Clause Union and Verb Raising Phenomena in German*

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Abstract

In this paper we discuss a class of constructions in German syntax which have been known under the headings of *coherent infinitives*, *clause union* or *verb raising*. These data run against the predictions of strictly configurational theories by apparently having a syntactic structure where the subcategorization frames of two or more verbal heads are merged into one. Thus, next to a fully bi-clausal structure with two clearly separated verbal heads, we also have envisage the case where a verb is raised to form a verb cluster together with its governing verb, while the sets of their arguments are merged into a single set, representing the case of clause union. However, as it seems there are also constructions where there is no evidence for clause union but one could nevertheless argue for the formation of a verb cluster.

We will investigate these data by looking at a series of constructions which bear evidence on the issue. Among these are *extraposition*, which appears a reliable test for nonobligatory verb raising; *subjectless constructions*, which are possible only as the complements of so-called raising verbs but not of control verbs; $\overline{\mathrm{S}}$–*pronominalization*, which seems to be limited to equi-verbs; *scrambling* and *long reflexivization* , which we can take as evidence for clause union; *scope of adjuncts and negation* which argues in favour of verb raising, but does not necessarily presuppose clause union; and finally certain *topicalization* phenomena which appear to violate almost any of the generalizations set up so far by configurational theories.

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1 Introduction

Many grammatical theories heavily rely on constituent structure as a means of describing grammatical relations, such as subcategorization, government and agreement, binding and scope relations etc. "Some version of $\overline{\mathrm{X}}$ syntax" often forms the basis of these theories, involving notions such as heads and maximal projections, and the configurational definition of grammatical relations. Word order variations and other phenomena are expected to follow the restrictions imposed by the schema. Variations which cannot be accommodated by the schema directly are assumed to be covered by some limited set of movement operations or alternatively by a corresponding static relation between a dislocated element and its trace.

The syntactic restrictions which follow from such a configurational schema are extremely tight: It permits only those structures as base structures which can be described by a context free phrase structure grammar. For every constituent it predicts that it must have only one lexical head, which will determine the internal structure of this constituent on the basis of its subcategorization frame. The maximal projections of a lexical head are expected to be boundaries for all kinds of relations, etc.

Accordingly, much linguistic discussion centers around phenomena which more or less blatantly contradict the generalizations implied by the $\overline{\mathrm{X}}$ schema. In this paper we want to investigate some data relating to a class of constructions, which under the heading of *clause union*, *verb raising* or *coherent infinitives* for a long time have been known to present a problem for a strict configurational theory as it is implied by the $\overline{\mathrm{X}}$ schema.[1] We will limit ourselves here mainly to data from German, as one of the languages which, compared to some more configurational languages, shows a fairly rich range of the relevant phenomena.[2]

The clause union phenomena contradict the $\overline{\mathrm{X}}$ schema in some quite crucial aspect: Generally speaking, they seem to imply that two or more lexical heads and their subcategorization frames are merged into one single verbal head or complex predicate with a composite subcategorization frame.

Our aim here will be to show, however, that the full range of phenomena which appear to indicate *clause union* and/or the formation of a verb complex will

[1] Cf. for example [Bech 83], [Evers 75], [den Besten 81], [Stechow 84] for some early illustrations and overviews of the problem.

[2] For descriptions of closely related phenomena in other languages see for example [Cooper 88], [Cooper 89] for Swiss German, [Haegeman/van Riemsdijk 86], [Johnson 86], [Schuurman 89], [Zaenen 79] for Dutch, and [Karttunen 86], [Vilkuna 89] for Finnish.

not always lead to a clear cut result, as it is predicted by most theories. In particular, we will try to illustrate that a configurational account, which attempts to cover the entire range of grammatical phenomena (from subcategorization over word order variation to scopal relations etc.) exclusively by means of simple tree configurations, imposes restrictions on the descriptive apparatus which might be both unnecessary and unwanted for.

2 Clause Union and Verb Raising

The phenomena which we summarize under the name *clause union* and *verb raising*, meaning the formation of a verb complex, in the following are limited to verbs which are subcategorized for a nonfinite complement. Many of the accounts of the phenomena in question ultimately attempt to explain them by two parameters, clause union itself and the occurrence or nonoccurrence of verb raising.[3] Only three of the four combinations are realized for quite obvious reasons:

a) The combination of no clause union and no verb raising represents the straightforward case of a fully bi-clausal structure.

b) The occurrence of clause union and verb raising results in a mono-clausal structure with a multiple or complex verbal head.

c) The occurrence of verb raising in the absence of clause union would yield a bi-clausal structure where the head of the embedded clause forms a verb complex together with the head of matrix clause, leaving behind a headless clausal projection.

d) The fourth combination of clause union without the formation of a verb complex is the one which does not make any sense if we take clause union to be a full destruction of the clausal constituency of the embedded clause and consequent merging of its constituents with the matrix clause.

The factors which can be shown to play some important role for the possible occurrence of these phenomena are

- the type of the governing or matrix verb (including its subcategorization for a nonfinite verbal category, but also the rest of its subcategorization frame)

[3] For illustrations and discussions of this approach compare [Grewendorf 87], [Haider 86a], [Haider 86c], [Haider87], [Fanselow 87b] Of course the various accounts do not fully agree on all the technical details of this classification.

- as well as for some constructions the subcategorization frame of the embedded nonfinite complement.

If formulated in transformational terms this approach rests on the basic assumption that verbs may be subcategorized for two different types of nonfinite complements, which we will take to be of the category $\overline{S}$ and S for the sake of simplicity meaning a maximal and sub-maximal clausal projection respectively.

The complement of those control (or *equi*) verbs which are subcategorized for a *zu*-infinitive is assumed to be an $\overline{S}$, i.e. a maximal clausal projection. This projection can be eliminated in some cases, resulting in clause union, but also triggering verb raising. The verbs which will optionally allow clause union are control verbs with no additional object; those which are expected never to show any signs of clause union are control verbs with a direct or indirect object. The opposition we find here is the one between the cases a) and b) above, i.e. between the joint occurrence or nonoccurrence of clause union and verb-raising, where the latter represents an optional variant for some of these verbs.

Raising verbs and verbs combining with a bare infinitive can be assumed to take a complement of the category S. In this case verb raising is considered to be obligatory. However, the opposition we are confronted with here is the one between b) and c) above, since the occurrence of clause union or elimination of the S constituent is taken to depend on the subcategorization frame of the embedded constituent. This factor is assumed to become relevant above all for the description of causative or *lassen*-constructions, where a different range of phenomena can be observed depending on the embedded complement being an unaccusative construction or not.

Verb raising is thus made dependent on the type of clausal category which dominates the verb to be raised: if the category is not a full clausal projection (say S), or if this projection has been eliminated (by means of $\overline{S}$ deletion), verb raising becomes possible.

Clause union itself is understood as a merging of subcategorization frames, therefore it is assumed to be dependent on the type of arguments of either (or both) the governing or the embedded verb.

The range of phenomena which these theoretical assumptions could be expected to cover are the following:

- Extraposition: Right extraposition is one of the operations which can be assumed to apply only to full clausal projections. Thus its occurrence can help distinguish the different types of nonfinite complements.

