

The phonological side of German scrambling*

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Most of the extensive body of literature which deals with German scrambling from a generative perspective considers it as the product of an operation taking place in the strictly syntactic component.¹ For those studies, the right characterisation of the phenomenon is inextricably linked to the question of the exact mechanism that derives it, which has resulted into two main types of analyses:

- (i) Movement analyses. Their basic tenet is that German scrambling is the result of the complex syntactic operation "Move", which displaces a constituent from the lexical projection where it is first merged to a position within the sentence's functional domain (Déprez, 1989, 1994; Moltmann, 1990; Santorini, 1990; Müller & Sternefeld, 1993; Müller & Sternefeld, 1994; Müller, 1995; Müller, 1998, among others). Despite important differences between them (especially with regard to the target of displacement), most of these studies take the islandhood of scrambled constituents as evidence for the movement approach, on the basis of Wexler & Culicover's (1980) "Freezing Principle".
- (ii) Base-generation analyses. They defend that scrambling orders are the result of simple "Merge", which amounts to equating them with non-scrambling strings (Bayer & Kornfilt, 1994; Neeleman, 1994; Neeleman & Reinhart, 1998; Fanselow, 2001; Fanselow, to appear). The factor that allows scrambling languages to merge elements in alternative positions is diversely accounted for in these studies. Nevertheless, scrambled and unscrambled constituents are expected to behave uniformly with respect to "Freezing", which entails that the apparent islandhood of reordered elements must be explained otherwise. On the other hand, if scrambling is reduced to base-generation, it should take place within the VP (or a "extended" version of it), and should not be restricted to verbal arguments. In fact, as shown in proposals such as Fanselow (2001,

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¹ Exceptions are Ross's (1967) pioneering work, Chomsky & Lasnik (1977), and an observation in Chomsky (1995), where scrambling is treated as a PF-procedure.

to appear), and Haider & Rosengren (1998, 2003)², this is the case: German allows reordering of arguments within fronted VPs, as well as within APs and postpositional phrases.

The present paper focuses on the pieces of evidence mentioned above, that which lends support to the movement approach (apparent islandhood of scrambled constituents), and those that seem to argue for a base-generation analysis (scrambling within topicalised VPs, and scrambling within APs and postpositional phrases). The main claim is that they are linked to two of the most important theoretical findings about the connection between phonological features and Narrow Syntax in Chomsky (2001a): (i) the existence of special operations that spell out phonological features at points different from the completion of strong phases (Dislocation); and (ii) the sensitivity of strictly syntactic operations to the presence (or absence) of phonological features. Chomsky argues that these generalisations are reflected in the basic characteristics of Scandinavian Object Shift, and the way preceding analyses (especially Holmberg, 1999) have capitalised on them. This issue will be dealt with in section 1, whereas Chomsky's own proposal will be presented in 2. In the third section of the paper, it will be claimed that German scrambling behaves similarly to Scandinavian Object Shift with respect to (i) and (ii) above, and that the complexity of the data derives from the existence of another, "scrambling-like", process, along with the one resembling Object Shift. Finally, section 4 will be devoted to some of the problems the present proposal may raise, as well as the questions it leaves unsolved.

Before I proceed with the argument, a word of caution is in order. Note that the claim here is not that German scrambling constitutes the same phenomenon as Scandinavian Object Shift. There is a vast amount of literature that extensively shows important differences between the two. The only claim is that, if my conclusions are tenable, there may be reasons to think that some of their core properties are similar. In this respect, my study aligns itself with those proposals that put the emphasis on what the two constructions share (for example, Déprez, 1989, 1994, or Diesing, 1997), but it goes beyond the structural position the shifted / scrambled constituent occupies, or the

² Although Haider & Rosengren's studies adopt a movement approach to German scrambling, they defend the idea that the target of "Move" is invariably a position within the head's lexical projection. Therefore, their system is not totally incompatible with some of the evidence adduced by base-generation analyses. Their main point of departure with respect to movement analyses is that they reject the island status of scrambled constituents. This is, in my opinion, a wrong conclusion, which leaves unaccounted for important sets of data that Haider & Rosengren disregard.

meaning it receives, insofar as it focuses on other syntactic properties that seem to derive from the interaction between Narrow Syntax and the PF interface.

1. Scandinavian Object Shift and "Holmberg's Generalisation"

Holmberg's (1986) pioneering work on Scandinavian Object Shift shows that the process is obligatorily tied to verb raising, according to what is known as "Holmberg's Generalisation", responsible for the contrast in the Danish examples of (1) (from Vikner, 1994):

- (1) Danish
- a. Peter købte **den** ikke
Peter bought it not
 - a'. *Det var godt at Peter **den** ikke købte
it was good that Peter it not bought
 - b. Hvorfor købte Peter **den** ikke?
why bought Peter it not
 - b'. *Hvorfor skal Peter **den** ikke købe?
why shall Peter it not buy

The picture is, however, complicated by another set of Scandinavian data, already pointed out in Holmberg (1986), which seem to suggest that it is not only the presence of the verb within VP that blocks Object Shift, but also that of some other elements, namely prepositions, indirect objects, and verb particles³ (examples from Holmberg, 1999):

- (2) Swedish
- a. *Jag talade **henne** inte med
I spoke her not with
 - b. *Jag gav **den** inte Elsa
I gave it not Elsa
 - c. *Dom kastade **mej** inte ut
they threw me not out

³ Nevertheless, as Holmberg (1999) notices, although verb particles seem to block Object Shift in Swedish, they do not block it in the rest of Scandinavian languages, as the Icelandic example below illustrates (Thráinsson, 2001):

(i) Hún skrifaði kvæðið ekki upp
she wrote poem-the not up

Although some scholars defend the view that "Holmberg's Generalisation" must be kept in its original formulation (Chomsky, 1993; Bobaljik, 1995; Bobaljik & Jonas, 1996; Anagnostopoulou, to appear, among others), Holmberg (1999) calls for a unified treatment of (1) and (2), along the lines of (3):

(3) "Holmberg's Generalization"

Object Shift cannot apply across a phonologically visible category asymmetrically c-commanding the object position except when that category is an adjunct.

Holmberg's proposal capitalises on the well-known interpretive differences between shifted and unshifted objects: whereas shifted objects obligatorily correlate with a specific (or quantificational) reading (4a), unshifted arguments generally receive a predication interpretation (4b) (Diesing, 1992, 1996, 1997; Diesing & Jelinek, 1993, 1995; etc.). However, unshifted objects preceded by phonologically realised VP-internal elements are ambiguously interpreted (4c) (examples from Thráinsson, 2001):

(4) Icelandic

- a. Nemandinn las **þrjár bækur** ekki
 student-the read three books not
 "There are three books that the student didn't read, namely..."
 **"It is not the case that the student read three books"
- b. Nemandinn las ekki **þrjár bækur**
 student-the read not three books
 "It is not the case that the student read three books"
 **"There are three books that the student didn't read, namely..."
- c. Nemandinn hefur ekki lesið **þrjár bækur**
 student-the has not read three books
 "There are three books that the student hasn't read, namely..."
 "It is not the case that the student has read three books"

Holmberg assumes that any phonologically visible constituent that appears within the VP is characterised by bearing a [+Focus] feature, except for adverbs, which would be marked as [-Focus]. This accounts for the predication reading of the unshifted object of (4b) and (4c), and explains why it obtains independently of "Holmberg's Generalization". But the central part of Holmberg's analysis is concerned with the availability of the specific / quantificational reading in (4c), i.e. why elements with a non-focused, "topic-like", presupposed, specific, quantificational, etc., meaning

may get that interpretation within VP only when c-commanded by phonologically visible material. Holmberg's answer to this question is that the only way Scandinavian languages have to license a [-Focus] feature (the feature at stake in this kind of reading) is government by an element characterized as [+Focus]. Thus, if the object bearing [-Focus] stays within VP, it will be licensed only in the case that a c-commanding constituent which is phonologically realised, and hence [+Focus], appears also there; otherwise, the object will be forced to move to a position where it may be governed by another, VP-external, [+Focus] category (the verb), which accounts for the movement operation, i.e. the "shift" itself.

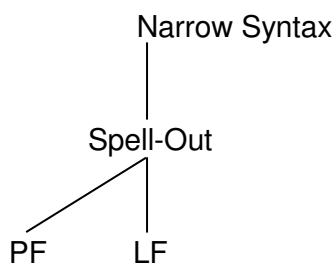
Holmberg adopts the minimalist approach to syntax in Chomsky (1993, 1995). Within that framework, both the nature of the feature he contends is responsible for Object Shift, and the dependence of its licensing on phonological features seem to be alien to what is usually considered purely syntactic: in a system in which all syntactic operations must take place before the derivation has access to the PF component, there is no place for operations dependent on phonological features, which are, by assumption, elements pertaining to PF. In other words, if Holmberg's proposal were to be stated in strictly syntactic terms, the system would have to allow for both countercyclicity (as far as, after realisation of phonological features, an extra strictly syntactic operation may be required to shift the object to the position preceding clause-medial adverbs), and violations of the "Extension Condition"⁴ (since, for example, in one of the cases he analyses, Swedish verb topicalisation, movement of the nominal to a higher position would have to take place only once the complete sentence is constructed). These are the main reasons that make Holmberg place Object Shift within a component called "Stylistic Syntax", which takes as input the output of syntax proper, with the addition of phonological features. However, as Chomsky (2001a) argues, there seems to be no need for resorting to components different from the strictly syntactic one, if a different view of the transfer of the derivation to PF is adopted, as will be discussed in the following section.

⁴ The "Extension Condition on Movement", as formulated in Chomsky (1993), states that substitution (i.e. movement) operations always extend their target, which in turn ensures strict cyclicity.

2. Scandinavian Object Shift in Narrow Syntax: Chomsky (2001a)

Chomsky's "Derivation by Phase" (Chomsky, 2001a) follows the conclusions the author drew in the preceding "Minimalist Inquiries" (Chomsky, 2000) with respect to the relation between the strict syntactic derivation and the interfaces, which, in turn, entail a clear departure from previous models. Until the appearance of both "Minimalist Inquiries" and "Derivation by Phase", the common minimalist assumption had been that the product of the core syntactic derivation (what Holmberg (1999) calls "Strict Syntax", and Chomsky (2000, 2001a) calls "Narrow Syntax") was transferred to the PF component by means of the procedure called Spell-Out once all the required strict / narrow syntactic operations had been performed, in what is known as the standard "Y-model" in (5):

(5)



Within this general framework, lexical items are bundles of features, some of which are legible at PF (in general terms, phonological features), some of which are legible at LF (in general terms, semantic features). There exists, however, a third kind of features, those which Chomsky (1995) calls formal features, divided into interpretable and uninterpretable. They differ greatly as far as LF is concerned: formal interpretable features are legible there, but formal uninterpretable ones are not. However, they are similar with respect to PF: if both interpretable and uninterpretable features may have a phonetic reflex (i.e. inflectional affixes may be phonetically realised), they must be in some sense available at PF irrespective of interpretability. What seems to be required, then, is a syntactic mechanism that makes formal uninterpretable features disappear before accessing LF, but, at the same time, preserves them for PF. That mechanism is the operation Spell-Out, which removes LF-uninterpretable material from the syntactic object and transfers it to the phonological component. On the other hand, uninterpretable features are considered responsible as well for the implementation of

other syntactic operations whose main objective is to delete them, which constitutes the core of "feature checking" (Chomsky, 1993, 1995).

However, the Y-architecture is problematic with respect to two different issues. First, as Chomsky (2000, 2001a) already notices, it entails great computational complexity, insofar as the whole syntactic object in its integrity must be present in active memory until it reaches the final (Spell-Out) point. Second, as Epstein and Seely (2002) argue, the model also suffers from important drawbacks having to do both with the way uninterpretable features are checked (or licensed) and the way they may or may not access interface levels, namely: (i) if formal uninterpretable features are uninterpretable at LF, how can Spell-Out, which has no direct access to the LF interface, distinguish them?; and (ii) if feature checking results in uninterpretable feature deletion, how can uninterpretable features be available at PF in the instances in which they present phonetic reflexes?⁵

Chomsky tries to solve these contradictions in "Minimalist Inquiries" and "Derivation by Phase" by reformulating both the feature checking procedure and the "Y-model" itself. With respect to feature checking, he refines it in terms of feature valuation, according to which the difference between interpretable and uninterpretable features lies in when they receive a value: whereas interpretable features are already valued before they enter the derivation, uninterpretable ones get their value in the course of it. As Epstein and Seely (2002) notice, this is a good solution for the problem posed by Spell-Out having access to LF information, i.e. one of the contradictions pointed out by Epstein and Seely themselves: Spell-Out does not distinguish between interpretable / uninterpretable features, but crucially between valued and unvalued ones. On the other hand, it also seems to improve the picture with respect to another of the problems mentioned above, as far as valuation does not imply deletion, which would account for the presence of phonetic reflexes of uninterpretable features at PF.

Nevertheless, as Chomsky observes in "Derivation by Phase", replacing feature deletion with feature valuation, while completely useless as a remedy to the issue of computational burden, creates a new complication for the Y-model: once an uninterpretable feature is valued, how can Spell-Out tell interpretable from uninterpretable material? There are two possible solutions: (i) Backtracking: Spell-Out reconstructs the derivation searching for all the occurrences of a valued feature in order

⁵ Chomsky (1995) attempts to overcome this second objection by resorting to a differentiation between feature deletion and feature erasure, which, nevertheless, as argued in Chomsky (2001a), still makes the system paradoxical.

to check if its valuation took place in the course of the derivation or not. But this solution would entail the same kind of computational burden the system is expected to get rid of, making the Y-model even worse; (ii) Spell-Out applies shortly after an uninterpretable feature has been assigned value. This means, of course, that, differently from what was assumed in the Y-model, Spell-Out does not take place at a single (final) point at the end of the narrow syntactic computation, but rather at several ones, which, in turn, amounts to characterizing Spell-Out as multiple and cyclic. The task is now to determine the precise points of the cycle at which Spell-Out is available, and this is just what the notion of phase tries to delimit.

Chomsky (2000, 2001a) makes cyclic Spell-Out contingent on the completion of what he calls "strong phases". In other words, once the iterative combination (Merge) of a group of lexical items results in a syntactic object characterized as a strong phase, the object may be spelled out (i.e. deprived of all its phonological and formal uninterpretable features). The crucial question here is what kind of syntactic object may be characterized as a strong phase. For Chomsky, the answer is given by the only elements (apart from lexical items) that are ineliminable on minimalist grounds: the PF and LF interface levels. Thus, he argues, any syntactic object that is relatively independent at the interface is a strong phase. For the LF component, this means that it must behave as a proposition; for the PF one, it refers to properties that allow it to appear more freely distributed than the rest of the linguistic expression (for example, in fronting, extraposition, pseudo-cleft constructions, etc.). The syntactic objects that seem to display this independent behaviour in natural languages are *v*Ps (the projections of *v*, the light verb head of constructions with full argument structure, i.e. experiencer and transitive predicates), and CPs. Hence, both *v*Ps and CPs, once constructed, may be spelled out.

As it stands, the new model reaches one of Chomsky's main objectives with respect to computational complexity, since entire strings of the derivation (i.e. lower phases) may completely disappear from active memory, but it also brings in new problems, since it seems to forbid the presence of a phonologically realized lexical item (or a group of them, i.e. a phonologically realised constituent) beyond the limits of the strong phase where it has been first merged, which would wrongly rule out standard cases of cyclic A / A-bar movement. In order to avoid this unwelcome result, Chomsky resorts to the interaction of a condition on phases (i), and a property intrinsic to strong phases (ii), as they appear in (6):

- (6)
- (i) Phase Impenetrability Condition: In a strong phase HP, in the configuration [ZP Z.... [HP α [H YP]]], ZP the next strong phase:
 - a. The domain of H (here, YP) is not accessible to operations at ZP, but only H and its edge.
 - b. Interpretation / evaluation for PH₁ (HP, here) is at PH₂ (ZP)
 - (ii) A strong phase may be optionally assigned an [+EPP] feature.

From (i) it follows that all those elements that by Spell-Out occupy the edge of the phase (specifiers and / or adjuncts) need not be obligatorily spelled out at the completion of the phasal cycle: the interaction of (a) and (b) makes it possible for a constituent to participate in operations at higher phases, while rendering the lower one free of uninterpretable features. On the other hand, (ii) is absolutely necessary in a system where movement operations are not free, but strictly feature-driven: in other words, if not directly merged at the edge of the phase, the element that is available for subsequent phases must have been moved there, and the only reason for this movement must be feature checking / valuation. Notice also that, since resorting to the [+EPP] feature seems to be motivated exclusively on empirical grounds (i.e. on the existence of cyclic movement itself), EPP feature elimination will always entail pied-piping, which, in turn, always requires phonological content. In this respect, the EPP feature constitutes the correlate of the notion of strong feature of the earliest versions of the MP (Chomsky 1993, 1995): features that provoke overt movement (i.e. movement with a reflex in linear order) are not strong features on the target, but rather features that appear associated to another, EPP feature. To put it differently, the distinction between strong and weak features collapses, which makes Chomsky redefine covert movement in terms of Agree (i.e. the "feature checking" of Chomsky 1993, 1995) between the probe and the closest c-commanded goal in its base position.⁶

Chomsky makes extensive use of the conception of cyclic Spell-Out in terms of phases in his analysis of Scandinavian Object Shift. The first consequence of his adoption of it is that Object Shift must be characterized as a process pertaining to the lower phasal cycle, i.e. the vP cycle, since the shifted object always appears in a position that follows the subject in Spec TP but precedes the clause-medial adverb

⁶ Unlike what covert movement implied, that is, LF displacement of the goal to the "Checking Domain" of the probe, usually the specifier position in the probe's maximal projection.

signalling the left-hand VP boundary. The second consequence is that, just because vP is a strong phase with the ability of being optionally assigned an EPP feature, movement of the nominal to the position in which it is phonetically realised may be understood as movement for EPP feature elimination. There are three things, however, that the phasal account itself --if compared to Holmberg's (1999) proposal-- does not explain without further assumptions: (i) why the presence of phonological material within VP may block Object Shift; (ii) why there are different semantic interpretations available for the nominal depending on the presence / absence of phonological features; and (iii) how optionality in EPP feature assignment (that is, optionality in the shift of the nominal) may be possible in a system in which no optionality is allowed.

Chomsky answers the first question by claiming that phonological features, although not directly involved in pure "Narrow Syntax" processes such as feature valuation, may nevertheless trigger them by simply appearing or not in the strict syntactic component. This basic intuition is refined in the notion of "phonological border":

- (7) The phonological border of HP is a position not c-commanded by phonological material within HP.⁷

The interplay of the notion of "phonological border" and the second statement of the "Phase Impenetrability Condition" above, according to which a phase is interpreted / evaluated at the next strong phase, entails that the DP_2 in (8) will appear at the phonological border of α if both V and DP_1 undergo further raising to another higher phase:

- (8) [α DP_1 [V DP_2]]

Hence, the lack of phonological features on V and DP_1 are directly responsible for the status of DP_2 as an element "at the border". Notice that, from this perspective, any Scandinavian object in a transitive configuration in which there is V to T (or C) raising as well as movement of the subject to Spec TP would be "at the phonological border".

⁷ Chomsky suggests that the notion of c-command in (7) may be restricted to c-command from the left (2001a: fn 51). Our account of German scrambling necessarily requires such restriction.

With respect to the question (ii) above, i.e. how shifted / non-shifted nominals may present different semantic meanings in connection with the presence / absence of phonological features, Chomsky proposes that, for languages in which the Object Shift parameter holds, elements at the phonological border receive an interpretation different from that assigned to those not at the phonological border. He labels the first one as INT' (encompassing basically the meanings Diesing (1992) and also Holmberg (1999) associate with "existential closure", i.e. non-specific, focused, new information, etc.), and the second one INT (specific, quantificational, non-focused, presupposed, old information, etc.). Thus, for example, it is derived that in Object Shift languages simple, unstressed definite pronouns would receive the interpretation that corresponds to them (that is, INT) only if they are not at the phonological border, that is, only in the case that the verb or any other constituent remains within VP. At the phonological border, on the other hand, they would be assigned an INT', hence deviant, interpretation.

But can Object Shift languages avoid these deviant interpretations of nominals when the computational operations that leave them at the phonological border are implemented? Chomsky links the answer to this question to our third question above, i.e. how to constrain optionality in EPP feature assignment in a system in which optionality is not possible at all. He argues that an EPP feature may be assigned only if it has an effect on outcome, that is, only if it has a bearing on semantic interpretation. In this light, the only cases at stake are those in which a nominal intended to be interpreted as specific, presupposed, quantificational, etc., remains within VP once all the rest of the VP elements have moved anywhere else, that is, when it becomes an element at the phonological border. Only in these cases is an EPP feature assigned, whose elimination, of course, may require the displacement, i.e. the shift, of the object. This is what, according to Chomsky, underlies "Holmberg's Generalization".

So far, Chomsky's phasal account of Scandinavian Object Shift seems to give the right results, to the extent that it brings together "Holmberg's Generalization", the different semantic interpretations the nominal may have, and the fact that movement of the object is always movement within the lower cycle, and it does so without departing from fundamental minimalist tenets. Nevertheless, it also faces both theoretical and empirical problems whose solution may require extra mechanisms, among which:

- (i) As stated in the "Phase Impenetrability Condition", in the configuration

$$[_{ZP} \ Z.... [_{HP} \ \alpha \ [H \ YP]]]$$

both ZP and HP strong phases, α and H are accessible to operations outside HP, which, for the case of Scandinavian Object Shift understood as movement to the vP edge, entails that the shifted object should induce intervention effects⁸ with respect to the relation established between T and the subject at the edge of vP. This is not confirmed by empirical evidence, as illustrated by (9), where the subject in the innermost specifier of v agrees with T despite the shifted object:

- (9) Nemandinn_{SUBJ/ NOM, SING} las_{v, SING} [bækurnar]_{OBJ / ACC PL} ekki_{vP[t_{obj}][t_{subj} [v...]]]}
 nobody read books-the not

The shifted object does not prevent raising of Subj to Spec TP.

(ii) Chomsky, citing Holmberg (1999), notices that in Mainland Scandinavian Object Shift the pronoun seems to occupy a position higher than the vP edge, since it precedes negation (10a), and negation, in turn, precedes the auxiliary verb's base position, as demonstrated by embedded clauses containing auxiliary verbs --(10b)-- (there is no verb movement in Mainland Scandinavian embedded clauses) (examples from Holmberg, 1999):

(10) Swedish

- a. Jag kysste henne inte
 I kissed her-ACC not
- b. Det är möjligt [att jag inte har kysste henne]
 it is possible that I not have kissed her-ACC

Chomsky overcomes these difficulties by invoking a language-specific operation called DISL (a dislocation rule). DISL is reminiscent of normal syntactic displacement in that it moves a constituent to a higher position (in (10) the position immediately preceding negation). But, unlike strictly syntactic movement, it does not correlate with a change in semantic interpretation.⁹ This leads Chomsky to characterise DISL as an operation of the phonological component: at the relevant stage of the cycle, the object in

⁸ Intervention effects are a consequence of the more general "Minimal Link Condition" (Chomsky, 1995), which determines that when two elements compete as goals with respect to the same probe (i.e. when two elements --the goals-- may value an uninterpretable (unvalued) feature of a third one --the probe), the probe may have access only to the closer one.

⁹ It may be useful to recall here that, in Chomsky's account, the interpretation shifted objects receive (INT) is simply a consequence of their displacement to Spec, vP in Narrow Syntax.

Spec, ν P is transferred to the phonological component, where it undergoes displacement to its ultimate position in the string (preceding negation in (10)). This entails that the narrow syntactic computation must proceed with a Spec, ν P phonologically empty even prior to the strong-phase level, at which point the position would have become phonologically empty even if not subject to DISL. Although a phonological operation, the effects of DISL in Narrow Syntax are important, especially due to Chomsky's (2001a) principle (46), which states that only "the phonological edge of HP is accessible to probe P" (recall that "phonological edge" refers to an edge element with no phonological material c-commanding it within the category). Chomsky links this principle on two properties characterising inactive traces: (i) they disallow pied-piping, insofar as they lack phonological features; (ii) they cannot induce intervention effects, insofar as they are inactive, that is, all their uninterpretable features have already received a value. In this light, if Scandinavian shifted objects also undergo DISL, the subject in situ becomes the closest goal not only with respect to the [+EPP] feature elimination on T, but also with respect to valuing the uninterpretable phi-features of this functional head.

From the discussion above, it is concluded that Chomsky motivates the existence of an operation such as DISL in Scandinavian Object Shift exclusively on a theoretical basis, since it makes his account compatible with economy considerations that are central to the Minimalist Program. This is probably the reason why DISL has been considered highly controversial, and criticised on several grounds. For instance, Svenonius (2001) contends that it is completely dispensable, and that the high position occupied by the shifted constituent as well as the absence of intervention effects must rather be explained in terms of the direct movement of the shifted object to TP (or even CP), which is possible by assuming a modified version of Chomsky's multiple, cyclic Spell-Out. According to this modified version, Spell-Out is not contingent on the completion of a strong phase, but rather on the total elimination of uninterpretable (unvalued) features within a phrase (not phase), which implies that Spell-Out happens as quickly as possible, in the spirit of Pesetsky's (1989) "Earliness Principle", or the "Spell-Out within the Rule" in Epstein and Seely (1999, 2002). Since, at the same time, "Holmberg's Generalisation" must be accounted for, Svenonius proposes a formulation of early Spell-Out as in (11):

- (11) A phrase goes to Spell-Out if
- (i) it no longer contains any unvalued features, and
 - (ii) its head has reached its final landing site

(11) amounts to saying that, if the verb must undergo raising to T or C, the object will be not transferred to PF, but be available for operations outside vP. Thus, "Holmberg's Generalization", in its earlier formulation (Holmberg, 1986), is derived.

