

A new approach to free relatives

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1 Introduction

- Free relatives (FR) are relative clauses that lack an overt head.
- In “true” FRs in German, the relative pronoun differs from the relative pronoun found in normal relative clauses: it is a wh-phrase.

- (1) Ich werde niemandem zeigen [_{FR} was ich gefunden habe].
I will nobody show what I found have
'I won't show to anybody what I found.'

(Ott, 2011, 184)

Claims:

- FRs are ambivalent with respect to the position of the wh-phrase: it is an argument both of the relative and the matrix clause.
- The special behaviour of the wh-phrase in FRs can be derived by letting it occur in both clauses at the same time: certain features of the wh-phrase are part of the matrix clause, while the rest of the features are part of the FR.

2 Data

2.1 The wh-phrase is part of the matrix clause

2.1.1 Number agreement

Observation:

A plural wh-phrase in an FR induces plural number agreement in the matrix clause (Bresnan & Grimshaw 1978).

(2) Agreement: Free Relative

- a. ?[_{FR} [_{Rel} welche Bücher] ich auch immer gelesen habe], haben mir gefallen.
which book.PL I ever read have have.PL me liked
'I liked whatever books I read.'
- b. *[_{FR} [_{Rel} welche Bücher] ich auch immer gelesen habe], hat mir gefallen.
which book.PL I ever read have have.SG me liked
'I liked whatever books I read.'

Note:

This property of FRs can only be shown with complex wh-phrases in German since simple wh-phrases always induce singular number agreement. But the use of complex wh-phrases in FRs is often considered to be slightly marginal. However, the number agreement property of FRs occurs in languages with simple plural wh-phrases, as, e.g., Spanish.

- (3) [_{FR} Quienes son del sur] son en gran parte bajos.
who.PL be.PL of.the south be.PL in great part short.PL
'Most people from the South are short.' (Caponigro, 2003, 169)

2.1.2 Extraction

Observation:

In general, topicalization in German may cross a wh-island (Fanselow 1987; Müller & Sternefeld 1993), see (4-b). However, topicalization out of an FR is impossible if the category is a part of the FR, see (5-b). On the other hand, if the category is a part of the wh-phrase, topicalization is possible, see (5-c).

- (4) *Extraction: wh-complement clause*
- Ich weiß [_{OC_{clause}} welche Bücher *Der Spiegel* diesen Leuten empfiehlt]
I know which books *Der Spiegel* these people recommends
'I know which books *Der Spiegel* recommends to these people.'
 - ?Diesen Leuten_i weiß ich [_{OC_{clause}} welche Bücher *Der Spiegel* *t_i* empfiehlt].
these people know I which books *Der Spiegel* recommends
'As for these people, I know which books *Der Spiegel* recommends to them.'
based on (Ott, 2011, 188f)
- (5) *Extraction: free relative*
- Ich lese [_{FR} welche Bücher von Jostein Gaarder auch immer *Der Spiegel*
I read which books by Jostein Gaarder ever *Der Spiegel*
diesen Leuten empfiehlt]
these people recommends
'I read whatever books by Jostein Gaarder *Der Spiegel* recommends to these people.'
 - *Diesen Leuten_i lese ich [_{FR} welche Bücher von Jostein Gaarder auch immer
these people read I which books by Jostein Gaarder ever
Der Spiegel t_i empfiehlt].
Der Spiegel recommends
'As for these people, I read whatever books by Jostein Gaarder *Der Spiegel*
recommends to them.'
based on (Ott, 2011, 188f)

- c. ?Von Jostein Gaarder_i lese ich [_{FR} welche Bücher *t_i* auch immer *Der Spiegel*
by Jostein Gaarder read I welche books ever *Der Spiegel*
diesen Leuten empfiehlt].
these people recommends
'As for Jostein Gaarder, I read whatever books by him *Der Spiegel* recommends
to these people.'

Note:

The same extraction contrasts can be observed in English (Rooryck, 1994, 197).

- (6) a. I will eat [_{FR} whatever the chef recommends to that person]
b. *This is the person [_{RClause} to whom_i I will eat [_{FR} whatever the chef recommends
t_i]]
c. This is the author [_{RClause} of whom_i I buy [_{FR} [_{Rel} whatever books *t_i*]] the NYT
recommends to its readers]

2.2 The wh-phrase is part of the free relative clause

2.2.1 Extraposition

Observation:

If the FR is extraposed, the wh-phrase is extraposed as well (Groos & Riemsdijk 1981). This is unexpected under the assumption that the wh-phrase is outside of the free relative clause (as in the analysis of Bresnan & Grimshaw 1978; Larson 1987).

- (7) *Extraposition: Free Relative*
- a. Ich denke, dass ich [_{FR} was ich mag] essen kann.
I think that I what I like eat can
'I think that I can eat what I like.'
- b. Ich denke, dass ich *t_{FR}* essen kann, [_{FR} was ich mag].
I think that I eat can what I like
'I think that I can eat what I like.'
- c. *Ich denke, dass ich [was *t_{FR}*] essen kann, [_{FR} ich mag].
I think that I what eat can I like
'I think that I can eat what I like.'

2.2.2 Case matching

Observation:

- In general, FRs exhibit a case matching property (Bresnan & Grimshaw 1978; Groos & Riemsdijk 1981): the wh-phrase must bear a case that fits the case assigning properties of both the matrix clause and the FR, see (9).