- Subjectless Constructions: It appears that only a certain class of verbs, namely raising verbs, will permit the complement to be without a thematic subject. One could attempt to explain this phenomenon by structural properties of the complement; for example, one could assume that the complement of control verbs must have a subject position filled by an empty category PRO which has to be assigned a θ-role. The question arises, however, whether all control verbs then have to be subcategorized for the same category.
- $\overline{\mathrm{S}}$-Pronominalization: The nonfinite complements of raising verbs cannot be pronominalized by a pronoun *es*. It could be argued that this is due to the fact that only a particular category of complements can be pronominalized, say $\overline{\mathrm{S}}$. However, since there are some modal verbs which allow pronominalization depending on their reading, it is unclear whether these verbs subcategorize for different categories and if so, whether one of these categories is identical to the one subcategorized for by control verbs.
- 'Scrambling': The interleaving of the nominal complements of two or more verbs can be assumed to be an indicator for a full clause union with full destruction of the constituency of the complement clause. Under a competing account, which doesn't rely on $\overline{\mathrm{S}}$ deletion or a corresponding process, scrambling would have to be considered as some movement relation, the restrictions arising through the embedded category being a boundary node for scrambling only in some cases.
- Reflexivization: Especially for *lassen*-constructions, it can be shown that the possibility of binding an object of the embedded verb to the subject of *lassen* depends on the presence but also on the type or thematic relation of the subject of the embedded verb. This phenomenon has been considered to be an argument for assuming clause union for *lassen* only in some cases, whereas a failure of binding is taken to be an indicator for the nonoccurrence of clause union.
- Scope of Adjuncts and Negation: Some scope bearing elements, such as negation particles, may take scope over a verb while being embedded in its complement. This phenomenon could be argued to be bound to clause union or alternatively to the occurrence of verb raising. This phenomenon may turn out to be a test case for the question of whether verb raising may occur without clause union.
- Topicalization: The fronting of verb clusters and partial VPs (i.e. nonfinite verbs with or without some of their complements) can be argued to be an indicator for clause union or verb raising, since the topicalized material often involves different heads cutting across clause boundaries. However, topi-

calization also has some interesting effects on scope and other ambiguities which argue against a total reconstruction of the topicalized material.

In the following, we will discuss these phenomena in greater detail, trying to identify where the initial assumptions might turn out to be contradictory to the empirical evidence.

3 Extraposition

Verbs which take nonfinite complements can be very roughly divided into those which (optionally) allow (right-) extraposition of the complement and those which do not.[4]

One possibility of accounting for verbs which never allow right extraposition would be to assume that the head of the complement in these cases has undergone verb-raising or formed a complex predicate together with the governing verb and that the (head-less) complement therefore cannot be extraposed.

Since two conditions have to be met for a verb to permit extraposition of its complement:

- The governing verb must not be a raising verb;
- the extraposed construction must be a *zu*–infinitive.

we would accordingly have to assume that verb raising or formation of a verb cluster may be triggered by two different conditions:

- the subject of the embedded complement stands in a syntactic relation (e.g. agreement, case assignment) but not in a thematic relation to the head of the matrix clause;
- the nonfinite head of the complement is not marked by the particle *zu* but takes the form of a bare infinitive or a perfective participle.

The first condition we can exemplify by the contrast between raising verbs like *scheinen* (seem) and control verbs like *versuchen*:

[4]For a more comprehensive description of some problems of right extraposition, also in combination with topicalization, cf. [Netter 88].

(1) *weil Fritz zu arbeiten scheint*
because Fritz to work seems
'because Fritz seems to work'

(2) **weil Fritz scheint, zu arbeiten*
because Fritz seems to work

(3) *weil Fritz zu arbeiten versucht*
because Fritz to work tries
'because Fritz tries to work'

(4) *weil Fritz versucht, zu arbeiten*
because Fritz tries to work

This contrast becomes even more obvious with verbs like *drohen* (threaten) or *versprechen* (promise), whose nonfinite complements are always marked by the *zu*–infinitive, which however may have two different readings as control and as raising verbs:

(5) *weil Fritz droht, aus dem Fenster zu springen*
because Fritz threatens, out the window to jump
'because Fritz threatens to jump out of the window'

(6) *weil der Fritz aus dem Fenster zu fallen droht*
because Fritz out the window to fall threatens
'because there is some danger that Fritz falls out of the window'

Extraposition of the infinitival complement in (6) would invariably lead to a change in the reading of the matrix verb such that its meaning will become identical to the one in (5). Similarly, although (7) may be ambiguous (for some precocious baby), the extraposed version of that sentence (8) will be true only if the baby performed some act of promising:

(7) *weil das Baby sich zu einem Genie zu entwickeln versprach*
because the baby itself into a genius to develop promised
(a) 'because the baby promised to become a genius'
(b) 'because it was very likely, that the baby would turn into a genius'

(8) *weil das Baby versprach, sich zu einem Genie zu entwickeln*
because the baby promised itself into a genius to develop
(a) 'because the baby promised to become a genius'
(b) *'because it was very likely, that the baby would turn into a genius'

Whereas the above examples show that *zu*–infinitives may occur as complements of control as well as of raising verbs, the second condition mentioned becomes relevant, if we assume that not all control verbs or not all nonraising verbs govern the *zu*–infinitive. Examples for this constellation are

- modal verbs like *wollen* (want) which (unlike in English) govern the bare infinitive,
- so-called exceptional case marking or a.c.i.-verbs such as *lassen* (let) and perception verbs (*sehen* – see, *hören* – hear), which only in some theories are assumed to be (subject to object-) raising verbs and
- possibly also some constructions with verbs of motion, where the purpose of the motion is represented by a bare infinitive.

Instances of the last type (9) - (11) are especially interesting, since this class of verbs usually takes verbal complements with or without the *zu*–infinitive, only the latter allowing extraposition (11):

(9) *weil Fritz Zigaretten (zu) holen gegangen ist*
because Fritz cigarettes (to) fetch gone is
'because Fritz has gone to fetch cigarettes'

(10) ∗*weil Fritz gegangen ist, Zigaretten holen*
because Fritz gone is cigarettes fetch

(11) *weil Fritz gegangen ist, Zigaretten zu holen*
because Fritz gone is cigarettes to fetch

It appears quite unlikely, that this difference in the syntactic marking of the complement also encodes a difference in meaning in the dimensions involved in the opposition of raising and control verbs.[5] If there were a difference in meaning at all it could be of the same order of magnitude as the distinction between English purpose clauses with *to* versus *in order to*. Even if the construction with the *zu*–infinitive comes quite close to straightforward adverbial purpose clauses (cf. (14)), there is an important difference: Whereas adverbial purpose clauses occur with

[5] Annie Zaenen and John Nerbonne drew my attention to some examples which show that there is one very subtle difference in meaning however, which could even be classified as an aspectual distinction.

(12) ∗*weil Fritz abzunehmen läuft*
because Fritz to-loose-weight runs

(13) *weil Fritz abnehmen läuft*
because Fritz loose-weight runs

Whereas sentence (12) means that Fritz is running for the purpose of loosing weight while running, the sentence with the bare infinitive (13) appears to imply that Fritz run or went somewhere in order to loose weight there.

practically any (agentive) verb, the *zu* infinitives appear to be somewhat more restricted. The more relevant bare infinitives however are limited to combinations with a very small class of movement verbs.

(14) *weil Fritz Maria Blumen schenkt,* **um** *ihr eine Freude* **zu machen**
because Fritz Mary flowers gives, in order her a happiness to make
'because Fritz present flowers to Mary, in order to please her'

(15) ?*weil Fritz Maria Blumen schenkt, ihr eine Freude* **zu machen**
because Fritz Mary flowers gives, her a happiness to make
'because Fritz present flowers to Mary, in order to please her'

(16) ∗*weil Fritz Maria Blumen ihr eine Freude* **machen** *schenkt*
because Fritz Mary flowers her a happiness make gives
'because Fritz present flowers to Mary, in order to please her'

To summarize, we can assume that extraposition may serve as a reliable indicator of the presence of two separate clauses. In the cases where extraposition is blocked two different factors appear to be involved: a morpho-syntactic parameter (the absence of the infinitival marker *zu*, and a syntactic-semantic parameter, the distinction between raising and control.

An account for these phenomena one might try to reduce both factors to one single process; say verb raising, possibly in combination with clause union. However, also under this hypothesis it should become clear why it is exactly those factors which may trigger the process.

4 Subjectless Constructions

Lexically independent clausal *zu*–infinitives in German, such as infinitival constructions functioning as subject clauses or as free adverbial infinitives) have in common, that the verbal head of the clause has to be subcategorized for a subject with a thematic argument status.[6] This property is also shared by the complements of control verbs subcategorized for a *zu*–infinitive:

(17) ∗*weil Hans ihm schlecht zu werden behauptete*
because Hans him$_{DAT}$ sick to get claims
'because Hans claims to get sick'

[6]For a critical discussion of attempts to explain subjectless passives in German by means of a small *pro* cf. [Haider 86b].

