

# Chapter 9

## Rethinking restructuring

Gereon Müller

Leipzig University

An approach to restructuring with control verbs in German is developed in terms of structure removal, based on an operation Remove that acts as a counterpart to structure-building Merge. The analysis accounts for both monoclausal and biclausal properties.

### 1 Introduction

Virtually all approaches to restructuring in infinitival constructions developed over the last three decades postulate either uniformly monoclausal structures or uniformly biclausal structures for the phenomenon; i.e., they do not actually rely on a concept of syntactic restructuring. Against this background, the goal of the present paper is to outline an approach to restructuring with control verbs in German that radically departs from standard approaches in that it presupposes that genuine syntactic restructuring does indeed exist, and can be held responsible for conflicting pieces of evidence that suggest both a monoclausal and a biclausal structure. This, in effect, implies a return to earlier transformational approaches according to which an initial biclausal structure is eventually reduced to a monoclausal structure. Arguably, the single main reason why these approaches were at some point generally abandoned is that they depended on reanalysis rules bringing about structure removal that were both unprincipled and unrestricted. I would like to suggest that the situation is different in a derivational minimalist approach where an elementary operation Remove (which removes structure) suggests itself as a complete mirror image of the operation Merge (which builds structure), and can be shown to be empirically motivated in areas unrelated to



restructuring. Thus, given that the goal of the present paper is that of “rethinking restructuring”, this not only implies a reconsideration of current approaches to restructuring, it also implies thinking of restructuring in terms of genuine restructuring again.

I will proceed as follows. In §2, I present conflicting evidence for restructuring with control verbs in German: there are arguments for a monoclausal analysis, and there are arguments for a biclausal analysis. In §3, I introduce a new approach to structure removal based on the operation Remove, and show what effects Remove can have for heads and phrases. §4 then shows how a Remove-based approach to restructuring captures both the evidence for monoclausality and the evidence for biclausality.

## 2 Restructuring

Abstracting away from some differences (e.g., with respect to the obligatoriness of extraposition, on which cf. Biberauer et al. 2014), non-restructuring control infinitives in German behave in crucial respects exactly like finite embedded clauses and thus uniformly demand a biclausal analysis in terms of CP embedding. In contrast, restructuring control infinitives in German exhibit both evidence for monoclausality (i.e., for the absence of at least a CP shell, possibly also of a TP or vP shell) and evidence for biclausality. Whether restructuring is possible or not needs to be marked as a lexical property with control verbs; if it is possible, it is always optional with control verbs.<sup>1</sup> In the next two subsections, I will first present some arguments for monoclausality, and then turn to arguments for biclausality of restructuring control infinitives in German.

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<sup>1</sup>Two remarks. First, as observed by Fanselow (1989; 1991), there is some variation among speakers as to which (control) verbs count as (non-) restructuring predicates in German. As a tendency, it would seem that there is a correlation with age: the younger the speaker, the more verbs (s)he accepts as a restructuring predicate. Thus, some of the data classified as ungrammatical in what follows because of a wrong lexical choice may actually be acceptable to some speakers. This does not affect the generalization as such.

Second, whereas regular control verbs trigger restructuring optionally throughout, other infinitive-embedding verbs (auxiliaries, modals, causative and perception verbs, and raising verbs) trigger restructuring obligatorily. As a matter of fact, I am not aware of strong arguments for biclausality with these latter classes, and I take it to be a plausible assumption that smaller projections (than CP) are embedded with these non-control verb types to begin with. This leaves open the question of whether they then qualify as purely functional elements (see Wurmbrand 2001; 2004 on functional restructuring vs. lexical restructuring), or whether they have full V status after all, just with complements of a smaller size. In what follows, I will generally disregard restructuring non-control verbs, except for a few cases where their different behavior sheds some light on the analysis of control verbs.

## 2.1 Arguments for monoclausality

There are several well-known arguments for monoclausality with restructuring control verbs in German (see von Stechow & Sternefeld 1988; Grewendorf 1988; Fanselow 1991; Bayer & Kornfilt 1994; Wurmbrand 2001, and Haider 2010, among others).

### 2.1.1 Scrambling and unstressed pronoun fronting

First, as first observed by Ross (1967), scrambling is strictly clause-bound in German; as shown in (1a), a CP boundary cannot be crossed by this operation. The same goes for fronting of unstressed pronouns; cf. (1b). Note that embedded *dass* clauses (as in 1a) and embedded verb-second clauses (as in 1b) uniformly block these operations.<sup>2</sup>

(1) German

- a. \* dass den Fritz<sub>1</sub> keiner gesagt hat [CP dass wir t<sub>1</sub> einladen  
that the Fritz<sub>ACC</sub> no-one<sub>NOM</sub> said has that we<sub>NOM</sub> invite  
sollen ]  
should
- b. \* dass die Maria es<sub>1</sub> meinte [CP solle man t<sub>1</sub> lesen ]  
that the Maria<sub>NOM</sub> it<sub>ACC</sub> said should one<sub>NOM</sub> read

In contrast, control infinitives are transparent for scrambling and unstressed pronoun fronting if they are embedded by a restructuring verb, as in (2a,b) (with the subject control verb *versuchen* ‘try’ and the object control verb *empfehlen* ‘recommend’), but not if they are embedded by a non-restructuring verb, as in (2c,d) (with the object control verb *auffordern* ‘request’ and the subject control verb *leugnen* ‘deny’).

(2) German

- a. dass den Fritz<sub>1</sub> keiner [ t<sub>1</sub> zu küssen ] versuchte  
that the Fritz<sub>ACC</sub> no-one<sub>NOM</sub> to kiss tried
- b. dass die Maria es<sub>1</sub> ihm gestern [ t<sub>1</sub> zu lesen ]  
that the Maria<sub>NOM</sub> it<sub>ACC</sub> him<sub>DAT</sub> yesterday to read  
empfohlen hat  
recommended has

<sup>2</sup>Unstressed pronoun fronting is arguably a different movement type from scrambling since it is obligatory (whereas scrambling is optional) and since it shows order-preservation properties (whereas scrambling, almost by definition, does not); see Müller (2001).

- c. \* dass den Fritz<sub>1</sub> keiner die Maria [CP t<sub>1</sub> zu küssen ]  
 that the Fritz<sub>ACC</sub> no-one<sub>NOM</sub> the Maria<sub>ACC</sub> to kiss  
 aufforderte  
 requested
- d. \* dass die Maria es<sub>1</sub> gestern [CP t<sub>1</sub> zu kennen ] geleugnet hat  
 that the Maria<sub>NOM</sub> it<sub>ACC</sub> yesterday to know denied has

Given that it is the presence of a CP projection that blocks non-clause bound scrambling with finite clauses and non-restructuring infinitives, this suggests that restructuring infinitives lack such a projection.

### 2.1.2 Extraposition

Extraposition can affect CPs and PPs (plus, somewhat more marginally, DPs) in German; the operation is subject to an upward boundedness constraint (see Ross 1967) according to which a clause boundary must not be crossed in the course of rightward movement. The following examples show how CP extraposition and PP extraposition are impossible across a CP boundary as it shows up with finite clauses (cf. 3a) and infinitival complements of non-restructuring verbs (cf. 3b), respectively (see Müller 1995).<sup>3</sup>

#### (3) German

- a. \* [CP<sub>0</sub> Er denkt [CP<sub>1</sub> dass Antje [DP<sub>2</sub> den Versuch t<sub>3</sub> ]  
 he<sub>NOM</sub> thinks that Antje<sub>NOM</sub> the attempt<sub>ACC</sub>  
 aufgegeben hat ] [CP<sub>4</sub> weil er sie nicht mehr sieht ] [CP<sub>3</sub>  
 given up has because he her not anymore sees  
 mit fünf Bällen zu jonglieren ]]  
 with five balls to juggle
- b. \* dass Karl [CP das Buch t<sub>1</sub> zu kennen ] geleugnet hat [PP<sub>1</sub>  
 that Karl<sub>NOM</sub> the book<sub>ACC</sub> to know denied has  
 über dieses Thema ]  
 about this topic

<sup>3</sup>In (3a), CP<sub>3</sub> undergoes extraposition from within CP<sub>1</sub>; CP<sub>4</sub> is an adjunct clause modifying CP<sub>0</sub> (not CP<sub>1</sub>). CP<sub>4</sub> thus indicates that CP<sub>3</sub> must have left the domain of CP<sub>1</sub>, and this violates the upward boundedness constraint. (The presence of an adjunct in the CP<sub>0</sub> clause is necessary to show that CP<sub>1</sub> has indeed been crossed by extraposition since finite clauses usually follow the verb in German.) This issue does not arise with infinitivals in a pre-verbal position, as in (3b).

Again, infinitival complements of restructuring verbs behave differently in that CP and PP extraposition are possible in these contexts; see (4a,b). This can then be taken to indicate that there is no CP boundary present.

## (4) German

- a. dass sie [ das Buch t<sub>1</sub> zu lesen ] versucht hatte [CP<sub>4</sub> als sie  
that she<sub>NOM</sub> the book<sub>ACC</sub> to read tried had when she  
dort lebte ] [CP<sub>1</sub> das alle Preise gewonnen hatte ]  
there lived that all prizes<sub>ACC</sub> won had
- b. dass ihr keiner [ das Buch t<sub>1</sub> zu lesen ] empfohlen hat  
that her<sub>DAT</sub> no-one<sub>NOM</sub> the book<sub>ACC</sub> to read recommended has  
[PP<sub>1</sub> über dieses Thema ]  
about this topic

## 2.1.3 Multiple sluicing

In multiple sluicing contexts in German, more than one wh-phrase escapes deletion (cf. Merchant 2001). The phenomenon is shown in (5a) (with elided material crossed out); here the two wh-phrases are clause-mates. Next, (5b) shows that simple sluicing can take place across a clause boundary.

## (5) German

- a. Irgendjemand hat irgendetwas geerbt, aber der Karl weiß nicht  
someone has something inherited but the Karl knows not  
mehr [CP wer<sub>1</sub> was<sub>2</sub> t<sub>1</sub> t<sub>2</sub> geerbt hat ]  
more who what inherited has
- b. Maria hat behauptet dass sie irgendetwas geerbt hat aber Karl  
Maria has claimed that she something inherited has but Karl  
weiß nicht mehr [CP was<sub>1</sub> Maria t<sub>1</sub>''' behauptet hat [CP t<sub>1</sub>'' dass sie  
knows not more what Maria claimed has that she  
t<sub>1</sub>' t<sub>1</sub> geerbt hat ]]  
inherited has

However, when the two strategies are combined, ungrammaticality arises: Multiple sluicing is impossible when the two wh-phrases are separated by a clause boundary; see (6).

