

Two types of restructuring—Lexical vs. functional

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Abstract

This paper presents and discusses criteria for distinguishing between lexical and functional heads in the clausal domain, with special focus on *restructuring* configurations (a.k.a. reanalysis, clause union, coherence). Using these criteria, I show that even under the narrowest understanding of the term restructuring, German has both functional and lexical restructuring verbs. This proposal contrasts with the view recently advanced by Cinque on the basis of Italian under which all restructuring verbs are functional (as opposed to lexical) heads residing within a highly articulated IP. The two approaches are compared, and it is shown that a universalist interpretation of Cinque's position is untenable.

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1. Introduction

Restructuring constructions are infinitival constructions which are characterized by the lack of clause-boundedness effects (in languages in which infinitives otherwise show clausal behavior). As shown in (1) from Italian, certain infinitives such as the restructuring infinitive in (1a) are transparent for operations such as clitic climbing, whereas non-restructuring infinitives such as the one in (1b) represent a separate and impenetrable domain for these operations.

(1) Italian restructuring

- a. *Lo volevo* [*vedere* t_{CL} subito]
Him I-wanted [see t_{CL} immediately]
'I wanted to see him immediately'

Restructuring

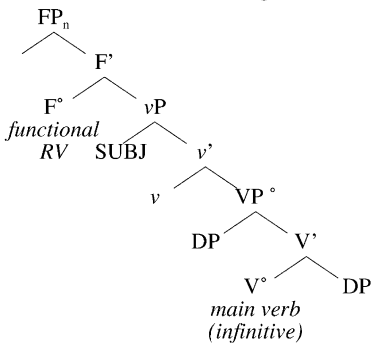
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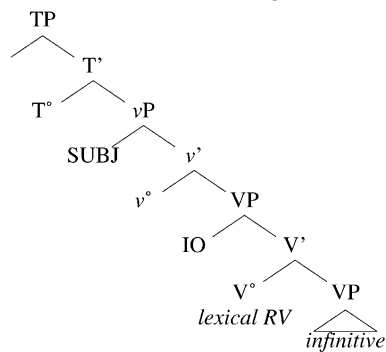
- b. * *Lo detesto* [*vedere* t_{CL} *in quello stato*] Non-restructuring
 Him I-detest [*see* t_{CL} *in that state*]
 ‘I detest seeing him in that state’

In this paper, I will pursue a mono-clausal approach to restructuring (see for instance Strozer 1976, 1981; Zagana, 1982; Cremers, 1983; Picallo, 1985, 1990; Haider, 1986a,b,c, 1991a,b, 1993; Rochette, 1988, 1990, 1999; Rosen, 1989, 1990; Moore, 1990, 1994; Rosengren, 1992; Cinque, 1997, 2001, 2002; Wurmbrand, 1998a,b, 2001) according to which the lack of clause-boundedness effects in restructuring infinitives follows trivially from the assumption that restructuring infinitives lack clausal properties (such as clausal projections) throughout the derivation (see Wurmbrand, 2001, for a comparison of mono- vs. bi-clausal approaches). Mono-clausal approaches are instantiated in two ways. According to one approach, which I will refer to as *functional restructuring*, a restructuring verb is a *type of auxiliary* (see for instance Napoli, 1981) *or a functional head* (see Cinque, 1997, 2001, 2002) which combines with the restructuring infinitive—i.e., the restructuring infinitive is the main predicate of the clause [cf. (2a)]. The second type of mono-clausal approach—*lexical restructuring*—also assumes that a restructuring infinitive is a very small (e.g., VP) complement, however, according to this approach, the restructuring verb is a full lexical verb [cf. (2b)].

(2) (a) Functional restructuring



(b) Lexical restructuring



The purpose of this paper is twofold. First, I will show that lexical and functional restructuring do not simply represent notational variants of the mono-clausal approach but that the lexical vs. functional distinction is a meaningful and definable distinction of grammar. Second, I will compare the two approaches in light of restructuring in German and conclude that a purely functional approach à la Cinque is not tenable, and that both types of restructuring exist.

Without going into detail, an initial difference between lexical and functional restructuring is that under the lexical restructuring approach, the small size of restructuring infinitives is considered to be a special (though potentially derivable) property of restructuring constructions, whereas it can be seen as an advantage of

functional restructuring that the **size** of restructuring infinitives **follows directly** from **the clausal architecture**. This advantage, however, can only be maintained if the functional status of restructuring verbs is independently motivated (i.e., if criteria can be provided that define what constitutes ‘functional’). If the lexical vs. functional status of a verb is simply stipulated, the functional approach is no better in explaining the size or category of a restructuring infinitive than the lexical approach. For that reason, Cinque (2001) suggests the following distinctions: **functional restructuring verbs i) do not assign theta-roles to arguments, ii) are subject to rigid ordering and co-occurrence restrictions, and iii) allow only one type of complementation**. Lexical verbs, on the other hand, establish thematic relations with arguments, are not per se subject to syntactic ordering and co-occurrence restrictions, and show optionality in complementation.

In this paper, I will investigate these points in detail and show that restructuring is not simply the result of a universal functional hierarchy. We will see that German restructuring provides evidence for the existence of both functional and lexical restructuring and that certain ‘exceptions’ in languages which feature mostly functional restructuring (such as Italian) might not be exceptions after all, but rather instances of lexical restructuring in these languages as well.

2. Thematic properties

A standard view holds that **lexical and/or thematic properties are projected** in a certain delimited domain of the clause (cf. Travis, 2000 **L-syntax** which corresponds to **VP plus certain aspect phrase(s)**, or Marantz 1997 domain of special meaning which corresponds to v'). Besides an interesting point of debate concerning the lexical vs. functional status of the head assigning the external theta-role (e.g., v°) and the external argument itself, which I will not address here since it will not affect the argument to be made (but see Wurmbrand, 2001, for some discussion), it seems to be quite uncontroversial to assume that all thematic properties are projected in the domain of the clause which corresponds to the V-projections and possibly v -projections. The **domain above this lexical domain is “non-thematic”** in that heads of that domain do not participate in properties such as theta-role assignment to arguments or special meaning.¹ Assuming essentially this split in the clause (i.e., a thematic lexical domain vs. a non-thematic functional domain), Cinque (2001) concludes that restructuring constructions—by virtue of the restructuring verb being a **functional head—i) have to be raising constructions, and ii) cannot include internal arguments which are selected by the restructuring verb**. In what follows, I will show that both conclusions do not hold for (all) German restructuring constructions.

¹ Throughout this paper, **I will distinguish between functional selection** (i.e., c-selection by functional heads) **and thematic selection of arguments**. I will refer to the former as “non-thematic” and to the latter as “thematic”.

2.1. Passive

To show that (certain) restructuring constructions cannot be analyzed as **raising** constructions (i.e., as constructions lacking an external argument), I will first summarize briefly the **major properties attributed to the presence vs. absence of an external argument**. As illustrated in (3a), unergative intransitive predicates can be passivized, whereas **unaccusative intransitive predicates do not allow passivization**.² The difference is generally attributed to the presence vs. absence of an underlying external argument: passive is only possible if the predicate involves an underlying external argument.

(3) German passive with intransitive verbs

- a. *Es wurde einen Abend lang getanzt/diskutiert*
 It was an evening long danced/discussed
 ‘They danced/talked for an evening.’
- b. * *Es wurde am Flughafen angekommen/gestorben*
 It was at the airport arrived/died
 ‘They arrived/died at the airport.’

The possibility of passive can hence be used as a diagnostic for the presence of an external argument. Turning to restructuring constructions **in German**, we find that **passive splits** the class of **restructuring predicates into two groups**: constructions which allow passive and constructions which prohibit passive. As expected, (true) raising constructions such as (4a) block passivization of the raising predicate. However, (4a) contrasts sharply with restructuring constructions such as the one in (4b). One restructuring criterion in German is the possibility of **(long) A-movement of the embedded object**. As illustrated in (4b), in **cases where a matrix restructuring verb is passivized, the embedded object moves to matrix subject position where it gets nominative Case and agrees with the matrix auxiliary**. Taking this form of “long” A-movement as evidence for restructuring, we can conclude that matrix predicates such as the one in (4b) cannot be raising predicates—i.e., they cannot be analyzed as lacking an underlying external argument.

