

Restructuring by Removal

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1. Structure Removal

Proposal:

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*.

Conflicting representations:

1. There is substantial evidence for conflicting representations in syntactic derivations.
2. The standard means to account for this is displacement: If some item α shows properties associated both with position P and position Q, then this is due to the fact that α has moved from Q to P.
3. However, there are many cases of conflicting representations that do not lend themselves to analyses in terms of displacement.
4. These latter cases can be straightforwardly derived by structure removal.

Observation:

If *Remove* exists as the mirror image of *Merge*, it is expected to show similar properties and obey identical constraints.

Assumptions about Merge:

- (i) Merge is feature-driven. It is triggered by designated [$\bullet F \bullet$] features, which are ordered on lexical items (Heck & Müller (2007), Abels (2012), Stabler (2013), Georgi (2014), Müller (2014), and references cited there).
- (ii) Merge may apply to heads (incl. head movement in cases of internal Merge) or phrases (incl. XP movement in cases of internal Merge): [$\bullet F_0 \bullet$], [$\bullet F_2 \bullet$]. (0=min, 2=max.)
- (iii) Merge obeys the Strict Cycle Condition in (1) (Chomsky (1973; 1995; 2001; 2008); also cf. the Extension Condition and the No Tampering Condition).
- (iv) Merge can be external or internal.

(1) *Strict Cycle Condition (SCC):*

Within the current XP α , a syntactic operation may not exclusively target some item δ in the domain of another XP β if β is in the domain of α .

(2) *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.

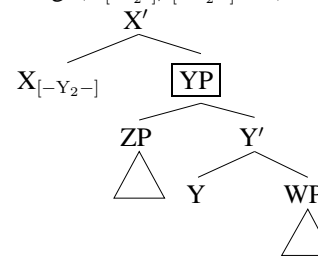
Note:

See Safir (2010; 2015) for a similar concept (called Peak Novelty Condition in the more recent paper).

Assumptions about Remove:

- (i) Remove is feature-driven. It is triggered by designated [$-F-$] features, which are ordered on lexical items.
- (ii) Remove may apply to heads or phrases: [$-F_0-$], [$-F_2-$].
- (iii) Remove obeys the Strict Cycle Condition.
- (iv) Remove can be external or internal.

(3) *Remove and phrases: complements* b. $\text{Remove}(X_{[-Y_2-]}, YP)$:
a. $\text{Merge}(X_{[\bullet Y_2 \bullet]} > [-Y_2-], YP)$:



Note:

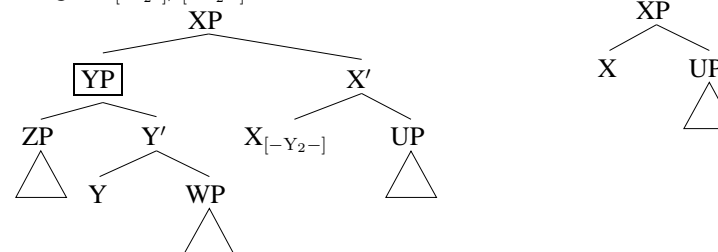
ZP, WP cannot be removed by X because of the Strict Cycle Condition.

Side remark:

(3) qualifies as a Duke-of-York derivation (see Pullum (1976), McCarthy (2003), and Lechner (2010)).

(4) *Remove and phrases: specifiers*

a. $\text{Merge}(X'_{[\bullet Y_2 \bullet]} > [-Y_2-], YP)$: b. $\text{Remove}(X'_{[-Y_2-]}, YP)$:



Note:

Again, ZP & WP cannot be removed by X because of the Strict Cycle Condition. In principle,

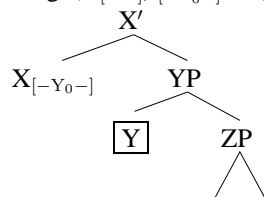
X might also remove UP in this configuration after YP has been merged. Evidence: (i) Richards (2001) on tucking in with internal Merge. (ii) If ellipsis constructions involve structure removal rather than mere PF deletion (Murphy (2015)), removal of the TP by a $[-T_2-]$ feature on C in German sluicing constructions must take place after wh-movement to SpecC has occurred.

(5) *Complement Removal in Sluicing:*

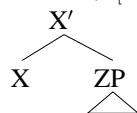
Fritz hat irgendwen gesehen, aber ich weiß nicht $[_{CP}$ wen_i C $[_{TP}$ der Fritz t_i
 Fritz has someone seen but I know not whom the Fritz
gesehen hat]]
 seen has

(6) *Remove and heads: complements w/o specifiers*

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



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

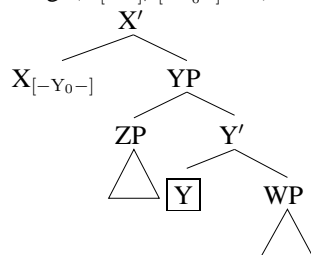


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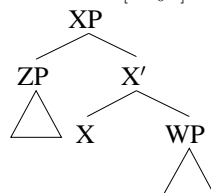
Since $[-F_0-]$ removes the head, it takes away the highest projection, and only this. More deeply embedded material (like ZP) is attached to the head responsible for removal and replaces the original item (YP): This works exactly like tree pruning (see Ross (1967, ch. 3)). If there are two or more items in YP (e.g., ZP, WP), they reassemble in their original structural and linear order in the XP domain. Such a reassociation is *not* an instance of Merge. Also cf. Stepanov (2012) on head movement. And cf. Pesetsky (2016) on Exfoliation (\rightarrow Appendix).

(7) *Remove and heads: complements with specifiers*

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



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

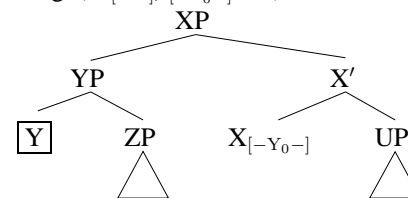


Note:

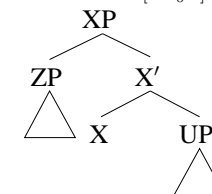
This opens up the possibility of dislocation without movement (i.e., without internal Merge of ZP in (7)).