(6) German

\*Irgendjemand hat behauptet, dass Maria irgendetwas geerbt hat, aber  
 someone has claimed that Maria something inherited has but  
 Karl weiß nicht mehr [CP wer<sub>1</sub> was<sub>2</sub> t<sub>1</sub> behauptet hat [CP dass Maria t<sub>2</sub>  
 Karl knows not more who what claimed has that Maria  
 geerbt hat ]]  
 inherited has

Finally, as noted by Sauerland (1999), whereas non-restructuring verbs do not permit multiple sluicing (with one wh-phrase belonging to the matrix clause, and the other one belonging to the embedded infinitive; see 7b), restructuring verbs permit such multiple sluicing (see 7a).

(7) German

- a. Irgendjemand hat irgendetwas zu klauen versucht aber ich weiß  
 someone has something to steal tried but I know  
 nicht [CP wer<sub>1</sub> was<sub>2</sub> t<sub>1</sub> [ t<sub>2</sub> zu klauen ] versucht hat ]  
 not who what to steal tried has
- b. ?\* Irgendjemand hat irgendetwas zu klauen gezögert aber ich weiß  
 someone has something to steal hesitated but I know  
 nicht [CP wer<sub>1</sub> was<sub>2</sub> t<sub>1</sub> [CP t<sub>2</sub> zu klauen ] gezögert hat ]  
 not who what to steal hesitated has

As before, this suggests that the complements of non-restructuring verbs involve biclausal structures (with an embedded CP), whereas restructuring verbs optionally involve monoclausal structures (without an embedded CP). Depending on the exact nature of the analysis of multiple sluicing, this argument for monoclausality may or may not be an instance of one of the arguments given above. Thus, Sauerland (1999) assumes that multiple sluicing in German involves a combination of simple wh-movement affecting one wh-phrase, and scrambling affecting the other one(s), which would make the multiple sluicing case an instance of the scrambling case, as discussed in §2.1.1. In contrast, Lasnik (2014) argues that multiple sluicing (in English) involves a combination of simple wh-movement and extraposition; adopting this analysis for German would imply that it is an instance of the extraposition case, as discussed in §2.1.2. Finally, if multiple sluicing in German does in fact indicate an exceptional (recoverability-driven) occurrence of two (or more) genuine instances of wh-movement (cf. Mer-

chant 2001; Heck & Müller 2003), it provides a fully independent argument for selective transparency of embedded infinitivals.<sup>4</sup>

The arguments for monoclausality given so far all involve movement; the final three arguments I want to mention here are somewhat different.

#### 2.1.4 Compactness

Haider (2010) observes that items participating in restructuring are *compact* in the sense that other material cannot linearly intervene. Thus, as shown by the presence of unstressed pronoun fronting from the infinitive, restructuring must have taken place in (8a); and in this configuration, matrix V and embedded V are separated by an intervening adverb, yielding ill-formedness. In contrast, (8b) does not involve restructuring, and the compactness requirement is lifted.

(8) German

- a. \* dass es<sub>1</sub> keiner [ t<sub>1</sub> zu lesen ] gestern versucht hat  
 that it<sub>ACC</sub> no-one to read yesterday tried has
- b. dass der Karl [CP das Buch<sub>1</sub> zu kennen ] gestern geaugnet  
 that the Karl<sub>NOM</sub> the book<sub>ACC</sub> to know yesterday denied  
 hat  
 has

Haider accounts for compactness by postulating a complex base-generated head analysis for restructuring. However, it looks as though many of the relevant data can be accounted for independently (see Büring & Hartmann 1996; Wurmbrand 2007; Müller 2014: ch. 3; but also Haider 2016 for a critique of PF-based accounts). In addition, the compactness requirement can be circumvented by various kinds of movement operations (verb-second, topicalization), and it does not hold in the third construction (see below; cf. Wurmbrand 2007). Thus, compactness may be an indicator of restructuring, but not without qualifications.

#### 2.1.5 Negation

A well-known argument for monoclausality is that embedded negation can take wide scope over the matrix clause; cf. (9a) (where restructuring can take place in the presence of the restructuring verb *empfehlen* ‘recommend’) vs. (9b) (where restructuring is not an option with the matrix verb *auffordern* ‘request’).

<sup>4</sup>In Heck & Müller (2003), the impossibility of (6, 7b) is tied to the presence of a CP phase that precludes long-distance wh-movement of the second wh-phrase via a conspiracy of Chomsky’s (2001) (PIC) and a constraint phase balance triggering intermediate movement steps.

(9) German

- a. dass Maria ihm [ das Buch nicht zu lesen ] empfiehlt  
 that Maria<sub>NOM</sub> him<sub>DAT</sub> the book<sub>ACC</sub> not to read recommends
- b. dass Maria ihn [<sub>CP</sub> das Buch nicht zu lesen ] auffordert  
 that Maria<sub>NOM</sub> him<sub>ACC</sub> the book<sub>ACC</sub> not to read requests

(9a) can have a reading where negation takes embedded scope (and restructuring does not apply: *recommend* >> *not*), and a (more salient) reading where negation takes matrix scope (and restructuring has applied: *not* >> *recommend*). In contrast, (9b) can only have a reading with embedded scope of negation (*request* >> *not*), not one with wide scope of negation (*\*not* >> *request*).

### 2.1.6 Intonation

Finally, restructuring infinitives typically trigger a different intonational realization from non-restructuring infinitives. Whereas the latter are usually prosodically separated from the matrix clause (by an intonational break, indicated by “|”), the former usually are not. Thus, the restructuring environment in (10a) (signalled by scrambling of the embedded object in front of the matrix subject) is incompatible with an intonational break; the non-restructuring context (signalled by a violation of compactness) favors it.

(10) German

- a. dass den Karl<sub>1</sub> niemand t<sub>1</sub> zu küssen versuchte  
 that the Karl<sub>ACC</sub> no-one<sub>NOM</sub> to kiss tried
- b. dass sie | den Karl zu küssen | gar nicht erst versucht hat  
 that she<sub>NOM</sub> den Karl<sub>ACC</sub> to kiss PTCL not PTCL tried has

## 2.2 Arguments for biclausality

### 2.2.1 Uniformity of embedding

The first argument for biclausality of restructuring constructions with control verbs in German is a conceptual one (see Koster 1987; von Stechow & Sternefeld 1988): every control verb that permits restructuring can optionally also show up in a non-restructuring context. Thus, there is no control verb like, say, a fictive predicate *entsuchen* ‘try’ that would permit (11a) (where scrambling to the matrix domain has applied, signalling restructuring) but not (11b) (where compactness is violated, signalling non-restructuring).

## (11) German

- a. dass den Fritz<sub>1</sub> keiner [ t<sub>1</sub> zu küssen ] entsuchte  
 that the Fritz<sub>ACC</sub> no-one<sub>NOM</sub> to kiss tried
- b. \* dass keiner [CP den Fritz<sub>1</sub> zu küssen ] gestern entsucht hat  
 that no-one<sub>NOM</sub> the Fritz<sub>ACC</sub> to kiss yesterday tried has

Deriving this implicational generalization requires additional assumptions if restructuring predicates can simply optionally involve TP-embedding, vP-embedding or VP-embedding.<sup>5</sup> However, the generalization follows directly if the only way to end up with such a smaller complement size is via an initial CP embedding that is then subject to some operation bringing about restructuring.

## 2.2.2 Licensing and interpretation of PRO

A second standard argument for biclausality of restructuring (cf., again, von Stechow & Sternefeld 1988) is that the distribution of the empty pronominal subject of control infinitives (PRO) requires the presence of a CP projection. In its original form, this argument presupposes that every verb must discharge its external  $\theta$ -role in the syntax, that the external  $\theta$ -role is represented by PRO, and that PRO must not be governed (“PRO theorem”, cf. Chomsky 1981). The PRO theorem is not widely accepted anymore; however, in all approaches that recognize a syntactically represented non-overt external argument like PRO in control infinitives, it needs to be ensured that PRO shows up in these contexts but not in others (finite clauses, exceptional case marking (ECM) environments, raising), and simple accounts would seem to rely on the presence of a C projection.<sup>6</sup> As pointed out by von Stechow & Sternefeld (1988), and Sternefeld (1990), if there is no CP projection, the difference between ECM/raising and control may be blurred.

A related problem arises in approaches that do not recognize PRO for restructuring contexts (because the structure that could introduce the external argument is not present, or because the structure that could license the external argument is not present, or both) but do recognize PRO for non-restructuring contexts with the same predicate (see, e.g., Haider 2010): such a heterogeneous analysis invariably requires two radically different approaches to control – e.g.,

<sup>5</sup>Minimally, it would seem that a designated lexical rule would have to be stipulated that derives restructuring versions of verbs from the corresponding non-restructuring versions. Such a way out is in principle unavailable if the lexicon is conceived of as a list of exceptions rather than a place where systematic generalizations can be expressed.

<sup>6</sup>This holds, e.g., for Adger’s (2003) approach: on this view, control predicates that embed infinitival clauses (cf. Stiebels 2010 on control into finite clauses in German) select a special type of complementizer which in turn assigns a case-like feature [null] to the embedded subject that requires a non-overt realization not just of the inflectional ending, but of the whole argument DP (as PRO). Also cf. Chomsky & Lasnik (1993); Roberts (1997).

(some operation like) syntactic Agree that determines the interpretation of an embedded PRO via syntactic binding on the one hand (see, e.g., Landau 2000), and (some operation like) functional composition that brings about the identification of an argument of the matrix predicate with the external argument of the embedded predicate on the other hand (see, e.g., Stiebels 2007). None of these two ways to identify argument positions of two verbs can be straightforwardly derived from the other; e.g., minimality may predict object control in the syntax in the unmarked case (see, e.g., Hornstein 2001), whereas simple lexical stipulation determines whether subject or object control takes place in the case of function composition.<sup>7</sup> Crucially, given the independence of the two means to identify argument positions in control, the option of control shift with restructuring is wrongly predicted to be possible. Control shift can take place in various contexts in German (e.g., influenced by passivization of the embedded verb, or in the presence of certain modal verbs; see Růžička 1983; Wurmbrand 2002; Stiebels 2007). However, this phenomenon never shows up with restructuring: there is no matrix verb that triggers object control when it embeds a non-restructuring infinitive, but subject control when it embeds a restructuring infinitive (or vice versa).