The only pending problem Svenonius's analysis must face is how to account for the different interpretations shifted vs unshifted nominals may present. Since he rejects movement of the object to the vP edge, the relevant semantic meaning must be dependent only on feature elimination at TP or CP. Svenonius argues that this dependence is articulated around two main elements: clause structure at LF, and Indirect Feature-Driven Movement (IFM), i.e. the insertion of strong features (Chomsky, 2000). Given that the clause at LF is split into a topic-comment structure, any DP occupying a position in the lower comment part would be interpreted as comment (i.e. focused, non-specific, etc.), unless it undergoes movement to the topic substructure. This movement may be LF movement or movement in Narrow Syntax, which, in the spirit of Pesetsky's "Earliness Principle" again, is to be preferred. The question now is how something evaluated at LF may be rescued in Narrow Syntax. Svenonius's answer combines IFM with his conception of early Spell-Out: once the clash between semantic interpretation of the shiftable object and its position within the comment substructure has been detected at LF, the string may be sent back to Narrow Syntax if no relevant part of it (i.e. the part containing the object) has been previously spelled out, that is, if either unvalued features remain within it, or its head has not reached its final landing site. Once the phrase is in Narrow Syntax again, a strong feature may be inserted allowing the nominal to move there. According to Svenonius, the feature in question is probably a strong Case feature, which would explain why Scandinavian Object Shift affects only DPs. This analysis predicts that only in those languages and in those structures in which the verb moves beyond v^{10} is Object Shift implemented.

¹⁰ Svenonius adopts Platzack's (1998) "Discourse Form", an (LF) level at which discourse information is evaluated. According to Platzack, the syntactic string checked at "Discourse Form" is not TP, but CP, which means that Object Shift would be possible only if V moves to a position further than T. This explains why Romance languages lack OS, and forces an analysis of verb movement in Icelandic embedded clauses in terms of V-raising to any of the heads appearing within Rizzi's (1997) enriched CP layer.

As is evident from the sketchy summary above, Svenonius's analysis crucially depends on considering verb movement as the element regulating the size of the string that may be subject to Spell-Out. Notice, however, that this role of the verb as "regulating" element is established on the basis of both a stipulation (the second tenet in (11), by which a phrase whose head has not reached its final landing site cannot go to Spell-Out), and the assumption that phonological features, the only uninterpretable ones Svenonius considers the verb has before reaching its ultimate position, are unvalued with respect to Spell-Out itself, that is, their lack of value prevents Spell-Out from removing them from the strict syntactic derivation (recall that Spell-Out, as formulated in Chomsky (2000, 2001a), may act only on (recently) valued features). Nevertheless, the picture arising from these two premises has, in my opinion, far-reaching consequences that seem to call for a re-shaping of the minimalist model going even beyond the way phases are conceived. Take, for example, Svenonius's conception of IFM, i.e. the insertion of strong features. This mechanism was first envisaged by Chomsky (2000) as a way to allow for successive cyclic movement while keeping a phasal derivation. But, whereas in Chomsky the insertion of the required strong feature takes place only at the end of a phase (thus targeting its edge), in Svenonius the feature may be inserted in phase-internal positions. This clearly contradicts the "Extension Condition" (see footnote 4).

From an empirical perspective, it is difficult to assess whether Svenonius's analysis of Scandinavian Object Shift is superior to that in Chomsky (2001a), insofar as the issue relates to the proper characterisation of "Holmberg's Generalisation", still a matter of debate. Note, however, that, according to the conclusions in Holmberg (1999), Svenonius's hypothesis, based as it is on the crucial relevance of uninterpretable phonological features on the verb, would fail in accounting for entire sets of data. Such sets of data are clearly compatible with Chomsky's proposal, which, nevertheless, fails in giving empirical support to the existence of an operation such as DISL. The aim of the following sections is to show that that empirical support may be found in certain German scrambling structures, which, according to our claim, seem to constitute evidence for the idea that DISL --or some comparable phonological process-- is a part of a phenomenon partially resembling Scandinavian Object Shift, namely German scrambling.

3. The phonological side of German scrambling

The present section extends Chomsky's analysis of Scandinavian Object Shift to German scrambling structures. As discussed above, such an analysis is based on three fundamental tenets: (i) surface semantic effects are restricted to Narrow Syntax; (ii) phonological features may condition strictly syntactic operations; (iii) there are special procedures that strip the narrow syntactic derivation of phonological features at points different from those coinciding with the completion of strong phases (that is, procedures with the basic properties of DISL). According to Chomsky, the case of Scandinavian Object Shift clearly corroborates (i), (ii) and (iii). With respect to (i), the strong, specific, presuppositional, etc. interpretation a shifted object receives is the result of the strictly syntactic operation "Move". "Move", in turn, takes place in order to get rid of an EPP-feature, optionally assigned to yield a semantic output which is not available otherwise. (ii) is responsible for "Holmberg's Generalisation": elements that are not at the "phonological border" may get the interpretation associated to shifted constituents in situ, which prevents EPP-feature assignment and, consequently, object displacement to the vP edge. As for (iii), Chomsky's proposal incorporates the notion of DISL, which is absolutely necessary on several grounds: it explains why the shifted object appears in a position higher than that corresponding to the vP edge, and why the subject may cross it on its way to Spec, T without violating the MLC.

There seem to be reasons to assume that German scrambling behaves like Scandinavian Object Shift with respect to these three fundamental properties. This claim is not new as far as (i) is concerned: a presuppositional, topical, discourse-linked interpretation is commonly attributed not only to shifted arguments, but also to scrambled constituents (Lenerz, 1977, 2000, 2001; Diesing, 1992, 1997; Meinunger, 1995; Neeleman & Reinhart, 1998; Abraham & Molnárfi, 2001; among others). My aim is to show that a similar parallelism may be defended also with regard to (ii) and (iii). In other words, I will contend that, like Scandinavian Object Shift, German scrambling entails DISL of the scrambled constituent (section 3.1), and is sensitive to the position the scrambleable element occupies, if that position is defined in terms of Chomsky's (2001a) "phonological border" (section 3.2).

3.1. Evidence for DISL

As was detailed above, Svenonius's (2001) main objection against the presence of DISL(ocation) in Chomsky's (2001a) account of Scandinavian Object Shift is that it is stipulative. Since the shifted object does not prevent the checking relation between T and the subject in Spec, *v*, it must be stipulated that it lacks phonological features, which makes it an unsuitable goal. On the other hand, since shifted objects linearly precede other elements that are traditionally assigned a structural position above the *v*P edge (for example, negation), it must be stipulated that object displacement from the *v*P periphery to higher sites is merely phonological, a consequence of DISL itself. Svenonius concludes that "Chomsky's account captures the peculiar characteristics of OS, but at some cost; in order to extend the account to Scrambling generally, it is necessary to be more explicit about what forces the object to move across the adverbs"¹¹ (2001:5).

The next sections constitute an extension of Chomsky's proposal for OS to German scrambling. It provides further independent evidence for the claim that the kind of reordering attested in Germanic has a phonological side. This phonological side accounts for some of the syntactic and phonological properties that reordered sequences exhibit, which go beyond those attributed by Chomsky to Icelandic Object Shift. This is the fundamental claim in the next two sections, where the behaviour of German topicalised VPs and scrambled coherent infinitivals (which, as far as I know, has never been fully explained in the literature) is shown to be a consequence of the phonological aspect of reordering.

3.1.1. *v*P/VP-topicalisation, scrambling sites, and DISL

When dealing with German VP-topicalisation, both base-generation and movement approaches to scrambling have traditionally capitalised on the data that seem to support one view or the other, basically disregarding those that could constitute potential counterevidence. This section explores the possibility of making both sets of data compatible by resorting to a process DISL, which would serve as a diagnosis for distinguishing true (i.e. "Icelandic-like") instances of scrambling from other German grammatical phenomena. Before dealing with the exact way in which such compatibility

may be possible, it may be useful to review some of the properties of German XP-fronting that are relevant to the subsequent discussion.

3.1.1.1. Some properties of VP-topicalisation in German

Like all its Germanic relatives except English, German is a V-2 language, which means, generally,¹² that the derivation of root declarative clauses obligatorily involves two movement operations: the first displaces the finite verb to C (or a C-related head); the second raises an XP to Spec, C (or to the specifier of a Comp-related projection). As far as the raised XP is concerned, there are no categorial restrictions, although the process seems to be subject to other type of constraints (examples a-b from Grohmann, 2000; c-d from Schwartz and Vikner, 1996):

(12)

- a. Viele Bücher hat Peter gestern gelesen
many books-ACC has Peter yesterday read
- a'. *Wenige Bücher hat Peter gestern gelesen
few books-ACC has Peter yesterday read
- b. Wahrscheinlich / Gestern hat das Buch Peter gelesen
probably yesterday has the book Peter read
- b'. *Kaum / Komplett hat Peter das Buch gelesen
barely / completely has Peter the book read
- c. Das Kind hat das Brot gegessen
the child-NOM has the bread eaten
- c'. Das Brot hat das Kind gegessen
the bread-ACC has the child eaten
- d. Es hat das Brot gegessen
it (the child)-NOM has the bread eaten
- d'. *Es hat das Kind gegessen
it (the bread)-ACC has the child eaten

¹¹ That is, to move past the vP-edge, if adverbs, negation, etc. are placed above Spec, v, as demonstrated by the fact that they precede auxiliaries in Mainland Scandinavian embedded clauses.

¹² The exception is constituted by those cases of "Pronoun Zap", a colloquial German construction in which clause-initial nominative and accusative pronouns may be omitted, leaving the finite verb in first position.

The pair in (a) illustrates the grammaticality of XP-topicalisation containing increasing quantifiers (a), and its ungrammaticality with decreasing ones (a'). The contrast in (b) shows that sentence and time adverbials may appear fronted, but the process is barred in the case of modal adverbs of the kind of *kaum*, or *komplett*. The two sentences in (c) are well-formed, showing that nominal subjects and objects may both occupy Spec, C. Finally, that this is not so if the DP is pronominal is illustrated by the opposition in (d), where fronting of nominative *es*, but not accusative *es*, results in an acceptable structure. I will not discuss the exact nature of the constraints holding in (a)-(d). Notice, however, that they are independent of grammatical category, and seem to follow semantic properties (at least for (a) and (b), and perhaps also for the opposition in (c)-(d)).

Given (12) and its consequences, there is nothing preventing XP-fronting of projections headed by a lexical verb. And, in fact, this kind of structure is widely attested in German, with topicalisation of the single V head (13a), the head plus one or more of its internal arguments (13b, c for transitives, 13d for passives, 13e for unaccusatives), and even of the external one (13f for unergatives, 13g for transitives) (examples (d)-(g) from Haider, 1990 and Wurmbrand, 2001b):

(13)

- a. [Gelesen] hat der Peter das Buch noch nie
read has Peter-NOM the book-ACC not yet
- b. [Ein Buch gelesen] hat der Peter noch nie
a book-ACC read has Peter-NOM not yet
- c. [Einem Studenten einen Wagen geschenkt] hat ein Millionär
a student-DAT a car-ACC given has a millionaire-NOM

hier noch nie
here not yet
- d. [Ein Orden verliehen] wurde ihr erst gestern
a medal-NOM awarded AUX her-DAT just yesterday
"It just happened yesterday that she was awarded a medal"
- e. [Ein Fehler unterlaufen] ist ihrem Mann noch nie
a mistake-NOM happened is her husband-DAT never
"It never happened that her husband made a mistake"
- f. [Aussenseiter gewonnen] haben hier noch nie
outsiders-NOM won have here never
"It never happened before that outsiders won here"

- g. ?[Ein Millionär einem Studenten einen Wagen geschenkt] hat
 a millionaire-NOM a student-DAT a car-ACC given has

hier noch nie

here never

"It has never happened here that a millionaire gave a student a car"

However, it has been frequently noticed in the literature that the structures in (13) are sensitive to a definiteness restriction, according to which while indefinite nominative arguments can be part of a fronted constituent (13), definite nominative DPs and proper names are prohibited (14) (Kratzer 1984; Haider, 1990; Wurmbrand, 2001b):

(14)

- a. *[Der Orden verliehen] wurde ihr erst gestern
 the medal-NOM awarded AUX her-DAT just yesterday
 "It just happened yesterday that she was awarded a medal"
- b. *[Dieser Fehler unterlaufen] ist ihrem Mann noch nie
 this mistake-NOM happened is her husband-DAT never
 "It never happened that her husband made a mistake"
- c. *[Die Aussenseiter gewonnen] haben hier noch nie
 the outsiders-NOM won have here never
 "It never happened before that outsiders won here"
- d. *[Der Millionär einem Studenten einen Wagen geschenkt] hat
 the millionaire-NOM a student-DAT a car-ACC given has
- hier noch nie
- here never
- "It has never happened here that a millionaire gave a student a car"

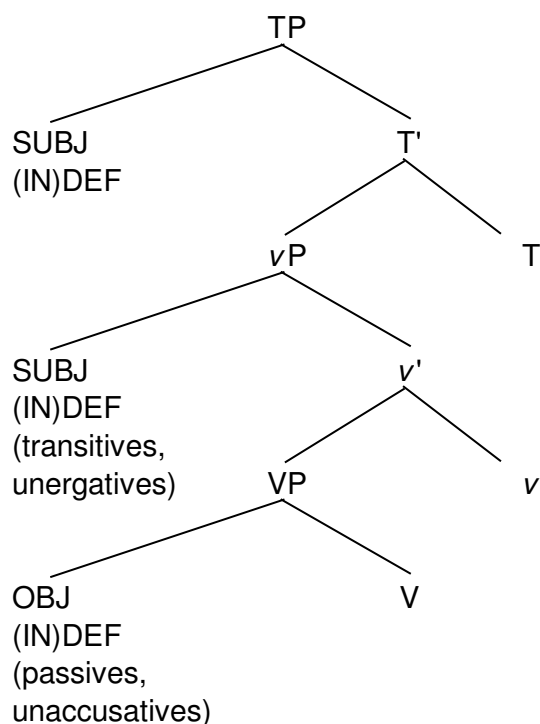
Interestingly, the definiteness restriction does not apply to non-nominative arguments. (15) shows the grammaticality of definite accusatives or datives in fronted constituents:

(15)

- a. [Das Buch gelesen] hat der Peter noch nie
 the book-ACC read has Peter-NOM not yet
- b. [Dem Studenten das Wagen geschenkt] hat der Millionär
 the student-DAT the car-ACC given has the millionaire-NOM
- hier noch nie
- here not yet

Wurmbrand (2001b) argues that the facts in (13)-(15) and the way the definiteness restriction operates are the result of the interaction of Diesing's (1992) "Mapping Hypothesis" at LF with the minimalist procedure for Case checking. Wurmbrand standardly assumes that nominative is the reflex of "Agree" between T and an argument within vP/VP (in Spec, v for subjects of transitive and unergative predicates, in the sister node to V for passives and unaccusatives). In order for "Agree" to hold, the argument in question may remain in its base position, or be displaced to Spec, T, whenever T is endowed with an EPP feature, as shown in (16):¹³

(16)

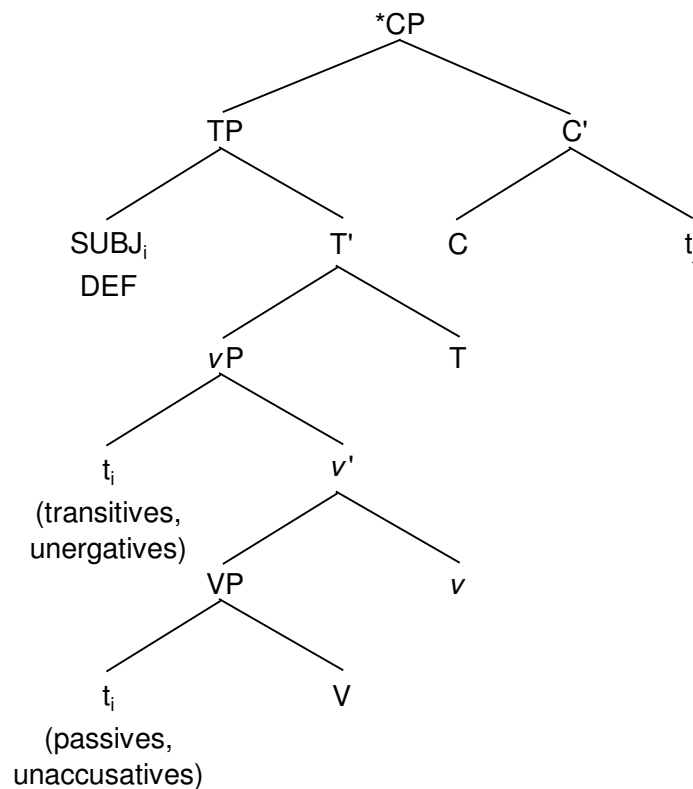


If the argument stays in its base position and the vP/VP complex is fronted to Spec, C, the mapping procedure between semantic interpretation and syntactic structure will give the right results only in the case that the nominative argument is associated with the meaning available within the domain of existential closure, namely vP : once vP/VP moves to Spec, C, it becomes an island for further movement out of it, preventing the definite subject from LF lowering to the T projection. On the other hand,

¹³ (16) is a simplified version aimed to cover all possible types of predicates. Whether, as Chomsky (1995, 2000, 2001a) suggests, unaccusative verbs lack a vP projection completely, or else it is just defective in some sense is not relevant here: the crucial point is that the only head with which they may establish the proper "Agree" relation is T.

pied-piping of the nominative argument to Spec, T would solve the problem of the mapping. However, since the resulting structure is completely ungrammatical (14), Wurmbrand concludes that TP-fronting is impossible in German:

(17) *TP fronting



Finally, that the definiteness restriction does not hold for objects of transitive predicates is straightforwardly derived: their Case is the result of the "Agree" relation they establish with v (or any other head within the vP/VP complex), so no movement out of a frozen constituent is required.

In conclusion, Wurmbrand's discussion of the data in (13)-(15) clearly indicates that, although not subject to categorial restrictions and only partially constrained by semantic ones, XP-fronting in German cannot apply to constituents structurally higher than vP .

3.1.1.2. Scrambling within topicalised VPs

Defenders of the base-generation approach (Fanselow, 2001), and advocates of untriggered movement within the VP (Haider and Rosengren, 1998, 2003) take

structures such as the ones in (18) to be empirical evidence against scrambling as a semantically-driven process (from Frey, 2000):

(18)

- a. $_{VP}$ [Kindern **den Sternenhimmel** erläutert] hat er schon oft
children-DAT the starry sky-ACC explained has he already often
- b. $_{VP}$ [**Den Sternenhimmel** Kindern erläutert] hat er schon oft
the starry sky-ACC children-DAT explained has he already often

The assumption is that the topicalised constituent in (18a, b) is a VP, and that the possibility of reordering between the accusative and the dative in (18b) supports the existence of VP-internal scrambling. The claim is unproblematic within a pre-minimalist framework, in which all the verbal arguments (including the external one of transitive predicates) are base-generated within VP, and movement always targets a functional projection beyond the VP-periphery. If indeed (18) is a case of VP-internal scrambling, the process cannot be characterised as semantically-driven any more: both the scrambled and unscrambled accusative in (18) are in the domain where non-presuppositional meaning obtains. This view is shared by Fanselow (2001) and Haider and Rosengren (1998, 2003), who find further support for it in three different sets of data:

(A) Existential subjects may precede scrambled objects (Fanselow, 2001):

If Diesing (1992) is right, and German existential subjects are syntactically mapped onto the specifier of vP/VP , examples such as (19) support the existence of a VP-internal scrambling position, namely the one occupied by the accusative object in (19a) (from Fanselow, 2001):

(19)

- a. dass $_{VP}$ [Studenten **das Buch** dem Kind zeigen]
that students-NOM the book-ACC the child-DAT show
"that (some) students show the child the book"
- b. dass $_{VP}$ [Studenten dem Kind das Buch zeigen]
that students-NOM the child-DAT the book-ACC show
"that (some) students show the child the book"

(B) Transparent subjects are compatible with scrambled objects (Fanselow, 2001)

According to the standard account of "Freezing", moved constituents become islands for extraction. Conversely, base-generated constituents allow for the displacement of their internal elements. Thus, Fanselow takes the transparency of the subject in (20) to indicate that it occupies Spec, VP, and not Spec, T. The conclusion is that scrambling of the accusative object in (20b) must have targeted again a VP-internal site:

(20)

- a. Was_i haben denn damals _{VP/VP}[[t_i für Studenten] dem Kind
what have PART then for students the child-DAT

das Buch gezeigt]?
the book-ACC showed

"What kind of students showed the book to the child then?"

- b. Was_i haben denn damals _{VP/VP}[[t_i für Studenten] **das Buch**
what have PART then for students the book-ACC

dem Kind gezeigt]?
the child-DAT showed

The evidence may, however, be less conclusive than it seems. Fanselow & Ćavar (to appear) question the strict correlation between syntactic position and islandhood in German, showing that there are subjects of individual level predicates that allow for preposing of their internal constituents¹⁴ (21). Similarly, Haider and Rosengren (1998) contend that not all base-generated subjects are transparent, as the ungrammaticality of (22) shows: *wh*-movement out of the subject of an unaccusative subject is barred.

(21)

Skorpione_i sind ziemlich [viele t_i] giftig
scorpions are rather many poisonous

(22)

*Was_i ist [t_i für ein Flugzeug] abgestürzt?
what is for an airplane crashed

"what kind of airplane crashed?"

(C) Argument scrambling within other, non-verbal, projections (Haider and Rosengren, 1998, 2003).

Reordering between the different arguments of a non-verbal lexical head is always possible, provided that it takes place within that head's final projection (example from Haider and Rosengren, 1998):

(23)

- a. ein jedem **an Kraft** überlegener Sportler
 a everyone-DAT in power superior athlete
- b. ein **an Kraft** jedem überlegener Sportler

One must conclude that the proofs are overwhelming, and this is probably what leads Fanselow and Haider and Rosengren to make the strongest possible claim about the nature of German scrambling: all instances of reordering with verbal arguments have the same source, base-generation (Fanselow), or untriggered displacement within the extended VP. Besides, there is an underlying aspect that is common to both analyses: base-generation and untriggered movement are restricted to the projection of the lexical head selecting for the scrambled argument. For Haider and Rosengren, who do not agree with Chomsky's assumption that subjects of predicates with full argument structure occupy the specifier of the light verb *v*, the head at stake is V. For Fanselow (to appear (a)), who accepts Chomsky's proposal, it is *v* (after V-to-*v* raising). At this point, I would like to draw the reader's attention to the following set of examples ((24) based on Wurmbrand, 2001b; (25) based on Haider and Rosengren, 1998; my informants' judgement):

(24)

- a. ?[Ein Millionär **dem Studenten** einen Wagen geschenkt] hat
 a millionaire-NOM the student-DAT the car-ACC given has
- hier noch nie
 here never
 "It has never happened here that a millionaire gave the student a car"

¹⁴ According to Kratzer (1989) and Diesing (1992), the generic interpretation of the bare plural *Skorpione* receives in (21) requires it to occupy a VP-external position, namely Spec, TP/IP.

- b. ***[Dem Studenten** ein Millionär einen Wagen geschenkt] hat
the student-DAT a millionaire-NOM the car-ACC given has

hier noch nie

here never

"It has never happened here that a millionaire gave the student a car"

- c. dass **dem Studenten** ein Millionär einen Wagen hier noch nie
that the student-DAT a millionaire-NOM a car-ACC here not yet

geschenkt hat

given has

"that it has never happened here that a millionaire gave the student a car"

(25)

- a. [Immer **Zigarren** geraucht] hat damals keiner
always cigars-ACC smoked has then no one
"No one always smoked cigars then"
- b. ***[Diese Zigarren** immer geraucht] hat damals keiner
these cigars-ACC always smoked has then no one
"No one always smoked these cigars then"
- c. dass **diese Zigarren** immer keiner geraucht hat
that these cigars-ACC always no one smoked has

In both Fanselow's and Haider and Rosengren's accounts, pre-subject scrambling (i.e. scrambling of an argument past the subject position) is straightforward, which explains the grammaticality of (24c): for Fanselow, *dem Studenten* is licensed by *v*, which hosts the incorporated V. V has previously licensed the accusative *den Wagen* in VP:

(26)

$\sqrt{[dem\ Studenten\ \sqrt{[ein\ Millionär\ \sqrt{[\sqrt{VP[einen\ Wagen\ t_i]}v + V\ geschenkt_i]}]}$

For Haider and Rosengren, who do not assign the subject any privileged status apart from its pre-derivationally assigned nominative case, the dative has left its base-generation position below the nominative and undergone re-merging above it, within the boundaries of the extended "Minimal Argument Projection Complex" (MAC) (that is, the extended VP):

(27)

$_{VP}$ [dem Studenten_i [ein Millionär [t_i [einen Wagen geschenkt]]]]

The question now is why (24b) is ruled out, if, as suggested by the grammaticality of (24a), vP -fronting is an option in German (see the summary of the discussion in Wurmbrand, 2001b above).

