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Bibliographic Details

The Blackwell Companion to Syntax
Edited by: Martin Everaert and Henk Van Riemsdijk
eISBN: 9781405114851
Print publication date: 2005

43 Mittelfeld Phenomena (Scrambling in Germanic)

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Subject	Theoretical Linguistics » Syntax
DOI:	10.1111/b.9781405114851.2005.00046.x

Sections

1 Introduction: the mittelfeld in OV and VO

1.1 What is the 'mittelfeld'?

The term 'mittelfeld' refers to one of five segments ('fields' in the topological model) of a clause. The topological field scheme (for an accurate exposition based on German see Höhle 1986) partitions a clause into five segments: pre-field (Vorfeld) – left bracket – midfield (Mittelfeld) – right bracket – post-field (Nachfeld). The example sentence in (1) illustrates the maximal expansion. It provides material in all five standard segment frames plus the left dislocation frame (LD), preceding the clause proper:

(1)

(Wer das liest),$_{LD}$ dem$_{pre-F}$ *fällt*$_{LB}$ nicht sofort$_{MF}$ *auf*$_{RB}$ wo es sich befindet$_{post-F}$.

(who this reads) him$_{dat}$ *falls* not immediately *up* where it itself locates

'He who reads this surely does not immediately realize where it is located.'

(auf-fallen 'fall up' = realize, come to mind; particle + verb combination)

The mittelfeld (MF) is that segment of a clause that is sandwiched by the left bracket *segment* (LB; Germ. *linke Klammer*) and the *right bracket segment* (RB; Germ. *rechte Klammer*). It is worth emphasizing that the MF does not correspond to a constituent in terms of a phrase structure representation, simply because the verb position is assigned to a separate segment frame, namely the right bracket. In phrase structure terms, the left bracket position is C^0. The right bracket is the position of the clause-final verb. So the mittelfeld includes everything between C^0 on the left and the verbs on the right. The exact mapping is theory-dependent and therefore differs, depending on the chosen model (see section 3.1).

For the left bracket frame, the alternative realizations are as follows: the finite verb in a verb-first (2a) or verb-second clause (1), the imperative verb form in a clausal imperative construction, or a complementizer (2b). The left bracket may be empty as in infinitival clauses (2c) or embedded *wh*-clauses (2d). The pre-field (Germ. *Vorfeld*) immediately precedes the left bracket; the post-field (Germ. *Nachfeld*) follows the right bracket. In GB-terminology, the post-field is the extraposition area. The left dislocation segment is external to the clause frame, and therefore it requires pronominal coreferencing as a mechanism of linking its content to the clause. In (1), the demonstrative pronoun in the pre-field is coreferent with the left-dislocated free relative. In clauses without accessible pre-field (e.g., in verb-first interrogative clauses), the resumptive demonstrative is located in the middle field:

(2)

a. LB *Fällt* MF der Leserin sofort etwas *auf*?

strikes the reader immediately something up?

'Does something immediately come to the mind of the reader?'

b. LB *daß* MF der Leserin sofort etwas *auffällt*

that the reader immediately something up-strikes

c. (*ohne*$_{Prep.}$) MF der Leserin sofort *aufzufallen*

(without) the reader immediately up-to-strike

'without coming immediately to the mind of the reader'

d. PF wem LB – MF sofort etwas auffällt
whom immediately something up-strikes

In OV-languages, the mittelfeld is easy to identify. It is the segment of a clause whose left boundary is immediately after the position of the sentence-initial complementizer or the finite verb and whose right boundary is right before the position of the clause-final verb(s) or stranded verbal particles (see 2a, b).

1.2 The mittelfeld in German as an OV language

In German, an OV language, the mittelfeld is in principle open for all constituents of a clause, that is, arguments (3b, d, e), adjuncts (3c, d) and predicates (3b), of all categories, namely noun phrases, PPs, clausal constituents (3c, d, e), or particles (3d). Unlike Dutch, German allows a genuinely empty mittelfeld (3a), and in fact it must be empty in constructions as in (3a), since an expletive pronoun is ruled out. As for clausal constituents, the preferred though not grammatically enforced position is the post-field (see section 2.5 for more details). In the post-field, predicates, particles, and noun phrases are generally ungrammatical, except for heavy-NP-shift constructions. The post-field hosts extraposed clauses and PPs.

(3)

a. **Intransitive passive**:
LB als MF [*empty*] geschossen wurde *empty post field*
when shot was

b. **Secondary predicates**:
daß MF er sein Steak *betrunken roh* aß
that he^{i} his steak^{j} drunk^{i} raw^{j} ate

c. **Adverbial case**:
daß MF [als wir vorbei fuhren] geschossen wurde
that [when we passed by] shot was
'that (someone) shot when we passed by'

d. **Finite argument clause**:
Ich habe MF ja [*daß die Erde rund sei*] nie bezweifelt.
'I have *PART*. [that the earth is flat] never doubted.'

e. **Infinitival clause**:
Bis jetzt hat MF [diese Frage zu stellen] noch keiner gewagt.
until now has *PART*. [this question to ask] not-yet anyone dared

Note that in Dutch there is a stricter ban against clausal arguments in the MF (see section 2.5). Infinitival argument clauses in the MF must undergo V-raising (= clause union operation that integrates parts of the infinitival clause into the matrix clause). Clausal infinitivals are therefore found only in extraposed or topicalized positions, that is, in the post-field or the pre-field, respectively. This is not the only reason why the Dutch equivalent of (3e) is ungrammatical: the first reason is that a clausal infinitive must not occur in the MF, and second, a (clausal) object cannot occur in front of the transitive subject in Dutch.

1.3 The mittelfeld in a VO language

What corresponds to the OV-Mittelfeld in a VO language? The Scandinavian Germanic languages are both VO and V2-languages; English is a 'residual' V2-language (notably in interrogative constructions). So, the topological segmentation tailored to capture the main subparts of a clause in a V2-language can be applied in an analogous manner to a VO-clause. The pre-field and the left bracket are easy to identify. But where exactly is the MF located?

(4)

a. pre-F Never before [LB had] he *read* such a good article.

b. pre-F Aldrig før [LB had] han *læst* sådan en god artikel. Danish[1]

c. pre-F Nie zuvor [LB hatte] er so einen guten Artikel *gelesen*. German

d. pre-F Nooit tevoren [LB had hij zo'n goed artikel *gelezen*. Dutch

The MF is less easy to identify. In OV languages, the right bracket is the position of the verbal head of the main VP. Thus, the entire VP is part of the MF, if we stretch the notion *mittelfeld* and include the right bracket into the MF, as its right boundary. With this proviso, it does not seem to be too difficult anymore to identify the MF in an VO language, despite the absence of a manifest right boundary: the MF in a 'verb-second' VO language is that segment of a clause that is in between the V2 position (= the position of a clause initial complementizer or the fronted finite verb) as the left boundary and the right edge of the VP as the right boundary. The extraposition area corresponds to the post-field of an OV clause:

(5) Did MF more people misidentify the mittelfeld post-F than the prefield?

In OV languages, it is easy to see that a comparative clause that is split off is necessarily extraposed. Hence, it is safe to conclude that the comparative clause in (5) is in the post-field of the VO clause.

For descriptive purposes, the primary utility of the notion MF rests on one's non-commitment in terms of the fine-grained details of phrase structure. It can serve as a theory neutral label for a well-defined portion of a clause in an OV language whose exact phrase structure analysis may remain open or even controversial. The prima-facie utility of the notion MF for VO languages is less obvious than for OV languages. Nevertheless, it can serve as a frame of reference for issues of cross-linguistic comparison. It is of considerable heuristic value for questions regarding the proper analysis of the crucial grammatical parameters that are constitutive of the OV vs. VO clause type, however.

2 Mittelfeld phenomena: a survey

2.1 Serialization variation: scrambling

The model language for this survey is German because of its wealth of word-order alternations in the mittelfeld. Compared to other Germanic OV languages, as for instance Dutch, the potential of word-order variation in German is very great. For example, all six possible serialization permutations of the three DPs in the mittelfeld of (6a) yield a fully grammatical order. One of the five alternative serializations for (6a) is given in (6b). In Dutch, however, DP arguments must not be permuted.

(6)

a. daß das Objekt dem Subjekt den ersten Platz streitig macht
that the objectNOM the subjectDAT the initial placeACC contested makes
'that the object competes with the subject for the initial place'

b. daß dem Subjekt den ersten Platz das Objekt streitig macht
that the subjectDAT the initial placeACC the objectNOM contested makes

Ross (1986), who furnished not only the name for this phenomenon, placed it outside grammar proper and treated it as a stylistic rule. In *The Minimalist Program* (1995c: 324), Chomsky considers a similar move. However, the fact that scrambling interacts with structurally determined phenomena (e.g., anaphor and variable binding) plus the fact that the very existence of scrambling in a given language is grammatically conditioned[2] militates against attempts to disqualify scrambling as a genuine phenomenon of grammar. The following grammatical properties characteristic of scrambling in German (Stechow and Sternefeld 1988; Grewendorf and Sternefeld 1990; Müller 1995: 95–102; Haider and Rosengren 1998), some of which are inappropriately characterized in the literature, will be discussed in the given order:

(i) Scrambling proper (in German) is clause-bound and confined to the mittelfeld.

(ii) There is no instance of obligatory scrambling.

(iii) Scrambling applies to arguments of all categories (i.e., DP, PP, CP).

(iv) Scrambling of potential binders extends their respective binding domains.

(v) Scrambling produces scope ambiguities (as a chain effect).

(vi) Scrambling can be iterated.

(vii) Scrambling reorders arguments (object shift does not; see **section 2.3.1**).

Scrambling is usually discussed as a clausal phenomenon, but in fact it should be seen as a more general phenomenon in the context of head-final projections (Haider 1991a; Corver and Van Riemsdijk 1997; Haider 1997c). In German, scrambling is found within VPs (see (2)) and within APs (see (3)), but not within NPs and PPs, as they are head-initial.

(7)

a. [$_{VP}$ Dem Subjekt den ersten Platz streitig gemacht] hat das Objekt.

b. [$_{VP}$ Den ersten Platz$_i$ dem Subjekt e$_i$ streitig gemacht] hat das Objekt.

(8)

a. der [$_{AP}$ *dem Briefträger* in vielen Merkmalen nicht unähnliche] Sohn der Nachbarin
the [the postman in many features not dissimilar] son (of)-the neighbour
'the son of the neighbour resembling the postman in many features'

b. der [$_{AP}$ in vielen Merkmalen *dem Briefträger* nicht unähnliche] Sohn der Nachbarin
the [the in many features the postman not dissimilar] son (of)-the neighbour

Property (i): Scrambling is clause bound, in contrast to *focus fronting*.

The claim that scrambling is clause bound is uncontroversial for cases of extraction out of finite clauses, as illustrated in (9), but it holds also for extraction out of infinitival clauses. Apparent counterevidence is controversial. It is open to an alternative analysis as a clause-union construction, due to V-raising.

Sentences (9a) and (9c) are unacceptable. The examples (9b) and (9d) are cases of focus fronting (FF; see Neeleman 1994b: 395f. for Dutch), a construction that occurs less frequently in written than in oral style, presumably because of the necessity of a manifest intonation contour, namely, a rise-fall contour, here indicated by / and \, respectively. Keep in mind that scrambling and FF are two clearly distinct phenomena. For instance, FF may be applied to elements that do not scramble, such as selected manner adverbials or VPs (see the contrasts in (9f) and (9g)).

(9)

a. *daß die Lösung$_i$ niemand geglaubt hat, [daß er e$_i$ gefunden hätte]
that the solution no one believed has that he found had

b. daß /SO eine Lösung$_i$ NIE\mand geglaubt hat, [daß einer e$_i$ gefunden hätte][3]
that such a solution no one believed has that someone found had
'that no one believed that anyone had found such a solution'

c. *daß niemand [sie zu besuchen]$_i$ geglaubt, [dass er sich e$_i$ leisten kann]
that no one [her to visit] believes that he REFL afford can

d. daß [sie zu be/SUchen]$_i$ NIE\mand glaubt, dass er sich e$_i$ leisten kann
that [her to visit] no one believes that he REFL afford can
'that no one believes that he can afford to visit her'

e. Da habe ich mich$_i$ angefangen, e$_i$ damit zu beschäftigen.[4]
there have I myself$_i$ begun [therewith to engage]
'So I began to engage myself for it.'

f. daß sie ja [/SO viel]$_i$ NICHT\ geglaubt hat [daß man dafür e$_i$ bezahlen müsse]
that she Prt [so much] not believed has [that one for-that pay must]

In (9a) and (9c), the scrambled constituent is in the mittelfeld of the matrix clause, that is the clause that embeds the clause with the trace of the scrambled constituent. This type of long-distance displacement is ungrammatical in German, with one exception however: (9b) and (9d) are acceptable, but only with a specific intonation contour. This construction is the result of long-distance movement. Sentence (9e) is an example of a construction whose analysis is controversial ('third infinitival construction', see Den Besten and Rutten 1989; Grewendorf and Sabel 1999; Haider 1993: ch. 9, 2002).

Excursion 1: topicalized V-projections are VPs

Scrambling is found within topicalized V-projections. For the theoretical modeling of scrambling it is relevant whether these constituents are just VPs or VPs within higher functional projections. In the first case, scrambling must be analyzed in terms of the structure of the VP. In the latter case, however, the analysis of scrambling may be framed in terms of movement to specs of functional heads.

Claim

Topicalized projections must not contain the trace of the finite verb. Therefore, topicalized V-projections are VPs, rather than VPs *within* functional projections.

Background

If the fronted constituent contains a functional projection on top of VP, part of the head chain of V-movement that relates the finite verb in V2-position and its base position in the VP would be within the topicalized constituents. This would incur a crossing violation in that the trace is not within the non-breaking hyphen domain of its antecedent. This is easy to demonstrate with the contrast between (1a) and (1c) because in German, stranded particles of verb-particle combinations identify the base position of the verb:

(1)

a. [Einen Fehler nachgewiesen] hat er ihm noch nie.
   [*Einen Fehler nachgewiesen*] *hat* *er ihr noch nie*.
   [a mistake PRT-proven] has he her never ever
   'given her proof of a mistake, he never ever has'
b. *Er wies*$_j$ *ihr noch nie einen Fehlernach-e*$_j$.
   he proved$_i$ her yet ever a mistake PRT-e$_i$
c. *[*Einen Fehlernach-e*$_j$] *wies*$_j$ *er ihr noch nie*.
   [a mistake PRT-e$_i$] proved$_i$ he her never ever
   'Given her proof of a mistake, he never ever has.'

The examples in (1) feature a particle verb. When the finite verb moves to [Spec, C], the particle is stranded (1b). Example (1c) shows that the stranded particle cannot be part of the fronted constituent. In other words, the trace of the finite verb must not be part of the topicalized constituent. Sentence (1c) demonstrates that the topicalized constituent cannot contain the trace of the finite verb: its unacceptability is due to a crossing violation. The trace of the verb in (1c) fails to be in the c-command domain of the moved verb.

The argument

If the topicalized constituent in (1a) contained the trace of the finite verb it would be predicted to be ungrammatical, contrary to the facts. The conclusion must therefore be that the topicalized phrase does not contain the trace of the finite verb. For (1a) this means that the topicalized constituent must be a complement of the auxiliary. It is only in this case that the finite auxiliary would not have to pass through the functional head of a functional projection that hosts arguments of the main verb (see 2a). So if the topicalized constituent in (1a) is not a VP but a VP within a functional projection, this functional projection must be a complement of the auxiliary (2a).

Unavoidable though this conclusion is, it is unwanted because it is bound to overgenerate. The structure in (2a) induces ungrammaticality, as (2b), illustrated in (3b), indicates.

(2)
a. [$_{AUX-VP}$ [**FP** XP F^0 [$_{VP}$ . . . YP . . . V^0]] V_{AUX}]
b. [$_{AUX-VP}$ [**FP** XP F^0 [$_{VP}$ . . . YP . . . V^0] (*__ZP__)] (*__ZP__) V_{AUX}]

(3)
a. Gesprochen *mit ihr* / *Mit ihr* gesprochen hat er nicht mehr.
   spoken to her / *to her* spoken has he not any-more
b. *daß er nicht mehr gesprochen *mit ihr hat*
c. daß er nicht mehr *mit ihr* gesprochen *hat*
d. daß er nicht mehr gesprochen *hat*mit ihr

PP objects may be 'extraposed'. The first chunk in (3a) (*Gesprochen mit ihr*) is VP topicalization with an extraposed PP. A VP with extraposition is ungrammatical in the base position (see 3b). If the topicalized constituent in (3a) is a functional projection that allows extraposition, it should allow extraposition in the base position, but this is not the case. Example (3c) is the version with the unextraposed PP. Extraposition of the PP targets a position after the finite verb (3d). One might object that the distributional properties in the base position are obscured by an intervening factor, namely, V-raising. Each verb is raised to the next higher V-position, forming a head cluster. But this objection is without force. If it were so, (4c) would be predicted to be grammatical: If V-raising out of the VP amalgamates

the sequence of verbs at the end of the clause, the VP nevertheless remains a target of extraposition. The prediction is then that in a double-object clause extraposition may place a relative clause that goes with the first object in between the second object and the verb cluster:

(4)

a. daß er *jenen*$_i$ etwas gegeben hat, *die*$_i$ *ihn darum gebeten haben*
that he those something given has who him therefore asked have
'that he gave something to those who had asked him for it'

b. [*jenen*$_i$ etwas gegeben *die*$_i$ *ihn darum gebeten haben*] hat er noch nie

c. *daß er *jenen*$_i$ etwas, e$_i$ *die*$_i$ *ihn darum gebeten haben* [gegeben hat]$_i$

Relative clauses can be extraposed in a fronted VP (4b). Example (4c) is ungrammatical, although it could be analyzed as a functional projection with extraposed relative clause and the verb raised to the higher verb, which subsequently moves to the right hand functional head.

In sum, there is robust enough evidence for VP topicalization and against topicalization of VP within functional projection(s). Hence, topicalized V-projections are a valid testing ground for VP-internal structure.

Property (ii): Syntactically, scrambling is optional. There is no obvious *syntactic* trigger.

Scrambling is optional in the sense that there is no syntactic context that makes an unscrambled order ungrammatical. This is generally acknowledged (see for instance Müller 1995: 95–100). However, there are semantic and pragmatic aspects of word-order variation. But, the semantic and/or pragmatic effects induced by scrambling cannot be taken to be grammatical triggering factors of Scrambling since the specific interpretation effects that are claimed to trigger Scrambling are found in unscrambled structures as well. Scrambling seems to reduce, but not to induce or replace, the interpretation potential. Sentence (10a) has the definite DP after an indefinite pronoun (morphologically identical with the interrogative form and specifically chosen here because it does not scramble). So the definite DP is likely to be in situ. Analogous considerations apply to (10b, c). Generic interpretation (10a), indefinite specific (10b), and definite specific (10c) interpretations of DP are available for DPs in situ as well as for scrambled DPs. What can get lost by the scrambling of indefinites is the existentially bound interpretation. Note, however, that the strong interpretation (generic (10a) or specific (10b)) is available in the base position as well. The grammar-theoretic reason will be analyzed below.