### 2.2.3 Absence of new binding domains

The third argument for biclausal structures is based on the observation that restructuring does not create new binding domains. Thus, an accusative object reflexive in a subject control infinitive (*sich* in 12a,b) can never pick a dative object of the matrix verb (*ihm* in 12a,b) as an antecedent, even if the matrix verb permits restructuring (*versprechen* in 12a,b). This is accounted for if a reflexive pronoun needs to participate in an Agree relation with its antecedent (cf. Reuland 2001; 2011, Fischer 2004, and Hicks 2009, among others), and restructuring environments involve a full clausal CP structure across which Agree is blocked.

(12) German

- |    |        |                     |                    |                     |                   |    |         |             |     |
|----|--------|---------------------|--------------------|---------------------|-------------------|----|---------|-------------|-----|
| a. | dass   | Karl <sub>1</sub>   | ihm <sub>2</sub>   | (PRO <sub>1</sub> ) | sich <sub>1</sub> | zu | waschen | versprochen | hat |
|    | that   | Karl <sub>NOM</sub> | ihm <sub>DAT</sub> |                     | REFL              | to | wash    | promised    | has |
| b. | * dass | Karl <sub>1</sub>   | ihm <sub>2</sub>   | (PRO <sub>1</sub> ) | sich <sub>2</sub> | zu | waschen | versprochen | hat |
|    | that   | Karl <sub>NOM</sub> | ihm <sub>DAT</sub> |                     | REFL              | to | wash    | promised    | has |

<sup>7</sup>Thus, an object control verb like *empfehlen* ‘recommend’ can be assumed to have a simplified entry like  $\lambda P \lambda y \lambda x \text{ recommend}(x,y,P(y))$ , whereas a subject control verb like *versprechen* ‘promise’ could be specified as  $\lambda P \lambda y \lambda x \text{ promise}(x,y,P(x))$  – here the only relevant difference is whether the complement predicate applies to the object variable ( $y$ ) or to the subject variable ( $x$ ) (after function composition has opened up internal argument position(s) of the embedded predicate via  $\lambda$  conversion plus  $\lambda$  prefixation).

In contrast, if there is no CP present in restructuring environments, it is not obvious how the ill-formedness of (12b) can be derived. The reason is that an accusative object reflexive *can* pick a dative object of the same verb as an antecedent for many speakers of German (see the empirical investigation reported in Sternefeld & Featherston 2003; Featherston & Sternefeld 2003, which contradicts earlier informal judgements reported in Grewendorf 1988); cf. (13).

- (13) German  
 dass Karl<sub>1</sub> ihm<sub>2</sub> sich<sub>1/2</sub> im Spiegel gezeigt hat  
 that Karl<sub>NOM</sub> him<sub>DAT</sub> REFL in the mirror shown has

In monoclausal approaches to restructuring where the embedded infinitive lacks PRO<sub>1</sub> in (12a,b) because it is always either part of a complex verb (as in Haider 2010) or is a bare VP (Sternefeld 2006), the problem is evident: the structural relations between *ihm<sub>2</sub>* and *sich<sub>2</sub>* in (12b) and in (13) are nearly indistinguishable on this view. However, accounting for the ill-formedness of (12b) also poses a challenge under approaches where the restructuring complement can be a vP or TP containing PRO (Wurmbrand 2001). The reason is that the option of reflexive binding of *sich<sub>1</sub>* by the matrix subject *Karl<sub>1</sub>* in (13) shows that reflexivization can take place across what one might think should be an intervening potential binder (viz., the indirect object *ihm<sub>2</sub>* in 13). The only way out here, it seems, would be to stipulate that external arguments (PRO<sub>1</sub> in 12b) intervene for Agree-based reflexive binding in a way that internal arguments (*ihm<sub>2</sub>* in 13) do not. However, not even this step would eventually suffice. As shown in (14a), an intervening external argument DP *can* be skipped with PP-internal reflexives in an ECM construction headed by *lassen* ‘let’ or *sehen* ‘see’ (see Reis 1976; Grewendorf 1983; Fanselow 1987; Gunkel 2003; Barnickel 2014). This is never possible across a finite clause boundary; see (14b). Crucially, it is also never possible with control infinitives (see 14c), even when restructuring must have taken place (because unstressed pronoun fronting to the matrix domain has occurred; see 14d).

- (14) German
- a. dass Maria<sub>1</sub> [TP Paul<sub>2</sub> [PP bei sich<sub>1/2</sub> ] schlafen ] lässt  
 that Maria<sub>NOM</sub> Paul<sub>ACC</sub> with REFL sleep lets
  - b. dass Maria<sub>1</sub> sagt [CP dass Paul<sub>2</sub> bei sich<sub>\*1/2</sub> schlafen kann ]  
 that Maria<sub>NOM</sub> says that Paul<sub>NOM</sub> with REFL sleep can
  - c. dass Maria<sub>1</sub> Paul<sub>2</sub> [CP PRO<sub>1</sub> [PP bei sich<sub>1/\*2</sub> ] zu schlafen ]  
 that Maria<sub>NOM</sub> Paul<sub>DAT</sub> with REFL to sleep  
 verspricht  
 promises

- d. dass Maria<sub>1</sub> es<sub>3</sub> Paul<sub>2</sub> [CP PRO<sub>1</sub> t<sub>3</sub> [PP bei sich<sub>1/\*2</sub> ] zu  
 that Maria<sub>NOM</sub> it<sub>ACC</sub> Paul<sub>DAT</sub> with REFL to  
 organisieren ] verspricht  
 organize promises

Thus, whatever ultimately accounts for the fact that PP-internal reflexives (in contrast to arguments of the embedded V) can skip over the subject of the infinitive, it is clear that such long-distance reflexivization is blocked by a CP phase boundary. The data then show that a CP is always present with control verbs (restructuring and non-restructuring), and not present with ECM predicates.

#### 2.2.4 Unstressed pronoun fronting

In §2.1.1, unstressed pronoun fronting from a restructuring infinitive was presented as an argument in support of monoclausality, based on the conclusion that the presence of a CP would lead to a violation of locality constraints on movement. Interestingly, unstressed pronoun fronting also provides an argument in support of biclausality, more specifically, the presence of a CP in restructuring environments. Unstressed pronouns must undergo fronting to a position that can only be preceded by a subject DP, which can then be assumed to have undergone optional EPP-driven movement to SpecT; cf. (15a,b) (see Müller 2001; Fanselow 2004). I assume that unstressed pronouns end up in an outer Specv position (more specifically, at the left edge of vP), where they precede DP and PP arguments, including scrambled ones (see 15a–c), adverbials (see 15d), and the base position of subjects (see 15a).

(15) German

- a. dass es<sub>1</sub> die Maria dem Fritz t<sub>1</sub> gegeben hat  
 that it<sub>ACC</sub> the Maria<sub>NOM</sub> the Fritz<sub>DAT</sub> given has
- b. dass die Maria es<sub>1</sub> dem Fritz t<sub>1</sub> gegeben hat  
 that the Maria<sub>NOM</sub> it<sub>ACC</sub> the Fritz<sub>DAT</sub> given has
- c. \* dass die Maria dem Fritz es<sub>1</sub> gegeben hat  
 that the Maria<sub>NOM</sub> the Fritz<sub>DAT</sub> it<sub>ACC</sub> given has
- d. \* dass die Maria wahrscheinlich es<sub>1</sub> dem Fritz t<sub>1</sub> gegeben hat  
 that the Maria<sub>NOM</sub> probably it<sub>ACC</sub> the Fritz<sub>DAT</sub> given has

Complements of non-control (obligatory) restructuring verbs do not have sufficient space for unstressed pronoun fronting. This is shown for auxiliaries in (16a), for raising verbs in (16b), and for ECM verbs in (16c), all of which become well formed if the unstressed pronoun *es* ‘it’ undergoes longer movement to a position directly after *sie* ‘she’.

## (16) German

- a. \* dass sie mir<sub>1</sub> schon letzte Woche [ t<sub>1</sub> es<sub>2</sub> gegeben ] hat  
 that she<sub>NOM</sub> me<sub>DAT</sub> already last week it<sub>ACC</sub> given has
- b. \* dass sie mir schon letzte Woche [ es<sub>2</sub> zu lesen ] schien  
 that she<sub>NOM</sub> me<sub>DAT</sub> already last week it<sub>ACC</sub> to read seemed
- c. \* dass sie mich schon letzte Woche [ es<sub>1</sub> lesen ] ließ  
 that she<sub>NOM</sub> me<sub>ACC</sub> already last week it<sub>ACC</sub> read let

The relevant observation now is that there is a vast improvement with the unstressed pronoun in the embedded domain in the case of control constructions. As shown in (17a,b), restructuring contexts (indicated here by the option of unstressed pronoun fronting of the dative pronoun) seem to provide sufficient space for separate unstressed pronoun fronting (here applying to the accusative pronoun, which of course could also accompany the dative pronoun in the matrix domain). (17b involves the third construction; see the next subsection.)

## (17) German

- a. dass sie mir<sub>1</sub> schon letzte Woche [ t<sub>1</sub> es<sub>2</sub> zu geben ]  
 that she<sub>NOM</sub> me<sub>DAT</sub> already last week it<sub>ACC</sub> to give  
 versucht hat  
 tried has
- b. dass sie mir<sub>1</sub> schon letzte Woche versucht hat [ t<sub>1</sub> es<sub>2</sub> zu  
 that she<sub>NOM</sub> me<sub>DAT</sub> already last week tried has it<sub>ACC</sub> to  
 geben ]  
 give

This indicates that there is more structure in control infinitives; assuming raising and ECM environments to involve embedded TPs (Fanselow 1991), the evidence suggests that a CP is required for all cases of unstressed pronoun fronting in German, and that such a CP is therefore present in restructuring contexts with control predicates.<sup>8</sup>

<sup>8</sup>Note that the argument here is indirect since the *actual* landing site of unstressed pronoun fronting, by assumption, is a left-peripheral position in vP. The point is that such movement is evidently only licensed in the presence of a higher CP. There are various possibilities to derive this – including, e.g., postulating an inheritance of the relevant features from C, as suggested in Chomsky (2008); Richards (2007), or postulating that unstressed pronouns must undergo Agree with C. Ultimately, it seems to be a fact about unstressed pronouns (perhaps, more generally, Wackernagel-oriented processes) that they depend on the presence of a CP domain, however this is derived.