(8) *Remove and heads: specifiers w/o specifiers*

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

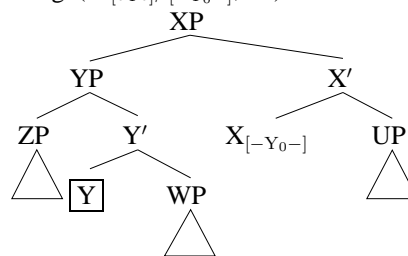


b. Remove($X'_{[-Y_0-]}$, Y):

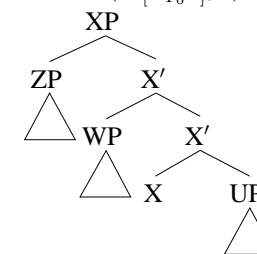


(9) *Remove and heads: specifiers with specifiers*

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



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



Short life cycle effects:

1. Some other operation Γ can be interspersed between Merge(X, YP) and Remove($X, Y(P)$).
2. However, due to the Strict Cycle Condition, a YP removed by $[-F-]$ is predicted to have a short life cycle (unless it undergoes movement; see 6. below): It is only accessible for other operations for a small part of the derivation.
3. Given incremental, bottom-up derivations, this implies that YP is accessible from below (downward accessibility) and inaccessible from above (upward inaccessibility): Remove counter-bleeds Γ but bleeds subsequent operations (see Chomsky (1951), Kiparsky (1973)).
4. There is empirical evidence for short life cycle effects of this type (Müller (2016b)).
5. Alternative accounts can only derive these kinds of effects on a case-by-case basis, as conspiracies because they cannot acknowledge, and model, a systematic pattern.
6. The system predicts one exception (Müller (2016c), Murphy (2016)): If an item is moved to a higher domain, it can be targeted there by a head with a $[-F_{0/2-}]$ feature, in accordance with the Strict Cycle Condition in (1).

Phenomena addressed in terms of Remove so far:

- Removal of phrases: passive (Müller (2016b), Murphy (2016)), applicative (Müller (2015b)), antipassive (Müller (2015a)), ellipsis (Murphy (2015), Murphy & Müller (2016))

- Removal of heads: complex prefields (Müller (2016a;c))

Goal:

Building on the rough sketch in Müller (2015b), I develop an approach to restructuring and non-restructuring infinitives with control verbs in German that is based on uniform CP embedding and subsequent removal of functional shells.

2. Restructuring

Generalization:

- Non-restructuring control infinitives in German behave in all relevant respects like finite embedded clauses and thus uniformly demand a biclausal analysis in terms of CP embedding.
- 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.

Side remark (Fanselow (1989; 1991)):

There is some variation among speakers as to which (control) verbs count as (non-) restructuring predicates in German. Tendency: The younger the speaker, the more verbs (s)he accepts as a restructuring predicate. This does not affect the generalization as such.

2.1. Arguments for Monoclausality

Refs.: Stechow & Sternefeld (1988), Grewendorf (1988), Fanselow (1991), Bayer & Kornfilt (1994), Wurmbrand (2001), Haider (2010).

2.1.1. Extraposition

(10) *M-I. Ban on extraposition:*

- Sie hatte [nicht gestört zu werden] gewünscht
she had not disturbed to be wished
- Sie hatte gewünscht [nicht gestört zu werden]
she had wished not disturbed to be
- Sie hatte [nicht gestört werden] wollen
she had not disturbed be wanted
- *Sie hatte wollen/gewollt [nicht gestört werden]
she had want/wanted not disturbed be

Note:

Some verbs (auxiliaries, modals, causative and perception verbs, raising verbs) obligatorily trigger restructuring; regular control verbs (like *versuchen* ('try')) do so optionally. Wurmbrand (2001; 2004): Functional restructuring vs. lexical restructuring; the ban on extraposition only holds for the former class (see below).

2.1.2. Verb (Projection) Raising

(11) *M-II. Verb (projection) raising* (incl. Ersatzinfinitiv):

- dass wir Ede hatten singen hören
that we Ede had sing hear
- weil Beate Ede wird anrufen wollen
that Beate_{nom} Ede_{acc} will call want
- weil er das Land nicht wird haben verlassen dürfen
that he the land not will have left may

2.1.3. Negation

(12) *M-III. Wide scope of negation:*

- dass sie ihn nicht zu sehen versucht
that she_{nom} him_{acc} not to see tries
- dass sie ihn nicht zu sehen bedauert
that she_{nom} him_{acc} not to see regrets

(13) *Two readings for (13-a), one for (13-b):*

- It is not the case that she tries to see him.
- She tries not to see him.
- *It is not the case that she regrets seeing him.
- She regrets not seeing him.

2.1.4. Intonation

(14) *M-IV. Intonation* ('Grenzpause'):

- dass sie ihn zu küssen versuchte
that she him to kiss tried
- dass sie versuchte □ ihn zu küssen
that she tried him to kiss
- dass sie □ ihn zu küssen □ gar nicht erst versucht hat
that she him to kiss PRT not PRT tried has

2.1.5. Status Government

(15) *M-V. Status government* ('verbal case assignment'):

- als wir Ede singen hörten
when we Ede sing heard
- weil Beate Ede anrufen will
because Beate_{nom} Ede_{acc} call wants
- weil Beate Ede angerufen haben wird
because Beate_{nom} Ede_{acc} called have will
- weil das Wetter gut zu werden scheint
because the weather good to become seems

- (16) *Status* ('verbal cases'):
- first status: aufessen (bare infinitive)
 - second status: aufzuessen (zu-infinitive)
 - third status: aufgegessen (past participle)

Assumption:

Status assignment (Bech (1955/1957)) (or 'verbal case assignment' (Fabb (1984))) is a form of government (Stechow (1984; 1990), Adger (2003)); like all kinds of government, it is clause-bound.

2.1.6. *Absence of Pied Piping of Infinitives*

- (17) *M-VI. Pied piping of infinitives:*
- die Ratten, die zu fangen Hubert sich vorgenommen hatte
the rats which to capture Hubert REFL planned had
 - *die Ratten, die Hubert fangen Günther ließ
the rats which Hubert capture Günther let
 - *die Ratten, die zu fangen Günther scheint
the rats which to capture Günther seems

2.1.7. *Extraction*

(18) *M-VII. Scrambling (& unstressed pronoun movement) across matrix material:*

- dass den Fritz₁ keiner [t₁ zu küssen] versuchte
that the Fritz_{acc} no-one_{nom} to kiss tried
- dass die Maria es₁ ihm gestern [t₁ zu lesen] empfohlen hat
that the Maria_{nom} it_{acc} him_{dat} yesterday to read recommended has
- *dass den Fritz₁ keiner die Maria [t₁ zu küssen] aufforderte
that the Fritz_{acc} no-one_{nom} the Maria_{acc} to kiss requested
- *dass die Maria es₁ gestern [t₁ zu kennen] geleugnet hat
that the Maria_{nom} it_{acc} yesterday to know denied has

Note (Ross (1967)):

Scrambling in German is strictly clause-bound.