- Based on the case hierarchy in (8) (cf. Pittner 1991, 1995; Vogel 2001; Grosu 2003), certain case mismatches are allowed: if the case assigned by the matrix clause is higher on the hierarchy than the case of the FR, the wh-phrase may bear the case of the FR, violating the matching condition, see (10).

(8) *Case Hierarchy*

NOM >> ACC >> DAT (>> GEN)

- (9) a. Ich folge [FR wem ich vertraue]
I follow→DAT who.DAT I trust→DAT
'I follow who I trust.' (Vogel, 2001, 902)
- b. *Ich folge [FR wem ich bewundere]
I follow→DAT who.DAT I adore→ACC
'I follow who I adore.' (Vogel, 2001, 902)
- c. *Ich folge [FR wen ich bewundere]
I follow→DAT who.ACC I adore→ACC
'I follow who I adore.' (Vogel, 2001, 902)
- (10) a. [FR Wem/*Wer Maria vertraut] wird eingeladen
who.DAT/who.NOM Maria trusts→DAT is→NOM invited
'Who Maria trusts gets invited.' (Vogel, 2001, 903)
- b. *Er zerstört [FR wer ihm begegnet]
he destroys→ACC who.NOM him meets→NOM
'He destroys who meets him.' (Vogel, 2001, 904)
- c. [FR Wen/*Wer Maria mag] wird eingeladen
who.ACC/who.NOM Maria likes→ACC is→NOM invited
'Who Maria trusts gets invited.' (Vogel, 2001, 903)

Notes:

- For a certain group of speakers, (10-b) is acceptable (Pittner 1991, 1995). These speakers seem to have a slightly different case hierarchy: NOM, ACC >> GEN, DAT.
- Riemsdijk (2006, 17) argues that cases of mismatching can be traced back to the fact, that German is in a state where it loses its morphological case system, so that speakers do not actually have a mismatch in these cases.

3 An analysis of free relatives

3.1 Assumptions

Basic assumptions:

- Lexical items (LI) are sets of features consisting of syntactic (formal), phonological and semantic features. As indicated in (11), these features belong to different sets which themselves may consist of sets of features, that is, LIs are assumed to have an internal structure: the features are organized into feature constituents.

$$(11) \quad \text{LI} = \{\{\{\text{syn}_1, \text{syn}_2, \dots\}, \text{syn}_i, \dots\}, \{\text{phon}_1, \text{phon}_2, \text{phon}_3, \dots\}, \{\text{sem}_1, \text{sem}_2, \text{sem}_3, \dots\}\}$$

- The LIs that are relevant for a derivation are gathered in a lexical array (LA). This LA must be empty by the end of the derivation.
- Syntactic derivation is driven by the application of three operations: Copy, Merge and Agree (Chomsky 1995 et seq.).
- *Merge* is a set-building operations that acts upon sets of features: two sets α and β become the elements of a new set.

$$(12) \quad \text{Merge}(\alpha, \beta) = \{\alpha, \{\alpha, \beta\}\}$$

For sake of simplicity, the set structures created in (12) are represented as trees or labeled bracketing.

$$(13) \quad \{\alpha, \{\alpha, \beta\}\} = [_{\alpha} \alpha \beta] = \begin{array}{c} \alpha \\ \wedge \\ \alpha \quad \beta \end{array}$$

There are two possibilities for Merge (Chomsky 2001):

1. *External Merge*: Merge of two sets that have no supersets, i.e., lexical items or undominated complex structures.
 2. *Internal Merge*: Merge of a subset α of a complex structure β with β . Following Chomsky (1995 et seq.), Internal Merge involves a copy operation.
- *Copy* is an operation that precedes Internal Merge. (For the independency of Copy and Merge, see also Nunes 1995, 2004.) It creates a copy of a structure. Here I assume that the copy replaces the original item and that it is the original item that is merged in a new position.

Copies must be deleted by the end of the derivation. Features are deleted in the respective components, i.e., syntactic features have to be deleted by the end of the syntactic component, phonological features have to be deleted by the end of PF, semantic features have to be deleted by the end of LF.

In order to ensure deletion of copies, copied features are marked by a diacritic ♣, which means that these features are unstable and have to be deleted.

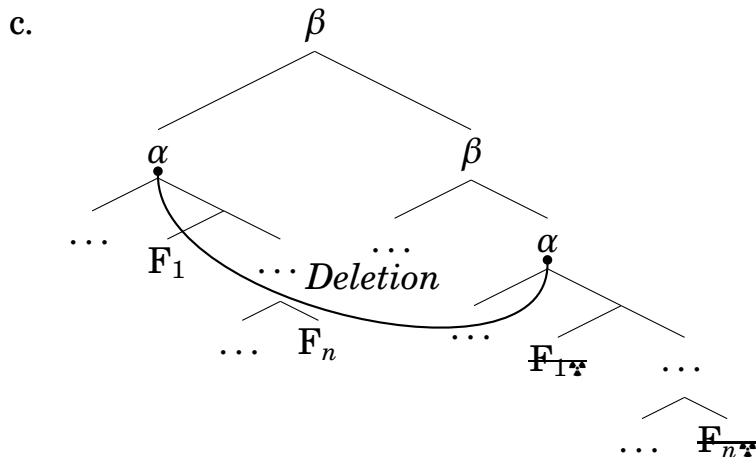
Deletion of features F_{\clubsuit} applies under c-command with a matching feature F .