### 2.2.5 The third construction

The fifth and final argument in support of a CP projection for restructuring in German involves the so-called third construction, i.e., constructions involving a combination of leftward scrambling or unstressed pronoun fronting out of a restructuring complement, and rightward extraposition of the restructuring complement itself (see den Besten & Rutten 1989). As noted in §2.1.2, CP, PP, and (to some extent) DP can undergo extraposition in German; however, verbal projections (vP, VP, TP) cannot do so.<sup>9</sup> CP extraposition is shown in (18a,b) (for finite clauses and infinitives, respectively).

(18) German

- a. dass er        gesagt hat [CP dass es        regnet ]  
       that he<sub>NOM</sub> said    has        that it<sub>NOM</sub> rains
- b. dass sie        versucht hat [CP PRO zu schlafen ]  
       that she<sub>NOM</sub> tried    has                    to sleep

The impossibility of TP extraposition is illustrated by (19a,b) (based on the assumption that complements of ECM verbs have TP status).

(19) German

- a. \* dass ich        gesehen habe [TP den Mann    das Buch    lesen ]  
       that I<sub>NOM</sub> seen    have        the man<sub>ACC</sub> the book<sub>ACC</sub> read
- b. \* dass sie        ließ [TP ihn        schlafen ]  
       that she<sub>NOM</sub> let        him<sub>ACC</sub> sleep

The data in (20a–d) show that vP/VP cannot undergo extraposition either.

(20) German

- a. \* dass sie        t<sub>1</sub> hat [VP gearbeitet ]  
       that she<sub>NOM</sub> has        worked
- b. \* dass er        t<sub>1</sub> hat [VP das Buch    gelesen ]  
       that he<sub>NOM</sub> has        the book<sub>ACC</sub> read
- c. \* dass er        t<sub>1</sub> wird [VP das Buch    lesen ]  
       that he<sub>NOM</sub> will        the book<sub>ACC</sub> read
- d. \* dass sie        hatte [ t<sub>1</sub> wollen/gewollt [VP das Buch    lesen ] ]  
       that she<sub>NOM</sub> had        want/wanted        the book<sub>ACC</sub> read

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<sup>9</sup>I hasten to add that this only holds for *Standard German*; see Haegeman & van Riemsdijk (1986); Bader & Schmid (2009); Salzmann (2011; 2013a,b) for variation in other varieties of German, for which the argument to be presented below can therefore not be made.

Against this background, it can be noted that extraposition *is* possible in the third construction, i.e., with scrambling or unstressed pronoun fronting from extraposed restructuring infinitives; see (21a,b) (with *versuchen* as a matrix verb), (21c) (with *versprechen* as a matrix verb), and (21d) (with the object control verb *empfehlen*).<sup>10</sup>

## (21) German

- a. dass sie ihn<sub>2</sub> t<sub>1</sub> versucht [CP<sub>1</sub> PRO t<sub>2</sub> zu küssen ]  
 that she<sub>NOM</sub> him<sub>ACC</sub> tries to kiss
- b. dass sie das Buch<sub>2</sub> t<sub>1</sub> versucht hat [CP<sub>1</sub> PRO t<sub>2</sub> dem Mann zu  
 that she<sub>NOM</sub> the book tried has the man<sub>DAT</sub> to  
 geben ]  
 give
- c. dass es<sub>2</sub> Maria t<sub>1</sub> (dem Fritz<sub>3</sub>) verspricht [CP<sub>1</sub> PRO t<sub>1</sub> zu lesen ]  
 that it<sub>ACC</sub> Maria the Fritz<sub>DAT</sub> promises to read
- d. dass es<sub>2</sub> Fritz ihr<sub>3</sub> t<sub>1</sub> empfohlen hat [CP<sub>1</sub> PRO t<sub>1</sub> zu lesen ]  
 that it<sub>ACC</sub> Fritz<sub>NOM</sub> her<sub>DAT</sub> recommended has to read

This strongly suggests that the extraposed item is a CP. If the third construction were to involve extraposition of a VP (as assumed by Wöllstein-Leisten 2001 and Haider 2010), or of a vP or TP, ungrammaticality would be expected to result throughout in (21).<sup>11</sup>

<sup>10</sup>(21c) and (21d) show that a control verb may take an additional DP argument (DP<sub>3</sub>) in the third construction. Kiss (1995: 110) claims that examples of this type are impossible; however, I would like to contend that the problem is due to parsing problems: DP<sub>2</sub> and DP<sub>3</sub> are extremely similar in his examples.

<sup>11</sup>There is in fact one principled exception to the generalization that VP extraposition is impossible in Standard German. In the Ersatzinfinitiv construction, VP extraposition is possible (in fact, obligatory); see (i).

- (i) dass sie das Buch hatte lesen wollen  
 that she<sub>NOM</sub> the book<sub>ACC</sub> had read want

I contend that this is the exception that proves the rule. In Ersatzinfinitiv constructions, existing constraints are *violated* in optimal forms so as to satisfy higher-ranked requirements (see Schmid 2005); this holds for morphological selection among verbs (with an infinitive form showing up where a participle would be expected) in the same way that it does for linearization. Note that extraposition in the third construction, unlike what is the case with the Ersatzinfinitiv construction, is strictly optional, and not a repair operation like Ersatzinfinitiv formation.

### 2.3 Interim conclusion

Summarizing so far, there is evidence both for a truly biclausal (CP) analysis and for a monoclausal analysis of restructuring constructions with control verbs in German. Accordingly, this state of affairs is difficult to account for both in purely monoclausal and purely biclausal approaches. In *monoclausal approaches* (see Geilfuß 1988; Haider 1993; 2010; Kiss 1995; Wurmbrand 2001; 2007; 2015b; Sternefeld 2006, and many others), the evidence for biclausality poses problems that typically require construction-specific assumptions complicating the overall analysis; effects attributable to the presence of a CP projection must be imitated in some other way if a CP projection cannot be present. In *biclausal approaches* (see Baker 1988; Sternefeld 1990; Müller & Sternefeld 1995; Sabel 1996; Roberts 1997; Hinterhölzl 1999, and Koopman & Szabolcsi 2000), the evidence for monoclausality poses problems that typically require extremely abstract interactions of movement operations lacking independent motivation (plus, in many cases, additional stipulations); effects attributable to the absence of a CP projection must be captured by mechanisms that permit selective disregard of the additional structure. What is needed, then, is a way to both have your cake and eat it.

*Coanalysis approaches* (as pursued in Huybregts 1982; Bennis 1983; Haegeman & van Riemsdijk 1986; Di Sciullo & Williams 1987; Sadock 1991; Pesetsky 1995) are a case in point. Here, both types of evidence can be accommodated because monoclausal and biclausal structures can exist simultaneously. However, these approaches are typically quite unconstrained, and often not fully worked out (especially where restructuring is directly addressed); and it is sometimes not clear why one process would target one kind of structure rather than the other one. That leaves, finally, traditional *reanalysis approaches* (see Ross 1967: Ch. 3, Evers 1975, Rizzi 1982, Aissen & Perlmutter 1983, and von Stechow & Sternefeld 1988): the simple idea underlying these approaches is that a structure that is initially biclausal is reduced to a monoclausal one, via some form of structure removal. The only problem with all the classical reanalysis approaches is that they rely on transformations that are (a) ad hoc, (b) not constrained in interesting ways, and (c) not embedded into a general system of elementary, primitive operations manipulating syntactic structure. The claim that I would like to argue for in what follows is that an analysis based on an elementary, restrictive operation Remove makes it possible to pursue a simple, principled reanalysis approach to restructuring in German.<sup>12</sup>

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<sup>12</sup>Thus, I take issue with the claim in Haider (2010: 309) that “radical clause union [...] cannot be achieved derivationally since derivations do not destroy or eliminate structures”: they do.

### 3 Structure removal

Suppose that syntactic derivations employ two elementary operations modifying representations: in addition to an operation that *builds* structure – *Merge* (Chomsky 2001; 2008; 2013) –, there is a complementary operation that *removes* structure: *Remove*. In Müller (2016; 2017; 2018), an approach to structure removal based on this operation has been argued to systematically account for cases where there is empirical evidence for conflicting representations (that movement cannot plausibly be invoked to account for). The basic premise is that if *Remove* exists as the mirror image of *Merge*, it is expected to show similar properties and obey identical constraints. The assumptions made about *Merge* are the following. First, *Merge* is feature-driven.<sup>13</sup> It is triggered by designated [ $\bullet$ F] features, which are ordered on lexical items (see Heck & Müller 2007, Abels 2012, Stabler 2013, Georgi 2014, among others); F here is a variable over categorial features (primarily for external *Merge*) and movement-related features (like *wh*, *top*) that trigger internal *Merge*. Once a feature has brought about an operation, it is discharged, and disappears. Second, *Merge* may apply to heads or phrases. This necessitates diacritics on structure-building features: [ $\bullet$ F<sub>0</sub>•], [ $\bullet$ F<sub>2</sub>•] for heads and phrases, respectively. Third, *Merge* obeys the strict cycle condition in (22) (see Chomsky 1973; 1995; 2001; 2008; also cf. Safir 2010; 2015 for this specific version). Based on the concept of domain in (23), the strict cycle condition in (22) blocks operations that exclusively affect positions contained in embedded phrases. Fourth and finally, *Merge* can be external or internal.

(22) *Strict cycle condition* (SCC):

Within the current XP  $\alpha$ , a syntactic operation may not exclusively target some item  $\delta$  in the domain of another XP  $\beta$  if  $\beta$  is in the domain of  $\alpha$ .

(23) *Domain* (Chomsky 1995):

The domain of a head X is the set of nodes dominated by XP that are distinct from and do not contain X.