(19) *Ban on long-distance scrambling in German:*

- *dass den Fritz₁ keiner gesagt hat [CP dass wir t₁ einladen sollen]
that the Fritz_{acc} no-one_{nom} said has that we_{nom} invite should
- *dass die Maria es₁ meinte [CP solle man t₁ lesen]
that the Maria_{nom} it_{acc} said should one_{nom} read

2.1.8. *Remnant Movement*

(20) *M-VIII. Remnant movement:*

- [t₁ Zu lesen versucht] hat es₁ keiner
to read tried has it_{acc} no-one_{nom}

- [t₁ Zu lesen abgelehnt] hat es₁ keiner
to read rejected has it_{acc} no-one_{nom}

2.1.9. *Compactness*

Observation (Haider (2010)):

Items participating in restructuring are *compact* in the sense that other material cannot linearly intervene.

(21) *M-IX. Compactness*

- *dass er gearbeitet gestern hat
that he_{nom} worked yesterday has
- *dass es₁ keiner [t₁ zu lesen] gestern versucht hat
that it_{acc} no-one to read yesterday tried has

Note:

Haider accounts for compactness by postulating a complex base-generated head analysis for restructuring. However, it seems that most of the relevant data can be accounted for independently (Wurmbrand (2007), Müller (2014, ch. 3)). 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) (Wurmbrand (2007)).

2.2. *Arguments for Biclausality*

2.2.1. *Uniformity of Embedding*

Observation (Stechow & Sternefeld (1988)):

Every control verb that permits restructuring can optionally also show up in a non-restructuring context. Deriving this implicational generalization requires additional assumptions if restructuring predicates can simply optionally involve TP-embedding, vP-embedding or VP-embedding; but 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 reanalysis operation.

(22) *B-I. Uniformity of embedding with verbs that optionally trigger restructuring:*

- dass der Oberförster versuchte [CP dem Peter einen Film zu empfehlen]
that the head forester tried the Peter_{dat} a film_{acc} to recommend
- dass sie [CP dem Peter einen Film zu empfehlen] versuchte
that she the Peter_{dat} a film_{acc} to recommend tried
- dass ihn₁ der Oberförster [dem Peter zu empfehlen] versuchte
that him the head forester the Peter_{dat} to recommend tried

2.2.2. *Distribution of PRO*

Observation (Stechow & Sternefeld (1988)):

The distribution of the empty pronominal subject of control infinitives (PRO) requires the presence of a CP projection.

(23) *B-II. PRO*

- a. dass der Oberförster versuchte [_{CP} PRO ein Buch zu lesen]
that the head forester tried a book to read
- b. dass der Oberförster [_{CP} PRO ein Buch zu lesen] versuchte
that the head forester a book to read tried
- c. *dass der Oberförster [_{VP} PRO ein Buch zu lesen] versuchte
- d. *dass der Oberförster [_{VP} ein Buch zu lesen] versuchte

Note:

This presupposes that *lesen* must discharge both its θ -roles in the syntax, that the external θ -role is represented by PRO, and that PRO must not be governed ('PRO theorem'), Chomsky (1981). The PRO theorem is not widely accepted anymore; however, somehow it needs to be ensured that PRO shows up in these contexts, and simple accounts would seem to crucially rely on the presence of a C projection. Adger (2003): Control predicates embedding infinitival clauses 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 ending, but of the whole argument DP (as PRO). Conclusion: If there is no CP projection, the difference between ECM/raising and control may be blurred.

(24) *Illicit long-distance passive with embedded subject promotion* (Stechow & Sternefeld (1988), Sternefeld (1990)):

- a. *dass Fritz₁ [_{VP} t₁ zu arbeiten] gewünscht wurde
that Fritz_{nom} to work wished was
- b. dass t₂ gewünscht wurde [_{CP}₂ dass Fritz arbeitet]
that wished was that Fritz_{nom} works

2.2.3. *Absence of New Binding Domains*

Observation:

Restructuring does not create new binding domains. An accusative object reflexive in a subject control infinitive can never pick a dative object of the matrix verb as an antecedent, in the way that an object reflexive can pick a dative object of the same verb as an antecedent for many speakers (Sternefeld & Featherston (2003), Featherston & Sternefeld (2003)).

(25) *B-IIIa. Absence of new binding domains:*

- a. Der Oberförster₁ hat ihm₂ (PRO₁) sich₁ zu waschen versprochen
the head forester has him_{dat} REFL to wash promised
- b. *Der Oberförster₁ hat ihm₂ (PRO₁) sich₂ zu waschen versprochen
the head forester has him_{dat} REFL to wash promised
- c. Der Oberförster₁ hat ihm₂ sich_{1/2} im Spiegel gezeigt
the head forester has him_{dat} REFL in the mirror shown

Note:

As it stands, this problem arises only with monoclausal approaches where the embedded infinitive is always either part of a complex verb (as in Haider (2010)) or is a bare VP

(Sternefeld (2006)), not with approaches where it can in principle be a vP or TP containing PRO (Wurmbrand (2001)). The reason is that a PRO subject can act as a minimal intervener establishing a binding domain for the reflexive.

However:

An intervening subject DP *can* be skipped with PP-internal reflexives in an ECM construction headed by *lassen* ('let') or *sehen* ('see') (Reis (1976), Grewendorf (1983), Fanselow (1987), Gunkel (2003), Barnickel (2014)). This is never possible across a finite clause boundary. Crucially, it is also never possible with control infinitives, even when restructuring takes place.

(26) *B-IIIb. Absence of new binding domains:*

- a. dass Maria₁ [_{TP} Paul₂ [_{PP} bei sich_{1/2}] schlafen] lässt
that Maria_{nom} Paul_{acc} with REFL sleep lets
- b. dass Maria₁ sagt [_{CP} dass Paul₂ bei sich_{*1/2} schlafen kann]
that Maria_{nom} says that Paul_{nom} with REFL sleep can
- c. dass Maria₁ Paul₂ [_{CP} PRO₁ [_{PP} bei sich_{1/*2}] zu schlafen] verspricht
that Maria_{nom} Paul_{dat} with REFL to sleep promises
- d. dass Maria₁ es₃ Paul₂ [_{CP} PRO₁ t₃ [_{PP} bei sich_{1/*2}] zu organisieren]
that Maria_{nom} it_{acc} Paul_{dat} with REFL to organize
verspricht
promises

Conclusion:

Whatever 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*

Generalization:

Unstressed pronouns must undergo fronting to a position that can only be preceded by a subject DP, which then has undergone optional EPP-driven movement to SpecT (Müller (2001), Fanselow (2004)). Assumption: Unstressed pronouns end up in a (higher) Specv position (more specifically, at the left edge of vP), where they precede DP and PP arguments (including scrambled ones), adverbials, and the base position of subjects.