(10)

a. **Existential or generic**:
dass ja wer *(die) Pockenviren* ausrotten sollte
that PRT who the pockvirus exterminate should
'that surely someone should exterminate the pockviruses'

b. **Indefinite specific**:
wenn wer *eine rothaarige Frau* sucht, dann ist das Maria
if who a red-haired woman seeks, then is this Mary
'if someone is looking for a red-haired person, then this is Mary'

c. **Definite specific**:
daß er wem *ihr Kleid* gezeigt hat, hat Anna nicht gefallen
that he who$_{DAT}$ her Dress shown has, has Anna$_{NOM}$ not liked'
'that he has shown her dress to someone Anna did not like'

The only case for allegedly obligatory Scrambling (cf. 11a) – indefinites cannot occur in the domain of negation in German – rests on a controversial premise, namely, the premise that the negation universally c-commands the whole VP. This premise is unfounded, at least for German and Dutch.[5] There are elements, for instance indefinite W-pronouns, that do not scramble (cf. 11b) but occur in front of the negation (11c).

(11)

a. *daß jemand nicht *wen* verjagte
that someone not someone chased

b. */??Daß mitunter wen_i jemand e_i beleidigt, kommt vor.
that sometimes someone someone offends, happens

c. daß mitunter wer wen nicht beleidigt, kommt vor
that sometimes someone someone not offends happens
'that it sometimes happens that someone does not offend somebody'

The fact that scrambled indefinites may lose their indefinite or unspecific interpretation is but an epiphenomenon, and not the trigger, of Scrambling. Example (11b) is ungrammatical because an indefinite scrambled out of the minimal domain of argument-projection (MAC = minimal argument complex)[6] cannot receive an existential reading: it has left the domain of existential closure. The generic or indefinite-specific interpretation that indefinites receive outside the MAC is incompatible with the lexical semantics of indefinite pronouns.

The examples in (12) illustrate that the very interpretation (cf. 12) that is applicable to scrambled indefinites is available already in the base position. In other words, scrambling eliminates interpretation options, but it does not add or generate them. In a triggering account, the 'generated' interpretation would be an element of the triggering mechanism.

(12)

a. daß ja Fisch/einen Fisch keiner bestellte
that PRT fish/a fish nobody ordered
'that nobody ordered fish/a fish'

b. daß ja keiner Fisch/einen Fisch bestellte
that PRT nobody fish/a fish ordered

The bare indefinite in (12) is interpreted generically in (12a), and so it can be interpreted in (12b). With an indefinite article, the NP in (12a) can be interpreted as specific, and so it can in (12b). The loss of the existential reading in (12a) is a by-product of scrambling, however. The scrambled DP has left the minimal argument complex, which means that it has left the domain of existential closure.

Property (iii): Scrambling applies to arguments of all categories (i.e., DP, PP, CP).

Irrespective of the category of an argument, namely as a DP, as a PP (13a), as a finite CP (13b), or as an infinite CP-construction (13c), an argument may scramble.[7]

(13)

a. daß dort jetzt [auf Peter]$_i$ jemand e_i wartet
that there now for Peter someone waits
'that someone is waiting for Peter there now'

b. (?)weil ja heutzutage [daß die Erde rund ist]$_i$ niemand e$_i$ ernsthaft bezweifelt
since PRT today [that the earth round is] nobody seriously doubts

c. daß doch [diese Tür aufzubrechen]$_i$ keiner je e$_i$ versucht hat
that PRT [this door to open] nobody ever tried has
'that nobody ever tried to open this door'

Note that the examples have the scrambled constituent to the left of the subject but to the right of modal particles and temporal adverbials. This, plus the fact that they are well-formed in the absence of focus intonation, indicates that focus movement is not at stake. However, as the question mark in (13b) indicates, non-extraposed finite (scrambled) clauses are slightly marginal; but they are equally marked in the position of the trace as well. They are best when extraposed or in the position immediately after C^0, the focus movement position.

A remark on the scrambling properties of adjuncts seems to be appropriate here: if there are alternative positions, this is not enough for claiming scrambling. Scrambling can be assumed only if there is a privileged start position. This is not entirely clear for adjuncts. If, however, adjuncts can be generated in alternative positions, scrambling is not at stake. This is claimed for Dutch by Neeleman and Weerman (1999). Arguments for base positions of adverbials in German are developed in Frey and Pittner (1998).

Property (iv): Scrambling of possible binders extends their respective binding domains.

Scrambling a potential binder creates new binding possibilities if scrambling enlarges the c-command domain on the binder. This holds for principle-A effects (14a), for principle-C effects (14b), and for Q-binding of pronouns (14c). Note that the discussion of variable binding in scrambling constructions in the literature may involve controversial data judgments (see Frey 1993; Müller and Sternefeld 1994). In all cases, binding in the base-positions[8] is impossible: the non-scrambled version of (14a) would be ungrammatical, (14b) would be grammatical, and in (14c) the pronoun could not get a Q-bound reading.

(14)

a. daß man die Zeugenaussagen$_i$ einander^i e$_i$ anglich
that one the testimonies$_{ACC}$ each other$_{DAT}$ adjusted
'that the testimonies were adjusted to one another'

b. *daß man Peter$_i$ [Peters$_i$ Vater] e$_i$ nicht übergeben hat
that one Peter Peter's father$_{DAT}$ not surrendered has

c. daß man fast jeden$_i$ seinem^i Vorgesetzten e$_i$ ankündigte
that one almost everyone his boss$_{DAT}$ announced
'that almost everyone was announced to his boss'

The counterpart of an extended binding domain as an effect of scrambling a potential binder is the destruction of a binding configuration by scrambling the bindee across a binder. Note that this is a property of A-movement, but not A′-movement. A′-moved bindees are reconstructed for binding.

Scrambling of a bindee across a binder destroys binding relations that hold in the base position for principle-A effects (15a), for principle-C effects (15b), and for Q-binding (15c). Binding of a fronted reflexive by a nominative (15d) is exceptional, since in this case F-binding applies, that is, binding by the functional head, whose F-features agree with the nominative (see Haider 1989, 1993: 167; for a detailed implementation see Frey 1993).[9] This is a nominative, not a subject effect: ECM-subjects (for instance, in ECM-constructions) behave like objects: scrambling of the bindee across the binder in

(15e) is ungrammatical.

(15)

a. *daß man aneinander$_i$ die Bilder^i e$_i$ anglich
that one to-each-other the pictures assimilated

b. daß man [den Vater des Polizisten^i]$_j$ dem Polizisten/ihm^i e$_j$ nicht übergeben hat
that one the father$_{ACC}$ of-the policeman the policeman/him$_{DAT}$ not handed over has
'that the father of the policeman was not handed over to the policeman/him'

c. ?daß man [seinen^i Vorgesetzten]$_j$ jedem^i e$_j$ ankündigte
that one his boss$_{ACC}$ everyone$_{DAT}$ announced

d. daß sich$_i$ bei diesem Fall viele^i e$_i$ geirrt haben
that REFL with this case many erred have
'that in this case many erred'

e. *daß man sich$_i$ keinen^i e$_i$ vorstellen ließ
that one himself nobody introduce let

These examples demonstrate that binding applies at the target position of Scrambling and not at the respective base positions (see Frey 1993). Hence, reconstruction is not at issue. Note that this distinguishes structures resulting from scrambling from those resulting from topicalization (16a, b):

(16)

a. Aneinander$_i$ hat man die Bilder^i e$_i$ angeglichen.
to-each-other has one the pictures assimilated
'The pictures were assimilated to one another.'

b. *[Aus Peters^i Wagen]$_j$ hat man ihn^i e$_j$ gezerrt.
out of Peter's car has one him dragged
'Peter was dragged out of his car.'

In A′-chains, binding is checked in the lower position. So (16a) meets condition (A) and (16b) violates condition (C). The relevant contrasts are (15a) versus (16a) and (15b) versus (16b).

Property (v): Scrambling produces scope ambiguities.

Scrambling of quantifiers across quantifier-sensitive elements produces scope ambiguities. Unlike binding, which depends on the surface position of the head of a movement chain, scoping refers to chain-links (cf. Frey 1993): a quantifier Q can get a wide-scope reading with respect to a phrase E, if at least one member of the chain of E is c-commanded by Q (see also Aoun and Li's (1993b) scope principle[10]). Since scrambling – under some of the current analyses – produces chain links, it is predicted to produce scope-ambiguities.

(17)

a. **Ambiguous scope:**
daß man [*mindestens ein* Bild]$_i$ *fast* *jedem* Experten e$_i$ zeigte
that one at least one picture$_{ACC}$ (to) almost every expert$_{DAT}$ showed
'that at least one picture was shown to almost every expert'

b. **Unambiguous scope**:

daß man *mindestens einem* Experten *fast jedes* Bild zeigte
that they (to) at least one expert$_{DAT}$ almost every picture$_{ACC}$ showed

The ambiguity of (17a) is a scrambling effect. The wide-scope reading of the existentially quantified expression follows from its surface position. It c-commands the universal quantifier. The universally quantified expression, on the other hand, c-commands a trace of the scrambled existential-quantifier expression. Hence this phrase can be assigned to the scope of the lower quantifier. The order of the objects in (17b) – DAT before ACC object – is a base order, given the head verb *zeigen* ('show').

Property (vi): Scrambling can be iterated.

Example (6), repeated for convenience, is representative: In the mittelfeld of a clause with three arguments, the arguments can be serialized in any order. So, there are orders in which more than one argument changes place. Hence, scrambling, unlike wh-movement, is not restricted to a single application.

(6)

a. daß das Objekt dem Subjekt den ersten Platz streitig macht
that the object$_{NOM}$ the subject$_{DAT}$ the initial place$_{ACC}$ contentious makes
'that the object disputes the right of the subject for the initial place'

b. daß dem Subjekt den ersten Platz das Objekt streitig macht
that the subject$_{DAT}$ the initial place$_{ACC}$ the object$_{NOM}$ contentious makes

If (6a) reflects the base order, (6b) is the result of scrambling the objects across the subject. Note that the resulting order of the scrambled objects is free: changing the order of the dative and the accusative object in (6b) does not affect grammaticality.

Property (vii): Scrambling reorders arguments (*object shift* does not; see 2.3.1).

In a genuine scrambling language like German (or e.g. Japanese), scrambling produces the complete permutation set of argument order variants for a given clause (see the discussion of ex. 6). The term 'scrambling' is sometimes used in a wider sense: in the discussion of Dutch word order, 'scrambling' is used to refer to the order variation between an argument and an adverbial (see section 2.2.1). 'Object shift' denotes a phenomenon found in Scandinavian languages: pronominal objects (in Icelandic any kind of object) may precede pre-VP adverbials if the VP is beheaded, that is, if the verb is finite and moved to the V2 position. The Dutch phenomenon and the Scandinavian object shift share the property of order conservation: the relative order of arguments must not change. So, it is justified and necessary – at least on the descriptive level – to distinguish scrambling proper from variants of object shift, as in Scandinavian languages and Dutch. It is still an unsettled issue as to whether object shift should be analysed as an argument-movement phenomenon or as an adverb-related pheonomenon (see Neeleman and Weerman 1999: 38ff.).

2.2 Base positions of arguments

2.2.1 Base order as a function of A-structure projection

In German, scrambling cannot be identified without reference to the A-structure of the particular verbal head. The reason is this: the German base order is not a function of grammatical relations (e.g. Case), but directly reflects the ranking of the arguments in the A-structure of the given head. The ranking is a function of the hierarchical organization of lexical-conceptual structure in the lexical entry of a head.

Several verb classes can be distinguished in German with respect to the serialization type determined by their respective A-structure. It is worth emphasizing that this is not a peculiarity of German. German compares with Icelandic in this respect. V-class dependent base orders are also familiar from Icelandic (Kress 1982; Yip et al. 1987). In this language, variant base orders are easy to identify just because of the lack of scrambling. They can be read off from the surface order of DPs inside a VP. Thus, this is a safe indicator that the ordering type is neither an idiosyncratic property nor dependent on scrambling.

A given order of arguments that is the result of scrambling for one verb class (cf. 18a, c, e) may be a base order for another verb class (cf. 18b, d, f). Therefore, a naive inspection of the order of DPs in terms of their case functions does not reveal whether a given order is a base order or a scrambling order. What is needed is an empirically reliable test criterion for the identification of antecedent-gap configurations that are indicative of scrambling. The patterns in (18) are possible base orders for nominal arguments in German (cf. Haider 1997d).

(18)

a. NOM > ACC:	anfassen	bedauern	interpretieren. . . .
	'touch'	'regret'	'interpret'
b. ACC > NOM:	ängstigen	beeindrucken	interessieren. . . .
	'frighten'	'impress'	'interest'
c. NOM > DAT:	helfen	gratulieren	widersprechen. . . .
	'help'	'congratulate'	'oppose'
d. DAT > NOM:	gefallen	fehlen.	imponieren. . . .
	'appeal/please'	'lack'/'be missing'	'impress'
e. NOM > DAT > ACC:	anvertrauen	verbieten	zeigen. . . .
	'entrust'	'forbid'	'show'
f. NOM > ACC > DAT:	aussetzen	unterordnen	zuschreiben. . . .
	'expose' to	'subordinate'	'attribute'

The verbs listed in (18a) through (18f) are all verbs that require *have* as an auxiliary, so the patterns (18b, d) cannot be explained away as an ergative-unergative effect. The subject of the verb in these two classes receives a Theme interpretation. If an Agent interpretation is chosen, the verbs must be allocated into classes (18a) and (18c), respectively.

It is worth emphasizing that in Dutch, a language without nominal case-marking,[11] base orders with a nominative following an object are found only with unaccusative verbs.[12] What is called Scrambling in the literature on Dutch is the variation in the relative order of arguments and certain adverbials. Genuine Scrambling is the permutation of arguments. This is absent in Dutch. The reason has to be sought in the implementation of case checking.

What determines the base order? The base order reflects the order in which the arguments are discharged into the syntactic structure: the asymmetric ranking order of the arguments in the argument grid is mapped onto an asymmetric syntactic structure. A higher ranked argument ends up in a higher position in the syntactic constituent structure (c-structure).

(19)

A-structure		c-structure (head-final)
H^0: <A <B <C>>> (ranked) lexical A-structure	⇒	[A [B [C h^0]]] syntactic c-structure (head-final)

For present purposes it is sufficient to accept that ranking is a function of the A-structure of a lexical head. The ranking of the A-structure in the lexical entry is not idiosyncratic (but see also Emonds

1991b). It seems to be determined by the conceptual structure.

In order to avoid begging the question, syntactic criteria for the identification of base vs. derived order are needed in order to ascertain whether a given serialization is the result of scrambling or whether it is a base order. Moreover, the test should be sensitive for antecedent–gap constellations that go together with scrambling in order to verify or falsify the assumption that scrambling involves chain formation.

A set of diagnostics with the desired property is found at the phonology–syntax interface. The first diagnostic property is the availability of a maximal focus potential under a nuclear stress intonation. The second property is scope inversion under rise–fall intonation. This property can be explained without additional assumptions if there is an antecedent–gap configuration with the rise intonation on the antecedent and the fall intonation on the constituent adjacent to the gap.

2.2.2 Focus potential

It is by now widely accepted that maximal or wide focus (the whole utterance focused) is possible only in clauses where the focus exponent (i.e., the constituent carrying the nuclear accent) is both in its base position and in the sister position of the head. In order to be a felicitous answer to a question like 'What is the case?' or 'What has happened?', wide focus potential is required. Scrambling of the most deeply embedded argument destroys this constellation since then the most deeply embedded A-position is a trace – and traces cannot be stressed. Stress on any other position yields only a restricted focus domain. So, scrambling of the lowest argument in the base order results in the loss of maximal focus potential. With this in mind, let us test utterances for the potential extension of their focus domain by looking at them in the question context mentioned above. Whenever the focus of a clause with a V-adjacent argument is restricted (and the utterance is consequently an unacceptable answer in the given context) we know that the expected focus exponent in structural terms is not the closest argument to the verb. A closer argument must have left a trace in its own base position closer to the verb and thereby lower in the VP. This test will therefore not only tell us which one of two alternative constellations is the base constellation, but also that the scrambled phrase has left a trace. Let us look at some representative examples. The examples in (20) contrast a verb with NOM > ACC base order (*interpretieren*, 'interpret') and one with ACC > NOM base order (*interessieren*, 'interest'):

(20)

a. **Maximal focus**:
   daß Linguisten Bal***LAD*** en interpretieren
   that linguists$_{NOM}$ ballads$_{ACC}$ interpret$_{3pl}$

b. **Maximal focus**:
   daß Linguisten Bal***LAD*** en interessieren
   that linguists$_{ACC}$ ballads$_{NOM}$ interest$_{3pl}$

c. **Minimal focus**:
   daß Balladen$_i$ Lingu***IST***en e_i interpretieren
   that ballads$_{ACC}$ linguists$_{NOM}$ interpret$_{3pl}$

d. **Minimal focus**:
   daß Balladen$_i$ Lingu***IST*** en e_i interessieren
   that ballads$_{NOM}$ linguists$_{ACC}$ interest$_{3pl}$

In (20c, d) only the DP with the focus exponents are possible focus domains. They do not allow maximal focus. Note that the order of arguments in terms of case is different in (20c, d). The utterances would be felicitous answers only to questions such as 'Who interprets ballads?' for (20c) and

'Who do ballads interest?' for (20d), but not to a question such as 'What happened?'. Equally felicitous answers to the questions would be the sentences in (20a, b), respectively, but with stress on the first DP:[13]

(21)

a. **Minimal focus:**

daß Lingu***IST***en$_{NOM}$ Balladen$_{ACC}$ interpretieren

that linguists ballads interpret

b. **Minimal focus:**

daß Lingu***IST***en$_{ACC}$ Balladen$_{NOM}$ interessieren

that linguists ballads interest

The stress pattern in (20c, d) is identical with the stress pattern in (21a, b) – a DP preceding another DP is stressed – and so is the focus potential, namely, minimal focus only. This parallelism is evidence for the existence of a trace in (20c, d): Only with the trace in the base positions are the structures of (20c, d) and (21a, b) equivalent with respect to the positioning of the focus stress.