A similar case is illustrated by the sentences in (24), although perhaps less clearly due to the difficulty of establishing the exact position where adverbs are base-generated in German. In any case, the question they raise is obvious, even if we agree with Haider and Rosengren (1998) that *immer* is relatively low in the tree.¹⁵ If in (25c) *diese Zigarren* has been directly merged as sister to the $v+V$ complex (Fanselow), or displaced there by means of untriggered, VP -internal scrambling (Haider and Rosengren), why is it that the whole constituent cannot be fronted? Notice that the reason has to be unrelated to the ill-formedness derived from topicalising temporally modified vP/VP s:¹⁶ (25a) is fully grammatical, according to Haider and Rosengren's own judgement. The conclusion is that, as also shown by (24), scrambling within topicalised verbal lexical projections seems to be restricted to VP s, and is barred for vP s. This is entirely unexpected within Fanselow's and Haider and Rosengren's analyses, and undermines the traditional generalisation on which Wurmbrand (2001b) capitalises, according to which any verbal projection below TP may be subject to XP -fronting.

As for the additional evidence appearing in (23), it does appear to support the idea of VP -internal scrambling, but does not tell us anything about the distinction between such a process and the more restrictive type of reordering that takes place past the vP -edge (where "more restrictive" refers to the impossibility of its appearance in Spec, C). (23) argues for VP -internal scrambling on the basis of its correlation with a parallel phenomenon within other lexical (probably head-final, as Haider and Rosengren

¹⁵ In fact, they contend that it is VP -internal, a statement that they do not support except with the example in (25b) itself. Diesing (1992), for example, assigns it a higher, VP -adjoined position.

¹⁶ This ill-formedness is apparent in the contrast between (i) and (ii) below, and also in the impossibility of (iii) and (iv) in English (my informants' judgement):

(i) dass der Peter gestern das Buch gelesen hat
that Peter-NOM yesterday the book-ACC read has

(ii) *Gestern das Buch gelesen hat der Peter
yesterday the book-ACC read has Peter-NOM

(iii) Kick the ball (carefully) he certainly did

(iv) *Kick the ball yesterday he certainly did

A comparison of (i)-(iv) with (25) in the main text may suggest that time frames are base-generated higher than frequency adverbs, at least in German. There is no doubt that they are base-generated higher than manner adverbials, both in English ((iii) vs (iv)) and in German (see Grohmann's (2000) examples in (12b')).

propose) projections. However, that the facts are again problematic for Fanselow's and Haider and Rosengren's proposals is evidenced by (28) (examples (28a)=(23a) and (28b)=(23b) from Haider and Rosengren (1998), their judgement; (28b), (28c), (28d), (28e) my informants' judgement):

(28)

- a. ein [jedem **an Kraft** überlegener] Sportler
a everyone-DAT in power superior athlete
- b. ein [**an Kraft** jedem überlegener] Sportler
a in power everyone-DAT superior athlete
- c. dass er **allen** gestern überlegener Sportler war
that he all-DAT yesterday superior athlete was
- d. dass er **allen** gestern überlegener zu sein versucht hat
that he all-DAT yesterday superior to be tried has
- e. *dass er einer **allen** gestern überlegener Sportler war
that he a all-DAT yesterday superior athlete was
- f. *dass er einer **allen** gestern überlegener Sportler zu sein
that he a all-DAT yesterday superior athlete to be

versucht hat
tried has

Haider and Rosengren contend that (28a) and (28b) support their view (and also Fanselow's): arguments of the adjectival head *überlegener* may show both a canonical, non-scrambled order (28a), and also a scrambled one (28b) within the maximal projection of the head selected for them (the AP embedded within the DP headed by the indefinite article *ein*). Their proposal accounts for the grammaticality of (28c) and (28d) in the same terms, on the assumption that adverbials such as *gestern* may be base-generated AP-internal, and the arguments of head-final projections may be freely adjoined within the extended MAC. But that those adverbials must occupy a higher position is shown in (28e), (28f), where embedding of the AP within the DP headed by *einer* results in two ill-formed structures. On the absence of an explanation why the scope of *gestern* may be restricted to the adjectival head in (28c) and (28d), but not in (28e) and (28f), the null hypothesis is that the scrambled (pre-adverbial) argument in (28c,d) must uniformly occupy a position structurally higher than the one defended by Haider and Rosengren, certainly outside the adjectival phrase, as in (29) below. Notice

that, given the contrast between (28a,b) and (28e,f), this basically entails that scrambling across a co-argument (28a,b) and scrambling across an adverbial (29e,f) must constitute different phenomena also in the case of arguments of adjectival heads.

(29)

- a. dass er allen_i gestern AP[t_i überlegener] war
 that he all-DAT yesterday superior was

- b. dass er allen_i gestern AP[t_i überlegener] zu sein versucht hat
 that he all-DAT yesterday superior to be tried has

We are thus left with two interesting puzzles: (i) scrambled constituents in German may occur both within the limits of the maximal projection of their selecting head, and beyond them; (ii) the maximal projection that contains them may undergo fronting (if a *vP*) or embedding (if an *AP*) only in the former case, but not in the latter. Both Fanselow's and Haider and Rosengren's approach to scrambling may account for (i) (by resorting to head incorporation, or to untriggered movement extending the *VP*); but they clearly fail with respect to (ii). In my opinion, this can be traced back to a questionable assumption underlying nearly every proposal for German scrambling, namely that a single, unique process derives all the order possibilities attested in that language.

3.1.1.3. **Proposal I: Two positions for scrambling in German**

The claim I would like to make in this section is weaker than those found in Fanselow (2001, to appear (a)), or Haider and Rosengren (1998, 2003) in that it does not try to reconcile the puzzling sets of data presented in the preceding section. I propose that German allows for two distinct "scrambling" sites, and that this dichotomy is responsible for the conflicting evidence we have just revised. That there are two "scrambling" sites in German is not a new assumption, since the traditional division between pre-subject and post-subject scrambling implies precisely that. However, such a division is not the one I maintain here, under the standard view (Haider, 1990) that German subjects may remain in their base-generated position (see the evidence drawn from *VP*-topicalisation above).

The first "scrambling" position I argue for is the one suggested by the examples crucially used to support the base-generation approach: basically, examples of

scrambling within topicalised VPs (18), scrambling after existential subjects (19), and scrambling within lexical projections such as APs (23). For these cases, I adopt the main tenet of base-generation studies, according to which the apparently scrambled constituent is directly merged in that position. However, I reject both head incorporation and untriggered movement as the factors responsible for allowing Merge in higher positions. In other words, "base-generated scrambling" may take place only within the strict limits of the maximal projection of the selecting head in its initial position, i.e. in (30b) but not (30c):

(30)

a. Non-scrambled order

dass der Millionär dem Studenten **das Wagen** hier noch nie
that the millionaire-NOM the student-DAT a car-ACC here not yet

geschenkt hat

given has

"that it has never happened here that the millionaire gave the student the car"

b. "Base-generated scrambled" order

dass der Millionär **das Wagen** dem Studenten hier noch nie
that the millionaire-NOM a car-ACC the student-DAT here not yet

geschenkt hat

given has

"that it has never happened here that the millionaire gave the student the car"

c. Not a "base-generated scrambled" order

dass **das Wagen** der Millionär dem Studenten hier noch nie
that a car-ACC the millionaire-NOM the student-DAT here not yet

geschenkt hat

given has

"that it has never happened here that the millionaire gave the student the car"

Excluding (30c) as an instance of base-generation is justified on both theoretical and empirical grounds. Theoretically, this alternative fares better with standard minimalism than Fanselow's or Haider and Rosengren's mechanisms for its base-generation: if Chomsky (2001a) is right, the kind of head incorporation Fanselow resorts

to is conceivably a PF process, thus probably unconnected to argument licensing;¹⁷ on the other hand, Haider and Rosengren's untriggered movement within Narrow Syntax goes against basic economy conditions that may not be violated. Empirically, the crucial fact is the unexpected contrast between (18) and (24b), (25b) above, that is, the grammaticality of *vP/VP*-topicalisation if scrambling takes place within the boundaries of *VP*, and its ungrammaticality if the scrambled element precedes an element merged higher than *VP* (the subject of a transitive predicate, or a frequency adverb such as *immer*). As will be shown in the following section, this contrast may be seen as a reflex of the differences between "base-generation scrambling" and the process responsible for placing a constituent in pre-subject or pre-adverbial position.

There is a further piece of evidence that may support the exclusion of "base-generated scrambling" in (30c). Fanselow (to appear (a)) contends that the base-generation approach he proposes is superior to the standard view that arguments are merged according to a fixed hierarchy, on the basis of the structures below (his judgements):

(31)

- a. sollte gestern wen **was** geärgert haben, dann....
 should yesterday anyone-ACC anything-NOM annoyed have then
- b. (?)sollte gestern **was** wen geärgert haben, dann...
 should yesterday anything-NOM anyone-ACC annoyed have then

Ärgern is a psychological predicate, selecting for two arguments. The normal, unmarked word order is that in (31a), with the accusative experiencer preceding the nominative theme. Nevertheless, although slightly deviant, (31b) is also possible. Notice that both arguments are indefinite, which entails that notions such as topichood, presuppositional meaning, definiteness... are irrelevant for the acceptability of (31b). Fanselow's reasoning is that, if the argument hierarchy view were right, only (31a) would be attested in German. But, obviously, that is not the case, and the slight ill-formedness of (31b) can be made follow from a surface serialisation principle that penalises structures in which inanimate DPs precede animate ones (Hoberg, 1981; Müller, 1999).

¹⁷ Chomsky's suggestion tries to solve the problem posed by the fact that head incorporation, as a strictly syntactic process, constitutes a violation of the "Extension Condition" (Chomsky, 1995), according to which movement operations in Narrow Syntax must always extend their target.

The slightly deviant order with psychological predicates becomes, however, completely ungrammatical when the animate argument is agentive. In other words, an indefinite accusative cannot precede an indefinite nominative in the case of transitive predicates:

(32)

- a. sollte gestern wer **was** gesagt haben, dann
 should yesterday anyone-NOM anything-ACC said have then
- b. *sollte gestern **was** wer gesagt haben, dann
 should yesterday anything-ACC anyone-NOM said have then

Surprisingly, the examples in (32) are due to Fanselow himself. But he does not explain how his theory could account for (32b). Fanselow's system allows arguments of *V* to be merged with *v*, since *V* becomes a sublabel of *v* after *V*-to-*v* raising. The resulting structure is subjected to the surface serialisation principle that accounts for the slight ill-formedness of (31b), namely "Animate XP First!". But, unlike (31b), (32b) is completely ungrammatical. To put it simply, "Animate XP First!" is too weak to rule out (32b). It must be observed that pragmatic ordering principles such as "Topic First!" and "Place the focus in the rightmost position!" cannot be invoked either, for both *wer* and *was* are non-given indefinites. In this context, a possible solution could be to enrich Fanselow's set of surface serialisation constraints with an additional one, "Agents First!", but this alternative is clearly problematic: "Agents First!" privileges agentive subjects, which amounts to keeping the standard minimalist distinction between *v* and *V* as two differentiated theta-role assigning heads, despite *v*-to-*V* movement. Thus, I conclude that the empirical evidence provided by Fanselow does not undermine the common claim that base-generation must take place within the limits of the maximal projection of the selecting head in its initial position, which, in general, entails the impossibility of treating pre-subject scrambling as "base-generated scrambling". In other words, "base-generated scrambling" must obligatorily be "post-subject scrambling".

Let us now return to the main point in this section, the proposal that "scrambling" in the relevant cases is in fact an instance of direct merge in the VP. I would like to suggest that the availability of this merge position is related to more general properties than those usually invoked in connection with German(ic) scrambling. To this effect, we now consider some evidence from Dutch (Rosengren, 2002; Haider and Rosengren, 2003) but also from a more distant language, namely Persian (Karimi, 2003).

Rosengren (2002) and Haider and Rosengren (2003), drawing on Broekhuis (2000), report that, while Dutch disallows scrambling of an accusative object past a dative in transitive constructions, it permits a nominative preceding a dative in the case of ergative verbs (examples in (33) based on Thráinsson, 2001; (34) from Rosengren, 2002):

(33) Dutch

- a. dat de vrouw de mannen **de film** toont
 that the woman-NOM the men-DAT the film-ACC shows
- b. *dat de vrouw **de film** de mannen toont
 that the woman-NOM the film-ACC the men-DAT shows

(34) Dutch

- a. dat (er) een meisje **erge rampen** overkamen
 that EXPL a girl-DAT terrible disasters-NOM happened
- b. dat (er) **erge rampen** een meisje overkamen
 that EXPL terrible disasters-NOM a girl-DAT happened

(33) is straightforwardly accounted for on the basis of the argument hierarchy view, but (34) is not: along with the normal, unmarked word order in (34a), (34b) is also a grammatical option. Rosengren and Haider and Rosengren observe that reordering necessarily takes place within the (extended) VP, as shown by the existential reading the scrambled nominative receives, and the possibility of there being an expletive in Spec, T.¹⁸ A first conclusion is that, although in a more restrictive way, Dutch is like German in exhibiting different base-generated orders.

Similarly, Karimi (2003) contends that there are two alternative sites for the merging of objects in Persian, one for specific objects, and another for non-specific ones. This is manifested in the syntactic and morphological properties that respectively characterise them, among others:

- (i) Specific objects can bind the indirect object; non-specific objects cannot.

¹⁸ In fact, Rosengren assigns the expletive the position in the specifier of Rizzi's (1997) Finiteness, a functional projection in the COMP-domain, but this is irrelevant here.

(35) Persian

- a. man se -tâ bachche-hâ-**ro**_i be hamdige_i mo'arrefi kard-am¹⁹
I three-PART child-PL-DEF to each other introduction did
- b. *man se -tâ bachche_i be hamdige_i mo'arrefi kardam

(ii) Non-specific objects have to precede the verb and be adjacent to it; specific objects are not subject to this restriction.

(36) Persian

- a. Sepide emruz tamiz kard hayât-**o**
Sepide today clean did courtyard-DEF
"Sepide DID clean the courtyard today"
- b. *Sepide emruz tamiz kard hayât

(iii) Specific and non-specific objects cannot appear together in a coordination construction.

(37) Persian

- man diruz in aks-**ro** va ketâb xarid-am
I yesterday this picture-DEF and book bought-1s

(iv) Non-specific objects allow for a process of lexicalisation (compounding) with the verb; specific objects do not.

(38) Persian

- a. *da'vat-**râ** kardan-e Kimea kêr-e dorost-i na-bud
invitation-DEF doing-PART Kimea work-PART right-INDEF NEG-was
- b. da'vat kardan-e Kimea kêr-e dorost-i na-bud
invitation doing-PART Kimea work-PART right-INDEF NEG-was

The conclusion Karimi draws from these facts is that Persian specific objects are base-generated in Spec, VP (39a), while non-specific ones are merged as sisters to V (39b), according to her "Two Object Position Hypothesis" (TOPH) (2003:105):

¹⁹ Persian lacks a definite determiner equivalent to *the* in English. Bare objects become definite only when they are followed by the particle **-râ**, or its colloquial variants **-o** or **-ro** (all of them in boldface in the examples).

(39) Two Object Position Hypothesis (TOPH)

- a. VP[DP_[+Specific]] v[PP V]
- b. VP[v[PP v[DP_[-Specific]] V]

If Karimi is right, Persian would parallel German --in my analysis-- but, again, in a more restricted fashion, since the higher site for base-generated objects is exclusively associated with definiteness. That the restriction does not entirely hold in German is clear from the partial grammaticality of (31b) above, in which an indefinite nominative precedes an indefinite accusative. However, there seems to be a sharp contrast between (40a) and (40b) (my informants' judgement):

(40)

- a. dass Studenten **das Buch** dem Kind zeigen
that students-NOM the book-ACC the child-DAT show
"that (some) students show the child the book"
- b. *dass Studenten **etwas/ ein Buch** dem Kind zeigen
that students-NOM something/a book-ACC the child-DAT show

(40) is parallel to (19) above in that the "scrambled" accusative object occupies a position following an existential subject probably in Spec, vP. In this light, it would constitute an instance of "base-generated scrambling". If the ill-formedness of (40b) is the result of a constraint preventing non-specific objects in the higher position of the kind defended by Karimi for Persian, or just a consequence of the application of one of Fanselow's (to appear (a)) surface serialisations principles is a matter which I must leave for further research.²⁰

²⁰ In this respect, it is tempting to resort to facts such as the ones in (i)-(iv) to endorse Karimi's hypothesis for German too. But (v)-(vi) (from Haider and Rosengren, 2003) tell us that things may be more complicated:

- (i) dass Peter das Buch nicht gelesen hat
that Peter-NOM the book-ACC not read has
- (ii) *dass Peter nicht das Buch gelesen hat (*, unless constituent negation)
that Peter not the book-ACC read has
- (iii) dass Peter kein Buch gelesen hat
that Peter no book-ACC read has
- (iv) *dass Peter ein Buch nicht gelesen hat (*, unless *ein Buch* is interpreted specifically)
- (v) dass hier wer was nicht begreift
that here somebody-NOM something-ACC not grasp
- (vi) *dass hier wer nicht was begreift
that here somebody-NOM not something-ACC grasp

If one assumes that the negative particle occupies a fixed position in German, (i)-(iv) could be taken to indicate that specific objects are generated above it, and non-specific ones below it. But non-specific *was* obligatorily appears preceding negation ((v) vs (vi)).

Let us now turn to the second type of reordering German grammar allows for, if my analysis is correct. Recall that the primary evidence was based on its distribution: it appears unproblematically in the *Mittelfeld* (41a,b) (optionally before or after subjects, but obligatorily before frequency and time adverbials), but is forbidden in fronted VPs (41c,d):

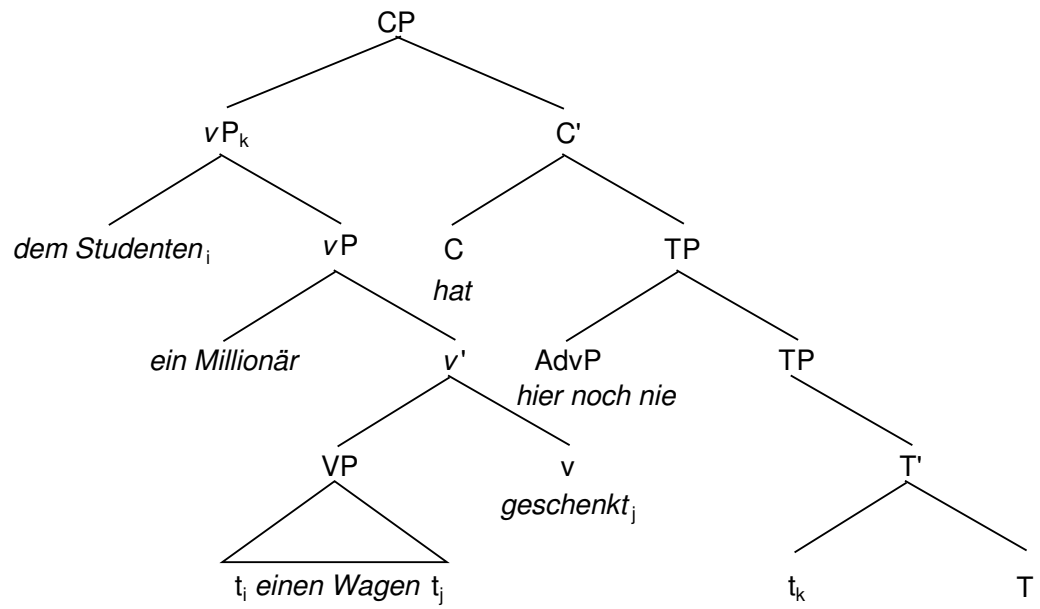
(41)

- a. dass **dem Studenten** ein Millionär einen Wagen hier noch nie
 that the student-DAT a millionaire-NOM a car-ACC here not yet
 geschenkt hat
 given has
- b. dass der Millionär **dem Studenten** immer einen Wagen
 that the millionaire-NOM the student-DAT always a car-ACC
 geschenkt hat
 given has
- c. ***[Dem Studenten** ein Millionär einen Wagen geschenkt] hat
 the student-DAT a millionaire-NOM a car-ACC given has
 hier noch nie
 here not yet
- d. ***[Diese Zigarren** immer geraucht] hat damals keiner
 these cigars-ACC always smoked has then nobody

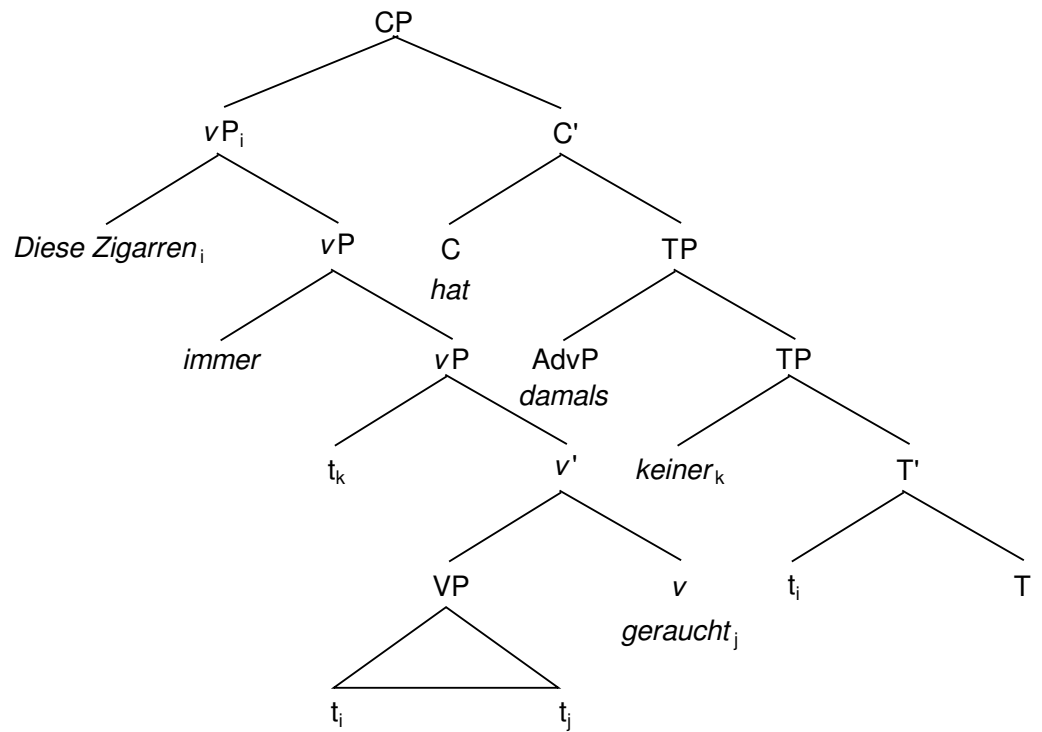
This is the kind of scrambling on which the present work focuses: a clause-bound process affecting any kind of arguments, associated to a *vP*/*VP*-external position, and characterised by the phonological and semantic effects traditionally described in the literature (Lenerz, 1977, 2000, 2001; Diesing, 1992, 1997; Meinunger, 1995; Neeleman & Reinhart, 1998; Abraham & Molnárfi, 2001; among others)). With respect to such effects, I take them to be identical to those visible in Scandinavian Object Shift. On the other hand, as far as Narrow Syntax is concerned, I agree with the accounts that capitalise on Diesing's (1992) "Mapping Hypothesis" (among others, Meinunger, 1995) in contending that German scrambling is semantically / pragmatically-driven movement in Narrow Syntax. But I depart from them with regard to the position targeted by the movement operation: it is not an Agr projection, or a topic projection; it is the *vP*-edge, paralleling Object Shift in Scandinavian (Chomsky, 2001a), as shown for the ungrammatical (41c) and (41d) in (42):

(42)

a. *(41c)



b. *(41d)



The reasons why the structure in (42a,b), with the scrambled object in Spec, νP , is preferable to the structure with the scrambled object in the spec of a functional projection, as proposed by movement approaches, will be discussed in the next sections. Note, however, that the ill-formedness of both (42a) and (42b) is problematic for any theory defending that German scrambling is always base-generation. Base-generation hypotheses, however, cannot be completely rejected, especially in light of some of the data dealt with in this section: the topicalisation of VPs containing scrambled arguments, the presence of reordered objects after existential subjects, and the scrambling of elements selected for by non-verbal heads. I thus conclude that the kind of "mixed approach" defended here is empirically more adequate than pure base-generation and movement approaches, insofar as it accounts for the relevant German data without exception.

3.1.1.4. Proposal II: The interaction of DISL and νP -fronting

As we know, the model for syntactic derivation developed in Chomsky (2000, 2001a) departs from previous versions in allowing for multiple cyclic spell-out, which entails that Narrow Syntax may access the phonological interface at several points of the computation. Chomsky makes those points coincide with the completion of what he calls "strong phases", which, in phonological and interpretive terms, correspond to CPs and νP s. But cyclic spell-out does not completely prevent features at a lower phase from establishing "Agree" operations at a higher one, respecting the "Phase Impenetrability Condition" ((6) above, repeated here as (43)):

- (43) Phase Impenetrability Condition (PIC) (Chomsky 2000:108)
 Given $HP=[\alpha [H \beta]]$, where β is the domain of H and α (a hierarchy of one or more Specs) its edge,
 In phase α with head H, the domain of H is not accessible to operations outside α , only H and its edge are accessible to such operations.