(27) *Unstressed pronoun fronting:*

- a. dass es₁ die Maria dem Fritz t₁ gegeben hat
that it_{acc} the Maria_{nom} the Fritz_{dat} given has
- b. dass die Maria es₁ dem Fritz t₁ gegeben hat
that the Maria_{nom} it_{acc} the Fritz_{dat} given has

- c. *dass die Maria dem Fritz es₁ gegeben hat
that the Maria_{nom} the Fritz_{dat} it_{acc} given has
- d. *dass die Maria wahrscheinlich es₁ dem Fritz t₁ gegeben hat
that the Maria_{nom} probably it_{acc} the Fritz_{dat} given has

Observation:

Obligatory restructuring environments do not have sufficient space for unstressed pronoun fronting. However, there is a vast improvement with control constructions: Here, restructuring contexts seem to provide sufficient space for unstressed pronoun fronting.

(28) *B-IV. Unstressed pronouns in restructuring contexts:*

- a. *dass sie mir₁ schon letzte Woche [t₁ es₂ gegeben] hat
that she_{nom} me_{dat} already last week it_{acc} given has
- b. *dass sie mir schon letzte Woche [es₂ zu lesen] schien
that she_{nom} me_{dat} already last week it_{acc} to read seemed
- c. *dass sie mich schon letzte Woche [es₁ lesen] ließ
that she_{nom} me_{acc} already last week it_{acc} read let
- d. ?dass sie mir₁ schon letzte Woche [t₁ es₂ zu geben] versucht hat
that she_{nom} me_{dat} already last week it_{acc} to give tried has
- e. ?dass sie mir₁ schon letzte Woche versucht hat [t₁ es₂ zu geben]
that she_{nom} me_{dat} already last week tried has it_{acc} to give

Conclusion:

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. (Why should this be the case, given that the actual landing site is at the left edge of vP? There are various possibilities, incl. feature inheritance from C, as in Chomsky (2008), Richards (2007); ultimately, it seems that these movements to Wackernagel positions are regulated by C.)

2.2.5. *The Third Construction*

Generalization:

CP can undergo extraposition in German, vP, VP, TP cannot do so. (Crucially, this only holds for *Standard German*; see Haegeman & Riemsdijk (1986), Bader & Schmid (2009), Salzmann (2011; 2013a;b) for variation in other varieties of German.)

(29) *CP extraposition:*

- a. dass er gesagt hat [CP dass es regnet]
that he_{nom} said has that it_{nom} rains
- b. dass sie versucht hat [CP PRO zu schlafen]
that she_{nom} tried has to sleep

(30) *TP extraposition:*

- a. *dass ich gesehen habe [TP den Mann das Buch lesen]
that I_{nom} seen have the man_{acc} the book_{acc} read
- b. *dass sie ließ [TP ihn schlafen]
that she_{nom} let him_{acc} sleep

(31) *vP/VP extraposition:*

- a. *dass sie t₁ hat [VP gearbeitet]
that she_{nom} has worked
- b. *dass er t₁ hat [VP das Buch gelesen]
that he_{nom} has the book_{acc} read
- c. *dass er t₁ wird [VP das Buch lesen]
that he_{nom} will the book_{acc} read
- d. *dass sie hatte [t₁ wollen/gewollt [VP das Buch lesen]]
that she_{nom} had want/wanted the book_{acc} read

Observation:

Extraposition is possible in the third construction (Besten & Rutten (1989)), i.e., with scrambling from restructuring infinitives. This strongly suggests that the extraposed item is a CP. If the third construction involves extraposition of a VP (Wöllstein-Leisten (2001), Haider (2010)), it is unclear how VP extraposition can be excluded in all the other contexts.

(32) *B-V. The third construction:*

- a. dass sie ihn₂ t₁ versucht [CP₁ PRO t₂ zu küssen]
that she_{nom} him_{acc} tries to kiss
- b. dass sie das Buch₂ t₁ versucht hat [CP₁ PRO t₂ dem Mann zu geben]
that she_{nom} the book tried has the man_{dat} to give
- c. dass es₂ Maria t₁ verspricht [CP₁ PRO t₁ zu lesen]
that it_{acc} Maria promises to read
- d. dass es₂ Fritz ihr t₁ empfohlen hat [CP₁ PRO t₁ zu lesen]
that it_{acc} Fritz_{nom} her_{dat} recommended has to read

Consequence:

M-I (ban on extraposition, (10)) only holds for predicates that obligatorily undergo restructuring, not for control verbs, which optionally undergo restructuring. As before, this suggests a truly biclausal (i.e., CP) analysis only for the latter environments.

Problem:

VP extraposition is possible after all (in fact, obligatory) in the Ersatzinfinitiv construction, in apparent violation of the generalization that only CPs (and PPs, plus to some extent DPs) can undergo extraposition in Standard German, not VPs.

(33) *Ersatzinfinitiv*:

- a. *dass sie das Buch lesen gewollt hatte
that she_{nom} the book_{acc} read wanted had
- b. *dass sie das Buch lesen wollen hatte
that she_{nom} the book_{acc} read want had
- c. *dass sie das Buch hatte lesen gewollt
that she_{nom} the book_{acc} had read wanted
- d. dass sie das Buch hatte lesen wollen
that she_{nom} the book_{acc} had read want

Solution:

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 (Schmid (2005)). Note that extraposition in the third construction, unlike what is the case with the *Ersatzinfinitiv* construction, is strictly optional, and not a repair operation.

2.3. Interim Conclusion

Situation 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.