The same contrast as illustrated in (20) for subject and object can be observed with pairs of verbs that differ in the base order of double objects: For a minority class of verbs, ACC–DAT, and not DAT–ACC, is the base order:

(22)

a. **Maximal focus:**

Es hinterließ jemand einer Frau eine ***NACH*** richt.

there left someone a woman$_{DAT}$ a message$_{ACC}$

b. **Non-maximal focus:**

Es hinterließ jemand eine Nachricht einer ***FRAU*** .

there left someone a message$_{ACC}$ a woman$_{DAT}$

c. **Maximal focus:**

Ein Lehrer setzte einen Schüler einer großen Ge***FAHR*** aus.

a teacher exposed a pupil$_{ACC}$ (to) a great danger$_{DAT}$

d. **Non-maximal focus:**

Ein Lehrer setzte einer großen Gefahr einen ***SCHÜ*** ler aus.

a teacher exposed (to) a great danger$_{DAT}$ a pupil$_{ACC}$

The basic difference between the two verb classes is obvious: in the DAT–ACC class, the dative argument is typically an experiencer; hence it denotes an animate discourse referent. In the ACC–DAT class, the dative-marked argument frequently has a non-animate denotation since it typically codes for a goal or source relation. This difference – experiencer vs. goal – is reflected as a difference in the argument ranking in the argument structure of the respective verbs. Note, however that it is not simply an animacy-triggered difference:

(23)

a. **Maximal focus:**

daß man ja seine Kinder$_{ACC}$ den *LEH*rern aussetzen muss

that one PRT one's children (to) the teachers expose must

b. **Non-maximal focus**:

daß man ja den Lehrern seine ***KIN*** der$_{ACC}$ aussetzen muss

that one PRT (to) the teachers one's children expose must

c. **Maximal focus**:

Er hat das erste Gedicht$_{ACC}$ seiner ***MUT*** ter gewidmet.

he has the first poem (to) his mother devoted

d. **Non-maximal focus**:

Er hat seiner Mutter das erste Ge***DICHT*** $_{ACC}$ gewidmet.

he has (to) his mother the first poem devoted

In (23a, b) all DPs involved denote animate individuals, but nevertheless the base order is identical with the base order in (22c), namely ACC–DAT. On the other hand, an animate dative as in (23c) has no influence on the base order. This becomes understandable if one bears in mind that in the lexical-conceptual structure of a verb like *devote*, animacy is irrelevant for ranking because the animate argument nevertheless is a goal argument.[14] Analogously, in the DAT–ACC class, animacy has no effect on the base order either:

(24)

a. **Maximal focus**:

daß er dem Buch das *VOR*wort hinzufügte

that he (to) the book the preface added

b. **Non-maximal focus**:

daß er das Vorwort dem BUCH hinzufügte

that he the preface (to) the book added

c. **Maximal focus**:

daß er der Firma den Fi*NANZ*chef abwarb

that he the company the financial manager levied

'that he enticed the financial manager away from this company'

d. **Non-maximal focus**:

daß er den Finanzchef der *FIR*ma abwarb

that he the financial manager the company levied

In sum, the only word order that allows maximal focus is the order in which the stress exponent is not higher than the lowest argument position in the VP. Stress on a higher position yields minimal focus potential only. This is the key for identifying a scrambling trace in between a focus exponent that is adjacent to the verb in PF and the verb. Of course this test is intrinsically limited, since it is applicable only for the A-position closest to the verb.

2.2.3 Scope

Scrambling changes scope relations. If the scrambled element is a scope-sensitive one, its scope domain gets wider by virtue of being moved to a position higher in the tree. If it moves across another scope bearing element, scope ambiguities arise (see Frey 1993). Let us examine the following example:

(25)

Question: Wie steht es mit der Beantwortung all der Fragen?
how stands it with the answering all the questions?
'What about the answers to all the questions?'

Answer: Du weißt doch, …
you know PRT, …
You know, …

a. daß mindestens einige Schüler fast ALLe Fragen beantworten konnte
that at least some pupils almost all questions answer could
'that some pupils could answer almost all questions'

b. daß [mindestens einige Fragen]$_i$ fast ALLe Schüler e_i beantworten konnten ∃∀,∀∃
that at least some questions almost all pupils answer could

In (25a), the only unforced reading is scope according to the overt order. In (25b) two readings are available; one corresponds to the surface linear order, the other reading, to the base order: Since the trace of the scrambled object is in the scope of the subject, the subject can get scope over the scrambled DP. This is in accordance with our assumption that (25a) is the base order and (25b) the scrambled order, resulting in a chain. Let us now apply this diagnostics to a verb with the base order pattern ACC–NOM, namely *interessieren* ('interest').

(26)

a. daß einige Linguisten fast ALLe Balladen interessierten ∃∀
that some linguists almost all ballads interested
'that some linguists were interested in almost all ballads'

b. daß [einige Balladen]$_i$ fast ALLe Linguisten e_i interessierten ∃∀,∀∃
that some ballads almost all linguists interested

The verb *interessieren* projects the argument structure EXP < THEME/CAUSE into the base order with the result that ACC precedes NOM. We, therefore expect (26b) but not (26a) to give rise to two readings. This expectation is fulfilled. Analogous considerations apply to the other verb classes mentioned in section 2.2.1. Compare the following examples:

(27)

a. daß er einen Kandidaten fast ALLen Tests unterzogen hat ∃∀
that he one candidate almost all tests subjected has
'that he subjected one candidate to almost all tests'

b. daß er [einem Test]$_i$ fast ALLe Kandidaten e_i unterzogen hat ∃∀,∀∃
that he one test almost all candidates subjected has

As expected, (27a) with the base order ACC > DAT yields only one reading, whereas (27b) gives rise to two readings. The converse pattern is characteristic for verbs with the base order DAT > ACC:

(28)

a. daß er zwei Kandidaten fast ALLe Fragen stellte ∃∀
that he two candidates almost all questions put
'that he asked two candidates almost all questions'

b. daß er [zwei Fragen]$_i$ fast ALLen Kandidaten e_i stellte ∃∀,∀∃
that he two questions almost all candidates put

In both cases, thus, the scrambled order and only the scrambled order – DAT > ACC in one case, and ACC > DAT with the other V-class – results in two readings.

2.2.4 The base order of arguments in German is not a function of their grammatical relations

German does not provide compelling evidence for, but displays considerable amount of evidence against, the contention that the base order is a function of the syntactic licensing relation (case checking), and in particular against the contention that case-checking obligatorily requires a functional head in the Spec position of which case-features are checked, overtly or covertly. The data presented in the scrambling section in connection with the issue of semantically determined base order types is one body of evidence.

In this section, four issues will be addressed. First, the exclusion of non-argumental expletives. If there is a functional Spec position for subjects, this Spec position would license clause internal, non-argumental expletives. But, this kind of clause internal expletives is ungrammatical in German, and this cannot be attributed to pro-drop. Second, the opacity of spec-positions. A phrase in a Spec position and in particular a subject is predicted to be opaque for extraction. This prediction is incorrect. Third, even covert movement to a spec-position must be ruled out, since the LF resulting from LF-raising out of fronted VPs is ill-formed. The conclusion must be that the unscrambled positions of arguments in the German clause structure are the base generated, preverbal argument positions within the V-projection.

In addition to these three areas of theory-internal considerations there is a set of data that bears directly on phrase-structure decisions, namely, evidence from VP topicalization in German. It provides as immediate as possible evidence for the claim that in German clause structure, unlike in English, all argument positions may remain in their VP-internal position in surface structure (see also Excursion 1).

Subjects may appear in the topicalized V-projection if two conditions – a semantic and a syntactic one – are met. First, the subject must be non-specific. At best, the VP denotes a property of an event in the scope of a quantifier, which accounts for the contrast between (29a) and (29b). This instance of a specificity effect was first noted by Kratzer (1984).[15]

(29)

a. **Indefinite unspecific subject:**
[Ein Außenseiter gewonnen] hat da nie.
an outsider won has here never

b. **Definite specific subject:**
*[Der krasse Außenseiter gewonnen] hat da nie.
the rank outsider won has here never

c. [Linguisten gespeist] haben hier schon oft.
linguist dined have here already often

d. *[Die Linguisten aus Wien gespeist] haben hier schon oft.
the linguist from Vienna dined have here already often

e. [Kinder gespielt] haben hier nie.
children played have here never

f. *[Ihre Kinder gespielt] haben hier nie.
her children played have here never

It is worth emphasizing that subjects within topicalized VPs do not prevent the licensing of anaphors as in the following examples. A solution is proposed in Frey (1993): The anaphor is bound by the functional head that licenses the nominative, which in turn functional head c-commands the anaphor.

(30)

a. [Ein Wunder$_j$ ereignet]$_i$ *hat* sich$_j$ hier noch nie e_i.
a miracle occured has REFL here never ever
'A miracle has never ever occured here'

b. [Wunder$_j$ ereignet]$_i$ *haben* sich$_j$ hier noch nie e_i.
miracles occured have REFL here never ever

Note that these facts are highly problematic for remnant topicalization analyses (see Den Besten and Webelhuth 1990). According to this analysis, what appears to be the topicalization of a part of the VP is analyzed as the result of the interaction of VP-topicalization and scrambling: scrambling removes constituents from the VP. Then, the partially emptied VP is fronted across the elements that have been moved out. However, this analysis overgenerates in the crucial case, namely, with unergative subjects whose base position precedes the base positions of the objects.

(31)

a. daß er das Beste$_i$ [den Armen e_i geschenkt] hat
that he the best the poor given has

b. [Den Armen geschenkt] *hat* er das Beste.
the poor given has he the best

c. daß heute den ersten Preis$_i$ [ein Außenseiter e_i gewonnen] hat
that today the first prize an outsider won has

d. ??/* [Ein Außenseiter gewonnen] hat heute den ersten Preis.
an outsider won has today the first prize

e. [$e_{(i)}$ $e_{(j)}$ gewonnen] hat *heute* den ersten Preis$_j$ ein Aussenseiter$_i$.
won has today the first prize an outsider

The very same analysis that has been proposed for the handling of (31a) fails with (31d), although the crucial part of the derivational procedure would be identical: Scramble the object out of the VP (31c), and then topicalize the VP. The same procedure must be iterated in (31e). The ungrammaticality of (31d), however, remains a surprise under remnant VP movement.

Ergative subjects whose base position is lower than the position of an object behave as expected. This is no surprise, since the nominative DP is generated in the position of the direct object. Note, however, that the remnant-topicalization approach must allow vacuous scrambling for non-scrambling items: if in (32a, b) the dative is an indefinite pronoun, which does not scramble, it must nevertheless be considered to have been scrambled out of the VP before the VP has been moved to the clause initial position.

(32)

a. [Ein Fehler unterlaufen] ist hier noch nie einem Professor/wem.
a mistake 'under-occured' is here never ever a professor/someone$_{DAT}$
'Never ever has here a professor committed a mistake'

b. Unangenehme Fragen gestellt werden auch hier manchmal den Professoren/wem.
unpleasant questions asked were also here sometimes the professors/someone$_{DAT}$

The crucial difference between the subjects in the examples above and the unergative subjects is this: the base position of the ergative subjects (32) in the VP is lower than the base position of the dative object. This is not an exclusive property of ergative subjects. Transitive subjects in idiom chunks behave as expected, for the following reason: the specificity constraint (Kratzer 1984) applies to subjects in fronted VPs. This constraint becomes void for non-referential subjects, hence subjects as parts of idioms are possible. Syntactically, they are nevertheless true subjects of transitive verbs.

(33)

a. daß den Mann dabei schon oft die Wut gepackt hat
that the man it-with already the the anger seized has
'that at this occasion the man often got angry'

b. [Die Wut gepackt] hat ja den Mann dabei schon oft.
the anger seized has the man it-with already often

In sum, transitive subjects in topicalized VPs are grammatical and the VP-internal position is therefore a licit surface position for nominative DPs in German. The counterpart in the VO language family is Icelandic. Postverbal nominatives in combination with a non-nominative preverbal subject evidence the possibility of VP-internal nominative assignment.

Descriptively speaking, a subject is a non-argument expletive subject if there is a lexical item for the canonical subject position for which the verb does not provide any argument relation. The test case is the passive of an intransitive verb. In German, expletive subjects in the mittelfeld are ungrammatical. It is instructive to compare Dutch and German in this respect. The examples and the judgments in (34a–c) are taken from the descriptive grammar of Paardekooper (1963: 55). He states explicitly that the apparent optionality of an expletive in constructions like (34b) – that is, with a non-extraposed local adverbial – is an effect of the presence of a (local) adverbial. This can be observed in English as well, in a different construction, though (see 34d).

(34)

a. In deze Hoek wordt volgens mij gefluisterd. Dutch
in this corner is according to me whispered

b. ?Volgens mij wordt in deze Hoek gefluisterd.

c. *Volgens mij wordt gefluisterd in deze Hoek.

d. On this spot (there) will stand a huge tower.

e. dat *(er) gelachen werd
that (there) laughed was

f. daß (*es) gelacht wurde German
that (there) laughed was

g. Er werd gelachen. Dutch
there was laughed

h. Es wurde gelacht. German
there was laughed

In Dutch, the expletive subject in clause-internal position in (34e) is obligatory, in German it is obligatorily missing (34f), although the respective elements can be found as expletives, but only in the spec-C position (34g, h). If German had an obligatory Spec position for the subject in the *mittelfeld*, the expletive would have to appear in this position, just like in Dutch.

The fact that in Dutch, but not in German, there is a structural subject position (arguably either as a [Spec, VP] or as a functional Spec position) finds support in the distribution patterns of fronted pronouns: in German and in Dutch, pronouns are fronted to the left edge of the VP. In Dutch, this is a position following the Spec position that hosts the subject. Hence fronted pronouns in Dutch but not in German must not precede the subject if the subject occurs in the Spec position (cf. Kieft 1967: 301; see also section 4.3).

(35)

a. Toen vond mijn broer *het* opeens tussen oude kranten. (= 35c)
then found my brother it suddenly between old newspapers

b. *Toen vond *het* mijn broer opeens tussen oude kranten.

c. Damals fand *es* mein Bruder plötzlich zwischen alten Zeitungen.

d. Nog nooit had de jongen *zich* meer ingespannen dan dit jaar. (= 35f)
never ever had the boys REFL more struggled than this year

e. *Nog nooit had *zich* de jongen meer ingespannen dan dit jaar.

f. Noch nie hatte *sich* der Junge mehr angestrengt als in diesem Jahr.

This set of data indicates that the subject position in Dutch is structurally different from the subject position in German. Given that pronoun fronting targets the left edge of the VP, the subject is VP-internal in German, but VP-external in Dutch. The contrast in (35) is easy to account for if the absence of an expletive subject in German is a function of the absence of a functional subject position. If there is a Spec position for the subject, on the other hand, this position legitimates and triggers the presence of an expletive. The obligatory absence of a subject-expletive in intransitive passives and in presentative constructions (see 36) in German calls for a structural explanation (cf. Haider 1993, 1990a). Invoking a language-specific pro-drop option is an ad-hoc patch-up strategy that does not adequately capture the empirical situation.

(36)

a. dat (er) gisteren iemand vertrokken is

b. daß (*es) gestern jemand abgereist ist
that (there) yesterday someone left has
'that someone left yesterday'

Accounts in terms of pro-drop as an independent parametric difference disregard an important fact, namely, that there are semantically empty subjects in German which must not be dropped (see 37). If German were pro-drop, pronominal subjects in these constructions would have to be expected to be dropped. Alleged semi-pro-drop languages such as German should drop exactly these pronominal subjects. These data are counter-evidence for the semi-pro-drop hypothesis.

(37)

a. **Quasi argument:**

daß *(**es**) sich dabei um einen Irrtum handelt
that (it) REFL. it-by at an error deals
'that it is a mistake'

b. **Intransitive middle construction:**

daß *(**es**) sich in dieser Stadt gut lebt
that (it) REFL. in this city well lives

c. **Extraposition:**

daß *(**es**) zu gefährlich ist, diese Route zu benützen
that (it) too dangerous is this route to take
'that it is too dangerous to take this route'

The verb *handeln* in (37a) takes two semantically empty arguments, namely, *es* ('it') as a subject and a reflexive as an object, plus PPs that host the DPs that are equated. Semantically, the verb establishes an equation relation between the DPs contained in the PPs. Example (37b) is the intransitive middle construction with the verb *leben*. In German, the middle of an intransitive verb introduces an expletive subject and a reflexive object. The example in (37c) is an extraposition construction. Dropping the pronominal subject that goes together with the extraposed subject clause is optional for some predicates but not for all, as the predicate in (37c) illustrates. A pro-drop account that treats German as a semi-pro-drop language, which drops non-referential pronouns, would incorrectly predict that the pronominal subject should drop in all these constructions.

If, on the other hand, no functional projections in the mittelfeld call for lexical material for at least their Spec positions, the absence of obligatory Spec positions in the mittelfeld is the direct grammatical reason for the absence of subject expletives. There is no room for an expletive subject and consequently no need for invoking an exceptional type of pro-drop (cf. Haider 1990a).

Further corroborative evidence for the claim that subjects in German are VP-internal is the lack of opacity effects with subjects in German: there are no clear-cut structural subject-object asymmetries for extraction or *wh*-in-situ constructions. If a subject were moved to a Spec position, this would render it an opaque domain for extraction out of this phrase. A decade of research on extraction restrictions proved the 'subject condition' to be a robust phenomenon. A subject in a functional Spec position is opaque for extraction because phrases in functional Spec positions are opaque. Consequently, non-opaque subjects must be subjects that are not in functional Spec positions. They are VP-internal:

(38)

a. *What$_i$ would [to discuss e$_i$ with him] be worthwhile?

b. (?)What$_i$ would it be worthwhile [to discuss e$_i$ with him]?

c. Was$_i$ würde sich [mit ihm e$_i$ zu besprechen] denn noch lohnen?
what would itself with him to discuss PRT PRT pay

d. Nur das$_i$ würde sich [mit ihm e$_i$ zu besprechen] ja noch lohnen.
only this would itself with him to discuss PRT PRT pay

e. Was/das$_i$ würde [mit ihm e$_i$ zu besprechen] wohl noch Spaß machen?
what/this would with him to discuss PRT PRT fun make

Since the subject clause in (38c–e) is systematically not opaque for extraction, it cannot be assigned to a functional Spec position. So, if there were a medial Spec position in (38c–e), its status would be that

of a pronominal empty category. Fronting the clause across this empty pronominal element in (39b) should produce the same effect as fronting a clause across an overt pronominal antecedent in (39a). In addition, the empty pronominal in the [Spec, I] position would force extraposition. Examples (39c–e) illustrate the contrast between extraposed and non-extraposed complements in the presence of a pronominal antecedent.

(39)

a. *[Alles mit ihm zu besprechen]$_i$ würde *es*^{i} sich nicht lohnen e$_i$.
everything with him to discuss would it itself not pay

b. [Alles mit ihm zu besprechen]$_i$ würde e$_i$ sich nicht lohnen.
everything with him to discuss would itself not pay

c. daß *es* sich nicht lohnen würde [alles mit ihm zu besprechen]
that it itself not pay would everything with him to discuss

d. daß (**es*) [alles mit ihm zu besprechen] sich nicht lohnen würde
that (it) everything with him to discuss itself not pay would
'that it would not pay to discuss everything with him'

The contrasts in (39) follow immediately if the embedded-subject clause is not in relation with an empty pronominal in an [IP, Spec] of the matrix clause. The empty category in (39b) is the single trace of the fronted clause and there is no other empty category the clause is coindexed with.

Please bear in mind that the structural conditions are necessary but not sufficient for extraction. The 'bridge verb quality' (remember that verbs of saying are bridge verbs for clausal objects, but not factive verbs like *regret*) is an additional independent factor that should be controlled if you try to counter-check the generalizations. Sometimes the impression of a subject–object contrast may arise because therere are only few subject-related bridge verbs, that is, verbs with a semantic relation to the subject argument that is of a similar semantic quality as the thematic relation to the objects of verbs like verbs of saying, etc. (Try *träumen* 'dream' with a subject clause and a dative object and you have a candidate for extraction out of a finite subject clause; see Haider 1993: 158ff.)

2.3 Pronouns

Unstressed pronouns have properties of their own that differ from non-pronominal DPs:

- Serialization preference: fronting to the left edge (see the parametric factors below).
- Order pattern by case: nominative before accusative before dative (same for Dutch).
- Serialization restrictions with respect to information-structure-sensitive particles and adverbials.

