VP by STAY-XP and *CP-ADJ (see candidates T4.17a vs. T4.17b).

- (4.88) a. As for Mary, what did John give to her?
 b. A: Imagine, John is a banker.
 B: Oh, a banker, is he?
 c. A: Imagine, John read the bible in one evening.
 B: Read the bible in one evening, did he?

-
- c. *Ever, who has?

²⁹ Remember that an adverb that takes scope over the interrogative operator has to precede a *wh*-phrase due to MODIFIER, compare section 3.5.4.

T4.16		SUBJECT	WHSPEC	OBHD	SCMA	*INVERSION	ADJCON _{epis}	STAY-X	STAY-XP	*X'-ADJ
☞	a	[CP Where _k is _i [IP he _j t _i [VP really [VP t _j t _k]]]]					*	**	**	
	b	[CP Where _k is _i [IP he _j really [I' t _i [VP t _j t _k]]]]					*	**	**	*!
	c	[CP Where _k is _i [IP really [IP he _j t _i [VP t _j t _k]]]]				*!		**	**	
	d	[CP Where _k really _i [C' is _i [IP he _j t _i [VP t _j [VP t _j t _k]]]]]			*!			**	***	*
	e	[CP Really _i [CP where _k is _i [IP he _j t _i [VP t _j [VP t _j t _k]]]]]			*!			**	***	
	f	[CP Where _k e [IP he _j really [I' is _i [VP t _j t _k]]]]		*!				*	**	*
	g	[CP Where _k is _i [VP really [VP he _j t _k]]]	*!					*	*	
	h	[IP He _j is _i [VP really [VP t _j t _k where]]]		*!				*	*	

T4.17	<i>John hasn't gotten along well with Fred recently.</i>	OBHD	SCMA	*INVERSION	TOPIC	ADJCON _{temp}	STAY-X	STAY-XP	*X'-ADJ	*CP-ADJ
☞	a	[CP Q Has _i [IP [VP t _j gotten ...] _[+top] k [IP he _j t _i [AUXP ever [AUXP t _j t _k]]]]]]				*	**	**		
	b	[CP [VP t _j gotten ...] _[+top] k [CP Q Has _i [IP t _k [IP he _j t _i [AUXP ever [AUXP t _j t _k]]]]]]]				*	**	***	!	*
	c	[CP Q Has _i [IP [VP t _j gotten ...] _[+top] k [IP he _j ever [I' t _i [AUXP t _j t _k]]]]]]				*	**	**	*!	
	d	[CP Q Has _i [IP [VP t _j gotten ...] _[+top] k [IP ever [IP he _j t _i [AUXP t _j t _k]]]]]]			*!		**	**		
	e	[CP Q Ever _i [C' has _i [IP [VP t _j gotten ...] _[+top] k [IP he _j t _i [AUXP t _j [AUXP t _j t _k]]]]]]]]			*!		**	***	*	
	f	[CP Ever _i [CP Q has _i [IP [VP t _j gotten ...] _[+top] k [IP he _j t _i [AUXP t _j [AUXP t _j t _k]]]]]]]]			*!		**	***		*
	g	[CP Q e [IP [VP t _j gotten ...] _[+top] k [IP He _j ever [I' has _i [AUXP t _j t _k]]]]]]	*!				*	**	*	
	h	[CP Q Has _i [IP he _j t _i [AUXP ever [AUXP t _j [VP t _j gotten ...] _[+top]]]]]]]			*!*		**	*		

By contrast, the ranking $WHSPEC \gg ADJCON_{evid}, ADJCON_{sub-ori} \gg TOPIC$ predicts that evidential and subject-oriented adverbs may precede a *wh*-gap, but not a gap induced by Fronting (compare examples (4.32, 4.33) vs. (4.37, 4.38) above): Fronting, but not *wh*-movement is blocked to prevent these adverbs from adjoining to an empty constituent. Inversion and non-inversion constructions thus seem to contrast in permitting VP Ellipsis in sentences containing evidential or subject-oriented adverbs (compare Tableau T4.5 vs. T4.18).

		OBHD	SCMA	*INVERSION	ADJCON _{sub-ori}	TOPIC	STAY-X	STAY-XP	*X'-ADJ	*CP-ADJ
T4.18	<i>John intended to read the book.</i>									
a	[_{CP} Q Has _i [_{IP} [_{VP} t _j read ...] _{[+top]k} [_{IP} he _j t _i [_{AuxP} wisely [_{AuxP} t _i t _k]]]]]]				*!		**	**		
b	[_{CP} [_{VP} t _j read ...] _{[+top]k} [_{CP} Q Has _i [_{IP} t _k [_{IP} he _j t _i [_{AuxP} wisely [_{AuxP} t _i t _k]]]]]]]]				*!		**	***		*
c	[_{CP} Q Has _i [_{IP} [_{VP} t _j read ...] _{[+top]k} [_{IP} he _j wisely [_{I'} t _i [_{AuxP} t _i t _k]]]]]]				*!		**	**	*	
d	[_{CP} Q Has _i [_{IP} [_{VP} t _j read ...] _{[+top]k} [_{IP} wisely [_{IP} he _j t _i [_{AuxP} t _i t _k]]]]]]			*!			**	**		
e	[_{CP} Q Wisely _i [_{C'} has _i [_{IP} [_{VP} t _j read ...] _{[+top]k} [_{IP} he _j t _i [_{AuxP} t _i [_{AuxP} t _i t _k]]]]]]]]		*!				**	***	*	
f	[_{CP} Wisely _i [_{CP} Q has _i [_{IP} [_{VP} t _j read ...] _{[+top]k} [_{IP} he _j t _i [_{AuxP} t _i [_{AuxP} t _i t _k]]]]]]]]		*!				**	***		*
g	[_{CP} Q e [_{IP} [_{VP} t _j read ...] _{[+top]k} [_{IP} He _j wisely [_{I'} has _i [_{AuxP} t _i t _k]]]]]]	*!					*	**	*	
☞	h [_{CP} Q Has _i [_{IP} he _j t _i [_{AuxP} wisely [_{AuxP} t _i [_{VP} t _j read ...] _{[+top]l}]]]]]]					**	**	*		

Hence, pre-gap positioning of an adverb cannot be avoided by placing the adverb in front of some overt element in inverted gap constructions, irrespective of the adverb's scope: the adverb cannot precede the subject nor the inverted auxiliary nor a *wh*-phrase (SCMA, *INVERSION >> ADJCON). Rather, it depends on the type of adverb and the type of gap whether or not pre-gap adverb placement is acceptable, as accounted for by the ranking of the ADJCON-subconstraints relative to WHSPEC and TOPIC.

4.8 Summary

Adverb placement in English gap constructions was shown to be influenced by three factors: the type of adverb, its scope, and the syntactic construction (*wh*-movement vs. Fronting / VP Ellipsis and inverted vs. non-inverted clauses). As argued in section 4.2, neither requirements on auxiliaries nor requirements on adverb placement alone may account for the complete distributional pattern, predicting adverb occurrence in front of a gap to be (un)acceptable independent (of some) of these factors. Considering grammaticality to be optimal satisfaction of a hierarchy of violable constraints, the interrelation of these factors can be considered to follow from the constraint hierarchy in (4.89) in an OT framework:

(4.89) SUBJECT, VP-E, WHSPEC, PUREEP, *LXMV >> OBHD, SCMA, *INVERSION >> ADJCON_{sub-ori}, ADJCON_{evid} >> TOPIC >> ADJCON_{epis}, ADJCON_{freq}, ADJCON_{temp} >> STAY-X, STAY-XP >> ADV<+FOC <<>> -FOC<ADV >> *X'-ADJ >> *CP-ADJ

Dominance of WHSPEC, TOPIC, and VP-E over STAY-XP triggers *wh*-movement, Fronting, and VP Ellipsis, respectively. Remember that VP Ellipsis is considered to presuppose VP Fronting, the elliptic VP occurring in IP-adjoined position. The contrast between matrix questions, subordinate questions, and Fronting constructions with respect to subject-auxiliary inversion is captured by the ranking of PUREEP, OBHD, and STAY-X.

Wide scope adverbs having to be merged somewhere above the base position of a finite auxiliary (MODIFIER), the ranking ADJCON >> -FOC<ADV >> *X'-ADJ rules out post-auxiliary placement of an adverb in non-inverted clauses if it coincides with adverb adjunction to a phonetically empty constituent: some overt element has to intervene between a wide scope adverb and a gap. In this case, the information-structural status of the subject may be crucial for the choice between pre-subject and pre-auxiliary positioning of the adverb.

While a violation of ADJCON is never tolerated for wide scope adverbs in non-inverted constructions, some types of adverbs may be placed in front of some types of gaps in case the adverb takes narrow scope or matrix CP is projected: MODIFIER and OBHD >> STAY-X require positioning of the finite auxiliary in front of the adverb in these cases. Due to the dominance of SCMA and *INVERSION over ADJCON, an adverb cannot be placed in front of an overt element to escape pre-gap placement (except for adverbs taking narrow scope with respect to an aspectual auxiliary which can be moved in front of that auxiliary unless it is inverted). The various types of adverbs differ in which types of gaps may follow them. The influence of adverb type and gap type on the grammaticality of adverb occurrence in front of a gap can be traced back to differences in the ranking of the ADJCON-subconstraints; their ranking relative to WHSPEC and TOPIC determines whether or not movement may result in adverb adjunction to a phonetically empty constituent. *Wh*-movement is obligatory; WHSPEC outranks all ADJCON-subconstraints, i.e. *wh*-movement has to take place even if it involves pre-gap placement of some adverb (WHSPEC >> ADJCON). In addition, epistemic, temporal, and frequency adverbs may precede a gap induced by Fronting if they take narrow scope with

respect to a modal verb or negation or if subject-auxiliary inversion applies (TOPIC >> ADJCON_{epis}, ADJCON_{freq}, ADJCON_{temp}). By contrast, evidential and subject-oriented adverbs are unacceptable in front of a Fronting-gap (ADJCON_{sub-ori}, ADJCON_{evid} >> TOPIC). VP Ellipsis and Fronting thus seem to be permitted only if they do not involve adjunction of these types of adverbs to a phonetically empty constituent: these operations may apply in the presence of a wide scope evidential or subject-oriented adverb in declarative clauses where adverb occurrence in front of the gap can be avoided by its placement in pre-auxiliary or pre-subject position.

CHAPTER 5.

FRENCH

Constraints are universal, i.e. they are active in every language; yet it depends on the hierarchic ranking whether or not some constraint has a visible effect in a given language. As will be shown in this chapter, the constraint ADJCON proposed in the last chapter may account for the phenomena of adverb positioning in French gap constructions. As in English, the acceptability of pre-gap adverb placement depends on the type of adverb, its scope, and the syntactic constructions (CLLD vs. Cleft; simple vs. periphrastic tense) in French. However, the influence of these factors on the distribution of adverbs differs in the two languages. For example, while pre-gap occurrence of a wide scope adverb may be prevented by its placement in pre-auxiliary position in English, adverb intervention between the subject and the finite verb is strictly prohibited in French; i.e. French cannot resort to the same strategy as English to avoid adverb adjunction to a phonetically empty constituent. In contrast to English, Fronting of an object or VP in French may result in pre-gap placement of any type of adverb behind a finite verb. Yet frequency and temporal adverbs differ from epistemic and evidential ones in that the former may also precede a gap following a non-finite verb (irrespective of scope) whereas the latter types of adverbs are ungrammatical in that position. Moreover, subject-oriented adverbs allow for pre-gap placement behind a non-finite verb only under a narrow scope reading; i.e. they may follow a non-finite modal in VP Fronting constructions, but are prohibited in pre-gap position behind a non-finite lexical verb in object CLLDs. Similarly, an epistemic or evidential adverb cannot precede a gap in Cleft sentences; a subject-oriented adverb, by contrast, can occur as clause-final element in Clefts under a narrow scope reading, and temporal as well as frequency adverbs can also appear in such positions irrespective of their scope.

The relevant data is presented in section 5.1. Adverb placement in Fronting and Cleft constructions is accounted for in the OT framework developed in the previous chapters in section 5.2 and 5.3, respectively. Section 5.4 briefly discusses the unacceptability of clause-final placement of sentence adverbs in Italian. The chapter closes with a summary in section 5.5.

5.1 The Data

As in English, adverb distribution in gap constructions in French is influenced by the type of adverb, the syntactic construction (CLLD vs. Cleft; simple tense vs. periphrastic tense) and, in case of subject-oriented adverbs, scope. Irrespective of scope, all types of adverbs may occur in pre-gap position following a finite verb if an object (5.1a,b) or VP (5.1c) is fronted.¹ Note that a lexical verb is within the modificational domain of the adverb, (5.1a,b). In addition, necessarily taking scope over the finite verb, epistemic and evidential adverbs outscope a modal verb; subject-oriented adverbs, by contrast, are restricted to a narrow scope reading with respect to modals (compare section 2.2). The scope of deontic modals relative to frequency or temporal adverbs may vary; the adverbs may occur in pre-gap position following a finite modal in VP Fronting constructions under a wide or narrow scope reading. Unlike English, intervention of an adverb between the subject and the finite verb as in (5.2) is always ungrammatical in French.

- (5.1) a. Cette fille, Jean l' aime (probablement / apparemment).
 this girl Jean her likes probably apparently
 'Jean (probably / apparently) likes this girl.'
- b. Cette fille, Jean l' embrassera (souvent / bientôt / gentiment).
 this girl Jean her will.kiss often soon nicely
 'Jean (often / soon / nicely) will kiss this girl.'
- c. Soulever 200 kilos, Jean le pouvait (probablement / évidemment / souvent /
 lift 200 kilos Jean it was.able.to probably evidently often
 plusieurs fois / toujours / juste avant / facilement).
 several times always just before easily
 'Jean could (probably / evidently / often / always / easily) lift 200 kilos (several
 times / just before).'
- (5.2) a. Cette fille, Jean (*probablement / *apparemment) l'aime.
 b. Cette fille, Jean (*souvent / *bientôt / *gentiment) l'embrassera.

¹ As in argument CLLDs, a resumptive pronoun should appear in French VP Fronting constructions; accordingly, it will be assumed that a fronted VP is base-generated in left-peripheral position while the resumptive clitic is merged in its base position, compare section 3.5.

Note that French VP Fronting cannot strand auxiliary *avoir* / *être* ('have' / 'be'); the licensing head apparently needs to hold some lexico-semantic impact (ii).

- (i) a. *Mangé des escargots, Jean l' a.
 eaten of.the snails Jean it has
 'Jean has eaten some snails.'
- b. Mangé des escargots, Jean l' a fait.
 eaten of.the snails Jean it has done
 'Jean has eaten some snails.'
- (ii) a. Ne pas partir à l' école immédiatement, je le peux. (Kim & Sag 2002: 358)
 not leave to the school immediately I it can
 'I am allowed not to go to school immediately.'
- b. Ne pas obéir aux ordres, le Général [l'] a osé.
 not obey to.the orders the general it has dared
 'The general dared not to obey the orders.'

- c. Soulever 200 kilos, Jean (*probablement / *évidemment / *souvent / *plusieurs fois / *toujours / *juste avant / *facilement) le pouvait.

While all types of adverbs may precede the gap in Fronting constructions with simple tense, the various types of adverbs differ in whether or not they may occur in pre-gap position in *C'est*-Clefts. Epistemic and evidential adverbs in final position in Clefts strongly tend to be set off from the rest of the clause by comma-intonation (5.3a,b) just as in their parenthetical usage following an object (5.3c), suggesting that they do not allow for pre-gap placement in Clefts. Yet epistemic and evidential adverbs are not excluded from Cleft structures *per se*; besides placement within the matrix clause as in (5.4), their occurrence in the relative clause of a Cleft is acceptable as long as some phonetic material follows them (5.5).

- (5.3) a. C'est Marie que Max aime *(,) (évidemment / probablement).
it is Marie that Max loves evidently probably
'Max (evidently / probably) loves Marie.'
- b. C'est regarder la télé que Jean veut *(,) (évidemment / probablement).
it is watch the TV that Jean wants.to evidently probably
'Jean (evidently / probably) wants to watch TV.'
- c. Jean regarde la télé *(,) (évidemment / probablement).
Jean watches the TV evidently probably
'Jean is (evidently / probably) watching TV.'
- (5.4) a. C'est (évidemment / probablement) Claude qu' elle a embrassé.
it is evidently probably Claude that she has kissed
'She has (evidently / probably) kissed Claude.'
- b. C'est (évidemment / probablement) regarder la télé que Jean ne peut pas.
it is evidently probably watch the TV that Jean not can not
'Jean is (evidently / probably) not allowed to watch TV.'
- (5.5) a. C'est Claude qu'elle a (évidemment / probablement) embrassé.
b. C'est regarder la télé que Jean ne peut (évidemment / probablement) pas.

In contrast to epistemic and evidential adverbs, frequency, temporal, and subject-oriented ones may occur in pre-gap position in the relative clause of a Cleft. Frequency and temporal adverbs may follow a lexical verb in an object Cleft (5.6a, 5.7a) as well as a modal one in a VP Cleft under a wide or narrow scope reading (5.6b, 5.7b). Yet subject-oriented adverbs are not acceptable in pre-gap position behind a lexical verb (i.e. if an object is clefted as in (5.8a)), while they are behind a modal verb (i.e. if VP is clefted, (5.8b)). Consequently, the acceptability of pre-gap placement of a subject-oriented adverb seems to be influenced by its scope: it may follow a modal verb that takes scope over it, but not a lexical verb which is within the adverb's modificational domain. As shown in (5.9a,b), just as epistemic and evidential adverbs, subject-oriented ones may occur in the relative clause of an object Cleft as long as they do not appear in pre-gap position; placement within the matrix clause, by contrast, is strongly marked, (5.9c).