State of the art:

- *Monoclausal approaches* (Haider (1993; 2010), Kiss (1995), Wurmbrand (2001; 2007; 2015b), Sternefeld (2006)), many others:
Evidence for biclausality poses problems that typically require construction-specific assumptions complicating the overall analysis.
- *Biclausal approaches* (Baker (1988), Sternefeld (1990), Müller & Sternefeld (1995), Sabel (1996), Koopman & Szabolcsi (2000)):
Evidence for monoclausality poses problems that typically require extremely abstract interactions of movement operations lacking independent motivation (plus additional stipulations).
- *Coanalysis approaches* (Huybregts (1982), Bennis (1983), Haegeman & Riemsdijk (1986), Di Sciullo & Williams (1987), Sadock (1991), Pesetsky (1995)):
Both types of evidence can be accommodated because monoclausal and biclausal structures can exist simultaneously. 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.
- *Reanalysis approaches* (Ross (1967, ch. 3), Rizzi (1982), Aissen & Perlmutter (1983), Stechow & Sternefeld (1988)):

A structure that is initially biclausal is reduced to a monoclausal one, via some form of structure removal. The main problem with all these 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.

Claim:

An analysis based on Remove makes it possible to pursue a simple, principled reanalysis approach to restructuring. (Pace Haider (2010, 309): “Radical clause union [...] cannot be achieved derivationally since derivations to not destroy or eliminate structures” – They do.)

3. Analysis

3.1. Structure Removal in Infinitival Complements

Assumptions:

- All control verbs take CP complements.
- Restructuring control verbs can subsequently remove CP and TP layers, yielding derived vP complements.
- Other restructuring verbs (functional restructuring predicates) take smaller complements from the start.

Note:

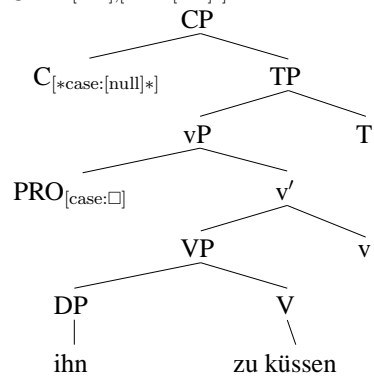
In principle, it is possible to introduce yet more subtle distinctions, with different degrees of removal eventually yielding different final output structures for the infinitival complements; see Fanselow (1991), Wurmbrand (2001; 2015b).

Proposal:

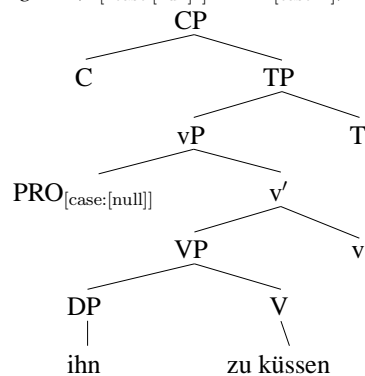
- Evidence for biclausality involves a CP structure before removal. The relevant operations are counter-bleed and counter-feed by Remove.
- Evidence for monoclausality involves a vP structure after removal. The relevant operations are bleed and feed by Remove.

(34) *Control infinitives:*

a. *Merge* ($C_{[+T],[*case:[null]*]}$, TP):



(i) *Agree* ($C_{[*case:[null]*]}$, $PRO_{[case:[]]}$):

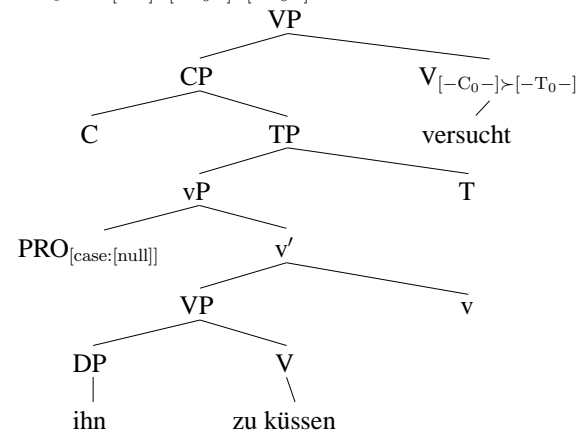


Note:

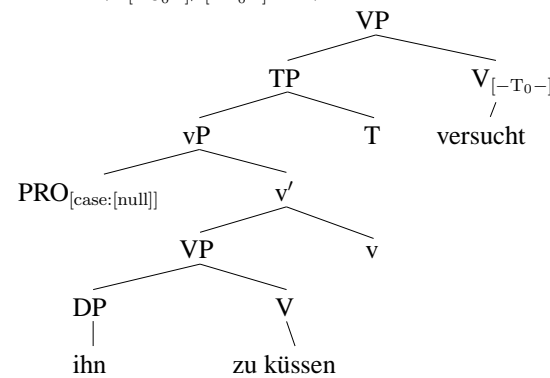
Since there is no obligatory EPP feature for German T, there is no reason to assume that PRO must undergo movement to SpecT; it is licensed by C in its in situ (Specv) position.

(35) *Restructuring:*

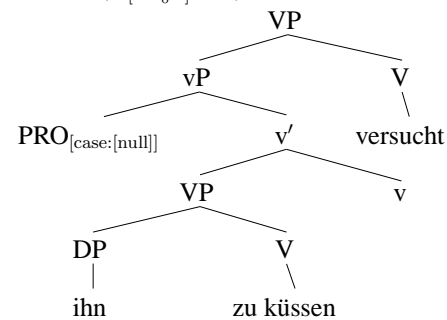
a. *Merge* ($V_{[-C_0-]>[-T_0-]}$, CP):



b. *Remove* ($V_{[-C_0-]>[-T_0-]}$, CP):



c. *Remove* ($V_{[-T_0-]}$, TP):



Side remark:

No restrictions are needed on the possible combinations and orders of Remove features on restructuring verbs:

- $V_{[\bullet C \bullet] \succ [-C_0 -] \succ [-T_0 -]} \rightarrow$ successful cyclic removal of CP, TP, and restructuring to vP
- $V_{[\bullet C \bullet] \succ [-T_0 -] \succ [-C_0 -]} \rightarrow$ no removal of TP because of the Strict Cycle Condition, no removal of CP because the feature is not yet visible
- $V_{[\bullet C \bullet] \succ [-T_0 -]} \rightarrow$ no removal of TP because of the Strict Cycle Condition

3.2. Deriving Evidence for Biclausality

Note:

The operations that presuppose the presence of CP are counter-bleed and counter-fed by subsequent structure removal.

B-I: Uniformity of embedding:

The implicational generalization that all control verbs that permit restructuring are also compatible with non-restructuring complements is derived straightforwardly: The only way to reach vP is via an initial CP: Remove counter-bleeds feature-driven external Merge.

B-II: Distribution of PRO:

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 (CP) is ultimately destroyed by removal: Remove counter-bleeds PRO licensing.