Following the line of argument sketched in the previous section, one could attempt to account for the ungrammaticality of (17) by assuming that the complements of control verbs are full sentential projections ($\overline{\mathrm{S}}$, CP or whatever) with an empty element PRO in the subject position which has to be assigned a θ-role. For the time being we could be satisfied with this account and just keep in mind the question of what the implications for the assumption of a configurationally defined PRO would be if the clausal structure of the complement was destroyed (or nonexistent to begin with).

However, the phenomenon referred to wouldn't be worth mentioning if the class of verbs affected by it also formed a natural class in some other respect; say the class of all control verbs with zu-infinitives, which as we noted will also allow extraposition.

On the contrary it is only a subclass of the verbs which do not allow extraposition of the complement, namely raising verbs, which do not impose this condition on their complements. For example, *scheinen* or *drohen* in its raising reading are compatible with impersonal passives or other subjectless constructions:

(18) *weil gearbeitet zu werden scheint*
because worked to be seems
'because it seems that someone works'

(19) *weil ihnen schlecht zu werden droht*
because them$_{DAT}$ sick to get threatens
'because there is some danger that they get sick'

Continuing in the spirit outlined above, we could assume that the complements of raising verbs are sub-maximal or nonclausal projections (S or maybe IP), which

a) would trigger verb raising and thus prevent extraposition (under the assumption that only maximal projections or projections with a lexical head can be extraposed) and
b) allows the 'raising' verb to assign case to the subject of the embedded verb *in situ* (nominative for verbs which do not have an external argument of their own, accusative if they do, e.g. *lassen*).

To a certain degree the latter assumption presupposes that the 'raising' verb does not raise the subject, i.e. that it does not have to have a subject of its own.[7] The

[7] What is assumed to enforce movement or raising of the subject in other languages, namely Burzio's generalization, would have to be put out of order for German: German 'raising' verbs should be able to assign case internally, even if they do not assign an external θ-role.

subject of the embedded verb would remain in situ and by virtue of being assigned the nominative case it would also trigger agreement with the finite verb. Whether or not the subject position of the embedded construction is lexically filled would simply depend on whether or not the embedded verb has an external θ-role to assign.

Leaving aside others, one of the problems for the present suggestion might be, that one has to stipulate syntactically different categorial status for constructions which have an otherwise identical surface realization and vice versa identical status for constructions which differ in many other respects.

For example, since there are modal verbs which do not permit subjectless passives, their complements would have to be attributed categorial properties different from the properties of modal verbs which do:

(20) *weil gearbeitet werden muß*
because worked be must
'because there has to be somebody working'

(21) **weil gearbeitet werden will*
because worked be wants
'because it is desirable that somebody is working'

If we want to keep the argument above consistent we might be forced to claim, that *wollen* is subcategorized for an $\overline{\mathrm{S}}$ just like any other control verb and that not only *zu*-infinitives but also bare infinitives may head a maximal clausal projection.

Alternatively, one could of course claim that the matrix verb in (21) requires a subject for semantic reasons. However, such an account does not sound quite as plausible in the case of *lassen* contrasted with perception verbs where there is hardly a semantic reason why the former, but not the latter, should be compatible with a subjectless passive:

(22) *weil er arbeiten läßt*
because he work lets
'because he lets somebody work'

(23) **weil er arbeiten sieht*
because he work sees
'because he saw somebody work'

To summarize, in one approach we have to assume that the structural properties of control and raising constructions cut across different surface realizations in a nontrivial way: we get *zu*-infinitives and bare infinitives both as complements of raising and control verbs. An explanation of the subject-less constructions along purely structural lines forces us to assume on the other hand that both types of infinitives may be heads of both maximal and sub-maximal projections.

As another consequence, an explanation of the very simple extraposition data by the hypothesis of different subcategorizations will not be quite as plausible any more either, since for some verbs one would have to claim *obligatory* verb raising or clause union in spite of maximal clausal projections.

Alternatively, we could simply abandon the idea that control (and passivization?) is a phenomenon which is sufficiently and adequately described in purely syntactic and configurational terms.

In any case, we would be back to square one with respect to the question of whether the class of clause union verbs forms a homogeneous class which can be described in purely configurational terms.

5 Pronominalization

On the basis of the assumption that only constituents can be replaced by a pronoun, we could consider the possibility of pronominalization as a valid criterion for determining the categorial and configurational status of nonfinite complements.

At first sight, we can observe a clear difference between those control verbs which allow extraposition on the one hand (24) and raising verbs (25) on the other hand. Whereas the complement of control verbs can be pronominalized, the complements of (subject to subject) raising verbs cannot:

(24) *Fritz versucht den Roman zu lesen und Maria versucht es auch*
Fritz tries the novel to read and Maria tries it also
'Fritz tries to read the novel and Maria does too'

(25) ∗*Fritz scheint den Roman zu lesen und Maria scheint es auch*
Fritz seems the novel to read and Maria seems it also
'Fritz seems to read the novel and Maria does too'

Those verbs which allow both a raising and a control interpretation, such as *drohen* and *versprechen*, get disambiguated in combination with pronominalization, leaving only the predicted nonepistemic or control reading:

(26) *Fritz versprach sich gut zu entwickeln und Peter versprach es auch*
Fritz promised himself well to develop and Peter promised it also
(a) 'Fritz promised to develop well and Peter promised it too'
(b) ∗ 'There were good chances that Fritz would develop well and that Peter would too'

Similarly, this distinction manifests itself with respect to the different readings of modal verbs (27), the epistemic (b) and e.g. the deontic reading (a):

(27) *Fritz muß Klavier spielen.*
Fritz must piano play
(a) 'Fritz must play the piano' (= has the obligation to)
(b) 'Fritz should be playing the piano' (= it is likely that)

The epistemic reading (b), where the verb can be seen as an operator over a full clause or proposition appears to be closely related to the syntactic 'raising' construction, i.e. constructions where the matrix verb stands in a syntactic relation to the subject of the sentence but not in a thematic or direct semantic relation.

Although, the modal verb *müssen* (must) in (28) and (29) is ambiguous in the simple clause, only the nonepistemic reading is acceptable in connection with the pronominal in the second conjunct. Whereas this reading goes quite naturally with the event verb in (28), it appears much less plausible than the epistemic reading in the case of the stative predicate in (29); yet it is the only interpretation possible.

(28) *Fritz muß Klavier spielen und Maria muß es auch*
Fritz must piano play and Maria must it also
(a) 'Fritz has the obligation to play the piano and Mary has the obligation too'
(b) ∗ 'It should be the case that Fritz is playing the piano and Mary too'

(29) *Fritz muß in der Bibliothek sein und Maria muß es auch*
Fritz must in the library be and Maria must it also
(a) 'Fritz has the obligation to be in the library and Maria has the obligation too'
(b) ∗ 'It should be the case that Fritz is in the library and Maria too'

Of course, one could hypothesize that these sentences (or interpretations) are unacceptable, because the subject in the second, the reduced conjunct cannot be interpreted relative to some predicate in this conjunct. Whereas in the nonepistemic interpretations the subject could be interpreted relative to the (two-place) matrix predicate, this would not be the case with the epistemic readings or raising verbs, where the subject were semantically 'dangling around' without an argument place to go to.

However, we find some counterevidence to this assumption, if we look at the causative or *lassen*–constructions, which traditionally are interpreted either as (subject to object) raising constructions or as constructions, where the embedded verb forms a constituent together with an exceptionally case marked (accusative) subject. In most theories however the assumption is that the accusative subject / object does not stand in a direct semantic relation to the matrix verb *lassen*.