- (5.6) a. C'est Pauline que Guy appelle souvent.
it is Pauline that Guy phones often
'Guy often phones Pauline.'
- b. C'est déjeuner du pain que je veux continuellement.
it is breakfast of.the bread that I want.to continually
i) 'I constantly want to have bread for breakfast.'
ii) 'I want to have bread for breakfast constantly.'
- (5.7) a. C'est Carla que Pierre rencontrera bientôt.
it is Carla that Pierre will.met soon
'Pierre will meet with Carla soon.'
- b. C'est retourner à la maison qu' elle voulait immédiatement.
it is return to the house that she wanted.to immediately
i) 'She immediately wanted to go home.'
ii) 'She wanted to go home immediately.'
- (5.8) a. *C'est Alice que Samuel invitera gentiment.
it is Alice that Samuel will.invite nicely
'Samuel nicely will invite Alice.'
- b. C'est déménager à Nice que Pierre doit intelligemment.
it is move to Nice that Pierre should intelligently
'Pierre should intelligently move to Nice.'
- (5.9) a. C'est Alice que Samuel n' invitera intelligemment plus.
it is Alice that Samuel not will.invite intelligently anymore
'Samuel intelligently won't invite Alice anymore.'
- b. C'est Alice que Samuel a gentiment invité.
it is Alice that Samuel has nicely invited
'Samuel nicely has invited Alice.'
- c. ?*C'est gentiment Alice que Samuel invitera.

Hence, the various types of adverbs differ in which type of gap (CLLD or Cleft) they may precede in clauses with simple tense. Similarly, the acceptability of pre-gap adverb occurrence behind a non-finite verb depends on the type of adverb, and - in case of subject-oriented adverbs - on scope. In section 3.2 it was shown that in French, a non-finite lexical verb or auxiliary may be moved in front of an adverb that takes scope over it, (5.10). Recall that the hypothesis that the sequence *non-finite verb - adverb* may result from movement of the non-finite verb is supported by the fact that this order is scopally ambiguous (5.11a) whereas the reverse order is restricted to a wide scope interpretation of the adverb (5.11b).

- (5.10) a. Paul a donné apparemment ce livre à Marie. (Kim & Sag 2002: 396)
Paul has given apparently this book to Marie
'Paul has apparently given this book to Marie.'

- b. Marc avait été peut-être refusé par la majorité des candidates.
 Marc had been perhaps refused by the majority of the candidates
 (Ernst 2002: 375)
 'Marc had perhaps been refused by the majority of the candidates.'
- (5.11) a. Samuel a du régulièrement boire de l'huile de foie de morue.
 Samuel has had.to regularly drink of the cod-liver.oil
 i) 'Samuel was regularly forced to drink cod-liver oil.'
 ii) 'Samuel was forced to drink cod-liver oil regularly.'
- b. Samuel a régulièrement du boire de l'huile de foie de morue.
 i) 'Samuel was regularly forced to drink cod-liver oil.'
 ii) #'Samuel was forced to drink cod-liver oil regularly.'

As in Clefts, evidential and epistemic adverbs on the one hand, and frequency, temporal, and subject-oriented adverbs on the other hand contrast in the acceptability of pre-gap adverb placement behind a non-finite verb. Although epistemic and evidential adverbs can be placed behind a non-finite verb (5.10), the order *non-finite verb - adverb* is unacceptable (without comma-intonation) in case no phonetic material follows the adverb - irrespective of the syntactic construction, Fronting or Cleft (5.12, 5.13). Subject-oriented, frequency, and temporal adverbs, however, may occur in pre-gap position following a non-finite verb without comma-intonation. Yet subject-oriented adverbs apparently are only acceptable in that position under a narrow scope reading: the preceding non-finite verb has to be a modal one as in (5.14); an adverb that is ambiguous between a subject-oriented and a manner reading is restricted to the manner interpretation if occurring in pre-gap position following a non-finite lexical verb, (5.15). By contrast, frequency and temporal adverbs in pre-gap position allow for a preceding lexical or modal verb (5.16)-(5.18); though a narrow scope reading of the adverb is preferred in post-modal position, a wide scope reading is also accessible according to my native speaker informants. Note that just as in the non-gap construction in (5.11), the order *adverb - non-finite modal* unambiguously marks the adverb as taking wide scope in Fronting and Cleft constructions.

- (5.12) a. Le diamant, Jean l'a (évidemment / peut-être) volé.
 the diamond Jean it has evidently perhaps stolen
 'Jean has (evidently / perhaps) stolen the diamond.'
- b. Le diamant, Jean l'a volé *(,) (évidemment / peut-être).
- c. C'est le diamant que Jean a (évidemment / peut-être) volé.
 it is the diamond that Jean has evidently perhaps stolen
 'Jean has (evidently / perhaps) stolen the diamond.'
- d. C'est le diamant que Jean a volé *(,) (évidemment / peut-être).
- (5.13) a. Aller à l'école, Christian l'a (apparemment / peut-être) du.
 go to the school Christian it has apparently perhaps had.to
 'Christian was (apparently / perhaps) forced to go to school.'
- b. Aller à l'école, Christian l'a du *(,) (apparemment / peut-être).

- c. C'est aller à l' école que Christian a (apparemment / peut-être) du.
it is go to the school that Christian has apparently perhaps had.to
'Christian was (apparently / perhaps) forced to go to school.'
- d. C'est aller à l'école que Christian a du *(,) (apparemment / peut-être).
- (5.14) a. Déménager à Nice, Pierre l' a du intelligemment.
move to Nice Pierre it has been.necessary intelligently
'Pierre should intelligently have moved to Nice.'
- b. C'est déménager à Nice que Pierre a du intelligemment.
it is move to Nice that Pierre has been.necessary intelligently
'Pierre should intelligently have moved to Nice.'
- (5.15) a. Charles, Sophie l' a gentiment salué.
Charles, Sophie him has nicely greeted
i) 'It was nice of Sophie to greet Charles.'
ii) 'Sophie greeted Charles in a nice way.'
- b. Charles, Sophie l'a salué gentiment.
i) #'It was nice of Sophie to greet Charles.'
ii) 'Sophie greeted Charles in a nice way.'
- c. C'est Charles que Sophie a gentiment salué.
it is Charles that Sophie has nicely greeted
i) 'It was nice of Sophie to greet Charles.'
ii) 'Sophie greeted Charles in a nice way.'
- d. C'est Charles que Sophie a salué gentiment.
i) #'It was nice of Sophie to greet Charles.'
ii) 'Sophie greeted Charles in a nice way.'
- (5.16) a. François, Jaques l' a (souvent / récemment) rencontré.
François Jaques him has often recently met
'Jaques (often / recently) met with François.'
- b. François, Jaques l'a rencontré (souvent / récemment).
- c. C'est François que Jaques a (souvent / récemment) rencontré.
it is François that Jaques has often recently met
'Jaques (often / recently) met with François.'
- d. C'est François que Jaques a rencontré (souvent / récemment).
- (5.17) a. Prendre son remède, Jean l' a régulièrement du.
take his medicine Jean it has regularly been.forced.to
i) 'Jean was regularly forced to take his medicine.'
ii) #'Jean was forced to take his medicine regularly.'
- b. Prendre son remède, Jean l'a du régulièrement.
i) 'Jean was regularly forced to take his medicine.'
ii) 'Jean was forced to take his medicine regularly.'
- c. C'est prendre son remède que Jean a régulièrement du.
it is take his medicine that Jean has regularly been.forced.to
i) 'Jean was regularly forced to take his medicine.'

- ii) #'Jean was forced to take his medicine regularly.'
- d. C'est prendre son remède que Jean a du régulièrement.
 i) 'Jean was regularly forced to take his medicine.'
 ii) 'Jean was forced to take his medicine regularly.'
- (5.18) a. Manger des escargots, Yvonne l' a ensuite voulu.
 eat of.the snails Yvonne it has after.that wanted.to
 i) 'Afterwards, Yvonne decided to eat snails.'
 ii) #'Yvonne planned to eat snails afterwards.'
- b. Manger des escargots, Yvonne l'a voulu ensuite.
 i) 'Afterwards, Yvonne decided to eat snails.'
 ii) 'Yvonne planned to eat snails afterwards.'
- c. C'est manger des escargots que Yvonne a ensuite voulu.
 it is eat of.the snails that Yvonne has after.that wanted.to
 i) 'Afterwards, Yvonne decided to eat snails.'
 ii) #'Yvonne planned to eat snails afterwards.'
- d. C'est manger des escargots que Yvonne a voulu ensuite.
 i) 'Afterwards, Yvonne decided to eat snails.'
 ii) 'Yvonne planned to eat snails afterwards.'

The distributional pattern of adverbs in French CLLDs and Clefts is summarized in Figure 5.1. As in English, the acceptability of pre-gap adverb placement in French depends on the type of adverb, its scope (in case of subject-oriented adverbs), and the syntactic construction (CLLD vs. Cleft; simple vs. periphrastic tense). All types of adverbs may occur in pre-gap position following a finite lexical or modal verb in CLLDs. By contrast, pre-gap adverb occurrence in Clefts or behind a non-finite verb is influenced by the type of adverb and its scope: epistemic and evidential adverbs cannot emerge as clause-final element in these cases (without comma-intonation) whereas frequency, temporal, and subject-oriented adverbs can. Yet frequency and temporal adverbs in pre-gap position may follow a lexical verb or a modal with wide or narrow scope reading, but subject-oriented adverbs only allow for a preceding modal verb that takes wide scope; consequently, it apparently depends on the scope of a subject-oriented adverb whether its pre-gap placement is acceptable in these cases.

Figure 5.1: Adverb occurrence in front of a gap in French

adverb type	scope	syntactic construction			
		CLLD		Cleft	
		simple tense	periphrastic tense	simple tense	periphrastic tense
epistemic	wide	✓	*	*	*
evidential	wide	✓	*	*	*
subject-oriented	wide	✓	*	*	*
	narrow	✓	✓	✓	✓
frequency	wide	✓	✓	✓	✓
	narrow	✓	✓	✓	✓
temporal	wide	✓	✓	✓	✓
	narrow	✓	✓	✓	✓

5.2 Adverb Placement in Clitic Left Dislocations

This section investigates the distribution of adverbs in French Fronting constructions with simple and periphrastic tense. It will be shown that the constraint ADJCON prohibiting adverb adjunction to a phonetically empty constituent and its differentiation according to adverb type may capture the fact that the acceptability of pre-gap adverb placement in CLLDs depends on the type of adverb and the tense of the clause, simple vs. periphrastic forms.

Remember that in English, an adverb with wide scope reading cannot precede any type of gap in non-inverted clauses - at least the finite auxiliary has to intervene between the adverb and the gap (compare section 4.4) - while pre-gap adverb placement may be acceptable if the adverb takes narrow scope or subject-auxiliary inversion takes place, depending on the type of adverb and the type of gap: only certain types of adverbs may precede a gap induced by Topicalization, VP Fronting, or VP Ellipsis in these cases while all types of adverbs may appear in front of a *wh*-gap. Unlike English, adverb intervention between the subject and the finite verb is never acceptable in French; i.e. pre-verbal placement cannot prevent an adverb from preceding a gap, indicating that OBHD and *X'-ADJ outrank ADJCON in French: the finite verb has to move to I⁰, adjunction to I' is strictly prohibited (compare example (5.2) above as well as candidates T5.1b,d).² Hence, French adverbs cannot make use of the same strategy as wide scope adverbs in English non-inverted gap constructions. Rather, CLLD of an object or a VP may strand any type of adverb in pre-gap position following a finite lexical or modal verb, irrespective of scope. Dominance of TOPIC over ADJCON may account for the fact that fronting of a topical phrase is not refrained from to avoid adverb attachment to a phonetically empty constituent (see candidate T5.1f); in addition, the ranking predicts that an adverb does not precede the CLLDed phrase (candidate T5.1c).³ Furthermore, the clitic

² Recall that due to the inviolable constraint MODIFIER, base-positioning of an adverb relative to a modal verb depends on their scopal relation: under a narrow scope reading the adverb is merged below the base position of the modal (ia) whereas it is generated above the modal's base position if it outscopes the modal (ib).

- (i) a. [IP Jean_j doit_i [AUXP t_i [VP régulièrement [VP prendre son remède]]]]
 Jean must regularly take his medicine
 'Jean has to take his medicine regularly.'
 b. [IP Jean_j doit_i [AUXP régulièrement [AUXP t_i [VP prendre son remède]]]]
 'Jean regularly has to take his medicine.'

Consequently, SCMA opposes placement of a narrow scope adverb in front of the finite verb (or the subject) as well, see Tableau T5.2.

³ Note that just as clause-initial positioning, adverb placement between the fronted constituent and the subject is only marginally acceptable, requiring comma-intonation:

- (i) a. ??Regarder la télé, probablement, Jean le veut.
 watch the TV probably Jean it wants.to
 'Probably, Jean would like to watch TV.'
 b. ??Probablement, regarder la télé, Jean le veut.

Given that the subject is typically [+top] and that a [+top] subject may occur in Spec,IP, positioning of an adverb in front of the subject is usually penalized by TOPIC (see section 3.5). Remember that a focused subject normally gives rise to a Cleft structure in French so that adverb occurrence in front of the subject should not be due to the requirement of ADV<+FOC (see section 3.4). Clause-initial adverb placement as in (i) is thus only expected in case the adverb itself is marked for (some feature similar to) [+top], triggering its left-peripheral occurrence.

pronoun that resumes the phrase in topic position (whether object or VP) has to attach to the finite verb (CLITIC >> ADJCON; compare candidate T5.1e). Hence, merged above (wide scope adverb, T5.1) or below the base position of the finite verb (narrow scope adverb, T5.2), placement of any type of adverb in pre-gap position is expected to be optimal in VP or object Fronting constructions.⁴ (Note that the disparate ADJCON-subconstraints are ranked differently, as supported by the contrasts between the various types of adverbs in the acceptability of pre-gap placement in clauses with periphrastic tense and in Clefts, see below.)

T5.1		OBHD	*X-ADJ	CLITIC	TOPIC	ADJCON _{epis}	STAY-XP	STAY-X
	Cette fille, il l' aime probablement. this girl he her likes probably 'He probably likes this girl.'							
☞ a	[IP [DP Cette fille] _{[+top]k} [IP il _j la _k -aime _i [VP probablement [VP t _j t _i t _k]]]]					*	*	**
b	[IP [DP Cette fille] _{[+top]k} [IP il _j probablement [l' la _k -aime _i [VP t _j t _i t _k]]]]		*!				*	**
c	[IP Probablement [IP [DP cette fille] _{[+top]k} [IP il _j la _k -aime _i [VP t _j t _i t _k]]]]				*!		*	**
d	[IP [DP Cette fille] _{[+top]k} [IP il _j e [VP probablement [VP t _j la _k -aime t _k]]]]	*!					*	*
e	[IP [DP Cette fille] _{[+top]k} [IP il _j aime _i [VP probablement [VP t _j t _i la _k]]]]			*!			*	*
f	[IP Il _j aime _i [VP probablement [VP t _j t _i [DP cette fille] _{[+top]l}]]]]				*!*		*	*

T5.2		*X-ADJ	CLITIC	SCMA	TOPIC	STAY-XP	STAY-X	ADJCON _{emp}
	Manger des escargots, il le veut ensuite. eat of.the snails he it wants.to afterwards 'He wants to eat snails afterwards.'							
☞ a	[IP [VP t _j Manger des escargots] _{[+top]k} [IP il _j le _k -veut _i [AuxP t _i [VP ensuite t _k]]]]					*	**	*
b	[IP [VP t _j Manger des escargots] _{[+top]k} [IP il _j ensuite _i [l' le _k -veut _i [AuxP t _i [VP t _j t _k]]]]]]	*!		*		**	**	
c	[IP Ensuite _i [IP [VP t _j manger des escargots] _{[+top]k} [IP il _j le _k -veut _i [AuxP t _i [VP t _j t _k]]]]]]			*!	*	**	**	
d	[IP [VP t _j Manger des escargots] _{[+top]k} [IP il _j veut _i [AuxP t _i [VP ensuite le _k]]]]		*!			*	*	
e	[IP Il _j veut _i [AuxP t _i [VP ensuite [VP t _j manger des escargots] _{[+top]l}]]]]				*!*	*	*	

While irrespective of adverbial scope all types of adverbs may precede a gap in CLLD constructions with simple tense, the various types of adverbs differ in whether or not they may follow a non-finite verb in pre-gap position. The influence of adverb type on the acceptability of pre-gap occurrence supports the hypothesis that the constraint ADJCON is differentiated according to adverb type put forward on the basis of the distribution of adverbs in English gap constructions in the previous chapter. Epistemic and evidential adverbs necessarily outscope a non-finite verb (see section 2.2). As illustrated in (5.19a), they require comma-intonation in case they appear in clause-final position following a non-finite verb.

⁴ Note that under the assumption that a fronted VP is base-generated in fronted position (compare footnote 1), the question arises how the subject and its trace are licensed; on that matter see Haider 1990 and Heycock 1995.

This prosodic effect indicates that these types of adverbs do not occur in pre-gap position in this case: while they may follow a non-finite verb without comma-intonation in the presence of subsequent phonetic material (5.19c), comma-intonation is likewise obligatory in parenthetical, clause-final position following an object as in (5.19d) (see also footnote 11 in section 3.2). These facts point to the conclusion that the adverb in (5.19b) does not occupy the same structural position as in (5.19c), but rather occurs in parenthetical position as the one in (5.19d). Consequently, pre-gap placement of epistemic and evidential adverbs behind a non-finite verb seems to be prohibited.