$$(14) \text{ Copy } (\{F_1 \dots F_n\}) = \langle \{F_1 \dots F_n\}, \{F_{1\clubsuit} \dots F_{n\clubsuit}\} \rangle$$

$$(15) \text{ Let } \beta = [\beta \dots \alpha], \alpha = [\alpha \dots \{F_1 \dots F_n\}],$$

$$\begin{aligned} \text{a. } & \text{Merge}(_, \beta) \\ &= \text{Merge}(_, [\beta \dots \text{Copy}([\alpha \dots \{F_1 \dots F_n\}])]) \\ &= \text{Merge}(_, [\beta \dots \langle [\alpha \dots \{F_1 \dots F_n\}], [\alpha \dots \{F_{1\clubsuit} \dots F_{n\clubsuit}\}] \rangle]) \\ &= \text{Merge}([\alpha \dots \{F_1 \dots F_n\}], [\beta \dots [\alpha \dots \{F_{1\clubsuit} \dots F_{n\clubsuit}\}]]) \\ &= [\beta [\alpha \dots \{F_1 \dots F_n\}] [\beta \dots [\alpha \dots \{F_{1\clubsuit} \dots F_{n\clubsuit}\}]]] \end{aligned}$$

$$\text{b. } (= \begin{array}{c} \beta \\ \swarrow \quad \searrow \\ \alpha \quad \beta \\ \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ \dots \quad F_1 \quad \dots \quad \dots \quad \alpha \\ \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ \dots \quad F_n \quad \dots \quad F_{1\clubsuit} \quad \dots \\ \swarrow \quad \searrow \\ \dots \quad F_{n\clubsuit} \end{array})$$



- *Agree* is a checking operation that affects features directly: a probe feature looks for a matching goal feature in a certain domain and the two of them enter into an agreement relation.

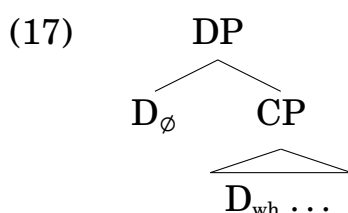
Special assumptions about Copy and lexical integrity

- The possibility for Copy is given at any time, also *before* the derivation actually starts, namely in the lexical array.
- Here again, copying may affect only sets that have supersets, i.e., parts of LIs may be copied prederivationally.
- After an LI has entered the derivation, subsets of it are no longer accessible to Copy, i.e., lexical integrity is given after an LI is combined with another structure. (This assumption might be dismissed, if theories like Chomsky 1995; Agbayani 1998; Brosziewski 2003 turn out to be correct, which assume that parts of lexical items can be moved also in the syntax.)
- In most cases, Copy of parts of LIs will lead to a crash of the derivation since there is no position available in the structure where the additional items can be merged. Hence, they will remain in the LA, which leads to a violation of the constraint that the LA has to be empty.
- However, if the LA lacks an item to begin with, Copy may create the missing item out of an existing one.
- Assuming a structure of LIs as in (11), syntactic features do not form a constituent either with phonological or semantic features. Hence Copy may only affect the syntactic features of a lexical item. (If only phonological or only semantic features are copied, an element is created that is not viable in the syntax, since it has no syntactic features.)

3.2 Analysis

(16) dass alle [FR was ich tue] gut finden
that everyone what I do good find
'that everyone likes what I do'

- FRs are assumed to have a structure as in (17) (Groos & Riemsdijk 1981; Grosu 1996, 2003; Citko 2004). This guarantees that the entire category is a DP which can be merged as an argument in a DP position.



- The main question is where the covert D head comes from. Furthermore, the data presented in section 2 suggest a special relation between the covert D head and the wh-phrase, a relation that is not found in headed relative clauses.

- *Solution*: There is no covert D head coming directly from the lexicon. Rather, the covert D head *is* the wh-phrase, more exactly, a part of it.
- The main assumption that drives the derivation of FRs is, that the LA of a sentence containing an FR has only one wh-phrase. However, this wh-phrase can only be merged
 1. inside the FR, where it fills one argument position and satisfies the wh-feature of the embedded C or
 2. in the matrix clause where it fills an argument position.