² There are some famous examples that have been stated as evidence against the claim that unaccusatives cannot be passivized (e.g., *Hier wird nicht gestorben* lit. ‘Here is not died’). Considering the meaning and distribution of these kinds of examples, however, seems to indicate that what is at stake here is not the question of passive of unaccusatives but rather the question of whether the predicate involved is indeed an unaccusative predicate. Note that examples of that sort require a very particular context—the example above for instance cannot be interpreted as a statement of fact expressing that people do not die here (which is evident by the impossibility of changing the tense to the past); it can only be used as a reassuring utterance, typically by a caretaker of an old or sick person, who is trying to disperse some death thoughts or worries of the addressee. That is, the interpretation is roughly “You are not allowed/supposed to die here”, which indicates that the speaker attributes some volitionality or agentivity to the addressee’s action.

(4) German passive



- a. * *Der Kaviar* wurde zu essen *gescheint/geschienen*
 The caviar was to eat seem-PART_a/PART_b
 ‘The caviar was seemed to eat’; ‘It seemed that somebody ate the caviar’
- b. *dass der Lastwagen und der Traktor* zu reparieren versucht wurden
 that the-NOM truck and the-NOM tractor to repair tried were
 ‘that they tried to repair the truck and the tractor’

Note that this conclusion holds under any definition of restructuring in German. Although there is some disagreement about the restructuring/non-restructuring classification and the criteria used to define the class of restructuring predicates (see Wurmbrand 2001 for an overview), it is important to note that even under the narrowest definition of restructuring, the class of restructuring verbs would involve predicates such as *try*, *dare*, *forget*, *intend*, *forbid*, *recommend*, *allow*. That is, to the best of my knowledge, all accounts of restructuring in German agree that these verbs are to be classified as restructuring verbs. Since all of the above predicates license passivization, the claim that these restructuring verbs do not assign an external theta-role cannot be maintained.

Importantly, however, passivization cannot apply to all restructuring predicates. In particular, unaccusative restructuring verbs such as *manage*, as well as modal and raising constructions, cannot be passivized. In Wurmbrand (1999, 2001) it is argued that modal constructions (independently of whether they are interpreted as epistemic or root/circumstantial modals) involve raising—i.e., that the subject in a modal construction is not assigned a theta-role by the modal verb. Under this analysis, it then follows that modals do not allow passivization in German [cf. (5)].

(5) Passive of modal verbs

- a. * *Der Wagen* wurde (zu) reparieren *gekonnt/können*
 The car-NOM was (to) repair can-PART/INF
 ‘They were able to repair the car’
- b. * *Der Wagen* wurde (zu) reparieren *gemußt/müssen*
 The car-NOM was (to) repair must-PART/INF
 ‘They had to repair the car’

While the possibility of passive allows us to conclude that the predicate under consideration involves an underlying external argument (and hence cannot be a non-thematic raising verb), the impossibility of passive does not imply that the predicate is non-thematic. The only conclusion that we can draw is that the predicate does not involve an external argument. To show that these predicates are functional raising predicates, we have to consider other properties. In what follows, I will present a number of arguments that will lead to the conclusion that modal and raising verbs are indeed non-thematic functional heads in German, which do not establish a thematic relation with the surface subject—i.e., the constructions in (4a) and (5) are typical raising constructions. Restructuring verbs such as *try* etc., on the other hand, are thematic lexical verbs which select an external argument and do not involve subject raising (in the active construction). This split between lexical and functional restructuring is supported

by a number of syntactic and thematic properties that are accounted for by the lexical vs. functional difference between the two types of restructuring, but that seem to be unexpected under an account that treats all restructuring as functional restructuring.

2.2. Lexical restructuring \neq raising

Let us start with a brief overview of typical raising properties such as the possibility of non-thematic (surface) subjects. As shown in (6a–c) and (7a–c) (epistemic and root) modal constructions as well as seem-type raising constructions are compatible with weather-*it* or inanimate subjects, whereas (what I argue to constitute) lexical restructuring predicates [cf. (6d), (7d)] and non-restructuring predicates [cf. (6e), (7e)] are not.

(6) Weather-*it* subjects

- | | | | | | |
|------|--|------------------|--------------------|-----------------|-----------------------|
| a. | <i>Es</i> | <i>dürfte</i> | <i>morgen</i> | <i>schneien</i> | Epistemic |
| | It | might | tomorrow | snow | |
| | 'It might snow tomorrow' | | | | |
| b. | <i>Es</i> | <i>scheint</i> | <i>zu schneien</i> | | Raising |
| | It | seems | to snow | | |
| | 'It seems to be snowing' | | | | |
| c. | <i>Es</i> | <i>muß</i> | <i>morgen</i> | <i>schneien</i> | Root |
| | It | must | tomorrow | snow | |
| | 'It must snow tomorrow [otherwise the race will have to be cancelled]' | | | | |
| d. * | <i>Es</i> | <i>versuchte</i> | <i>zu schneien</i> | | Lexical restructuring |
| | It | tried | to snow | | |
| e. * | <i>Es</i> | <i>plante</i> | <i>zu schneien</i> | | Non-restructuring |
| | It | planned | to snow | | |

(7) Inanimate arguments, raising

- | | | | | | |
|------|-------------------------------------|------------------|------------------------------|----------------|-----------------------|
| a. | <i>Der Kuchen</i> | <i>dürfte</i> | <i>gegessen worden</i> | <i>sein</i> | Epistemic |
| | The cake | might | eaten AUX _{PASS} | be | |
| | 'The cake might have been eaten' | | | | |
| b. | <i>Der Kuchen</i> | <i>scheint</i> | <i>gegessen worden</i> | <i>zu sein</i> | Raising |
| | The cake | seems | eaten AUX _{PASS} | to be | |
| | 'The cake seems to have been eaten' | | | | |
| c. | <i>Der Kuchen</i> | <i>muß</i> | <i>gegessen werden</i> | | Root |
| | The cake | must | eaten AUX _{PASS} | | |
| | 'The cake must be eaten' | | | | |
| d. * | <i>Der Kuchen</i> | <i>versuchte</i> | <i>gegessen zu werden</i> | | Lexical restructuring |
| | The cake | tried | eaten to AUX _{PASS} | | |
| | 'The cake tried to be eaten' | | | | |
| e. * | <i>Der Kuchen</i> | <i>plante</i> | <i>gegessen zu werden</i> | | Non-restructuring |
| | The cake | planned | eaten to AUX _{PASS} | | |
| | 'The cake planned to be eaten' | | | | |

Thus, modals and raising predicates are non-thematic whereas lexical restructuring verbs establish thematic relations with their argument(s). Under the assumption that this

Table 1
Thematic properties

	Raising predicates	Modals	Lexical restructuring verbs	Non- restructuring verbs
Weather- <i>it</i>	OK	OK	*	*
Inanimate subjects	OK	OK	*	*
Subject raising	OK	OK	*	*
Matrix passive	*	*	OK	OK

thematic difference correlates with a structural difference (such as lexical vs. functional), the properties summarized in Table 1 follow straightforwardly. Assuming that only lexical verbs establish thematic relations, we can conclude that *try*-type restructuring verbs are indeed lexical verbs rather than functional heads. The only way to maintain the claim that these restructuring verbs are functional elements, **would be to give up the view that thematic relations are restricted to heads in the lexical domain.** However, as mentioned above, this would mean abandoning the first of the three criteria for the functional status of restructuring verbs, moving the lexical vs. functional distinction closer to being a mere stipulated label. Moreover, under this view, it would not be clear why verbs such as *try* are thematic ‘functional’ restructuring verbs, whereas modals are non-thematic functional restructuring verbs and verbs such as *decide*, *hope*, *plan*, *regret*, *force* are thematic lexical (hence non-restructuring) verbs. Note further that the assumption that restructuring verbs of the *try*-type are non-thematic verbs which assign an adjunct theta role (cf. Zubizarreta, 1982, for the original assumption applying only to modals; see Cinque, 2001, among others for an extension of this idea to other restructuring predicates) would not explain the systematic differences in (6) through (7). First, the thematic relations established by lexical restructuring verbs are obligatory; restructuring verbs such as *try* behave thematically exactly like non-restructuring verbs such as *decide*—they obligatorily require an agent and never allow raising. Thus, adjunct theta roles would have to be assigned obligatorily which seems to do no more than re-stipulate that lexical restructuring verbs are thematic. Second, as shown in Section 2.1, a true external argument is crucial for the difference evidenced in the passive constructions. If adjunct theta roles are sufficient to license passive, one would lose the explanation for the fact that passive is only possible with lexical restructuring verbs and not, for example, with modals.