- (5.19) a. *Cette fille, Jean l' a embrassée probablement.
 this girl Jean her has kissed probably
 'Jean has probably kissed this girl.'
- b. Cette fille, Jean l'a embrassée, probablement.
- c. ?Jean a embrassé probablement cette fille.
- d. Jean a embrassé cette fille *(,) probablement.

By contrast, a subject-oriented adverb may occur in pre-gap position following a non-finite verb under a narrow scope reading; i.e., it may appear behind a non-finite modal in VP Fronting constructions (5.20a) whereas its pre-gap placement behind a non-finite lexical verb in object CLLDs is prohibited: the sentence in (5.20b) is only acceptable under a manner reading of the adverb, compare (5.15) above. Frequency (5.21) and temporal adverbs in pre-gap position (5.22), however, may follow both a non-finite lexical verb or a modal; moreover, though a narrow scope reading is preferred following a non-finite modal, a wide scope interpretation is also acceptable.

- (5.20) a. Déménager à Nice, Pierre l' a du intelligemment.
 move to Nice Pierre it has been.necessary intelligently
 'Pierre should have intelligently moved to Nice.'
- b. *Charles, Sophie l' a salué gentiment.
 Charles Sophie him has greeted nicely
 'It was nice of Sophie to greet Charles.'
- (5.21) a. Yvonne, Louis l' a rencontrée souvent.
 Yvonne Louis her has met often
 'Louis often met with Yvonne.'
- b. Manger des escargots, Louis l' a voulu continuellement.
 eat of.the snails Louis it has wanted.to continually
 i) 'Louis continually wanted to eat snails.'
 ii) 'Louis wanted to eat snails continually.'
- (5.22) a. Yvonne, Louis l' a rencontrée récemment.
 Yvonne Louis her has met recently
 'Louis recently met with Yvonne.'
- b. [Jean did not only manage to run a marathon.]

Courir 100 mètres en 10 secondes, Jean l' a pu ensuite.
 Run 100 meters in 10 seconds Jean it has been.able.to afterwards
 'Jean was able to run 100 meters in 10 seconds afterwards.'

- c. [Jean has had an accident and is now paraplegic.]
 Courrir 100 mètres en 10 secondes, Jean l' a pu auparavant.
 Run 100 meters in 10 seconds Jean it has been.able.to previously
 'Before that, Jean has been able to run 100 meters in 10 seconds.'

Remember that an adverb has to be merged below an auxiliary that outscopes it (MODIFIER). The unambiguity of the order *adverb - non-finite modal* points to the ranking *ScMA >> ADJCON* (see also examples (5.17, 5.18) above): a narrow scope adverb cannot move in front of a non-finite modal to escape pre-gap placement, candidate T5.3b. Just as in CLLDs with simple tense, the ranking *TOPIC >> ADJCON* predicts that a topical phrase has to occur in clause-initial position even if this placement results in attachment of an adverb to a phonetically empty constituent (compare candidate T5.3a vs. T5.3d). Consequently, an adverb is expected to be able to occur in pre-gap position following a non-finite modal if it takes narrow scope. Since epistemic and evidential adverbs do not allow for a narrow scope reading with respect to a non-finite modal, their base-generation below a non-finite modal is excluded. By contrast, frequency and temporal adverbs may, and subject-oriented ones must take narrow scope with respect to a modal verb; their occurrence in pre-gap position following a non-finite modal is acceptable (compare (5.20)-(5.22) above).

T5.3		CLITIC	ScMA	TOPIC	STAY-XP	STAY-X	ADJCON _{req}
	Soulever 200 kilos, il l' a pu plusieurs fois. lift 200 kilos he it has been.able.to several times 'He was able to lift 200 kilos several times (in a row).'						
☞ a	[_{IP} [_{VP} t _j Soulever 200 kilos] _{[+top]k} [_{IP} il _j le _k -a _i [_{AuxP1} t _i [_{AuxP2} pu [_{VP} plusieurs fois t _k]]]]]]]				*	**	*
b	[_{IP} [_{VP} t _j Soulever 200 kilos] _{[+top]k} [_{IP} il _j le _k -a _i [_{AuxP1} t _i [_{AuxP2} plusieurs fois _i [_{AuxP2} pu [_{VP} t _i t _k]]]]]]]]]		*!		**	**	
c	[_{IP} [_{VP} t _j Soulever 200 kilos] _{[+top]k} [_{IP} il _j a _i [_{AuxP1} t _i [_{AuxP2} pu [_{VP} plusieurs fois [_{VP} le _k]]]]]]]]]	*!			*	*	
d	[_{IP} Il _j a _i [_{AuxP1} t _i [_{AuxP2} pu [_{VP} plusieurs fois [_{VP} t _j soulever 200 kilos] _{[+top]l}]]]]]]]			*!*	*	*	

Under a wide scope reading of the adverb, the sequence *non-finite verb - adverb* must be derived by movement of the non-finite verb: the adverb is merged in a position above the verb, which moves in front of it (MODIFIER).⁵ Hence, the contrast between the various types

⁵ Recall that the extended chain formation mechanism allows an adverb to take scope over the whole extended chain if it c-commands some member of it (compare section 3.2). I.e., the adverb in (i) may take scope over the finite auxiliary although it is merged below its base position: the adverb c-commands the trace of the non-finite verb, which forms an extended chain with the finite auxiliary; it is thus able to satisfy its semantic requirements as a PROPOSITION-modifier.

of adverbs in occurring in pre-gap position behind a non-finite verb under a wide scope reading seems to be based on a difference in whether or not non-finite verb movement may result in their adjunction to a phonetically empty constituent. As argued in section 3.4, non-finite verb movement in French might be triggered by $-FOC < ADV$, suggesting that the various ADJCON-subconstraints differ in their ranking relative to that constraint. $-FOC < ADV$ being dominated by the ADJCON-subconstraints of subject-oriented, epistemic, and evidential adverbs, it is predicted that these types of adverbs do not allow for pre-gap placement under a wide scope reading in VP or object Fronting constructions with periphrastic tense: non-finite verb movement across these types of adverbs may only take place if it does not deprive the adverb's sister constituent of all its phonetic material (compare example (5.19) above); otherwise, the adverb has to precede the non-finite verb: non-finite verb movement is refrained from to prevent the adverb from adjoining to a phonetically empty constituent, see Tableaux T5.4 and T5.5. Epistemic and evidential adverbs are thus excluded from pre-gap position behind a non-finite verb altogether. Subject-oriented adverbs, by contrast, may occur in that position under a narrow scope interpretation (see (5.20)): they may follow a non-finite modal, but not a lexical verb in front of a gap. An adverb that is ambiguous between a manner and a subject-oriented reading is restricted to the manner reading if following a non-finite lexical verb in pre-gap position. Under a manner reading, the order *non-finite lexical verb - adverb* does not have to involve non-finite verb movement; rather, the adverb might be placed to the right of the verb within VP, as illustrated in (5.23b) (see also section 3.2). Consequently, pre-gap occurrence of a subject-oriented adverb is apparently only permitted in VP Fronting constructions, but not in object CLLDs with periphrastic tense.

- (5.23) a. * $[_{IP} Charles_k [_{IP} Sophie_j l_k' a_i [_{AUXP} salué_l-t_i [_{VP} gentiment [_{VP} t_j t_i t_k]]]]]$
 Charles Sophie him has greeted nicely
 'It was nice of Sophie to greet Charles.'
- b. $[_{IP} Charles_k [_{IP} Sophie_j l_k' a_i [_{AUXP} t_i [_{VP} t_j salué_l gentiment t_k]]]]]$
 'Sophie greeted Charles in a nice way.'

-
- (i) a. $[_{IP} Jean_j a_i [_{AUXP} résolu_k-t_i [_{VP} probablement [_{VP} t_j t_k tes problèmes]]]]]$ (Ernst 2002: 377)
 Jean has resolved probably your problems
 'Jean has probably resolved your problems.'
- b. $[_{IP} Pierre_j a_i [_{AUXP1} du_k-t_i [_{AUXP2} probablement [_{AUXP2} t_k [_{VP} t_j ranger sa chambre]]]]]$
 Pierre has had.to probably tidy.up his room
 'Pierre has probably been forced to tidy up his room.'

T5.4	Manger des escargots, il l' a probablement voulu. eat of.the snails he has probably wanted.to 'He probably wanted to eat snails.'	TOPIC	ADJCON _{epis}	STAY-XP	-FOC<ADV	STAY-X
☞ a	[IP [VP t _j Manger des escargots] _{[+top]k} [IP il _j le _k -a _i [AuxP1 probablement [AuxP2 voulu _[-foc] t _k]]]]]			*	*	**
b	[IP [VP t _j Manger des escargots] _{[+top]k} [IP il _j le _k -a _i [AuxP1 voulu _[-foc] -t _i [AuxP2 probablement [AuxP2 t _i t _k]]]]]		*!	*		***
c	[IP Il _j a _i [AuxP1 voulu _[-foc] -t _i [AuxP2 probablement [AuxP2 t _i [VP t _j manger des escargots] _[+top]]]]]]	*!*		*		**
T5.5	Cette fille, Jean l' a gentiment saluée. this girl Jean her has nicely greeted 'Jean nicely has greeted this girl.'	TOPIC	ADJCON _{sub-ori}	STAY-XP	-FOC<ADV	STAY-X
☞ a	[IP [DP Cette fille] _{[+top]k} [IP Jean _j la _k -a _i [AuxP gentiment [AuxP t _i [VP t _j saluée _[-foc] t _k]]]]]			*	*	**
b	[IP [DP Cette fille] _{[+top]k} [IP Jean _j la _k -a _i [AuxP saluée _[-foc] -t _i [VP gentiment [VP t _j t _i t _k]]]]]		*!	*		***
c	[IP Jean _j a _i [AuxP saluée _[-foc] -t _i [VP gentiment [VP t _j t _i [DP cette fille] _[+top]]]]]]	*!*		*		**

In contrast to epistemic, evidential, and subject-oriented adverbs, frequency and temporal ones may occur in clause-final position following a non-finite lexical or modal verb also under a wide scope reading; i.e., non-finite verb movement is seemingly not refrained from to prevent these types of adverbs from preceding a gap, indicating that their ADJCON-subconstraints are outranked by -FOC<ADV (see Tableaux T5.6 and T5.7 below). Hence, in contrast to subject-oriented adverbs, the acceptability of pre-gap placement of frequency and temporal adverbs is not influenced by scope: under a narrow scope reading, they are base-generated below the non-finite modal while non-finite verb movement may give rise to pre-gap placement of the adverb with wide scope reading. Consequently, both object CLLD and VP Fronting may result in attachment of a frequency or temporal adverb to a phonetically empty constituent in clauses with periphrastic tense.⁶

⁶ Note that the hierarchic ranking of ADJCON_{temp} relative to -FOC<ADV is carried out on the basis of the distributional similarity of temporal adverbs to frequency ones. Temporal adverbs are not focus-sensitive: they cannot precede a focused constituent in the prefield position in German, and do not give rise to focus-dependent interpretative effects as focus-sensitive frequency and sentence adverbs do (compare section 3.4).

- (i) a. Bedauerlicherweise / *Letztens [dem Otto]_[+foc] hat sich die Maria anvertraut.
unfortunately recently the Otto has herself the Maria confided.in
'Maria has (unfortunately / recently) confided in Otto.'
b. Glücklicherweise / *Bald [den Karl]_[+foc] wird die Susanne heiraten.
fortunately soon the Karl will the Susanne marry
'Susanne will (fortunately / soon) marry Karl.'

The focus constraints ADV<+FOC and -FOC<ADV are formulated with regard to placement of focus-sensitive adverbs. The violation of *CP-ADJ induced by the sentences in (i) may thus never be legitimized in case of a CP-adjoined temporal adverb, excluding temporal adverbs from that position.

Temporal adverbs not being focus-sensitive, non-finite verb movement across them cannot be triggered by the constraint -FOC<ADV and is thus unexpected because of the violation of STAY-X (and, potentially, ADJCON) it causes. In fact, the exact structural position of a wide scope temporal adverb behind a non-finite verb cannot be

determined in gap constructions: in contrast to e.g. subject-oriented, epistemic, and evidential adverbs, temporal ones allow for right-adjunction (ii); as shown in the sentences in (iii), a clause-final temporal adverb may outscope a scope-bearing element in medial position (compare footnote 11 in chapter 3.2). Consequently, their clause-final occurrence as in (iva) might not involve pre-gap placement derived by non-finite verb movement (ivb); the adverb could as well be right-adjoined above the non-finite verb, satisfying ADJCON (ivc). (Note that in case the temporal adverb in clause-final position takes narrow scope relative to a non-finite modal, it must be attached to a phonetically empty constituent - whether it is adjoined to the left or to the right: due to MODIFIER, it has to be merged below the modal and cannot move in a position c-commanding the modal (SCMA >> ADJCON); hence, a violation of ADJCON_{temp} may be tolerated in an output at least under a narrow scope reading of a temporal adverb.)

- (ii) a. Jean a récemment voulu embrasser Marie.
Jean has recently wanted.to kiss Marie
'Jean recently wanted to kiss Marie.'
- b. Jean a voulu embrasser Marie récemment.
- c. Jean a parlé à Marie récemment. (Laenzlinger 2000: 124)
Jean has spoken to Marie recently
'Jean has recently spoken to Marie.'
- d. La direction a décidé l' affaire maintenant. (Ernst 2002: 163)
the management has decided the matter now
'The management has now decided the matter.'
- (iii) a. He didn't come home twice again last week. (Ernst 2000: 85)
b. They didn't understand us out of fear momentarily, but then did so because of our accents for another few minutes. (Ernst 2000: 86)
- (iv) a. Manger des escargots, Charles l' a voulu récemment.
eat of.the snails Charles it has wanted.to recently
'Charles recently wanted to eat snails.'
- b. [IP [VP t_j Manger des escargots]_i [IP Charles_j le_i-a_i [AuxP1 voulu_k-t_i [AuxP2 récemment [AuxP2 t_k t_i]]]]]
- c. [IP [VP t_j Manger des escargots]_i [IP Charles_j le_i-a_i [AuxP1 [AuxP1 t_i [AuxP2 voulu_k t_i]] récemment]]]

Yet the fact that temporal adverbs may occur behind a non-finite verb in the presence of following overt material points out that non-finite verb movement across them is possible.

- (v) a. ?Jean a lu récemment un livre.
Jean has read recently a book
'Jean has recently read a book.'
- b. ?Jean a du récemment manger des escargots.
Jean has had.to recently eat of.the snails
'Jean was recently forced to eat snails.'

In Italian, non-finite verbs may optionally precede certain types of adverbs that are not focus-sensitive as well (compare footnote 19 in chapter 2), indicating that there are other triggers for (i.e. other constraints requiring) non-finite verb movement than -FOC<ADV whose nature cannot be investigated here, but which might be responsible for non-finite verb movement across a temporal adverb in French, too. Such a constraint would presumably have to be ranked similar to -FOC<ADV; i.e., it would need to dominate STAY-X to be able to motivate movement and it has to be outranked by the ADJCON-subconstraints of epistemic, evidential, and subject-oriented adverbs in order to exclude their pre-gap occurrence behind a non-finite verb (under a wide scope reading).

Note that frequency adverbs, which are focus-sensitive, can also be right-adjoined; in clause-final position, they may be scopally ambiguous with respect to a medial adverb or negation (see footnotes 11 and 53 in chapter 3).

- (vi) a. Ils ont gagné de l' argent souvent. (Ernst 2002: 163)
they have won of the money often
'They have often won money.'
- b. He willingly kissed her often.
i) 'He willingly often kissed her.'
ii) 'He often willingly kissed her.'
- c. The committee hasn't called him in again. (Ernst 2002: 180)
i) 'The committee again hasn't called him in.'
ii) 'The committee hasn't again called him in.'