Yet, it appears that the pronominalization of the embedded construction is grammatical, if the (unergative) subject of the embedded verb is still present, even if in the second conjunct it does not bear a semantic relation to the matrix predicate:[8]

(31) *Fritz läßt ihn den Roman lesen und Maria läßt es ihn auch*
Fritz lets him the novel read and Maria lets it him also
'Fritz lets him read the novel and Maria lets him (do it) also'

The sentence appears less grammatical however, if we try to pronominalize the entire construction representing the (semantic) complement of *lassen*, i.e. if *es* in the second conjunct is supposed to refer to the string *ihn den Roman lesen*:

(32) **Fritz läßt ihn den Roman lesen und Maria läßt es auch*
Fritz lets him the novel read and Maria lets it also
'Fritz lets him read the novel and Maria lets (do) it also'

One of the most straightforward explanations for this opposition therefore could be that the pronominalized string in the case of (32) simply does not form a con-

[8]Note by the way, that the two pronouns, *ihn* (him) and *es* (it), the latter allegedly and potentially representing the VP are inverted, i.e. the VP pronominal precedes the subject NP of the embedded clause or alternatively the object of *lassen*. The conclusions we could draw from that fact are amongst others, that the pronoun does not really represent the same category as the verbal construction in the first conjunct i.e. that it can be considered as an NP rather than a VP. In addition it might follow, that the pronoun has to be a sister to the accusative subject/object. Under these assumptions we have two choices: If the accusative subject object is not an immediate constituent of the matrix clause (i.e. if we do have exceptional case marking rather than subject to object raising,) we might be committed to the assumption that the ('clausal') complement of *lassen* consists of a clausal projection, dominating two NPs yet being without a verbal head. If on the other hand we assumed that the causative constructions should be analyzed along the lines of subject to object raising as it is the case for example in LFG (cf. [Bresnan 82]), the matrix clause would consist of three constituents or syntactic complements: the matrix subject, the subject/object of the embedded verb and the constituent representing the embedded infinitive (i.e. S or possibly VP). Pronominalization of the VP constituent might have an effect on the range of possible orderings relative to the subject/object NP, but would otherwise leave the analysis unaffected and consistent. Additional support for this analysis might be derived from the fact that the pronoun *es* in the example may also be omitted:

(30) *Fritz läßt ihn den Roman lesen und Maria läßt ihn auch*
Fritz lets him the novel read and Maria lets him also
'Fritz lets him read the novel and Maria lets him (do it) also'

Again, if we were dealing with a embedded sentential constituent with the accusative subject/object *in situ*, this would imply that the clause is without an overtly realized head – a situation which, at least for this type of construction, would be rather unusual in German.

stituent. Alternatively, one could assume that the string does form a constituent and that its category is however a submaximal projection, such that it cannot be replaced by a pronoun.

It is interesting to note however, that pronominalization of the (entire) complement becomes possible again, if it has undergone some argument reduction comparable to passivization:

(33) *Fritz läßt den Roman lesen und Maria läßt es auch*
Fritz lets the novel read and Maria lets it also
'Fritz lets the novel be read and Maria lets it (be done) also'

As we will see below, this is unexpected to a certain degree, since in most other circumstances the type of construction in (33) is more likely to exhibit properties of a clause union construction than any of the ones given in (31) and (32). In addition, we have to acknowledge that the relation between the accusative object/subject in (33) and (31) is not at all the same: If we were dealing with two constructions which are absolutely identical in that respect, we would certainly not expect the ungrammaticality of (34):

(34) **Fritz läßt den Roman lesen und Maria läßt es ihn auch*
Fritz lets the novel read and Maria lets it it(the novel) also
'Fritz lets the novel be read and Maria lets it (be done) also'

Still, all these assumptions will not necessarily support the simple generalization made above, that the complements of control verbs can be pronominalized, whereas those of raising verbs cannot. This generalization could be maintained only if we made some special and rather unconventional assumptions about the causative constructions: They would involve analyzing the accusative subject/object in (31) and (32) as an argument of the causative verb (i.e. assuming something like object control for this type of construction), whereas the constructions with a reduced argument structure (33) and (34) would have to be analyzed as raising constructions.

Under these conditions, we could hypothesize the following generalization over *es*-pronominalization:

(35) *Es* can be used to pronominalize nonfinite complements of verbs, if the complement does not have an overtly realized external argument/subject or if the overtly realized external argument is semantically interpretable relative to the matrix predicate.

To summarize the discussion up to this point, we have encountered some quite clear criteria; such as extraposition, which separates obligatorily coherent from optionally noncoherent constructions; embedding of subject-less constructions, which distinguishes among the obligatorily coherent constructions those which could be classified as raising constructions (in a conventional terminology) and those which bear a close relation to control verbs. In this section, we found some additional support for this distinction in the different possibilities for VP-pronominalization. However, we have also seen, that the notorious class of *lassen*–constructions does not fit into any simple schema as easily as one would wish, possibly even forcing one to make some rather unconventional assumptions about the subcategorization of *lassen.*

6 Scrambling

By the notion of *scrambling* we refer to a phenomenon concerning the order of nominal (or prepositional constituents) in the so-called German *Mittelfeld*, i.e. the topological field between the clause initial position, filled for example by a complementizer, wh- pronoun or finite verb, and the clause final verb or verb cluster.[9] Scrambling constructions deviate from the $\overline{\mathrm{X}}$ schema in that they cannot be derived in such a way that every verbal head forms a constituent with its complements on the surface. However,they could be accommodated at least with the subcategorization requirements if one assumed clause union and the formation of a complex predicate represented by a verb cluster.

For most of the sentences we gave above there was very little evidence in terms of word order which would indicate whether or not the string representing the embedded construction would form a constituent of its own or whether it had been merged with the matrix clause. Simplifying somewhat, most of them could have been described by the following basic structuring, with the indices indicating dependencies between verbal heads and nominal complements:

(36) $[\ \mathrm{NP}_1{}^*\ [\ \mathrm{NP}_2{}^*\ [\ ...\ [\ \mathrm{NP}_n{}^*\ \mathrm{V}_n\ ]\ ...\ ]\ \mathrm{V}_2\ ]\ \mathrm{V}_1\ ]$

In the case of scrambling however, we are faced with a situation where this simple nested structure will not suffice any more, since a complement is separated from its head by the complement of a verb which takes a position higher in the dependency hierarchy:

(37) $[\ ...\ \mathrm{NP}_i\ [\ \mathrm{NP}_j\ ...\ [\ ...\ \mathrm{V}_i\ ]\ ...\ \mathrm{V}_j\ ]\ ...\ ]$
with $j < i$

[9] We use the term *Scrambling* as a convenient notation without implying the transformational process. For different accounts of the phenomena in question cf. [Thiersch 82], [Netter 86], [Uszkoreit 87], [Fanselow 87b], [Fanselow 90], [Webelhuth 85]

Of course, similar constellations always occur with 'true' nonlocal dependencies, covered for example by *wh*–movement. However, under an approach which attempts to describe the scrambling phenomena on the basis of movement or filler – gap relations, the various restrictions on scrambling would have to be accounted for by assuming different types of boundaries for the categories out of which the movement has occurred.[10]

As mentioned, one alternative account to the movement analysis would be the assumption of clause union: The idea would be that under certain conditions verbs may form a cluster behaving as a single head whose subcategorization frame embodies the subcategorization frames of the individual verbs. As a consequence the lists of complements could be merged into a single list with the complements appearing in a free or less restricted order.[11]

The latter analysis is given some additional support by the fact that the class of verbs which allow scrambling to a large degree coincides with the verbs exhibiting other clause union phenomena. Thus, within the class of obligatorily coherent constructions, where extraposition of the complement is not allowed, scrambling occurs quite unrestrictedly with those matrix verbs which do not have an additional object, i.e. the subject to subject raising or subject control verbs:

(38) *weil ihm der Fritz zu helfen schien*
because him Fritz to help seems
'because Fritz seems to help him'

Of course one could argue, that (38) does not have to be described as a case of scrambling to begin with. One alternative assumption, mentioned already above, could be that the subject of raising verbs in German is not raised at all, but rather should be given an analysis such as (39) in which it is derived as a sister to the embedded verb and its object complements.[12]

(39) *weil [[ihm der Fritz zu helfen] schien]*

[10]The treatment of scrambling as a movement phenomenon entails some fundamental problems in any case. Clearly, it cannot be related to NP-movement, since, for example, lack of case assignment for the base position plays no role in it at all. Nor does scrambling follow all the restrictions of WH-movement: there may be more than one constituent being scrambled out; scrambling is only possible in connection with nonfinite clauses and there are no constraints on crossing or nestedness of the filler–gap relations, etc.