2.3.1 Fronting

Unstressed pronouns tend to be fronted. Pronoun fronting applies both to argumental pronouns as well as to pronominal adjuncts as *there*. Cross-linguistically, the domain of fronting may appear to be different at first glance on comparing the patterns. In German, object pronouns are fronted to a position following the topmost functional head, that is, the complementizer or the finite verb. In Dutch, an object pronoun must not be fronted across an unergative subject (40b). In English, pronouns are fronted within the VP to a position after the verbal head. In the continental Scandinavian languages (41), pronouns must be fronted across clause-internal adverbials and negation in the so-called obligatory object-shift configuration (cf. Vikner 1995 and chapter 46 in this *Companion*).

(40)

a. daß [es$_i$ jeder e$_i$ zurücksteckte]
that it everyone back-put

b. *dat het$_i$ iedereen [e$_i$ terugzette]
that it everyone back-put
that everyone [put it back e$_i$]

(41)

a. Studenterne læste den$_i$ alligevel ikke e$_i$. Danish
students read it/there after-all not

b. Studenterne læste alligevel ikke artiklen/*den.
students read after-all not article-the/it/there

Despite the apparently diverse patterns, the serialization of unstressed pronouns in the Germanic languages is uniform. It is the parametric diversification of a single condition: if a pronoun can be fronted, it is fronted as close as possible to the left edge of the VP. Once it is realized that in general in German but not in Dutch, the surface-subject position is VP-internal it is easy to provide a simple descriptive generalization for the range of fronting in a Germanic OV language: Pronoun fronting targets the highest accessible VP-internal position. In German this is the left edge of the mittelfeld. In Dutch it is a mittelfeld-internal position, namely, the left edge of the VP with the transitive subject in a (functional) position outside the VP. In VO languages, pronouns targeting the left edge of the VP end up in positions immediately following the V. In English and in Scandinavian languages, pronoun fronting can be observed only in contexts in which fronting does not affect argument order. The position targeted by fronting is closest to the left edge of the VP. In the Scandinavian languages there is an additional possibility, namely object shift. The pronouns may be fronted to the left edge of the VP provided that the overt head of the VP is not crossed. This is possible only if the verb has moved as the finite verb to the V2-position (see 41).

In German there are distributional restrictions that seem to differentiate between pronoun fronting and scrambling. Fronted negation ('light negation') in non-asserted clauses (i.e., conditionals, indirect questions) and information-structuring particles may precede scrambled NPs, but not fronted pronominals (see Haider 1997c):

(42)

a. wenn damals *nicht*/*doch* den {Mann$_i$, *ihn$_i$} jemand e$_i$ gewarnt hätte
if then not/PRT the man, *him someone warned had
'if/since someone would have warned {the man, him} then'

b. wenn damals {den Mann$_i$, ihn$_i$} *nicht*/*doch* jemand e$_i$ gewarnt hätte

In (42a) the object is fronted across the subject. The result is ungrammatical for a pronominal but it is perfect for a non-pronominal DP if a particle of the kind discussed above precedes. The following example, however, shows that the restriction against pronouns in the c-command domain of the particles including negation is independent of fronting. It holds in the base position, too:

(43)

a. daß der Mann ja doch die Frau/*sie gesehen hat
that the man PRT PRT the woman/her seen has
'that the man has seen her/the woman after all'

b. daß der Mann sie/die Frau ja doch gesehen hat
that the man her/the woman PRT PRT seen has

The contrast between (43a) and (43b) parallels the contrast in (42) and it is therefore independent of scrambling. The only difference between scrambling and pronoun fronting is an order restriction. The preferred order for fronted pronouns is NOM–ACC–DAT; there is no such restriction for scrambled non-pronominal DPs (cf. Lenerz 1993).

2.3.2 Order restriction for pronouns: NOM–ACC–DAT

The order restriction holds uniformly, that is, irrespective of the base order induced by the verbal head. Whatever base-order pattern the verbal head requires for is arguments; pronominal arguments are ordered according to the template in the headline. If the order deviates from the standard serialization nominative < accusative < dative (cf. 44b with a stressed pronominal subject), then the pronoun that follows, and thereby deviates, is stressed and as a stressed (= strong) pronoun exempted from the restriction.

(44)

a. daß niemand/er$_{NOM}$ ihn$_{ACC}$ ihr$_{DAT}$ vorstellte

b. daß *ihn ihr* niemand/**ER** vorstellte

The same ordering patterns are found in Dutch. This is remarkable because of the Dutch prohibition against scrambling a direct object in front of the indirect object. So, this is additional evidence that the order of pronominal arguments cannot be a result of scrambling, nor can it be taken as an indicator of the base order for arguments. For both issues Dutch provides the relevant counterevidence. Since DP objects cannot be reordered by scrambling, the pronoun order cannot be achieved by scrambling. On the other hand, if the pronoun order would be the base order for arguments, the canonical Dutch order for non-pronominal arguments – IO before DO – would have to be analyzed as an instance of scrambling the IO across the DO. The result would be over-generating an ungrammatical DO before IO order as a base order.

The examples under (45) show that the demonstrative *dat* ('that') (see 45b) and the strong form *haar* appear in the order of non-pronominal forms, whereas the other pronouns come in the order direct object before indirect object.

(45)

a. Had Jan/*hij het zich* niet ingebeeld?
had Jan/he it himself not imagined

b. Had Jan/*hij zich* *dat* niet ingebeeld?
had Jan/he himself it not imagined

c. Eigenlijk had Jan/*hij zich* *haar* heel anders voorgesteld.
actually had Jan/he himself she completely different imagined

d. Eigenlijk had Jan/*hij ze* *zich* heel anders voorgesteld.
actually had Jan/he she himself completely different imagined

The Dutch data provide immediate evidence for a general, cross-linguistically relevant, issue that is hard to tackle with German data, namely, that the difference between the Dutch patterns of pronominal and non-pronominal DPs is evidence against the assumption of a case driven underlying order for DPs in general.

The invariant pronoun order in German might be (and has in fact been, see Müller 1995) identified with

an invariant case-driven underlying order for DPs in general, and the V-dependent serializations discussed above could be taken to be scrambling variants. The Dutch data clearly forbid this hypothesis, however. As in German, the pronominal direct object precedes a pronominal indirect object. For non-pronominal objects, the inverse order is required. But Dutch scrambling does not cross DP arguments. So the order of non-pronominal DPs cannot be a scrambling effect, and consequently, the pronominal order cannot be the base order of DPs in general.

If the pronoun order were the underlying order for DPs in general, non-pronominal DPs would have to be scrambled obligatorily into the opposite order. But there is neither a trigger nor positive evidence for this kind of scrambling so these data support the hypothesis of an A-structure determined base order for non-pronominal arguments in German. But what is the source of the order restriction for personal pronouns?

It is worth emphasizing that the order pattern NOM-ACC-DAT is not triggered by fronting. It applies also to pronouns that are not fronted to the left edge of the MF, as (46) illustrates, and it holds also for non-adjacent sequences of pronouns (see 47). Of course, non-pronominal DPs (see 47c) do not follow this restriction.

(46)

a. daß endlich einer sie uns vorstellen/zeigen sollte
that after-all someone them$_{ACC}$ us$_{DAT}$ introduce/show should

b. *daß endlich einer uns sie vorstellen/zeigen sollte
that after-all someone us$_{DAT}$ them$_{ACC}$ introduce/show should

(47)

a. daß bei dieser Gelegenheit *sie* einer *uns* kurz vorstellen/zeigen sollte
that at this occasion them$_{ACC}$ someone us$_{DAT}$ briefly introduce/show should

b. ?daß bei dieser Gelegenheit *uns* einer *sie* kurz vorstellen/zeigen sollte
that at this occasion us$_{DAT}$ someone them$_{ACC}$ briefly introduce/show should

c. daß bei dieser Gelegenheit *den Besuchern* einer *die Bilder* kurz zeigen sollte
that at this occasion den Besuchern someone the pictures briefly show should

2.3.3 Particle distribution

Particularly instructive for the analysis of pronoun positions is the serialization pattern with respect to certain sentence particles (e.g. *ja*, *denn*) are used for information structuring. They partition the clause into the backgrounded and the asserted part:

(48)

a. weil *sich*$_j$ **ja** niemand dem Mob e$_j$ in den Weg gestellt hat
since PRT nobody the mob in the way put has
'since nobody tried to stop the the mob'

b. *weil ja *sich*$_j$ niemand dem Mob e$_j$ in den Weg gestellt hat

c. wenn *sich*$_j$ nicht noch jemand der Meute e$_j$ in den Weg wirft, …

d. *wenn nicht *sich*$_j$ noch jemand der Meute e$_j$ in den Weg wirft, …

e. weil ja unter diesen Umständen *sich* niemand dem Mob in den Weg stellen könnte

The descriptive generalization behind the pattern (48) is this: if a pronoun is fronted, it cannot exclusively constitute the extendable VP-domain in the scope of a sentence particle. Thus in (48b, d), the extendable VP-domain contains only a pronoun that follows a sentence particle. This is

unacceptable. The well-formed serialization is (48a, c), with the pronoun preceding the particle. It is worth emphasizing that this is not a strict positional effect of an edge effect. Note that the fronted pronouns may be separated from the preceding functional head position (see 48e) by frame adverbials such as *unter diesen Umständen* ('under these circumstances'), *angesichts der drohenden Gefahr* ('in view of the threatening danger'). The resulting expression becomes acceptable.

It would be premature to conclude that if pronouns are fronted they must be fronted to a specific position preceding sentence particles. What we suggest is that the crucial factor behind the ungrammaticality of (48b, d) is a stress property, in that personal pronouns avoid accented positions. The position following the particle receives secondary stress. If this is the correct characterization, this implies that a fronted pronoun *can* occur in the c-command domain of a sentence particle, provided the pronoun is not the highest element within the c-command domain of the particle.

The examples in (49) contrast, as expected, with the corresponding examples in (48). If a scrambled DP (preceding the fronted pronoun in this case) ends up higher than the domain of the particle, this DP receives the secondary stress. The slight degradation in (49) is to be blamed on the pronoun in this domain for a semantic reason. As non-referential material it could and hence should precede the particle.

(49)

a. (?)weil ja [*dem Mob*$_i$ sich$_j$ niemand e$_i$ e$_j$ in den Weg gestellt hat]

b. (?)wenn nicht [*der Meute*$_i$ sich$_j$ noch jemand e$_i$ e$_j$ in den Weg wirft], …

The distribution with respect to adjuncts is analogous to the pattern found with sentence particles. Pronouns may be preceded, as mentioned above, by frame adverbials and adverbials of reasoning but not by lower adverbials.

(50)

a. daß *unter diesen Umständen* sich$_i$/sie$_i$ Max (ja) e$_i$ verstecken hätte müssen

b. daß *in vielen Fällen* sich$_i$/sie$_i$ Max e$_i$ (ja) nicht rechtzeitig informiert hat

c. ??daß (ja) *hier* sich$_i$/sie$_i$ niemand e$_i$ verstecken mußte

d. ??daß (ja) *gestern* sich$_i$/sie$_i$ niemand e$_i$ rechtzeitig informiert hat

The deviant sentences in (50) contain two candidates whose serialization disobeys the interface condition of mapping syntactic domains properly onto semantic domains: the pronoun is in too low a domain and the adjunct is too high. The pronoun as a background item is in the domain of an event adjunct that modifies the assertion part and the adjunct c-commands an unnecessary big domain.

2.4 Constraints on a well-formed mittelfeld

2.4.1 Empty mittelfeld

In this section, syntactic restrictions on elements in the mittelfeld are briefly reviewed (see also section 2.2.4.2). The trivial case to start with is an empty mittelfeld. As mentioned in the introduction section, the mittelfeld in German, but not in Dutch, may be radically empty, as in (51a) versus (51b). An expletive subject is ungrammatical in German, but mandatory in Dutch.

(51)

a. Wurde (*es) gelacht?
   was (there) laughed

b. Werd *(er) gelachen?

As in English locative constructions (52a), a locative PP may substitute for the expletive in Dutch in an intransitive passive (52b). That the PP replaces the expletive in English becomes obvious in wh-constructions. The locative PP as wh-element does not trigger *do*-support (52c, d).

(52)

a. On this spot (there) will stand a huge tower.

b. In deze hoek werd gefluisterd.

c. *Out of which* box jumped a rabbit?

d. Out of which box did *there* jump a rabbit?

It would be misleading in my opinion (I will motivate this later) both for German and for Dutch or English to characterize the absence of an expletive as a case of (semi-) *pro-drop*. Quite a few attempts in that direction have been made in the 1980s (McKay 1985; Safir 1985a, 1985b; Koster 1987; Platzack 1987; Grewendorf 1989).

It is misleading for German because German does not allow pro-drop for expletives in the clear cases. It is misleading for English and Dutch because (52a) and (52b) are not cases of pro-drop, but cases of locative preposing. If pro-drop of expletives would be available for Dutch, dropping the expletive in (51b) should not be ungrammatical. Independent evidence can be found in presentative constructions. An expletive in the otherwise empty mittelfeld is required in Dutch but forbidden in German.

(53)

a. Es ist jemand gekommen – Ist (*es) jemand gekommen?

b. Er is iemand gekomen – Is (er) iemand gekomen?

The absence of an expletive in the German mittelfeld is the reflex of a structural condition and not a case of expletive pro-drop, because there are obligatory expletive subjects in German:

(54)

a. **Quasi argument:**

Gestern hat *(es) geregnet.

Yesterday has it rained

b. **Expletive subject of intransitive middles:**

Hier plaudert *(es) sich angenehm.

here chats it itself pleasantly

'Here it is pleasant to chat.'

c. **Pronominal correlate of extraposition:**

War *(es) sehr peinlich, daß . . . ?

Was it embarrassing that . . . ?

Next, let us briefly look at a derivationally emptied mittelfeld. Although the mittelfeld may be empty from the beginning, it must not be emptied derivationally. In other words, topicalization of the whole mittelfeld as in (55a) is ungrammatical if the mittelfeld portion of the resulting clause thereby becomes empty. This must not be confused with the case of (55c), in which the mittelfeld contains only a single constituent that is fronted to the pre-field. For details see Haider (1988, 1997b).

(55)

a. *[Eine Hymne gesungen]$_i$ wurde$_j$ e$_i$ e$_j$.

a hymn sung was

b. [Eine Hymne gesungen]$_i$ wurde$_j$ dabei noch nie e_i e_j.
a hymn sung was it-with never ever

c. [Eine Hymne] erklang.
a hymn sounded

The crucial difference between (55a) and (55b) is that the movement in (55a), but not in (55b), is string-vacuous. But why should string-vacuous movement matter in (55a) but not in (55c)? An answer is suggested in Haider (1988): in string-vacuous derivations, the well-formedness conditions for the target and the source structure must be met simultaneously. This is the case for (55c). In the base structure, the order conforms with the Complement+head configuration, as a derived structure is conforms to a (Spec-Head) configuration. In (55a), the Spec constituent in the derived structure is not a possible constellation in the non-derived order because of obligatory V-raising (i.e., cluster formation): the participle and the auxiliary ought to be adjoined to each other. Of course this is not the case in (55a) because the functional-head position targeted by the finite verb would not accept a verb cluster, only the single finite verb.

2.4.2 Banned from the mittelfeld

Let us turn now to the next question: are there grammatical restrictions for phrases in the mittelfeld? First, there are no category restrictions. Arguments and adjuncts in the mittelfeld are allowed in all possible categories, that is, DP, PP, and CP, infinitival, and to some extent, finite CPs as well.

(56)

a. Ich habe ja [daß 2 plus 2 vier ergibt] nicht bezweifelt.
I have prt [that 2 plus 2 four yields] not doubted

b. Du mußt aber [sobald das Licht erscheint] sofort den Knopf drücken.
you must however [as-soon-as the light appears] immediately the button press

c. Ich werde [was ich gefunden habe] niemandem zeigen.
I shall what I found have nobody show

d. ??Mich hat ja [ob er es getan hat] nicht wirklich interessiert.
me$_{ACC}$ has PRT [whether he it done has] not really interested

e. ??Mir hat sie [wer es getan hat] ja nicht gesagt.
me$_{DAT}$ has she [who it done has] PRT not said

f. *Zu mir hat sie [er sei krank] gesagt.
to me has she [he is$_{SUBJ}$ ill] said

Finite CPs in the mittelfeld are found as declarative argument clauses of a subset of verbal predicates (56a) or as adverbial clauses of all kinds (56b) or as free relatives (56c). Argumental CPs in the function of indirect *wh*-clauses are unacceptable or at least highly marginal (56d, e). Embedded V2-clauses are ungrammatical in the MF (56f); they must be extraposed.

Second, there are strict dependency restrictions. Constituents that are not 'VP-compatible' are excluded from the German mittelfeld. A constituent XP is VP-compatible if it is an argument of V^0, or an adjunct of V^0, or its extended projection, or a secondary predicate of an argument of V^0 (57). VP-incompatible constituents are phrases without a dependency relation to the V^0 head of the VP, for instance 'wrongly extraposed' elements.

(57)

a. Er^{i} hat [das Steak^{j} betrunken roh^{j} gegessen^{i}].
   he has the steak drunk raw eaten
b. He^{i} [ate the steak^{j} raw^{j} drunk^{i}].

Note that secondary predicates and extraposable attributes like relative clauses behave differently. The former can be part of a topicalized VP (58a), while the latter cannot (58b), unless the antecedent is contained in the VP (58c).

(58)

a. [Betrunken roh gegessen] hat nur einer sein Steak.
   drunk raw eaten had only one his steak
   'Only one has eaten his steak raw drunk.'
b. *[Entdeckt, [den^{i} er gemacht hat]] hat er ja einen Fehler^{i}.
   discovered [which he made has] has he indeed a mistake
c. [Einen Fehler^{i} entdeckt, [den^{i} er gemacht hat]] hat er in der Tat.
   a mistake discovered [which he made has] has he well indeed has
   'He has indeed discovered a mistake that he made.'

The examples in (59) illustrate that wrongly detached (= extraposed) clauses (e.g., relative clauses, comparative clauses) cannot occur in the MF but only in the post-field. The relation between an extraposed argument clause and the correlate pronoun in the MF follows the same pattern (60). Fronting to the pre-field is unacceptable in all these cases. Note that this asymmetry (OK in post-field, but not OK in pre-field) raises a non-trivial problem for movement approaches to extraposition (see Culicover and Rochemont 1990; Haider 1997c) since in both cases the trace would guarantee the proper identification of the extraction site.

(59)

a. *Er hat alles^{i} auf Anhieb [was sie gesagt hat]^{i} auch verstanden.
b. Er hat auf Anhieb [was sie gesagt hat] auch verstanden. (note that this is a free relative)
c. *Sie hat mehr^{i} Leuten die Geschichte [als^{i} notwendig war] erzählt.
d. Sie hat mehr^{i} Leuten die Geschichte erzählt [als^{i} notwendig war].

(60)

a. Bisher hat (*es^{i}) den meisten [per e-mail benachrichtigt zu werden]$^{(i)}$ genügt.
b. Bisher hat (es^{i}) den meisten genügt [per e-mail benachrichtigt zu werden]$^{(i)}$.
c. [Per e-mail benachrichtigt zu werden]$^{(i)}$ hat (*es^{i}) bisher den meisten genügt.