T5.6	Manger des escargots, il l' a voulu souvent. eat of.the snails he it has wanted.to often 'He often wanted to eat snails.'	TOPIC	STAY-XP	-FOC<ADV	STAY-X	ADJCON _{freq}
a	[_{IP} [_{VP} t _j Manger des escargots] _{[+top]k} [_{IP} il _j le _k -a _i [_{AuxP1} souvent [_{AuxP1} t _i [_{AuxP2} voulu _[-foc] t _k]]]]]]]		*	*!	**	
☞ b	[_{IP} [_{VP} t _j Manger des escargots] _{[+top]k} [_{IP} il _j le _k -a _i [_{AuxP1} voulu _[-foc] -t _i [_{AuxP2} souvent [_{AuxP2} t _i t _k]]]]]]]		*		***	*
c	[_{IP} Il _j a _i [_{AuxP1} voulu _[-foc] -t _i [_{AuxP2} souvent [_{AuxP2} t _i [_{VP} t _j manger des escargots] _[+top]]]]]]]]	*!*	*		**	
T5.7	Cette fille, Jean l' a embrassée souvent. this girl Jean her has kissed often 'Jean often kissed this girl.'	TOPIC	STAY-XP	-FOC<ADV	STAY-X	ADJCON _{freq}
a	[_{IP} [_{DP} Cette fille] _{[+top]k} [_{IP} Jean _j la _k -a _i [_{AuxP} souvent [_{AuxP} t _i [_{VP} t _j embrassée _[-foc] t _k]]]]]]]		*	*!	**	
☞ b	[_{IP} [_{DP} Cette fille] _{[+top]k} [_{IP} Jean _j la _k -a _i [_{AuxP} embrassée _[-foc] -t _i [_{VP} souvent [_{VP} t _j t _i t _k]]]]]]]		*		***	*
c	[_{IP} Jean _j a _i [_{AuxP} embrassée _[-foc] -t _i [_{VP} souvent [_{VP} t _j t _i [_{DP} cette fille] _[+top]]]]]]]]	*!*	*		**	

Summing up, CLLD of an object or a VP may strand any type of adverb in pre-gap position in clauses with simple tense, irrespective of adverbial scope: the topical phrase has to occur in clause-initial position, adverb placement in front of some overt element is impossible (OBHD >> CLITIC >> *X'-ADJ >> SCMA >> TOPIC >> ADJCON). By contrast, in Fronting constructions with periphrastic tense, it depends on the type of adverb (and for subject-oriented adverbs also on scope) whether or not pre-gap placement of the adverb is acceptable. Under a narrow scope reading, pre-gap positioning of an adverb is expected to be optimal due to SCMA >> ADJCON: the adverb cannot be moved to some position c-commanding the wide scope element. Having to outscope a non-finite verb, epistemic and evidential adverbs could only emerge behind a non-finite verb by movement of the verb across them. Yet non-finite verb movement is obviously blocked in case it would result in attachment of an epistemic or evidential adverb to a phonetically empty constituent; the unacceptability of pre-gap occurrence of these types of adverbs behind a non-finite verb is accounted for by the dominance of their ADJCON-subconstraints over -FOC<ADV, the constraint that may otherwise motivate placement of an unfocused non-finite verb in front of these adverbs (compare section 3.4). Likewise, subject-oriented adverbs do not permit non-finite verb movement to give rise to their pre-gap placement: they may only be placed in front of a gap

Hence, as for temporal adverbs, clause-final occurrence of frequency adverbs behind a non-finite verb might not involve pre-gap placement under a wide scope reading. However, the distribution of frequency adverbs in Cleft sentences indicates that their ADJCON-subconstraint is outranked by -FOC<ADV (see next section), predicting that non-finite verb movement may give rise to attachment of a frequency adverb to a phonetically empty constituent. (Remember that the focus constraints do not require a certain linear relation between a focus-sensitive adverb and an (un)focused phrase, but a structural one; i.e. placement of a focus-sensitive adverb behind unfocused material satisfies -FOC<ADV only if it corresponds to a configuration in which the adverb is c-commanded by the unfocused constituents, not given in case the adverb is right-adjoined above the unfocused material.)

following a wide scope non-finite modal in VP Fronting constructions whereas they cannot follow a non-finite lexical verb in object CLLDs. By contrast, frequency and temporal adverbs may arise as clause-final elements, irrespective of scope: permitting non-finite verb movement to result in their pre-gap occurrence, they may follow a lexical or modal verb in object CLLDs or VP Fronting constructions, respectively, as captured by the dominance of the constraint -FOC<ADV over their ADJCON-subconstraints.

5.3 Adverb Placement in Clefts

While irrespective of adverbial scope all types of adverbs can precede a gap in CLLDs with simple tense, the various types of adverbs differ in whether or not they may appear in pre-gap position in Cleft sentences. The acceptability of adverb placement in front of a gap in a Cleft depends on the type of adverb and - in case of subject-oriented adverbs - on scope, irrespective of whether the sentence displays simple or periphrastic tense forms. Epistemic and evidential adverbs are not acceptable in clause-final position in Clefts (without comma-intonation) whereas subject-oriented, frequency, and temporal adverbs are. Yet a subject-oriented adverb may only arise in this position under a narrow scope reading, i.e. following a finite or non-finite modal verb in VP Clefts; it cannot be stranded in pre-gap position behind a lexical verb in an object Cleft, indicating that scope influences the acceptability of pre-gap placement of subject-oriented adverbs, compare (5.24a,b) vs. (5.24e,f). Pre-gap positioning of frequency and temporal adverbs, by contrast, is always acceptable; they may follow a finite or non-finite, lexical or modal verb and permit for both narrow and wide scope reading in clause-final position.

- (5.24) a. C'est Marie que Jean appellera (*probablement / *apparemment /
it is Marie that Jean will.phone probably apparently
*intelligemment / bientôt / régulièrement).
intelligently soon regularly
'Jean will (probably / apparently / intelligently / soon / regularly) phone Marie.'
- b. C'est Marie que Jean a appelé (*probablement / *apparemment /
it is Marie that Jean has phoned probably apparently
*intelligemment / récemment / régulièrement).
intelligently recently regularly
'Jean has (probably / apparently / intelligently / recently / regularly) phoned Marie.'
- c. C'est embrasser Marie que Jean voulait (*probablement / *apparemment /
it is kiss Marie that Jean wanted.to probably apparently
immédiatement / souvent).
instantly often
'Jean (probably / apparently / instantly / often) wanted to kiss Marie.'
- d. C'est embrasser Marie que Jean a voulu (*probablement / *apparemment /
it is kiss Marie that Jean has wanted.to probably apparently
récemment / souvent).
recently often
'Jean has (probably / apparently / recently / often) wanted to kiss Marie.'

- e. C'est prendre son remède que Charles doit (intelligemment /
it is take his medicine that Charles should intelligently
régulièrement / ensuite).
regularly afterwards
'Charles should (intelligently) take his medicine (regularly / afterwards).'
- f. C'est prendre son remède que Charles a du (intelligemment /
it is take his medicine that Charles has had.to intelligently
régulièrement / ensuite).
regularly afterwards
'Charles should have (intelligently) taken his medicine (regularly / afterwards).'

As laid out in section 3.4, Cleft structures may serve two functions. First, they might give rise to the opportunity to place the focused constituent at the right edge of a prosodic phrase; second, they make it possible to mark the focal range unambiguously: the focus appears in the matrix clause of the Cleft, the presupposed unfocused material in its relative clause (see e.g. Collins 1991a,b, Fichtner 1993, Lambrecht 1994, 2001, Jucker 1997, and Katz 2000). In case a VP or an object is focused, cleaving obviously serves the latter function: the VP or object coincides with the end of a prosodic phrase also in canonic order.

- (5.25) a. Charles veut probablement [regarder la télé]_[+foc].
Charles wants.to probably watch the TV
'Charles probably wants to watch TV.'
- b. Pierre aime évidemment [Marie]_[+foc].
Pierre likes evidently Marie
'Pierre evidently likes Marie.'

The hypothesis that the unacceptability of the occurrence of epistemic and evidential adverbs in (5.24) is due to their pre-gap placement is supported by the fact that they may appear within the relative clause of a Cleft in case some phonetic material follows them, compare (5.26); the focus-sensitivity of these adverbs does obviously not enforce their positioning in front of the focused constituent in the matrix clause as in (5.27). Similarly, frequency adverbs, which are focus-sensitive as well (see Buring 1996 and footnotes 51 and 53 in chapter 3), may optionally appear in the matrix clause of a Cleft (5.28), allowing for a wide or narrow scope reading with respect to a modal verb in the relative clause.

- (5.26) a. C'est ranger son bordel que Yves a (évidemment / probablement) du.
it is tidy.up his mess that Yves has evidently probably had.to
'Yves has (evidently / probably) been forced to tidy up his mess.'

- b. C'est ranger son bordel que Yves ne veut (évidemment / probablement)
 it is tidy.up his mess that Yves not wants.to evidently probably
 pas.
 not
 'Yves (evidently / probably) doesn't want to tidy up his mess.'
- c. C'est Claude qu' elle a (évidemment / probablement) embrassé.
 it is Claude that she has evidently probably kissed
 'She has (evidently / probably) kissed Claude.'
 'It is Claude that she has (evidently / probably) kissed.'
- (5.27) a. C'est (évidemment / probablement) ranger son bordel que Yves a du.
 b. C'est (évidemment / probablement) Claude qu'elle a embrassé.
- (5.28) a. C'est souvent Marie que Jean appelle.
 it is often Marie that Jean phones
 'Jean often phones Marie.'
- b. C'est régulièrement manger des escargots que Pierre veut.
 it is regularly eat of.the snails that Pierre wants
 i) 'Pierre regularly wants to eat snails.'
 ii) 'Pierre wants to eat snails regularly.'

The acceptability of adverb positioning in both the matrix and the relative clause of a Cleft indicates that the two focus constraints are tied: while placement of a focus-sensitive adverb in front of the focused constituent in the matrix clause is required by $ADV < +FOC$, $-FOC < ADV$ favors its occurrence behind the unfocused material in the relative clause (i.e. its pre-gap placement). In addition, adverb distribution in Cleft sentences points to the conclusion that CLEFT outranks the two focus constraints: Clefts are possible although an adverb may immediately precede a focused VP or object in canonical order, following the unfocused material (compare (5.25) above). In summary, these considerations - together with the hierarchic relations between $-FOC < ADV$ and the various ADJCON-subconstraints established in the previous section - suggest the ranking in (5.29).⁷

- (5.29) OBHD >> *X'-ADJ >> CLEFT >> SCMA >> TOPIC >> ADJCON_{epis}, ADJCON_{evd},
 ADJCON_{sub-ori} >> STAY-XP >> ADV <+FOC <<>> -FOC <ADV >> STAY-X >>
 ADJCON_{freq}, ADJCON_{temp}

Note that although CLEFT outranks all ADJCON-subconstraints, the acceptability of adverb placement in front of a gap in Clefts depends on the type of adverb. This phenomenon is accounted for by the fact that the ranking of the ADJCON-subconstraints relative to $-FOC < ADV$ is crucial for the availability of pre-gap placement of a wide scope adverb in Clefts. Since the

⁷ Remember that in contrast to topicalization, clefting may move an adverb across another scopal element (compare footnote 25 in section 3.2), supporting the dominance of CLEFT over all ADJCON-subconstraints and the focus constraints: CLEFT outranks SCMA, which in turn outranks all ADJCON-subconstraints.

ADJCON-subconstraints of epistemic, evidential, and subject-oriented adverbs outrank the constraint -FOC<ADV, these types of adverbs are expected not to be able to precede a gap in Cleft sentences: placement in front of an unfocused element is tolerated to escape adjunction to a phonetically empty constituent. The ranking OBHD >> *X'-ADJ >> ADJCON thereby rules out adverb positioning between the subject and the finite verb. Assuming that *que* ('that') is invisible to -FOC<ADV⁸, epistemic and evidential adverbs are predicted to appear within the matrix clause of a Cleft in case the relative clause bears simple tense: taking wide scope, these adverbs may be base-adjoined to the matrix VP from where they c-command the material in the relative clause. Irrespective of how the tie of the focus constraints is resolved, placement of an epistemic or evidential adverb in front of the focused constituent in the matrix clause is optimal: this placement satisfies ADV<+FOC while doing equally well on -FOC<ADV as adverb positioning in front of the subject in the relative clause (compare candidates T5.8d vs. T5.8e).

T5.8	C'est probablement manger des escargots qu' il it is probably eat of.the snails that he veut. wants.to 'He probably wants to eat snails.'	OBHD	*X'-ADJ	CLEFT	ADJCON _{epis}	STAY-XP	ADV<+FOC	-FOC<ADV	STAY-X
a	[_{IP} Ce ₁ est _m [_{VP} t _i t _m [_{VP} [_{VP} t _j manger des escargots] _{[+foc]k} [_{CP} que [_{IP} il _j veut _i [_{AuxP} probablement [_{AuxP} t _i t _k]]]]]]]]]				*!	***	*		**
b	[_{IP} Ce ₁ est _m [_{VP} t _i t _m [_{VP} [_{VP} t _j manger des escargots] _{[+foc]k} [_{CP} que [_{IP} il _j probablement [_r veut _i [_{AuxP} t _i t _k]]]]]]]]]		*!			***	*	*	**
c	[_{IP} Ce ₁ est _m [_{VP} t _i t _m [_{VP} [_{VP} t _j manger des escargots] _{[+foc]k} [_{CP} que [_{IP} il _j e [_{AuxP} probablement [_{AuxP} veut t _k]]]]]]]]]	*!				***	*	*	*
d	[_{IP} Ce ₁ est _m [_{VP} t _i t _m [_{VP} [_{VP} t _j manger des escargots] _{[+foc]k} [_{CP} que [_{IP} probablement [_{IP} il _j veut _i [_{AuxP} t _i t _k]]]]]]]]]					***	*!	**	**
e	[_{IP} Ce ₁ est _m [_{VP} probablement [_{VP} t _i t _m [_{VP} [_{VP} t _j manger des escargots] _{[+foc]k} [_{CP} que [_{IP} il _j veut _i [_{AuxP} t _i t _k]]]]]]]]]					***		**	**
f	[_{IP} Il _j veut _i [_{AuxP} probablement [_{AuxP} t _i [_{VP} t _j manger des escargots] _{[+foc]k}]]]			*!		*			*

In contrast to epistemic and evidential adverbs however, placement of a subject-oriented adverb in the matrix clause of a Cleft is strongly marked: a subject-oriented adverb (or its trace) has to be c-commanded by the subject and, consequently, cannot be base-generated within the matrix clause of a Cleft (compare section 2.1.4). The ranking CLEFT >> ADJCON_{sub-ori} >> STAY-XP predicts that cleaving takes place and that the adverb is moved in front of

⁸ In contrast to German where stress on a complementizer may express verum focus (see e.g. Höhle 1992), differences in the tonal properties of complementizers in French do not seem to give rise to interpretative contrasts, but to be a function of prosodic phrasing (Caroline Féry p.c.; see also Féry 2001). They are thus considered not to be subject to the distinction between [+foc] vs. [-foc] and, consequently, not to be affected by the focus constraints.

some overt element to escape pre-gap positioning. Thereby, movement to pre-subject position is obviously preferred over movement out of the relative clause (for unknown reasons).⁹

- (5.30) a. *C'est Marie que Jean épousera intelligemment.
 it is Marie that Jean will marry intelligently
 'Jean intelligently will marry Marie.'
- b. ??C'est Marie que intelligemment_{t_k}, Jean épousera t_k.
- c. ?*C'est intelligemment_k Marie que Jean épousera t_k.

Note that just as in Fronting constructions, epistemic, evidential, and subject-oriented adverbs with wide scope interpretation are expected not to appear in pre-gap position following a non-finite verb in Clefts: the dominance of their ADJCON-subconstraints over -FOC<ADV rules out non-finite verb movement in front of the adverb, as discussed in the previous section. Optimally satisfying -FOC<ADV, the adverb precedes the non-finite verb in the relative clause, predicting that occurrence of an epistemic or evidential adverb within the relative clause of a Cleft is possible as long as some phonetic material follows the adverb (see (5.26) above and Tableau T5.9). In addition, if base-generation of the adverb within the matrix clause of the Cleft is possible - as it is for epistemic and evidential adverbs, but not for subject-oriented ones - adverb placement in front of the focused phrase in the matrix clause is expected to be optimal in case the tie between the focus constraints is resolved as ADV<+FOC >> -FOC<ADV (see candidate T5.9c).^{10,11}

⁹ Remember that SCMA prohibits movement of an adverb out of a subordinate clause (compare sections 3.2 and 3.5). Yet in case of Clefts, movement of an adverb from some position within the relative clause does not seem to change the adverb's scope domain: there is no lexical material that would get into the adverb's c-command domain which is not included in the scope of the adverb in its base position. Hence, SCMA should not be the constraint that is responsible for the marginal status of (5.30c). Future research has to clarify the question why movement of a subject-oriented adverb into the matrix clause is strongly marked (despite the requirement of ADV<+FOC).

¹⁰ Adverb placement in front of the subject of the relative clause is only marginally acceptable. Since this positioning is penalized by -FOC<ADV, it is expected to arise only in case (some feature similar to) [+top] on the adverb requires it. In contrast to other clause-initial adverb occurrences however, a pre-subject adverb in Clefts does not need to be set off from the rest of the clause by comma-intonation, possibly due to the deaccentuation of the unfocused material following the focus. (Thanks to Caroline Féry for pointing that out to me.)

- (i) a. Probablement, Jean a embrassé Marie.
 probably Jean has kissed Marie
 'Probably, Jean has kissed Marie.'
- b. ??C'est Marie que probablement Jean a embrassé.
 it is Marie that probably Jean has kissed
 'It is Marie who Jean has probably kissed.'

¹¹ Yet note that the choice between adverb positioning in the matrix or in the relative clause of a Cleft seems to be influenced by context: while (ia) presupposes that Jean has kissed someone (the speaker speculates on who he kissed), it is not quite sure that Jean has kissed some person at all in (ib).

- (i) a. C'est probablement Marie que Jean a embrassé.
 it is probably Marie that Jean has kissed
 'Jean probably kissed Marie.'
- b. C'est Marie que Jean a probablement embrassé.

		CLEFT	ADJCON _{evid}	STAY-XP	ADV<+FOC	-FOC<ADV	STAY-X
T5.9	C'est Marie que Jean a évidemment frappé. it is Marie that Jean has evidently hit 'Jean evidently hit Marie.'						
☞ a	[_{IP} Ce _i est _m [_{VP} t _i t _m [_{DP} [_{DP} Marie] _{[+foc]k} [_{CP} que [_{IP} Jean _j a _i [_{AuxP} évidemment [_{AuxP} t _i [_{VP} t _j frappé _[-foc] t _k]]]]]]]]]]]			***	*	*	**
b	[_{IP} Ce _i est _m [_{VP} t _i t _m [_{DP} [_{DP} Marie] _{[+foc]k} [_{CP} que [_{IP} Jean _j a _i [_{AuxP} frappé _[-foc] n-t _i [_{VP} évidemment [_{VP} t _j t _n t _k]]]]]]]]]]]		*!	***	*		***
☞ c	[_{IP} Ce _i est _m [_{VP} évidemment [_{VP} t _i t _m [_{DP} [_{DP} Marie] _{[+foc]k} [_{CP} que [_{IP} Jean _j a _i [_{AuxP} t _i [_{VP} t _j frappé _[-foc] t _k]]]]]]]]]]]			***		***	**
d	[_{IP} Jean _j a _i [_{AuxP} frappé _[-foc] -t _i [_{VP} évidemment [_{VP} t _j t _i Marie _[+foc]]]]]]]]	*!		*			**

While a subject-oriented adverb cannot precede a gap following a lexical verb in a Cleft as in (5.30a), it may occur in pre-gap position behind a finite or non-finite modal verb that outscopes it (see example (5.24e,f) above); hence, subject-oriented adverbs seem to be permitted in pre-gap position only in case VP is clefted, but not if an object is clefted. Under a narrow scope reading, the adverb has to be merged below the base position of the modal (MODIFIER). CLEFT and SCMA outranking all ADJCON-subconstraints, pre-gap placement of a narrow scope adverb cannot be circumvented: cleaving has to take place and movement of the adverb in front of some overt element is prohibited since it would require the adverb to cross the wide scope finite or non-finite modal (compare candidate T5.10b). (Remember that epistemic and evidential adverbs outscope a modal verb and are thus expected not to be able to occur in pre-gap position in Clefts, irrespective of whether an object or a VP is clefted.)