[11]It should be noted that this approach might entail a highly nonconfigurational theory of grammatical relations, in the sense that grammatical functions could not be defined in terms of phrase structure positions any more.

[12]This line of analysis was taken for example by [Uszkoreit 87] in a very early GPSG account for German word order.

However, this line of argument would not get us very far, since exactly the same scrambling phenomenon also occurs with control verbs, where the subject not only stands in a syntactic relation (agreement) to the governing verb, but also in a semantic predicate argument relation:

(40) *weil ihm der Fritz zu helfen versuchte*
because him Fritz to help tried
'because Fritz tried to help him'

Yet, apparently not all control verbs permit scrambling, but only those which do *not* have a direct (41) or an indirect object (42)/(43). As we can see from the pair (42) and (43) the parameter of subject or object control does not have any impact on the grammaticality, i.e. the subject control verb in (43) patterns with the object control verb (42) rather than with the object-less subject control verb in (40):

(41) ∗*weil ihm der Fritz den Hans zu helfen überredete*
because him Fritz Hans to help persuaded
'because Fritz persuaded Hans to help him'

(42) ∗*weil ihn der Fritz dem Hans abzuholen empfahl*
because him Fritz Hans up to pick recommended
'because Fritz recommended to Hans to pick him up'

(43) ∗*weil ihn der Fritz dem Hans abzuholen versprach*
because him Fritz Hans up to pick promised
'because Fritz promised to Hans to pick him up'

Thus, scrambling is the first phenomenon where the one class of verbs which behaved in a uniform way according to the other criteria above, namely the control verbs with *zu*-infinitives, does not form a homogeneous set any more.

It should not come as a surprise then, that the complementary group of verbs, the raising verbs and verbs with the bare infinitive, do not form a coherent class either. Again, it is the a.c.i. or putative subject–to–object–raising verbs, i.e., *lassen* or the perception verbs, which exhibit exceptional behaviour.[13] Above all in the *lassen* –constructions, scrambling of a complement of the embedded verb is impossible if the embedded verb is a nonergative verb whose subject is overtly realized as an accusative NP.[14]

[13]Cf. also for example [Reis 73], [Haider87]

[14]The assumption of a subject to object raising construction here may receive additional support through some data which show that the object of the embedded verb may not even be positioned before the (underlying) subject of the embedded verb (44), whereas the (nominative) subject of the matrix verb *lassen* and the (accusative) subject of the embedded verb (putatively

(46) $*$*weil ihm der Fritz den Hans nicht helfen läßt*
because him Fritz Hans not help lets
'because Fritz doesn't let Hans help him'

This restriction on scrambling appears to be neutralized however, if the subject of the embedded verb is a nonagentive subject or, put differently, if the embedded verb enters a so-called unaccusative construction. This is regularly the case if the embedded verb undergoes an argument reduction comparable to passivization (47).

(47) *weil ihm der Fritz helfen läßt*
because him Fritz help lets
'because Fritz lets him be helped'

The same holds for active constructions with so-called unaccusative verbs, such as *fallen*, which normally can be identified by the formation of the perfective with the auxiliary *sein*. In the following example the preposed dative NP has the thematic role of an experiencer, the subject of the embedded verb would be classified as a theme rather than an agent:

(48) *weil ihm der Fritz den Stein auf den Kopf fallen läßt*
because him$_{DAT}$ Fritz the stone$_{ACC}$ on the head fall lets
'because Fritz lets the stone fall on his head'

At first sight, we thus have to summarize that scrambling causes a distinction running across the classes and subclasses we had established so far:

All matrix verbs which do not stand in a syntactic relation to an object allow scrambling of some complement of the embedded verb, irrespective of the parameter of control and raising.

As to verbs which do not allow scrambling, we could comprise them into one class if we assumed in the case of *lassen* that only the subjects of unergative verbs undergo subject to object raising.

Under the assumption that so-called scrambling is ultimately due to clause union, one could thus conjecture in return that clause union is a phenomenon whose

raised to the object relation of the matrix verb) may be freely inverted (45):

(44) $*$*weil der Fritz ihm den Hans nicht helfen läßt*
because Fritz him$_{DAT}$ Hans$_{ACC}$ not help lets
'because Fritz doesn't let Hans help him'

(45) *weil ihn der Fritz dem Hans nicht helfen läßt*
because him$_{ACC}$ Fritz Hans$_{DAT}$ not help lets
'because Fritz doesn't let him help Hans'

occurrence is closely dependent on the subcategorization frames of the verbs to be merged. For example, one could assume that the subcategorization frames involve information about particular thematic roles as well as about the possible surface realizations of the thematic roles. The appropriate generalization could then be tentatively stated along the following lines:

(49) Two predicates may enter a clause union construction, if the union of the elements of their subcategorization frames is such that there are no two overtly realized complements which bear the same thematic role.

This rule could at least cover the intricate problem of the *lassen*–constructions, even if, in this simple form, it will fail to cover the case of control verbs with an additional object.

There is one set of data, however, which should be mentioned as a caveat on the generality of these assumptions: For many of the constructions where scrambling had been strictly excluded a considerable improvement of acceptability can be observed, if not only the object of the embedded verb but also the underlying subject are positioned before the subject of the matrix verb:

(50) *weil ihn das niemand machen läßt*
because him this nobody do lets
'because nobody lets him do this'

(51) *weil es ihn niemand lesen läßt*
because it him nobody read lets
'because nobody lets him read it'

(52) *weil ihn das niemand zu tun bat*
because him this nobody to do asked
'because nobody asked him to do this'

Clearly, the fact that the objects in these sentences are pronominals and possibly also the negated indefinite pronoun in the subject function play an important role in contributing to the acceptability, as becomes obvious from the comparable constructions (53) and (54).

(53) ∗*weil der Maria den Hans niemand helfen läßt*
because Maria Hans nobody help lets
'because nobody lets Hans help Maria '

(54) ∗*weil ihm den Hans niemand zu helfen bat*
because him Hans nobody to help asked
'because Hans asked nobody help him'

Although these data relativize the generalizations above, their restrictedness and marginality makes it difficult to decide what status they should be attributed.

One quite radical conclusion would be to assume that there are no restrictions on clause union (or at least those aspects of clause union which concern word order) at all. The nominal constituents in the *Mittelfeld* can basically occur in any order. However, additional linear precedence rules may determine and exclude certain sequences.

Alternatively, one could simply ignore or question the grammaticality of the counter-examples and do away with them by invoking some specific rule applying to the idiosyncratic case of pronominals, as for example some rule based on the specific properties of the notorious, so-called 'Wackernagel' position.

Unfortunately, a choice between these solutions can hardly be made on a purely empirical basis, since the basis of relevant data is too narrow or contains too much 'noise' in order to clearly support one of these versions.

One constellation, for example, which would provide an argument in favour of the assumption of clause union, would be a case where the scrambling of a constituent causes other clause union effects to occur. The (normally) unexpected inversion of the two objects in (55) for example goes together with a clear ambiguity of the scope of the negation – as we will see below a possible indicator for clause union in some circumstances.

(55) *weil der Fritz es ihn nicht zu lesen bat*
because Fritz it him not to read asked
(a) 'because Fritz asked him not to read it'
(b) 'because Fritz didn't ask him to read it'

However, the ambiguity of the negation in this particular case does not force us to assume clause union, since it could be explained perfectly well by some alternative analysis, relying on adjunction on different levels of the verbal projections.

A more crucial case, where only the assumption of clause union would yield an elegant explanation, would be a sequence such as the following,

(56) NP_2 NP_1 NP_2 $NEG_{1/2}$ V_2 V_1

illustrated by sentence (57), where scrambling of one constituent is combined with an embedding of a negation particle. Unfortunately, this construction is quite unexceptional, insofar as it does not allow scrambling of the object similar to the case of (55):

(57) *∗weil der Fritz* es_2 ihn_1 ihr_2 $nicht_{1/2}$ *zu* $geben_2$ bat_1
because Fritz it him to her not to give asked
(a) 'because Fritz asked him not to give it to her'
(b) 'because Fritz didn't ask him to give it to her'

In short, since these particular, unexpected and exceptional cases of scrambling themselves are the only evidence available, we will have to remain agnostic with respect to the assumption of clause union here.