The PIC is empirically justified by the existence of well-known instances of successive cyclic movement (*wh*-movement, topicalisation...), and the case-agreement system, if, as standardly assumed since Koopman and Sportiche's (1991) "VP-internal Subject Hypothesis", subjects are merged in the specifier of the lower phase (νP) and

value the features of a head in a higher one (T). However, given that the PIC states that not only subjects but any other element at the edge is accessible to operations outside its own phase, the presence of any constituent past the base-generated subject position is expected to violate the "Minimal Link Condition" in (44)):

(44) Minimal Link Condition (Chomsky, 1995: 311)

- (i) K attracts α only if there is no β , β closer to K than α , such that K attracts β
- (ii) α is closer to target K than β if α c-commands β

Recall that Chomsky (2000, 2000a) rules out such a violation by resorting to a condition on strong phases, according to which operations that take place at a lower phase are evaluated at the next higher one. This means that the relation established between the subject and T is legitimate with respect to the MLC only in the case that the element intervening has become an (inactive) trace²¹ at the completion of CP. This is straightforward in the case of successive cyclic movement, with the *wh*-moved or topicalised constituent in Spec, C. However, it is more problematic in the case of Scandinavian Object Shift, for which Chomsky proposes the special procedure DISL(ocation), which may be interpreted as early, phase-independent, spell-out.

Assume now that, for our ungrammatical examples in (42c) and (42d) above (repeated here as (45a) and (45b), the derivation has reached the point at which phasal spell-out of the ν P domain takes place, as represented in (45c) and (45d):²²

(45)

- a. ***[Dem Studenten ein Millionär einen Wagen geschenkt] hat**
 the student-DAT a millionaire-NOM a car-ACC given has

 hier noch nie
 here not yet

²¹ Recall that the requirement that it becomes an (inactive) trace derives from the general properties traces exhibit: they cannot be pied-piped, which prevents them from being attracted by an [+EPP] feature; and they are completely inert for the purpose of valuing other features.

²² For expository purposes, I will stick here to the notion of phase in Chomsky (2001a). As convincingly demonstrated by Svenonius (2003), such a notion is problematic, insofar as it does not account for the edge effects detected for both A- and A-bar movement in verb phrases headed by transitive, passive, and raising verbs (Fox, 2000; Legate, 2003). Those edge effects are, however, rightly predicted on the assumption that the phases that spell-out are, instead, VP and TP (Nissenbaum, 2001; Chomsky, 2001b), or that there exist additional functional heads between ν P and CP (Svenonius, 2003). Note that none of these versions is incompatible with our analysis of German scrambling in terms of Chomsky's (2001a) DISL.

- b. ***[Diese Zigarren** immer geraucht] hat damals keiner
 these cigars-ACC always smoked has then nobody
- c. $_{VP}$ [dem Studenten $_{VP}$ ~~ein Millionär~~ $_{V}$ [$_{VP}$ ~~einen Wagen~~ t_i] geschenkt] $_i$]
- d. $_{VP}$ [diese Zigarren] $_j$ $_{VP}$ [immer $_{VP}$ ~~keiner~~ $_{V}$ [$_{VP}$ t_j t_i] geraucht] $_i$]

(t conventionally represents the structural position left by a phrase which has undergone movement in Narrow Syntax. Crossing marks constituents sent to PF, i.e. spelled out).

At that point, all the elements in the domain plus the subject and the verbal head²³ have been stripped of their phonological features: *ein Millionär einen Wagen geschenkt* in (45c), and *keiner geraucht* in (45d). On the other hand, as demonstrated by morphological agreement, T must have targeted the features of the subject across the scrambled object. This operation respects the MLC only if, at the CP level, both *dem Studenten* and *diese Zigarren* are just traces, i.e. have been deprived of their phonological features. According to Chomsky's (2001a), there are only two ways to achieve this: (i) pied-piping of the scrambled object to the C-projection in Narrow Syntax; or (ii) spell-out of its phonological features before the end of the CP-cycle. The former case constitutes standard topicalisation (46a,a'); the latter is a regular case of scrambling in the *Mittelfeld* (46b, b'):

(46)

- a. **Dem Studenten** hat ein Millionär hier noch nie einen Wagen
 the student-DAT has a millionaire-NOM here not yet a car-ACC

 geschenkt
 given
- a'. **Diese Zigarren** hat immer keiner geraucht
 these cigars-DAT has always no one-NOM smoked
- b. dass **dem Studenten** ein Millionär einen Wagen geschenkt hat
 that the student-DAT a millionaire-NOM a car-ACC given has
- b'. dass **diese Zigarren** immer keiner geraucht hat
 that these cigars-ACC always no one-NOM smoked has

²³ On the basis that they do not undergo further movement (Chomsky, 2000, 2001a).

But the ungrammatical (45a) and (45b) present a topicalised *vP* in which the scrambled object has undergone neither pied-piping to Spec, C (insofar as it is the *vP* as a whole that occupies this position), nor DISL, since, on Chomsky's assumptions, DISL always targets a higher phase.²⁴ The co-occurrence of a fronted object and a fronted *vP* is not an option in German, due to the ban on more than one constituent in the initial position of a V-2 structure.²⁵ But scrambling of the object in the *Mittelfeld* along with *vP* preposing is possible in instances of so-called "remnant topicalisation" (Thiersch, 1985; Den Besten and Webelhuth, 1987) (example based on Fanselow, to appear (b)):

(47)

[Mädchen geküsst] haben den Peter noch nie
 girls-NOM kissed have Peter-ACC not yet

That the preposed phrasal projection in (47) is a *vP* is demonstrated by the presence of the subject of the transitive predicate, a bare plural receiving an existential reading according to the definiteness restriction that holds for this kind of structures. On the other hand, *den Peter* has scrambled from its VP-internal position, as is clear from the fact that it is exempted from movement to Spec, C. Since agreement between the subject in situ and *haben* in T (subsequently moved to C) obtains, the conclusion is that the reordered argument must be inactive for feature valuation. If Chomsky is right, this amounts to saying that its phonological features have undergone DISL to the CP/TP phase, where it appears in the final string:

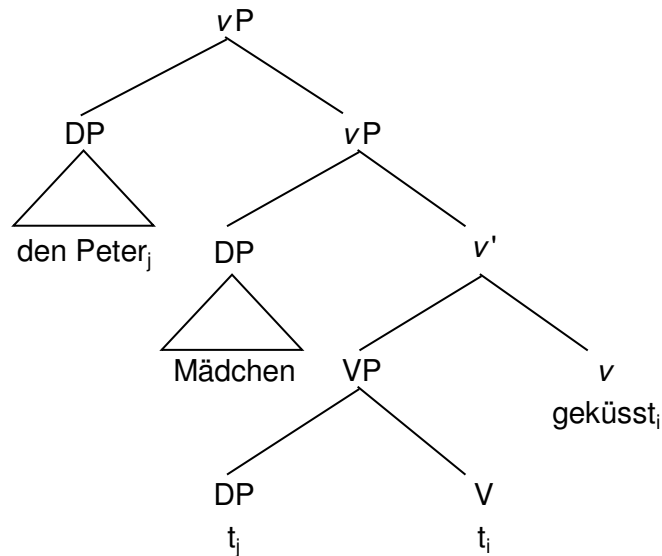
²⁴ Note, incidentally, that hypothetical DISL to a higher phase in the case of embedded V-2 is barred by the requirement that feature valuation between the subject and T must take place at the next higher strong phase, namely embedded CP.

²⁵ However, there are some exceptions to that ban, according to Müller (2004) (and references therein). In any case, they constitute an exceptional pattern, not yet successfully accounted for.

(48)

1. Narrow Syntax

- (i) ν P-cycle: scrambling of *den Peter* to Spec, ν .



- (ii) CP-cycle: merging of T and C (Aux projection and Aux-to-T movement omitted):

$[C[haben_{TP} [noch\ nie_{TP} [T[t_{Aux} \nu P[Mädchen_{\nu'} [\nu P[t_{obj} t_v] geküsst]]]]]]]$

2. PF

- (i) Spell-out at the level of the ν P-phase:

$\nu P[den\ Peter_{\nu P} [\nu P[Mädchen_{\nu'} [\nu P[t_{obj} t_v] geküsst]]]$

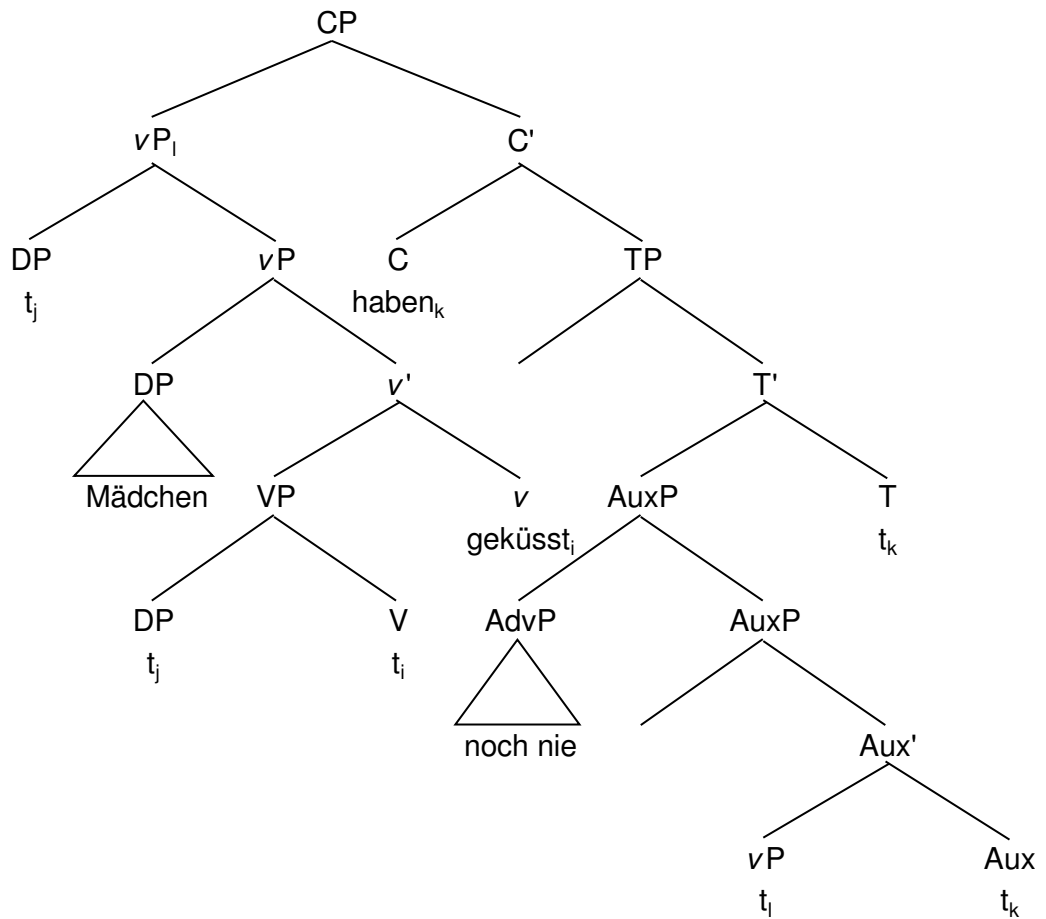
- (ii) DISL

$\nu P[den\ Peter_{\nu P} [\nu P[Mädchen_{\nu'} [\nu P[t_{obj} t_v] geküsst]]]$

3. Narrow Syntax

CP-cycle: merging of the spelled-out ν P in Spec, C.

$CP [\nu P[Mädchen_{\nu'} [\nu P[t_{obj} t_v] geküsst] C[haben_{TP} [noch\ nie_{TP} [T[t_{Aux} \nu P[Mädchen_{\nu'} [\nu P[t_{obj} t_v] geküsst]]]]]]]$.



4. PF
Spell-out at the level of the CP-phase.

Mädchen geküsst haben den Peter noch nie

(48) above is just a sketchy summary of the different strictly syntactic and phonological operations that derive (47). The crucial point for the grammaticality of the structure is step (4), i.e. DISL, which leaves the outermost vP specifier empty before feature valuation between T and the subject is evaluated at the CP-phase. The following sections present a more detailed analysis of the way it may work. I will contend there that DISL is a two-step process. Apart from accounting for the sudden appearance of *den Peter* in (48.6), it may shed some light on the "Freezing / Anti-Freezing Paradox" with scrambled coherent infinitives, an issue to which we turn now.

3.1.2. DISL and the "Freezing / Anti-Freezing Paradox": The case of coherent infinitives.

The label "Freezing / Anti-Freezing Paradox" is used here to refer to the puzzling behaviour of German coherent infinitives with respect to islandhood (Grewendorf & Sabel, 1994; Müller, 1998), which will be briefly reviewed here.

Extraction out of a coherent infinitive in its base position is permitted independently of the kind of movement involved. Thus, scrambling of a nominal (49a) or pronominal (49b) argument, topicalisation (49c), and *wh*-movement (49d, 49e) result in grammatical structures, provided that the coherent infinitive appears adjacent to the selecting matrix verb:

(49)

- a. dass das Buch_i keiner [t_i zu lesen] versucht hat
that the book-ACC no one-NOM to read tried has
- b. dass es_i keiner [t_i zu lesen] versucht hat
that it-ACC no one-NOM to read tried has
- c. Das Buch_i hat keiner [t_i zu lesen] versucht
the book-ACC has no one-NOM to read tried
- d. Was_i hat keiner [t_i zu lesen] versucht
what-ACC has no one-NOM to read tried
- e. das Buch, das_i keiner [t_i zu lesen] versucht hat
the book-ACC which no one-NOM to read tried has

A different picture arises with scrambled coherent infinitives: their nominal arguments may be displaced to Spec, C (50c, d, e), but they cannot scramble (50a). This latter option is, however, still possible with pronominal DPs (50b) (examples (50a) and (50b) from Müller, 1998; (51d) and (51e) from Grewendorf and Sabel, 1994; their judgements):

(50)

- a. *dass [t_i zu lesen]_j das Buch_i keiner t_j versucht hat
that to read the book-ACC no one-NOM tried has
- b. dass [t_i zu lesen]_j es_i keiner t_j versucht hat
that to read it-ACC no one-NOM tried has

- c. Den Hund_i hat [t_i zu füttern]_j keiner t_j versucht
the dog-ACC has to feed no one-NOM tried
- d. Wen_i hat [t_i zu füttern]_j keiner t_j versucht?
who-ACC has to feed no one-NOM tried
- e. der Mann den_i [t_i zu küssen]_j Maria t_j versucht hat
the man-NOM whom to kiss Maria tried has

Finally, there are two additional facts that, to my knowledge, are unreported in the literature: (i) pronominal scrambling out of a scrambled coherent infinitive (50b) is ruled out if another constituent intervenes between the pronoun and the verb, unless that constituent is a pronoun itself (51a vs 51b); and (ii) while *wh*-movement and pronominal scrambling are independently permitted (50b) and (50d,e), they cannot co-occur in the same structure (51c). The same is true of topicalisation (51d) (my informants' judgements):

(51)

- a. *dass [t_i zu lesen]_j der Peter es_i t_j versucht hat
that to read Peter-NOM it-ACC tried has
- b. dass [t_i zu lesen]_j er es_i t_j versucht hat
that to read he-NOM it-ACC tried has
- c. *Wem_i hat [t_i t_j zu geben]_k es_j keiner t_k versucht?
who-DAT has to give it-ACC no one-NOM tried
- d. *Dem Kind_i hat [t_i t_j zu geben]_k es_j keiner t_k versucht
the child-DAT has to give it-ACC no one-NOM tried

As far as I know, there is no account of "Freezing /Anti-Freezing" with German coherent infinitives that may satisfactorily cover all the examples above. The following section (3.1.2.1) is devoted to a summary of two of the most prominent accounts, in order to substantiate my criticism. Then I show how an analysis including Chomsky's (2001a) special operation DISL as a fundamental component accounts for (49)-(51), leaving no exceptions.

3.1.2.1. Two previous analyses: Grewendorf and Sabel (1994), Müller (1998)

As stated in the preceding section, the data that illustrate what I have called the "Freezing / Anti-Freezing Paradox" with German coherent infinitives are only partially covered in the literature. Thus, it is not surprising that studies tend to capitalise on some examples and disregard others. This is the case with Grewendorf and Sabel's (1994) and Müller's (1998) studies: both disregard the facts in (51), but, while Grewendorf and Sabel focus on the contrast between movement to Spec, C vs scrambling out of a derived position ((50 a) vs (50c,d,e)), Müller deals basically with the opposition between (50a) and (50b), attempting to insert it within a more general theory.

Grewendorf and Sabel (1994) first discuss the structures in (49a) and (50a), where scrambling is allowed from an infinitival clause in its base-generated position, but is disallowed if the infinitive is displaced. They attribute this to the interplay of abstract incorporation, a modified theory of barriers, and the "Empty Category Principle". With respect to incorporation, Grewendorf and Sabel adopt Baker's (1988) notion of reanalysis as LF-incorporation, through which both embedded and matrix heads would appear as a single verbal complex in Logical Form, and be coindexed at Surface Structure. This process of LF-incorporation is subject to the "Empty Category Principle"²⁶, and sensitive to barrierhood, also in the sense of Baker (1988). Without going into technical details, Grewendorf and Sabel argue that the infinitive in (49a) is a CP whose verbal head may abstractly incorporate with the matrix verb, since movement of the embedded TP to the C-projection of the infinitival clause triggers the process of coindexing between the embedded and the matrix predicates. On the other hand, if, as they claim, scrambling is adjunction to the matrix predicate, the scrambled element may antecedent-govern its trace due to the non-distinctiveness of the incorporated heads²⁷, as shown in (52):²⁸

²⁶ "Empty Category Principle" (Chomsky, 1981)

An empty category must be:

(i) Lexically / head governed: governed by a lexical X; or

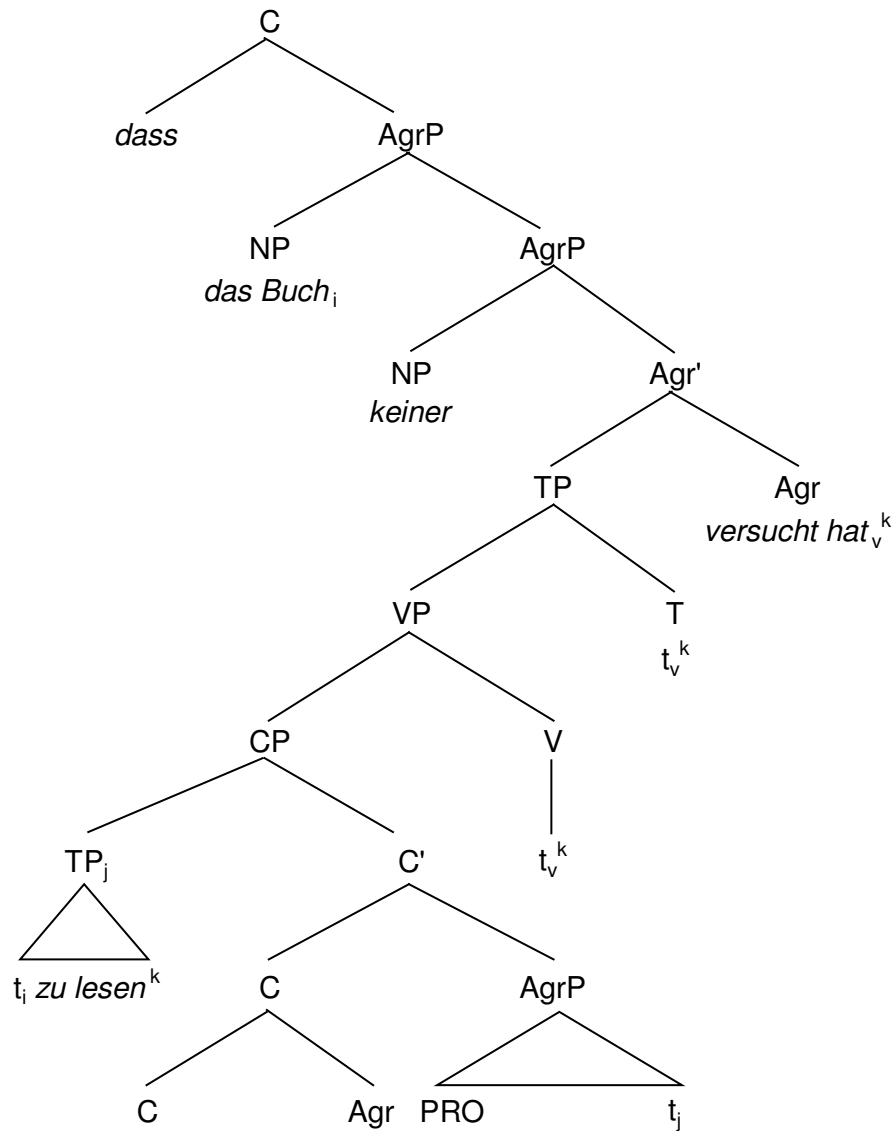
(ii) Antecedent governed: bound by (co-indexed with and c-commanded by) a category that governs it.

²⁷ According to Baker's (1988) theory of barriers:

Let D be the smallest maximal projection containing A. Then C is a barrier between A and B if and only if C is a maximal projection that contains B and excludes A, and either a. C is not selected, or b. the head of C is distinct from the head of D and selects some WP equal or containing B.

²⁸ The index *k* is the surface reflex of LF-incorporation between *versucht* and *zu lesen*.

- (52) (=49a) dass das Buch_i keiner [t_i zu lesen] versucht hat
 that the book-ACC no one-NOM to read tried has



In turn, the ungrammaticality of (50a) derives from the fact that incorporation cannot take place, since the coherent infinitival clause occupies an adjoined position (Baker, 1988). If incorporation is barred, TP becomes a barrier intervening between the nominal and its trace, thereby preventing antecedent government.

Grewendorf and Sabel also deal with the well-formedness of examples such as (50c,d,e), in which the nominal object may be topicalised or *wh*-moved, despite being adjoined. They claim that their grammaticality is due to the fact they do not involve incorporation, hence there is no movement of the embedded TP to the C-projection. Therefore, the topicalised or *wh*-moved constituent can leave the adjoined infinitive via its specifier position. Notice that this amounts to saying that the infinitives at stake are incoherent.

As it stands, Grewendorf and Sabel's proposal presents two kinds of drawbacks, some related to the theoretical model it adopts (GB), and those related to its empirical coverage itself. Regarding the former, recall that notions such as government, coindexing at SS, etc. are problematic within a minimalist framework of the kind advocated for in Chomsky (1995, 2000, 2001a, 2001b). Regarding the latter, there is no explanation why (50b), i.e. pronominal scrambling out of an adjoined position, is possible at all. Hypothetically speaking, one could assume that (50b) parallels the well-formed (50c,d,e) in allowing for pronoun movement via Spec, C. But this would necessarily require an account of why this is not an option with scrambling of nominal DPs, that is, an explanation for the ungrammaticality of (50a).²⁹

Müller's (1998) approach to the conflicting cases at stake is simpler than Grewendorf and Sabel's (1994), insofar as it makes use of a single overall condition, the "Principle of Unambiguous Domination". In brief, Müller takes the contrast between (49a) and (50a) (i.e. scrambling from a base position vs scrambling from a derived one) to be the reflex of a general constraint on the licensing of traces, his "Principle of Unambiguous Domination":

(53) Principle of Unambiguous Domination (1998:241)

An α -trace must not be α -dominated

where α -trace is interpreted as a trace with a (not necessarily c-commanding) antecedent in a position of type α , α -dominated means dominated by a category in a position of type α , and type α is, in turn, determined by the different landing sites (Spec, C, XP-Left-Adjoined positions, etc.). As shown in (54) below, both (49a) (=54a) and (50a) (=54b) contain the trace of the scrambled *das Buch*, bound by the DP in its

²⁹It could be argued that pronoun movement is not an instance of scrambling (Müller, 1998), which would straightforwardly account for the contrast between (50a) and (50b). Nevertheless, in the absence of a full characterisation of the process, resorting to pronoun movement just begs the question.

scrambled position. But only in (54b) is this trace ambiguously dominated, according to Müller's principle in (53), since the infinitival projection, also a scrambled element, dominates it.

(54)

- a. dass das Buch_i keiner [t_i zu lesen] versucht hat
 that the book-ACC no one-NOM to read tried has
- b. *dass [t_i zu lesen]_j das Buch_i keiner t_j versucht hat
 that to read the book-ACC no one-NOM tried has

According to Müller, that the ill-formedness of (54b) is solely due to "Unambiguous Domination" is demonstrated by (55), where the infinitive occupies a position of a type different from the one in which the reordered object appears (according to Müller, Spec, C and a position adjoined to IP respectively):

(55)

- [t_i zu lesen] hat das Buch_i keiner t_j versucht
 to read has the book-ACC no one-NOM tried

But "Unambiguous Domination" should rule out (50b) (=56) on a par with (54b), contrary to fact:

(56)

- dass [t_i zu lesen]_j es_i keiner t_j versucht hat
 that to read it-ACC no one-NOM tried has

Müller solves the problem posed by (56) by claiming that, differently from *das Buch* in (50a/54b), *es* has not undergone scrambling, but another sort of displacement targeting a type of position distinct from the IP-adjoined one. This conflicts with two of the examples of (51) above, which seem to suggest that pronoun movement is displacement to two alternative positions, depending on the nature of the subject (57) (57a=51 a, 57b=51b):

(57)

- a. *dass [t_i zu lesen]_j der Peter es_i t_j versucht hat
 that to read Peter-NOM it-ACC tried has

- b. dass [t_i zu lesen]_j er es_i t_j versucht hat
 that to read he-NOM it-ACC tried has

According to Cardinaletti & Starke (1996, 1999), *es* belongs to the pronominal class they call "deficient", whose members typically appear displaced in a VP-external projection.³⁰ This entails that, in the grammatical (57b), *es* cannot occupy a VP-internal position. Furthermore, note the nominal character of the subject does not prevent *es* from preceding it:

(58)

- dass es der Peter gelesen hat
 it-ACC Peter-NOM read has

I thus conclude that the contrast between (50a) and (50b) is left unsolved in Müller's account.