		CLEFT	SCMA	ADJCON _{sub-ori}	STAY-XP	ADV<+FOC	-FOC<ADV	STAY-X
T5.10	C'est soulever 200 kilos que Pierre a pu it is lift 200 kilos that Pierre has been.able.to facilement. easily 'Pierre should have wisely moved to Nice.'							
☞ a	[_{IP} Ce _i est _m [_{VP} t _i t _m [_{VP} [_{VP} t _j soulever 200 kilos] _{[+foc]k} [_{CP} que [_{IP} Pierre _j a _i [_{AuxP1} t _i [_{AuxP2} pu [_{VP} facilement t _k]]]]]]]]]]]			*	***	*		**
b	[_{IP} Ce _i est _m [_{VP} t _i t _m [_{VP} [_{VP} t _j soulever 200 kilos] _{[+foc]k} [_{CP} que [_{IP} Pierre _j a _i [_{AuxP1} t _i [_{AuxP2} facilement _n [_{AuxP2} pu [_{VP} t _n t _k]]]]]]]]]]]		*!		***	*	*	**
c	[_{IP} Pierre _j a _i [_{AuxP1} t _i [_{AuxP2} pu [_{VP} facilement [_{VP} t _j soulever 200 kilos] _[+foc]]]]]]]]	*!			*			*

In contrast to epistemic, evidential, and subject-oriented adverbs, temporal and frequency ones may precede a gap in Cleft sentences, irrespective of scope and verb type: they may follow a finite or non-finite lexical or modal verb in clause-final position, as accounted for by the dominance of their ADJCON-subconstraints over -FOC<ADV. Under a narrow scope reading, the adverb has to be merged below the finite or non-finite modal within the relative clause (5.31c); adverb attachment to the matrix VP as in (5.31a) is only possible under a wide scope reading of the adverb (MODIFIER). Being unable to move in front of some overt element, the adverb is thus stranded in pre-gap position if VP is clefted (CLEFT >> SCMA >> ADJCON). Occurrence of a narrow scope adverb within the matrix clause may thus only arise

by adverb adjunction to the focused phrase, as illustrated in (5.31b).¹² The fact that pre-gap placement of narrow scope adverbs is possible at all points to the conclusion that it is specified in the input whether or not an adverb belongs to the focus and should thus be taken along by VP cleaving (compare also footnote 26 in chapter 4): not c-commanding the unfocused elements in the relative clause, attachment of a narrow scope adverb to the focused VP in the matrix clause satisfies -FOC<ADV, just like pre-gap positioning as in (5.31c) does. Consequently, the optionality of narrow scope adverb placement within the matrix clause or the relative clause of a Cleft cannot be accounted for by the alternating resolutions of the tie between the focus constraints.¹³ Hence, the sentences in (5.31b,c) should arise as outputs to different inputs: only if the narrow scope adverb does not belong to the focus, a violation of ADJCON is expected to be tolerated in an output.¹⁴

- (5.31) a. [IP Ce₁ est_m [VP souvent [VP t₁ t_m [VP [VP t_j soulever 200 kilos]_{[+foc]k} [CP que
it is often lift 200 kilos that
[IP Charles_j peut_i [AuxP t_i t_k]]]]]]]
Charles can
'Charles is often able to lift 200 kilos.'
- b. [IP Ce₁ est_m [VP t₁ t_m [VP [VP plusieurs fois [VP t_j soulever 200 kilos]_{[+foc]k} [CP que
it is several times lift 200 kilos that
[IP Charles_j peut_i [AuxP t_i t_k]]]]]]]
Charles can
'Charles is able to lift 200 kilos several times (in a row).'
- c. [IP Ce₁ est_m [VP t₁ t_m [VP [VP t_j soulever 200 kilos]_{[+foc]k} [CP que [IP Charles_j peut_i
[AuxP t_i [VP plusieurs fois t_k]]]]]]]
'Charles is able to lift 200 kilos several times (in a row).'

¹² Note that since the adverbs have to attach to a verbal projection, occurrence of a narrow scope adverb in the matrix clause of a Cleft is only expected in VP Clefts. An adverb preceding a clefted object necessarily takes wide scope; it may only be adjoined to matrix VP, c-commanding the material in the relative clause.

- (i) [IP C_j'est_i [VP souvent [VP t_j t_i [DP [DP Pierre] [CP que Yvonne veut embrasser]]]]]
it is often Pierre that Yvonne wants.to kiss
i) 'Yvonne often wants to kiss Pierre.'
ii) #'Yvonne wants to kiss Pierre several times.'

¹³ By contrast, the optionality of wide scope adverb positioning is accounted for by the constraint tie: a wide scope adverb is adjoined to the matrix VP - it is not part of the focused VP -, and thus c-commands the unfocused elements in the relative clause as in (5.31a), violating -FOC<ADV; compare T5.8 and T5.9.

¹⁴ Note that likewise, a narrow scope adverb may be fronted together with VP.

- (i) a. Partir à l' école immédiatement, je le dois.
leave to the school immediately I it have.to
'I have to go to school immediately.'
b. Partir à l'école, je le dois immédiatement.

Again, the acceptability of pre-gap placement of the narrow scope adverb in (ib) points to the conclusion that it is specified in the input whether or not the adverb is to be fronted together with VP: despite the violation of ADJCON, the adverb may resist fronting.

The fact that frequency and temporal adverbs with wide scope reading may also occur in pre-gap position following a finite or non-finite verb/modal is accounted for by the dominance of -FOC<ADV over their ADJCON-subconstraints. In case the tie of the two focus constraints is resolved as -FOC<ADV >> ADV<+FOC, the adverb is expected to occur within the relative clause following all unfocused constituents (see candidate T5.11a and T5.12b). Under the reverse ranking of the focus constraints, attachment of the frequency adverb to the matrix VP is predicted to be optimal, giving rise to adverb placement in front of the focused constituent (candidate T5.11e and T5.12c).¹⁵

T5.11		OBHD	*X'-ADJ	CLEFT	STAY-XP	ADV<+FOC	-FOC<ADV	STAY-X	ADJCON _{freq}
	C'est Marie que Jean frappait souvent. it is Marie that Jean hit often 'Jean often hit Marie.'								
☞	a	[IP Ce ₁ est _m [VP t ₁ t _m [DP [DP Marie] _{[+foc]k} [CP que [IP Jean _i frappait _i [VP souvent [VP t _j t _k]]]]]]]]]			***	*		**	*
	b	[IP Ce ₁ est _m [VP t ₁ t _m [DP [DP Marie] _{[+foc]k} [CP que [IP Jean _i souvent [VP frappait _i [VP t _j t _k]]]]]]]]]	*!		***	*	*	**	
	c	[IP Ce ₁ est _m [VP t ₁ t _m [DP [DP Marie] _{[+foc]k} [CP que [IP Jean _i e [VP souvent [VP t _j frappait t _k]]]]]]]]]	*!		***	*	*	*	
	d	[IP Ce ₁ est _m [VP t ₁ t _m [DP [DP Marie] _{[+foc]k} [CP que [IP souvent [IP Jean _i frappait _i [VP t _j t _k]]]]]]]]]			***	*!	**	**	
☞	e	[IP Ce ₁ est _m [VP souvent [VP t ₁ t _m [DP [DP Marie] _{[+foc]k} [CP que [IP Jean _i frappait _i [VP t _j t _k]]]]]]]]]			***		**	**	
	f	[IP Jean _i frappait _i [VP souvent [VP t _j t _k Marie] _{[+foc]k}]]]		*!	*			*	

¹⁵ Not being focus-sensitive, placement of a wide scope temporal adverb in pre-gap position following the unfocused material in the relative clause of a Cleft should be triggered by some constraint other than -FOC<ADV (compare footnote 6 above).

Furthermore, note that wide scope temporal adverbs do not occur within the matrix clause of a Cleft, indicating that this position is reserved for focus-sensitive items; ADV<+FOC does not require a temporal adverb to attach to the matrix VP. Under a narrow scope reading however, a temporal adverb may occur in the matrix clause of a Cleft; in this case, it is adjoined to the focused VP (see (5.31) above).

- (i) a. ?*[IP Ce₁ est_m [VP récemment [VP t₁ t_m [DP [DP Marie] [CP que Jean a frappé]]]]]]]
it is recently Marie that Jean has hit
'Jean has recently hit Marie.'
- b. [IP Ce₁ est_m [VP t₁ t_m [VP [VP immédiatement [VP retourner à la maison]] [CP que Charles veut]]]]]
it is immediately return to the house that Charles wants to
'Charles wants to return home immediately.'

5.4 Excursus: The Distribution of Sentence Adverbs in Italian

In section 3.4, it was mentioned that sentence adverbs usually precede a finite or non-finite lexical verb in Italian (5.32), clause-final placement as in (5.33) being ungrammatical (without comma-intonation). Occurrence of a sentence adverb behind a lexical verb is only acceptable if a focused constituent follows as in (5.34); the adverb is then interpreted as relating to the that constituent only.

- (5.32) a. Gianni probabilmente sbaglierà. (Belletti 1994: 34)
 Gianni probably will.make.mistakes
 'Gianni will probably make mistakes.'
- b. Gianni è probabilmente uscito. (Cinque 1993: 265)
 Gianni is probably left
 'Gianni has probably left.'
- (5.33) a. *Gianni sbaglierà probabilmente. (Belletti 1994: 34)
 b. *Gianni è uscito probabilmente. (Cinque 1993: 265)
- (5.34) a. In vita sua Gianni leggerà probabilmente molti racconti d' avventura.
 In life his Gianni will.read probably many novels of adventure
 (Belletti 1990: 130)
 'It is probably many adventure novels that Gianni will read in his life.'
- b. Gianni avrà parlato ben di lui. (Belletti 1994: 30)
 Gianni will.have talked indeed about him.
 'It is indeed of him that Gianni will have talked.'

Italian was assumed not to differ from French in verb syntax; i.e., just as in French, V-to-I movement is considered to be obligatory in Italian - irrespective of the type of verb, lexical verb or auxiliary (OBHD >> STAY-X, *LXMV, compare section 3.4). However, in contrast to French, adverb adjunction to I' is obviously possible in Italian: a focus-sensitive sentence adverb has to precede the lexical verb unless a following constituent is narrowly focused. This pattern can be captured by the focus constraints and their dominance over *X'-ADJ and STAY-X. ADV<+FOC >> *X'-ADJ requires adverb placement in front of the lexical verb in case the verb belongs to the focus, allowing for I'-adjunction of the adverb (see Tableau T3.45 in chapter 3). Yet if a following phrase is narrowly focused, the unfocused finite or non-finite lexical verb may precede the adverb (-FOC<ADV >> STAY-X), see Tableaux T3.46 and T3.47 above. Though movement of an unfocused verb in front of a sentence adverb is possible, it obviously may not result in clause-final placement of the adverb, suggesting that the ADJCON-subconstraints of these types of adverbs outrank *X'-ADJ and -FOC<ADV: the order *finite/non-finite lexical verb - sentence adverb* is thus ruled out in case it would give rise to adverb adjunction to a phonetically empty constituent (see Tableaux T5.13 and T5.14). Consequently, adverb occurrence behind a lexical verb is predicted to be possible only if a narrowly focused constituent follows the adverb, accounting for its special interpretative effect.

		OBHD	STAY-XP	ADJCON _{epis}	-FOC<ADV	*X'-ADJ	STAY-X
T5.13	Gianni probabilmente sbaglierà. Gianni probably will.make.mistakes 'Gianni will probably make mistakes.'						
☞	a [IP Gianni _i probabilmente [_{I'} sbaglierà _{i-foc} [_{VP} t _j t _i]]]		*		*	*	*
	b [IP Gianni _i sbaglierà _{i-foc} [_{VP} probabilmente [_{VP} t _j t _i]]]		*	*!			*
	c [IP Gianni _i e [_{VP} probabilmente [_{VP} t _j sbaglierà _{i-foc}]]]	*!	*		*		
		OBHD	STAY-XP	ADJCON _{epis}	-FOC<ADV	*X'-ADJ	STAY-X
T5.14	Gianni è probabilmente uscito. Gianni is probably left 'Gianni probably left.'						
☞	a [IP Gianni _i è _i [_{AuxP} probabilmente [_{AuxP} t _i [_{VP} t _j uscito _{i-foc}]]]]]		*		*		*
	b [IP Gianni _i è _i [_{AuxP} uscito _{i-foc} k-t _i [_{VP} probabilmente [_{VP} t _j t _k]]]]]		*	*!			**

5.5 Summary

The previous sections showed that just as in English, the acceptability of pre-gap adverb placement in French is influenced by the type of adverb, its scope (for subject-oriented adverbs), and the syntactic construction (CLLD vs. Cleft; simple tense vs. periphrastic tense). However, English and French differ in the way these factors affect the distributional pattern of adverbs in gap constructions. As accounted for by cross-linguistic differences in the hierarchic relations of the constraints, the languages contrast in which strategies can be pursued to avoid placement of a specific type of adverb in front of a certain type of gap. For example, while wide scope adverbs in English can be placed in pre-auxiliary position to prevent them from adjoining to a phonetically empty constituent (ADJCON >> *X'-ADJ, compare section 4.4), adverb positioning between the subject and the finite verb is strictly prohibited in French (OBHD >> *X'-ADJ >> ADJCON). The constraint ranking in (5.35) may capture the interaction of the various factors in determining the grammaticality of adverb occurrence in pre-gap position in French.

- (5.35) SUBJECT >> OBHD >> *X'-ADJ >> CLITIC >> CLEFT >> SCMA >> TOPIC >> ADJCON_{epis}, ADJCON_{evd}, ADJCON_{sub-ori} >> STAY-XP >> ADV<+FOC <<>> -FOC<ADV >> STAY-X >> ADJCON_{freq}, ADJCON_{temp}

The various types of adverb differ in which types of gaps they may precede under a wide or narrow scope reading, following a finite or non-finite verb. All types of adverbs may occur in clause-final position in CLLDs with simple tense, while the acceptability of their pre-gap occurrence behind a non-finite verb depends on the type of adverb and - in case of subject-oriented adverbs - on scope. As predicted by the ranking OBHD >> *X'-ADJ >> TOPIC >> ADJCON, an adverb cannot be placed in front of some overt element in Fronting constructions with simple tense, irrespective of adverbial scope; consequently, any type of adverb may appear in pre-gap position following a finite lexical or modal verb in case an object or a VP is left-dislocated.

However, frequency, temporal, and subject-oriented adverbs differ from epistemic and evidential ones in that the former types of adverbs may also occur in pre-gap position following a non-finite verb whereas the latter ones cannot. Yet, subject-oriented adverbs may only appear in that position under a narrow scope reading; i.e., they may follow a non-finite modal in VP Fronting constructions, while they cannot be placed behind a non-finite lexical verb if no phonetic material follows. Frequency and temporal adverbs in pre-gap position, by contrast, allow for both a preceding lexical or modal verb and may take wide or narrow scope in that position. In case an adverb takes narrow scope with respect to a non-finite modal, its occurrence in pre-gap position is expected: the ranking SCMA >> TOPIC >> ADJCON requires that a topical constituent be fronted and prohibits adverb movement in front of some overt element, predicting the order *adverb - non-finite modal* to be restricted to adverbs with wide scope reading. Under a wide scope reading of an adverb, its occurrence behind a non-finite verb must be derived by movement of the verb across the adverb (MODIFIER). The contrast

between subject-oriented, epistemic, and evidential adverbs, on the one hand, and frequency and temporal ones, on the other hand, in occurring in pre-gap position following a non-finite verb under a wide scope reading thus seems to be subject to a difference in whether or not non-finite verb movement may result in their attachment to a phonetically empty constituent. The pattern is captured by differences in the ranking of the various ADJCON-subconstraints relative to $\text{-FOC} < \text{ADV}$, the constraint that may trigger movement of an unfocused non-finite verb. Since the ADJCON-subconstraints of subject-oriented, epistemic, and evidential adverbs outrank $\text{-FOC} < \text{ADV}$, non-finite verb movement is expected to be refrained from if it prevents these adverbs from occurring in front of a gap, while frequency or temporal adverbs whose ADJCON-subconstraints are dominated by the constraint $\text{-FOC} < \text{ADV}$ may be stranded in clause-final position by non-finite verb movement. Having to outscope a non-finite verb, epistemic and evidential adverbs are thus predicted to be unacceptable in pre-gap position following a non-finite verb altogether. Subject-oriented adverbs, by contrast, may occur in that position under a narrow scope reading, and frequency and temporal adverbs allow for clause-final occurrence in CLLDs with periphrastic tense, irrespective of scope.