7 Reflexivization

The obligatory coreference between a reflexive pronoun and an antecedent is often assumed to be sensitive to clause boundaries or at least to the presence of one constituting property of clauses, the presence of a subject. At least in German, reflexivization normally will tell us very little about the structure in question. In the case of control verbs one can always assume a nonovert subject to which the reflexive can be bound, thus we will not be able to see in most cases whether it is directly bound to the controlling complement or only indirectly via the control relation. In the case of subject to subject raising, the only constituent outside the clause boundary to which the reflexive could be co-indexed is the raised subject, thus we trivially couldn't tell whether the reflexive is bound outside or inside the clause.

However, there is one constellation where the different possible bindings of reflexives might bear some evidence on the putative clausal structure: the case of the causative or *lassen*–constructions, where we have a questionable clause boundary and where there are potentially two overtly realized subjects to which the reflexive could be bound.[15]

To begin with, it is of course always possible to reflexivize the subject of the embedded verb, as in (58):

(58) *weil die Männer sich ihren Freunden nicht helfen lassen*
because the men themselves$_{ACC}$ their friends$_{DAT}$ not help let
'because the men do not let themselves help their friends'

The more interesting constellation is however a reflexive pronoun functioning as an object to the embedded verb. A quite crucial generalization here appears to be that a reflexive coreference between an object of the embedded verb and the

[15] Cf. [Grewendorf 83], for a discussion of the problems of unaccusativity and Case in German cf. [Haider 85a] and [Haider 85b].

subject of *lassen* can be established if the embedded verb has the properties of an unaccusative construction. In the unreduced subcategorization frame of *helfen* in (59) the reflexivization across the subject of the embedded verb is impossible; it has to bound to the local subject as expected. Binding to the matrix subject is grammatical however in the passive-like version (60):[16]

(59) $*$*weil Maria*$_i$ *den Hans sich*$_i$ *nicht helfen läßt*
because Maria Hans himself / $*$herself$_{DAT}$ not help lets
'because Maria does not let Hans help himself / $*$herself'

(60) *weil Fritz*$_i$ *sich*$_i$ *nicht helfen ließ*
because Fritz himself$_{DAT}$ not help lets
'because Fritz doesn't let himself be helped'

The case of (active) unaccusative constructions such as (61) and (62) shows, that it is not necessarily the absence of a subject for the embedded verb which is responsible for the grammaticality of the reflexivization:[17]

(61) *weil Fritz*$_i$ *den Stein sich*$_i$ *auf den Fuß fallen ließ*
because Fritz the stone himself$_{DAT}$ on his foot drop let
'because Fritz$_i$ let a stone drop (himself$_i$) on his foot'

(62) *weil sich*$_i$ *Fritz*$_i$ *etwas einfallen ließ*
because himself$_{DAT}$ Fritz something think-of lets
'because Fritz managed to come up with an idea'

The ambiguous sentence (63) may serve to illustrate, that it is not the absence of a suitable, i.e. animate antecedent within the domain of the embedded verb, which makes the matrix subject available as an antecedent for the reflexive.

(63) *weil Maria den Peter sich vorstellen läßt*
because Maria Peter$_{ACC}$ himself$_{ACC}$ / herself$_{DAT}$ introduce let
(a) 'because Maria let Peter introduce himself'
(b) * 'because Maria let Peter introduce herself'
(c) 'because Maria let Peter be introduced to herself'
(d) 'because Maria let Peter be introduced to himself'

In the active readings of *vorstellen* (63) (a)/(b) only the 'narrow' subject *Peter* but not the matrix subject *Maria* is accessible as an antecedent. The passivized

[16] It goes without saying that the dative in (60) in no respect whatsoever qualifies as the subject of the embedded verb, as it might be claimed of the accusative pronoun in (58).

[17] The supposition here is of course that the NP which is marked in the nominative case in finite clauses or which is unrealized in nonfinite clauses can also be regarded as the grammatical subject of the embedded verb.

version on the other hand allows reflexivization across the 'narrow' passive subject in (63)(c), but also a binding of the reflexive to the embedded subject itself.[18]

Yet again a caveat has to be noted with respect to the notion of unaccusativity: Although the class of verbs where 'wide' reflexivization is allowed largely coincides with the class where scrambling in *lassen*–constructions is possible, this class is not fully co-extensive with the class of verbs fulfilling other tests for unaccusativity.

The verbs *schmecken* (taste) and *gefallen* (please) for example do not form their perfectives with *sein*, nor do they allow the formation of adjectival participles parallel to other unaccusatives:

(64) a *der gefallene Stein*
'the fallen stone'

b **die geschmeckte Suppe*
the tasted soup

c **der gefallene Vorschlag*
the pleased suggestion

However, these verbs do permit wide reflexivization (65) and also scrambling of an embedded object across the matrix subject (66):

(65) *weil Fritz die Suppe sich schmecken lässt*
because Fritz the soup himself taste lets
'(because Fritz enjoys the soup)'

(66) *weil sich Fritz so etwas nicht gefallen lässt*
because himself Fritz such a thing not please lets
'because Fritz wouldn't put up with such a thing'

These verbs have in common with other unaccusatives on the other hand that their subject clearly fills a nonagentive thematic role.

Thus, no matter how the phenomenon of clause union is eventually spelled out, we again have some evidence that the subcategorization frames and in particular the specific thematic roles involved have to be given some crucial status among the determining factors.

[18] We use the terms subject and object in a rather loose fashion here and do not want to presume on the question whether the accusative *Peter* in (63) should be interpreted as a subject with exceptional case marking, a subject raised to the object function of the matrix verb, or as a direct object of the embedded verb in the case of the reading of (63)(c)/(d).

8 Scope of Adjuncts and Negation

The scope of certain adverbial elements, mostly sentential adjuncts such as negation particles, temporal or frequentative adjuncts, under normal circumstances can be expected to be clause bound. At least, if such an element occurred within a subordinate finite clause, it will almost certainly not take wide scope over the respective matrix construction.

If we take a biclausal structure to be the null hypothesis for the infinitival constructions under consideration, we would accordingly not expect a situation to arise where a scope bearing element (SE) is embedded in the complement (NP_n ... V_n) of some other constituent (V_j) however, can take scope over the matrix constituent.

(67) [... NP_j ... [NP_n ... SE ... V_n] ... V_j ...]

This prediction is trivially correct for all those cases, where an infinitival construction has been split up by means of extraposition: Here the negation can neither have narrow scope if it occurs in the matrix clause (68), nor can it have wide scope if it occurs in the extraposed subordinate clause (69):

(68) *weil Fritz nicht gewagt hat, das Buch zu lesen.*
because Fritz not dared has the book to read
(a) 'because Fritz didn't dare to read the book '
(b) ∗'because Fritz dared not to read the book'

(69) *weil Fritz gewagt hat, das Buch nicht zu lesen.*
because Fritz dared has the book not to read
(a) ∗'because Fritz didn't dare to read the book '
(b) 'because Fritz dared not to read the book'

The prediction also holds while we are dealing with a subset of those verbs for which scrambling has been excluded, namely the control verbs with an additional object complement. The examples (70) - (72) follow closely the pattern given in (67). Again, the distinction between object control and subject control (72) appears not to make any difference.