Let me repeat: structural expletives, that is, expletives for Spec-Head positions, are banned from the German MF, but obligatory in the Dutch one, as the contrast between (61a) and (61b) illustrates. Note that the very same element is the required expletive for the pre-field in the respective language. It would be misleading to attribute the absence of an expletive in German to pro-drop of non-referential subjects because quasi arguments (62a), subjects of middle constructions (62b) and the correlates of extraposed clauses (62c) cannot be dropped freely.

(61)

a. Mitunter steht (***es**) jemand an der Tür.
sometimes stands it someone at the door
'Sometimes there is someone at the door.'
b. Soms staat *(**er**) iemand aan de deur.
c. **Es** steht mitunter jemand an der Tür.
d. **Er** staat soms iemand aan de deur.

(62)
a. Heute hat *(es) gehagelt.
today has it hailed
b. Mit ihm plaudert *(es) sich.
with him chats it itself pleasantly
'He is pleasant to chat with.'
c. Eigentlich ist *(es) peinlich, daß man das häufig übersieht.
actually is it embarassing that one this frequently overlooks

2.4.3 Remarks on the IPP

The IPP construction (*infinitivus pro participio* 'infinitive instead of a past participle') raises a problem – at least in German – for the delimitation of the MF because in this construction, at least the finite verb (in a non-V2 clause type) may apparently appear in the MF, as the following examples illustrate. [16] In Dutch IPP-constructions the finite verb cannot precede a non-verbal intervener (63d).

(63)
a. daß er für ihn nicht *hatte* die Firma am Leben halten wollen
that he for him not had the company at life keep want$_{Infinitive}$
(Mann)
b. Gerda, die sie nicht *hatte* in der Familie grau werden sehen
Gerda, who she not had in the family grey become see$_{Infinitive}$
(Mann)
c. daß der Tod ihr *werde* in unabsolviertem Zustand auflauern dürfen
that the death her would in unabsolved state waylay may$_{Infinitive}$
(Werfel)
d. *dat hij graag wilde kraanvogels fotograferen
that he with-delight wanted cranes photograph
(Haeseryn et al. 1997: 949)

Presently, the theoretical modeling of the IPP construction is still controversial. Basically there are two competing approaches: either the finite verb is moved to a position in the MF, or (portions of) the VP (are)/is moved out of the MF to the right.

2.5 Differences between German and Dutch word order in the MF

2.5.1 Do not change the relative order of DP arguments in Dutch

It is handbook-knowledge for Dutch (see Haeseryn et al. 1997)[17] that – contrary to German – the

relative order of DP arguments must not be permuted in the mittelfeld. This holds for subject–object order (64), as well as for the order of the indirect object before the direct object (65).

(64)

a. dat (er) iemand krakers oppakt
that (there) someone squatters arrests
'that someone arrests squatters'

b. *dat (er) krakers$_i$ iemand e$_i$ oppakt
that (there) squatters someone arrests

(65)

a. dat ik de jongen het/een boek gegeven heb
that I the boys the/a book given have
'that I gave the/a book to the boys'

b. *dat ik het/een boek$_i$ de jongen e$_i$ gegeven heb
that I the/a book the boys given have

What is called a Scrambling order in the literature on Dutch refers to the serialization options of adverbials relative to arguments. If there are two possible serializations, one with a DP following an adjunct (66a) and one with a DP preceding an adjunct (66b), scrambling refers to the latter order.

(66)

a. dat de politie/iemand *altijd*/*vandaag* krakers oppakt
that the police/someone always/today squatters arrests that
'that the police/someone always arrests squatters'

b. dat de politie/iemand krakers$_{(i)}$ *altijd*/*vandaag* (e$_i$) oppakt
that the police/someone squatters always/today arrests

If (66b) is indeed a result of scrambling (either by adjunction or by substitution into a suitable [F, Spec], (65b) should in principle be a potential result of the same process that derives (66b). The Scrambling analysis of (66b) presupposes that the time or frequency adverb precedes the VP boundary. So the object is moved across the VP boundary into a position preceding the VP, suitable for hosting a scrambled direct object. But this is exactly what would be necessary to derive (65b): the indirect object would stay in situ and the direct object would be scrambled. Since (65b) is ungrammatical, Scrambling does not provide a satisfactory solution for (66b) as long as the ungrammaticality of (65b) remains unaccounted for.

A satisfactory account must pay attention to the Dutch–German contrasts in addition to the argument–adjunct contrasts above. In section 2.2.1, a crucial difference was located in the case system, namely, the lack of morphological case in Dutch, which has consequences for case checking. The lack of morphological case distinctions for DPs requires a hierarchical implementation of case checking. First come, first checked. This implies that objects cannot be permuted unless they are morphologically identifiable. PP-arguments can scramble but DPs cannot.

In sum, scrambling of DP objects is ungrammatical in Dutch if arguments are permuted. The grammar-theoretical reason seems to be the identification of object arguments in terms of their abstract case ranking. This statement does not include subjects and PP-objects, and for a good reason: they are morphologically identifiable and may therefore enter chain relations in the middle field, that is, they may scramble. The subject is identifiable by overt agreement, PPs are categorially identified. This fact is not properly stressed in current syntactic literature, although descriptive grammars like

Haeseryn et al. (1997)[18] are quite explicit in this respect. As for scrambling of PP-objects, see (67):

(67)

a. Het is verkeerd om [een huis *aan Jan* te schenken].
   it is wrong C^0 [a house to Jan to give-away]

b. Het is verkeerd [om [*aan Jan* een huis te schenken]].
   it is wrong [C^0 [to Jan a house to give-away]]
   'It is wrong to give a house to Jan.'

c. Toen heeft hij [de oplossing aan de studenten verteld].
   then has he [the solution to the students told]

d. Toen heeft hij [aan de studenten de oplossing verteld].
   then has he [to the students the solution told]
   'Then he told the solution to the students.'

One of the alternative orders in the bracketed constituents in (67) is a scrambling order. Since PP objects follow DP objects in the base order, it is safe to assume that (67b) and (67d) are the result of Scrambling with a trace in the base position of the PP object to the right of the direct object.

Fronting of subjects (see (68)) is found with passive and unaccusative subjects, that is nominative DPs whose base position follows an object position. In this case there are two options. The nominative DP may stay in situ in itsVP-internal position or it may move across the object. The following examples are quoted from Haeseryn et al. (1997: § 22.5.6.2.). The existential-closure reading is lost if an indefinite nominative is fronted, unless *er* is inserted, as in (68c). This is the reason why (68b), with an indefinite article and an existential reading, is unacceptable:

(68)

a. Daarom werd de burgermeester het/een schilderij aangeboden.
   therefore is the mayor the/a painting offered
   'Therefore the/a painting is offered to the mayor'

b. Daarom werd [het/*een schilderij]$_i$ de burgermeester e_i aangeboden.
   therefore is the/a painting the mayor offered

c. Daarom werd er [een schilderij]$_i$ de burgermeester e_i aangeboden.
   Therefore is there a painting the mayor offered

If *er* in (68c) is analyzed as an expletive for a subject position as a functional Spec position, the fronted nominative is VP-internal, that is, adjoined to the VP, as a consequence of scrambling. So, there exists genuine scrambling in Dutch, that is, permutation of the order of arguments. This is support for the theory of scrambling described in section 3.6 that Dutch is an OV language with hierarchical identification of case for DP objects. A nominative DP is not confined to a structurally unique configuration. This can be inferred from the fact that a nominative can appear in the position of the direct object (cf. 68a) or in a VP-initial position (cf. 68c). The preconditions for Scrambling are therefore met for a nominative DP that follows an object in the base order: there is more than one position available in the domain of the projection of the verbal head.

Similar considerations apply to PP objects. PPs are not identified by case. Rather the head of the PP, which is selected by V, identifies them^0. There is no structurally unique identification position for a PP. The PP may in principle appear in any position in the VP: it can precede or follow a DP object (see 67) or a subject, as in (69).

(69)

a. dat (er) voor je vader niemand wat meegebracht heeft
that (there) for your father no one something presented has
'that no one brought father anything'

b. dat (er) aan dit jongetje niemand snoepjes gegeven heeft
that (there) to this boy no one cookies given has
'that no one gave this boy cookies'

2.5.2 No infinitival clauses in the midfield in Dutch

In Dutch, sentential infinitival complements cannot be projected in the position in which nominal complements would be projected (70a): They are either replaced by a clause union construction ('V-raising', 70d) or they are extraposed (70e).

(70)

a. *dat Jan [het boek terug te geven] (niet) vergat
that Jan [the book back to give] (not) forgot

b. daß Jan [das Buch zurückzugeben] (nicht) vergaß
that Jan [the book back-to-give] (not) forgot

c. eine Kür, die$_i$ sicher [*pro* e$_i$ spektakulär zu nennen] nicht übertrieben wäre[19]
a free-exercise, that surely [spectacular to call] not exaggerated would-be

d. dat Jan het boek niet vergat terug te geven

e. dat Jan niet vergat [het boek terug te geven]

f. daß [sein Buch zurückzugeben] keiner vergaß
that [his book return] nobody forgot

German allows infinitival clauses as objects (70b) and subjects (70c), and the sentential argument may scramble (70f). The clause-union construction is available in German, too, but it is optional. For verbs that optionally allow a clustering construction in German, these sentences are systematically ambiguous between a construction with clausal embedding and a simple clause structure with V-clustering:

(71)

a. daß uns [zwischen zwei Strukturen zu wählen] erlaubt wird
that us [between two structures to choose] permitted is

b. daß uns zwischen zwei Strukturen [zu wählen erlaubt wird]
that us between two structures [to choose permitted is]

This ambiguity is the source for the case alternation in the construction with a passive matrix verb or a matrix unaccusative verb that selects an infinitival complement:

(72)

a. daß der$_{NOM}$/den$_{NOM}$ Brief einzuwerfen vergessen wurde
that the letter to post forgotten was

b. daß uns (?)der$_{NOM}$/den$_{NOM}$ Text zu entziffern gelungen ist
that us$_{DAT}$ the Text to decipher succeeded is

If the clausal construction is forced by splitting the potential verbal cluster (73), the nominative option is cancelled, as expected, since the nominative is licensed only in the clustering (= clause union) construction.

(73)

a. daß [*der$_{NOM}$/den$_{NOM}$ Brief einzuwerfen] *leider* vergessen wurde
that [the letter to post] unfortunately forgotten was

b. daß uns /[*der$_{NOM}$/den$_{NOM}$ Text zu entziffern] *endlich* gelungen ist
that us$_{DAT}$ [the Text to decipher] finally succeeded is

It is presently not evident what the (micro-)parametric source of this grammatical contrast between the German and the Dutch system of sentential complementation is.

3 Theoretical accounts of word-order variation in the MF: Scrambling

Theoretical accounts of scrambling are directly connected with particular assumptions on clause structure. The given clause structure determines whether scrambling is applicable and what the range of word-order variation is. As for clause structure, there is much more consensus on the empirically adequate structure for VO languages, notably English, Romance, and Scandinavian languages, than there is consensus on what the proper clause structure for an OV language like German or Dutch is. Section 3.1 highlights two controversial issues, namely, the positioning of the argument under agreement (i.e., the nominative subject) and the positioning of functional heads targeted by the finite verb – and their implications for the implementation of adequate scrambling mechanisms. Section 3.2 briefly surveys the theoretical approaches on scrambling that are discussed one after the other in section 3.3.

3.1 Clause structure controversies

- Where are – if there are any – the (covert) functional head positions in the mittelfeld?
- Where are – if there are any – the specs of the functional head positions in the mittelfeld?

In current Generative versions of German grammar, the mittelfeld is equated with the VP plus the cascade of functional projections above the VP. The functional head positions are assumed either to be clause final or clause medial and empty, except the top V2 position. Most if not all phrases in the mittelfeld, notably the arguments, are taken to be moved to distinct functional Spec positions.

The resulting structures are in conflict with a wide range of empirical issues of German syntax, however. Presently, its plausibility is borrowed more from the relative success of the structural analysis for VO languages than from the satisfactory coverage of German data. In the following section two problem areas will be highlighted. One is the position of the clause-final finite verb; the other, the evidence for or against Spec positions in the MF.

3.1.1 Is the overt position of the clause-final finite verb a functional head position?

There is good evidence for the claim that the surface position of the finite verb in the clause-final position in a German or Dutch clause is not a derived position, that is, not a functional-head position (e.g., associated with features like finiteness, agreement, or tense). Its positional properties are those of the position of the lexical head of the VP. Like an English finite main verb (cf. 74a), the finite verb in German stays in its head position as the head of the V projection. For verb-final clauses, there is no evidence of overt movement of the finite verb to the right or of movement to the left, and there is robust counter-evidence for the assumption that a clause-final finite verb in German or Dutch is

moved to a functional-head position. An overt V-to-F-movement analysis for the positioning of the finite Verb – either to an F-head that follows (cf. 74b) or to a preceding F-head (74c) – is in conflict with evidence that bears directly on V-movement:

(74)

a. [C^0 [. . . [F1-e [F2-e [V^0. . .]]]]] [VO, e.g., English]

b. *[C^0 [[[. . . V^0] F2-e] F1-e . . .]] [OV + final functional heads]

c. *[C^0 [. . . F1-e [F2-e [. . . V^0]]]] [OV + preceding functional heads]

As originally noted by Höhle (1991) and discussed in Haider (1993: 62f.), finite denominal verbs derived from complex nouns occur in verb-final clauses in German, but not in V2 or V1 clauses (see (75)). The corresponding case of Dutch (cf. Koopman 1995) is the case of complex verbs (see (76)) with a separable prefix preceded by an inseparable one (*her-* as in 76b, c).

(75)

a. daß sie es uraufführten
   that they it ur-performed (*ur* = as a premiere)

b. *Urauffühᵢren sie es eᵢ?
   ur-perform they it?
   Do they ur-perform it?

c. *Führenᵢ sie es urauf-eᵢ?

(76)

a. dat hij het *her*opbouwde
   that he it re-up-built

b. *Hij bouwde het *her*op.

c. *Hij *her*opbouwde het.

d. Hij bouwde het op.

In descriptive terms, the problem seems to arise because two requirements get into conflict, namely, the requirement to strand a prefix (separable prefix, *an-* in German, *op-* in Dutch) with the requirement to pied-pipe a prefix (inseparable prefix, like *her-* in Dutch and *ur-* in German).

The most straightforward case is that of verbs with two prefixes, each one of the class of separable prefixes (see also Vikner 2002). Each of these prefixes requires stranding, so there is no way to meet these requirements if there is more than one prefix. Since prefixing is a productive word-formation rule in German, it is safe to presusuppose that these verbs illustrate a phenomenon of German core grammar.

(77)

a. wenn sie den Kurs *mit-an*-kündigen
   if they the course with-an-nounce (= announce together)

b. *Man *kündigtᵢ* den Kurs *mit-an*-eᵢ.

c. *Man *an-kündigtᵢ* den Kurs *mit*-eᵢ.

d. *Man *mit-an*-kündigtᵢ den Kurs eᵢ.

Both prefixes, *an-* in (78a) and *mit-* in (78b), require stranding. In the combination (77a), there is no possibility to simultaneously meet this requirement. If *an-* is stranded (77b), *mit-* remains attached to the following prefix and hence is not stranded. Stranding the prefix *mit-* (77c), however, is possible

only if the following prefix is pied-piped with the verb. But this violates the stranding requirement of the second particle. Needless to say, pied-piping both particles is ungrammatical as well (77d).

(78)

a. Sie kündigen$_i$ den Kurs an-e$_i$.

b. Sie diskutieren$_i$ heute mit-e$_i$.

What these data show is that the conflict arises once the verb is overtly moved. As long as it stays, the issue of stranding does not arise. So the fact that finite forms are possible even for these verbs shows that they do not require overt movement.

If they had to be moved in order to become finite, further movement to the V2 position could not be blocked, except by ad-hoc mechanisms. 'I-to-C' is an automatic process that cannot be blocked by idiosyncrasies of the morphological make-up of verbs. English proves this point: if a verb does not move to I′ it does not move to C, and if it moves to I, it moves to C in the contexts of I-to-C movement. It is safe to conclude, therefore, that clause-final finite verbs are not overtly moved to intermediate functional head positions. If overt V-to-I were required, doubly prefixed verbs would be predicted to occur only in nonfinite forms (because of the impossibility of licit V-to-I). The fact that they are grammatical as finite forms, but only in clause-final position, is a clear case against overt V-to-I in German and Dutch. Thus, if there is no overt movement, there is no need to assume a post-VP functional-head position. If there are covert positions they can just as well be assumed to be in pre-VP positions.

3.1.2 Are there positions in the German MF that are functional Spec positions?

In this section, three issues will be addressed that are problematic for a [Spec, F] analysis of the subject position or other argument positions. First, if there were a functional Spec position for subjects, this Spec position would license clause-internal expletives. But clause-internal expletives are ungrammatical in German, and this cannot be attributed to pro-drop. This point was already addressed in section 2.2.4.2. Second, subjects in Spec positions are predicted to be opaque for extraction. This prediction is incorrect (cf. 3.1.2.1). Third, covert movement can be ruled out, since the LF resulting from LF-raising out of fronted VPs is ill-formed (cf. 3.1.2.2).

The ungrammaticality of non-argumental expletive subjects in the mittelfeld in German is direct evidence against the need of a functional Spec position for the subject if pro-drop can be excluded. The relevant data are discussed and analyzed in section 2.2.4.2. German does not allow non-argumental expletive subjects and their absence cannot be attributed to pro-drop. We therefore conclude that if there were obligatory functional Spec positions in the MF, at least one of them would require lexical support. In all languages with a functional subject position, this position must be lexicalized unless the language is pro-drop. This is a consequence of the EPP (Extended Projection Principle). The fact that German requires overt argumental expletive subjects but forbids purely structural expletives points directly to the conclusion that structural expletives do not occur because there is no structural position to host them. If this is correct, the overt positions of the subject and the objects are VP-internal in German.

Finally, the fact that VP topicalization with a VP-internal unergative subject is grammatical in German (cf. 79) is clear and sufficient evidence at least for the following conclusion: no (obligatory) overt movement of a nominative to a functional Spec position – that is, movement to AgrS – in German.