The availability of pre-gap adverb positioning in Clefts parallels the one in Fronting constructions with periphrastic tense. While epistemic and evidential adverbs can never occur in pre-gap position in Cleft sentences, subject-oriented adverbs may only under a narrow scope reading (following a finite or non-finite modal verb), and frequency as well as temporal ones are acceptable in that position under a wide or narrow scope reading. This similarity is accounted for by the fact that the ranking of the ADJCON-subconstraints relative to the focus constraints is crucial for the placement of wide scope adverbs in Clefts. Epistemic, evidential, and subject-oriented adverbs whose ADJCON-subconstraints outrank $\text{-FOC} < \text{ADV}$ may be placed in front of the unfocused material in the relative clause to avoid their pre-gap occurrence: epistemic and evidential adverbs appear in the matrix clause while subject-oriented adverbs, which cannot be merged to the matrix VP, are moved in front of the subject within the relative clause with simple tense. In addition, just as in Fronting constructions, these types of adverbs suppress non-finite verb movement in Clefts if it would result in their attachment to a phonetically empty constituent. Consequently, epistemic, evidential, and subject-oriented adverbs with wide scope reading are excluded from pre-gap position in Clefts altogether.

Yet under a narrow scope reading, subject-oriented adverbs are acceptable in pre-gap position in VP Clefts following a finite or non-finite modal. In this case, adverb placement in front of some overt constituent is ruled out by $\text{SCMA} \gg \text{ADJCON}$: the narrow scope adverb merged below the finite or non-finite modal cannot move in front of the wide scope element. The ranking $\text{CLEFT} \gg \text{ADJCON}$ predicts cleaving to take place in spite of the resulting pre-gap positioning of the adverb. Frequency and temporal adverbs, by contrast, may occur in clause-final position under a wide or narrow scope reading. Their ADJCON-subconstraints being outranked by $\text{-FOC} < \text{ADV}$, they have to follow all unfocused material. Pre-gap occurrence of these types of adverbs is thus expected to be acceptable, following a finite or non-finite lexical or modal verb, irrespective of scope.

The fact that the acceptability of pre-gap adverb placement in French may depend on the type of adverb supports the view that (a) there is a constraint demanding for phonetic material in an adverb's sister constituent, ADJCON, and (b) that this constraint is differentiated according to adverb type. Note that English and French differ in the relative ranking of the various ADJCON-subconstraints to each other as well as to other constraints (e.g. TOPIC), indicating that these are not subject to an internal subhierarchy (see Baković 1995): the ADJCON-subconstraints can be ranked freely to each other and to the other constraints. The questions why the adverbs are grouped differently in English and French and which criteria underlie these groupings have to be clarified by future research.

CHAPTER 6.

GERMAN

In contrast to English and French, ADJCON does not have any visible effect on the distribution of adverbs in German: pre-gap placement of an adverb never yields to ungrammaticality in this language. Linearization is carried out on the basis of syntactic, semantic, and pragmatic criteria - whether it results in adverb adjunction to an empty constituent seems to be irrelevant. For example, German matrix clauses should display V2; i.e. some constituent is placed in Spec,CP and the finite verb undergoes V-to-C movement, irrespective of whether these movements deprive an adverb's sister constituent of all its phonetic material. Moreover, adverb positioning relative to other phrases within the middle field is subject to semantic and pragmatic considerations, as discussed in sections 3.4 and 3.5 above: an adverb takes scope over the elements that follow it, and topical or unfocused arguments have to precede an adverb within the middle field. As a consequence, an adverb might arise in pre-gap position if there is no overt element in the middle field that could be placed behind it.

The relevant data is presented in section 6.1. The syntactic, semantic, and pragmatic factors that may give rise to pre-gap adverb placement are focused on in section 6.2-6.4, respectively. Section 6.5 summarizes the results.

6.1 The Data

Since finite verbs in embedded clauses as well as non-finite verbs occur in right-peripheral position in German (compare section 3.3), exclusively matrix clauses with simple tense or fronted VP will be taken into consideration in this chapter: only such clauses may unambiguously give rise to adverb placement in pre-gap position (see footnote 9 below).

As laid out in section 3.3, German matrix clauses normally exhibit V2: some constituent occurs in prefield position, followed by the finite verb in C^0 ; independent of which phrase is fronted to Spec,CP - e.g. the subject (6.1), an object (6.2), or VP (6.3) -, an adverb cannot occur between the prefield constituent and the finite verb (6.1a)-(6.3a) nor may it precede the prefield constituent (6.1b)-(6.3b) (unless that constituent is focused and there is appropriate

phonetic material within the middle field; compare section 3.4, especially footnote 66).¹ Occurrence of any type of adverb in pre-gap position as in (6.1d)-(6.3d) is acceptable although it could be prevented by adverb placement in prefield position (6.1c)-(6.3c). (Adverb positioning relative to other elements within the middle field is subject to semantic and pragmatic factors, see below.)

- (6.1) a. Klaus (*wahrscheinlich / *offensichtlich / *schlauerweise / *oft /
Klaus probably obviously cleverly often
*schon lange) lügt.
already awhile lies
'Klaus is (probably / obviously / cleverly / often) lying (awhile already).'
- b. (*Wahrscheinlich / *Offensichtlich / *Schlauerweise / *Oft / *Schon lange)
Klaus lügt.
- c. *(Wahrscheinlich / Offensichtlich / Schlauerweise / Oft / Schon lange) lügt
Klaus.
- d. Klaus lügt (wahrscheinlich / offensichtlich / schlauerweise / oft / schon lange).
- (6.2) a. Ihren treusorgenden Ehemann (*vermutlich / *angeblich / *gemeinerweise /
her devoted husband presumably supposedly nastily
*ständig / *schon lange) betrügt sie.
constantly already awhile cheats.on she
'She (presumably / supposedly / nastily / constantly) cheats on her husband
(awhile already).'
- b. (*Vermutlich / *Angeblich / *Gemeinerweise / *Ständig / *Schon lange) ihren
treusorgenden Ehemann betrügt sie.
- c. *(Vermutlich / Angeblich / Gemeinerweise / Ständig / Schon lange) betrügt sie
ihren treusorgenden Ehemann.
- d. Ihren treusorgenden Ehemann betrügt sie (vermutlich / angeblich /
gemeinerweise / ständig / schon lange).
- (6.3) a. Die Steuern nachzahlen (*vielleicht / *offenbar / *schlauerweise /
the taxes pay.extra perhaps obviously cleverly
*wieder / *jetzt) wird er.
again now will he
'He will (perhaps / obviously / cleverly / again / now) pay the taxes extra.'
- b. (?*Vielleicht / ?*Offenbar / ?*Schlauerweise / ?*Wieder / ?*Jetzt) die Steuern
nachzahlen wird er.
- c. *(Vielleicht / Offenbar / Schlauerweise / Wieder / Jetzt) wird er die Steuern
nachzahlen.
- d. Die Steuern nachzahlen wird er (vielleicht / offenbar / schlauerweise / wieder /
jetzt).

¹ Note that certain types of adverbs might be fronted to prefield position together with VP; they may thus precede an object and/or a non-finite verb within Spec,CP, see section 3.4.

In contrast to declarative clauses, adverb placement in prefield position is not acceptable in questions: if present, the *wh*-phrase has to occur in Spec,CP.² An adverb that is within the scope of the question can neither precede the *wh*-phrase nor the finite verb; pre-gap placement of any type of adverb is acceptable.

- (6.4) a. Wer von den beiden (*wirklich / *nachweislich / *schlauerweise / *oft /
 who of the two really provably cleverly often
 *heute) lügt?
 today lies
 'Who of the two is (really / provably / cleverly / often) lying (today)?'
- b. (*Wirklich / *Nachweislich / *Schlauerweise / *Oft / *Heute) wer von den
 beiden lügt?
- c. (*Wirklich / *Nachweislich / *Schlauerweise / *Oft / *Heute) lügt wer von den
 beiden?
- d. Wer von den beiden lügt (wirklich / nachweislich / schlauerweise / oft / heute)?
- (6.5) a. (*Tatsächlich / *nachweislich / *gemeinerweise / *öfters / *schon lange)
 actually provably nastily often already awhile
 betrügt Karla ihren Ehemann?
 cheats.on Karla her husband
 'Does Karla (actually / provably / nastily / often) cheat on her husband (awhile
 already)?'
- b. Betrügt Karla ihren Ehemann (tatsächlich / nachweislich / gemeinerweise /
 öfters / schon lange)?

Adverb positioning relative to an argument within the middle field is influenced by information structure (see section 3.4 and 3.5). An argument following a focus-sensitive adverb is perceived as its associated constituent; topics and unfocused arguments should be placed in front of an adverb within the middle field even if this results in pre-gap positioning of the adverb, see (6.6a, 6.8a) vs. (6.7a, 6.9a). Alternatively, the adverb may occur in prefield position as in the (c)-sentences in (6.6)-(6.10).

- (6.6) (Who is Karl cheating on?)
- a. Karl betrügt gemeinerweise seine Ehefrau.
 Karl cheats.on nastily his wife
 'Karl is nastily cheating on his wife.'
- b. ??Karl betrügt seine Ehefrau gemeinerweise.
- c. Gemeinerweise betrügt Karl seine Ehefrau.
- (6.7) (Who is cheating on his wife?)

² Remember that *yes/no*-questions are considered to host a covert operator in Spec,CP (compare footnote 32 in chapter 3); hence, the finite verb occupies the second structural position, although it arises as the first overt element.

- a. ?*Karl betrügt gemeinerweise seine Ehefrau.
 b. Karl betrügt seine Ehefrau gemeinerweise.
 c. Gemeinerweise betrügt Karl seine Ehefrau.
- (6.8) (Who smashed the kitchen window?)
 a. Das Küchenfenster eingeworfen hat vermutlich dein Sohn.
 the kitchen.window smashed has presumably your son
 'Your son presumably smashed the kitchen window.'
 b. ??Das Küchenfenster eingeworfen hat dein Sohn vermutlich.
 c. Vermutlich hat dein Sohn das Küchenfenster eingeworfen.
- (6.9) (What did my son do?)
 a. ?*Das Küchenfenster eingeworfen hat vermutlich dein Sohn.
 b. Das Küchenfenster eingeworfen hat dein Sohn vermutlich.
 c. Vermutlich hat dein Sohn das Küchenfenster eingeworfen.
- (6.10) (Susanne is vegetarian, but ...)
 a. *Fisch ißt angeblich sie.
 fish eats allegedly she
 '... she allegedly eats fish.'
 b. Fisch ißt sie angeblich.
 c. angeblich ißt sie Fisch.
- (6.11) a. Weil sie_i sich in ihn_i verliebt hat, bekocht (*neuerdings) Karin_i,
 since she herself in him fallen.in.love has cooks.for these.days Karin
 (*neuerdings) Helmut_j (neuerdings).
 these.days Helmut these.days
 'Since she fell in love with him, Karin is cooking for Helmut these days.'
 b. Weil er_i sie_j nicht leiden kann, ignoriert (*oft) Hans_i (*oft) Maria_j (oft).
 because he her not like can ignores often Hans oft Maria often
 'Because he doesn't like her, Hans often ignores Maria.'

Besides pragmatic factors, semantic ones affect adverb positioning as well. The scopal relation of an adverb relative to negation or another adverb is normally reflected in linear order within the middle field (compare section 3.5)³: the narrow scope element follows the one that outscopes it (6.12, 6.13). An adverb obviously cannot be placed in front of the wide scope element to escape pre-gap placement: the sentences in (6.14a,b)-(6.16a,b) are unambiguous. Yet, an adverb with narrow scope reading can appear in prefield position; i.e. clause-initial occurrence of an adverb may give rise to ambiguity (though scopal interpretation corresponding to surface order is preferred; see section 3.3).

- (6.12) a. Peter kommt wahrscheinlich nicht.
 Peter comes probably not
 'Peter probably won't come.'

³ As laid out in section 3.5.2, only a few types of adverbs may be fronted within the German middle field.

- b. *Peter kommt nicht wahrscheinlich.
 c. Wahrscheinlich kommt Peter nicht.
- (6.13) a. Er lügt sicher oft.
 he lies certainly often
 'He certainly is often lying.'
 b. *Er lügt oft sicher.
 c. ?Oft lügt er sicher.
- (6.14) a. Den Diamanten geklaut hat er nachweislich nicht.
 the diamond stolen has he provably not
 i) 'It can be proven that he didn't steal the diamond.'
 ii) #'It cannot be proven that he stole the diamond.'
 b. Den Diamanten geklaut hat er nicht nachweislich.
 i) #'It can be proven that he didn't steal the diamond.'
 ii) 'It cannot be proven that he stole the diamond.'
 c. Nachweislich hat er den Diamanten nicht geklaut.
 i) 'It can be proven that he didn't steal the diamond.'
 ii) ?'It cannot be proven that he stole the diamond.'
- (6.15) a. Ins Wasser ging er (oft / lange) nicht.
 into.the water went he often long not
 i) '(Often, / For a long time,) he didn't go for a swim.'
 ii) #'He didn't go for a swim (often / for a long time).'
 b. Ins Wasser ging er nicht (oft / lange).
 i) #'(Often, / For a long time,) he didn't go for a swim.'
 ii) 'He didn't go for a swim (often / for a long time).'
 c. (Oft / Lange) ging er nicht ins Wasser.
 i) '(Often, / For a long time,) he didn't go for a swim.'
 ii) ?'He didn't go for a swim (often / for a long time).'
- (6.16) a. Klaus schweigt oft klugerweise.
 Klaus says.nothing often cleverly
 i) 'Klaus often cleverly says nothing.'
 ii) #'Klaus cleverly often says nothing.'
 b. Klaus schweigt klugerweise oft.
 i) #'Klaus often cleverly says nothing.'
 ii) 'Klaus cleverly often says nothing.'
 c. Oft schweigt Klaus klugerweise.
 i) 'Klaus often cleverly says nothing.'
 ii) ?'Klaus cleverly often says nothing.'
 d. Klugerweise schweigt Klaus oft.
 i) ?'Klaus often cleverly says nothing.'
 ii) 'Klaus cleverly often says nothing.'

The scopal relation between quantified arguments and frequency adverbs is likewise encoded unambiguously in surface order within the middle field (see e.g. Frey & Pittner 1998, 1999, Pittner 1999, Frey 2000a; compare also section 3.5). I.e., a frequency adverb may only be placed in front of a quantified argument if it takes wide scope (6.17a, 6.18a); otherwise, the adverb has to follow the argument even if this ordering involves its pre-gap placement (6.17b, 6.18b). If one of the phrases, adverb or argument, occurs in prefield position, the sentence is ambiguous (though, again, the scopal relation reflected by surface order seems to be preferred).

- (6.17) a. Der Staatsanwalt beleidigte oft jeden Angeklagten.
 the public.prosecutor insulted often every defendant
 i) 'The prosecutor often insulted every defendant.'
 ii) #'The prosecutor insulted every defendant several times.'
- b. Der Staatsanwalt beleidigte jeden Angeklagten oft.
 i) #'The prosecutor often insulted every defendant.'
 ii) 'The prosecutor insulted every defendant several times.'
- c. Oft beleidigte der Staatsanwalt jeden Angeklagten.
 i) 'The prosecutor often insulted every defendant.'
 ii) ?'The prosecutor insulted every defendant several times.'
- d. Jeden Angeklagten beleidigte der Staatsanwalt oft.
 i) ?'The prosecutor often insulted every defendant.'
 ii) 'The prosecutor insulted every defendant several times.'
- (6.18) a. Zu Daniels Seminar kam zweimal kein Student.
 to Daniel's course came twice no student
 i) 'Twice, no student came to Daniel's course.'
 ii) #'No student came to Daniel's course a second time.'
- b. Zu Daniels Seminar kam kein Student zweimal.
 i) #'Twice, no student came to Daniel's course.'
 ii) 'No student came to Daniel's course a second time.'
- c. Zweimal kam kein Student zu Daniels Seminar.
 i) 'Twice, no student came to Daniel's course.'
 ii) ?'No student came to Daniel's course a second time.'
- d. Kein Student kam zweimal zu Daniels Seminar.
 i) ?'Twice, no student came to Daniel's course.'
 ii) 'No student came to Daniel's course a second time.'

Furthermore, the interpretation of an indefinite argument depends on its placement relative to a temporal adjunct or some higher type of adverbial: placed in front of the adverb, the argument is restricted to a strong interpretation whereas it is ambiguous in reading if it follows the adverb (compare 3.5.5 and references therein). Hence, an adverb may occur in pre-gap position only under a strong reading of the argument.

6.2 Syntax: Verb Second

As discussed in section 3.3, V2 is mandatory in (most) German matrix clauses. Some phrase is placed in Spec,CP and the finite verb moves to C^0 (PREFIELD >> OBHD >> STAY-X); as prohibited by *X'-ADJ and *CP-ADJ, an adverb cannot intervene between the prefield constituent and the finite verb, nor may it precede the prefield constituent.⁴ Though an adverb may occur in prefield position (6.23a), its occurrence in pre-gap position within the middle field as in (6.23b) is also acceptable. Remember that it was assumed to depend on the featural composition of C^0 which constituent is attracted to prefield position: AGREE >> STAY-XP requires that in case C^0 bears some information-structural feature, a corresponding phrase occupy Spec,CP. Hence, the fact that besides prefield positioning, adverb placement in pre-gap position is possible points out that AGREE outranks ADJCON: under that ranking, an adverb will not be placed in prefield position if the featural specification of C^0 demands for some other phrase, as illustrated in Tableau T6.1 (compare candidate T6.1a vs. T6.1b). Hence, e.g. the subject, an object, or VP may move to Spec,CP if it is attracted by a corresponding feature on C^0 such as [+top] or [+foc] even in case this movement results in adverb adjunction to a phonetically empty constituent, see examples (6.1)-(6.3).⁵ Note that the ranking OBHD >> STAY-X >> ADJCON prohibits adverb placement in a functional projection above CP: no additional XP can be projected to prevent an adverb from preceding a gap (see candidates T6.1f and T6.1g).⁶

⁴ Placement of a focus-sensitive adverb in front of a focused constituent in prefield position is acceptable in the presence of appropriate phonetic material in the middle field, compare section 3.4.