The assumptions about *Remove* are identical. First, *Remove* is feature-driven. It is triggered by designated [ $-F-$ ] features, which are ordered on lexical items (and can be interspersed with features for structure building). Second, *Remove* may apply to heads or phrases, so there is a feature [ $-F_0-$ ] for heads, and a feature [ $-F_2-$ ] for phrases. If *Remove* applies to a phrase (via [ $-F_2-$ ] on a head that triggers the operation), it takes out a whole subtree. Removal of phrases in the

<sup>13</sup>This corresponds to Chomsky's original view but is at variance with his more recent assumption that *Merge* comes free; see, e.g., Chomsky (2013).

course of the derivation has been argued to take place with external arguments in passive constructions (see Müller 2016), with internal arguments in applicative constructions (see Müller 2017), and with VPs and TPs in various kinds of ellipsis constructions (see Murphy 2015; Murphy & Müller 2016). In what follows, I will exclusively focus on Remove applying to a head (via  $[-F_0-]$ ) – this is the operation that I assume to take place in restructuring environments. Third, Remove obeys the strict cycle condition in (22). And fourth, Remove can be external or internal. Here I focus on internal Remove, i.e., operations that remove part of the current syntactic structure.<sup>14</sup>

If an  $[-F_0-]$  feature on some head X is discharged, it removes the head Y of a projection in the minimal domain of X. Given a bare phrase structure approach, a head's projection does not exist independently of the head. This means that by taking away the head Y, the whole projection line of Y up to YP is removed – but only this: specifiers and complements of Y are not affected by removal. The question then is what happens with the material that was originally included in the removed projection, and that is temporarily split off from the current tree after removal of the head and its projection. In Müller (2018), it is argued that such items are reassociated with the main projection, i.e., with the projection of the head responsible for structure removal, in a way that is maximally structure-preserving, maintaining earlier c-command and linearization relations as much as possible.<sup>15</sup> Predecessors or alternatives of removal of heads by  $[-F_0-]$  features (and, consequently, the projections of these heads) include tree pruning (see Ross 1967: Ch. 3); Chomsky's (1981) proposal of S-bar deletion with ECM verbs (and in subject extraction environments – a new version of this latter approach is suggested in Chomsky (2015b: 24) and argued to crucially involve removal of syntactic structure in Hornstein 2014);<sup>16</sup> the approaches to head movement developed in Heycock & Kroch (1994) and Stepanov (2012); the approach to pruning

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<sup>14</sup>External Remove may initially look like an unusual concept since such an operation removes items that are not yet part of the current tree; see Müller (2016; 2017) for discussion of some relevant cases.

<sup>15</sup>Note that reassociation is not an instance of Merge: it only applies to phrases (not to heads), the external/internal distinction does not make sense here, and, perhaps most importantly, reassociation is not feature-driven; rather, it is an operation triggered by the need to reintegrate material into the present tree that is temporarily unattached as a consequence of Remove.

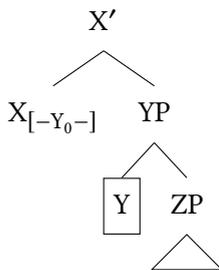
<sup>16</sup>It should be noted, though, that although it is uncontroversial that the approach in Chomsky (2015b) relies on syntactic (rather than, say, phonological) deletion, it is not entirely clear what exactly is subject to removal. Further elaboration in Chomsky (2015a) suggests that Chomsky, despite explicitly proposing a rule " $C \rightarrow \emptyset$ ", might have in mind a relativization of the deletion operation to certain kinds of features of C (e.g., the "phase-head feature of C"). However, as argued in Müller (2017), given that syntactic categories are to be viewed as sets of features, this difference would be purely quantitative rather than qualitative.

of  $\emptyset$ -affixes in Embick (2010); the approach to cases of XP movement that can circumvent intervention effects proposed in Heck (2016); and, last but not least, Pesetsky's (2016) exfoliation transformation, which removes embedded CP and TP shells.<sup>17</sup>

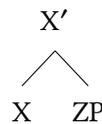
In what follows, I will illustrate the working of head removal by some abstract sample derivations. Consider first the case where the head Y of a complement YP is removed. For now, I assume that Y has a complement ZP but does not have a specifier; I will address this latter scenario momentarily. As shown in (24a), X first combines with YP (triggered by [ $\bullet Y \bullet$ ] on X); after [ $\bullet Y \bullet$ ] is discharged and Merge(X,YP) has taken place, [ $-Y_0-$ ] becomes accessible and triggers removal of the YP shell before being discharged; see (24b). As a consequence, ZP, which is initially split off the tree after YP shell removal, is reassociated with the projection of X in a maximally structure-preserving way: it becomes the new complement of X, which maintains all earlier c-command relations. Note that if X were to be equipped with a removal feature [ $-Z_0-$ ] instead of [ $-Y_0-$ ] in (24a), removal of the ZP shell could not take place in the presence of the intervening YP projection, due to the strict cycle condition. However, if X were to be equipped with [ $-Z_0-$ ] in addition to [ $-Y_0-$ ] in (24a), and if [ $-Z_0-$ ] were ranked below [ $-Y_0-$ ] on the list of operation-triggering features on X, the ZP shell could next be removed on the basis of (24b). In other words: Remove can apply recursively. (This will become relevant in the analysis of restructuring given in the next section.)

(24) Remove and heads: complements w/o specifiers

a. Merge( $X_{[\bullet Y \bullet]} > [-Y_0-], YP$ ):



b. Remove( $X_{[-Y_0-]}, Y$ ):



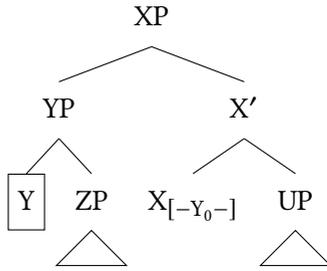
In the same way, Remove applying to heads can also affect a specifier. The operation is shown in (25), where X has first merged with a UP complement; again, an

<sup>17</sup>Exfoliation is similar to Remove applying to heads, but differs from it in some important respects, e.g., by being inherently less local (it takes place across phase boundaries), by not being feature-driven (but instantiating a last resort operation), and by never applying recursively. See Müller (2018) for a more elaborate comparison of the two approaches to shrinking trees.

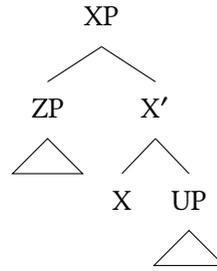
XP included in the specifier (here: ZP) cannot be targeted by the operation, due to the strict cycle condition. ZP reassociates with the X projection as a specifier, in a maximally order-preserving way.<sup>18</sup>

(25) Remove and heads: specifiers w/o specifiers

a. Merge( $X'_{[-Y_0-]} > [-Y_0-], YP$ ):



b. Remove( $X'_{[-Y_0-]}, Y$ ):



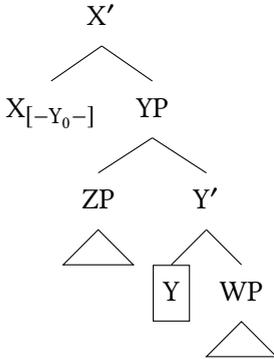
Next consider the situation where a complement projection YP is removed via  $[-Y_0-]$  on X, but where the difference to (24) is that Y takes both a complement (WP) and a specifier (ZP). Again, the null hypothesis is that after YP shell removal, WP and ZP reassemble in their original hierarchical and linear order in the XP domain, so that structural changes induced by the operation are minimized – recall that a basic property underlying Remove operations is that they change embedded structures as little as possible. (26) shows how a Remove operation triggered by X and targeting the head of X's complement Y reassociates Y's specifier (ZP) and complement (WP) with the projection of X: ZP becomes a new specifier of X, and WP replaces the original YP in the complement position.<sup>19</sup>

<sup>18</sup>In principle, given an appropriate feature  $[-U_0-]$ , X could also have removed the UP shell in the presence of a specifier YP, in accordance with the strict cycle condition, in what is essentially a removal analogue to tucking-in derivations with Merge; see Richards (2001).

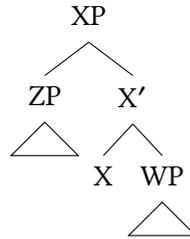
<sup>19</sup>Two remarks. First, it is clear that the earlier c-command relation of X and ZP is reversed by reassociation of ZP as X's specifier. Still, this qualifies as the best option since the alternative – reintegrating ZP as a specifier of WP – would (a) change a c-command relation into a dominance relation, and (b) carry out changes in a domain that should not be accessible, given the strict cycle condition. Second, the question arises of what happens if X independently has a feature triggering Merge of a specifier. There are two possibilities: Either this specifier is already in place, or it is merged later. The second case is straightforward; the specifier will be merged on top of the existing structure. As for the first case, ZP will have to be reassociated below the inherent specifier of X, so as to maximize structure preservation. Thus, the outcome is identical.

(26) Remove and heads: complements with specifiers

a. Merge( $X_{[-Y_0-]} >_{[-Y_0-]} YP$ ):



b. Remove( $X_{[-Y_0-]}, Y$ ):

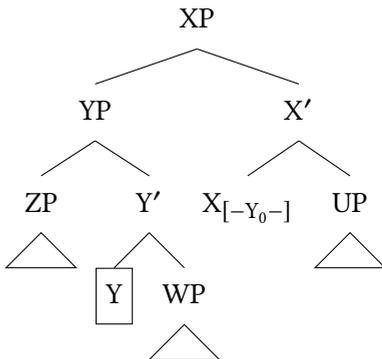


The derivation in (26) illustrates a non-trivial property of Remove operations applying to heads that take a complement and a specifier: ZP undergoes dislocation *without movement* (i.e., without internal Merge of ZP in 26b). This will play a role below.

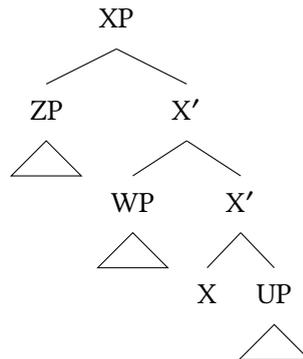
Finally, for the sake of completeness, the scenario where the head (Y) of a specifier (YP) is removed that takes both a complement (WP) and a specifier (ZP) is illustrated in (27). As before, ZP and WP are reassociated with X's projection in a way that maximally maintains earlier c-command and linearization relations, and here this implies that ZP and WP become outer and inner specifiers of X, respectively.