(70) *weil der Fritz ihn [das Buch mehrmals zu lesen] überredet hat.*
because Fritz him the book several times to read persuaded has
(a) 'because Fritz has persuaded him to read the book several times'
(b) ∗'because Fritz has several times persuaded him to read the book'

(71) *weil der Fritz ihn [das Buch nicht zu lesen] überredet hat.*
because Fritz him the book not to read persuaded has
(a) 'because Fritz has persuaded him not to read the book'
(b) ∗'because Fritz has not persuaded him to read the book'

(72) *weil der Fritz ihm [das Buch mehrmals zu lesen] versprochen hat.*
because Fritz him the book several times to read promised has
(a) 'because Fritz has promised him to read the book several times'
(b) ∗'because Fritz has several times promised him to read the book'

However, quite contrary to expectation almost all other verb classes that we have considered so far permit an ambiguous reading for scope bearing elements. This clearly holds for all those verbs which also allow scrambling, such as the subject raising verbs (73), the subject control verbs with no additional complements (74), and the *lassen*-constructions with inherently unaccusative or passivized complements (75)/(76)

(73) *weil der Fritz die Maria seit langem zu lieben scheint.*
because Fritz Maria for a long time to love seems
(a) 'because Fritz seems to have loved Maria for a long time'
(b) 'because it has seemed for a long time that Fritz loves Maria'

(74) *weil der Fritz das Buch nicht zu lesen gewagt hat.*
because Fritz the book not to read dared has
(a) 'because Fritz has not dared to read the book'
(b) 'because Fritz has dared not to read the book'

(75) *weil Fritz den Ball mehrmals am Boden auftreffen ließ*
because Fritz the ball several times on the floor bounce let
(a) 'because Fritz let the ball bounce on the floor several times '
(b) 'because Fritz several times let the ball bounce on the floor'

(76) *weil Fritz die Neuigkeit nicht verbreiten ließ*
because Fritz the story not spread let
(a) 'because Fritz didn't make the news be spread '
(b) 'because Fritz caused the news not to be spread'

Now, the crucial question is of course how the *lassen*–constructions with unergative complements (i.e., complements with an agentive subject) behave, since they pattern with the object control verbs with respect to the limitations on scrambling and reflexivisation, with the raising verbs however with respect to the restrictions on extraposition. As it seems the embedded constructions here do *not* form a boundary for the scope bearing elements, but rather allow or even prefer a wide scope reading:

(77) *weil Fritz ihn den Brief mehrmals vom Original abschreiben ließ*
because Fritz him the letter several times from the original copy let
(a) 'because Fritz made him copy the letter several times from the original'
(b) 'because Fritz several times made him copy the letter from the original'

(78) *weil Fritz ihn den Brief nicht an alle Mitarbeiter schicken ließ*
because Fritz him the letter not to all employees send let
(a) 'because Fritz made him send the letter not to all employees'
(b) 'because Fritz didn't make him send the letter to all employees'

The explanation for this divergence of behaviour is often sought in the assumption that here verb raising occurs without necessarily causing clause union as a consequence. The basis for this assumption are usually constructions such as the following, where the scope bearing element occurs adjacent to the verbal complex:

(79) *weil Fritz ihn seinem Freund nicht helfen ließ*
because Fritz him his friend not help let
(a) 'because Fritz didn't make him help his friend'
(b) 'because Fritz caused him not to help his friend'

The structure for this sentence could be either such that the negation particle is embedded in the dependent construction (80) or it is adjoined to the verb complex after the embedded verb has been raised to form a constituent with the matrix verb (81):

(80) [NP [NP NP NEG V] V]

(81) [NP [NP NP e_i] [NEG [[V_i] V]]]

The lack of clause union in (81) would account for the failure of scrambling and long reflexivization, the formation of the verb cluster through verb raising would be compatible with the wide scope of the negation.

Yet, even if this account may appear plausible for structures such as (79), it fails to cover the constructions in (77) and (78): Since the scope bearing element there is not adjacent to the verb cluster, not only the embedded verb but also some other constituent would have to be raised in order for the negation particle to be in a position which c-commands the matrix verb.

The argument against this assumption is further corroborated by the fact that also with those forms of negation, where the negation and the indefinite article *ein-* have been agglutinated into one morphological form *kein-* , we find the negation to take scope over the matrix verbs:

(82) *weil Fritz ihn keinem Menschen helfen ließ*
because Fritz him no man help let
(a) 'because Fritz didn't let him help anybody'
(b) 'because Fritz made him help nobody'

In fact, the second, narrow scope reading in sentences such (82) is not always easy to obtain, the wide scope reading of the negation representing a much more plausible interpretation.

Now, of course the easy way out would be to claim a purely semantic explanation entirely independent from the syntactic structure for all these constructions. However, whereas a wide scope reading in some cases is only more plausible, we can enforce this reading in some constructions through mere variations of the syntactic structure.

This phenomenon is perhaps best illustrated with constructions containing one or more modal verbs (we ignore the epistemic readings of the modals for the moment):

(83) *weil er nicht kommen darf.*
because Fritz not come may
(a) 'because Fritz was not allowed to come'
(b) 'because Fritz was allowed not to come'

(84) *weil ein Wachsoldat die Königin nicht anstarren können muss.*
because a guard the queen not stare-at can must
(a) 'because a guard does not have to be able to stare at the queen'
(b) 'because a guard has to be unable to stare at the queen'
(c) 'because a guard has to be able not to stare at the queen'

The (multiple) ambiguities that can be observed in (83) and (84),[19] can be eliminated, if we form a syntactic variant, which already by itself can be considered as an argument in favour of verb raising and / or clause union , namely the so-called *Ersatzinfinitiv* construction. In this construction, which crucially involves the presence of a bare infinitive[20], a (normally) left recursive or self-embedding verbal structure (85) is 'transformed' into a right recursion which changes into a left recursion (86). As a consequence, none of the embedded verbs can be analysed as forming a constituent with one of its complements or modifiers any more.

[19]We owe this sentence, which represents an ideal example not only for the possibility but also plausibility of different scopal readings, to Hubert Haider.

[20]This bare infinitive in some, but not all cases substitutes the perfective participle, hence the name of the construction.

(85) $[\ldots [\ldots [\ldots [\ldots V_n] \ldots V_{i+1}] V_i] \ldots V_1]$
with $1 <= i < n - 1$

(86) $\ldots [V_1 \ldots [V_i [[V_n] \ldots V_{i+1}]]]$
with $1 <= i < n - 1$

The effect of this construction on the scope ambiguities is that only one of the originally possible readings remains available, the one where the scope bearing element has the widest scope over the entire complex of verbs:

(87) *weil er nicht hat kommen dürfen.*
because Fritz not has come may
(a) 'because Fritz was not allowed to come'
(b) ∗ 'because Fritz was allowed not to come'

(88) *weil ein Wachsoldat die Königin nicht muß anstarren können.*
because a guard the queen not must stare-at can
(a) 'because a guard does not have to be able to stare at the queen'

In some respect this phenomenon would go together quite well with the assumptions of verb raising: As the *Ersatzinfinitiv* can be taken to indicate the formation of a verb cluster, it would make sense that the scope bearing elements can only take scope over the entire verb cluster, if one assumes that these elements automatically take scope over the highest verb to which they are adjoined:

(89) $\ldots [\text{NEG} [_{V'} V_1 [_{V'} [_{V'} V_3] V_2]]]$

In the case of ambiguous readings one could still assume the formation of a verb cluster since the scope bearing element can be adjoined to the left on different levels of the cluster.

(90) $\ldots [\text{NEG} [_{V'} [_{V'} [_{V'} V_3] V_2] V_1]]$

(91) $\ldots [_{V'} [\text{NEG} [_{V'} [_{V'} V_3] V_2]] V_1]$

As to the problem of the *lassen*–constructions, the question was merely whether one should postulate the possibility of verb raising or formation of a verb cluster without simultaneous clause union. If the data above are correct and valid, they would argue against such an assumption, under condition that scope is not entirely determined at semantic level with no reference to structural configurations. The implication then would be of course, that the restrictions on scrambling or word order and reflexivization or binding are not due to the failure of clause union, but rather have to be accounted for by some other, nonconfigurational factors.

9 Topicalization

The last phenomenon we want to consider is topicalization of nonfinite verbal heads with or without their complements or modifiers. Since the topicalized material may cut across different clauses, this phenomenon represent some more argument for the assumption of verb clusters and also clause union. In addition, these constructions provide us with some evidence which may be relevant for the interpretation of the data involving scope bearing elements.