Müller does not study the structures that combine scrambling of an infinitival clause with the fronting of one of its internal arguments, which are at the core of Grewendorf and Sabel's (1994) proposal. In the light of his general theory, they presumably would need to be discarded as instances of movement out of a frozen constituent.³¹

In the following sections I adopt a "broader" syntactic perspective, according to which operations in Narrow Syntax (and the conditions they must fulfill) are not sufficient for dealing with the complexity of the "Freezing / Anti-Freezing" effects exhibited by scrambled coherent infinitives. The main claim will be that purely PF-processes, in their

³⁰ As reflected in the contrast below:

- (i) *dass er gestern es gelesen hat
 that he yesterday it-ACC read has
 (ii) dass er es gestern gelesen hat
 that he it-ACC yesterday read has

³¹ Another possibility would be to assume that movement of the *wh*-word in (50) precedes movement of the infinitive through an intermediate, VP-adjoined position. Since it constitutes an instance of *chain interleaving*, Müller excludes it on the basis that *chain interleaving* is prohibited on economy grounds (Collins, 1994). Note, however, that the general framework adopted in this work does not allow us to dispense with *chain interleaving*, mainly for two reasons: (i) according to the phase model approach to syntactic derivation (Chomsky, 2000, 2001a, 2001b) constituents in the domain of a lower strong phase may be accessed by operations at a higher phase only if they are at the edge (roughly equivalent to Müller's VP-adjoined position); (ii) as argued by De Kuthy (2002), and Fanselow and Cavar (to appear), elements within the same maximal projection may perform semantic / pragmatic functions that correlate with different syntactic positions.

interaction with Narrow Syntax, are responsible for the properties of these structures. One such process is, of course, Chomsky's (2001a) DISL.

3.1.2.2. "Copy theory", chain reduction and DISL

As we know, Chomsky (2001a) envisages DISL(ocation) as a phonological operation that strips the (dislocated) constituent of its phonological features, transferring them to PF. It differs from regular spell-out procedures in that it is not linked to phase completion, and causes the (dislocated) string to be phonologically realised in a position preceding the hypothetical syntactic one (the *vP* edge). However, one does not expect any difference between DISL and regular, phase-bound, spell-out as far as the mechanism of transfer is concerned: on principled grounds, they must fit the minimalist approach to syntax in Chomsky (1995, 2000, 2001a, 2001b), where the syntax-phonology mapping is rendered by means of the "copy theory" of movement and chain reduction (Chomsky 1993, 2001b; Nunes, 1999). The general mechanism of "copy theory" and chain reduction will be the subject of the following section (3.1.2.2.1). The additional properties which DISL may be endowed with will be the focus of 3.1.2.2.2.

3.1.2.2.1. "Copy theory" and chain reduction

From a minimalist perspective, a "perfect language" should meet the "Inclusiveness Condition" (Chomsky, 1995, 228):

(59) **Inclusiveness Condition**

No new objects are added in the computation apart from rearrangement of lexical properties.

As it stands, the "Inclusiveness Condition" entails a ban on the existence of traces, a type of objects that, within the GB framework, are characterized by being the phonetically null product of movement operations. Since they are subject to different constraints from those applying to regular lexical items, it follows that they constitute in fact a different entity, whose relation to the moved phrase is established by means of coindexing, a procedure that links the trace to the displaced constituent. Note that coindexing must also be barred by the "Inclusiveness Condition".

If traces must be excluded on a theoretical basis, the model faces the problem of explaining how phrases that have been moved may be interpreted, as far as some of their features are concerned, in positions different from the one they occupy in the final string. To put it simply, in an English sentence such as (60) *whom* is supposed to satisfy one of the theta-roles of the thematic grid of *see*, and have the accusative Case assigned by *see*, all of which calls for an explanation.

- (60) *whom* did you see yesterday?
 THEME
 ACCUSATIVE

Chomsky (1993) gives a possible solution for this, and maintains it in Chomsky (2001a, 2001b) as the simplest assumption: the "copy theory" of movement. The basic insight is that lexical items, which are the only elements taking part in the narrow syntactic computation as bundles of features, are merged as many times as feature checking requires it³². Each such instance of Merge constitutes, with respect to the lexical item (or group of lexical items) that undergoes it, a copy. Thus, in (60) above, since *whom* is merged three times, its derivational history comprises three copies of it, as shown in (61):^{33 34}

- (61) $_{CP}[whom_1 \ C[did \ TP[you \ T[\ vP[whom_2 \ v[see \ VP[whom_3 \ yesterday]]]]]$

The set of copies of a phrase (a combination of lexical items) is its chain: in (61), the chain of *whom* would be the one formed by $\langle whom_1, whom_2, whom_3 \rangle$, with *whom*₁, the highest copy, as its head, and *whom*₃, the lowest copy, as its tail.

Chomsky's proposal entails that all copies must be identical, i.e. they must share the same bundle of features, since, in fact, it is the same lexical item being iteratively merged.³⁵ And if they must be identical, all of them must also be endowed with phonological features, unless they are empty categories. But it is clear that sequences

³² Although Chomsky (2001a) replaces the notion of multiple merge with the composite operation agree/pied-piping/mark, I will present the German facts assuming the former for ease of exposition. I do not think that an account in terms of occurrences and agree/pied-piping/mark would change the analysis I propose.

³³ I adopt here a phase-based approach to displacement, according to which movement of *whom* to its final landing site is preceded by movement to the edge of *vP*.

³⁴ I omit other displacement processes affecting the subject and the verb.

³⁵ This is more complex than it seems if one adopts the cyclic Spell-Out in Chomsky (2001a, 2001b), as Epstein and Seely (2002) convincingly argue. Nevertheless, I will disregard those technical problems and assume that the "copy theory" as feature identity is tenable.

such as the one in (61) are ungrammatical in English, and that the source of their ungrammaticality has to do with the phonetic realisation of the three copies of *whom*. The question now is when (i.e. at what point of the syntactic derivation) phonological features are erased in the copies 2 and 3 of *whom*.

In the model of multiple Spell-Out (SO) that Chomsky (2000, 2001a, 2002b) proposes, phonological features enter the narrow syntactic component associated to lexical items, since, as said above, they constitute a group among their other bundles of features. Later on, they disappear from Narrow Syntax (NS), and are handed over to the phonological component (PF), either by means of SO, an operation cyclically applying at the end of each phase (ν P and CP), or by other phonological operations such as DISL. Leaving aside, for the moment, those other phonological operations, cyclic SO is subject to the "Phrase Impenetrability Condition", which may prevent elements at the edge of the phase from being spelled-out if they must undergo further movement in NS. Thus, after the first SO applying to our English sentence in (60) and (61), the string that PF receives is the one constituted by the underlined elements below:

(62) ν P[whom ν P[you ν [see ν P[see whom yesterday]]]

Chomsky (2001b) argues that, while the narrow syntactic cycle continues unchanged (except for the absence of the phonological features of the underlined sequence, handed over to PF by the first SO), the PF component may already perform whatever phonological operations affect the spelled-out string, thus reducing some burden for subsequent PF cycles. I will assume that one of those operations is chain reduction, i.e. determining which copy of a chain must be pronounced, eliminating the other ones for the next higher phrase. I will return to the exact mechanism below; let it suffice now to state simply that the head of a chain (that is, the highest copy)³⁶ is the one that must be pronounced (that is, the one keeping its phonological features until the end of the PF cycle is reached) (Chomsky, 2001a, 2001b). According to this, the "surviving" phonological string in (62) is now (63):

(63) [see] [whom] [yesterday]

the phonological features of the lower copy of *see* having been eliminated.

³⁶ Obviously, this is not a stipulation, but a consequence of the derivational (bottom-up) model adopted for Narrow Syntax.

After Spell-Out has applied for a second time, PF will comprise the elements in (64):

(64) CP[whom C[did TP[you T[vP[whom vP[you]]]]

plus the elements that have "survived" at the lower cycle, that is, the combination of (63) and (64):

(65) CP[whom C[did TP[you T[vP[whom vP[you v[see vP[whom yesterday]]]]]]

The operation of chain reduction will delete the lower copies, and only the highest ones will be pronounced, yielding an English grammatical sentence.

(66) Whom did you see yesterday?

3.1.2.2.2. Additional properties of DISL

As extensively discussed in different parts of this paper, Chomsky (2001a) envisages DISL as a device for justifying the grammaticality of the Icelandic counterpart to (67):

(67) John_{subj} T [the book_{obj} [t_{subj} read t_{obj}]]

This is necessary because of two facts. In the first place, the object in Spec, *v*P does not induce a violation of the "Minimal Link Condition". Secondly, as observed by Holmberg (1999), shifted objects seem to precede the *v*P-edge in the final phonological string. Chomsky's characterisation of DISL is minimal, limited to accounting for these two properties in a satisfactory way: DISL is an instance of spell-out, which explains why the MLC is respected in (67); DISL raises the phonological features of the scrambled object at the edge of the lower strong phase to a higher one (CP), which explains why the shifted object appears phonologically realised past the *v*P edge.

This minimal characterisation apparently suffices for dealing with the Icelandic data Chomsky presents, but in itself would not account for scrambled coherent infinitives in German. I will therefore adopt a more explicit version of it, as in (68):

(68)

- (i) DISL is a two step-process:
 - (a) elimination of phonological features from Narrow Syntax and their transfer to PF (an operation of the syntax-phonology mapping)
 - (b) raising of phonological features to a higher position in the PF string (an operation of PF proper)
- (ii) To be subject to DISL a constituent must have a full set of phonological features.

(i) derives from general considerations about Chomsky's model, and its interaction with the high surface position of shifted objects in Icelandic. If cyclic spell-out is essentially motivated by the need to transfer material from Narrow Syntax to PF as early as possible, thus freeing the strict syntactic computation from unnecessary burden, the obvious conclusion is that DISL will not be deferred until the CP cycle is finished. But notice that, on the other hand, the CP cycle must be completed for DISL to be able to target a position within it at PF. Assuming that DISL applies in two different steps solves the contradiction: (a) satisfies earliness; (b) accounts for the empirical facts.

(ii) is basically a consequence of the analysis we propose for the German facts, but I do not think that it is controversial: both (a) and (b) in (i) are phonological operations, and only phonological features are subject to phonological operations. This does not necessarily entail that elements without phonological content cannot prevent some phonological operations from applying; it simply means that phonological operations never apply to them.

3.1.2.3. The "Freezing / Anti-Freezing Paradox" revisited

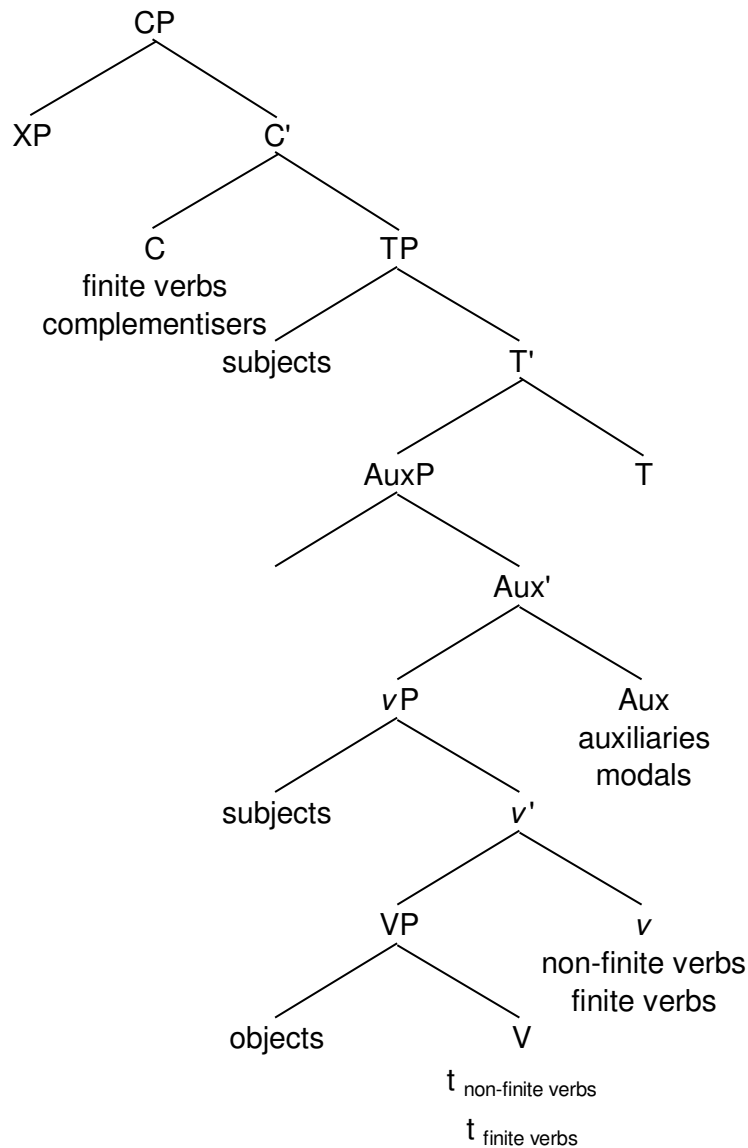
This section presents a specific analysis of extraction out of scrambled coherent infinitives in the light of the assumptions made so far. Before presenting it in detail, let me refer to the exact clausal architecture I will adopt for German.

German is basically head-final (VP, *v*P, TP), although it has a head-initial CP, as illustrated by (69):

(69)

a. $CP[C TP[vP[NP_v[[VP \dots V] vT]]]]$

b.



Objects are base-generated within VP, where they eliminate their case feature by Agree with v . Subjects of predicates with full argument structure are merged in Spec, v , and need not move to Spec, T. Non-finite Vs raise to v ; finite Vs raise to v in embedded clauses, and to v -T-C in root ones. Modals and auxiliaries are inserted in a left-headed Aux-projection, and move to T and C in root clauses. Root clauses are generally subject to the V-2 constraint, which forces movement of some XP to Spec, C. Finally, and with respect to coherent infinitives, I will follow Wurmbrand (2001a) and take them

to be VPs, which entails that (i) their objects eliminate their case feature by means of the relation they establish with the matrix *v*; and (ii) may be pied-piped to the matrix *vP* edge.

Now we turn to the way the contrasts in (49)-(51) above may be accounted for. First we will deal with (49a) vs (50a), that is, the incompatibility between scrambling of the infinitive and scrambling of the object (3.1.2.3.1). Second, we will address the question why topicalisation and *wh*-movement are insensitive to the scrambled or non-scrambled status of the coherent construction (50c,d,e) (3.1.2.3.2). Third, we will focus on the exception constituted by the examples with scrambling of both an infinitive and a pronoun (50b), and we will show how the facts in (51) may lend empirical support to our treatment of (49)-(50) (3.1.2.3.3).

3.1.2.3.1. Illicit "double scrambling"

Scrambling of the nominal object of a coherent infinitive to the matrix clause is constrained by the position occupied by the infinitive itself, as shown by the contrast between (49a) and (50a) (repeated here as (70a) and (70b) respectively):

(70)

- a. dass das Buch_i keiner [t_i zu lesen] versucht hat
that the book-ACC no one-NOM to read tried has
- b. *dass [t_i zu lesen]_j das Buch_i keiner t_j versucht hat
that to read the book-ACC no one-NOM tried has

My claim is that such a contrast is due to one of the properties of DISL in (68), namely the requirement that elements undergoing any of the operations involved in DISL have phonological features. The constraint is respected in (70a), but violated in (70b), as their respective derivations in (71a) and (71b) show:

- (71a) dass das Buch_i keiner [t_i zu lesen] versucht hat
that the book-ACC no one-NOM to read tried has

■ Narrow Syntax

- *vP* cycle: *V* raises to *v*; *das Buch* is pied-piped to the *vP* edge for [+EPP] feature elimination (Chomsky, 2001a for Object Shift)
vP[das Buch *vP*[keiner *v*[*vP*[[das Buch zu lesen] versucht] versucht]]]

- CP cycle: merging of T and C (Aux projection and Aux-to-T movement omitted)

CP[C[dass TP[T[_{VP}[das Buch _{VP}[keiner _v[_{VP}[[das Buch zu lesen] versucht] versucht]]] hat]]]]

■ PF

- Spell-Out: phase-bound transfer to PF (_vP)

_vP[keiner _v[_{VP}[[das Buch zu lesen] versucht] versucht]]

- Dislocation 1 (according to (68ia): elimination of phonological features from NS

_vP[das Buch _{VP}[keiner _v[_{VP}[[das Buch zu lesen] versucht]]]

- Chain reduction and PF output for PF at CP:

das Buch keiner ~~das Buch~~ zu lesen ~~versucht~~ versucht³⁷

- Spell-Out phase-bound transfer to PF (CP)

CP[C[dass TP[T[hat]]]]

- PF input (Spell-Out of CP plus PF of _vP)

dass das Buch keiner ~~das Buch~~ zu lesen ~~versucht~~ versucht hat

- Dislocation 2 (raising of phonological features):³⁸

dass das Buch **0** keiner zu lesen versucht hat

- Chain reduction (vacuous):

dass das Buch keiner zu lesen versucht hat

³⁷ For the sake of simplicity, I refrain from representing syntactic structure at PF, since it is not relevant at this point. Nevertheless, I am conscious that it plays an important role, as I will show in my treatment of the grammaticality of pronominal scrambling.

³⁸ I will distinguish dislocated phonological features from those eliminated by chain reduction by using 0 instead of crossing. The distinction may be relevant: phonological features eliminated by chain reduction are considered to affect phonological processes such as phonological phrasing (Nespor and Vogel, 1986; Chen, 1987; Truckenbrodt, 1999), or contraction (Chomsky, 1981), but, in principle, that needs not be the case with dislocated ones.

(61b) *dass [_i zu lesen]_j das Buch_i keiner _{t_j} versucht hat
 that to read the book-ACC no one-NOM tried has

■ Narrow Syntax

- *vP* cycle: V raises to *v*; *das Buch* and *das Buch zu lesen* are pied-piped to the *vP* edge.

vP[das Buch zu lesen *vP*[das Buch *vP*[keiner *v*[*vP*[[das Buch zu lesen] versucht] versucht]]]]

- CP cycle: merging of T and C (Aux projection and Aux-to-T movement omitted)

CP[C[dass TP[T[*vP*[das Buch zu lesen *vP*[das Buch *vP*[keiner *v*[*vP*[[das Buch zu lesen] versucht] versucht]]]]] hat]]]]

■ PF

- Spell-Out: phase-bound transfer to PF (*vP*)

vP[keiner *v*[*vP*[[das Buch zu lesen] versucht] versucht]]

- Dislocation 1: elimination of phonological features from NS

vP[das Buch zu lesen *vP*[das Buch *vP*[keiner *v*[*vP*[[das Buch zu lesen] versucht] versucht]]]]

- Chain reduction and PF output for PF at CP:

~~das Buch~~ zu lesen das Buch keiner ~~das Buch zu lesen~~ versucht versucht

- Spell-Out: phase-bound transfer to PF (CP)

CP[C[dass TP[T[hat]]]]

- PF input (Spell-Out of CP plus PF of *vP*)

dass ~~das Buch~~ zu lesen das Buch keiner ~~das Buch zu lesen~~ versucht versucht hat

- Dislocation 2 (raising of phonological features):

dass ~~das Buch zu lesen~~ das Buch 0 0 keiner versucht hat

- Chain reduction (vacuous):
dass zu lesen das Buch keiner versucht hat

Notice what the crucial differences between (71a) and (71b) are. One relates to chain reduction at the vP cycle: scrambling of *das Buch* makes it a head of a chain, which entails that the phonological features of the rest of the copies must be eliminated. This does not have any consequence for the structure in (71a): the phonologically unrealised copy of *das Buch* remains VP-internal, and does not take part in further syntactic or phonological operations. But the situation is different if the entire infinitival clause is pied-piped as well: the phonological features of the copy of *das Buch* contained in it will be eliminated. On the other hand, the constituent is at the vP edge, which must be emptied before the end of the CP cycle. This forces the phonological incomplete infinitive to undergo either syntactic displacement to a higher position or DISL. The former results in a well-formed structure, since the presence of phonological features on the infinitival head is enough to license pied-piping (72):

- (72) $[t_i \text{ Zu lesen}]_j$ hat das Buch_i keiner t_j versucht
to read has the book-ACC no one-NOM tried

However, DISL requires full phonological integrity, which explains the ungrammaticality of (71a). Thus, we conclude that the ban on "double scrambling" with nominal scrambling reduces to the impossibility of dislocating constituents that have been previously deprived of some of their phonological features by chain reduction.

3.1.2.3.2. Fronting from base-generation / scrambling positions

Contrary to scrambling, *wh*-movement and topicalisation may front the object of an infinitival clause irrespective of the kind of position (base-generated / scrambled) it occupies:

- (73)
- a. Was_i hat keiner $[t_i \text{ zu lesen}]$ versucht?
what-ACC has no one-NOM to read tried
- b. Was_i hat $[t_i \text{ zu lesen}]_j$ keiner t_j versucht?
what-ACC has to read no one-NOM tried

This seems to contradict our findings in the previous section, insofar as a phonologically incomplete infinitival clause may scramble, that is, undergo the two operations that DISL encompasses. I will now show that the partial lack of phonological features in the conflicting (73b) is just apparent, and that, at the points at which DISL applies, the infinitival clause is still phonologically complete.

- (86) Was_i hat [t_i zu lesen] keiner versucht?
 what-ACC has to read no one-NOM tried

■ Narrow Syntax

- ν P cycle: V raises to ν ; *was* and *was zu lesen* are pied-piped to the ν P edge³⁹
 ν P[was zu lesen ν P[was ν P[keiner ν [ν P[[was zu lesen] versucht] versucht]]]]
- CP cycle: merging of T and C; T-to-C movement; *wh*-movement (Aux projection and Aux-to-T movement omitted):
 $CP[was C[hat TP[T[ν P[was zu lesen ν P[was ν P[keiner ν [ν P[[was zu lesen] versucht] versucht]]]] hat]]]]$

■ PF

- Spell-Out: phase-bound transfer to PF (ν P)
 ν P[keiner ν [ν P[[was zu lesen] versucht] versucht]]
- Dislocation 1: elimination of phonological features from NS
 ν P[was zu lesen ν P[keiner ν [ν P[[was zu lesen] versucht] versucht]]]
- Chain reduction and PF output for PF at CP:
 was zu lesen keiner ~~was zu lesen~~ ~~versucht~~ versucht
- Spell-Out: phase-bound transfer to PF (CP)
 $CP[was C[hat TP[T[ν P[was]]]]]$

³⁹ Recall that intermediate *wh*-movement to Spec, ν is imposed by the "Phase Impenetrability Condition" (Chomsky, 2001 a), according to which only elements at the phase-edge are accessible to higher phases.

- PF input (Spell-Out of CP plus PF of *vP*)
was hat was was zu lesen keiner ~~was zu lesen versucht~~ versucht
- Dislocation 2 (raising of phonological features):
was hat **was zu lesen** was **0** keiner ~~was zu lesen versucht~~ versucht
- Chain reduction
was hat ~~was zu lesen~~ ~~was~~ keiner ~~was zu lesen versucht~~ versucht

The difference between the ungrammatical "double scrambling" case in (71b) and (74) lies in the elimination of the phonological features of the object in the reordered infinitival clause. In (71b), the previously dislocated *das Buch* is present at PF when *das Buch zu lesen* is sent there. Since it constitutes the highest copy of the chain (the head), it forces the elimination of the phonological features of *das Buch* in the dislocated clause, crucially prior to the application of the second step of DISL (raising of phonological features to a position within the CP-phase). However, in (74) *was* is sent to PF at the completion of the CP phase, like any non-dislocated element at the *vP* edge. This allows *was zu lesen* to keep its phonological integrity, thus rendering the second operation of DISL legitimate. Finally, *was* in Spec, C makes chain reduction erase the phonological features of the copy in *was zu lesen*. Notice that this account necessarily requires DISL to precede the last application of chain reduction. I would claim that this must be so on independent grounds: if chain reduction at the CP-phase preceded DISL, this would probably force an additional, second chain reduction, given that the dislocated constituent might have become the highest copy. To put it simply, it is preferable to have chain reduction implemented once the position of all the constituents in the string is completely fixed.

I would like to conclude this section by examining the possibility of reducing the contrast between (71b) and (74) to the coherent / non-coherent distinction, an assumption that underlies Haider's (1987, 1990, 1991) pioneering work as well as Grewendorf and Sabel's (1994) analysis, at least in a certain sense. Recall that the claim is, basically, that *wh*-movement and topicalisation are allowed because they proceed via Spec, C, which entails that the infinitival clause is a CP, that is, an incoherent, non-restructuring infinitive (or, in Grewendorf and Sabel's terms, that the embedded CP projection is not used for abstract incorporation between the matrix and

embedded predicates). My reasons for rejecting this solution are the following. (i) According to standard minimalist assumptions, fronting of a constituent to Spec, C requires an escape hatch (the vP edge, an intermediate Spec, C) only in the case the constituent that must undergo it is in the domain of a lower strong phase. If, as I argue, *was zu lesen* in (74) above is just a VP (that is, not a strong phase), *was* may move to Spec, C unproblematically, provided that it passes through the matrix vP edge, as in our derivation. (ii) It is uncontroversial that incoherent, non-restructuring infinitives never allow their internal arguments to appear in the matrix clause, irrespective of their nominal or pronominal nature (Wurmbrand, 2001a, among others). This means that, in those structures in which scrambling of a pronominal object may co-occur with scrambling of the infinitive itself, restructuring must be invoked. The obvious conclusion is that adjacency between matrix and embedded predicates is not a consistent proof to distinguish coherent infinitives from non-coherent ones.