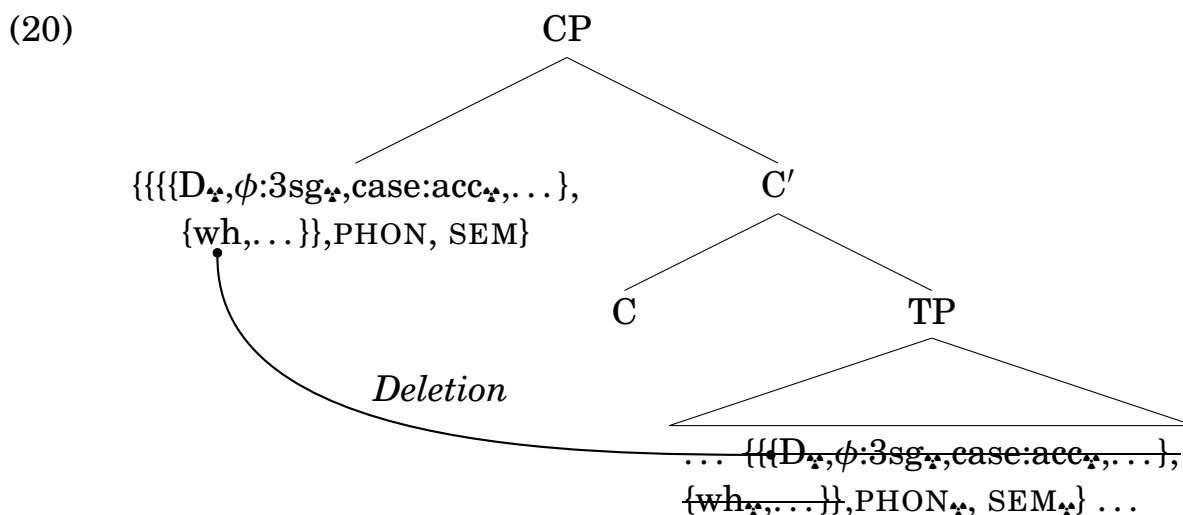
Assuming that one DP can only fill one argument position (presumably for case and Theta-Role reasons), the only possibility that both clauses have enough arguments would be if Copy applied in the LA. This can create an additional item that may be merged in an argument position.

- Note further that only the core argument features ($\{D, \phi, \text{case}, \dots\}$) of the wh-phrase are copied.
 (If the wh-feature would be copied as well, this feature would need to be checked in both clauses, which is not possible in the matrix clause. Thus, only a constituent not containing the wh-feature can be copied.)

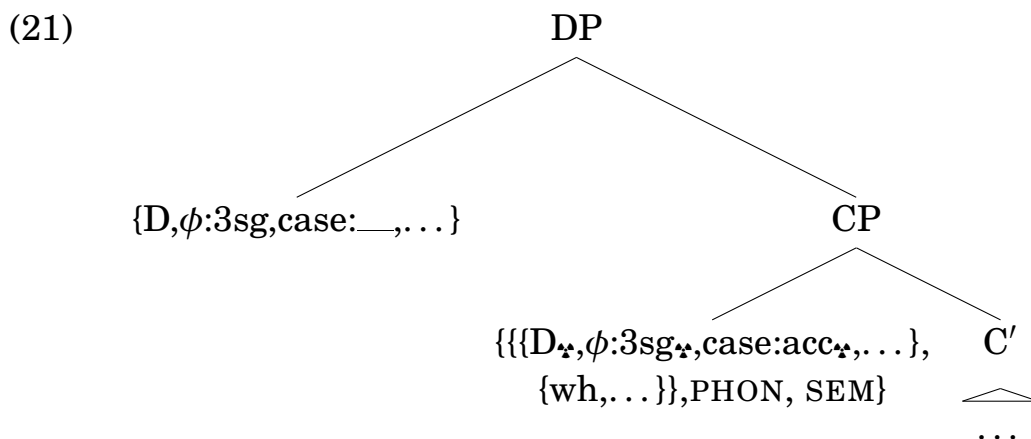
(18) $was = \{\{\{D, \phi:3sg, \text{case:}__, \dots\}, \{wh, \dots\}\}, PHON, SEM\}$

(19) $\{\{Copy(\{D, \phi:3sg, \text{case:}__, \dots\}), \{wh, \dots\}\}, PHON, SEM\}$
 $= \{\{<\{D, \phi:3sg, \text{case:}__, \dots\}, \{D_\ast, \phi:3sg_\ast, \text{case:}__\ast, \dots\}>, \{wh, \dots\}\}, PHON, SEM\}$
 $= \{D, \phi:3sg, \text{case:}__, \dots\}, \{\{D_\ast, \phi:3sg_\ast, \text{case:}__\ast, \dots\}, \{wh, \dots\}\}, PHON, SEM\}$

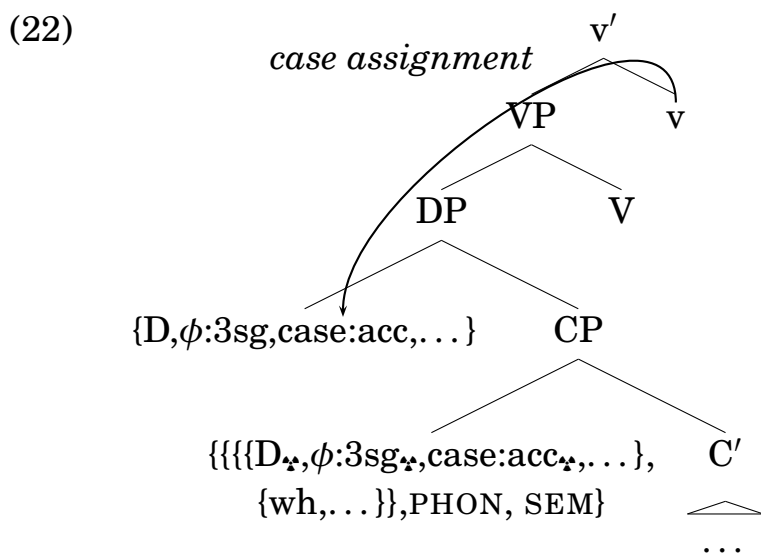
- Afterwards, the derivation starts and the embedded clause is built first. The *was*-item that contains the wh-feature must be merged in this clause in order for C to check its wh-feature. Movement of *was* to Spec-C leaves a copy behind that must be deleted.