(79)

a. [Ein Wunder^j ereignet]$_i$ *hat*$_i$ sich^j hier noch nie e$_i$.

a miracle occured has REFL here yet never

'A miracle has never ever occured here.'

b. [Wunder$_j$ ereignet]$_i$ *haben*$_j$ sich$_j$ hier noch nie e_i.
miracles occurred have REFL here yet never

c. [Aussenseiter$_j$ gewonnen]$_i$ *haben*$_j$ es noch nie e_i.
outsiders won have it never ever

VP-topicalization in (79) cannot be reanalyzed as the topicalization of a functional projection in order to save the claim that nominatives are overtly moved to a functional Spec position: if the topicalized projection in (79) contains the functional head in whose Spec position the nominative occurs, this functional head is a head position. The topicalized constituent would then have to contain the trace of the finite verb as well. Clear instances of this structure are ungrammatical, however. In German, the topicalized constituent cannot contain the trace of the finite verb. It must be analyzed as VP and not as a more complex functional projection containing the VP (cf. the discussion of example (77)):

(80)

a. [Ein Schiff$_{NOM}$ untergegangen]$_j$ ist$_i$ hier noch nie e_j e_i.
[a boat down-went] has here yet never
'A boat did not yet sink here'

b. *[Ein Schiff$_{NOM}$ unter-$_i$]$_j$ ging$_i$ hier noch nie e_j.
[a boat down-e_i] went$_i$ here yet never

c. Ein Schiff ging$_i$ hier noch nie unter-e_i.
a boat went$_i$ here yet never down-e_i

Example (80a) is compatible with the standard analysis, that is, VP topicalization, as well as with the alternative analysis as a topicalized functional projection. If it were a functional projection, however, (80b) would be structurally parallel to (80a) – both would contain the trace of the finite verb – and therefore both should be grammatical or ungrammatical. That the topicalized constituent in (80b) contains the trace of the finite verb is signaled by the stranded verbal prefix *unter*, because *untergehen* is a verb with a separable prefix (cf. 80c). The prefix is stranded in the base position of the verb. The standard analysis correctly predicts (80b) to be ungrammatical because the trace of the topicalized VP is not lexically head-governed. In (80a), the topicalized VP is a complement of the copular verb. [21]

Having established that there is no overt movement of the subject to Agr-S, we have to check the possibility of covert movement. Again, VP topicalization with a subject is a suitable testing ground: The topicalized VP as a *wh*-moved phrase in a Spec position is opaque for extraction, and, consequently, covert movement, that is, extracting the subject out of the topicalized VP, is ruled out. Reconstruction of the VP plus subsequent extraction would violate the cycle. So, there is no covert movement either. A re-check with quantifiers confirms the opacity of a fronted VP for covert extraction with or without reconstruction:

(81)

a. **Wide scope of the universal Q**:
Jeden Passagier hat er zweimal befragt.
every passenger has he twice questioned

b. **Narrow scope of the universal Q**:
[Jeden Passagier befragt] hat er zweimal.
every passenger questioned has he twice

c. **Wide scope of the universal Q**:

[Zweimal befragt] hat er jeden Passagier.
twice questioned has he every passenger

In (81b) the domain of the universal Q is the fronted VP; it does not c-command into the MF. The quantifier in the mittelfeld c-commands the trace of the fronted VP, so the VP belongs to the scope domain of the mittelfeld quantifier. If a quantifier could be Q-raised out of the fronted VP, it ought to get scope over the Q in the mittelfeld. Moreover, (81b, c) show that the fronted VP cannot be treated as a remnant VP, that is, it cannot contain the trace of either the frequency adverbial (81b) or the quantified object. Since one would c-command the trace of the other within the fronted VP, either (81b) or (81c) would get a second scope reading, but this is not the case.

3.2 A grammar-theoretic perspective on free word order in the MF

The key issues to be addressed in this section are:

- Is scrambling base-generated free word order?
- Is scrambling the result of movement?
- Is scrambling triggered movement?
- Movement by adjunction or movement to functional Spec positions (or both)?
- A- or A′-chains? Are parasitic gaps evidence for scrambling as A′-chaining?

The theoretical positions available in syntactic theory have all found their (at least part-time) advocates. Nevertheless, the ultimate and uncontroversial insight is still missing. It is therefore worthwhile to focus on the problematic areas of each of the competing candidates for an empirically and theoretically satisfactory theory of scrambling. Here is the set of theoretically available options to chose from. The position of a phrase in a clause-bound scrambling position is:

- a base-generated argument position;
- a base-generated adjunct position;
- the head of an A′-chain targeting a Spec position;
- the head of an A′-chain targeting an adjoined position;
- the head of an A-chain targeting a Spec position;
- the head of an A-chain targeting an adjoined position.

The baseline hypothesis to start with is that scrambling does not involve any derivational machinery at all. The word-order variation called scrambling is but a set of individually available serialization patterns, each of which is a possible base-generated order of A-positions. This possibility for German – suggested first in Haider (1984) as an option provided by the German case system – has been revived vigorously in more detail and greater theoretical depth and on theoretically up-to-date foundations by Fanselow (1998) for German. Scrambling as base-generated A′-positions with subsequent lowering to theta positions on LF has been suggested by Bošković and Takahashi (1998). These approaches will be referred to as the base-generation approaches. In this perspective, a scrambling language is characterized as a language with a clause structure that allows a choice of positions for arguments. Potential sources of counter-evidence are phenomena indicative of antecedent-gap relations and typological overgeneration.

The next and more widely assumed general option is the derivational approach, in which scrambling is the result of re-arranging a given base order. This general option is narrowly channeled by syntactic theory. The two main channels are A-chaining or A′-chaining with the additional bifurcation as to

whether movement targets a Spec position or a position adjoined to a (lexical) projection. The evaluation of these proposals calls for a clarification of the basics of German clause structure as the underlying source of some controversies. A crucial theoretic issue is the issue of optionality vs. triggered movement. Traditionally, scrambling is considered to be optional modulo various side effects. Of course, these side effects could be reflexes of a hidden triggering mechanism. Explorative attempts to uncover these mechanisms produced various triggering scenarios, syntactic ones (e.g., movement to case-checking positions) as well as semantic (e.g., movement triggered by definiteness features) or pragmatic ones (e.g., movement triggered by information structuring features like topicality). Undoubtedly, scrambling influences the information structure conveyed by a clause, but it is far from obvious that this is the result of a grammatical causality of movement.

Once movement is granted, several questions arise. What type of movement is scrambling an instance of? The two basic options – A′-movement or A-movement – have been exploited and even been combined because of an apparent simultaneous aggregate of A- and A′-properties (Webelhuth 1992). The grammatical phenomenology of the parasitic-gap construction has played an important role in this respect. Another question relates to the nature of movement. Is it movement to a Spec position or is it adjunction? Adjunction is a less well-studied area and tends to be shunned in current grammar research in favor of movement-by-substitution into Spec positions. Here is a selection of suggestions from the scrambling literature:

Structure:

- Base generated A-positions: **Haider (1984)**; **Kiss (1994)**; **Fanselow (1998)**.
- Base generated A′-positions: **Bošković and Takahashi (1998)**.
- Scrambling as A-movement: **De Hoop and Kosmeijer (1995)**.
- Scrambling as A′-movement: **Müller and Sternefeld (1994)**.
- Scrambling as the result of both A and A′ movement: **Webelhuth (1989)**; **Mahajan (1994b)**.

Triggers:

- Untriggered scrambling (syntactically optional): **Haider and Rosengren (1998)**; **Saito and Fukui (1998)**.
- Scrambling triggered by (strong/weak) case features: **De Hoop (1992)**.
- Scrambling triggered by a topic-feature: **Müller (1995**: 107, **1998)**.
- Scrambling triggered by a scrambling-feature: **Grewendorf and Sabel (1999)**.
- Scrambling triggered by theta-features on LF: **Bošković and Takahashi (1998)**.

3.3 The grammar-theoretic modeling of scrambling: a critical survey

3.3.1 Scrambling: base-generated word order?

Pro:

- Occam's razor: if base-generated, no additional derivational devices required.
- Shifts the optionality issue to structure generation rather than to the application of movement.

Con:

- Positive evidence for antecedent-gap properties.

- Missing generalization on the OV vs. VO asymmetry (esp. Icelandic).

The idea that the 'scrambled' order is a base-generated order can be implemented in various ways. The common property is that there are no antecedent – gap relations, that is, movement chains, involved. The first possibility is the single level implementation. The alternative orders are taken to be alternative realization of V projections. In this perspective, scrambling languages are languages with free base orders. The second possibility is a dual level implementation: the alternative surface orders are related to a single structure on a hidden level, namely, LF. Again, this allows various alternative implementations. One possibility is the combination of a free base order with LF movement to checking positions. This characterizes a scrambling language as a language that differs from non-scrambling language in the checking system. The relevant feature is checked covertly rather than overtly. For a particular implementation of this strategy, see Fanselow (1998). Another possibility for base-generating scrambled order is suggested by Bošković and Takahashi (1998). The scrambled positions are base-generated adjunction positions generated in a generalized merger operation that need to be related to base position. This is managed at LF. The difference between this hypothesis and a movement hypothesis is that at surface structure there are no movement chains, and on LF, operations are foreseen that are forbidden for overt movement processes (e.g., lowering).

The direct criterion of success for these hypotheses is obvious. If they are right, scrambling does not involve antecedent gap relations on surface structure. On the other hand, evidence of movement traces is counterevidence for these proposals. A more indirect criterion is the typological question: Why is (clause-bound) scrambling strongly correlated with head-final projections? How is this captured in a theory of base-generable alternative orders.

Note that in a VO language like Icelandic, VP-internal reordering is in general ungrammatical, despite of the fact that there are alternative, verb specific ordering patterns. Only for the *give*-type double object constructions, both, DAT-ACC and ACC-DAT order is available (see Holmberg and Platzack 1995, ch. 7; Haider 2000d). If this order variation is interpreted as scrambling (rather than alternative base orders), it strengthens the point that scrambling is confined to the domain of the verb. Scrambling to the left, accross the verb, is not possible.

The base-generation approach opens various possibilities for a specific interplay between PF and LF. For instance, a subset of the scoping data could be captured in the following way: scope could either be read off the PF order or from the LF configuration, given that there is a fixed order of feature-checking positions at LF (cf. Fanselow 1998, sect. 3.5) or a fixed order of base positions in Bošković and Takahashi's (1998) approach. Lets assume the LF-order is DAT-ACC:

(82)

a. **PF:**

daß er [mindestens eine Frage$_{ACC}$] [fast jedem Kandidaten$_{DAT}$] stellte

that he at least one question almost every candidate put

'that he asked almost every candidate at least one question'

b. **LF:**

[jedem Kandidaten$_{DAT}$ [mindestens eine Frage$_{ACC}$ [stellte . . .]]]

every candidate at least one question put

The fact that the sentence in (82) is ambiguous with respect to the scope of the quantified DPs can be captured in the following way. Scope is read off either at Spell Out, that is, from the surface order, or after Spell Out, that is, from LF. If scope is read off the surface order (82a), the accusative DP has wide scope. But at LF (82b), the dative feature has wide scope by virtue of LF-movement into the checking position for dative, which is higher than the position for accusative.

This approach has shortcomings, however. If it is assumed that in general dative is checked at LF in a higher position than the accusative, then the inverse scoping effects for the base order class ACC–DAT (18f) would not follow (cf. 83). Analogous considerations apply to the class ACC–NOM (18b), DAT–NOM (18d). Whatever order is taken to be the LF order will run into problems with the converse base-order class of verbs:

(83)

a. **Unambiguous scope:**

daß man ja fast alle Kandidaten mehr als einem Test unterzog

that one PRT almost every candidate more than one test undergo

'that almost all candidates had to undergo more than one test'

b. **Ambiguous scope:**

daß man ja [mehr als einem Test]$_i$ fast alle Kandidaten e_i unterzog

that one PRT more than one test almost every candidate undergo

'that almost all candidates had to undergo more than one test'

Scoping either at surface structure or at LF, with the dative higher than the accusative at LF, predicts (83a) to be scope-ambiguous: at the surface, the accusative c-commands the dative and at LF the converse applies. Example (83b), on the other hand, is predicted to have the unique scope property that corresponds to the surface order because surface order and LF order coincide. In fact, the scope data do not match these predictions. They follow from an ACC–DAT base order (83a) plus Scrambling (83b): Scrambling introduces the ambiguity because of chain formation (see the discussion of property (vi), section 2.2.1).

From a more general theoretic perspective, first, the free choice between surface structure and LF as the relevant level of representation for the semantic interface would be unique for scoping and therefore ad hoc, since the fact that all binding relations are determined by the surface order in German forbids the going to and fro between surface structure and LF. Note that in our approach the surface structure is the relevant representation at the syntax–semantic interface. Second, and most importantly, the interplay between PF and syntax (cf. the data discussed in section 2) that becomes manifest in a structurally determined position of sentence accent, focus potential, and chain-connectivity for topic–focus accent (rise–fall intonation), would have to be discarded in order to await redesigning in yet unexplored ways. Third, and most important on the theoretical level, the base-generation approach does not provide insights as to why Icelandic – a language with as rich a case system as German – does not allow free argument order, although it allows various verb-specific order patterns that parallel the German verb-specific base-order patterns. In Icelandic the same verb-class-dependent word orders as in German are attested (cf. Haider 2000d). But still there is neither free word order within VP nor, in the case of Object shift, outside of VP (cf. Collins and Thráinsson 1996: 418; but see Holmberg and Platzack 1995, ch. 7). The fact that, for instance, a dative may precede or follow an accusative, depending on verb class, is incompatible with the assumption that checking is taking place in specific Spec positions of functional heads before Spell Out. So checking features have to be diagnosed as weak for Icelandic. But if checking is postponed to LF, the free word order in the VP, if there were any free word order, should be visible just as in German. But this is not the case and therefore these data are in conflict with the assumption of a correlation of strict word order and feature strength.

If scrambling were just free base-ordering in a language with morphologically identifiable grammatical functions, the clear-cut OV–VO contrast is unaccounted for. If, however, Scrambling word order is the result of chain-formation, the OV–VO contrast is expected: in VO languages, Scrambling chains would sandwich the verbal head, that is, the target position of Scrambling would precede the head, but the

base position would be in the domain of the head. In VO languages, however, left-adjunction to VP projects structures in which the target as well as the gap are in the domain of the verbal head. This is an essential fact for the understanding of the grammatical nature of scrambling; in languages with mixed head directionality, scrambling is confined to constituents with final heads. An example is German, with Scrambling in VP and AP, but not in NP and PP.

Finally, 'free' word order is not 'arbitrary' word order (in the absence of factors that are instrumental for grammatical reordering preferences) in German. What is the only word order in English is exactly what is the only neutral word order – which we equate with base order – of the corresponding V-class in German, which of course can be checked only with verbs with the same meaning and, *ceteris paribus*, the same construction type:

(84)

a. **Maximal focus**:

Peter zeigte seiner Schwester das neue RAThaus.

Peter showed his sister the new town hall

'Peter showed his sister the new town hall.'

b. **Minimal focus**:

Peter zeigte [das neue Rathaus]$_i$ seiner SCHWEster e$_i$.

Peter showed the new town hall his sister

'*Peter showed the new town hall his sister.'

Of course, English may use a PP instead of a bare DP with the inverted order between the objects. This is the only option for the verbs in (85), however.

Dative functions like Goal (85a) or Beneficiary (85b) are not coded with bare DPs in languages without morphological relation marking. So English does not allow double-object constructions corresponding to ACC-DAT base orders in German. Instead, the argument coded with dative in German appears as a PP in English (*aussetzen*, 'expose to'; *unterordnen*, 'subject to'; *unterwerfen*, 'submit to', etc.):

(85)

a. Er hat uns einer ernsten Gefahr ausgesetzt.

he has us a severe danger exposed

'He exposed us to a severe danger.'

b. Er hat der Frau die Tür geöffnet.

he has opened the woman the door

'He opened the door to the woman.'

This fact, however, is additional support for our assumption that the argument order in the lexical entry (as the result of mapping the lexical-conceptual structure on the lexical argument structure) is not arbitrarily but semantically determined and that it determines the syntactic configuration by ranking-geared discharge of the A-structure into syntactic structure.

3.3.2 Does scrambling target functional Spec positions?

Pro:

- It gives simple characterization of the movement targets: Spec positions of empty functional heads.
- It is a widespread assumption in the literature because of its immediate compatibility with

widely accepted assumptions on the organization of clause structure.

Con:

- Scrambled XPs lack the syntactic properties of phrases in functional Spec positions.
- Scrambling, unlike object shift in Scandinavian languages, does not reflect a unique order of functional projections.

There are at least three independent issues that are hard to reconcile with the assumption that the scrambled constituent is in a Spec position. First, scrambled XPs are transparent for extraction (contra Diesing 1992b; see also Müller 1998). Second, Scrambling may occur within a constituent fronted to [Spec, C]. If this constituent is a higher functional projection, crossing violations are predicted for head-movement chains that involve the finite verb. Third, neither a multiple F-spec analysis nor a multiple F-projection analysis can capture the freedom of scrambling orders in German. An analysis in terms of functional projections would be justified if there were a strictly fixed sequence of scrambled XPs as in the case of Icelandic Object shift.

Let us start with the argument from extraction patterns, that is, transparency for extraction. In a language with easily identifiable Spec positions, for example English, XPs in Spec are opaque for extractions:

(86) [Spec, IP]: *Who$_i$ has [a picture of e$_i$] been sold?

XPs, topicalized to positions between [Spec, IP] and C^0, are opaque as well (cf. 87b). This indicates that this position is either a Spec position or it is a position adjoined to IP. In both cases, extraction is illicit, as the evidence suggests:

(87)

a. (that) [a picture of this painter] virtually everyone has admired
b. *Who$_i$ has [a picture of e$_i$] virtually everyone admired?
c. (that) [with him] I should talk at once
d. *Who$_i$ should [with e$_i$] I talk at once?

The ungrammaticality of (87d) cannot be attributed to an adjacency requirement for V and the preposition.[22] Cross-linguistic evidence can be found, for instance, in Danish (see Vikner 1995: 248) where prepositions can be stranded at some distance from the verb.

In German, Scrambling does not create opaque domains for extraction. This is easy to demonstrate for scrambled infinitival clauses. Neither Scrambling nor 'extraposition' has any effect on extractability:

(88)

a. daß schon mal jemand [ihn damit zu überzeugen] versucht hat
   that already PRT someone him with-that to convince tried has
   'that someone already tried to convince him with this'
b. Wen$_i$ hat (denn) [e$_i$ damit zu überzeugen]$_j$ schon mal jemand e$_j$ versucht?
   who has PRT [with-that to convince] already PRT someone tried
   'Who did someone try to convince with this?'
c. Wen$_i$ hat (denn) schon mal jemand versucht [e$_i$ damit zu überzeugen]?
   who has PRT already PRT someone tried with-that to convince

Diesing's (1992b: 32f.) claim that scrambling creates opaque domains is based on inadequately chosen

data. She adduces '*was–für* split' constructions as the main body of evidence. The contrast in (89) is interpreted as the result of an opacity effect incurred by Scrambling.

(89)

a. Was$_i$ hat denn jeder von euch [e$_i$ für Witze] erzählt?
what has PRT everyone of you for jokes told
'What kind of jokes did everyone tell?'

b. ??Was$_i$ hat [e$_i$ für Witze] denn jeder von euch erzählt?
what has for jokes PRT everyone of you told

The degraded acceptability of (89b) cannot be the result of scrambling, however. Sentence (90a), with a scrambled object DP, is perfectly acceptable. The degradation is of a different nature: it is not extraction out of, but scrambling of, a *wh*–marked DP across a particle like *denn* that induces ungrammaticality (cf. 90b). Example (89b), just like (90b), is ungrammatical, not because of extraction, but because of illicit scrambling of a *wh*–DP to the left of the particle, as the contrast between (90b) and (90c) illustrates. Sentence (89b) is the counterpart of (90b), just like (90a) is the counterpart of (90c).