B-III: Absence of new binding domains:

Assuming that reflexives are licensed by Agree operations which are (in most cases) blocked by a CP boundary (Reuland (2001; 2011), Fischer (2004), Hicks (2009)), 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 (also note that unlike English, German does not allow for movement producing new binding options, cf. Barss (1986) vs. Frey (1993), Buring (2005)); nor can it undo existing binding indices on a reflexive: Remove counter-feeds new binding of reflexives and counter-bleeds old binding of reflexives.

B-IV: Unstressed pronoun fronting:

An unstressed pronoun moves to the left edge of vP, and must ultimately be licensed in this position by C (as an instance of Agree). Subsequent removal of CP and TP comes too late to block the licensing: Remove counter-bleeds unstressed pronoun fronting.

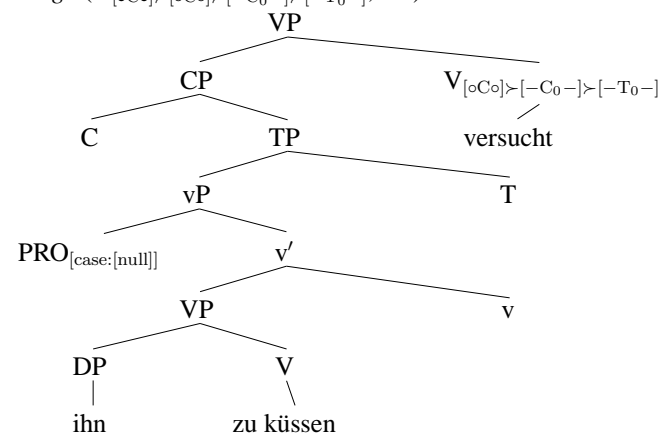
B-V: The third construction:

CP extraposition takes place *before* structure removal (recall that only CP can undergo ex-

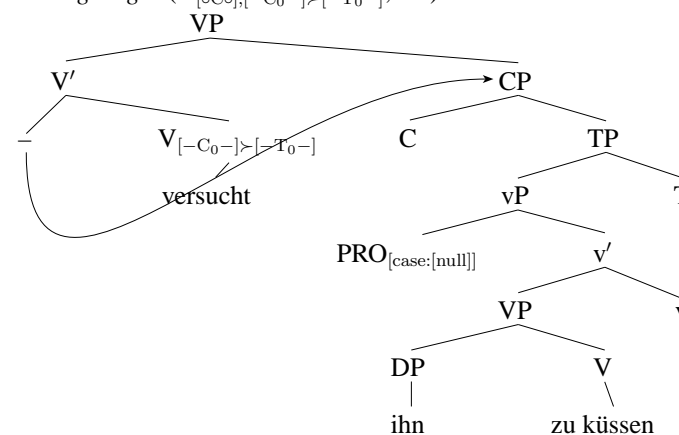
traposition in German, TP/vP/VP cannot do so). Assumption: Rightward movement is triggered by an optional $[\circ X \circ]$ feature (with $X \in \{C, P, D\}$ in German).

(36) The third construction:

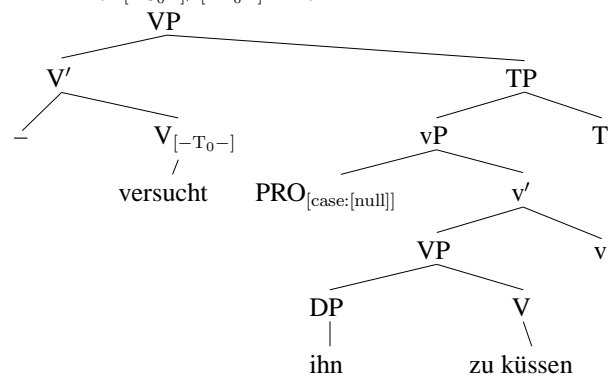
a. Merge ($V_{[\bullet C \bullet] \succ [\circ C \circ] \succ [-C_0 -] \succ [-T_0 -]}$, CP):



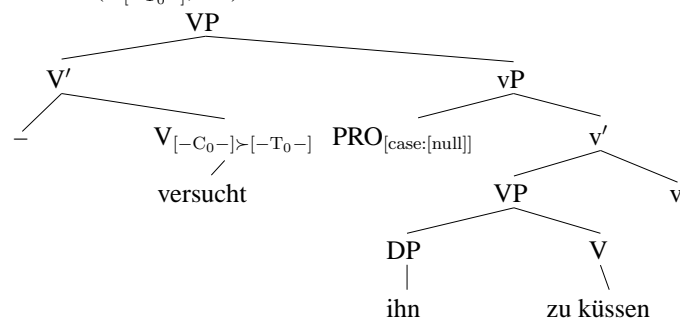
b. Rmerge/right ($V_{[\circ C \circ] \succ [-C_0 -] \succ [-T_0 -]}$, CP):



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



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



Note:

There is no problem with Remove affecting specifiers (or adjuncts) rather than complements; recall (4), (7), (8) from section 1.

(37) Restructuring with subject clauses (unergative, unaccusative):

- a. dass es₁ sich nicht [PRO t₁ zu beanstanden] gehört hat
that it₁ REFL not to object to respectable is
- b. dass sich₁ ihm [PRO t₁ zu befreien] gelungen ist
that REFL him_{dat} to free successful was

A first question:

What about periphrastic verb forms (perhaps more generally functional restructuring)?

Answers:

- (i) Head movement of non-finite lexical V, followed by discharge of the extraposition feature in the derived position, plus minimal modification of the SCC incorporating the effect of (this type of) head movement.
- (ii) The two Vs form a single complex head (and verb-second is excorporation).

A second question:

The final representation is monoclausal, as required for scrambling or unstressed pronoun fronting to a vP specifier of the matrix V. However, it is not quite clear why a vP in a derived specifier (or adjoined) position does not block extraction via the Condition on Extraction Domain (CED, Huang (1982), Chomsky (1986), Cinque (1990)); the problem persists under the approach to CED effects in Müller (2010) based on the Phrase Impenetrability Condition (PIC, Chomsky (2001)). See below. (A non-solution: Perhaps movement in general does not leave a trace/copy, so that extraposition would actually produce a new complement here. This would not account for cases where there is an additional matrix object in the third construction, as in (32-d); and it would be incompatible with the approach to periphrastic verb forms just sketched.)

With that proviso:

Remove counter-bleeds extraposition.