To conclude, the distribution in Table 1 strongly suggests that verbs like *try* (also *recommend*, *allow*, *forbid*, *forget*, *dare* etc.) are lexical verbs rather than functional raising predicates.

2.3. Internal arguments

The final point concerning the thematic structure of restructuring predicates concerns Cinque’s claim that restructuring predicates cannot combine with internal arguments. As shown in (8), this claim is falsified by **lexical restructuring predicates such as *allow*, *recommend*, or *manage* which allow restructuring in the presence of an internal dative argument** (see also Haider, 1993; Sabel, 1994, 1996). Restructuring is



evidenced by long A-movement—i.e., nominative Case on the embedded object and agreement with the matrix verb.

(8) Dative arguments in restructuring contexts

- a. *Dem Kind* wurden nur Kekse zu essen erlaubt
the child-DAT were only cookies to eat allowed
'They only allowed the child to eat cookies'
- b. *Der Roman* wurde ihm zu lesen empfohlen
the novel-NOM was him to read recommended
'They recommended to him to read the novel'
- c. weil mir der Brief auf Anhieb zu entziffern gelungen ist
since me-dat the letter-nom straightaway to decipher managed is
'since I managed straightaway to decipher the letter'

To conclude, predicates classified as lexical restructuring predicates here fail all tests generally employed to diagnose raising. Like lexical non-restructuring verbs and unlike modal and raising constructions, lexical restructuring verbs establish thematic relations with their argument(s): lexical restructuring verbs can occur with internal arguments, do not allow non-thematic subjects, and (non-unaccusative) lexical restructuring verbs select an underlying external argument. In the next section, I will show that these thematic properties correlate with a number of other syntactic properties which distinguish between lexical and functional heads, leading again to the conclusion that *try*-type restructuring verbs pattern with lexical verbs rather than with functional verbs.

3. Ordering, co-occurrence, and optionality

An interesting observation made in Cinque (2001) is the claim that restructuring verbs show certain ordering and co-occurrence restrictions which track (more or less) the hierarchy in (9) observed independently for the ordering of adverbs (cf. Cinque, 1999). Cinque therefore concludes that restructuring verbs are instantiations of the heads of the universally ordered functional projections in (9) which host the relevant adverbs in their specifiers.

(9) Cinque's functional hierarchy

MoodP_{speech act} > MoodP_{evaluative} > MoodP_{evidential} > ModP_{epistemic} > TP(Past) > TP(Future) > MoodP_{irrealis} > ModP_{alethic} > AspP_{habitual} > AspP_{repetitive(I)} > AspP_{frequentative(II)} > ModP_{volitional} > AspP_{celerative(II)} > TP(Anterior) > AspP_{terminative} > AspP_{continuative} > AspP_{retrospective} > AspP_{proximative} > AspP_{durative} > AspP_{generic/progressive} > AspP_{prospective} > ModP_{obligation} > ModP_{permission/ability} > AspP_{Completive} > VoiceP > AspP_{celerative(II)} > AspP_{repetitive(II)} > AspP_{frequentative(II)}

The attractiveness of this proposal comes from the claim that the hierarchy in (9) is universal and rigid—i.e., the order of heads cannot be reversed. An illustration is given in (10): *use-to* can combine with *try* as its complement, but not vice versa.

(10) Ordering effects in Italian

(Cinque, 2001: 94)

- a. *Suole provarle a fare da solo*
 He-uses to-try-them_{CL} to do by self
 'He uses to try to do them by himself'
- b. * *Prova a solerle fare da solo*
 He-tries to use-them_{CL} to-do by self
 'He tries to use to do them by himself'

Thus, the functional status of a predicate (and hence restructuring) is motivated by the place that predicate occupies in the functional hierarchy in (9). In other words, the meaning of a verb determines its position in the hierarchy, and restructuring verbs are simply realizations of the heads of the functional hierarchy. A strong piece of motivation for this claim is provided in Cinque (2001) where it is noted that the ordering effects found in restructuring contexts are not only found when the constructions involve restructuring properties such as clitic climbing etc., but are also retained in contexts where restructuring effects are absent. Since the position of a verb in the hierarchy in (9) is not seen as an arbitrary assumption about particular verbs (which again would defeat the motivation behind the claim that restructuring is tied to the functional hierarchy in (9)) but rather argued to follow from the meaning of the predicates involved and the universality of the hierarchy, (functional) verbs occupy one and only one predetermined spot on the universal hierarchy [with some exceptions; cf. the two positions for repetitive, frequentative, and celerative meaning in (9)]. This is illustrated in (11): it has been noted by many authors that clitic climbing is not necessitated in constructions with restructuring verbs. Thus, (11a) is possible along with (10a). A standard claim is that the difference between (10a) and (11a) is a difference between restructuring (10a) and non-restructuring (11a). However, as Cinque points out, (11b) is as ungrammatical as (10b). That is, the **ordering between use-to and try is found whether clitic climbing takes place or not.**

(11) Ordering effects in Italian

- a. *Suole provare a farle da solo*
 He-uses to-try to do-them_{CL} by self
 'He uses to try to do them by himself'
- b. * *Prova a soler farle da solo*
 He-tries to use to-do-them_{CL} by self
 'He tries to use to do them by himself'

The assumption that restructuring verbs are functional heads provides an elegant explanation for the impossibility of (11b). Under the assumption that restructuring verbs are functional heads and that the position of a predicate in the hierarchy is rigidly determined by its meaning, a particular verb will always occupy the same position, and it hence follows that a verb cannot be both a (functional) restructuring verb and a (lexical) non-restructuring verb (with the same meaning). In other words, Cinque rejects the claim that restructuring is optional—both (10b) and (11b) are restructuring constructions in the sense that the verbs occupy functional head positions

which cannot be reversed. Optionality does arise, however, with respect to (certain) restructuring properties (e.g., clitic climbing). Finally, whenever there is a restructuring/non-restructuring alternation, the alternation is only apparent in that the verbs involved in the two constructions are in fact not the same. **Cinque provides some interesting evidence that in cases of apparent optionality of restructuring, the constructions corresponding to restructuring vs. non-restructuring involve (subtle but nevertheless detectable) differences in meaning.**

To conclude, the major argument for the functional status of restructuring verbs comes from the rigid ordering restrictions found in constructions with restructuring verbs, which hold independently of the presence or absence of restructuring properties. In the following sections, I will show that this system indeed makes the right predictions for a subclass of restructuring constructions but it is again unsatisfactory for constructions involving predicates classified as lexical restructuring verbs here.

3.1. Ordering, co-occurrence restrictions

To begin with, I will first summarize certain ordering and co-occurrence restrictions found in German. Importantly, these effects are only found with predicates that are diagnosed as non-thematic predicates.