As has been often observed, the position in front of the finite verb in German declarative clauses can be filled not only by nonverbal maximal projections, but also by nonfinite verbal heads either together with all or some of their complements (92) / (93) or all by themselves (94).[21]

(92) *[einen Freund vorgestellt] hat er ihr noch nie*
a friend introduced has he to her yet never
'He hasn't yet introduced a friend to her'

(93) *[ihr vorgestellt] hat er seine Freunde noch nie*
to her introduced has he his friends yet never
'He hasn't yet introduced his friends to her'

(94) *[vorgestellt] hat er ihr seine Freunde noch nie*
introduced has he to her his friends yet never
'He hasn't yet introduced his friends to her'

More central to our discussion is the fact, that this position may also be filled by a verbal head together with the head of its nonfinite verbal complement. Again it is possible to leave behind either all (95) or only some of the nominal complements (96), in both cases the topicalized material comprises only some of the material of the putative two clauses involved:

(95) *[zu lesen versucht] hat er das Buch nicht*
to read tried has he the book not
'He didn't try to read the book'

(96) *[einen Freund vorzustellen versucht] hat er ihr noch nie*
a friend to introduce tried has he to her yet never
'He hasn't yet tried to introduce a friend to her'

Now, the question is of course whether or how the topicalized material should be related to a trace in the base position. One of the phenomena which strongly

[21] Cf. for example [Haider 88], [Johnson 86], [Nerbonne 86], [Netter 86], [Uszkoreit 87].

argues in favour of a base generation of the material in the topic position is the fact that we may get extraposition of the dependent material within the topic position. These examples represent a problem for a strict movement analysis, since the topicalized string can hardly be assumed to form a string or even a constituent in a 'base position':

(97) *[versucht, zu lesen], hat er das Buch nicht*
tried, to read, has he the book not
'He hasn't yet tried to introduce a friend to her'

(98) *[versucht, einen Freund vorzustellen], hat er ihr noch nie*
tried, a friend to introduce, has he to her yet never
'He hasn't yet tried to introduce a friend to her'

None of the following three potential base structures for the sentence (98) obeys the laws of a trace theory which is based on the assumption that the structure co-indexed with a trace could be substituted for this trace without loss of grammaticality.

The first two constructions represent variants of the sentence (98) with the infinitival complement extraposed (99) or nonextraposed (100). In the first case the topicalized material of (98) does not even form a coherent string, in the second case the strings in the base and in the topic position are not identical:

(99) *er hat noch nie* **versucht**, *ihr* **einen Freund vorzustellen**
he has yet never tried, to her a friend to introduce

(100) *er hat ihr noch nie* **einen Freund vorzustellen versucht**
he has to her yet never a friend to introduce tried

In a third (grammatical) variant of the sentence the nonfinite complement has been extraposed, leaving the indirect object behind. However, although in this case we have identical strings, the structure can hardly be called a base structure for the topicalized structure, at least not under the common assumptions where the finite verb is supposed to leave a trace in a clause final base position, but also not in the light of the deviation due to the 'intraposed' NP. The only thing that could be said in favour of establishing a relation between the two constructions is that the summarized saturation of the subcategorization frames of the two respective strings is identical.

(101) *er hat ihr noch nie* **versucht, einen Freund vorzustellen**
he has to her yet never tried, a friend to introduce

Given this apparent lack of restrictions, it should not come as a surprise then, that even those constructions for which the assumption of a biclausal structure appeared most plausible permit a topicalization of lexical material across the putative clause boundaries. Although control verbs with objects hardly satisfied any of the criteria for clause union, it is still possible to topicalize them together with the verbal head of the complement, while leaving all of the nominal complements behind:

(102) *[zu lesen gebeten] hat er ihn es nicht*
to read asked has he him it not
'He didn't ask him to read it'

(103) *[zu lesen empfohlen] hat er ihm alle die Bücher, die ...*
to read recommended has he to him all those books which ...
'He recommended to him to read all those books which ...'

Still, it would be too rash to regard topicalization merely as some more or less meaningless rearrangement of sub-strings, heads and complements; it also has some serious effects on the range of possible interpretations for a sentence. Two of the most interesting examples are perhaps the disambiguation effects on the readings of modal verbs and on the possible scope readings for negation particles and other adjuncts.

To illustrate the former phenomenon, we have to choose a construction where the modal verb governs an unaccusative verb. In these cases, it is generally assumed, that the subject of the embedded verb can be topicalized together with the nonfinite verb. However a side effect of this construction is that a (nonepistemic or perhaps deontic) reading of the modal verb, which involves a direct semantic relation to the subject is not available any more interpreted as a one-place epistemic operator over a full proposition:

(104) *ein Häftling entspringen muß hier öfters*
an prisoner escape must here frequently
(a) 'it must be frequently the case, that a prisoner escapes'
(b) *'a prisoner frequently has to escape here'

(105) *ein Häftling entspringen darf hier nicht*
a prisoner escape may here not
(a) 'it must not be the case that a prisoner escapes here'
(b) *'a prisoner does not have the permission to escape here'

In a quite related way, scope bearing elements also show a restricted range of interpretations if nonfinite heads have been topicalized.

In a very simple case, such as (106), one might expect that the negation particle may have among other readings narrow scope only over the topicalized constituent, as represented by the interpretation in (b). However, apparently this is not sufficient: the negation must have scope also over some head, which is not part of the topicalized constituent, in this case the modal verb *können*:

(106) *[die Königin anstarren] kann er nicht*
the queen stare-at can he not
(a) 'he is not able to stare at the queen'
(b) *'he is able not to stare at the queen'

This generalization is corroborated by the next example where the verb governing the topicalized head is not the topmost, finite verb, but some other nonfinite verb in a clause final position. Sentence (107) has two possible readings, however a third reading (c) with the negation having narrower scope than the modal *können* has to be rated out:

(107) *[anstarren] muß er die Königin nicht können*
stare-at must he the queen not can
(a) 'he need not be able to stare at the queen'
(b) 'he must be unable to stare at the queen'
(c) *'he must be able not to stare at the queen'

If we topicalize all verbal heads except for the finite verb, only one reading remains available, the one with the negation taking the widest scope possible, i.e. scope over the finite verb *müssen* :

(108) *[anstarren können] muß er die Königin nicht*
stare-at can must he the queen not
(a) 'he need not be able to stare at the queen'
(b) *'he must be unable to stare at the queen'
(c) *'he must be able not to stare at the queen'

These data again could present a problem for a theory which accounts for topicalization by means of reconstruction or even by means of having a trace for the topicalized heads somewhere in a clause final position. Since the negation particle presumably has to c-command this trace (or the reconstructed constructions), one would also expect that it can take this empty constituent as an argument, resulting in the narrow scope interpretations. However, apparently the negation cannot even 'see' the topicalized material (nor any of its potential traces), but rather has to look for an argument somewhere in the rest of the clausal structure.

The conclusions that we could draw from these data thus will argue strongly against a purely configurational account, or at least an account which requires that the topicalized material be fully reconstructed or reinstated in its putative base position.

It seems that material can be topicalized which cuts across different clause nuclei and also forms strings which never occur in this form in a putative base structure, i.e. a considerable amount of extrinsically ordered movement operations would be necessary in order to reconstruct such a basic structure.

In the case of object control verbs the assumption of clause union or verb raising is not supported by any other criterion, thus the topicalized heads in this case can hardly be argued to form a constituent in the *Mittelfeld*, at any point of the derivation. As a consequence, one would either have to assume that the topicalized construction can bind traces in different positions not by means of a chain, but rather directly and simultaneously. Alternatively, one could assume that the constituent in the topic position binds a single trace through which its unsatisfied subcategorization requirements are transmitted. Depending on how seriously one wants to take the scope phenomena, it is likely that even the latter solution goes too far, which appears superior to full reconstruction at least insofar as it takes into account that the internal structure of the topicalized construction is inaccessible from outside.

10 Conclusion

It should be clear that many of the suggestions, hypotheses and tentative solutions put forward in this paper are highly speculative and possibly inconsistent. However, as has been mentioned the aim was not to champion one particular approach or even to try and construct a coherent theory, but rather to present a set of phenomena which together make up a complex of problems which is not always examined in its full breadth.

This is presumably not very surprising, given that the relevant data range from phenomena such as extraposition, which appears to argue for a bi-clausal structure, to phenomena like topicalization of partial constituents or even nonconstituents, which seems to indicate the full and radical destruction of any clause-like constituent structure.

Still, even if we cannot present an alternative theory here, the paper will have fully served its purpose if it has cast a shadow of a doubt on a syntactic approach accounting for the phenomena in purely tree configurational terms.

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