3.3. Deriving Evidence for Monoclausality

3.3.1. Feeding and Bleeding

M-I: Extraposition & M-II: Verb (Projection) Raising:

The properties do not hold for control verbs and are accounted for without invoking structure removal.

M-III: Negation:

Scope of negation is an output-oriented phenomenon, determined at LF. Wide scope presupposes the absence of a CP boundary: Remove feeds scope of negation.

M-IV: Intonation:

Intonational phases are output-oriented objects, determined at PF, and sensitive to CP boundaries: Remove bleeds the generation of smaller intonational phrases.

M-V: Status government:

One possibility would be that status government is determined late, after structure removal (Remove feeds status government). However, this is at variance with Agree operations applying as soon as possible, giving rise to default realization (realization by the maximally unspecific form) if they cannot be carried out within a certain local domain (Preminger (2014)): Removal of CP and TP comes too late to feed status government (Benz (2016)). Solution: Only first and third status of V₂ are determined via Agree with a c-commanding V₁; second status is the *default* status (not specified by status features). (All verbs that optionally give rise to restructuring take complements where the verb has the second status.)

M-VI: Pied piping:

The standard assumption is that pied piping by a relative pronoun requires the presence of CP. Furthermore, movement to SpecC of the matrix clause is a very late operation that must follow removal triggered by matrix V: Remove bleeds clausal pied piping.

3.3.2. Extraction from Clauses

M-VII: Extraction & M-VIII: Remnant Movement:

An obvious account might rely on the assumption that extraction from the infinitival complement can take place after removal of CP and TP shells, i.e., that Remove feeds extraction. (Remnant movement is straightforwardly accounted for, given that it merely involves an additional operation of VP topicalization that requires extraction to have taken place earlier, and can therefore be disregarded in what follows.) However, there are problems with such a naive view.

Why Remove does not feed extraction:

- Successive cyclicity: An item that needs to undergo extraction from a constituent needs to undergo intermediate movement steps to phase edges, because of the PIC. An item within an infinitival CP does not know that eventually, there will be no CP; thus, without look-ahead, it will have to undergo movement to SpecC, via Specv.
- Third construction: Recall that a vP in a right-peripheral SpecV position should block extraction because of the CED.

More general question:

Why does a CP block scrambling and unstressed pronoun fronting (cf. (19-a)) but not wh-movement, topicalization or relativization in the first place? (Wurmbrand (2015b): Every CP contains an abstract Σ P that blocks the former movement types but not the latter movement types, essentially by fiat.)

- (38) a. *dass den Fritz₁ _[Σ :vC] keiner gesagt hat [_{CP} dass wir t₁ einladen sollen]
 that the Fritz_{acc} no-one_{nom} said has that we_{nom} invite should
- b. wen₁ _[wh:vC] sie gesagt hat [_{CP} dass wir t₁ einladen sollen]
 whom_{acc} she_{nom} said has that we invite should

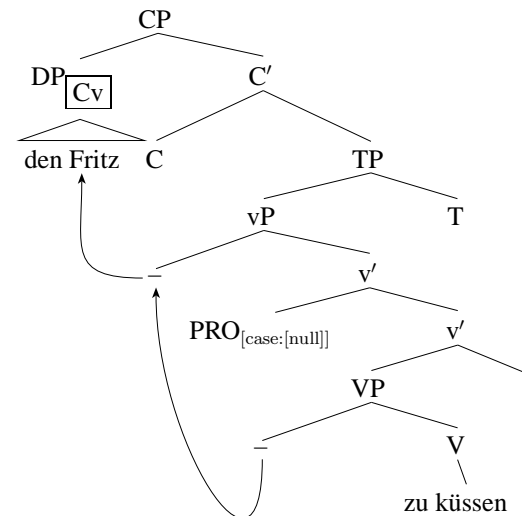
Assumption:

1. *Improper movement:*
 Extraction from CP must proceed via SpecC (because of the PIC), and the Williams Cycle (Williams (1974; 2003)) ensures that once an XP domain has been targetted by intermediate movement, the final landing site must be at least of the same height as the XP in the clausal spine.
2. *Local implementation* (Müller (2014, ch. 2)):
 Category information about intermediate landing sites is recorded on a buffer that is associated with a moved item (a list that acts as the value of a movement-related feature); a category symbol is deleted once the same kind of category symbol is added; in criterial positions, the category list on a moved item is required to conform to the functional sequence of heads: [vC] is legitimate (as with wh-movement in (38-b)), but [vC] is illegitimate (as with scrambling in (38-a)).

(39) Extraction and restructuring revisited:

- a. dass den Fritz₁ keiner [PRO t₁ zu küssen] versuchte
 that the Fritz_{acc} no-one_{nom} to kiss tried
- b. dass sie den Fritz₁ versuchte [PRO t₁ zu küssen]
 that she_{nom} the Fritz_{acc} tried to kiss

(40) Movement in the embedded CP:

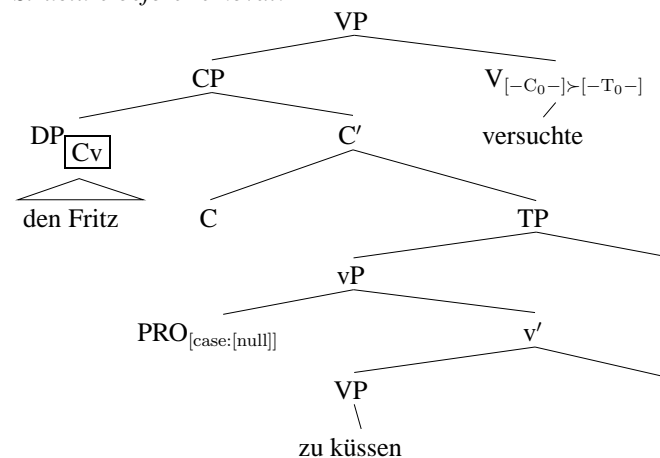


Proposal:

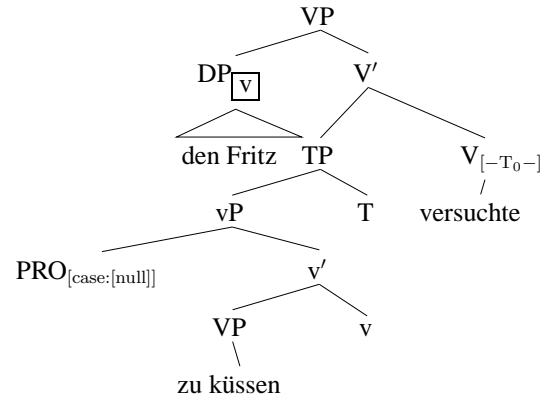
Removal of a CP leads to immediate deletion of a C symbol on a moved item in SpecC.