A well-known restriction which is attested in a variety of languages is that **epistemic verbs have to precede other modals and auxiliaries** (cf. Picallo, 1985, 1990, among many others and von Stechow and Iatridou, 2003, for a recent treatment of this fact). This is illustrated in (12) through (14). The epistemic modal *might* can embed modals under it (12a), but cannot be embedded under other modals (12b) or the future auxiliary (12c). The same effect is found with modals that can receive different interpretations. While *must* in (13a) is **ambiguous between a root/deontic and epistemic interpretation**, (13b) can only be interpreted deontically; an epistemic interpretation is not available. Similarly, (13c) shows that an epistemic modal cannot be embedded under the future auxiliary. Finally, (epistemic) raising verbs in German, like epistemic modals, have to precede other modals and/or auxiliaries: the raising verb *seem* cannot be embedded under the future auxiliary (14a), the perfect auxiliary (14b), an epistemic modal (14c), or a deontic modal (14d).

(12) Epistemic *might*

- a. *Er dürfte zu Hause sein müssen*
He might at home be must
'He might have to be at home'
- * 'It must be that it must be the case that he is at home'
- b. * *Er muß wieder singen dürfen*
He must again sing might
'It must be the case that he might sing again'
- c. * *Er wird wieder singen dürfen*
He will again sing might
'It will be the case that he might sing again'

(13) Root vs. epistemic *must*

- a. *Sue muß gerade zu Hause arbeiten*
 Sue must just at home work
 ‘Sue is obliged to work at home right now’
 ‘It must be the case that Sue is working at home right now’
- b. *Sue hat zu Hause arbeiten müssen*
 Sue has at home work must-IPP
 ‘Sue had an obligation to work at home’
 * ‘It must have been the case that Sue worked at home’
- c. *Morgen wird er Kartoffel schälen müssen*
 Tomorrow will he potatoes peel must
 ‘Tomorrow, he will be obliged to peel potatoes’
 * ‘Tomorrow, it will have to be the case that he will peel potatoes’

(14) Embedded *scheinen* ‘seem’

- a. * *Morgen wird er die Stadt zu verlassen scheinen*
 Tomorrow will he the town to leave seem
 ‘He will seem to be leaving town tomorrow’
- b. * *Sie hat zu Hause zu arbeiten gescheint/geschienen*
 She has at home to work seem-part_a/PART_b
 ‘She has seemed to work at home’
- c. * *Morgen dürfte er die Stadt zu verlassen scheinen*
 Tomorrow might he the town to leave seem
 ‘He might seem to leave town tomorrow’
- d. * *Sie muß zu Hause zu arbeiten scheinen*
 She must at home to work seem
 ‘She must seem to work at home’

Note that the modal *dürfte* ‘might’ is finite and hence the distribution in (12) might not be surprising. However, the assumption that the distribution in (12) is due to an idiosyncratic property of *dürfte* (its obligatory finiteness) does not solve the problem but simply shifts the burden of explanation to the question of why *dürfte* only occurs in the finite form and why there are no non-finite forms of this verb. Moreover, the same question arises for the (epistemic) raising verb *scheinen* in (14). Assuming, on the other hand, that there is an ordering restriction in German according to which epistemic verbs must be higher than other functional heads (but lower than tense), we can account for both the distribution in (12) through (14) as well as the finiteness restriction for verbs that can only be embedded under tense but no other functional head.

Although the epistemic ordering restriction above is in line with Cinque’s functional hierarchy, it is important to stress that I nevertheless consider it to be a language-specific restriction of German here. There are various reasons for this claim. While there is a general trend among languages for epistemic modals to be very high in the functional domain, languages differ regarding the position of epistemic raising verbs. In English, for instance, *seem* can be embedded under modals, and it also does not compete with other epistemic verbs (e.g., *He might seem to be sick*). Thus, the ordering restriction

posited for German would be too strict for English. Similarly, it was pointed out to me by an anonymous reviewer that Dutch has two verbs that correspond to *seem*: *schijnen* and *lijken*. While *schijnen* behaves like German *scheinen* in contexts such as the ones in (14), *lijken* (which is also an epistemic raising verb) can be embedded under deontic modals (in the raising version). Thus again, the distribution of epistemic raising verbs does not seem to be in accordance with Cinque's universal hierarchy and a general epistemic ordering restriction as suggested for German would be too strong.

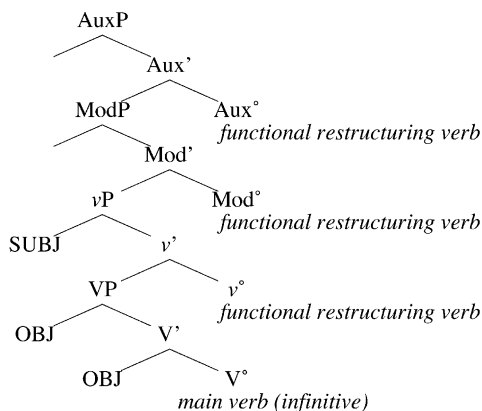
Given the co-occurrence restriction between epistemic verbs and raising verbs in German, I follow the common approach that these restrictions indicate that the elements involved compete for the same position.³ Bundling or competition effects are quite common for functional heads and—unless they follow from other properties of grammar—can be seen as support for the claim that the verbs above are functional heads. To give one example, as is well-known, tense, agreement, and modals compete for one position in English [cf. (15)].

(15) Competition for I° in English

- a. *John must have left*
- b. * *John has must left*
- c. *he talks*; **he talkeds*

Following Iatridou (1990), Thráinsson (1996), and Bobaljik and Thráinsson (1998), the bundling effect in (15) indicates that the features under consideration compete for one position—i.e., that there is only one inflectional position in English hosting tense, agreement, and modals. By the same reasoning, the competition effects noted in (12) through (14) lead to the (partial) clause structure in (16) for German, where epistemic modals and raising verbs compete for the highest head (labeled Aux), whereas deontic modals are in a lower Mod head (which presumably is recursive in German).

(16) Functional restructuring



³ Similar restrictions which cannot be discussed here for reasons of space arise for perception verbs, motion verbs, and causatives (cf. Wurmbrand, 2001; for motion verbs see also Cardinaletti and Giusti, 2001).

Turning to thematic restructuring verbs, however, we find that these restructuring predicates can freely co-occur and swap positions provided there is an appropriate context.⁴ Some examples are given in (17). This list can be extended easily, as long as one takes into consideration that certain contexts are pragmatically less common than others. That is, there are of course certain restrictions on the order of verbs (e.g., it is perhaps harder, but by no means impossible, to imagine an utterance such as *He tried to dare to do something* than it is to think of a context in which *He dared to try to do something*). While there might be some borderline cases, native speakers' intuitions are fairly clear that these kinds of pragmatic effects are of a very different nature than the structural ordering restrictions found in (12) through (14) which arise independent of the context of the utterance.⁵

(17) No ordering/co-occurrence restrictions with lexical restructuring verbs

- a. *dass den Mann dem Fritz keiner wagte zu erlauben anzurufen*
that the man-ACC the Fritz-DAT nobody-NOM dared to allow to-call
'that nobody dared to allow Fritz to call the man' (Sabel, 1994: 292)
- b. *dass er die Tür zu öffnen zu versuchen wagte* [...] *...*
that he the door to open to try dared
'that he dared to try to open the door' (Haider, 1993: 249)
- c. *dass er zu rauchen aufzuhören begonnen hat*
that he to smoke stop begun has
'that he began to stop smoking' (Haider, 1993: 245)
- d. *Hans befahl der Maria die Augen aufzumachen zu versuchen*
John ordered the Mary-DAT the eyes open-to-make to try
'John ordered Mary to try to open the eyes'
- e. *Hans versuchte der Maria die Augen aufzumachen zu befehlen*
John tried the Mary-DAT the eyes open-to-make to order
'John tried to order Mary to open the eyes'
- f. *Hans vergaß der Maria schwimmen zu lernen zu empfehlen*
John forgot the Mary-DAT swim to learn to recommend
'John forgot to recommend to Mary to learn swimming'
- g. *Hans empfahl der Maria nicht zu atmen zu vergessen*
John recommended the Mary-DAT not to breath to forget
'John recommend to Mary not to forget to breathe'

⁴ The restructuring verbs *manage/fail* cannot be embedded (as infinitives) since these verbs are unaccusative verbs selecting dative experiencers which cannot be controlled in German (cf. Zaenen et al., 1985).