(90)

a. Was$_i$ hat denn damals [e$_i$ für Witze]$_j$ jeder von euch e$_j$ erzählt?
what has PRT at that time for jokes everyone of you told
'What kind of jokes did each of you tell at that time?'

b. *Wem hat [was für Witze]$_i$ denn damals jeder von euch e$_i$ erzählt?
whom has what for jokes PRT at that time everyone of you told

c. Wem hat denn damals [was für einen Witz]$_i$ jeder von euch e$_i$ erzählt?
whom has PRT at that time what for a joke everyone of you told
'To whom did each of you tell what kind of jokes at that time.'

What is essential, though, is not so much the particle as such but the adjacency to the C^0 position: dropping the intervening adverbial in (91a) reduces the acceptability considerably. The marginality of (91b) is of the same nature, but this is completely unexpected in Diesing's account because the subject of (91b) is the subject of an unaccusative verb and it may stay in its base position.

Whatever theoretical reason might be behind this restriction, it is independent of structural considerations with respect to the position of the particle *denn*. In (91a), the split is possible despite the presence of *denn* if the phrase with the extraction site is preceded by another element.

(91)

a. Was$_i$ hat ??(*damals*) [e$_i$ für Ergebnisse] (*denn*) jeder von euch erzielt?
what has at that time for results PRT everyone of you achieved
'What kind of results did at that time everyone of you achieve?'

b. ??Was$_i$ fielen$_j$ [e$_i$ für Gläser] um–e$_j$?
what fell [for glasses] down
'What kind of glasses fell down?'

The fact that extraction out of a scrambled constituent in front of the particle is perfectly grammatical (see 91a) proves that what rules out (89b) and (90b) cannot be a positional effect on extraction proper.

Next, let us inspect the second area of counter-evidence and examine the hypothesis that scrambled

XPs are hosted by F-specs above VP. If this is the case, a topicalized constituent with scrambled arguments must be analyzed as a topicalized functional projection, whose Spec is hosting the scrambled XP. It is important, however, to note that these F-projections must be lower than the starting point of the head chain that leads to the V2 position of the finite verb. That this is so, is easy to demonstrate with the contrast between (92a) and (92b).

(92)

a. [Ein Fehler$_i$ einem Linguisten e$_i$ *auf*gefallen] ist dabei noch nie.
an error a linguist *up-struck* is at-that yet never[23]
'In this connection, no linguist ever noticed an error.'

b. *[Ein Fehler$_j$ einem Linguisten e$_j$ *auf*-e$_i$] fiel$_i$ dabei noch nie.
[an error a linguist up-e$_i$] struck$_i$ at-that yet never

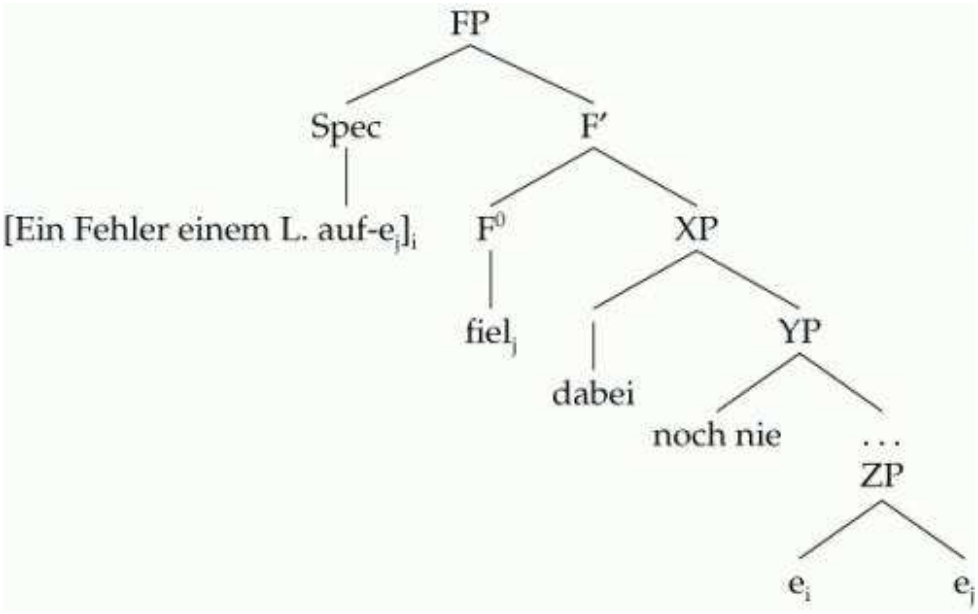
c. [Einem Linguisten *ein Fehler* aufgefallen] ist dabei noch nie.
a linguist an error conspicuous-made is at-that yet never

d. Es fiel$_j$ dabei einem Linguisten ein Fehler auf-e$_j$.
it fell at-that a linguist an error on-e$_i$
'In this connection, a linguist noticed an error.'

The examples in (92) feature an unaccusative subject. Its base position is the position following the indirect object (92c). In (92a, b), the subject is scrambled across the indirect object. If the target position of Scrambling in (92a, b) is the Spec of a functional projection that dominates the base position of the finite verb, the corresponding functional head is a head on the movement path of the finite verb from its base position to the V2 position. For the example chosen in (92b) this conclusion is unavoidable since the clause contains only the main verb. When it leaves its basic V-projection in order to start its travel up to the topmost F-projection, it will unavoidably travel through all the intermediate functional heads up to the top projection.

With this in mind, let us proceed to the argument that (92b) demonstrates that the topicalized constituent cannot contain the trace of the finite verb. The particle in (92b, d) is an indicator for the position of the trace of the finite verb, since the verb is one with a so-called separable particle (cf. 92d) that is stranded by V2. Topicalizing the constituent that contains the trace of the verb incurs a crossing violation: the trace of the verb in (92b) fails to be in the c-command domain of the moved verb.

(93)

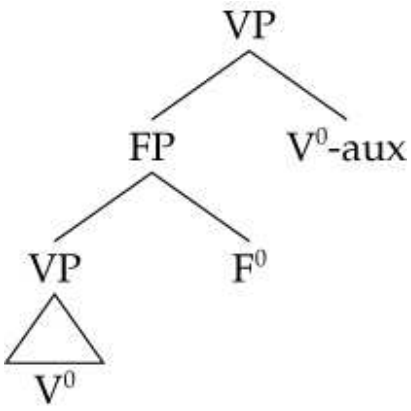


Thus, if the topicalized constituent in (92a) contained the trace of the finite verb, it would be predicted to be ungrammatical, contrary to the facts. The conclusion must be, therefore, that the functional projection that hosts the scrambled item cannot contain the auxiliary. It must be a complement of the auxiliary. Only in this case does the finite auxiliary not pass through the functional heads of the Scrambling domain:

(94)

a. $[_{Aux-VP} \ldots [_{FP} XP_i\ F^0\ [_{VP} \ldots e_i \ldots V^0]\ V_{Aux}]$

b.



Unavoidable though this conclusion is, it is unwanted, and so is the premise, therefore, which it is derived from. It is unwanted for at least the following two reasons (i) there are no plausible candidates for FP; (ii) this structure leads to overgeneration. As for the first reason, the Scrambling domain indicated in (93) is confined to the complement domain of the auxiliary, that is the FP in (94a, b). This domain cannot contain the subject-agreement projection because of (92b). So the Scrambling of the nominative in (92a) cannot have targeted the default A-position for the subject (AgrS) because this projection is higher and includes the base position of the auxiliary. This implies that Scrambling must stop short exactly in case the projection is topicalized. In all the other cases Scrambling may target higher positions. This is unavoidable again because adverbials that relate to the finite verb must be higher in the structure, but scrambled items may precede these adverbials.

On the one hand, scrambled constituents may precede these adverbials in the middle field (95d, f) but, on the other, Scrambling may take place within the topicalized constituent that must not contain these adverbials (95b, e).

(95)

a. *[Sein Argument *leider*/*vermutlich* allen mehrmals erklären] mußte er.
his argument unfortunately/probably everyone many-times explain had-to he

b. [Sein Argument$_j$ allen e$_j$ erklären]$_i$ mußte er *leider*/*vermutlich* mehrmals e$_i$.
his argument everyone explain had-to he unfortunately/probably many-times
'Unfortunately/probably, he had to explain his argument more than once to everyone.'

c. daß er sein Argument allen *leider*/*vermutlich* mehrmals erklären mußte
that he his argument everyone unfortunately/probably many-times explain had-to
'that unfortunately/probably he to explain his argument to everyone had more than once'

d. *[Sein Argument$_j$ *gestern* allen e$_j$ erläutert] hat er doch.
his argument yesterday everyone explained has he PRT

e. [Sein Argument$_j$ allen e$_j$ erläutert]$_i$ hat er doch *gestern* e$_i$.
his argument everyone explained has he PRT yesterday
'He explained his argument to everyone yesterday.'

f. daß er sein Argument doch *gestern* allen erläutert hat
that he his argument PRT yesterday everyone explained has
'that he explained his argument to everyone yesterday'

What this entails is at least that a Spec position targeted by Scrambling cannot be a single uniquely identified position. Scrambling in this scenario must be able to optionally target either a Spec position that is lower than certain adverbials or one that is higher. It is unclear, moreover, what kind of functional heads could provide these lower Spec positions. It cannot be an agreement position because of (92b): AgrS would have to be higher in the structure. It cannot be an aspectual position either, because these F-heads must be accessible for the respective auxiliaries and therefore higher. In fact, there is no obvious candidate. Postulating an F-head in this case is motivated only by the premise that Scrambling targets an F-spec. What this amounts to is equivalent to what is defended in section 4, namely, that the extended VP is the Scrambling domain.

As to the second reason, overgeneration is a serious problem for (93). If an auxiliary selects an FP rather than a VP, this opens room for elements intervening between the VP that contains the main verb and the following auxiliary. But in German this room is not available though extraposed prepositional objects are VP-final (96a), they may not intervene between the VP and the following verb (96b).

(96)

a. [Gewartet *auf uns*]$_i$ hat sie nicht e$_i$.
waited for us has she not

b. *daß sie nicht [gewartet *auf uns*] hat
that she not waited for us has

c. daß sie nicht gewartet hat *auf uns*
that she not waited has for us

The third issue mentioned at the beginning of this section is the complete permutation potential of scrambling in German. This calls for an adequate structural solution. Cascading functional projections are ordered and so would be the outcome of scrambling. Scrambling would map one particular order onto another particular order. From this perspective, scrambling would not be equivalent to the permutation of arguments. It should rather behave like Scandinavian Object Shift, which is not the case, however. Cumulating scrambled items in a multiple Spec projection would not be adequate either because scrambled items may be separated by intervening adverbials. They do not come in packages.

3.3.3 Is scrambling triggered by a functional feature?

Pro:

- A syntactic trigger feature provides a grammar-internal causality for movement. This is favored by economy-based accounts.

Con:

- The various triggering properties suggested in the literature do not single out scrambled items. The alleged triggering properties are also found with phrases in situ.

This section is to complete the evidence against scrambling as movement targeting a functional projection. In section 3.2.1, evidence has been accumulated that militates against movement to a functional Spec position. This section argues against a trigger-account in terms of feature checking.

If the proposed feature has content (in contrast to a merely technical implementation like Sauerland 1999a), the issue of optionality can be put to test easily. Let us take De Hoop's distinction between weak and strong interpretations of indefinite DPs. If scrambling were triggered by a specific interface feature, (97a) and (97b) would differ precisely to the extent defined by the presence or absence of that feature.

(97)

a. daß ja Max Primaballerinas bewundert
that PRT Max primaballerinas admires
'that Max admires primaballerinas'

b. daß ja Primaballerinas Max bewundert
that PRT primaballerinas Max admires

But (97a) can receive the same interpretation as (97b), namely a generic one: if someone is a primaballerina, Max admires this person. Therefore, the claim that a strong feature 'generic' is the trigger of scrambling cannot be satisfactory, because of the licit generic interpretation of (96a). If it were indeed a strong feature, it would obligatorily trigger movement. If, on the other hand, the generic interpretation is available in situ, there is no justification for a contentful triggering feature.

The fact that there is a difference between (97a) and (97b) – the existential interpretation is lost in the scrambled order (97b) – is irrelevant in this context of argumentation. What is essential is not the loss but the exclusive gain. The loss of an interpretation in the course of movement does not differentiate between optional or triggered movement. It is simply a domain effect: if scrambling makes a DP leave the MAC, it leaves the domain of existential closure.

There is also a technical solution, of course, if one wants to enforce obligatoriness in face of optionality, namely, to stipulate some changes in the minimalist program which would bring about the 'overt' optionality in terms of invisible obligatoriness. Measures in this direction have been suggested by Haeberli (1993). He proposes that "the positions for case checking do not have to be fixed. Case checking projections are unspecified [. . .] projections in German [. . .] Thus, any NP can check its Case in any specifier position of these CasePs." The result is that argument Scrambling in German is tied to obligatory A-movement above VP into any of the CasePs. Even if one would accept this as an ad hoc measure for protecting the MP-axioms that do not admit optional movement – although it is not in any way supported by independent theoretical or empirical considerations – it is too weak: as emphasized earlier, scrambling does not single out DPs. A case-driven account is therefore bound to fail. Scrambled PPs and CPs remain unaccounted for.

Finally, if there were a triggering feature for Scrambling, this feature should be found at work in some other Germanic languages as well, for instance, in Icelandic, with its rich morphological system of case-marking and a movement phenomenon called Object shift. This is not the case however (cf. Collins and Thráinsson 1996: 410). Although a pre-VP position is accessible for Object shift, this movement conserves the base order, both for subject-object (98a, b) as well as for double object constructions (98d, e). In German, both orders are available (98c, f).

(98)

a. Í gær las Jón bækurnar ekki.
yesterday read John books-the not
'John did not read the books yesterday.'

b. *Í gær las bækurnar$_i$ Jón e$_i$ ekki.
yesterday read books-the John not not

c. Gestern las die Bücher Hans nicht. (= 98b)
yesterday read the books Hans not
'Hans did not read the books yesterday.'

d. Forstjórinn svipti mannin vinunni.
the boss deprived man-the (ACC) work-the (DAT)
'The boss deprived the man of the work.'

e. *Forstjórinn svipti vinunni$_i$ mannin e$_i$.
the boss deprived work-the (DAT) man-the (ACC)

f. Der Chef hat die Arbeit$_i$ dem Mann e$_i$ entzogen. (= 98e)
the boss has the work the man deprived
'The boss deprived the man of the work.'

If there were a trigger feature for Scrambling in German, the difference between the availability of scrambling in German and the lack of scrambling in Icelandic would have to be reduced to an accidental property; it so happens that the relevant feature is strong in German but weak in Icelandic. The difference is not accidental, however. It is a difference that relates directly to the OV vs. VO difference. So, arbitrary assignment of strong/weak values is thus but a technical option, but the relevant generalization is not to be captured.

3.3.4 Parasitic gaps as evidence for scrambling as A′-chaining?

This section provides reasons to dismiss so-called parasitic-gap evidence. The phenomena suspected to be parasitic-gap constructions in German are ellipsis constructions with properties known from coordination. Hence it need not come as a surprise that their grammatical behavior is different. The background: if scrambling licensed parasitic gap constructions, it would have to be an instance of A′-movement.

The binding data discussed in section 2.2.1. (Property (v)) suggest that Scrambling chains are A-chains rather than A′-chains (cf. Grewendorf 1989; Webelhuth 1992). But there seems to be a contradicting piece of evidence, namely, parasitic gaps apparently licensed by Scrambling. The phenomenon of parasitic gaps has been considered the cardinal evidence for A′-dependencies. However, as has been pointed out by Webelhuth (1989: 410f.), its impact is more confusing than revealing in German:

(99)

a. ?Er hat jeden$_i$ Gast [ohne *pg*$_i$ anzuschauen] seinem$_i$ Nachbarn e$_i$ vorgestellt.
he has every guest [without to-look-at] (to) his neighbor introduced

b. ?Er hat die Gäste$_i$ [ohne *pg*$_i$ anzuschauen] einander$_i$ e$_i$ vorgestellt.
he has the guests [without to-look-at] (to) each other introduced

If (99) is a parasitic gap construction, its pattern is inconsistent with standard assumptions. On the one hand, a parasitic gap needs an A′-chain for licensing, but on the other hand, A′-antecedents cannot bind anaphors and would trigger weak cross-over violations. In (99a) the scrambled quantified DP binds a pronoun without a weak crossover effect, and in (99b) the scrambled object binds an anaphor. These properties are associated with A-positions, however. Since under standard understanding a position cannot simultaneously be treated as A and A′, there are either two movement steps involved (cf. Mahajan 1994b), or the dichotomy must be relaxed (cf. Déprez 1994), or the data must be re-evaluated for their validity. We advocate pursuing the last option.

At least for German, the identification of constructions like (99) as parasitic gap constructions is of questionable validity. First of all, the gaps in adverbial infinitival clauses do not have the properties of parasitic gaps in English, as the comparison between (100a–c) and (101a–c) illustrates. The typical cases of English (cf. 100d) are very marginal in German, however (cf. 101d). Parasitic gap constructions with the gap in a finite clause are ungrammatical in German. Only infinitival adjuncts (see 101a, b) seem at first glance to display a parasitic-gap-like behavior.

(100)

a. *Where did Elaine work e_i without ever living e_i? (Postal 1993: 737)

b. *What he became e_i without wanting to become e_i was a traitor. (p. 746)

c. *This is a topic about which he should think e_i before talking e_i. (p. 736)

d. ?Which disease did everyone who caught e_i want Dr. Jones to study e_i. (p. 738)

(101)

a. Wo hat Elaine, anstatt mit dir zu wohnen, ihr Büro eingerichtet? (= 100a)
where has Elaine instead-of with you to live her office established
'Where did E. establish her office instead of living there together with you?'

b. Was er wurde, ohne eigentlich werden zu wollen, war ein Syntaktiker. (= 100b)
what he became without really become to want was a syntactician
'What he became without really wanting it was a syntactician.'

c. Das ist ein Thema, über das er, anstatt zu schwätzen, nachdenken sollte. (= 100c)
that is a topic over which he instead-of to talk think should
'This is a topic about which he should think instead of chatting.'

d. *Welches Haus wollte jeder, dem er e_i zeigte, e_i sofort kaufen?
which house wanted everyone who he showed at once buy

Furthermore, the same type of construction is found with elements that do not scramble easily. *Wh*-elements in situ license the alleged parasitic gaps, both in the function of a *wh*-interrogative (102a) and in the function of a *wh*-indefinite (102b). It should be noted that the alleged parasitic gap in (102a) must be interpreted like a bound pronoun.

(102)

a. Wer hat seinem Nachbarn wen [ohne e_i anzuschauen] vorgestellt?
who has his neighbour whom [without to-look-at] introduced
'Who has introduced whom to his neighbour without looking at?'

b. Er hat seinem Nachbarn wen [ohne e_i anzuschauen] vorgestellt.
he has his neighbour whom [without to-look-at] introduced
'He has introduced someone to his neighbour without looking at.'

Fanselow (1993) adduces additional evidence against a parasitic-gap analysis for structures like (102a–b). He notes parallels between this construction and conjunction reduction and concludes that *ohne* ('without') and *anstatt* ('instead of') function syntactically like coordinating heads. The alleged parasitic gaps are rather the result of coordination ellipsis (cf. 103b) and not the result of the parasitic-gap type variable-binding mechanism. Viewed from this perspective, it is not surprising any more that the alleged parasitic-gap construction unlike the standard construction may contain more than one gap.