(41) Extraction and Restructuring:

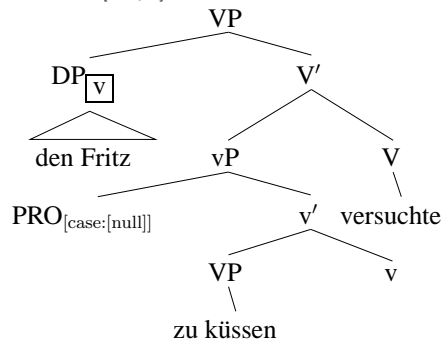
a. Structure before removal:



b. Remove ($V_{[-C_0-]} > [-T_0-]$, CP), reassociation of DP:



c. Remove ($V_{[-T_0-]}$, TP):



Third construction:

Exactly the same kind of derivation takes place with extraction in the third construction: DP in SpecC becomes reassociated with VP as a consequence of CP removal in the extraposed position.

Note:

On this view, a DP that has reached SpecC of a restructuring infinitive ends up in the matrix VP domain *without having undergone movement* to that position.

Two possibilities:

- DP can undergo further movement in the matrix clause; since it only has \boxed{V} on its buffer, it can undergo movement of any kind (e.g., wh-movement, scrambling).
- DP stays in SpecV; since it has not moved there, the position is virtually indistinguishable from a base-merged position at this point. This provides a principled approach to *pseudo-scrambling* phenomena.

Observation (Geilfuß (1991)):

Items in immediately preverbal positions in the third construction do not exhibit the characteristic properties of *scrambling* in German; they instantiate *pseudo-scrambling*. Evidence comes from focus projection, wh-scrambling, scope, non-specific indefinites, directional PPs, extraction, idioms, and quantifier floating.

(42) *Focus projection* (out of the blue contexts):

- #Fritz hat das MÄRCHEN₁ einem Kind t₁ vorgelesen
Fritz_{nom} has the fairy tale_{acc} a child_{dat} read to
- Fritz hat einem Kind das MÄRCHEN₁ [_{VP} versucht [t₁ vorzulesen]]
Fritz_{nom} has a child_{dat} the fairy tale_{acc} tried to read to

(43) *Scope:*

- Er hat mindestens ein Geschenk₁ fast jedem Gast t₁ überreicht
he_{nom} has at least one present_{acc} almost every guest_{dat} given
Readings: $\exists > \forall, \forall > \exists$
- Er hat mindestens ein Geschenk₁ versucht [fast jedem Gast t₁ zu überreichen]
he_{nom} has at least one present_{acc} tried almost every guest to give
Readings: $\exists > \forall, *\forall > \exists$

Note:

The same predictions are made for locally string-vacuous scrambling from non-extraposed restructuring infinitives in remnant movement contexts (Müller (2014, ch. 3)).

4. Long-Distance Passive

Observation (Höhle (1978), Stechow (1992), Bayer & Kornfilt (1994), Sabel (1996), Wöllstein-Leisten (2001), Wurmbrand (2001; 2015a;b), Sternefeld (2006), Haider (2010), Keine & Bhatt (2016):

In the long-distance passive construction, an object of the embedded verb is assigned matrix clause nominative and agrees with the matrix verb; passive morphology only shows up on the matrix verb.

(44) *Long-distance passive:*

- dass der Traktor₁ [t₁ zu reparieren] versucht wurde
that the tractor_{nom} to repair tried was
- dass die Traktoren₁ versucht wurden [t₁ zu reparieren]
that the tractors_{nom} tried were to repair

Generalizations:

- Long-distance passive in German presupposes restructuring, but not every restructuring predicate permits long-distance passive (Höhle (1978), Wöllstein-Leisten (2001),

Sternefeld (2006), Haider (2010)): *versuchen* ('try'), *vergessen* ('forget') vs. *beabsichtigen* ('intend'), *wünschen* ('wish').

- Cross-linguistically, long-distance passive and restructuring seem to be independent phenomena, but as a tendency the former presupposes the latter (Wurmbrand (2015a;b)).

Sketch of an analysis:

(i) Restructuring verbs that also permit long-distance passivization in German have an additional $[-v_0-]$ feature that removes the vP shell of the infinitival complement. As a consequence of vP removal, PRO becomes reassociated with the matrix VP. It shows up in SpecV without having undergone movement to this position.

(ii) Close proximity of the matrix subject (DP_{ext} in Specv) and the embedded subject (PRO in SpecV) makes it possible that both are removed by a single argument reduction operation initiated by passive v in the matrix (Müller (2016b)). This presupposes that the two subjects share an index (via Agree-based control): There can be no long-distance passive with object control verbs; cf. **dass ihr der Traktor zu reparieren empfohlen wurde* ('that her the tractor to repair recommended was').

(iii) To suppress accusative case assignment in the embedded clause, v must be absent in long-distance passives (Wurmbrand (2001)). In the present approach, this implies that counter-bleeding of accusative case assignment by removal of the vP shell must be prevented, perhaps by some visibility condition for overt (as opposed to null) case assigners.

Appendix: Remove vs. Exfoliation

Differences between Remove and Pesetsky's (2016) concept of Exfoliation:

1. Remove can apply to phrases or heads; Exfoliation is confined to phrases.
2. Remove is local: An operation that is triggered by the head of a projection α and that applies to some item δ (merging or removing it) does indeed "exclusively target" δ (in the sense of (1)) in the domain (in the sense of (2)) of which δ is a member. In contrast, Exfoliation is inherently non-local; it can (in fact, must) apply across phase boundaries, and can be reconciled with the Strict Cycle Condition only if it is assumed that the root domain that induces the operation is also directly affected by it.
3. Remove is feature-driven. Exfoliation is not feature-driven; rather, it is a repair operation that can resolve a dilemma created by the need of an embedded subject DP to undergo movement to the matrix clause across a phase (viz., an embedded CP) without violating either a phase-based concept of antilocality (by movement to the specifier of the phase) or phase impenetrability (by skipping over the specifier of the phase): Exfoliation can delete the CP phase (plus, possibly, a TP below it) and thereby make subject movement to the matrix clause possible.
4. Remove can apply recursively; Exfoliation cannot apply recursively.
5. Exfoliation does not act as a direct counterpart of Merge.
6. Remove can affect a specifier; Exfoliation, by assumption, can never be upwards.

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