⁵ According to Fanselow (2003b), a predicate may be contrastively topicalized by either moving the (Remnant) VP (ia) or only the accented constituent to prefield position (ib). The sentence in (ib) is ambiguous between a reading in which the focus particle *nur* ('only') relates to the fronted object exclusively and an interpretation in which reading the bible is contrasted with other religious activities.

- (i) a. Nur die Bibel gelesen hat der Pfarrer nie.
 only the bible read has the priest never
 'The only (religious) activity that the priest never undertook is read the bible.'
- b. Nur die Bibel hat der Pfarrer nie gelesen. (Fanselow 2003b: 36)
 i) 'The only book the priest never read is the bible.'
 ii) 'The only (religious) activity that the priest never undertook is read the bible.'

Because of ADJCON, it seems necessary to assume that it is specified in the input whether the whole VP or only the accented constituent is to be placed in Spec,CP if VP is [+top]; (Remnant) VP Fronting is then expected to be able to strand an adverb in pre-gap position (AGREE >> ADJCON). Otherwise, i.e. in case C^0 were free to attract VP or the accented object, the sentence in (ia) would always be suboptimal to (ib) because of the violation of ADJCON and, consequently, predicted not to arise, contrary to fact (compare also footnote 26 in chapter 4).

⁶ Remember that right-adjunction of an adverb is prohibited in German, see footnote 11 in chapter 3. I.e., a clause-final adverb cannot be right-adjoined to a constituent including phonetic material; it occurs in pre-gap position.

Furthermore, note that a finite verb following an adverb in middle field position in an embedded clause is not necessarily included in the adverb's sister constituent; i.e. despite following phonetic material, the adverb may occur in pre-gap position (compare also section 4.4 on phonetic material occurring behind a gap in English). As laid out in section 3.3, a finite verb in German embedded clauses occupies right-peripheral I^0 (OBHD >> STAY-X). Hence, unless adverb adjunction to a projection dominating the finite verb is required (e.g. by ADV<+FOC, compare section 3.4), the adverb is expected to occur in pre-gap position due to the dominance of *X'-ADJ (violated in (ib)) and STAY-XP (additionally violated in (ic)) over ADJCON.

- (6.23) a. Jetzt schläft Karl.
 now sleeps Karl
 'Karl is sleeping now.'
 b. Karl schläft jetzt.
 c. *Karl jetzt schläft.
 d. *Jetzt Karl schläft.

T6.1 Karl schläft jetzt. Karl sleeps now 'Karl is sleeping now.'		PREFIELD	AGREE	OBHD	*X'-ADJ	STAY-X	*CP-ADJ	*INVERSION	STAY-XP	ADJCON
a	[_{CP} Jetzt schläft _i -C ⁰ _[+foc] [_{IP} Karl _{[+foc]j} [_{VP} t _j t _i] _{t_j]]]}		*!			**			*	
☞ b	[_{CP} Karl _{[+foc]j} schläft _i -C ⁰ _[+foc] [_{IP} t _j [_{VP} jetzt [_{VP} t _j t _i]] t _j]]]					**			**	*
c	[_{CP} Karl _{[+foc]j} schläft _i -C ⁰ _[+foc] [_{IP} jetzt [_{IP} t _j [_{VP} t _j t _i]]]]]					**		*!	**	*
d	[_{CP} Karl _{[+foc]j} jetzt [_{C'} schläft _i -C ⁰ _[+foc] [_{IP} t _j [_{VP} t _j t _i]]]]]				*!	**			**	
e	[_{CP} Jetzt [_{CP} Karl _{[+foc]j} schläft _i -C ⁰ _[+foc] [_{IP} t _j [_{VP} t _j t _i]]]]]					**	*!		**	
f	[_{FP} Jetzt e [_{CP} Karl _{[+foc]j} schläft _i -C ⁰ _[+foc] [_{IP} t _j [_{VP} t _j t _i]]]]]			*!		**			**	
g	[_{FP} Jetzt schläft _i [_{CP} Karl _{[+foc]j} t _i -C ⁰ _[+foc] [_{IP} t _j [_{VP} t _j t _i]]]]]					***!			**	
h	[_{CP} Karl _{[+foc]j} e [_{IP} jetzt [_{IP} t _j [_{VP} t _j t _i]] schläft _i]]]			*!		*			**	
i	[_{CP} e Schläft _i [_{IP} jetzt [_{IP} Karl _{[+foc]j} [_{VP} t _j t _i]] t _j]]]	*!				**		*	*	
j	[_{IP} Jetzt [_{IP} Karl _{[+foc]j} [_{VP} t _j t _i]] schläft _i]]]	*!				*			*	

In contrast to declarative clauses, questions do not allow for placement of an adverb in prefield position, compare example (6.4, 6.5) above: the ranking WHSPEC >> STAY-XP >> ADJCON ensures that a *wh*-phrase is fronted to Spec,CP. Besides *CP-ADJ and *X'-ADJ, SCMA penalizes adverb adjunction to some projection of CP in questions if the adverb is within the scope of the question (see section 3.5.4). Consequently, the adverb occurs in pre-gap position in the optimal candidate (see Tableau T6.2).

- (i) a. ... [_{CP} weil [_{IP} Hans_j [_{VP} jetzt [_{VP} t_j t_i]] schläft_i]]
 since Hans now sleeps
 '... because Hans is sleeping now.'
 b. ... [_{CP} weil [_{IP} Hans_j jetzt [_{VP} t_j t_i]] schläft_i]]]
 c. ... [_{CP} weil [_{IP} Hans_j [_{IP} jetzt [_{IP} t_j [_{VP} t_j t_i]]]] schläft_i]]]]]

T6.2	Wer schläft gerade? who sleeps right now 'who is sleeping at the moment?'	WHSPEC	OBHD	*X'-ADJ	STAY-X	*CP-ADJ	SCMA	*INVERSION	STAY-XP	ADJCON
a	[_{CP} Jetzt schläft _i [_{IP} wer _j [_{VP} t _j t _i]]]	*!			**				*	
♫ b	[_{CP} Wer _j schläft _i [_{IP} t _j [_{VP} jetzt [_{VP} t _j t _i]] t _i]]]				**				**	*
c	[_{CP} Wer _j schläft _i [_{IP} jetzt [_{IP} t _j [_{VP} t _j t _i]]]]]				**			*!	**	*
d	[_{CP} Wer _j e [_{IP} jetzt [_{IP} t _j [_{VP} t _j t _i]] schläft _i]]]		*!		*				**	
e	[_{CP} Wer _j jetzt _k [_{C'} schläft _i [_{IP} t _j [_{VP} t _k [_{VP} t _j t _i]] t _j]]]]]			*!	**		*		***	*
f	[_{CP} Jetzt _k [_{CP} wer _j schläft _i [_{IP} t _j [_{VP} t _k [_{VP} t _j t _i]]]] t _j]]]]]				*	*!	*		***	

Hence, the V2 requirement of German matrix clauses is crucial for the occurrence of an adverb in pre-gap position: the necessity to fill the prefield position gives rise to V-to-C movement in German matrix clauses (PREFIELD >> OBHD >> STAY-X). Since adverb placement in front of the prefield constituent or between the prefield constituent and the finite verb is prohibited (*X'-ADJ >> *CP-ADJ >> ADJCON), an adverb is expected to adjoin to a phonetically empty constituent in case its placement in prefield position is excluded (WHSPEC >> AGREE >> ADJCON) and there is no overt material within the middle field that could follow the adverb, as discussed in the next sections.

6.3 Pragmatics: Information Structure

The linearization of adverbs and arguments within the middle field is subject to pragmatic considerations. An argument following a focus-sensitive adverb is interpreted as its focus; unfocused and topical arguments are placed in front of the adverb (compare sections 3.4. and 3.5) even if that ordering coincides with pre-gap positioning of the adverb (6.24, 6.25), suggesting that $-FOC < ADV$ and $TOPIC$ outrank $ADJCON$ (see Tableaux T6.3 and T6.4). Only if an argument is focused is its placement behind a focus-sensitive adverb within the middle field unmarked, as expected by $ADV < +FOC$. Note that in case the focused constituent occupies the prefield position, the acceptability of pre-gap placement of a focus-sensitive adverb as in candidate T6.3b is predicted by the dominance of the tie between $ADV < +FOC$ and $*CP-ADJ$ over $ADJCON$ ⁷: although adverb adjunction to a phonetically empty constituent can be prevented by CP-adjunction of the adverb (see candidate T6.3d), the adverb is expected to occur within the middle field following all unfocused material in case the tie is resolved as $*CP-ADJ >> ADV < +FOC$.

- (6.24) a. Die Polizei gerufen hat (vermutlich) [Klaus' Nachbar]_[+foc] (??vermutlich).
 the police called has presumably Klaus' neighbor presumably
 'Klaus' neighbor presumably called the police.'
- b. [Die Polizei gerufen]_[+foc] hat (*vermutlich) Klaus' Nachbar (vermutlich).
- (6.25) a. Weil er_i noch arbeiten muß, kommt (*erst morgen) Otto_i (erst morgen).
 since he still work must comes only tomorrow Otto only tomorrow
 'Since he still has to work, Otto will come only tomorrow.'
- b. (Did you hear the news about Franz?)
 Der Botschafter empfängt (*demnächst) diesen Blödmann (demnächst).
 the ambassador meets soon this stupid.fool soon
 'The ambassador will meet this stupid fool soon.'

T6.3	Die Polizei gerufen hat K.'s Nachbar vermutlich. the police called has K.'s neighbor presumably 'K.'s neighbor presumably called the police.'	AGREE	STAY-X	*CP-ADJ	ADV < +FOC	-FOC < ADV	*INVERSION	STAY-XP	ADJCON
a	[CP Vermutlich hat _i -C ⁰ _[+foc] [IP Klaus' Nachbar _j [AUXP [VP t _j die Polizei gerufen] _[+foc] t _i t _j]]	*!	**			**		*	
☞ b	[CP [VP t _j Die Polizei gerufen] _[+foc] k hat _i -C ⁰ _[+foc] [IP Klaus' Nachbar _j [AUXP vermutlich [AUXP t _k t _j] t _i]]		**		*			**	*
c	[CP [VP t _j Die Polizei gerufen] _[+foc] k hat _i -C ⁰ _[+foc] [IP vermutlich [IP Klaus' Nachbar _j [AUXP t _k t _j] t _i]]		**		*	*!	*	**	
☞ d	[CP Vermutlich [CP [VP t _j die Polizei gerufen] _[+foc] k hat _i -C ⁰ _[+foc] [IP Klaus' Nachbar _j [AUXP t _k t _j] t _i]]]		**	*		**		**	

⁷ Note that this hierarchic relation is already predicted by the partial rankings $ADV < +FOC >> -FOC < ADV$ (see section 3.4) and $-FOC < ADV >> ADJCON$ established above.

		STAY-X	TOPIC	*INVERSION	STAY-XP	ADJCON
T6.4	Der Botschafter empfängt diesen Blödmann demnächst. the ambassador meets this stupid.fool soon 'The ambassador will meet this stupid fool soon.'					
a	[_{CP} Der Botschafter _j empfängt _i [_{IP} t _j [_{VP} demnächst [_{VP} t _j diesen Blödmann _[+top] t _i] t _i]]]	**	*!*		**	
b	[_{CP} Der Botschafter _j empfängt _i [_{FP} demnächst [_{IP} diesen Blödmann _[+top] [_{IP} t _j [_{VP} t _j t _k t _i] t _i] t _i]]]	***!		**	***	
c	[_{CP} Der Botschafter _j empfängt _i [_{IP} demnächst [_{IP} diesen Blödmann _[+top] [_{IP} t _j [_{VP} t _j t _k t _i] t _i]]]]]	**	*!	**	***	
d	[_{CP} Der Botschafter _j empfängt _i [_{IP} diesen Blödmann _[+top] [_{IP} demnächst [_{IP} t _j [_{VP} t _j t _k t _i] t _i]]]]]	**		**!	***	*
e	[_{CP} Der Botschafter _j empfängt _i [_{IP} diesen Blödmann _[+top] [_{IP} t _j [_{VP} demnächst [_{VP} t _j t _k t _i] t _i]]]]]	**		*	***	*

Summing up, pragmatic considerations may yield to pre-gap positioning of an adverb: the information-structural status of an argument determines its position relative to an adverb within the middle field, irrespective of whether or not it involves adjunction of the adverb to a phonetically empty constituent.

Note that information structure may also influence the positioning of a sentence adverb relative to the subject in the Scandinavian languages (compare footnote 87 and 116 in section 3.5): according to Svenonius (2002), all types of subject DP have to precede a sentence adverb in Danish whereas only topical ones are placed in front of a sentence adverb in Norwegian and just focused ones may follow an adverb in Swedish. These cross-linguistic contrasts can be captured by differences in the ranking of the information-structural constraints -FOC<ADV, ADV<+FOC, and TOPIC relative to *INVERSION. Being V2-languages, Danish, Swedish, and Norwegian are expected to rank the constraints responsible for verb placement in second position (PREFIELD, OBHD, STAY-X, *CP-ADJ, *X'-ADJ) above ADJCON. This hypothesis is supported by the Swedish data in (6.26): the V2-structure cannot be deviated from to prevent an adverb from preceding a gap. Moreover, the Danish sentences in (6.27, 6.28) and the Norwegian ones in (6.29) show that an adverb may occur in pre-gap position following the subject in non-subject-initial clauses, suggesting that as in German, ADJCON is dominated by the information-structural constraints (and *INVERSION) in these languages.

- (6.26) a. De talade länge. (Svenonius 2002: 214)
they spoke long
'They had a long talk.'
- b. *De länge talade.
c. *Länge de talade.
- (6.27) a. Hvad for en film så hun egentlig? (Vikner 2001a: 227)
what for a film saw she really
'Which film did she actually see?'
- b. *Hvad for en film så egentlig hun?

- (6.28) a. Kaffe drikker Peter ofte.
 coffee drinks Peter often
 'Peter often drinks coffee.'
- b. *Kaffe drikker ofte Peter.
- (6.29) a. Røykeforbudet brøt en student sannsynligvis allerede i går.
 the.smoking.ban broke a student probably already yesterday
 (Svenonius 2002: 223)
 'A student probably violated the smoking ban as early as yesterday.'
- b. Røykeforbudet brøt en student vanligvis unansett.
 the.smoking.ban broke a student usually anyway
 'A student usually violated the smoking ban anyway.'

Furthermore, not only may an adverb have to follow the subject, Object Shift can give rise to pre-gap placement of an adverb in the Scandinavian languages as well. In the Icelandic examples in (6.30), Object Shift is prohibited since the lexical verb does not leave VP (see Holmberg 1986; for an OT account on Object Shift see Vikner 2001b): the adverb *örugglega* ('surely') that is ambiguous in reading may only receive a sentential interpretation if it is placed in front of the lexical verb as in (6.30a), its clause-final occurrence is restricted to a manner reading (6.30b). By contrast, a sentential reading of the clause-final adverb is possible in (6.31b), indicating that movement of the object may result in pre-gap placement of the adverb; i.e., the constraint triggering Object Shift obviously outranks ADJCON. Likewise, pre-gap placement of an adverb may be caused by Object Shift in the other Scandinavian languages, as illustrated in (6.32) for Danish.⁸

- (6.30) a. Þess vegna mun Jón örugglega hitta eplið. (Vikner 1995: 98)
 therefore will Jón surely hit the.apple
 i) 'Therefore, Jón will definitely hit the apple.'
 ii) #'Therefore, Jón will hit the apple in a sure way.'
- b. Þess vegna mun Jón hitta eplið örugglega.
 i) #'Therefore, Jón will definitely hit the apple.'
 ii) 'Therefore, Jón will hit the apple in a sure way.'
- (6.31) a. Þess vegna hitti Jón örugglega eplið. (Vikner 1995: 99)
 therefore hits Jón surely the.apple
 i) 'Therefore, Jón definitely hits the apple.'
 ii) #'Therefore, Jón hits the apple in a sure way.'
- b. Þess vegna hitti Jón eplið örugglega.
 i) 'Therefore, Jón definitely hits the apple.'
 ii) 'Therefore, Jón hits the apple in a sure way.'

⁸ Note that in contrast to Icelandic, only pronouns may - and must - undergo Object Shift in these languages.

- (6.32) a. *Hvorfor læste Peter aldrig den? (Vikner 2001b: 322)
 why read Peter never it
 'Why did Peter never read it?'
 b. Hvorfor læste Peter den aldrig?

Hence, the Scandinavian languages are similar to German in that the V2 requirement together with restrictions on the ordering of adverbs and arguments may enforce pre-gap placement of an adverb.

6.4 Semantics: The Reading of Quantified and Indefinite Arguments

Besides information structure, semantic factors influence adverb placement within the middle field: as illustrated in (6.12)-(6.16) above, an adverb in middle field position takes scope over negation or another adverb following it.⁹ I.e., a narrow scope adverb cannot be moved in front of the wide scope element to escape pre-gap placement, as predicted by the ranking SCMA >> ADJCON (see Tableau T6.5). Note that no hierarchic relation among the various ADJCON-subconstraints can be established in German since pre-gap placement is possible for all types of adverbs. Yet, dominance of SCMA over ADJCON predicts that even in case these subconstraints were hierarchically ranked with regard to each other, an adverb α with narrow scope reading cannot be placed in front of an adverb β with wide scope interpretation to escape pre-gap placement even if β 's ADJCON-subconstraint were lower ranked; the unambiguity of the different orders of adverbs in the middle field is thus accounted for. Unless the narrow scope adverb is to be placed in prefield position, it is expected to appear in pre-gap position (in the absence of material within the middle field that might be placed behind it).¹⁰

⁹ Recall that an adverb in middle field position may take narrow scope relative to a finite or non-finite verb in clause-final position; the right-peripheral position of the verb obscures its c-command relation to the middle field constituents, the adverb may occupy a position c-commanded by the following verb (compare footnote 30 in section 2.2). In these cases, too, the ranking SCMA >> ADJCON predicts that the adverb is not moved to a position c-commanding the wide scope verb to escape pre-gap placement, as illustrated in (ib). Rather, the clause-final verb is expected to be included in the adverb's sister constituent only in case the adverb outscopes the verb and thus has to be merged above it as in (ic).