⁵ An interesting question is why long passive and scrambling (i.e., restructuring properties) are quite marked in constructions with more than one infinitive (cf. **Der Turm wurde zu reparieren zu beginnen versucht* 'They tried to begin to repair the tower'; or **Der Turm wurde zu reparieren zu versuchen begonnen* 'They began to try to repair the tower'). Note that this has no bearing on the question of whether there is an ordering between *begin* and *try*, as both orderings prohibit these restructuring properties. A way to account for this effect would be to assume with Bobaljik and Wurmbrand (2003) and Wurmbrand (2003) that restructuring infinitives are phases which are in principle barriers for movement. However, as argued there, phase boundaries can be skipped in certain contexts. It then seems natural to assume that the more phases there are, the harder it is to circumvent them.

Although these facts per se do not argue for the lexical status of these verbs, they nevertheless pose a challenge for the claim that the predicates involved are functional. If the verbs in (17e) were functional heads, they would have to be ordered on the functional hierarchy by definition. To deal with the ordering variability in (17), it would have to be assumed that parts of the hierarchy can be repeated [as for the cases which occur twice in (9)]. Thus, for the cases at hand, multiple occurrences in the functional hierarchy are necessary in just those cases that correspond to lexical verbs by the other criteria discussed. This seems to once more undermine one of the criteria for the lexical/functional status of restructuring verbs, again leaving open why some verbs do work like (true) functional verbs.

To conclude this section, ordering effects and co-occurrence restrictions indeed obtain in restructuring contexts, however, only in constructions with functional (i.e., non-thematic) predicates. In the next section, I will provide further arguments for the claim that thematic restructuring predicates are best analyzed as lexical verbs.

3.2. *Obligatory vs. optional restructuring*

In this section, I will address the issue of optionality of restructuring vs. optionality of restructuring properties and show that again only a subclass of restructuring in German has the properties Cinque attributes to restructuring. In particular, I will argue that functional but not lexical restructuring is obligatory (or put differently, only functional restructuring is subject to rigid complementation). Importantly, the class of predicates that display ‘functional’ properties will correlate with the predicates that have been diagnosed as non-thematic in Section 2, whereas the predicates that fail to have the ‘functional’ characteristics are predicates that are classified as thematic predicates. In the second subsection, I will suggest that the lexical vs. functional distinction argued for in German might also be found in Italian. Finally, in the third subsection, I will show that the claim that restructuring is obligatory but restructuring properties are optional makes the wrong predictions for certain constructions in German, and that an account that attributes differences such as the one between (10a) and (11a) to optionality of restructuring is superior.

3.2.1. *German lexical vs. functional restructuring*

As pointed out by Cinque, constructions lacking restructuring properties are not per se (but see Section 3.2.3) conclusive evidence for the optionality of restructuring. To determine whether restructuring is optional, I will therefore take a different path. While the lack of restructuring properties in constructions with (potential) restructuring verbs does not show that a construction is a non-restructuring construction [cf. Cinque’s discussion of (11a)], the occurrence of properties that diagnose non-restructuring, can be taken as conclusive evidence for the optionality of restructuring (for constructions that also license restructuring properties in other contexts). I will show in this subsection that functional restructuring

constructions indeed prohibit non-restructuring properties, whereas (potential) lexical restructuring contexts permit them, however, importantly, only in the absence of restructuring properties.

A property that has been used to diagnose non-restructuring is relative clause pied piping (see van Riemsdijk, 1984, 1985; von Stechow, 1984; Haider, 1993; Kiss, 1995; Grosse, 2000). As shown in (18), **relative clause pied piping is possible in non-restructuring constructions.**

(18) Relative clause pied piping of non-restructuring infinitives

- a. ...*der Roman* [*den schon gelesen zu haben*]_{INF} *der Hans* *bedauerte*
 ...the novel [that already read to have]_{INF} the John-NOM regretted
 ...‘the novel that John regretted having read already’
- b. ...*der Roman* [*den zu lesen*]_{INF} *der Hans* *plante*
 ...the novel [that to read]_{INF} the John-NOM planned
 ...‘the novel that John planned to read’

Turning to **functional restructuring** contexts, it can be observed that the application of relative clause pied piping results in **ungrammaticality** (cf. (19)).

(19) Relative clause pied piping in functional restructuring contexts

- a. * ...*der Roman* [*den lesen*]_{INF} *nur der Hans* *muß*
 ...the novel [that read]_{INF} only the John-NOM must
 ...‘the novel that only John must read’
- b. * ...*der Roman* [*den zu lesen*]_{INF} *nur der Hans* *schien*
 ...the novel [that to read]_{INF} only the John-NOM seemed
 ...‘the novel that only John seemed to be reading’

The impossibility of relative clause pied piping, however, is only found in functional restructuring contexts. The examples in (19) contrast sharply with the well-formed cases in (20a,b). That is, **relative clause pied piping is possible with all (potential) lexical restructuring verbs, but importantly, it is blocked when the construction shows any property indicating restructuring.** This is illustrated with long passive in (20c,d) (see Wurmbrand, 2001, for examples showing the same phenomenon with other restructuring properties).

(20) Relative clause pied piping in lexical (non-)restructuring contexts

- a. ...*der Roman* [*den zu lesen*]_{INF} *nur der Hans* *vergaß*
 ...the novel [that to read]_{INF} only the John-NOM forgot
 ...‘the novel that John forgot to read’
- b. ...*der Roman* [*den ihr zu geben*] *der Hans schon oft* *versucht hatte*
 ...the novel [that her to give] the John already often tried had
 ...‘the novel that John had tried to give to her already several times’
- c. * ...*der Roman* [*der ihr zu geben*] *schon oft* *versucht wurde*
 ...the novel [that-NOM her to give] already often tried was
 ...‘the novel that somebody had tried to give to her already several times’

- d. *...der Mann [demzu geben] nur ein Roman versucht wurde
 ...the man [thatto give] only a novel-NOM tried was
 ...‘the man that they (imp.) tried to give only a novel’

Without going into detail, the distribution of relative clause pied piping follows straightforwardly from the lexical vs. functional distinction suggested here together with the assumption that only full clauses can be pied-piped. If verbs like *try*, *forget* etc. are **lexical verbs**, there is no a priori restriction against combining with different types of complements (many verbs allow more than one type of complement; e.g., *expect* in English **can combine with an ECM complement, a control complement, a finite clause etc.**). Thus, all we have to say is that (potential) restructuring verbs can combine with either a **restructuring infinitive** (which then allows restructuring properties but prohibits non-restructuring properties such as relative clause pied piping), or a full clause non-restructuring infinitive which prohibits restructuring properties but allows non-restructuring properties such as relative clause pied piping. **Functional restructuring constructions, on the other hand, are obligatorily mono-clausal configurations** (due to the rigid ordering of functional heads in a clause) and hence **do not involve any optionality in complementation** (i.e., functional verbs cannot combine with clausal complements and hence never allow non-restructuring properties).

To conclude, the assumption that *try*-type restructuring verbs are lexical verbs (which is also supported by their thematic properties) provides a straightforward account for the occurrence of properties restricted to non-restructuring infinitives. An account that treats all restructuring verbs as functional heads, on the other hand, seems to face a challenge regarding the above distribution. The only way to account for the option of non-restructuring properties would be to state that verbs like *try* are ambiguous between a functional restructuring verb and a lexical non-restructuring verb, whereas **modal and raising verbs are unambiguously functional verbs**. As mentioned above, this solution, however, would be against the spirit of the idea that restructuring follows directly from the strict functional hierarchy (note that there is no obvious meaning difference between (20a,b) and the restructuring versions of these examples). Moreover, this solution would fail to account for the generalization that all and only lexical restructuring verbs come in two versions. Thus, the two sets of correlations presented so far (thematic vs. non-thematic, and optional vs. obligatory restructuring) strongly favor a split in the class of restructuring constructions.