- The set $\{D, \phi, \text{case}, \dots\}$ can now be merged with this CP, obtaining a structure as in (17), see (21). The D head does not contain any phonological features and is, thus, covert.

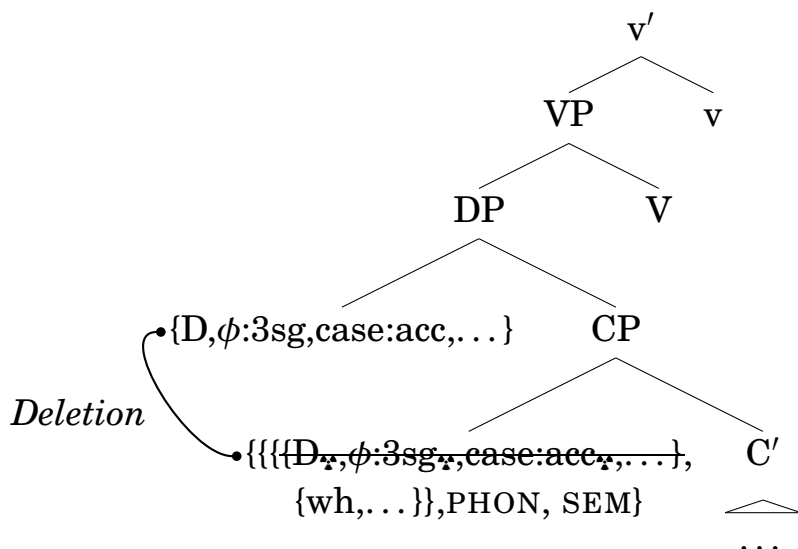


- The entire DP can now be merged as an argument of the matrix clause and the covert D head receives case by the matrix v, see (22).



- Finally, after the head of the FR has received case, the copied features on the wh-phrase can be deleted. Remember that deletion in the syntactic component can only affect copies of syntactic features. (Copies of phonological and semantic features are deleted on PF or on LF, respectively.)

(23)



4 Deriving the behaviour of wh-phrase

4.1 The wh-phrase is part of the matrix clause

4.1.1 Number agreement

Observation:

A plural wh-phrase in an FR induces plural number agreement in the matrix clause (Bresnan & Grimshaw 1978).

Analysis:

A plural number feature is part of the ϕ -features of an LI. Hence, after prederivational Copy both the copy and the original will bear a plural number feature. Thus, plural number agreement is supposed to be possible in the FR as well as in the matrix clause.

(24) [_{FR} Quienes son del sur] son en gran parte bajos.
 who.PL be.pl of.the south be.PL in great part short.PL
 ‘Most people from the South are short.’

(25) a. *quienes* = {{{D, ϕ :3pl,...}, wh, ...}, PHON, SEM}
 b. {{Copy({D, ϕ :3pl,...}), wh, ...}, PHON, SEM}
 = {D, ϕ :3pl,...}, {{{D_x, ϕ :3pl_x,...}, wh, ...}, PHON, SEM}

(26) [_{VP} [_{DP} {D, ϕ :3pl,...} [_{CP} {{{D_x, ϕ :3pl_x,...}, wh, ...}, ...} ... son ...]] ... son ...]
 number agreement

Note:

Things are more difficult with complex wh-phrases in German. In general, there are two possibilities to extend the analysis to the German data:

1. There are two forms of *welch* ('which'): a singular form selecting for a singular NP and a plural form selecting for a plural NP.
 ⇒ The same analysis as sketched in (25) and (26) can account for the data.
2. *welch* agrees with the NP in its number feature.
 ⇒ Both the original and the copied number feature agree with the NP which is merged in the FR.

(27) $[_{DP} \{D, \phi:3pl, \dots\} [_{CP} [_{DP} \{\{D_{\star}, \phi:3pl_{\star}, \dots\}, \dots\}, \dots\} [_{NP} \text{Bücher}]]]]$

4.1.2 Extraction

Observation:

Topicalization out of an FR is impossible if the category is a part of the FR. On the other hand, if the category is a part of the wh-phrase, topicalization is possible.

- (28) a. *Diesen Leuten_i lese ich $[_{FR}$ welche Bücher von Jostein Gaarder auch immer these people read I which books by Jostein Gaarder ever *Der Spiegel* t_i empfiehlt].
Der Spiegel recommends
 'As for these people, I read whatever books by Jostein Gaarder *Der Spiegel* recommends to them.'
- b. ?Von Jostein Gaarder_i lese ich $[_{FR}$ welche Bücher t_i auch immer *Der Spiegel* by Jostein Gaarder read I welche books ever *Der Spiegel* diesen Leuten empfiehlt].
 these people recommends
 'As for Jostein Gaarder, I read whatever books by him *Der Spiegel* recommends to these people.'

Analysis:

Whatever rules out extraction out of a relative clause, rules out extraction out of FRs, since they are relative clauses. Hence, (28-a) is expected to be ungrammatical.