- (i) a. [CP [VP t_j Ihr sagen, daß er sie liebt]_k, hätte_i [IP er_j [AuxP1 [AuxP2 [VP öfters t_k sollen] t_i] t_i]]
her say that he her loves had he more.often be.to
'He should have told her more often that he loves her.'
- b. *[CP [VP t_j Ihr sagen, daß er sie liebt]_k, hätte_i [IP er_j [AuxP1 [AuxP2 öfters_i [AuxP2 [VP t_i t_k sollen]]t_i]t_i]]
- c. [CP [VP t_j Ihr gestehen, daß er sie liebt]_k, hätte_i [IP er_j [AuxP1 [AuxP2 öfters [AuxP1 [AuxP2 t_k können] t_i]] t_i]]
her confess that he her loves had he several.times be.able.to
'Several times, he would have had the opportunity to tell her of his love.'

¹⁰ Remember that an adverb in prefield position may be interpreted as taking wide or narrow scope with respect to a scope-bearing element within the middle field (though the wide scope reading seems to be preferred). Since a narrow scope adverb has to be merged below the wide scope element (MODIFIER), its occurrence in clause-initial position has to be derived by movement (ia, iia), i.e. presupposes attraction of the adverb by some feature on C⁰ (AGREE >> SCMA). Hence, though prefield positioning may prevent a narrow scope adverb from preceding a gap, it cannot be triggered by ADJCON, which is outranked by SCMA. Under a wide scope reading, by contrast, an adverb may be base-generated in prefield position (ib, iib), see section 3.3.

- (i) a. ?Oft_i fehlte er nicht t_i.
often was.absent he not
'He wasn't often absent.'
- b. Oft fehlte er nicht.
'He often wasn't absent.'
- (ii) a. ?Oft_i schweigt er klugerweise t_i.
often says.nothing he cleverly
'He cleverly often says nothing.'
- b. Oft schweigt er klugerweise.
'He often cleverly says nothing.'

T6.5	Ins Wasser ging er nicht oft. into.the water went he not often 'He didn't often go for a swim.'	STAY-X	SCMA	STAY-XP	ADJCON _{freq}
☞ a	[_{CP} Ins Wasser _k ging _i [_{IP} er _j [_{VP} nicht [_{VP} oft [_{VP} t _j t _k t _i]]]] t _i]]	**		**	*
b	[_{CP} Ins Wasser _k ging _i [_{IP} er _j [_{VP} oft _i [_{VP} nicht [_{VP} t _j [_{VP} t _j t _k t _i]]]]]] t _i]]	**	*!	***	

Likewise, a frequency adverb may only be placed in front of a quantified argument within the middle field if it takes wide scope (see Frey & Pittner 1998, 1999, Pittner 1999, Frey 2000a, among others).¹¹ Remember that a frequency adverb can be merged above or below (the base position of) an argument, depending on their scopal relation (compare section 3.5.5). The ranking SCMA >> ADJCON rules out movement of a narrow scope adverb in front of the argument; as shown in (6.33a, 6.34a), a narrow scope adverb may emerge in pre-gap position, following the wide scope argument.¹²

- (6.33) a. Der Staatsanwalt beleidigte jeden Angeklagten oft.
the public.prosecutor insulted every defendant often
i) 'The prosecutor insulted every defendant several times.'
ii) #'The prosecutor often insulted every defendant.'
- b. Der Staatsanwalt beleidigte oft_(i) jeden Angeklagten (*t_i).
i) #'The prosecutor insulted every defendant several times.'
ii) 'The prosecutor often insulted every defendant.'

¹¹ Again, placement of either the frequency adverb or the quantified DP in prefield position results in ambiguity, though the scopal reading corresponding to surface order is preferred.

- (i) a. Oft_(i) putzt keiner (t_i) die Küche.
often cleans nobody the kitchen
i) 'Often, nobody cleans the kitchen.'
ii) ?'Nobody cleans the kitchen often.'
- b. Keiner_(i) putzt (t_i) oft (t_i) die Küche.
i) ?'Often, nobody cleans the kitchen.'
ii) 'Nobody cleans the kitchen often.'

¹² Similarly, a quantified temporal adverbial takes scope over a following quantified argument; yet, in contrast to frequency adverbs, temporal ones have to be merged above the base positions of all arguments (see section 3.5.5). The fact that a narrow scope reading of the temporal adverbial is only available if it follows the quantified argument (ic) points out that the adverbial cannot be moved from a position below the surface position of the argument in front of it (ib), suggesting that STAY-XP outranks ADJCON: if the adverbial precedes an argument, it is base-generated in that position as in (ia); see also footnote 124 in chapter 3.

- (i) a. [_{CP} Angeblich fehlt_i [_{IP} [_{PP} an fast jedem Tag] [_{IP} mindestens ein Student_j [_{VP} t_j t_i]]]]
allegedly is.absent on almost every day at.least one student
i) 'On almost every day, at least one student is absent.'
ii) #'At least one student is absent on almost every day.'
- b. * [_{CP} Angeblich fehlt_i [_{IP} [_{PP} an fast jedem Tag]_k [_{IP} mindestens ein Student_j [_{VP} t_k [_{VP} t_j t_i]]]]]]
c. [_{CP} Angeblich fehlt_i [_{IP} mindestens ein Student_j [_{VP} [_{PP} an fast jedem Tag] [_{VP} t_j t_i]]]]
i) 'On almost every day, at least one student is absent.'
ii) 'At least one student is absent on almost every day.'

- (6.34) a. Die Küche putzt keiner oft.
 the kitchen cleans nobody often
 i) 'Nobody cleans the kitchen often.'
 ii) #'Often nobody cleans the kitchen.'
- b. Die Küche putzt oft_(i) keiner (*t_i).
 i) #'Nobody cleans the kitchen often.'
 ii) 'Often nobody cleans the kitchen.'

Moreover, the interpretation of an indefinite argument may depend on its position relative to a temporal adverbial (or an adverb of a higher type). While the argument is ambiguous in interpretation if placed behind the adverb (6.35a, 6.36a), it may only receive a strong reading if it precedes the adverb as in (6.35b, 6.36b) (compare Diesing 1992, Frey & Pittner 1998, 1999, Pittner 1999, Frey 2000a,b, Haider 2002, Svenonius 2002). It was argued in section 3.5 that independent of its interpretation, the subject might possibly occupy Spec,IP; adverb adjunction to IP (violating *INVERSION) may then be mandatory to make a weak reading of the subject possible. The fact that placement of a strongly interpreted subject in front of the adverb may result in adverb adjunction to an empty constituent as in (6.35b, 6.36b) points to the conclusion that *INVERSION outranks ADJCON: the adverbial does not have to precede the subject to escape pre-gap positioning (see Tableau T6.6).

- (6.35) a. Mit der Eisenbahn spielen an Weihnachten Männer.
 with the train.set play at Christmas men
 i) 'Men (in general) are playing with the train set at Christmas.'
 ii) '(Some) men are playing with the train set at Christmas.'
- b. Mit der Eisenbahn spielen Männer an Weihnachten.
 i) 'Men (in general) are playing with the train set at Christmas.'
 ii) #'(Some) men are playing with the train set at Christmas.'
- (6.36) a. Bewundert werden wollen wahrscheinlich Männer.
 admired be want.to probably men
 i) 'Probably, men (in general) want to be admired.'
 ii) 'Probably, (some) men want to be admired.'
- b. Bewundert werden wollen Männer wahrscheinlich.
 i) 'Probably, men (in general) want to be admired.'
 ii) #'Probably, (some) men want to be admired.'

		SUBJECT	STAY-X	*INVERSION	STAY-XP	ADJCON
T6.6	Mit der Eisenbahn spielen Männer an Weihnachten. with the train.set play men at Christmas 'Men (in general) play with the train set at Christmas.'					
☞ a	$[_{CP} \text{ Mit der Eisenbahn}_k \text{ spielen}_i [_{IP} \text{ Männer}_j [_{VP} \text{ an Weihnachten } [_{VP} t_j t_k t_i]] t_i]]]$		**		**	*
b	$[_{CP} \text{ Mit der Eisenbahn}_k \text{ spielen}_i [_{IP} \text{ an Weihnachten } [_{IP} \text{ Männer}_j [_{VP} t_j t_k t_i]] t_i]]]$		**	*!	**	
c	$[_{CP} \text{ Mit der Eisenbahn}_k \text{ spielen}_i [_{VP} \text{ an Weihnachten } [_{VP} \text{ Männer } t_k t_i]] t_i]]]$	*!	*		*	

Hence, pre-gap placement of an adverb may be enforced by semantics: an adverb in middle field position has to follow an element that outscopes it; the adverb cannot be moved in front of the wide scope element to escape pre-gap placement, as captured by the ranking SCMA >> STAY-XP >> ADJCON. Moreover, an adverbial may have to be placed in front of an indefinite argument to facilitate its weak reading; yet, the ordering *adverb - argument* is not mandatory to prevent an adverb from adjoining to a phonetically empty constituent.

6.5 Summary

In contrast to English and French, ADJCON does not seem to have any effect on the distribution of adverbs in German: pre-gap placement of an adverb never gives rise to ungrammaticality. Word ordering is carried out on the basis of syntactic, semantic, and pragmatic principles - whether it results in adverb adjunction to a phonetically empty constituent is apparently irrelevant: an adverb is not placed in a position different from the one that adverb would occupy in a non-gap construction nor is movement of some constituent suppressed to prevent an adverb from preceding a gap. Although the constraints are taken to be active in every language, the lack of any influence of ADJCON on the positioning of adverbs in German can be captured by its hierarchic ranking below the syntactic, semantic, and pragmatic constraints in the OT framework.

(6.37) PREFIELD >> WHSPEC >> SUBJECT >> AGREE >> OBHD >> *X'-ADJ >> STAY-X >>
 *CP-ADJ <<>> ADV<+FOC >> SCMA >> -FOC<ADV, TOPIC >> THEMSTRUC >>
 *INVERSION >> STAY-XP >> ADJCON

The ranking in (6.37) predicts that V2 may not be deviated from in German matrix clauses: neither filling of the prefield position nor V-to-C movement may be omitted to avoid a violation of ADJCON (PREFIELD, AGREE, OBHD >> ADJCON); moreover, an adverb may neither be placed between the prefield constituent and the finite verb nor in front of the prefield constituent to escape pre-gap position (unless the constituent in Spec,CP is focused; *X'-ADJ, *CP-ADJ, ADV<+FOC >> ADJCON). Word ordering within the middle field has to obey certain semantic and pragmatic principles: an element taking wide scope has to precede a narrow scope adverb; i.e., an adverb cannot be moved in front of a wide scope element within the middle field to avoid adjunction to a phonetically empty constituent (SCMA >> ADJCON). Furthermore, topical and unfocused arguments precede an adverb within the middle field; an argument following a focus-sensitive adverb is perceived of as its focus (TOPIC, -FOC<ADV >> ADJCON). Consequently, an adverb may end up in pre-gap position if its placement in prefield position and in front of some middle field constituent is excluded by syntactic, semantic, and/or pragmatic considerations. As in German, pre-gap adverb placement in the Scandinavian languages, which also display V2, might arise due to restrictions on the ordering of adverbs and arguments within the middle field.

CONCLUSION

Part I of this thesis developed an OT approach to adverb placement extending to the analysis of adverb distribution in gap constructions in Part II. The investigation of adverbs in English, French, and German revealed that their positioning is subject to the interaction of various factors the alternating weighting of which in the diverse languages may give rise to cross-linguistic contrasts in the distributional patterns.

As shown in chapter 2, not only syntactic principles such as the emergence of movement or the availability of particular adjunction sites, but also semantic ones influence the placement of adverbs: the unacceptability of specific adverb positions seems to be based on the inaccessibility of certain scope options; i.e. among other things, adverb placement depends on the other items involved in the clause. These semantic restrictions were captured by restrictions on the input semantic representations and their encoding in the syntactic structures of the output candidates in the present analysis. The base positioning of an adverb was thus restrained by its scope specified in the input.

Yet, the surface position of an adverb rests on the requirements of the violable constraints in the syntactic competition in an OT framework: the candidates' evaluation with regard to these constraints decides on which form out of a set of alternative candidates is the grammatical output for a given input. With the constraints often making conflicting demands on an output structure, their hierarchic relations are crucial in determining grammaticality, permitting cross-linguistic contrasts to be regarded as resulting from the language-specific rankings of the universal constraints. As shown in chapter 3, a set of violable constraints and their language-particular ranking may account for the fact that syntactic, semantic, and pragmatic factors affect adverb placement in various ways in different languages, capturing the following phenomena:

- the contrasts in the ordering of adverbs relative to finite and non-finite verbs/auxiliaries in English and French (section 3.2)
- the filling of the prefield position as well as finite verb placement in German and its effect on adverb positioning (section 3.3)
- the placement of focus-sensitive adverbs (section 3.4)

- the differences in the fronting of topical arguments and adverbs in diverse constructions of the various languages (section 3.5)

Part II focussed on the distribution of adverbs in gap constructions. The three languages under discussion were shown to exhibit distinct patterns of adverb occurrence in front of a gap. In German, pre-gap placement of an adverb never yields to ungrammaticality; rather, adverb positioning is carried out on the basis of the syntactic, semantic, and pragmatic principles investigated in Part I, irrespective of whether or not it results in adverb occurrence in clause-final position. In English and French, by contrast, the acceptability of adverb placement in front of a gap depends on the type of adverb, its scope, and the syntactic construction (English: *wh*-movement vs. Fronting and inverted vs. non-inverted clauses; French: CLLD vs. Cleft and simple vs. periphrastic tense). The interaction of these factors in determining the acceptability of pre-gap adverb occurrence as well as the language-specific strategies to prevent an adverb from adjoining to a phonetically empty constituent could be accounted for by the present analysis. The OT approach thus proves to be capable and suitable to explain the complex interrelations of the various determinants in adverb positioning as well as to capture the cross-linguistic contrasts in their instantiations.

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APPENDIX: CONSTRAINTS AND RANKINGS

ADJCON: Adjuncts are sisters to constituents which include phonetic material.

ADV<+FOC: A constituent that is focussed by a focus-sensitive adverb does not c-command the adverb.

AGREE: Elements in Spec-head relation agree in featural composition.

CLEFT: (a) The focal range is marked unambiguously and (b) the focussed constituent is placed at the right edge of a phonological phrase.

CLITIC: A clitic is attached to its host.

*CP-ADJ: There is no phrase adjoined to CP.

-FOC<ADV: A constituent that is not focussed by a focus-sensitive adverb c-commands the adverb.

*INVERSION: X^0 and Y^0 cannot be co-indexed if there is an overt phrase ZP, ZP c-commanding a segment of IP, and X^0 c-commands ZP and ZP c-commands Y^0 .

*LXMV: A lexical head cannot move.

OBHD: A projection has a head.

PREFIELD: The specifier position of matrix CP is filled.

PUREEP: No adjunction takes place to the highest node in a subordinate extended projection; and no movement takes place into the highest head of a subordinate extended projection.

SCMA: The scope of the head of a chain of an adverbial matches the scope of its foot.

STAY-X: X^0 -trace is not allowed.

STAY-XP: XP-trace is not allowed.

SUBJECT: The highest A-specifier is structurally realized.

THEMSTRUC: C-command relations among arguments that hold on D-structure also hold on S-structure.

TOPIC: (a) A [+top] phrase aligns with the left edge of a segment of IP and (b) a [+top] phrase is the leftmost element within IP.

VP-E: If a VP α is deleted, α occurs in topic position.

WHSPEC: A *wh*-phrase occurs in the highest specifier position of the clause in which it takes scope.

*X'-ADJ: There is no adjunction to the X'-level.

English: SUBJECT, VP-E, WHSPEC, PUREEP, *LxMV, AGREE >> OBHD, CLITIC, SCMA, *INVERSION >> ADJCON_{sub-ori}, ADJCON_{evld} >> TOPIC >> ADJCON_{epis}, ADJCON_{freq}, ADJCON_{temp} >> STAY-X, STAY-XP >> ADV<+FOC <<>> -FOC<ADV >> *X'-ADJ >> *CP-ADJ, PREFIELD, THEMSTRUC

French: SUBJECT, PUREEP, AGREE >> OBHD >> *X'-ADJ >> CLITIC >> CLEFT >> *INVERSION, SCMA >> TOPIC >> ADJCON_{epis}, ADJCON_{evld}, ADJCON_{sub-ori} >> STAY-XP >> ADV<+FOC <<>> -FOC<ADV >> STAY-X >> ADJCON_{freq}, ADJCON_{temp} >> *LxMV, *CP-ADJ, PREFIELD, THEMSTRUC

German: PREFIELD >> WHSPEC, PUREEP >> SUBJECT >> AGREE >> OBHD >> *X'-ADJ >> STAY-X >> *CP-ADJ <<>> ADV<+FOC >> SCMA >> -FOC<ADV, TOPIC >> THEMSTRUC >> *INVERSION >> *LxMV, STAY-XP >> ADJCON