(103)

a. daß er eine Frau$_i$ einem Mann$_j$ [anstatt e$_i$ e$_j$ vorzuziehen] unterordnen wollte
that he a woman a man [instead of to prefer (to)] subordinate wanted
'that he wanted to subordinate a woman to a man instead of preferring [her to him]'

b. daß er eine Frau einem Mann zuerst unterordnete und dann [– vorzog]
that he a woman a man first subordinated and then [preferred –]
'that he first subordinated a woman to a man and then preferred her to him'

Once it is realized that elliptic infinitivals are not cases of parasitic-gap constructions in German (and the very same considerations apply to Dutch), the puzzling conflict between A- and A′-properties disappears, and so does the support for an A′-movement analysis of Scrambling in German.

3.3.5 Clause-bound scrambling as adjunction to VP?

Pro:

- Direct correlation with the headedness factor.
- Immediate account for the locality properties.

Con:

- Insufficiently developed adjunction/merge mechanisms.
- Insufficiently developed licensing system.
- Currently a minority position in the field. Caveat: the author belongs to this minority.

The previous sections provided evidence against all but one of the currently admissible options, namely A-chains within the projection of V^0. This seems to be an odd result. It may become less odd, however, once the two crucial factors are appreciated. One factor is the parameter of argument licensing; the other factor is the headedness parameter.

In a language like German with a relational system of argument identification (identification by case), the syntactic base order of arguments in syntactic structure is an immediate reflex of the ranking in the lexical A-structure. In particular, it is important to keep in mind that base-order patterns of one class may be identical with scrambling orders of another class. This presupposes that the identification of arguments is not a function of case checking in position that are unique for a given case. If the checking of a specific case is not tied to a unique structural configuration for the given case in a given language, case may be successfully checked in alternative positions. On the other hand, the base order must be projected because the arguments of a head are ranked in the A-structure, and the A-structure is mapped to the phrase structure projected by the head. A simple illustration is (104) and (105)

(104)

a. V^0: <A_1 <A_2>>

b. [$_{VP}$ A1 [A_2 V^0]]

Assume a verb with two arguments, ranked as in (104a). This A-structure projected on syntactic representation yields (104b), a VP with base order. If, on the other hand, the arguments appear in the reverse order as in (105a), and the first position is a possible checking position and the second position a possible base position (as in 105b), the relation between these two positions fulfills the requirements of an A-chain: the chain locally combines a checking license and a projection license.

(105)

a. / . . . A_2 A_1 V^0/

b. [$_{VP}$ A_{2-i} [A_1 [e_i V^0]

This type of A-chain is possible only in the grammatical setting sketched above. In the following paragraphs it will be characterized more precisely.

- **Scrambling criterion** (observational):
  If a language L with head-final V-projections has different A-structure dependent base orders for argumental expressions, then L is also a scrambling language.

In other words, if there are A-structure dependent base orders, the given language allows for non-positional identification of arguments. This is a precondition for Scrambling. Note that this rules out Dutch and Icelandic as Dutch has positional identification and therefore no order alternation for DP arguments. Icelandic has different base orders for objects but it is a head-initial language.

- **Scrambling criterion** (technical):
  If in a language L the identification of argumental constituents in head-final projections is not subject to positionally fixed unique identification configurations, L is a scrambling language.

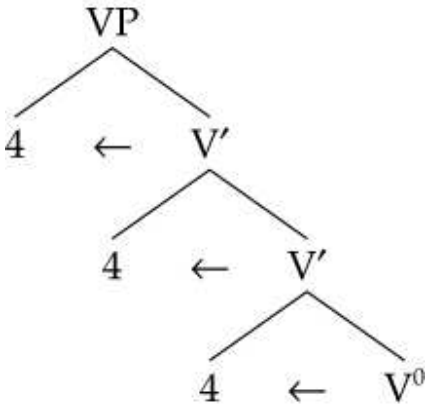
The crucial difference between a head-final and a head-initial projection is the availability of the extendable identification domain. In a head-initial projection, the extendable domain is necessarily empty; in a head-initial projection, an identification position is a position preceded by the head. So adjunction to the left creates positions that are not in the identification domain. Therefore, genuine scrambling-structures cannot arise in head-initial projections.

Excursion 2: OV vs. VO

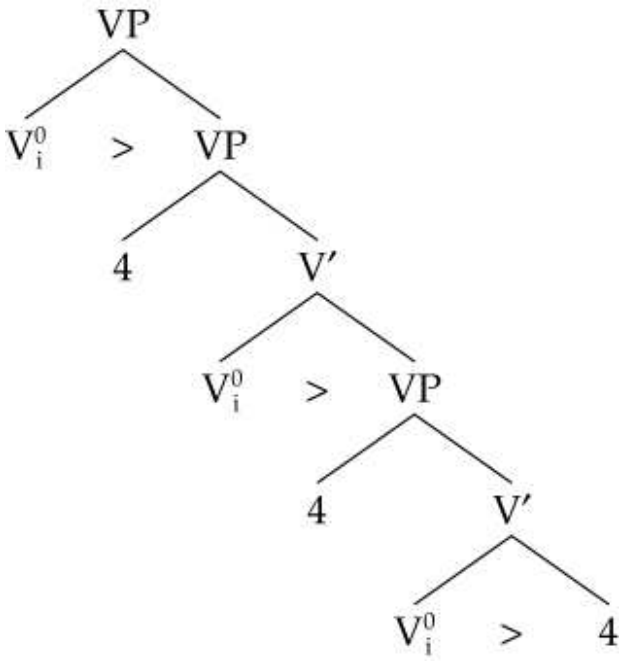
Claims:

- A head-final projection is a projection with the head in the foot position of the projection. The licensing directionality is regressive (see 1).
- A head-initial projection is a projection with an empty head in the foot position bound by the overt head in a shell projection. The licensing directionality is progressive (see 2).

(1) Head-final VP-VP



(2) Head-initial VP-shellVP



Two factors are crucial for the correlation between scrambling and headedness. First, unlike head-initial projections, head-final ones ones are simple projections, that is, binary layered structures with the head in the right foot position.

The implications for Scrambling are obvious, given that Scrambling is adjunction to the V-projection.[24] Adjunction in the structure (106a), but not in (106b), extends the identification domain of the head. Hence, left-adjoining to the projection (as in (106a)), adds one more node to the projection line and opens a position in the identification domain of the head. Left-adjunction as in (106b) creates a position that is not in the identification domain of the head of the projection. This is the basic difference between adjunction to OV and VO projections. If Scrambling structures are adjunction structures, this difference in the projection structure of head-final vs. head-initial projections entails that the grammatical properties of Scrambling in OV must be different from those that would result from an analogous operation in a VO language.

The second factor differentiates between German as a Scrambling language and Icelandic as a non-Scrambling language: the Scrambling position must be within the identification domain of the lexical head of the projection.[25] We assume that argument identification is subject to the directionality parameter. OV is – as demonstrated above – the result of regressive identification whereas VO is the outcome of progressive identification. The difference between Scrambling in an OV system, in contrast with a VO system, is illustrated in (106). In (106a) the scrambled XP is in the identification domain of V^0, but not in (106b), where it precedes a progressively identifying head:

(106)

a. $[_{VP}\ XP_i\ [_{VP}\ \ldots\ [e_i\ \ldots\ V^0]]]$

b. $[_{VP}\ XP_i\ [_{VP}\ V^0\ [\ \ldots\ e_i\ \ldots\ ]]]$

Arguments in positions within the identification domain of the lexical head are L-related positions. This is the reason why scrambled and non-scrambled XPs do not differ with respect to grammatical factors conditioning opacity for extraction. It is also the reason for the lack of differences in binding. After all, a position in the identification domain of a lexical head is a position in which an XP is linked. In terms of the A′- vs. A-distinction, a linking position is an A-position. This accounts for the A-chain properties of Scrambling.

We shall have to answer the question, What determines the position of the gap in a Scrambling construction? The gap is the foot of the Scrambling chain in the base position of the scrambled element. This position is determined by the base order and hence predictable from the A-structure of the lexical head of the projection. The pertinent principle is that of the discharge of A-structure onto syntactic structure that guarantees that the ranking in the lexical A-structure is conserved in the syntactic structure:

(107) **Principle of conservative mapping of A-structure onto syntactic structure**:
The A-structure ranking in the lexical A-structure of a lexical head is mapped onto a syntactic c-command hierarchy.

The lowest ranking argument in the A-structure is associated with the lowest A-position in the projection of the head, the next higher one with a position c-commanding the lower one, and so on. In terms of merging, the argument expression with which the head merges first is associated with the lowest ranking argument and merging continues in the inverse order of the ranking. The minimal domain of mapping will be referred to as Minimal Argument projection Complex (MAC).

Let us assume, for the sake of illustration, a head with a three-argument A-structure and a given ranking as in (108a). The resultant MAC, the minimal complete lexical projection that contains all A-positions, is either a structure like (108b), for head-final projections, or a structure like (108c) for head-initial ones.

(108)

a. h^0 $<A_i <A_j <A_k>>>$ lexically stored information

b. $[_{HP}\ A_i\ [A_j\ [A_k\ h^0]]]$ (head final)

c. $[_{HP}\ A_i\ [\ [A_j\ [\ A_k]]]]$ (head initial, projection shells)

An illustration for the structures (108b, c) is given in (109a, b), respectively, in the form of a German head-final and an English head-initial V-projection. For the latter we follow the standard assumption that the external argument is the only argument to the left of the head. This position is structurally a Spec position of the head-initial projection and it is identifiable as the single position to the left of the head. In head-final projections no position is singled out structurally. All positions are positions to the left of the head.

(109)

a. $[_{VP}$ jemand$_i$ [jemandem$_j$ [etwas$_k$ *zeigen*]]]
someone$_{(NOM)}$ someone$_{DAT}$ something$_{ACC}$ show

b. $[_{VP}$ someone$_i$ [*show*$_q$ [somebody$_j$ [e$_q$ something$_k$]]]]

Let us now return to the question we started with, namely, the identification of the gap in a Scrambling construction like the one in (110). The gaps are identifiable in the MAC in the order of the ranking of the A-structure.

(110)

daß (ja) [die Bilder$_k$ [Linguisten$_j$ [MAC niemand$_i$ [e$_j$ [e$_k$ zeigte]]]]]
that (PRT) the pictures linguists nobody showed
'that nobody showed the pictures to linguists'

The scrambled constituents are adjoined to the V-projection and thus remain in the identification domain of the head. (Note that the scrambled order could, of course, also be *Linguisten*$_j$ *die Bilder*$_k$ since both are scrambled across the subject.) The case is checked in the overt position; linking to the

A-structure position requires chain formation between the identification position and the base position. The resulting chain is thus a chain between an overt A-identification position and a covert linking position, that is, an A-chain.

In a head-initial projection, this type of structure does not give rise to A-chains for a simple reason. Positions adjoined to the MAC are positions to the left of the head position and therefore are not in the potential identification domain of the head:

(111) [VP something$_k$ [MAC someone$_q$ [*show*$_i$ [somebody [e$_i$ e$_k$]]]]] (*scrambling)

Since the position adjoined to the MAC in (111) is not in the identification domain of the lexical head because identification is subject to a directionality requirement, the chain cannot be an A-chain. It could be an A′-chain only. This is the grammar-theoretical reason for the absence of A-chain Scrambling of the German type within VO languages. The remaining possibility for scrambling within the MAC in VO languages, that is, adjunction to the left is ruled out for principled reasons as well. Adjunction to the left is not admissible in constrained phrase-structure theories as those of Haider (2000a) or Kayne (1994).

4 Conclusion: questions and answers

- What makes an SOV-language (like German, Hindi, Japanese) a scrambling language?
  - Licensing domains are non-positionally restricted.
  - V-projections are head-final.
- What prevents scrambling in SVO languages (like English, French, or Icelandic)?
  - There is no adjunction to the right (universal restriction).
  - Heads of head-initial projections do not license to the left; hence there is no adjunction to the left either.
  - Scrambling is conditioned by the headedness property (head-final). Hence a language with mixed headedness (e.g., German) does not scramble in head-initial projections (NP, PP), but only in head-final ones (VP, AP).

Typological note: VSO languages such as Tagalog allow for scrambling in the sentence domain (for Tagalog see Schachter 1996). What this indicates for our present concern is that reordering in the domain of the verb – the V-projection (plus higher functional projections) – is possible if arguments are not confined to unique licensing positions. In addition, we should take into account that languages like Polish and Russian are considered scrambling SVO languages. This is a serious challenge to the account described above, unless there is an independent factor intervening, namely, the positioning of V^0. If Slavic languages are more like Hindi (see Mahajan 1997) or Yiddish (see Haider and Rosengren 1998), the problem disappears. These languages are neither true OV nor true VO languages, but rather a combination of both OV and VO: in that the base position plus the identification directionality is OV, but the verb may move to a surface position to the left. If this characterization is correct, scrambling is possible because the identification directionality is like in an OV system. The surface position of the verb, however, masks this property.

- What prevents the permutation of DP arguments in Dutch, unlike German?
  - Positional licensing of DP objects (because of the lack of relational morphological identification).
- What is responsible for the apparent combination of A- and non-A-movement properties (crossover, parasitic gaps, etc.)?

– (Mis)interpretation of data, (mis)interpretation of theoretical concepts.

NOTES

I want to thank Anders Holmberg and an anonymous reviewer for their valuable efforts to improve the quality and readability of an earlier version of this chapter. Please blame remaining shortcomings exclusively on the author.

1 Representative for the Scandinavian languages (Faroese, Iceandic, Norwegian, Swedish).

2 A necessary condition for scrambling within a projection P is (i) that P must be a head-final projection, and (ii) that the arguments of the head of P must be licensed relationally, that is, the identification of the given argument phrases does not depend on unique structural positions for each argument. (See Haider 1991a; Corver and Van Riemsdijk 1997; Haider 1997c; Haider and Rosengren 1998.)

3 Capitals indicate the locus of the pitch accent.

4 Stefan Heym, interview.

5 The position of a negation particle is a position that c-commands the finite verb or its trace. This is one reason why a negation particle in the role of sentence negation cannot appear in a VP-internal position in a VO language:

(i) He has talked *gently* to Mary.

(ii) *He has talked *never* to Mary.

(iii) *He has talked *not* to Mary.

But in an OV language the negation particle, just like adverbs of all semantic types, occurs VP-internally, since any VP-internal position c-commands the finite verb in its base position.

6 The MAC is the minimal projection of the head that contains all argument positions of the head. This is a modification of Diesing's (1992b) claim that the VP is the domain of existential closure. The VP in an OV language may be larger than the MAC. This is the case if scrambling is analyzed as adjunction to VP. In head-initial projections, however, the left boundary of the MAC is identical with the left boundary of the VP.

7 There are some restrictions regarding genitival objects, however (cf. Rosengren 1993). Since this is not relevant here we shall not discuss it further.

8 In the following example the subscript is the trace index; the superscript is the binding index.

9 Nominative is a bi-partite relation because the nominative DP obligatorily agrees with the finite verb. The DP and the finite verb share a feature matrix. By definition, the finite verb, as the head of the projection, c-commands all the phrases in its projection. So the feature matrix of the governor of nominative c-commands any position within the VP. If binding is defined in terms of the position of the head that agrees with the DP features rather than the DP position itself, the result is in accordance with the empirical facts. It is important to realize that overt agreement is the crucial factor and not the subject function (cf. ECM subjects).

10 'An operator A may have scope over an operator B iff A c-commands B or an A′-element coindexed with B.'

11 Nominal-case distinctions in Dutch are found only with pronouns, much as in English.

12 A derived un-accusative predicate is the passive of a ditransitive verb. An example of a primary unaccusative verb is *overkomen* ('happen to'):

(i) dat Jan boeken gegeven werden
that Jan books given were
dat Jan rampen overkomen zijn
that Jan disasters happened were

13 This is of course not the same as to say that they are informationally equivalent. The difference in position of the minimal focus exponent is of course important but not relevant in this connection.

14 Note that a reflex of this property is the fact that the verb that denotes the same concept in English – the verb *devote* – does not allow for a 'dative alternation'. An unambiguous goal relation is ranked lower than a theme argument in A-structure.

15 Note that contrary to widespread rumours there is no specificity effect in the German counterpart of the English *there*-construction:

(i) Es spielt jetzt für sie *die Academy of St. Martin in the Fields* unter Neville Mariner.
there plays now for you *the Academy of St. Martin in the Fields* under Neville Mariner

16 See Askedal (1986). The examples are excerpted from T. Mann, *Die Buddenbrooks* and F. Werfel, *Das Lied der Bernadette*.

17 Haeseryn et al. (1997: § 22.5.6.3) "Als lijdend voorwerp en indirect object beide een substantiefgroep zijn, moet het indirect object steeds vóór het lijdend voorwerp staan, hoewel niet steeds vlak ervoor" ['If the direct object and the indirect object are both DPs, the indirect object must always precede the direct object, although not always immediately'].

18 Haeseryn et al. (1997: § 22.5.6.3) "dan is verplaatsing gemakkelijk mogelijk" ['then movement is well possible'].

19 Commentary (Eurosport channel, February 22, 2002) on Sarah Hughes' gold-medal-winning performance.

20 The fact that Dutch infinitival subject clauses are obligatorily extraposed supports the assumption of an IP shell for Dutch, which is confirmed by the German–Dutch contrast in the distribution of sentence internal expletive subjects discussed earlier. The Dutch restriction is the parallel of the English restriction on clause-internal clausal subjects.

21 The very same ECP effect can be seen with English VP-topicalization:

(i) a. . . . and [found a solution]$_i$ he has e$_i$
b. * . . . and [found a solution]$_i$ he e$_i$

In (b), the trace of the topicalized VP would be governed only by an empty functional head. The ECP requires a lexicalized head. Note that whatever condition is to replace the coverage of the ECP in the Minimalist Program must cover this distinction.

22 Examples such as *Who was taken advantage of?* and *Who did you give this book to?* show clearly that the verb and the preposition are not adjacent heads because in both examples the preposition is not adjacent to the verbal head.

23 *Auffallen* is a particle verb: *auf+fallen*, literally translated 'up+fall', with the meaning *to happen to notice*. The gloss uses the translational equivalent 'strike' plus a particle.

24 Adjunct(ion) is used here as a purely structural notion: the adjunction position is a position merged with the projection of a syntactic category (daughter and sister of a segment of a (maximal) projection XP), without being selected by the head. The BC (see above) allows adjunction on the left but not on the right side of a projection.

25 We assume a P-and-P-theory-checking system for overt case: a lexical head can check for a single case value per case category, that is, one structural case, one lexical case, and one oblique (e.g., prepositional) value.

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Cite this article

Haider, Hubert. "43 Mittelfeld Phenomena (Scrambling in Germanic)." *The Blackwell Companion to Syntax*. Everaert, Martin and Henk Van Riemsdijk (Eds). Blackwell Publishing, 2005. Blackwell Reference Online. 06 January 2009
<http://www.blackwellreference.com/subscriber/tocnode?id=g9781405114851_chunk_g978140511485146>