3.1.2.3.3. Licit "double scrambling"

Recall that Müller (1998) observes that "double scrambling", i.e. scrambling of the infinitival clause along with scrambling of one of its internal arguments, is possible if, and only if, it affects pronominal objects. Thus, a derivation that should parallel that of the ungrammatical (71b) results in a well-formed sentence:

(75) *dass* [*t_i zu lesen*]_j *es_i* *keiner* *t_i* *versucht* *hat*
 that to read it-ACC no one-NOM tried has

■ Narrow Syntax

- vP cycle: V raises to v ; *es* and *es zu lesen* move to the vP edge
 $vP[es\ zu\ lesen\ vP[es\ vP[keiner\ v[vP[[es\ zu\ lesen]\ versucht]\ versucht]]]]]$
- CP cycle: merging of T and C (Aux projection and Aux-to-T omitted)
 $C[dass\ TP[T[vP[es\ zu\ lesen\ vP[es\ vP[keiner\ v[vP[[es\ zu\ lesen]\ versucht]\ versucht]]]]] hat]]]$

- PF
 - Spell-Out: phase-bound transfer to PF (vP)
vP[keiner v[vP[[es zu lesen] versucht] versucht]]
 - Dislocation 1: elimination of phonological features from NS
vP[es zu lesen vP[es vP[keiner v[vP[[es zu lesen] versucht] versucht]]]]
 - Chain reduction and PF output for PF at CP:
es zu lesen es keiner ~~es zu lesen~~ ~~versucht~~ versucht
 - Spell-Out: phase-bound transfer to PF (CP)
CP[C[dass TP[T[hat]]]]
 - PF input (Spell-Out of CP plus PF of vP)
dass ~~es~~ zu lesen es keiner ~~es zu lesen~~ ~~versucht~~ versucht hat
 - Dislocation 2 (raising of phonological features):
dass **es zu lesen** es **0 0** keiner ~~es zu lesen~~ ~~versucht~~ versucht hat
 - Chain reduction (vacuous):
dass zu lesen es keiner versucht hat

Notice that the application of the second step of DISL ("Dislocation 2" in the derivation above) makes (75) as bad as (71b), contrary to fact. My claim is that, in fact, "Dislocation 2" is an illegal operation at the moment it takes place in (71b), but not in (75). In other words, the crucial distinction between the ungrammaticality of (71b) and the grammaticality of (75) is that, in the latter and not in the former, an extra phonological process "repairs" the damage caused by the application of chain reduction to the infinitival clause, turning it into a phonologically complete constituent again. This repairing procedure must be intrinsically phonological, since both chain reduction and DISL take place at PF, and counter-cyclicity is forbidden on theoretical grounds: once a constituent has been handed over to the interface level, it cannot go back to Narrow

Syntax. I contend that the repairing procedure at stake is twofold, since it comprises both phonological restructuring and licensing.⁴⁰

A. *Phonological restructuring*

The background of the discussion here is the theory of prosodic phonology as developed in Selkirk (1980a,b). In this theory, phonological strings encompass a hierarchical, layered structure in which smaller units are grouped into larger ones: segments into syllables, syllables into feet, and feet into prosodic words; the layers above the prosodic word are the phonological phrase, the intonational phrase, and the utterance. Although stress is often used as the basis for postulating prosodic structure within the prosodic word, prosodic constituents above the word are typically inferred through the blocking or triggering of postlexical phonological processes.

Research on different languages has evidenced that some of these prosodic constituents are sensitive to the syntax-phonology mapping, insofar as they show systematic relations to syntactic constituent structure. This is the case of the phonological phrase, whose boundaries seem to be crosslinguistically determined by those of the syntactic constituent, irrespective of category. Selkirk (1986) captures this in her universal theory of phrasing, according to which the right / left edge of a phonological phrase φ is always aligned with the right / left edge of a syntactic XP, depending on the head parameter ((76), from Selkirk, 1995):

(76)

a. ALIGN-XP, R: ALIGN (XP, R; φ , R)

"For each XP there is a φ such that the right edge of XP coincides with the right edge of φ "

b. ALIGN-XP, L: ALIGN (XP, L; φ , L)

"For each XP there is a φ such that the left edge of XP coincides with the left edge of φ "

(77) illustrates the mapping principle in (76) for English, a head-initial language:

⁴⁰ "Licensing" is used here in a general, non-technical, meaning, roughly equivalent to "rendering (phonologically) appropriate", as will be clear in the following paragraphs of the main text.

(77) English

that John read the book

a. Syntactic structure

CP[that C[TP[NP [John]_i T[vP[t_i v[read]_j VP [t_j NP[the book]]]]]]

b. Prosodic structure: phonological phrasing

{that John} {read the book}

where the right edge of the first prosodic phrase is aligned with the first available right phrasal bracket (that of the NP *John*)⁴¹, and the right edge of the second one with that of *the book*.

Not all syntactic constituents are visible to (76), however. Thus, Nespor and Vogel (1986), Chen (1987), and Truckenbrodt (1999), among others, contend that (76) ignores phonetically null elements. To put it differently, empty categories (traces, PRO, etc.) never provoke ϕ -closure.

A theory of prosodic phrasing along the lines sketched above would assign essentially the same phonological representations to both the licit and illicit "double scrambling" cases. On the assumption that German, although head-final within VP, is head-initial in most projections (DP, NP, PP, and CP), the scrambled object and the remnant infinitive in (71b) and (75) would invariably show up in different phonological phrases, since the right VP bracket of the infinitival clause intervenes between them. This is illustrated in (78a) for (71a), and (78b) for (75):

(78)

a. (=71a) *dass [t_i zu lesen]_j das Buch_i keiner t_j versucht hat
 that to read the book-ACC no one-NOM tried has
 {dass t_i zu lesen} {das Buch} {keiner} {t_j versucht} {hat}⁴²

b. (=75) dass [t_i zu lesen]_j es_i keiner t_j versucht hat
 that to read it-ACC no one-NOM tried has
 {dass t_i zu lesen} {es} {keiner} {t_j versucht} {hat}

⁴¹ I have omitted DPs for the sake of simplicity. Notice that their inclusion does not affect phonological phrasing: the right bracket of the NP is still the one provoking the closure of the phonological phrase (i.e. ϕ -closure), since it appears embedded within DP.

⁴² (78) pictures the initial prosodic phrases of the examples at stake. The final unstressed verbs require a further adjustment rule that joins them to the prosodic phrase on their left, such as the rule PRED in Büring (2000, 2001): a predicate shares its Accent Domain with at least one of its arguments, where "Accent Domain" stands for phonological phrase. Such an adjustment is irrelevant for the contrast in

However, the nominal object *das Buch* and the pronominal *es* differ with respect to their intrinsic phonological properties. Recall that, according to Cardinaletti & Starke (1996, 1999), *es* is a deficient pronoun. From a phonological perspective, deficient pronouns are characterised by a property that nouns and non-deficient pronouns lack, namely, the possibility of being included in a preceding or following phonological phrase (Nespor and Vogel's (1986) restructuring of phonological phrases). Once within the same prosodic domain, deficient forms may undergo further restructuring with strictly adjacent elements, which results in the formation of complex prosodic words. This claim is supported by examples like (79) below, from Cardinaletti and Starke (1999), where the absence of the glottal stop between the subject pronoun and the verb indicates phonological restructuring:

(79)

- a. ? Es ? ist schön
 it is nice
- b. ? Es ist schön

In this light, I propose that the opposition between "double scrambling" with nominal and pronominal objects simply reduces to the (un)ability to undergo phonological restructuring.

That phonological restructuring of the pronoun with the infinitive is the factor responsible for the well-formedness of (78b) (=75) is supported by the following pieces of evidence:

(i) The weak pronoun may be replaced by a clitic with no change in grammaticality, as noticed by Müller (1998) ((80a), his example, and also his judgement). It may be also replaced by weak demonstrative *das*. Gärtner and Steinbach (2003) claim, by the way, that this goes against Müller's (1998) idea that personal pronouns undergo a special kind of movement different from scrambling ((80b) from Gärtner and Steinbach, their judgement):

grammaticality we are discussing, insofar as it takes place in the two sentences. That is the reason why I will disregard it in the following.

(80)

- a. dass zu lesen's keiner versucht hat
 that to read-it-ACC-CL no one-NOM tried has
- b. dass zu lesen das keiner versucht hat
 that to read that-ACC no one-NOM tried has

(ii) There must be strict adjacency between the infinitive and the pronoun, except in the case that the intervening element is a pronoun too (as far as I know, a fact unreported in the literature) (our examples in (51); my informants' judgement):

(81)

- a. *dass zu lesen der Peter es versucht hat
 that to read Peter-NOM it-ACC tried has
- b. dass zu lesen er es versucht hat
 that to read he-NOM it-ACC tried has

The assumption is that, in (81a), the phonological phrase *der Peter* prevents restructuring of *es* with the infinitival *zu lesen*: if *es* restructures at all, it must restructure with *der Peter*. But this is not so in (81b): *es* may restructure with *er* (also a pronoun) and *er*, in turn, may restructure with *zu lesen*. The result is, again, that the object and the infinitive form a single prosodic word, within a single phonological phrase (82a), exactly as in the string in which no subject intervenes (82b):

(82)

- a. {dass zu lesen er es} {versucht} {hat}
- b. {dass zu lesen es} {keiner} {versucht} {hat}

There are two questions we must address now. The first is related to the reasons why a purely phonological process such as restructuring may interact with scrambling, if scrambling is the result of a strictly syntactic operation. The reasons are not obvious, if scrambling is conceived of as base-generation, or as the product of just "Move". However, in the analysis we are proposing, in which "Move" is followed by Chomsky's (2001a) DISL, the connection is straightforward: DISL applies only to phonologically complete constituents, and restructuring adds phonological features to previously less

complex phonological words and phrases. In a sense, restructuring makes phonologically empty elements invisible for DISL. We turn to this "invisibility" and the exact way in which it is implemented in the following section.

B. Phonological licensing of non-phonologically realised features.

Ackema and Neeleman (2003) contend that a certain class of morphological alternations that seem to involve syntactic adjacency do not derive from syntactic rules themselves, but rather from spell-out principles holding for heads and phrases contained within the same phonological phrase. They illustrate their claim with six case studies, concerning agreement weakening in Dutch and Arabic, cliticisation in Middle Dutch and Celtic, and pro-drop in Old French and Arabic.

Ackema and Neeleman assume, as it stands, that the syntactic and phonological components are autonomous, but related to each other by the PF interface. According to them, the PF interface is responsible for the following operations, in the given order:

- (83) PF operations (Ackema and Neeleman, 2003: 683)
 - a. Linearisation of syntactic terminals
 - b. Initial prosodic phrasing, on the basis of syntactic information
 - c. Application of context-sensitive allomorphy rules
 - d. Spell-out of terminals

With respect to (83a) and (83b), they adopt the general view that both processes are sensitive to syntactic constituency, in the form of Selkirk's (1986) alignment theory for the case of (83b). However, (83c) constitutes a partial innovation. It shares with "Distributed Morphology"⁴³ (Halle and Marantz, 1993 and subsequent work) the notion of spell-out as vocabulary insertion, and the idea that there are post-syntactic allomorphy rules that adjust the feature content of terminals in particular environments. But it departs from it in the claim that such allomorphy rules are sensitive to prosodic phrasing, since the former always precedes the latter in Halle and Marantz's framework.

⁴³ Recall that in Chomsky (1993, 1995) all inflected words are formed in the lexicon, a tenet which constitutes the "strong lexicalist view". In Halle and Marantz's (1993) "Distributed Morphology" the claim is weaker: functional heads like Tense serve as locus of lexical ("Vocabulary") insertion, and all word formation occurs in the syntax, as a result of the syntactic combination of heads. In addition, the operations taking place in a derivation between Spell-Out and PF are of the same sort and obey the same principles as the operations in the rest of the syntax.

Ackema and Neeleman distinguish two general types of prosodically-conditioned allomorphy rules. The first one states that the morpho-syntactic features of a terminal contained in the same phonological phrase as a certain other terminal are deleted. Such deletion necessarily requires agreement between the features of the terminals to which the rule applies on the basis of recoverability. Suppression of features obviously changes the phonological realisation of the terminal whose feature content has changed, since the phonological material that the operation in (83d) above assigns to terminals is determined by the bundles of features in them. The whole process is represented in (84):

(84)
 $\{ [A \ F_1 \ F_2] \ \dots [B \ F_1 \ F_3] \ \dots \}$
 Feature deletion:
 $\{ [A \ F_2] \ \dots [B \ F_1 \ F_3] \ \dots \}$
 Spell-out
 $[A \ F_1 \ F_2] \rightarrow /a/$
 $[A \ F_2] \rightarrow /a'/$

The second type of allomorphy rule states that if a particular terminal appears in the same prosodic domain as some other terminal, its phonological realisation is altered. According to Ackema and Neeleman, this type of rule is responsible for cliticisation: the presence of a syntactic head endowed with the required features forces a pronoun to be realised as a simple clitic, that is, something smaller than a phonological word (such as σ , a syllable). This is schematised in (85):

(85)
 $\{ \dots A \dots [B \ F_1 \ F_3] \dots \} \rightarrow \dots <A \dots [B \ F_1 \ F_3]> \dots$
 Spell-out
 $[B \ F_1 \ F_3] \rightarrow /b_\sigma/$

Ackema and Neeleman contend that (85) differs from (84) in that it does not delete morpho-syntactic features in its target. This is required by their analysis of cliticisation in Middle Dutch and Celtic, where the process is conditioned exclusively by the availability of a proper verbal head within the same prosodic phrase. However, my

claim is that, given the proper conditions, (84) and (85) may, in fact, co-occur. Those proper conditions obtain in some cases of the licit "double scrambling" in German.

Recall that we concluded in the previous section that the (un)grammaticality of pronominal / nominal scrambling from an already scrambled infinitival clause can be attributed to the phonological properties of the object: weak pronouns may restructure with the preceding phonological phrase, while nominal DPs may not. This resulted in the phonological representations of (86), where *es* but not *das Buch* shares a phonological phrase with both its copy, devoid of phonological features because of chain reduction, and the infinitive:

(86)

- a. {dass t_i zu lesen es_i } {keiner} { t_j versucht} {hat}
- b. *{dass t_i zu lesen} {das Buch $_i$ } {keiner} { t_j versucht} {hat}

The question now is how phonological restructuring can affect grammatical well-formedness. I suggest that the answer is related to the interaction of chain reduction and its effects on DISL with PF procedures of the kind proposed by Ackema and Neeleman. But a preliminary observation is in order. Recall that, on standard minimalist assumptions, lexical items are characterised in terms of bundles of semantic, formal, and phonological features. Any spell-out procedure (phase-bound spell-out, or special operations such as DISL) must send to PF not only phonological features, but also valued formal ones, since they may have a phonetic reflex. In other words, after the first step of DISL ("Dislocation 1") has applied, *es/das Buch* and *es/das Buch zu lesen* leave the νP -edge (which they have targeted in Narrow Syntax), and are handed over to PF as bundles of phonological and (already valued) morphosyntactic features, as in (87):

(87) "Dislocation 1": transfer to PF

- a. νP [[$es_{[3 \text{ neuter sing acc}]}$ zu lesen] νP [$es_{[3 \text{ neuter sing acc}]}$ νP [keiner
- b. νP [[das Buch $_{[\text{neuter sing acc}]}$ zu lesen] νP [das Buch $_{[\text{neuter sing acc}]}$ νP [keiner

After chain reduction, the phonological features of the copy of the object in the scrambled infinitival clause are deleted. To put it differently, *es* and *das Buch* are reduced to valued formal features:

(88) Chain reduction:

- a. $\nu P[[\text{es}_{[3 \text{ neuter sing acc}]} \text{ zu lesen}] \nu P[\text{es}_{[3 \text{ neuter sing acc}]} \nu P[\text{keiner} \dots]$
- b. $\nu P[[\text{das Buch}_{[\text{neuter sing acc}]} \text{ zu lesen}] \nu P[\text{das Buch}_{[\text{neuter sing acc}]} \nu P[\text{keiner} \dots]$

In the minimalist spirit that operations take place as early as possible, assume that the PF interface maps syntactic structure onto prosodic structure as soon as the strong phase is complete. In other words, at the point at which the CP cycle is transferred to PF, the νP cycle (plus the constituents that have undergone "Dislocation 1") is already structured in different prosodic layers, which include, of course, phonological phrases:

(89) Prosodic phrasing

- a. $\{[\text{es}_{[3 \text{ neuter sing acc}]} \text{ zu lesen es}_{[3 \text{ neuter sing acc}]}] \{ \text{keiner} \} \dots$
- b. $\{\text{das Buch}_{[\text{neuter sing acc}]} \text{ zu lesen}\} \{ \text{das Buch}_{[\text{neuter sing acc}]} \} \{ \text{keiner} \} \dots$

As shown in (89), prosodic phrasing behaves uniformly in the two examples at stake with respect to the phonologically unrealised copy and the infinitive: both are included in a single phonological phrase, due to the invisibility of empty elements for ϕ -closure (Nespor and Vogel, 1986; Chen, 1987; Truckenbrodt, 1999; see above). But it has different effects with respect to the second, phonologically realised, copy of the object: it forms its own phrase in (89b), but not in (89a). Thus, *das Buch* is prevented from entering with its copy and/or the infinitive into the kind of operations Ackema and Neeleman argue for, since these operations are confined to the phrasal limits. However, this is possible for *es*, which I take to participate in both deletion of morphosyntactic features (an operation of the first type in Ackema and Neeleman's proposal), and cliticisation (their second type). Regarding the former, suppose that, as Ackema and Neeleman state, the features of the phonologically unrealised terminal are deleted by the presence of the identical features of the realised one. This would entail the complete invisibility of the first occurrence of *es*, on the basis that it only contains phonological and morphosyntactic information. Simply put, *es*, lacking any sort of features, virtually disappears:

(90)

- $\{[\text{es}_{[3 \text{ sing acc}]} \text{ zu lesen es}_{[3 \text{ sing acc}]}] \{ \text{keiner} \} \dots$

On the other hand, *zu lesen* is an appropriate host for *es*, contained within the same phonological phrase, which explains the grammaticality of the "double scrambling" cases when the pronoun is a clitic:

(91)

{[~~es~~_[3-sing-acc] zu lesen's_[3 sing acc] } { keiner }....

If such an analysis is tenable, notice the consequences it has for the application of the second step of DISL, which, as the first one, necessarily requires the phonological integrity of the constituent undergoing the process. When the narrow syntactic CP cycle is complete and the resulting string is handed over to PF, DISL ("Dislocation 2") must raise the phonological phrases corresponding to the scrambled object and the scrambled infinitive: in the case of nominal scrambling, the phonetically empty copy of the object is still visible, since suppression of its morphosyntactic features has failed, due to the absence of a terminal with identical feature characterisation in the relevant prosodic domain (92b). Nevertheless, in the case of pronominal scrambling, the unrealised copy has virtually disappeared, which makes the remnant infinitive phonologically complete again, as DISL demands (92a):

(92)

a. {[~~es~~_[3-neuter-sing-acc] zu lesen es_[3 neuter sing acc] } { keiner }...

b. { ~~das Buch~~_[neuter sing acc] zu lesen } { das Buch_[neuter sing acc] } { keiner }

There are still a few remaining issues, to which we turn now. The first is related to the question of how lexical items such as the pronoun *es*, or its clitic counterpart *'s*, enter the derivation. If, as the strong lexicalist hypothesis contends, they do it as fully inflected forms (see footnote 45), the two operations DISL encompasses would target phonologically complete constituents, and deletion and cliticisation processes of the kind defended by Ackema and Neeleman would have to be re-stated in different terms. Take, for instance, their first type of rule in (84), repeated here for convenience as (93):

(93)

{ [A F₁ F₂] [B F₁ F₃] }

Feature deletion:

{ [A F₂] [B F₁ F₃] }

Spell-out

[A F₁ F₂] → /a/

[A F₂] → /a' /

The first part of the rule, the one related to feature deletion, would be unaffected by the adoption of the strong lexicalist hypothesis; however, the insertion of the phonological form associated to the reduced feature bundle would be impossible, since phonological features are determined prior to PF. To check whether the strong lexicalist hypothesis is incompatible with the data analysed by Ackema and Neeleman is beyond the scope of the present work; however, as my own account of the German facts shows, I think that that is not necessarily the case, once processes such as phonological restructuring of phrases and prosodic words are made to precede feature deletion and cliticisation. In fact, this is the only way to explain the contrast between the nominal and pronominal scrambling cases, since, as stated elsewhere, the right bracket of the infinitival VP would intervene as a phonological boundary in both structures.

Nevertheless, the choice of the strong lexicalist hypothesis over weaker versions such as "Distributed Morphology" (footnote 43) is important as far as the first step of DISL ("Dislocation 1") is concerned. Recall that we envisaged this operation as one imposing phonological integrity in the constituent transferred to PF, due to its character of special spell-out procedure. Such an assumption is very difficult to test empirically, insofar as "Dislocation 1" is always followed by "Dislocation 2", which, along the lines of our discussion above, clearly requires phonologically complete phrases. On the other hand, neither can be dispensed with: "Dislocation 1" crucially affects chain reduction, which explains the asymmetry between fronting (*wh*-movement, topicalisation) and scrambling out of displaced infinitival clauses (sections 3.1.2.3.1 and 3.1.2.3.2); "Dislocation 2" accounts for the phonological presence of the object in a position higher than the *vP* edge (Chomsky, 2001a for Scandinavian Object Shift), as well as for the contrast between nominal and pronominal scrambling discussed in the present section.

A second problem relates to the grammatical sequences in which a subject pronoun intervenes between the scrambled object and infinitive, our example (82a), repeated here as (94):

(94)

{dass zu lesen er es} {versucht} {hat}

Recall that I have argued that prosodic phrasing of the *vP* material takes place before the strictly syntactic CP cycle reaches PF. Since in (94) the subject, in Spec, T, is inserted in the middle of an already formed phonological phrase, and must obligatorily precede the object⁴⁴, two obvious consequences arise: (i) re-phrasing must be permitted (which would also explain the presence of the complementiser in the first ϕ); (ii) linearisation constraints concerning (at least) pronoun length, quantity and quality of the onset, nucleus, and coda of the syllables that are involved force the fixed order subject > object (Wegener, 1985; Hoberg, 1997; Zifonun, 2000; Müller, 2002).⁴⁵

The last issue I would like to address is the reason why scrambling of the infinitive prevents pronominal scrambling and fronting from co-occurring, while it allows for each of the processes in isolation. Illicit co-occurrence is illustrated by (95):

(95)

- a. *Wem_i hat [t_i t_j zu geben]_k es_j keiner t_k versucht?
 who-DAT has to give it-ACC no one-NOM tried
- b. *Dem Kind_i hat [t_i t_j zu geben]_k es_j keiner t_k versucht
 the child-DAT has to give it-ACC no one-NOM tried

The analysis we proposed in 3.1.2.3.2 for the grammaticality of *wh*-movement and topicalisation out of scrambled infinitives was based on the claim that fronted

⁴⁴ That is, (i) is ill-formed in German

(i) *dass zu lesen es er versucht hat
 that to read it-ACC he-NOM tried has

⁴⁵ The fixed order that *er* and *es* exhibit in (94) is independent of the "double scrambling" structure. All German weak pronouns appear in fixed positions (nominative > accusative > dative) in the so-called Wackernagel domain, irrespective of other factors, as shown in (i)-(iii) below:

(i) *dass ihr es er gestern gegeben hat
 that her-DAT it-ACC he-NOM yesterday given has

(ii) *dass es ihr er gestern gegeben hat
 that it-ACC her-DAT he-NOM yesterday given has

(iii) dass er es ihr gegeben hat
 that he-NOM it-ACC her-DAT given has

elements are subject to chain reduction after "Dislocation 2" has applied to them, which makes them phonologically complete constituents at the relevant point. Thus, our hypothesis is that the ill-formedness of the examples in (95) does not lie in the movement the dative undergoes from the displaced infinitive to Spec, C, but rather in the suppression of features in the phonologically unrealised copy of *es*. According to our assumptions so far, (95a) and (95b) must be the product of the following operations: narrow syntactic movement of the accusative and dative objects to the *vP* edge; narrow syntactic movement of the infinitival clause to Spec, *v* (in accordance to Chomsky's (2001a) PIC in (6)); phase-bound spell-out for the *vP* domain (plus the subject and the verb, which do not undergo further movement); "Dislocation 1" for the accusative object and the infinitival clause; chain reduction and prosodic phrasing at PF. The final result before the CP cycle accesses the interface is given in (96):⁴⁶

(96)
 {wem} {~~es~~ zu geben es} {keiner} {versucht}

In the light of (96), deletion of the morphosyntactic features of the phonologically unrealised copy should be possible, since they share a prosodic domain with the restructured *es*. Therefore, (96) should be well-formed, contrary to fact.