In those cases where extraction out of an FR seems to be possible, extraction actually proceeds from outside the FR. The PP complement can choose to be merged either to the covert head outside the FR or inside the overt wh-phrase. If it is merged outside the FR, it is possible to be topicalized.

(29) $\dots [_{DP} \{D, \phi:3pl, \dots\} [_{PP} \text{von J.G.}] [_{CP} \{\{D_{\star}, \phi:3pl_{\star}, \dots\}, \dots\}, \dots\} \dots \alpha \dots]]$

4.2 The wh-phrase is part of the free relative clause

4.2.1 Extraposition

Observation:

If the FR is extraposed, the wh-phrase is extraposed as well (Groos & Riemsdijk 1981). This is unexpected under the assumption that the wh-phrase is outside of the relative clause (as in the analysis of Bresnan & Grimshaw 1978; Larson 1987).

- (30) a. Ich denke, dass ich t_{FR} essen kann, [_{FR} was ich mag].
I think that I eat can what I like
'I think that I can eat what I like.'
- b. *Ich denke, dass ich [was t_{FR}] essen kann, [_{FR} ich mag].
I think that I what eat can I like
'I think that I can eat what I like.'

Analysis:

Since the phonological features of the wh-phrase are part of the FR, the wh-phrase must be pronounced within the CP, i.e., if the CP is extraposed, the wh-phrase must be extraposed as well.

4.2.2 Case matching

Observation:

In general, FRs exhibit a case matching property (Bresnan & Grimshaw 1978; Groos & Riemsdijk 1981): the wh-phrase must bear a case that fits the case assigning properties of both the matrix clause and the FR.

Based on the case hierarchy in (31) (cf. Pittner 1991, 1995; Vogel 2001; Grosu 2003), certain case mismatches are allowed: if the case assigned by the matrix clause is higher on the hierarchy than the case of the FR, the wh-phrase may bear the case of the FR, violating the matching condition.

- (31) *Case Hierarchy*
NOM >> ACC >> DAT (>> GEN)

Analysis:

- Case features are rather case slots to which case features are added.
- Cases are decomposed in a way that a case higher on the case hierarchy is a superset of a case lower on the hierarchy (cf., e.g., Trommer (2006)), see (32).
- All case features in the case slot of the copy must be deleted under identity with the respective case feature in the case slot of the original.
- If the case assigned in the FR is higher on the hierarchy, i.e., if it consists of more features, than the case assigned in the matrix clause, not all case features on the copy inside the FR can be deleted, see (34).

- If the case assigned in the FR is lower on the hierarchy, i.e., consists of fewer features, than the case assigned in the matrix clause (or if both cases are identical), all case features on the copy inside the FR can be deleted, see (33), (35).

(32) *Case decomposition*

NOM [α, β, γ] \gg ACC [α, β] \gg DAT [α]

(33) Ich folge [_{DP} D [_{CP} wem ich vertraue]]
 I follow $\emptyset. \alpha$ who. $\alpha_{\bar{x}}$ I trust

(34) *Er zerstört [_{DP} D [_{CP} wer ihm begegnet]]
 he destroys $\emptyset. \alpha, \beta$ who. $\alpha_{\bar{x}}, \beta_{\bar{x}}, \gamma_{\bar{x}}$ him meets

(35) [_{DP} D [_{CP} Wen/ *Wer Maria mag]] wird eingeladen
 $\emptyset. \alpha, \beta, \gamma$ who. $\alpha_{\bar{x}}, \beta_{\bar{x}} / \text{who. } \alpha_{\bar{x}}, \beta_{\bar{x}}, \gamma_{\bar{x}}$ Maria like is invited

Note:

The wh-phrase must always be pronounced with the case of the FR, since the phonological features in the FR can only realize the case on the same lexical item, which is the case assigned in the FR. Hence, the ungrammatical version of (35-c) is correctly excluded.

5 Conclusion

- Free relatives are puzzling since their relative pronouns (wh-phrases) seem to be simultaneously part of two sentences.
- The special behaviour of the wh-phrase is derived as follows:
 - A part of the wh-phrase, namely the part containing the core argument features, is copied prederivationally in the LA.
 - The wh-phrase containing only a copy of its core argument features is merged inside a relative clause CP, where it is wh-moved to Spec-C.
 - The original core argument features are merged as the head of the relative clause outside the FR.
 - The copied features on the wh-phrase must be deleted under c-command and feature identity.