3.2.2. *An indication of optionality of restructuring in Italian*

Turning to Italian, an indication that (lexical) restructuring shows optionality comes from the distribution of adverbs. Part of the motivation for the (rigid) functional status of restructuring predicates comes from the **prohibition against using the same adverb twice in** restructuring constructions (cf. (21a) from Cinque 2001:59). Since restructuring constructions are mono-clausal constructions in that they involve only one ‘set’ of the **functional** projections in (9), it follows that a restructuring construction can **only include one adverb of each type**. The problem,

however, is that the impossibility of the multiple occurrence of the same adverb is only found when transparency facts obtain [cf. (21b) from Cinque, 2001: 59]. If, as Cinque claims, both examples in (21) are restructuring constructions, both examples should be ungrammatical [very much like (10b) and (11b)].

(21) Adverbs in restructuring contexts

- a. * *Maria lo vorrebbe già aver già lasciato*
 Mary him-CL would-want already have already left
 ‘Mary would already want to have already left him’
- b. *Maria vorrebbe già averlo già lasciato*
 Mary would-want already have-him-CL already left
 ‘Mary would already want to have already left him’

If, on the other hand, (21a) is a restructuring infinitive but (21b) is a non-restructuring infinitive, the difference could be related to the mono-clausality of the former vs. the bi-clausality of the latter. Going back to the examples in (10) and (11), we are then faced with two options. First, the verbs involved could indeed be functional verbs, hence triggering ordering restrictions. This would mean, however, that *try* in Italian is different from *try* in German. Since there does not seem to be any independent motivation for the lexical vs. functional difference of *try* (note that *try* is one of the problematic predicates for Cinque, since it lacks raising properties and hence requires the postulation of an adjunct theta-role), I will not pursue this option here. Second, assuming that *try* is indeed lexical in both languages, the ungrammaticality of (11b) could not be seen as an ordering effect but would have to be accounted for differently. An obvious solution would be to exclude (11b) on semantic or pragmatic grounds. An infinitive combining with a verb like *try* has to receive a simultaneous irrealis interpretation. However, this interpretation seems to be incompatible with the meaning of *use-to*.

3.2.3. Lack of obligatory restructuring properties with lexical restructuring

The final argument against Cinque’s claim that restructuring verbs are functional heads and that restructuring is obligatory comes from certain restructuring properties in German which will be argued to be obligatory. Thus, I will show that there is an implicational relation between restructuring and certain restructuring properties: if an infinitive is a restructuring infinitive it has to involve these properties. From that it will follow that constructions lacking these properties can only be non-restructuring infinitives. Importantly for the discussion here, we will see that properties that are obligatory in restructuring infinitives do not have to apply in constructions with potential lexical restructuring predicates, leading again to the conclusion that lexical predicates can combine with either restructuring infinitives or non-restructuring infinitives.

Let us start with a brief summary of two restructuring properties in German: scrambling and long passive. As shown in (22a), restructuring infinitives allow scrambling of the object to the matrix clause (the same operation is impossible from non-restructuring infinitives). As is generally the case in German, scrambling is not obligatory (though it does of course have certain effects on the interpretation).

Simplifying somewhat, I will assume here that scrambling is only possible from mono-clausal infinitives.

(22) Scrambling

- a. *dass Hans den Traktor versucht hat* [t_{SCR} zu reparieren] Restructuring
 that John the tractor-acc tried has t_{SCR} to repair]
 ‘that John (has) tried to repair the tractor’
- b. *dass Hans versucht hat* [den Traktor zu reparieren] (Non-)Restructuring
 that John tried has [the tractor-acc to repair]
 ‘that John (has) tried to repair the tractor’

Long passive is shown again in (23a). As argued in Wurmbrand (2001), this form of passive (which again is only possible from restructuring infinitives) is **obligatory in restructuring infinitives**. The reason for this claim is that long passive is seen as a direct consequence of restructuring: **restructuring infinitives are simple VPs which do not involve any Case related functional projection (such as vP), and hence the object in a restructuring infinitive cannot get Case inside the infinitive but has to move to the matrix clause to receive or check Case**. Since accusative is not available in passive predicates, it follows that examples such as (23b) can only be analyzed as non-restructuring infinitives under this approach. That is, since the object occurs with accusative which cannot have been assigned by the matrix predicate, the infinitive has to involve an object Case assigner/position (i.e., it has to be at least a vP). This analysis—in particular, the claim that long Case movement is obligatory when the infinitive is a restructuring infinitive—is supported by examples involving two restructuring properties. If whenever Case is assigned inside the infinitive [such as in (23b)] the infinitive is a non-restructuring infinitive, it follows that scrambling should be impossible in exactly the contexts which do not involve long Case movement. (23c) shows that this is correct: While scrambling is possible in (22a), it is blocked in (23c).

(23) Restructuring vs. non-restructuring

- a. *dass der Traktor* [zu reparieren] *versucht wurde* Restructuring
 that the tractor-nom [to repair] tried was
 ‘that they tried to repair the tractor’
- b. *dass versucht wurde* [den Traktor zu reparieren] Non-restructuring
 that tried was [the tractor-acc to repair]
 ‘that they tried to repair the tractor’
- c. * *dass den Traktor versucht wurde* [t_{SCR} zu reparieren] Non-restructuring
 that the tractor-acc tried was [t_{SCR} to repair]
 ‘that they tried to repair the tractor’

Let us now return to the approach advocated by Cinque. If it is assumed that restructuring is obligatory, all of (22) and (23) would have to be restructuring infinitives, and both scrambling and long Case movement would have to be optional restructuring properties [otherwise (22b) and/or (23b) should be ungrammatical]. This scenario, however, yields the following problem: If restructuring infinitives

license scrambling and if (23b) is a restructuring infinitive, it is not clear why (23c) is ungrammatical. Assuming that long passive is optional incorrectly predicts that scrambling and passive should be independent of each other, contrary to fact.

To conclude, the claim that restructuring is obligatory (which is one of the major pieces of support for the functional approach to restructuring) faces a series of problems for constructions involving verbs like *try*. Since these predicates also fail the diagnostics for raising constructions, the assumption that these predicates are functional heads seems unmotivated, in particular in light of ‘true’ functional predicates which differ systematically from the class of lexical restructuring verbs.

3.2.4. Extraposition

The final property I will mention briefly here is extraposition. Although the distribution of extraposition in restructuring contexts is subject to some variation (see Wurmbrand, 2001, for some discussion), there is nevertheless one very robust generalization. As shown in (24), **infinitives combining with functional restructuring verbs cannot be extraposed**, whereas this operation is possible for infinitives combining with lexical restructuring verbs.

(24) Extraposition in functional vs. lexical contexts

- a. * *weil der Hans schien [den Wagen repariert zu haben]_{INF}*
 since the John-NOM **seemed** [the car-ACC repaired to have]_{INF}
 ‘since John seemed to have repaired the car’
- b. * *weil der Hans muß [den Wagen reparieren]_{INF}*
 since the John-NOM **must** [the car-ACC repair]_{INF}
 ‘since John must repair the car’
- c. *weil der Hans versuchte [den Wagen zu reparieren]_{INF}*
 since the John-NOM **tried** [the car-ACC to repair]_{INF}
 ‘since John tried to repair the car’

I will not be able to provide an account of the distribution of extraposition here, but only wish to mention that the contrast in (24) is systematic across the class of restructuring predicates (i.e., **all and only lexical restructuring verbs allow extraposition**). Hence extraposition can be seen as another potential piece of evidence for the distinction between lexical and functional restructuring.

4. A final difference between lexical and functional restructuring predicates

The final argument for the lexical vs. functional distinction as suggested here comes from a difference in reconstruction found between the two classes of predicates. As illustrated in (25), the **surface subject in modal constructions can be interpreted above or below the modal**, with the typical restriction that context and knowledge of the world favor different readings. Thus, for instance, (25a,b) are most naturally interpreted with low scope of the subject as there typically is no requirement that a particular book be published before tenure.