The problem may be solved by resorting to the base generation approach we adopted for explaining what we labelled "base-generated scrambling" cases in our discussion of VP-topicalisation. Recall that we concluded there that objects of ditransitive predicates may be merged in alternative orders, DAT > ACC, or ACC > DAT, and that ACC > DAT seems to be constrained by the (in)definiteness of the accusative: only definite accusatives may precede (in)definite datives (see (40) above). The claim could be strengthened for cases such as the one in (96), where the accusative is pronominal, i.e. inherently definite, and the dative a *wh*-element, hence inherently indefinite, which would make ACC > DAT obligatory. In fact, as noticed above, pronominal accusatives always appear before nominal and even pronominal datives in German. If the fixed order ACC > DAT in the Wackernagel domain is a matter of order preservation, it will argue for a derivation in which *es* occupies the outer spec, with *wem*

⁴⁶ I disregard the complete infinitival clause and the matrix verb within VP: by chain reduction, they have lost all their phonological features, thus being unable to provoke ϕ -closure

tucked in between *es* and the subject, much in the spirit of Richards (1997, 1999).⁴⁷ Thus, (96) would be rather like (97):

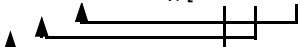
(97)

{*es wem*} {zu geben *es*} {keiner} {versucht}

As in (96), the configuration in (97) allows *es* to restructure with the preceding phrase, apparently making the suppression of the morphosyntactic features of the phonetically empty copy possible. But notice that this operation is barred by the copy of *wem*: since it is not subject to chain reduction until the end of the CP-cycle, where both the intermediate *wem* in Spec, *v* and the one in Spec, C are handed over to PF, it still preserves its phonological features. In consequence, its syntactic right bracket triggers ϕ -closure, which, in turn, keeps the two occurrences of *es* in separate prosodic domains. The result is that deletion of the offending morphosyntactic features cannot take place.

The second obstacle is the timing for evaluation of operations such as DISL. Recall that one of the tenets of the "Minimalist Program" in its latest versions is that the output of a strong phase is evaluated for convergence at the completion of the next higher one (see (6) above). If the claim is tenable not only for Narrow Syntax, but also for processes at the interfaces, (97) would not be excluded by failure in the deletion of morphosyntactic features: the intervening *wem* has lost its phonological features at the completion of the CP cycle, allowing for restructuring between *es* and the phrase containing its copy. Rather, its ill-formedness must be attributed to chain reduction affecting the copy of *wem* itself. But such an account would entail delaying prosodic phrasing until the CP cycle has reached PF, which albeit preferable, insofar as less restructuring operations are required, would come at some cost: the grammaticality of object fronting with remnant scrambled infinitives would turn out to be a mystery, since chain reduction with the *wh*-moved or topicalised element in Spec, C implies that DISL has invariably applied to an ultimately incomplete constituent. In any case, the issue is

⁴⁷ In a nutshell, Richards states that multiple movement to a single projection always exhibit a crossing path configuration, with the closest goal targeting the highest probe, and the lower goal targeting the lower probe, as schematically represented in (i):

(i) [

a matter for further research, with implications for the general design of natural languages.

3.2. Is German scrambling sensitive to phonological borders?

In Chomsky's (2001a) analysis of Scandinavian Object Shift, the role played by phonological features in Narrow Syntax is not restricted to the implementation of processes such as DISL, which, according to our conclusions in the preceding sections, also seems to be attested in German scrambling. Chomsky, as we know, also resorts to them when accounting for "Holmberg's Generalisation", which roughly states that objects in situ may receive the semantic interpretation normally associated to shifted ones, if they are linearly preceded by the verb, another object, a preposition, or a particle (section 2). Chomsky reformulates "Holmberg's Generalisation" in terms of the interaction between a kind of "object shift parameter"(98a) and optional assignment of an [EPP] feature on *v* (98b):

(98)

- a. "Object Shift Parameter" (Chomsky, 2001a: 34)
At the phonological border of *vP*, *XP* is assigned *Int'*, where
 - (i) "at the phonological border" means not asymmetrically c-commanded (from the left)⁴⁸ by a phonologically visible category (except adjuncts), and
 - (ii) *Int'* is the semantic interpretation related to new information, focus, indefiniteness, etc.
- b. Optional [EPP] feature assignment (Chomsky, 2001a: 35)
 - (i) *v* is assigned an [EPP] feature only if it has an effect on the outcome
 - (ii) The EPP position of *v* is assigned *Int*, where *Int* is the semantic interpretation associated to old information, topic, definiteness, etc.

It is commonly claimed in the literature that "Holmberg's Generalisation" strongly indicates that Scandinavian Object Shift and West Germanic scrambling are two unrelated phenomena. The basic piece of evidence is based on the connection between

⁴⁸ See footnote 7.

verb movement and reordering: shifted objects only occur in structures where the verb has left its base position, whereas scrambling is possible in all kinds of sentences, irrespective of the location of the verb. But this argument is untenable if "Holmberg's Generalisation" is taken to hold in its formulation in Holmberg (1999), since elements other than the verb would also prevent Scandinavian objects from shifting, and the only property shared by those elements and the verb is that they are endowed with phonological features (Holmberg, 1999; Chomsky, 2001a). Notice the consequences of this for the connection between verb position and reordering in the case of West Germanic scrambling: if, *pace* Kayne's (1994) "Linear Correspondence Axiom", German (and Dutch) are head-final in the VP and *v*P, the phonological features of the verb will never bar scrambling of an internal argument.

The aim of this section is to present some evidence for the existence of a constraint on German scrambling that resembles the requirement that shifted objects move from the "phonological border". In section 3.2.1, I will try to show that phonological borders are responsible for the pragmatically well-formedness of given, unscrambled accusatives of ditransitive predicates, a problem for otherwise valuable analyses of scrambling, such as Neeleman and Reinhart (1998). I will also contend that resorting to phonological borders provides an alternative account for the data about scrambling in non-verbal projections in Haider and Rosengren's (1998; 2003) proposal (section 3.2.2). Finally, a third controversial piece of evidence will be presented in 3.2.3, where the case of scrambling with ditransitives predicates in which accusatives usually precede datives or genitives will be dealt with.

3.2.1. The "unmarkedness" of the "unmarked" word order

The "unmarked word order" is traditionally taken to correspond to sequences exhibiting wide focus, insofar as they could be answers to a *what happened* question:⁴⁹

- (99) Was ist passiert?
 what happened?
- a. dass Peter gestern das **BUCH** gelesen hat
 that Peter-NOM yesterday the book-ACC read has

⁴⁹ Boldface caps mark nuclear stress.

- a'. #dass Peter das Buch gestern ge**LE**sen hat
 that Peter-NOM the book-ACC yesterday read has
- b. dass Peter gestern dem Kind das **BUCH** gegeben hat
 that Peter-NOM yesterday the child-DAT the book-ACC given has
- b'. #dass Peter das Buch gestern dem **KIND** gegeben hat
 that Peter-NOM the book-ACC yesterday the child-DAT given has

(99a)-(99b) illustrate the "unmarked word order" for a German monotransitive and a ditransitive predicate respectively, with the accusative object *das Buch* in its VP-internal position, following the *vP*/*VP*-adjoined adverbial (99a), or both the adverbial and the dative (99b), and being assigned nuclear stress. On the other hand, (99a') and (99b') are marked: the accusative is interpreted as non-focused, and nuclear stress falls on another constituent.

It has been frequently claimed in the literature that the "marked" / "unmarked" distinction is not as clear-cut as presented in (99) as far as the interpretation of the (un)scrambled object is concerned. Thus, while reordered constituents are obligatorily presuppositional, D-linked, those that stay VP-internal are not necessarily new information. In other words, scrambling entails defocusing, but defocusing does not always entail scrambling. According to Neeleman and Reinhart's (1998) proposal for Dutch, the double reading of unscrambled elements is not tenable for monotransitive predicates. I take their conclusions to be right also for German, as shown by the pragmatic ill-formedness of (100):

- (100) Was ist mit das Buch geschehen?
 what happened with the book?

#dass Peter gestern das Buch ge**LE**sen hat
 that Peter-NOM yesterday the book-ACC read has

In other words, destressed, discourse-given constituents of monotransitive predicates cannot appear within the VP. However, the double reading is not discarded in the case of ditransitive predicates, since examples such as (101) below are both grammatically and pragmatically well-formed in German:

(101) Was ist mit dem Buch geschehen?
 what happened with the book?

dass Peter gestern dem **KIND** das Buch gegeben hat
 that Peter-NOM yesterday the child-DAT the book-ACC given has

(101) clearly constitutes a serious obstacle for any theory that establishes a correlation between scrambling and semantic / pragmatic meaning, either in the form of a triggering feature (Meinunger, 1995), or by means of economy considerations (Neeleman and Reinhart, 1998). Nevertheless, (101) is unproblematic for an account where the presence of phonological features in Narrow Syntax has a bearing on interpretation, and interpretation is derived, in turn, from strictly syntactic operations: *das Buch* is crucially c-commanded by a phonologically visible category (*dem Kind*), thus not at Chomsky's (2001a) "phonological border". If German obeys a rule analogous to Scandinavian "Object Shift" (see (98) above), *das Buch* may be interpreted as discourse-given in its VP-internal position, which prevents its displacement to the vP edge. But this is an option barred in (100), where the only c-commanding phonologically visible element is the adjunct *gestern*. In consequence, the object must be interpreted as new information, focus.

Our account of (101) raises the question why sentences such as (102) below are possible at all in German:

(102) Was ist mit dem Buch geschehen?
 what happened with the book?

dass Peter das Buch gestern dem **KIND** gegeben hat
 that Peter-NOM the book-ACC yesterday the child-DAT given has

My tentative suggestion here is that they are the product of the "base-generated scrambling" the defenders of the base generation approach argue for (section 3.1.1.3). In other words, they are the result of merging the accusative after the dative, which leaves the former at the phonological border, exactly as in (100).⁵⁰

⁵⁰ In this connection, notice that the status of (i) below is controversial: for some researchers (Höhle, 1982; Haider, 1992), it allows maximal focus, with the accusative interpreted as non-given. For others (Meinunger, 1995), the accusative is obligatorily D-linked.

(i) dass Peter das Buch dem Kind gegeben hat
 that Peter-NOM the book-ACC the child-DAT given has

3.2.2. Scrambling in non-verbal projections

As shown elsewhere, German scrambling is attested with lexical projections other than vP/VPs. The defenders of the base generation approach (Fanselow, 2001, to appear (a)), and those arguing for an analysis in terms of untriggered movement (Haider and Rosengren, 1998, 2003) have capitalised on the existence of such structures as a proof for two basic tenets: (i) the nature of reordering processes in German is different from that of Scandinavian Object Shift, insofar as the former apply to all kind of arguments, and the latter is restricted to verbal arguments; and (ii) the scrambled constituent occupies a position within the lexical projection of the head selecting for it, and not the specifier of a functional phrase.

But a closer inspection of all instances of scrambling within non-verbal projections reveals that the full set of data is not entirely consistent with (i) and (ii). With respect to (i), it has been frequently observed (Müller, 1995; Haider and Rosengren, 1998, 2003) that it is not true that all kinds of arguments may scramble in German: scrambling is barred for complements of prepositions (103), and also for those of nouns (104), while complements of postpositions (105) and adjectives (106) may undergo it freely:

(103)

- a. In diesem Abschnitt **über Metaphern**
in this chapter about metaphors
- b. *In **über Metaphern** diesem Abschnitt
- c. *In diesem **über Metaphern** Abschnitt

(104)

- a. die Versendung von Briefen **an Verwandte**
the forwarding of letters to relatives
- b. *die Versendung **an Verwandte** von Briefen
- c. *die **an Verwandte** Versendung von Briefen

(105)

- a. Peter ist gestern **den Fluss** entlang gefahren
Peter has yesterday the river along driven
- b. Peter ist **den Fluss** gestern entlang gefahren

(106)

- a. ein jedem **an Kraft** überlegener Sportler
a everyone-DAT in power superior athlete
- b. ein **an Kraft** jedem überlegener Sportler

The data in (103)-(106) constitute a serious drawback for the analyses adopting the base-generation approach, which do not address the question why theoretically unconstrained merging of arguments is, in fact, constrained by the category of the selecting head. Nevertheless, the contrast is explicitly dealt with in theories such as Haider and Rosengren's (1998, 2003), which share with the base generation view the idea that scrambled positions are positions within a lexical projection. Haider and Rosengren link scrambling to head-finalness, which nicely explains why reordering is attested within APs and postpositional phrases (YP-X in German), and not within DPs or PPs (X-YP).

But, as noticed in 3.1.1.2, Haider and Rosengren's proposal does not fare well with examples like (28) above, repeated here as (97):

(97)

- a. ein [jedem **an Kraft** überlegener] Sportler
a everyone-DAT in power superior athlete
- b. ein [**an Kraft** jedem überlegener] Sportler
a in power everyone-DAT superior athlete
- c. dass er **allen** gestern überlegener Sportler war
that he all-DAT yesterday superior athlete was
- d. dass er **allen** gestern überlegener zu sein versucht hat
that he all-DAT yesterday superior to be tried has
- e. *dass er einer **allen** gestern überlegener Sportler war
that he a all-DAT yesterday superior athlete was

- f. *dass er einer **allen** gestern überlegener Sportler zu sein
 that he a all-DAT yesterday superior athlete to be
 versucht hat
 tried has

Although they are not very explicit about it, recall that Haider and Rosengren (2003) argue for free attachment of adverbs in the German *Mittelfeld*. Suppose that the grammaticality of (107c,d) is derived in this way: the adverb is inserted within the AP, before re-merging of the second internal argument of the adjectival phrase within the extended "Minimal Argument Projection Complex" (MAC). Nevertheless, this position does not seem to be available in the ill-formed (97c,d). In the light of facts like this, and the evidence drawn from *vP/VP* topicalisation, in 3.1.1.3 we concluded that the contrasts in (97) indicate that there is a single position for adverbs such as *gestern* in German (a position higher than AP in (97c,d) and DP in (97e,f)), as well as two different types of scrambling: the first type, pictured in (97b), simply reduces to alternative base-generated orderings, and is strictly confined to the limits of the projection headed by the selecting head in its base position; the second type, that in (97c,d), resembles Scandinavian Object Shift in that it involves movement to a position beyond the phrasal boundaries of the lexical projection where arguments are first merged, a position invariably higher than that of *gestern*. Notice that this allows us to dispense with the unconstrained model of adverb placement Haider and Rosengren defend.

My claim here is that this second type of reordering is sensitive to Chomsky's notion of phonological border in the same way as Scandinavian Object Shift is. In other words, since there is no phonologically visible category c-commanding from the left either in German postpositional or adjectival phrases, arguments of those heads may move across the boundaries of the projection where they are base generated. This is exemplified for APs by (108a), and for postpositional phrases by (108b):

(108)

- a. Er war wahrscheinlich **diesen Männern** gestern an Sport überlegener
 he was probably these men-DAT yesterday in sport superior
- b. Peter ist **den Fluss** gestern entlang gefahren
 Peter has the river-ACC yesterday along driven

That the structures in (108) are the product of the inability of the scrambled object to receive the semantic interpretation Chomsky calls Int (that is, specific, presuppositional, etc) at the phonological border is demonstrated by their deviance with unspecific, existential displaced objects (my informants' judgement):

(109)

- a. *Er war wahrscheinlich **jemandem / wem** gestern an Sport
 he was probably someone-DAT yesterday in sport
 überlegener
 superior
- b. *Peter ist **einen Fluss** gestern entlang gefahren
 Peter has a river yesterday along driven
 "Peter drove along a (unspecific) river yesterday"

It is true that the facts in (109) could be also explained by resorting to free attachment of the adverbs, and to the scope relations between them and the scrambled constituent, in the spirit of Haider and Rosengren (1998, 2003) or Fanselow (2001, to appear (a)). The problems such an account must face in the case of APs have been discussed in 3.1.1.2. The main obstacle it finds in the case of scrambling of arguments of postpositions is the grammaticality of (108b), where the event-related adverbial *gestern* would appear embedded within the postpositional phrase, which would theoretically prevent it from having *gefahren* in its domain. One could think of solutions such as overt incorporation of the postposition into V, which, nevertheless, seem to be excluded by structures such as (110):

(110)

Wahrscheinlich fuhr Peter den Fluss gestern entlang
 Probably drove Peter the river yesterday along

If the analysis above is tenable, the reason why reordering out of head-initial projections is not possible in German is straightforward: complements of nouns or prepositions are never at the phonological border. However, at least for the case of DPs, this still does not rule out "base-generated scrambling", that is, it does not explain why they cannot appear in alternative positions within the projection of their selecting head, as shown in (104a,b) above, repeated here as (111):

(111)

- a. die Versendung von Briefen **an Verwandte**
the forwarding of letters to relatives
- b. *die Versendung **an Verwandte** von Briefen

In the absence of an independent motivation for it, the ungrammaticality of (111b) still supports a correlation between head-finalness and reordering of the kind defended by Haider and Rosengren, which is independent of the interplay between notions such as phonological border and semantic interpretation.

3.2.3. Scrambling of special, *verbnahe* arguments

Frey (2000) notices that there is an apparently syntactic restriction on reordering in German, namely the impossibility for a certain class of arguments to undergo scrambling. The class is composed by what are traditionally called *verbnahe* elements: objects inflected for genitive case, or datives subcategorised for by verbs like *aussetzen* ("expose"), *unterziehen* ("submit"), *zuführen* ("to bring to"), etc. Their presence in the *Mittelfeld* seems to determine a high degree of ill-formedness, as demonstrated by the examples in (112):

(112)

- a. weil Hans bedauerlicherweise einen Unschuldigen **dieses**
because Hans unfortunately an innocent-ACC this

Anschlagen bezichtigte
conspiracy-GEN accused
- a'. *weil Hans bedauerlicherweise **dieses Anschlagen** einen Unschuldigen
bezichtigte
- b. weil Otto leider die Kandidaten **dieser Prüfung**
because Otto unfortunately the candidates-ACC this test-DAT

ausgesetzt hat
subjected has
- b'. *weil Otto leider **dieser Prüfung** die Kandidaten ausgesetzt hat

However, Fanselow (to appear (a)) observes that the structures at stake become fully grammatical when both arguments (the *verbnahe* genitive or dative, and the accusative that precedes it) undergo scrambling and keep the relative ordering between them. This is illustrated in (113) for *verbnahe* datives:

(113)

- a. dass er glücklicherweise die Kandidaten **der schwersten Prüfung**
 that he fortunately the candidates-ACC the most difficult test-DAT

immer nur am Vormittag unterzog
 always only before noon subjected

- b. dass glücklicherweise die Kandidaten **einer schweren Prüfung**
 that fortunately the candidates-ACC a difficult test-DAT

am Vormittag nur der Fritz unterziehen wollte
 before noon only Fritz-NOM to subject wanted

In (113a) the accusative *die Kandidaten* precedes the dative *der schwersten Prüfung*, and both appear past the adverbial *immer*. In (113b), they have scrambled across the intervening focused subject. These two examples contrast with the one in (112b), where reordering of the dative past the accusative is forbidden. Fanselow attributes the difference between (113a,b) and (112b) to a serialisation constraint forcing inanimate objects to follow animate ones. The conclusion is that *verbnahe* elements behave differently from other, non special, arguments with regard to that animacy requirement, but not with regard to the alternative base generation positions they may occupy.

I would like to suggest that the data in (112) and (113) are amenable to an analysis in terms of Chomsky's (2001a) phonological border. The assumption is that, as opposed to the accusatives found with regular ditransitive verbs, *verbnahe* genitives and datives have a single base generation position in German, namely as sisters of the lexical V. This is straightforward in the case of *verbnahe* genitives, since they constitute instances of lexical case, and lexical case is traditionally taken to be realised in the lowest available position (Chomsky, 2000; Fanselow, 2000, among others). It needs some refinement for *verbnahe* datives, an issue to which we turn now.

Meinunger (1995) claims that *verbnahe* datives are, in fact, the remnant of a PP whose head has been incorporated into the lexical verb. His hypothesis is supported by

semantic and morphological considerations: semantically, the dative of ACC-DAT verbs does not imply the relation of possession found in the dative of regular DAT-ACC structures, but rather location; morphologically, all the verbs exhibiting this complementation pattern can be decomposed into a verbal stem and a local preposition: *aussetzen* ("expose sb to sth"), *ausliefern* ("extradite"), *unterziehen* ("submit"), *unterwerfen* ("subject to"), *zuführen* ("bring to"), etc. The process of incorporation is made possible by the strict adjacency between the two elements involved, i.e. the PP and the verb. From this perspective, "local" datives behave as lexical genitives do: they are merged in a fixed position, sister to the lexical verb .

What is crucial for our account of the ungrammaticality of (112a',b') above in terms of phonological borders is that the fixed merge position is the lowest one, since this entails that *verbnähe* elements will be c-commanded by the phonologically visible accusative, in other words, that they will not be at the phonological border, as (114) illustrates:

(114)

$_{VP}$ [die Kandidaten $_V$ [dieser Prüfung ausgesetzt]]

If German, as we contend, is subject to --the equivalent of-- Chomsky's "Object Shift Parameter", the dative in (114) may be interpreted either as discourse-linked or as new information, since both meanings are available for an element c-commanded by a phonologically visible VP-internal constituent. Notice, however, that the position occupied by the dative may become a phonological border if the accusative is forced to move beyond the limits of the VP. Such scenario is the one reflected in (113a,b) above, where the D-linked accusative, which is not c-commanded by any phonologically visible category, is displaced past the adverbial in order to be interpreted as D-linked:

(115)

$_{VP}$ [die Kandidaten $_i$ $_{VP}$ [immer / am Vormittag $_{VP}$ [t_{subj} $_V$ [t_i $_{VP}$ [der schwersten Prüfung/
einer schweren Prüfung t_{vb}] unterzog]]]]

The displacement of the accusative leaves the *verbnähe* elements at the phonological border, where only a non discourse-linked interpretation is available. As a consequence, the definite *der schwersten Prüfung* and the indefinite *einer schweren*

Prüfung may remain there only in the case that they constitute new information-focus. Otherwise, they must leave the domain of existential closure. This is exactly the situation in Fanselow's examples: the definite is interpreted as discourse given, while the indefinite is clearly specific. Note that both examples obey the ordering restrictions exhibited by Scandinavian Object Shift (and also Dutch scrambling), insofar as the argument merged in the higher position (accusative) precedes that in the lower one (the dative, or genitive), in accordance to Richard's (1997, 1999) crossing paths for multiple attraction by a single attractor (see footnote 47) (Icelandic examples from Collins and Thráinsson, 1993; Dutch examples from Thráinsson, 2001):

(116) Icelandic

- a. Ég lána ekki Maríu bækurnar
I lend not Mary-DAT the books-ACC
- b. Ég lána Maríu bækurnar ekki
I lend Mary-DAT the books-ACC not
- c. *Ég lána bækurnar Maríu ekki
I lend the books-ACC Mary-DAT not

(117) Dutch

- a. dat de vrouw waarschijnlijk de mannen de film toont
that the woman-NOM probably the men-DAT the film-ACC shows
- b. dat de vrouw de mannen de film waarschijnlijk toont
that the woman-NOM the men-DAT the film-ACC probably shows
- c. *dat de vrouw de film de mannen waarschijnlijk toont
that the woman-NOM the film-ACC the men-DAT probably shows

The relevance of the data in (112) and (113) for the claim that German scrambling is sensitive to phonological borders may be weakened by structures like (118) below, where the low genitive (118a) and dative (118b) seem to have moved across the accusative to a position preceding a sentence adverb (examples from Frey, 2000):

(118)

- a. weil Hans **dieses Anschlages** bedauerlicherweise
because Hans-NOM this crime-GEN unfortunately

einen Unschuldigen bezichtigte
an innocent-ACC accused
- b. weil Otto **dieser Prüfung** leider die Kandidaten
because Otto-NOM this test-DAT unfortunately the candidates-ACC

ausgesetzt hat
subjected has

Frey (2000) and Pili (2003) contend that the operation responsible for the sentences in (118) is different from regular scrambling, in that the former targets an operator position within TP, and the latter takes place in lower projections. Frey supports this claim by comparing the strictly syntactic properties of the two processes, and concludes that, although both share iterability, transparency for extraction,⁵¹ a non-barrier status, and clause-boundedness, they differ in three basic aspects: trigger, topicalisation, and the (im)possibility of affecting the *verbnahe* elements dealt with above.

On the basis of examples such as (119), Frey argues that scrambling is an untriggered process, insofar as the discourse-linked argument may remain VP-internal:

(119)

Hans hat eine Menge Photos von Italien. Heute abend will er
Hans has a bunch (of) photos of Italy . Today afternoon wants he

nun wieder netten Damen **seine Fotos** zeigen
now again nice ladies-DAT his photos-ACC to show

But notice that given *seine Fotos* is not at the phonological border, since it is c-commanded by the phonologically visible *netten Damen*, which receives an existential reading. If German obeys something similar to the "Object Shift Parameter", the presuppositional reading of the low argument in (119) follows straightforwardly.

The second piece of evidence Frey adduces in order to distinguish movement to a topic phrase from scrambling is based on the contrast in (120):

⁵¹ Frey confines transparency for extraction to fronting cases, thus avoiding the complex facts discussed above.

(120)

- a. ***[Den Otto** jedenfalls treffen] werde ich an Ostern
Otto-ACC in any case meet will I in the East
- b. **[Den Sternenhimmel** Kindern erläutert] hat er schon oft
the starry sky-ACC children-DAT explained has he already often

According to Frey, (120a) is ruled out because the fronted VP contains the topic projection to which *den Otto* has moved, as signalled by the presence of the sentence adverb *jedenfalls*. However, the projection targeted by scrambled constituents is not barred in Spec, C: *den Sternenhimmel* has undergone reordering past the dative *Kindern* and still appears in the topicalised phrase. The conclusion is that the processes at stake are linked to different loci.