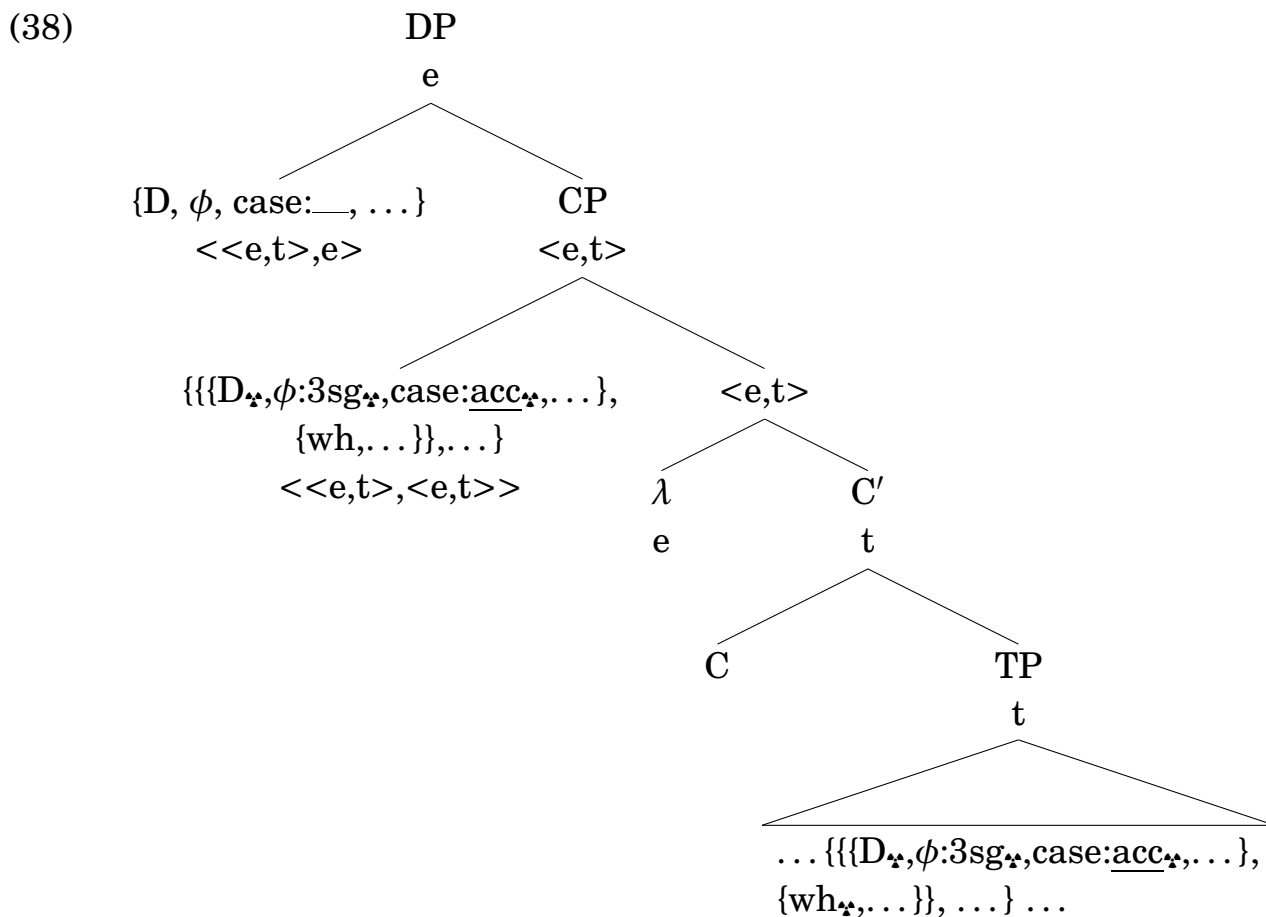
Appendix

A Semantics of FRs

- Following Caponigro (2003); Jacobson (1995) (cf. also Grosu 2003), I assume that FRs are semantically like DPs in that both denote the maximal entity (Link (1983)) described by a predicate.
- The semantic type of a lexical item depends on its features: wh-phrases, e.g., have a wh-feature and are therefore of type $\langle\langle e,t\rangle,\langle e,t\rangle\rangle$ (Caponigro 2003).
- The semantic operator σ that returns the maximal entity of a set is of type $\langle\langle e,t\rangle,e\rangle$, i.e., the same type as a simple D head.
- Such a simple D head is available in the theory above: it is the head of the DP dominating the relative clause. This head indeed has the feature specification of a simple D head.

(36) $\{\{D_{\alpha}, \phi:3sg_{\alpha}, case: _\alpha, \dots\}, \{wh, \dots\}\}, PHON, SEM\}$
 $\langle\langle e,t\rangle,\langle e,t\rangle\rangle: \lambda P \lambda x [+anim'(x) \wedge P(x)]$

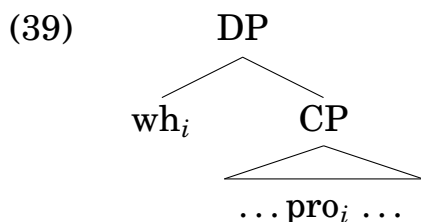
(37) $\{D, \phi:3sg, case: __, \dots\}$
 $\langle\langle e,t\rangle,e\rangle: \lambda P \sigma x [P(x)]$



B Appendix: Previous Analyses

B.1 Bresnan & Grimshaw (1978)

- The analysis was also adopted by Larson (1987).
- The wh-phrase is the head of the relative clause.
- The gap inside the relative clause is filled by a pronoun which is bound by the wh-phrase and undergoes a process of *Controlled Pro-Deletion*.

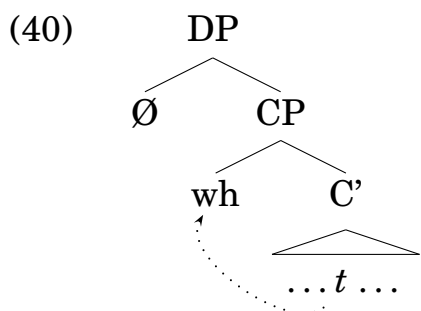


Problem:

The account cannot derive the extraposition data since it would have to assume that it is actually a DP that is extraposed, which is not attested otherwise in German.