(27) Remove and heads: specifiers with specifiers

a. Merge( $X'_{[-Y_0-]} >_{[-Y_0-]} YP$ ):



b. Remove( $X'_{[-Y_0-]}, Y$ ):



Overall, what emerges is a principled approach to reanalysis by structure removal, which is also restrictive, due to the strict cycle condition. The patterns in (24–27) can all be shown to underlie syntactic constructions exhibiting evidence for conflicting structure assignments that are unrelated to restructuring infinitives. For instance, removal of specifier heads with complements and specifiers, as in (27), is argued in Müller (2018) to account for conflicting structure assignments to complex prefield constructions in German (*viz.*, as topicalized headless VPs and as multiple specifiers of C); removal of complement and specifier heads with complements but no specifiers, as in (24) and (25), is argued in Müller (2015) and Puškar (2016) to account for conflicting evidence for nominals as DPs or NPs in Circassian and Serbo-Croatian, respectively, and in Korsah & Murphy (2017) to account for the presence or absence of clausal determiners in Kwa; and removal of complement heads with specifiers, as in (26), is argued in Schwarzer (2016) to account for conflicting evidence concerning the size of *tough*-movement constructions in English and German. (In addition, Dschaak 2017 develops an account of restructuring in Russian along the lines of the present proposal.) In the next section, I develop an approach to restructuring that accounts for the conflicting evidence laid out in §2. I will argue that the evidence for biclausality involves environments before removal of heads, and the evidence for monoclausality involves environments after removal. Removal typically takes place with complements (as in 24 and 26), but in the context of discussing the third construction, I will also argue that it can involve specifiers (as in 25 and 27).

## 4 Analysis

### 4.1 Structure removal in infinitival complements

Suppose that all control verbs take CP complements. The special property of restructuring control verbs then is that they can subsequently remove CP and TP layers, yielding derived vP complements.<sup>20</sup> More specifically, I suggest that evidence for biclausality involves a CP structure before removal. Thus, the relevant operations that are indicative of biclausality are counter-bleed and counter-feed by Remove. In contrast, evidence for monoclausality involves a vP structure after removal. Consequently, the relevant operations that are indicative of monoclausality are bleed and feed by Remove. The derivation of a restructuring control infinitive is shown in Figures 9.1 and 9.2. In Figure 9.1a, infinitival C is merged with

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<sup>20</sup>In principle, it is possible to introduce yet more subtle distinctions, with different degrees of removal eventually yielding different final output structures for the infinitival complements; see Fanselow (1991); Wurmbbrand (2001; 2015b). Also cf. the remark on long-distance passivization in footnote 28 below.

a TP containing an infinitival V, an object DP that has been assigned accusative case by *v*, and a PRO subject that does not yet have case. Next, in Figure 9.1b, (cf. §2.2.2), infinitival C for control environments can value the infinitival subject with null case (see footnote 6); I take this to be an instance of Agree.<sup>21</sup>

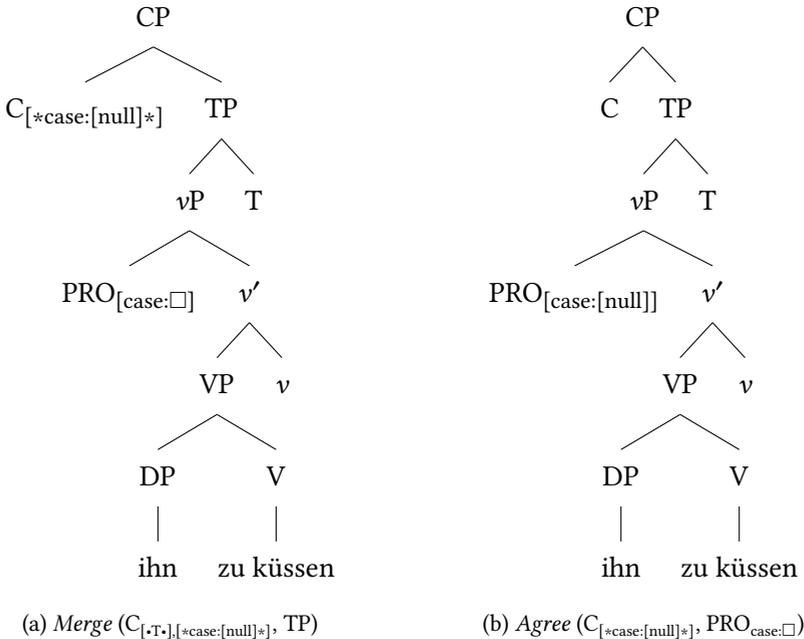


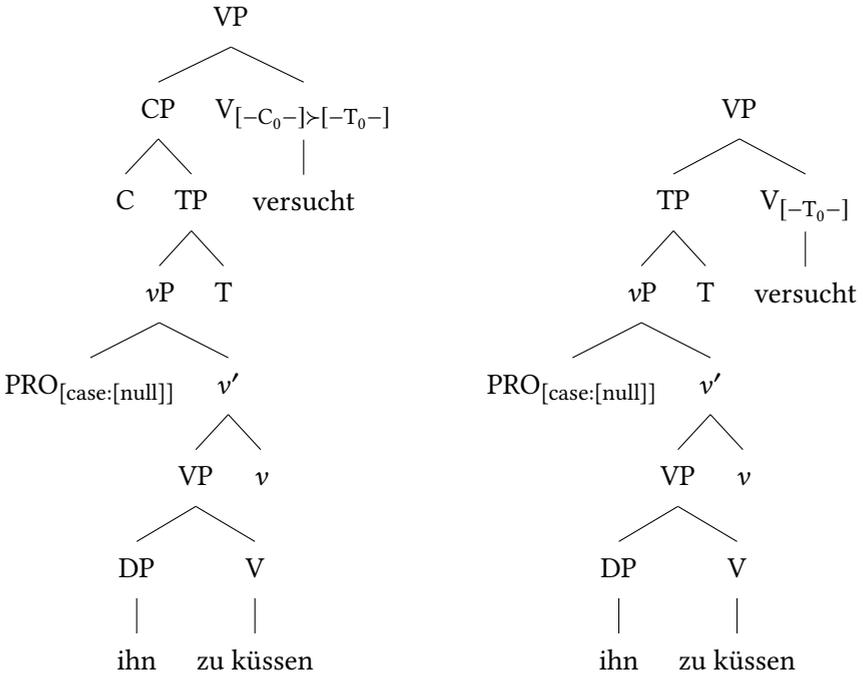
Figure 9.1: Control infinitives

If restructuring does not take place, that is all there is to say. However, if the matrix control predicate has the restructuring property, the derivation proceeds as in Figure 9.2. The lexical property that characterizes a restructuring verb in the present approach is that a  $[-C_0-]$  feature and a  $[-T_0-]$  feature can be added at the bottom of its stack of operation-triggering features. If this happens, the Merge operation combining V and CP (triggered by a  $[\bullet C\bullet]$  feature that uniformly characterizes control verbs) in Figure 9.2a is followed by recursive removal – first of the CP shell (cf. Figure 9.2b), and then of the TP shell (cf. Figure 9.2c).

The end result is a proper monoclausal structure.<sup>22</sup>

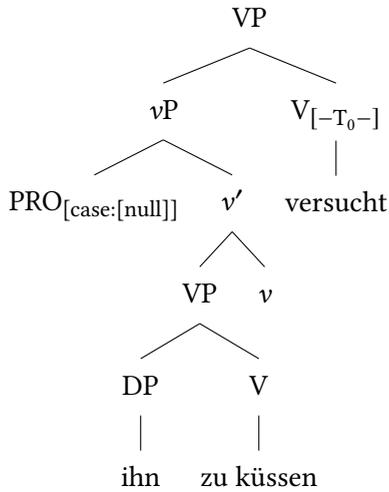
<sup>21</sup>Here, asterisks indicate that a feature triggers an Agree operation ( $[\bullet F\bullet]$ ). Also, since there is no obligatory EPP feature for German T, there is no reason to assume that PRO must undergo movement to SpecT; it is licensed by C in its in situ (Spec*v*) position.

<sup>22</sup>Instantiation of the features for head removal on restructuring control verbs is optional, and it turns out that hardly any restrictions are needed to guarantee only correct outcomes. If the order of the two features on V is reversed ( $V_{[C\bullet]>[-T_0-]>[-C_0-]}$ ), there can be no removal



(a) Merge (V<sub>[-C<sub>0</sub>-]>[-C<sub>0</sub>-]>[-T<sub>0</sub>-]</sub>, CP)

(b) Remove (V<sub>[-C<sub>0</sub>-]>[-T<sub>0</sub>-]</sub>, CP)



(c) Remove (V<sub>[-T<sub>0</sub>-]</sub>, TP)

Figure 9.2: Restructuring

## 4.2 Deriving evidence for biclausality

As noted above, the operations that presuppose the presence of CP are counter-bleed and counter-feed by structure removal: removal simply comes too late to bleed or feed operations that are indicative of the CP layer. Let me go through the evidence one by one. First, consider *uniformity of embedding* (§2.2.1). Given that features for removal are optional, the implicational generalization that all control verbs that permit restructuring are also compatible with non-restructuring complements is derived without further ado. The only way to reach vP is via an initial CP: Thus, Remove counter-bleeds feature-driven external Merge.

Second, as for the *licensing and interpretation of PRO* (§2.2.2), PRO is licensed via Agree with an infinitival C that assigns null case to it. Once null case is assigned, it cannot be taken away again. Thus, it does not matter that the context in which PRO can be licensed (viz., a CP) is ultimately destroyed by removal: Remove counter-bleeds PRO licensing.

Let me turn next to the *absence of new binding domains* after restructuring (§2.2.3). Assuming that reflexives are licensed by Agree operations which are blocked by a CP boundary, a reflexive will have its index fixed once the minimal CP is reached. Subsequent structure removal can neither lead to new binding options by adding a binding index on a reflexive if new potential antecedents are around,<sup>23</sup> nor can it undo existing binding indices on a reflexive: Remove counter-feeds new binding of reflexives and counter-bleeds old binding of reflexives.

Fourth, concerning the evidence based on *unstressed pronoun fronting* (§2.2.4), recall that an unstressed pronoun moves to the left edge of vP, but must be licensed in this position by C (perhaps as an instance of Agree, as suggested in footnote 8). Subsequent removal of CP and TP comes too late to block the licensing: Remove counter-bleeds unstressed pronoun fronting.

Fifth, consider the argument based on *the third construction* (§2.2.5): Extraposition of a restructuring infinitive is indicative of its CP status because only CP can undergo extraposition in German; TP, vP, and VP cannot do so. This implies that CP extraposition takes place *before* structure removal; otherwise the

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of TP (because of the strict cycle condition), and no removal of CP either (because  $[-C_0-]$  is not active before  $[-T_0-]$  is discharged). If the matrix verb bears  $[-T_0-]$  but not  $[-C_0-]$ , restructuring also cannot take place (because of the strict cycle condition). Finally, if only  $[-C_0-]$  is instantiated, restructuring to TP size would be expected. To avoid such an outcome, it can be assumed that  $[-T_0-]$  and  $[-C_0-]$  are tied because they are part of the same phase; also see Pesetsky (2016). (That said, most of the evidence for monoclausality would not necessarily be incompatible with a TP status of the complement; the crucial requirement is the absence of CP.)