(25) Reconstruction in modal constructions

- a. *weil vor der Habilitation ein Buch publiziert werden muss*
since before tenure a book-NOM published become must
'It is necessary to publish one book before tenure'
'There is one book which has to be published before tenure'
- b. *weil zwei neue Mitarbeiter eingestellt werden müssen*
since two new employees hired become must
'It is necessary to hire two new employees'
'There are two new employees which have to be hired'
- c. *weil zwei Angestellte entlassen werden müssen*
since two employees laid-off become must
'It is necessary to fire two employees'
'There are two employees which have to be fired'

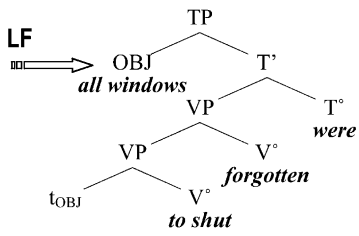
Comparing modal constructions with **lexical restructuring** constructions, however, we find that the **low scope interpretation is impossible** in these contexts. To see what the scope relations are, consider first (26a). Under the wide scope interpretation of the embedded object (i.e., $\forall \gg \textit{forget}$), the interpretation is “all windows are such that John forgot to close them”, which entails that no window got closed. Thus, this interpretation is incompatible with a situation in which some windows are closed and some are open. Under the low scope interpretation of the embedded object (i.e., $\textit{forget} \gg \forall$), the interpretation is “what John forgot was to close all the windows”, which is compatible with a situation in which some windows are closed and some are open. Turning now to the German restructuring infinitive in (26b), we find that in this example **only the wide scope interpretation is available** (see also Bayer and Kornfilt, 1990, 1994, for a similar observation).

(26) a. *John forgot to close all the windows*

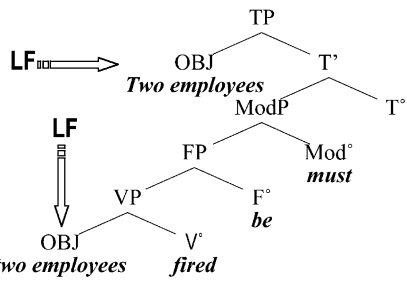
- b. *weil alle Fenster zu schließen vergessen wurden*
since **all windows(-NOM)** to close **forgotten** were
'since they forgot to close all windows' $\forall \gg \textit{forget}$; * $\textit{forget} \gg \forall$

This asymmetry between modal constructions and lexical restructuring infinitives is summarized in (27).

(27) (a) Lexical restructuring



(b) Functional restructuring



An account of the asymmetry in (27) is provided in Bobaljik and Wurmbrand (2003), Wurmbrand (2003). Although the details of the analysis cannot be reproduced here for reasons of space, I would like to summarize the crucial claims made there. The account is based on the assumption that **complements of lexical verbs** (but not functional verbs) **are separate locality domains** (phases) and that reconstruction can only occur within one phase. Since the infinitive in (27a) is the complement of a lexical verb (*forget*), it constitutes an independent phase, and hence reconstruction of the object is impossible. In (27b), on the other hand, the infinitive does not form a phase independent of the matrix predicate since it is not selected by a lexical verb but by a functional head (the modal) and hence reconstruction below the modal is possible.

Returning to the questions addressed in this paper, the importance of the analysis presented is thus the crucial reference to the lexical status of certain restructuring verbs. It is again the verbs that have been characterized as **lexical verbs** throughout this paper (and only those verbs) that are special in that they **induce phase effects** as diagnosed by the prohibition against reconstruction. Assuming the split between lexical and functional verbs as advocated here allows us to provide a principled account of the otherwise puzzling contrast in the reconstruction behavior of objects in restructuring infinitives.

5. Conclusion

The major claim of this paper is that there are two forms of restructuring: lexical and functional restructuring. As functional restructuring verbs are instantiations of the functional clausal heads, functional restructuring is a direct consequence of the clausal hierarchy. **As is typical for the functional domain, functional complementation is obligatory, rigid, and subject to bundling effects and syntactic ordering and co-occurrence restrictions. Furthermore, functional restructuring constructions are non-thematic raising configurations.** Although the distribution of functional restructuring constructions in German has thus provided a further piece of evidence for a pre-determined clausal hierarchy as argued for in Cinque (1997, 1999, 2001), it has also been shown that there are certain language specific bundling and co-occurrence effects which do not per se follow from the universal functional hierarchy (e.g., the incompatibility of raising verbs with auxiliaries for instance is a special property of German which is not attested in English). Certain hierarchy effects, however, appear to be very robust, such as the high position of epistemic verbs (see also for instance von Stechow and Iatridou, 2003).

Lexical restructuring, on the other hand, is not obligatory, does not show hierarchy effects, is not subject to ordering or co-occurrence restrictions, and involves fully thematically specified verbs. The specific properties discussed in this paper are summarized in Table 2. As the table shows, lexical and functional restructuring constructions differ systematically in a variety of properties.

Thus, there is **robust evidence** in German for the **existence of lexical restructuring**—i.e., a phenomenon of restructuring that cannot be seen as a direct consequence of the clausal architecture. What do the German facts tell us about restructuring in

Table 2

Lexical vs. functional restructuring

	Raising predicates	Modals	Lexical restructuring verbs
Weather- <i>it</i>	YES	YES	NO
Inanimate subjects	YES	YES	NO
Subject raising	YES	YES	NO
Matrix passive	NO	NO	YES (unless unaccusative)
Relative clause pied piping	NO	NO	YES (if non-restructuring)
Extraposition	NO	NO	YES
Co-occurrence restrictions	YES	YES	NO
Restructuring is optional	NO	NO	YES
Reconstruction	YES	YES	NO

general? It has to be noted that cross-linguistically, functional restructuring is certainly the more common phenomenon (whenever a language exhibits restructuring phenomena, that language has functional restructuring), whereas lexical restructuring is a marked and more restricted case. Since functional restructuring is an unavoidable consequence of the clausal architecture, this is not surprising. However, as we have seen above, under a purely functional approach it is necessary to make certain unmotivated claims about the thematic properties of ‘functional’ restructuring verbs and about what constitutes ‘functional’, even in languages which might be argued to only involve functional restructuring. I would therefore like to conclude by suggesting that lexical restructuring, although perhaps marked and restricted, is nevertheless a general phenomenon. That is, certain ‘exceptions’ to the functional restructuring approach might not be exceptions after all but simply instantiations of lexical restructuring.

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References

Bayer, J., Kornfilt, J., 1990. Restructuring effects in German. In: Engdahl, E., Reape, M., Mellor, M., Cooper, R. (Eds.), *Edinburgh Working Papers in Cognitive Science*, Vol. 6: Parametric varia-