But, following Frey's argumentation, examples such as the ones in (121), based on Haider and Rosengren (1998), clearly indicate that a third position is needed:

(121)

- a. Er hat wahrscheinlich **sein Argument** immer allen erklärt
he has probably his argument-ACC always all-DAT explained
- b. ***[Sein Argument** immer allen erklärt] hat er wahrscheinlich
his argument-ACC always all-DAT explained has he probably

What (121) shows is that the accusative *sein Argument* is not in Frey's topic phrase, since it does not precede the sentence adverb *wahrscheinlich*. But it is not in its base generation position either, since it appears before the frequency adverb *immer* and the dative *allen*. On Frey's assumption that (121) is just an instance of ordinary scrambling, there is no reason for the ungrammaticality of (121b), except if one hypothesises that, along with regular scrambling and topicalisation, there exists a third type of reordering process in German. Such a process, taking place in a projection below Frey's topic phrase (121a) but above the site of regular scrambling (121b), should be empirically justified on the basis of evidence different from that VP fronting itself.

Frey's third proof for his TP-internal topic projection is based on the reordering options with *verbnähe* elements on which this section has focused. Such a proof lends support to Frey's claim that topicalisation in TP must be distinguished from cases of regular scrambling. But I do not think that it undermines our hypothesis that German

scrambling is sensitive to phonological borders, given that a language may signal discourse givenness in different ways. Recall, in this respect, that topics in German can also occur in Spec, CP. The same is true of other languages: for instance, Pili (2003) proposes for Italian the existence of three different projections hosting topics.

We have argued that the data in (119)-(121) supports the idea that both TP-internal topicalisation and regular scrambling are semantically / pragmatically triggered, and that both are incompatible with VP-fronting. It must be observed, however, that this does not entail that they cannot be different processes: (i) they share a common semantic/ pragmatic trigger because both correlate with discourse-givenness; (ii) they are incompatible with VP-fronting either because they target a projection higher than *vP* (TP-internal topicalisation, on Frey's assumptions), or because they are followed by DISL (regular scrambling, in our analysis). I leave it open whether the differences between them simply reduce to the structures with *verbnahme* elements or can be extended to differences in the characterisation of the kind of topic they involve.

4. Conclusions, problems, and pending issues

Most studies devoted to Scandinavian Object Shift share with those that focus on West Germanic scrambling the view that they constitute different phenomena, and thus must be treated independently. Exceptions to this are the proposals in Déprez (1989, 1994) and Diesing (1997), which, on the basis of some similarities between them, group the two constructions under the label of "Object Movement". Such similarities are strictly syntactic and / or semantic: both object shift and scrambling displace an element across a clause-medial adverb or negation, which correlates with a change of that elements's interpretation. The proposal presented in this work shares the view in such analyses, and maintains that there exists a connection between the two processes. However, the emphasis is not on the structural position of the shifted / scrambled constituents or the meaning they receive, but rather on other syntactic properties that seem to derive from the interaction between Narrow Syntax and the PF interface. Since those syntactic properties are already put forward by Chomsky (2001a) in his account of Scandinavian Object Shift, my contribution reduces to showing that they may be extended to German scrambling. The basic claim is, therefore, that both types of reordering are the result of strictly syntactic "Move" conditioned by (i) the "Object Shift / Scrambling Parameter", and (ii) the early, non phase-bound procedure DISL.

The empirical evidence provided here came from data on which either movement or base-generation analyses have traditionally capitalise: VP-topicalisation (base-generation), and the "Freezing/ Anti-Freezing Paradox" with remnant coherent infinitives (movement), plus certain apparent constraints on scrambling in ditransitive VPs and other non-verbal projections. My aim has been to offer a unified treatment for all of them. This may give rise to some difficulties, as shown by the discussion of the conflicting sets of data in Frey (2000) for the case of *verbnahe* genitives and datives. This section deals with the possible loose ends in my analysis, as well as with some other, more general questions.

Regarding VP-topicalisation, recall that the basic contrast was the one exhibited by examples such as (122) below, where indefinite subjects of transitive predicates (122a), and co-arguments scrambled across other co-arguments (122b) may be fronted along with the lexical verb, while arguments scrambled past time, and frequency adverbials are completely excluded (122c):

(122)

- a. **[Mädchen** geküsst] haben ihn noch nie
 girls-NOM kissed have him-ACC not yet
- b. **[Den Sternenhimmel** Kindern erläutert] hat er schon oft
 the starry sky-ACC children-DAT explained has he already often
- c. ***[Diese Zigarren** immer geraucht] hat damals keiner
 these cigars-ACC always smoked has then nobody

We attributed this contrast to two main factors: (i) the existence of alternative base generated orders, along with scrambling of the "object shift" type in German; and (ii) the requirement that scrambled constituents undergo DISL to a higher phase. In this light, (i) is responsible for (122b), and (ii) rules out (122c). On the other hand, (122c) was used as a proof against the hypothesis in Haider and Rosengren (1998, 2003) and Fanselow (2001, to appear (a)) that all scrambling strings may be reduced to base-generation: apparently, there is no reason why a *vP* / *VP* (i.e. an extended MAC, in Haider and Rosengren's terms) containing a freely attached adverbial cannot appear in Spec, C. However, the facts in (122) are amenable to a different type of analysis. Suppose that, on the traditional assumption that no projection higher than *vP* may be fronted, we contend that the ill-formedness of (122c) is due to movement to a functional phrase located between TP and *vP*, preserving direct insertion for (122b). This would be

descriptively adequate, since it conforms to the three examples at stake. But it would have important consequences for our overall approach: on the one hand, dispensing with DISL for the VP-topicalisation cases would force us to eliminate it also in our account of the "Freezing / Anti-Freezing Paradox" with remnant coherent infinitives, whose behaviour seems to be fully consistent with an explanation in terms of a PF procedure; on the other, such a functional projection would necessarily correlate with the presence of a matching [+topic] feature on the displaced constituent, given the semantic / pragmatic effects of the operation. The general result is very similar to the proposal in Meinunger (1995), which does not fare well with those instances in which topical accusatives following non-topical datives are exempted from moving to that purported functional phrase.

The empirical coverage of the "Freezing / Anti-Freezing Paradox" also deserves some comments. The reader has probably noticed that our conclusions in the preceding chapter are exclusively drawn from the controversial islandhood of coherent infinitives, and that we have not dealt with the issue of extraction out of other types of scrambled structures. Those types are mainly four, as summarised under (123) (examples in (i) from Müller, 1998; examples in (ii) from Lenerz, 2001; examples in (iii) from Bayer & Kornfilt, 1994):

(123)

(i) NP-PP splits

- a. [Über wen]_i hat der Fritz letztes Jahr [ein Buch t_i] geschrieben?
about whom has Fritz last year a book written
- b. *[Über wen]_i hat der Fritz [ein Buch t_i]_j letztes Jahr t_j geschrieben?

(ii) Split topicalisations

- a. [Volvos]_i haben mich ja [viele t_i] überholt
Volvos have me PART many overtaken
- b. *[Volvos]_i haben mich [viele t_i]_j ja t_j überholt

(iii) *Was-für* construction

- a. [Was]_i hat Heinrich dem Mann [t_i für ein Buch] empfohlen?
what has Heinrich the man-DAT for a book recommended
- b. *[Was]_i hat Heinrich [t_i für ein Buch]_j dem Mann t_j empfohlen?

A hypothetical extension of our findings about the behaviour of coherent infinitives to the rest of the structures above appears to run against the ungrammaticality of the examples in (b), insofar as movement of the fronted constituent entails the deletion of the phonological features of the lower copy of the scrambled constituent at the end of the CP cycle. In other words, in all the cases DISL applies to a phonologically complete constituent. But our analysis is, in fact, compatible with (123), as suggested by the existence of "Anti-Freezing" for (i) and (ii), and the reasons Meurers and De Kuthy (2001) and De Kuthy (2002), and Fanselow and Ćavar (to appear) give for it. Their basic conclusion is that "Freezing" is not due to syntactic constraints, but rather to purely pragmatic ones: splitting is permitted only if the scrambled and fronted constituents are characterised differently with respect to the topic / comment distinction. The crucial point here is that, according to our proposal, fronting out of a scrambled constituent must be licit, as it is, pragmatic factors aside. In this respect, an obvious question arises: if splitting is disfavoured in those instances in which the displaced elements perform the same pragmatic function, why is it that "double scrambling" is possible at all? In my opinion, the answer is related to the defective nature of coherent infinitives, and the requirement that discourse-linked constituents leave the domain of existential closure. If, as Wurmbrand (2001a) argues, coherent infinitives are VPs, their pronominal, inherently D-linked arguments must obligatorily move to the matrix vP edge. Notice that subsequent movement of an also D-linked infinitival clause to that position cannot fulfill that requirement: the pronoun would be still within the embedded VP. This could naturally be extended to the illicit "double scrambling" cases, if they did not violate the constraint on phonological integrity imposed by DISL.

There is only one case remaining, namely the *was-für* split construction. This case exhibits a good deal of complexity, since judgements of apparently similar examples differ greatly. Recall that Diesing (1992) used contrasts such as that in (123 iii) as a proof for the island status of scrambled constituents. But Fanselow (2001) refutes Diesing's claim on the basis of structures such as (124):

(124)

Was _i	hätte	denn	[t _i	für Aufsätze]	selbst	Hubert	nicht	rezensieren
what	would have	PART		for articles	even	Hubert	not	review

wollen?
wanted

Observe that, paralleling what happened with NP-PP splits and split topicalisation, it is the ungrammaticality of (iii,b) in (123) and not the grammaticality of (124) that may constitute an obstacle to our account of the "Freezing / Anti-Freezing Paradox" with scrambled infinitivals: *wh*-movement should always be possible. Therefore, we will follow Wiltschko (1997) in assuming that the source of the ill-formedness of (iii,b) has nothing to do with extraction of *was*, and is rather a consequence of the non D-linked interpretation *was für (ein) N* preferably receives. If, as she argues, *wh*-words can be subsumed under the class of weak quantifiers, they must be subject to Diesing's (1992) "Mapping Hypothesis", which requires them to remain vP/VP-internal. This is illustrated by the multiple questions in (125) (from Wiltschko, 1997, her judgements):

(125)

- a. Wer hat welches Buch denn schon oft empfohlen?
 who-NOM has which book-ACC PART already often recommended
- b. *?Wer hat was für Opern immer geschätzt?
 who-NOM has what-ACC for operas always appreciated

Wiltschko contends that the only difference between (125a) and (125b) lies in the (non) D-linked nature of the *wh*-constituent, which forces it to scramble in (125a), and to stay in its base generation position in (125b). Although she does not explicitly address the grammatical extraction in (124), she notes that the *was-für* construction seems to involve dialectal (and possibly idiolectal) variation, which allows some speakers to interpret it as D-linked. Those speakers tolerate the presence of an overt partitive phrase following *was-für*, an option which is barred in the other dialectal / idiolectal variety:

(126)

- %*?Was für einen dieser Filme hast du schon gesehen?
 what-ACC for a these movies-GEN have you already seen

Finally, notice that to check whether Wiltschko's suggestion is tenable for all the possible instances of "Freezing / Anti-Freezing" with *was-für* splits is relevant for the trigger for scrambling itself, and not for the compatibility between scrambling (however it is driven) and movement to Spec, C. Since the conclusions we drew from the analysis

of coherent infinitivals are restricted to the latter point, the consequence is that the behaviour of the *was-für* construction does not detract from its validity.

As stated elsewhere, Chomsky (2001a) envisages DISL mainly as a procedure that allows Scandinavian object shift structures to fulfill basic minimalist principles such as the "Minimal Link Condition". However, he suggests that it may also be also empirically supported by two observations in Holmberg (1999). The first, already mentioned above, is that shifted constituents precede auxiliaries, which entails that they must leave the νP edge. The second, originally due to Holmberg and Platzack (1995), is that the pre-auxiliary position cannot be an A-position, as demonstrated by the absence of binding between the shifted object and the c-commanded anaphor in the Icelandic examples in (127) and the Swedish examples in (128) (from Holmberg and Platzack, 1995):

(127) Icelandic

- a. Ég taldi, þeim_i / *sér_i til undrunar, Ólaf og Marteín_i
 I believed them-DAT/self-DAT to surprise Olaf and Martin-ACC
 vera jafngóða
 be equally-good
 "I believed, to their surprise, Olaf and Martin to be equally good"
- b. Ég taldi Ólaf og Marteín_i, þeim_i / *sér_i til undrunar, t_i
 I believed Olaf and Martin-ACC them-DAT/self-DAT to surprise
 vera jafngóða
 be equally-good
 "I believed Olaf and Martin, to their surprise, to be equally good"

(128) Swedish

- a. Jag ansåg till deras_i / *sin_i besvikelse Per och Martín_i
 I believed to their / self's disappointment Per and Martin-ACC
 vara lika bra
 be equally good
 "I believed, to their disappointment, Per and Martin to be equally good"
- b. Jag ansåg dem_i till deras_i / *sin_i besvikelse t_i lika bra
 I believed them to their / self's disappointment equally good
 "I believed them, to their disappointment, to be equally good"

If, as standardly assumed (Chomsky and Lasnik, 1993), binding relations are relevant only at LF, it is expected that PF operations such as DISL have no bearing on

them. In other words, the position occupied by the shifted objects in (127) and (128) is merely a PF position, invisible to LF, which computes Principle A according to the input provided by Narrow Syntax. Since, in that input, the potential binder is structurally lower than the reflexive in the adverbial phrase, the resulting structures are ill-formed.

Similar arguments seem to be valid for German. On the basis of (129) and (130) below, Grewendorf and Sabel (1999) contend that scrambled categories cannot bind anaphors in that language either (examples from Grewendorf and Sabel, 1999):

(129)

- a. *weil die Lehrer von sich_i zweifellos den Studenten
because the teachers-NOM of himself undoubtedly the student-ACC

in guter Erinnerung behalten haben
in good memory kept have
- b. *weil den Studenten_i die Lehrer von sich_i zweifellos t_i
because the student-ACC the teachers-NOM of himself undoubtedly

in guter Erinnerung behalten haben
in good memory kept have
- c. weil der Student_i die Lehrer von sich_i zweifellos
because the student-NOM the teachers-NOM of himself undoubtedly

in guter Erinnerung behalten hat
in good memory kept has

(130)

- a. *weil der Vater von sich_i dem Jungen_i ein Geschenk
because the father-NOM of himself the boy-DAT a present-ACC

zu machen versucht hat
to make tried has
- b. *weil dem Jungen_i der Vater von sich_i ein Geschenk
because the boy-DAT the father-NOM of himself a present-ACC

zu machen versucht hat
to make tried has
- c. weil der Junge_i dem Vater von sich_i ein Geschenk
because the boy-NOM the father-DAT of himself a present-ACC

zu machen versucht hat
to make tried has

Unlike shifted objects in Scandinavian, German scrambled constituents may precede the subject, either in their own clause (129b), or in a matrix higher one (130b) in the case of coherent constructions. However, this does not repair the ungrammaticality observed in both (129b) and (130b), where the reflexive contained in the nominative DP appears unbound, in clear violation of Principle A. In other words, (129b) and (130b) are as ill-formed as (129a) and (130a), which seems to suggest that scrambling does not feed binding. Grewendorf and Sabel (1999) take the facts above to be evidence for the A-bar nature of scrambling, given the contrast with (129c) and (130c), where binding is possible from an A-position. But an account of (129)-(130) as the product of Chomsky's DISL is, in principle, superior, insofar as it dispenses with the problems that the A-bar approach faces. Such problems basically derive from the asymmetry between scrambling (and object shift) and well-known instances of A-bar movement (fronting to Spec, C) with respect to properties like clause-boundedness, or phenomena like parasitic gaps.⁵²

Resorting to DISL appears at first sight more problematic when dealing with contrasts like those in (131), traditionally adduced as evidence for the claim that scrambling is A-movement:

(131)

- a. *Gestern habe ich einander die Gäste vorgestellt
yesterday have I each other-DAT the guests-ACC introduced
- b. Gestern habe ich die Gäste einander vorgestellt
yesterday have I the guests-ACC each other-DAT introduced

If, in parallel to the scrambled constituent in Grewendorf and Sabel's examples, *die Gäste* precedes the reciprocal only phonologically in (131b), why is binding possible at all? This is only a problem, however, if we do not adopt a derivational approach to Binding Theory along the lines Kitahara (1999, 2000, 2002), according to which coreference is not determined on a unique LF representation after all transformations have applied, but rather immediately after the valuation of the uninterpretable features

⁵² That is, object shift and scrambling are strictly clause-bound, while fronting to Spec, C is not. With regard to parasitic gaps, Fanselow (1993, 2001) convincingly shows that they are absent from German scrambling structures. But it is commonly accepted that they are also impossible in Scandinavian object shift (Holmberg, 1986; Vikner, 1994; Holmberg and Platzack, 1995, etc), as illustrated by the Icelandic example in (i):

(i) Pétur bað Maríu_i aldrei t_i án þess að sækja hana_i / *e_i
Peter invited Mary-ACC not without it to fetch her

of potentially coreferent elements. In the case at hand, this means that the binders *den Studenten* (129b), and *dem Jungen* (130b) must have their Case feature valued in a position from which they cannot c-command their respective bindees (that is, *der Lehrer von sich* in (129b), and *der Vater von sich* in (130b)), while *die Gäste* gets rid of its uninterpretable Case feature in a position c-commanding *einander*. Recall that, according to standard minimalist assumptions (Chomsky, 2000; 2001a), structural accusative (and dative) is the manifestation of a relation of Agree between the nominal bearing it, the goal, and a probe *v*. Recall also that Agree is possible only if the probe has the goal in its domain, or the goal is re-merged with the probe. In other words, Case feature valuation may proceed in the two ACC positions in (132):

(132)

$$vP[\textbf{ACC} \ vP[\text{Subject} \ v[\ vP[\textbf{ACC} \ V] \ v]]]]$$

If interpretation followed Case valuation of the accusative in Spec, *v*, that position would be relevant for Principle A at LF, which would fit the grammaticality of (131b) and leave (129b) and (130b) unexplained. We get the reverse effects if interpretation follows Case valuation of the nominal in the domain of *v*, with (129b) and (130b) as clear instances of a Principle A violation, and no reason, from these quarters, for the well-formedness of (131b). This option is, however, preferable according to the main tenets in the present work: (i) German scrambling is sensitive to phonological borders; (ii) base-generation within the German *vP* is, to a certain extent, flexible, as demonstrated by the VP-topicalisation facts and merge of indefinite co-arguments discussed above; (iii) neither West Germanic scrambling nor Scandinavian object shift are crucially linked to structural Case licensing, given that the former displaces non-nominal arguments, and the latter displaces DPs bearing inherent (i.e. non structural) Case (see below). Within this framework, therefore, the grammaticality of (131b) follows from a base generated ACC > DAT order.

So far my review of the remaining problems for considering DISL as a part of German scrambling. Next I would like to address those related to the potential sensitivity of the phenomenon to Chomsky's (2001a) phonological border. We have suggested that the asymmetry found between ditransitive and monotransitive "unmarked" sequences is the result of the existence of a rule of the kind of Chomsky's (2001a) "Object Shift Parameter" in German reordered structures: only the discourse-

linked objects of monotransitive predicates will be forced to leave the VP. However, this may be not necessarily so, if, as Chomsky tentatively assumes, subjects in Spec, *v* also belong to the sets of elements which cause c-commanded, scramble material not to be at the phonological border. Thus, our proposal would fail to account for examples such as (133) (from Fanselow, to appear (a)), where *das* has moved across *wer* in its base generated position:

(133)

ob das wer gewusst hat
 whether that anyone-NOM known has

Cases parallel to (133) are attested in Icelandic too, as Chomsky himself notices (2001a: 36). He attributes their grammaticality to a condition holding for transitive constructions, according to which something must escape the *vP*. But postulating such a condition for German may be questionable, as shown below:

(134)

- a. ?[Ein Millionär dem Studenten einen Wagen geschenkt] hat
 a millionaire-NOM the student-DAT the car-ACC given has
- hier noch nie
 here never
 "It has never happened here that a millionaire gave the student a car"
- b. dass [Studenten dem Kind das Buch zeigen]
 that students-NOM the child-DAT the book-ACC show
 "that (some) students show the child the book"

If Wurmbrand (2001b) is right, the bracketed constituent in (134a) must be a complete *vP*, given the ban on TP fronting. On the other hand, according to Diesing's (1992) "Mapping Hypothesis", German existential subjects remain in Spec, *v*, which entails that (134b) constitutes a case in which all the arguments of the three-place predicate are VP-internal. If the analysis of these facts in German is correct, it throws doubt on Chomsky's account of the Icelandic counterpart to (133), and thus on his claim that phonologically realised subjects in Spec, *v* are relevant for the "Object Shift Parameter". In the absence of straightforward evidence, I leave the issue open.

The last question I would like to address does not relate to the phonological side of reordering processes, but rather to the syntactic device that is responsible for them,

namely the EPP feature. This feature has its origins in the "Extended Projection Principle" (Chomsky, 1982) of the GB framework, which basically states that a clause must have a subject, even if its predicate lacks an external theta-role. In the earliest versions of the Minimalist Program, the EPP is reinterpreted as the presence of a strong nominal feature on T, which entails that it must be checked in Narrow Syntax either by merging an expletive in Spec, T or by pied-piping the VP-internal subject to that position. However, the rejection of covert operations in Chomsky (2000, 2001a) and their replacement by long-distance agreement (Agree) excludes the EPP from the core of feature checking again, making it appear as in its first formulation, that is, as the requirement that certain functional heads must have a specifier. Besides, it undergoes several modifications: (i) the principle is rendered in the form of an uninterpretable feature, whose elimination has effects for interpretation; and (ii) it is not exclusively linked to T, but rather to *core functional categories* in general, i.e. T, C, and *v* (the light verb selecting for a V with full argument structure). Its presence in T correlates with a phonologically realised subject in Spec, T; if it appears in C, a *wh*-moved or topicalised constituent must fill Spec, C; finally, as extensively discussed in this paper, an EPP feature on *v* is responsible for object shift.

The existence of an EPP feature of the kind in Chomsky (2000, 2001a) has been criticised on several grounds. For example, Epstein and Seely (2002) consider its configurational nature a threat to the entire minimalist theory of movement, based on feature interpretability at the interfaces. In other words, since the EPP feature does not seem to derive from the intrinsic properties of lexical items, it amounts to readmitting the phrase structure rules and principles of GB. In the same vein, Grohmann, Drury and Castillo (2000) reject its stipulative character: the EPP feature exclusively responds to the need to allow for successive cyclic A-bar movement, and therefore is not empirically justified. Pesetsky and Torrego's (2001) account of T-to-C movement offers a possible way to make the EPP feature less configurational. They propose to render it not as a feature of a core functional head, as in Chomsky (2000, 2001a), but rather as a property of a feature of that head. Notice what this would entail for Chomsky's (2001a) account of Scandinavian Object Shift: the displacement of the object must be triggered by the only features of *v* that are illegitimate at LF, i.e. uninterpretable ϕ -features, which are, in turn, marked as [+EPP]. On the other hand, recall that Agree only takes place between active probes and goals. In this light, object shift reduces to structural Case licensing.

Such an approach would obviously be at odds with our claim that German scrambling is syntactic movement to the vP edge, constrained by conditions equivalent to the "Object Shift Parameter", insofar as arguments different from DPs may move there. But it does not fit the Icelandic data either: according to Collins and Thráinsson (1996), all objects undergo object shift in Icelandic, including those with dative, genitive, and nominative morphological case:

(135) Icelandic

- a. Ég henti bókinni ekki
 I threw the book-DAT not
- b. Ég sakna Haraldar ekki
 I miss Harald-GEN not
- c. Mér líka bækurnar ekki
 I like the books-NOM not

If neither T nor v assigns inherent case (Chomsky, 2000), the facts in (135) support Chomsky's view that structural (accusative or dative) Case assignment is a phenomenon independent from the EPP. In other words, the EPP cannot be linked to the uninterpretable features of the probe v . Therefore, the question why the categorial constraints found in Scandinavian Object Shift are not found in German scrambling may be of the same order as the question why Icelandic Object Shift is not restricted in the way reordering in Mainland Scandinavian is.⁵³

Despite all the problems and pending issues reviewed in this final section, the overall conclusion in the present work is that there are reasons to think that the two reordering processes characterising Germanic languages may basically constitute a single syntactic phenomenon. Supporters of this view have so far relied on the semantic similarities between shifted and scrambled constituents, as in Diesing (1997). The aim of this thesis has been to go beyond such semantic similarities, contending that the prominent role Chomsky (2001a) assigns to phonological features and PF procedures in Scandinavian object shift can also be detected in West Germanic scrambling. In spite of the complexity of the data, and the large number of relevant issues that are still unsettled in the latest versions of the Minimalist Program, I believe that the general

⁵³ Object Shift in Mainland Scandinavian only affects pronominal DPs, and that the reasons for it do not seem to be related to morphological case, as the facts in Faroese show: despite the existence of a rich inflectional morphology in nominal DPs, only pronominal DPs are allowed to shift in Faroese.

perspective offered by this alternative provides a more adequate account of scrambling than was found in previous generative models, and is therefore well worth pursuing.

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