<sup>23</sup>Also note that unlike English, German does not allow for movement producing new binding options; cf. Barss (1986) vs. Frey (1993) and Büring (2005).

possibility of extraposition would not be explained. For the sake of concreteness, suppose that rightward movement is triggered by an optional designated feature, say  $[\circ X \circ]$  (with  $X \in \{C, P, D\}$  in German). A relevant part of the derivation of a sentence like (21a) is shown in Figure 9.3. First, the infinitival CP is merged to the left of V (see Figure 9.3a); then it undergoes extraposition, which I assume to target a right-peripheral specifier position (see Figure 9.3b); but note that assuming extraposition to involve right-adjunction would not substantially change things). In the next two steps, the CP and TP shells are successively removed (see Figure 9.3c,d).

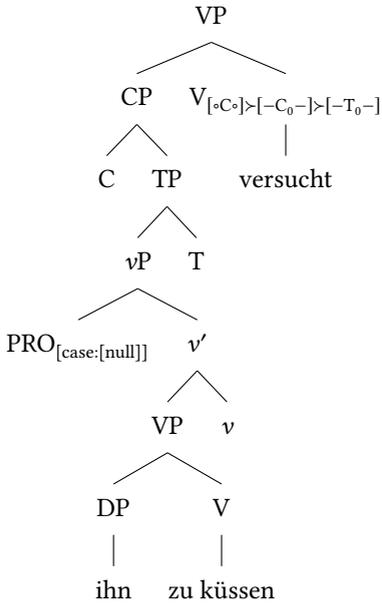
As for the steps in Figure 9.3c,d, recall that there is no problem with Remove affecting specifiers (or adjuncts) rather than complements (cf. 25 and 27). As a matter of fact, there is clear independent evidence for the general possibility of restructuring with specifiers in German. Examples like (28a,b), where scrambling takes place from a subject infinitive, are entirely unproblematic (28b may involve a derived subject, but 28a certainly does not).

(28) German

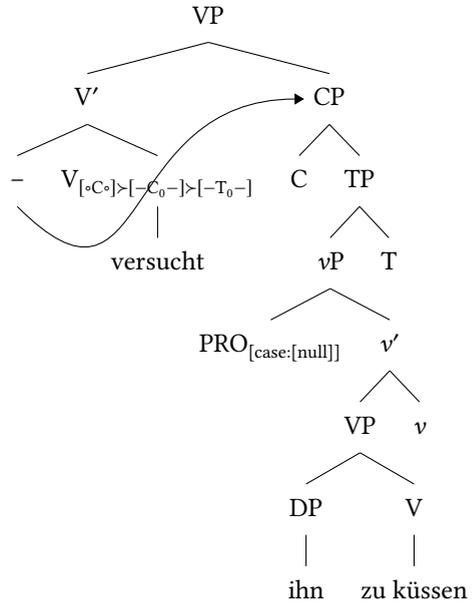
- a. dass es<sub>1</sub> sich nicht [ PRO t<sub>1</sub> zu beanstanden ] gehört hat  
     that it<sub>1</sub> REFL not                      to object to            acceptable is
- b. dass sich<sub>1</sub> ihm [ PRO t<sub>1</sub> zu befreien ] gelungen ist  
     that REFL him<sub>DAT</sub>                      to free                successful was

The final representation in Figure 9.3d is monoclausal, as required for scrambling and unstressed pronoun fronting to a vP specifier of the matrix V. However, there is a problem: it is not quite clear why a vP in a derived specifier (or adjoined) position does not block extraction via the condition on extraction domains (CED; Huang 1982; Chomsky 1986; Cinque 1990). I will address this issue in the following section. With this proviso, we can conclude that Remove counter-bleeds extraposition: loss of the CP status of the complement in the extraposed position comes too late to block rightward movement (which requires CP status).<sup>24</sup>

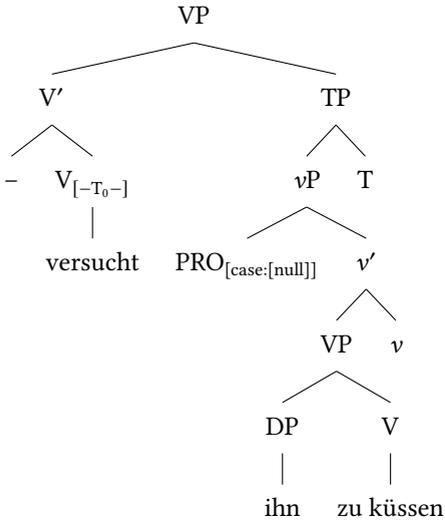
<sup>24</sup>The derivation in Figure 9.3 also gives rise to another question: the third construction is possible with periphrastic verb forms; i.e., as an alternative to *versucht* ‘tried’, as in (21a), there is also the option of *versucht hat* ‘tried has’, as in (21b). There are (at least) two ways to account for this. First, one might assume that periphrasis comes about by head movement of non-finite lexical V to the auxiliary, followed by discharge of the extraposition feature in the derived position; this would require a minimal modification of the strict cycle condition that incorporates the effect of (this type of) head movement. Second, one might postulate that the two Vs form a single complex head (see, e.g., Zwart 2016 for a recent version of this approach); verb-second movement might then proceed by excorporation.



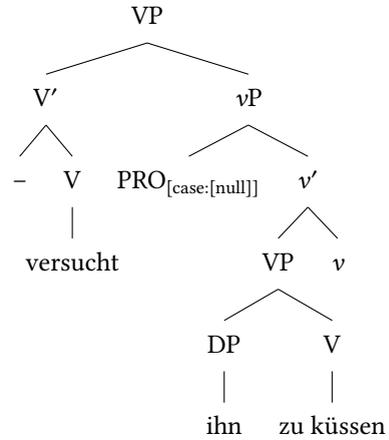
(a) Merge ( $V_{[C_0]>[C_0-]>[-T_0-]}$ , CP)



(b) Extrapose ( $V_{[C_0]>[C_0-]>[-T_0-]}$ , CP)



(c) Remove ( $V_{[-C_0-]>[-T_0-]}$ , CP)



(d) Remove ( $V_{[-T_0-]}$ , TP)

Figure 9.3: The third construction

### 4.3 Deriving evidence for monoclausality

The basic pattern is that operations that presuppose monoclausality are bled and fed by Remove. Let me begin with the simplest cases. First, wide scope of *negation* in restructuring contexts (§2.1.5) follows straightforwardly: scope is an LF-related phenomenon that is determined on the basis of output representations like Figure 9.2c, i.e., after structure removal. Hence, at the stage where the scope of the embedded negation is determined, there is no intermediate clause boundary anymore that might prevent wide scope (or, for that matter, permit embedded scope): Remove feeds scope of negation.<sup>25</sup> Second, similar considerations apply in the case of *intonation* (§2.1.6). The determination of intonational breaks is a phonetic form (PF) process; consequently, it is output representations like Figure 9.2c that are taken into account in order to decide whether intonational breaks can or cannot occur – and after removal, the clause boundary that is indicative of an intonational break is gone: Remove bleeds the generation of smaller intonational phrases.

Next, §2.1.1 (scrambling and unstressed pronoun fronting), §2.1.2 (extraposition), and §2.1.3 (multiple sluicing) all involve evidence for monoclausality based on the a priori unexpected option of extraction (of certain movement types) to take place across a clause boundary with restructuring. An obvious account might therefore rely on the assumption that extraction from the infinitival complement can take place from the in situ position after removal of CP and TP shells, i.e., that Remove directly feeds extraction in the case of movement types that cannot cross a CP boundary. However, there are two problems with this simple view. The first problem concerns successive cyclicity: in general, a phrase that is supposed to undergo extraction from a constituent needs to undergo intermediate movement steps to phase edges, because of the PIC. Accordingly, an item within an infinitival CP that will target a position in the matrix clause (e.g., via scrambling or extraposition) does not know that eventually, there will be no CP (due to removal by the matrix verb); thus, without look-ahead, it will have to undergo movement first to Specv, and then to SpecC.

<sup>25</sup>There is a qualification, though. As observed by Santorini & Kroch (1991), negation is always clause-bound in the third construction; cf. (i) vs. (9a).

- (i) German  
 dass ich seinen neusten Roman beschlossen habe [<sub>vP</sub> nicht zu lesen ]  
 that I his newest novel<sub>acc</sub> decided have not to read  
 (only narrow scope)

This suggests that, unlike displacement, wide scope is blocked by a vP in a derived (specifier or adjunct) position.

The second problem has already been noted above: recall that a vP in a right-peripheral SpecV position should block scrambling in the third construction, because of the CED (see Figure 9.3d). Taken together, these two problems suggest that the way in which Remove feeds extraction options is somewhat different from the way envisaged under the simple account just sketched.

As a first step to a solution, let us assume that there is some constraint against improper movement that ensures that a CP blocks movement to a clause-external position in the case of scrambling and unstressed pronoun fronting (cf. 1a, 1b, 2c, 2d) and extraposition (cf. 3a, 3b), but not with wh-movement, topicalization or relativization. There are various proposals in the literature as to how the prohibition against movement to low (vP- or TP-internal) positions from a CP can be derived (see, e.g., Müller 2014: Ch. 2; Wurmbrand 2015b; Keine 2016 for three recent attempts); for present purposes, it may suffice to state that such movement (as an instance of Merge) is blocked.

On this basis, consider again the case of scrambling from a restructuring infinitive, as in (2a), repeated here as (29).

- (29) German  
 dass den Fritz<sub>1</sub> keiner [ PRO t<sub>1</sub> zu küssen ] versuchte  
 that the Fritz<sub>ACC</sub> no-one<sub>NOM</sub> to kiss tried

Before the infinitival CP is merged with the matrix V, successive-cyclic movement of the embedded object DP *den Fritz* takes place to Specv and SpecC; cf. Figure 9.4.