B.2 Groos & Riemsdijk (1981)

- This analysis is also adopted by Suñer (1984); Grosu (2003); Caponigro (2002) among others.
- The wh-phrase is inside the relative clause.
- The relative clause is headed by an empty category.



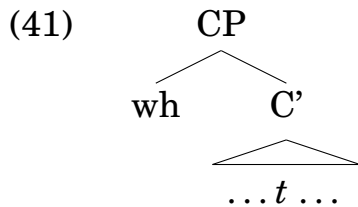
Problem:

The special relationship between the covert D head and the wh-phrase must result from some sort of agreement relation. (Grosu 2003 notes that the covert head must even agree in categorial features, since there are also adjectival free relatives.) The main question within this approach is therefore: what is this covert head?

The current approach which is a version of the analysis of Groos & Riemsdijk (1981), provides answers to the questions of why the D head is covert and why there is such a close link between the covert D head and the overt wh-phrase.

B.3 Rooryck (1994)

- This analysis is also adopted by Caponigro (2003) among others.
- The *wh*-phrase is inside a CP.
- The CP is directly merged in an argument position in the matrix clause.

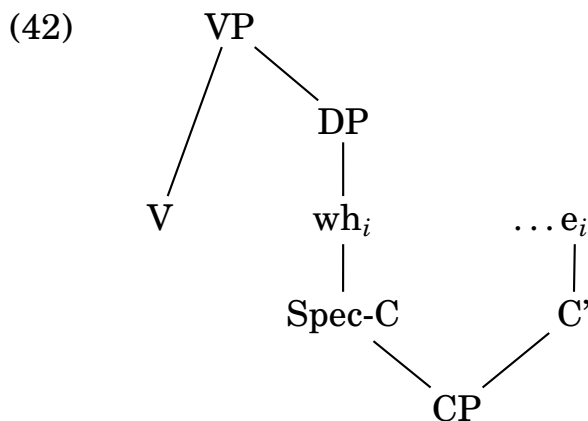


Problem:

It is unclear why this CP can occur in positions where CPs are not allowed.

B.4 Riemsdijk (2006)

- The *wh*-phrase is simultaneously part of both the relative and the matrix clause.
- This is enabled by grafting.

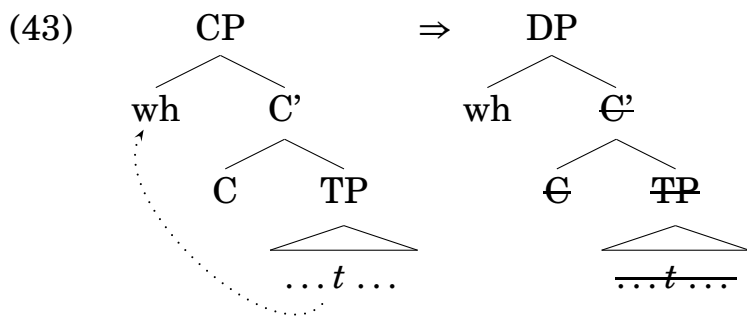


Problem:

Besides the conceptual problems with grafting, this account predicts strict case matching contrary to fact.

B.5 Ott (2011)

- The FR starts out as a normal CP where the *wh*-phrase is moved to Spec-C.
- Spellout applies not only to the complement of C but to the C-head as well because it does not bear any interpretable features (in contrast to, e.g., embedded questions).
- Since the head of the CP has been sent to Transfer, only the *wh*-phrase remains and becomes the head of the phrase.

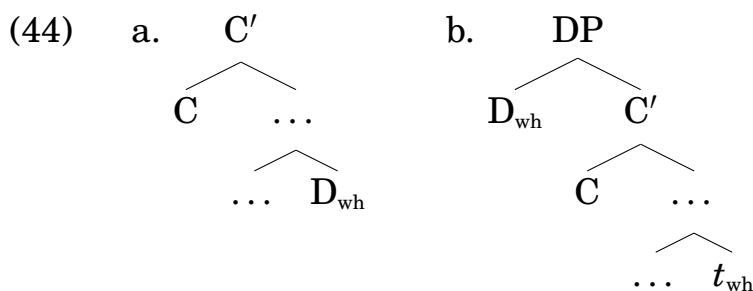


Problem:

Again, since the category dominating the *wh*-phrase is a DP, it remains unclear how the extraposition data follow under this approach.

B.6 Donati & Cecchetto (2011)

- The *wh*-phrase is merged inside a CP and moved to Spec-C.
- If it is a simple *wh*-phrase like *was* ('what') it may reproject and turn the CP into a DP.



Problems:

Similarly to Bresnan & Grimshaw (1978) and Ott (2011), the category dominating the *wh*-phrase is a DP. Therefore, the extraposition data do not follow from this analysis. Furthermore, the analysis bans complex *wh*-phrases from occurring in FRs. Donati & Cecchetto (2011) explicitly discuss this issue, claiming that FRs that contain a complex *wh*-phrase followed by *ever* are no real FRs. However, it remains unclear how other types of complex *wh*-phrases are excluded.

- (45) Ich lade ein [_{FR} [_{PP} auf wen] sich auch Maria freuen würde]
 I invite on who self also Maria be.happy would
 'I invite whoever also Maria would be happy to meet' (Vogel, 2001, 904)

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