- tion in Germanic and Romance; Proceedings from a DYANA Workshop (September 1989), pp. 21–42.
- Bayer, J., Kornfilt, J., 1994. Against scrambling as an instance of move- α . In: Corver, N., Riemsdijk, H.v. (Eds.), *Studies on Scrambling: Movement and Non-movement Approaches to Free Word-order Phenomena*. Mouton de Gruyter, Berlin/New York, pp. 17–60.
- Bobaljik, J.D., Thráinsson, H., 1998. Two heads aren't always better than one. *Syntax* 1 (1), 37–71.
- Bobaljik, J.D., Wurmbrand, S., 2003. Long distance object agreement, restructuring and anti-reconstruction. In: Kadowaki, M., Kawahara, S. (Eds.), *Proceedings of the North Eastern Linguistics Society Annual Meeting (NELS 33)*. Graduate Linguistic Student Association, Amherst, MA, pp. 67–86.
- Cardinaletti, A., Giusti, G., 2001. 'Semi-lexical' motion verbs in Romance and Germanic. In: Corver, N., Riemsdijk, H.v. (Eds.), *Semi-lexical Categories: The Function of Content Words and the Content of Function Words*. Mouton de Gruyter, Berlin/New York, pp. 371–414.
- Cinque, G., 1997. Restructuring and the Order of Aspectual and Root Modal Heads. Unpublished manuscript, University of Venice.
- Cinque, G., 1999. *Adverbs and Functional Heads: A Cross-linguistic Perspective*. Oxford University Press, Oxford.
- Cinque, G., 2001. "Restructuring" and functional structure. In: Brugè, L. (Ed.), *University of Venice Working Papers in Linguistics*, Vol. 11, pp. 45–127.
- Cinque, G., 2002. The interaction of passive, causative, and 'restructuring' in Romance. In: Tortora, C.M. (Ed.), *The Syntax of Italian Dialects*. Oxford University Press, Oxford/New York, pp. 50–66.
- Cremers, C., 1983. On two types of infinitival complementation. In: Heny, F., Richards, B. (Eds.), *Linguistic Categories: Auxiliaries and Related Puzzles*. Reidel, Dordrecht, pp. 169–221.
- Fintel, K.v., Iatridou, S., 2003. Epistemic containment. *Linguistic Inquiry* 34 (2), 173–198.
- Grosse, J., 2000. Kontrollprobleme bei Infinitiven: Eine Auseinandersetzung mit "Infinitives" von Susanne Wurmbrand. Unpublished MA Thesis, University of Tübingen.
- Haider, H., 1986a. Deutsche Syntax—generativ. Unpublished Habilitationsschrift, University of Vienna.
- Haider, H., 1986b. Fehlende Argumente: vom Passiv zu kohärenten Infinitiven. *Linguistische Berichte* 101, 3–33.
- Haider, H., 1986c. Nicht-sententiale Infinitive. In: Groninger Arbeiten zur germanistischen Linguistik, Vol. 28, pp. 73–114.
- Haider, H., 1991a. Fakultativ kohärente Infinitivkonstruktionen. In: *Arbeitspapiere des Sonderforschungsbereichs 340*.
- Haider, H., 1991b. PRO-bleme? In: Fanselow, G., Felix, S. (Eds.), *Strukturen und Merkmale syntaktischer Kategorien*. Narr, Tübingen, pp. 121–143.
- Haider, H., 1993. *Deutsche Syntax Generativ*. Narr, Tübingen.
- Iatridou, S., 1990. About Agr(P). *Linguistic Inquiry* 21, 551–577.
- Kiss, T., 1995. *Infinite Komplementation: Neue Studien zum deutschen Verbum infinitum*. Max Niemeyer Verlag, Tübingen.
- Marantz, A., 1997. No escape from syntax: don't try morphological analysis in the privacy of your own lexicon. In: Dimitriadis, A., Siegel, L., Surek-Clark, C., Williams, A. (Eds.), *UPenn Working Papers in Linguistics*, Vol. 4.2: Proceedings of the 21st Annual Penn Linguistics Colloquium, pp. 201–225.
- Moore, J., 1990. Spanish clause reduction with downstairs cliticization. In: Dziwirek, K., Farrell, P., Mejias-Bikandi, E. (Eds.), *Grammatical Relations: A Cross-theoretical Perspective*. Center for Study of Language and Information, Stanford, CA, pp. 319–334.
- Moore, J., 1994. Romance cliticization and relativized minimality. *Linguistic Inquiry* 25, 335–344.
- Napoli, D., 1981. Semantic interpretation vs. lexical governance: clitic climbing in Italian. *Language* 57, 841–887.
- Picallo, C., 1985. *Opaque Domains*. Unpublished PhD Dissertation, City University, New York.
- Picallo, C., 1990. Modal verbs in Catalan. *Natural Language and Linguistic Theory* 8, 285–312.
- Riemsdijk, H.v., 1984. On pied-piped infinitives in German relative clauses. In: Toman, J. (Ed.), *Studies in German Grammar*. Foris Publications, Dordrecht, pp. 165–192.
- Riemsdijk, H.v., 1985. Zum Rattenfängereffekt bei Infinitiven in deutschen Relativsätzen. In: Abraham, W. (Ed.), *Erklärende Syntax des Deutschen*. Narr, Tübingen, pp. 75–99.

- Rochette, A., 1988. Semantic and syntactic aspects of Romance sentential complementation. Unpublished PhD Dissertation, MIT, Cambridge, MA.
- Rochette, A., 1990. On the restructuring classes of verbs in Romance. In: Di Sciullo, A.M., Rochette, A. (Eds.), *Binding in Romance: Essays in Honour of Judith McA'Nulty*. Canadian Linguistic Association, Ottawa, Ontario, pp. 96–128.
- Rochette, A., 1999. The selection properties of aspectual verbs. In: Johnson, K., Roberts, I. (Eds.), *Beyond Principles and Parameters: Essays in Memory of Osvaldo Jaeggli*. Kluwer Academic, Dordrecht, pp. 145–165.
- Rosen, S.T., 1989. Argument structure and complex predicates. Unpublished PhD Dissertation, Brandeis University, Waltham, MA.
- Rosen, S.T., 1990. Restructuring verbs are light verbs. In: Halpern, A. (Ed.), *Proceedings of the 9th West Coast Conference on Formal Linguistics (WCCFL 9)*. CSLI Publications, Stanford, CA, pp. 477–491.
- Rosengren, I., 1992. Zum Problem der kohärenten Verben im Deutschen. In: Suchsland, P. (Ed.), *Biologische und soziale Grundlagen der Sprachen*. Max Niemeyer Verlag, Tübingen, pp. 265–296.
- Sabel, J., 1994. *Restrukturierung und Lokalität: Universelle Beschränkungen für Wortstellungsvariationen*. PhD Dissertation, University of Frankfurt.
- Sabel, J., 1996. *Restrukturierung und Lokalität: Universelle Beschränkungen für Wortstellungsvariationen*. Akademie Verlag, Berlin.
- Stechow, A.v., 1984. Gunnar Bech's government and binding theory: GB's GB theory. *Linguistics* 22, 225–241.
- Strozer, J.R., 1976. Clitics in Spanish. Unpublished PhD Dissertation, UCLA, Los Angeles, CA.
- Strozer, J.R., 1981. An alternative to restructuring in Romance syntax. In: *Papers in Romance (PRom)*, Vol. 3, pp. 177–184.
- Thráinsson, H., 1996. On the (non)-universality of functional projections. In: Abraham, W., Epstein, S.D., Thráinsson, H., Zwart, C.J.-W. (Eds.), *Minimal Ideas: Syntactic Studies in the Minimalist Framework*. John Benjamins, Amsterdam/Philadelphia, pp. 253–281.
- Travis, L.d., 2000. The L-syntax/S-syntax boundary: evidence from Austronesian. In: Paul, I., Phillips, V., Travis, L.d. (Eds.), *Formal Issues in Austronesian Syntax*. Kluwer Academic, Dordrecht/Boston/London, pp. 167–194.
- Wurmbrand, S., 1998a. Downsizing infinitives. In: Sauerland, U., Percus, O. (Eds.), *MIT Working Papers in Linguistics*, Vol. 25: *The Interpretive Tract*, pp. 141–175.
- Wurmbrand, S., 1998b. *Infinitives*. Unpublished PhD Dissertation, MIT, Cambridge, MA.
- Wurmbrand, S., 1999. Modal verbs must be raising verbs. In: Bird, S., Carnie, A., Haugen, J.D., Norquest, P. (Eds.), *Proceedings of the 18th West Coast Conference on Formal Linguistics (WCCFL 18)*. Cascadia Press, Somerville, MA, pp. 599–612.
- Wurmbrand, S., 2001. *Infinitives: Restructuring and clause structure*. Mouton de Gruyter, Berlin/New York.
- Wurmbrand, S., 2003. A-movement to the point of no return. In: Kadowaki, M., Kawahara, S. (Eds.), *Proceedings of the North Eastern Linguistics Society Annual Meeting (NELS 33)*. Graduate Linguistic Student Association, Amherst, MA, pp. 463–474.
- Zaenen, A., Maling, J., Thráinsson, H., 1985. Case and grammatical functions: The Icelandic passive. *Natural Language and Linguistic Theory* 3, 441–483.
- Zagona, K., 1982. Government and proper government of verbal projections. Unpublished PhD Dissertation, University of Washington, Seattle.
- Zubizarreta, M. L., 1982. On the relationship of the lexicon to syntax. Unpublished PhD Dissertation, MIT, Cambridge, MA.