Next, V combines with CP (see Figure 9.5a); then Remove(V,CP) takes place (see Figure 9.5b). Importantly, DP and TP, as the original specifier and complement of C, are now both reassociated with the matrix V projection in a structure-preserving way, and this means that DP ends up as a specifier of matrix V without having undergone movement to this position. Consequently, there can be no violation of the constraint against improper movement (improper movement can only occur if there is movement in the first place).<sup>26</sup> After this, V removes the TP shell (see Figure 9.5c), which has no further consequences for the moved DP.

As a consequence, DP shows up in the matrix domain without having undergone movement itself, and is now free to move on, yielding, e.g., (29), or, alternatively, to stay in place, with no effects that would be directly discernible since it cannot have crossed matrix VP material (see footnote 19).

<sup>26</sup>See, however, Keine (2016) for evidence that long-distance agreement is subject to the same kinds of restrictions as movement and can also qualify as improper. On this more general view, only operations triggered by features can count as improper; reassociation after structure removal still cannot do so.

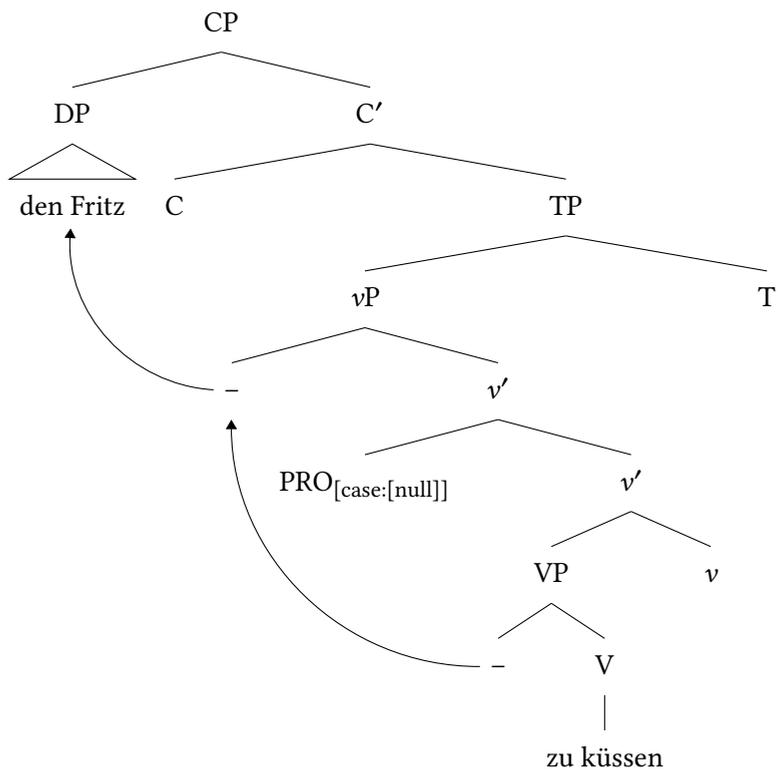
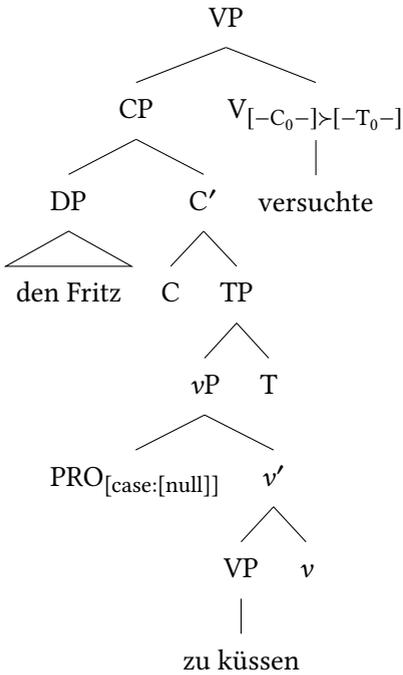
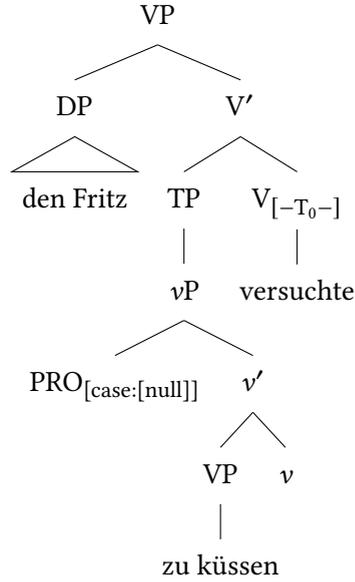


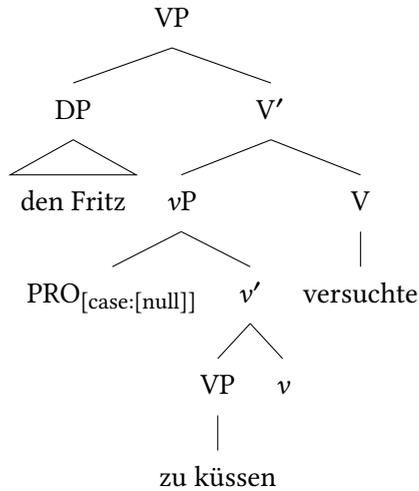
Figure 9.4: Movement in the embedded CP



(a) Structure before removal



(b) Remove (V[-C<sub>0</sub>-]>[-T<sub>0</sub>-], CP), reassociation of DP



(c) Remove (V[-T<sub>0</sub>-], TP)

Figure 9.5: Extraction and Restructuring



extraction in the third construction, the only difference being that CP is extraposed prior to removal. Thus, a DP that is in SpecC of the extraposed CP becomes reassociated with VP as a consequence of CP removal in the extraposed position. As before, this means that a DP that has reached SpecC of a restructuring infinitive ends up in the matrix VP domain without having undergone movement to that position; and as before, two possibilities arise: First, DP can undergo further movement in the matrix clause (including scrambling and unstressed pronoun movement). Second, DP may stay in SpecV; since it has not moved there, the position is virtually indistinguishable from a base-merged position at this point. I would like to contend that this second option does indeed have discernible empirical effects: It provides a principled approach to *pseudo-scrambling* phenomena as they have been identified by Geilfuß (1991).

The relevant observation is that items in immediately preverbal positions in the third construction do not exhibit the characteristic properties of *scrambling* in German; they instantiate what has been called *pseudo-scrambling*. Geilfuß (1991) presents evidence from a variety of different phenomena, among them focus projection, wh-scrambling, scope, non-specific indefinites, directional PPs, extraction, idioms, and quantifier floating. Let me just briefly address two of them. First, (30a) shows that maximal focus projection in out-of-the-blue contexts is normally impossible with scrambled items; in contrast, (30b) shows that a pseudo-scrambled DP in the third construction permits focus projection (the effect goes away again if DP<sub>1</sub> were to undergo further displacement to a position in front of the matrix object). In the present approach, this is accounted for straightforwardly: focus projection is incompatible with scrambling, and the pseudo-scrambled DP in (30b) is not moved but transported to matrix SpecV via reassociation after CP removal.

## (30) German

- a. # Fritz hat das MÄRchen<sub>1</sub> einem Kind t<sub>1</sub> vorgelesen  
     Fritz<sub>NOM</sub> has the fairy tale<sub>ACC</sub> a child<sub>DAT</sub> read to
- b. Fritz hat einem Kind das MÄRchen<sub>1</sub> [<sub>VP</sub> versucht [ t<sub>1</sub>  
     Fritz<sub>NOM</sub> has a child<sub>DAT</sub> the fairy tale<sub>ACC</sub> tried  
     vorzulesen ]]  
     to read to

Second, relative scope illustrates the same effect. Normally, scrambling of one quantified DP across another one leads to scope ambiguities (see 31a). However, extremely local pseudo-scrambling from third construction environments does

not (see 31b). Given the present analysis, DP<sub>1</sub> in (31b) does not exhibit this property indicative of movement for the simple reason that it has reached its position not by movement, but by reassociation after CP removal.

(31) German

- a. Er hat mindestens ein Geschenk<sub>1</sub> fast jedem Gast t<sub>1</sub>  
 he<sub>NOM</sub> has at least one present<sub>ACC</sub> almost every guest<sub>DAT</sub>  
 überreicht  
 given

Readings:  $\exists > \forall, \forall > \exists$

- b. Er hat mindestens ein Geschenk<sub>1</sub> versucht [ fast jedem Gast  
 he<sub>NOM</sub> has at least one present<sub>ACC</sub> tried almost every guest  
 t<sub>1</sub> zu überreichen ]  
 to give

Readings:  $\exists > \forall, * \forall > \exists$

To sum up, assuming that the *compactness* property (§2.1.4), to the extent that it holds, can be accounted for in one of the ways suggested in the literature, the empirical evidence for monoclausality highlighted in §2.1 has been derived in toto.

More generally, I would like to conclude that a Remove-based approach to restructuring infinitives embedded under control verbs in German is conceptually viable and empirically motivated; in fact, an analysis in terms of structure removal would seem to be the only kind of principled approach that captures both the evidence for biclausality and the evidence for monoclausality in a straightforward way. Furthermore, the option of deriving local displacement in restructuring contexts as a consequence of reassociation after removal (rather than by movement) offers a new look on pseudo-scrambling in the third construction (and possibly in other contexts as well). All in all, then, it seems to me that there is every reason to return to classical concepts of restructuring as involving a genuine syntactic reduction of clause size; the core problem with these approaches – viz., that the analyses were not sufficiently principled and restricted – can be solved when an elementary operation Remove is identified as the complete mirror image of Merge.<sup>28</sup>

<sup>28</sup>Needless to say, there are many more aspects of restructuring that will ultimately have to be addressed, both in German and, particularly, when it comes to extending the analysis to other languages. Let me just mention two issues that I cannot address here for lack of space. First, *long-distance passivization* has played an important role in the development of restructuring

## Abbreviations

ACC	accusative	NOM	nominative
CED	condition on extraction domains	PF	phonetic form
DAT	dative	PIC	phase impenetrability condition
ECM	exceptional case marking	PTCL	particle
EPP	extended projection principle	REFL	reflexive
LF	logical form		

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theories (see Höhle 1978, Wurmbrand 2001; 2015a,b, Sternefeld 2006, Haider 2010, and Keine & Bhatt 2016, among many others). In Müller (2019), I sketch an analysis in terms of Remove that extends the present analysis.

Second, I have been silent about *status government* (see Bech 1955–1957; Fabb 1984), which is also sometimes viewed as being indicative of restructuring. See Benz (2019) on how the concept of status government interacts with a Remove-based approach to restructuring.

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