

### 1 The Phenomenon

#### Free Relatives:

Free relatives are relative clauses that do not possess an overt external head. Instead, they contain a *wh*-phrase, which appears to stand for the nominal head of the relative clause as well as the relative pronoun.

- (1) Ich werde niemandem zeigen was ich gefunden habe.  
I will nobody.DAT show what I found have  
'I won't show to anybody what I found.' (Ott 2011: 184)

#### Case (Mis-)Matching

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

- (2) 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/wen ich bewundere]  
I follow→DAT who.DAT/who.ACC I adore→ACC  
'I follow who I adore.' (Vogel 2001: 902)

However, based on the case hierarchy in (3) (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 assigned within the FR, the *wh*-phrase may bear the case of the FR, violating the matching condition.

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

- (4) a. [FR Wem Maria vertraut] wird eingeladen  
who.DAT Maria.NOM 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 Maria mag] wird eingeladen  
who.ACC Maria.NOM likes→ACC is→NOM invited  
'Who Maria trusts gets invited.' (Vogel 2001: 903)

#### Exception:

There is an exception to the matching condition that concerns morphologically syncretic forms: if the case markers of two cases are identical, the case hierarchy can be violated.

- (5) a. Er tut immer [FR was mich ärgert].  
he does→ACC always what.NOM/ACC me annoys→NOM  
'He always does something annoying to me.'  
b. \*Er liebt [FR wer mich ärgert].  
he loves→ACC who.NOM me annoys→NOM.  
'He loves who annoys me.'

### 2 The Rules

#### 2.1 Background

**Basic Operations: Copy, Deletion, Merge, Agree:** (Chomsky 2000; 2001; Nunes 1995; 2004)

- **Copy** creates a new category out of an existing one. The copied item must be deleted eventually.
- **Deletion** eliminates categories created by Copy. Deletion may only apply under c-command and identity.
- **Merge** combines two categories into one complex category.
- **Agree** copies the value of a goal feature onto a probe feature.

#### Grammatical Components:

- **Pre-Syntactic Component:** Lexical Array
- **Syntactic Component:** Syntactic derivation
- **Post-Syntactic Component:** preparations for the semantic and phonological interpretation

#### Assumptions:

- Standard minimalist assumptions (Chomsky 1995 et seq.) about structure building, case assignment etc.
- Each basic operations can in principle apply in every grammatical component. Importantly, **Copy** can apply **pre-syntactically**.
- **Lexical items are complex:** they consist of feature sets (argument licensing features: D, case,  $\phi$ ; operator features, phonological features, semantic features).

- (6) LI = {{arg<sub>1</sub>, arg<sub>2</sub>, ...}, {op<sub>1</sub>, op<sub>2</sub>, ...}, {phon<sub>1</sub>, phon<sub>2</sub>, ...}, {sem<sub>1</sub>, sem<sub>2</sub>, ...}}

#### 2.2 Derivation

##### Pre-Syntactic Component:

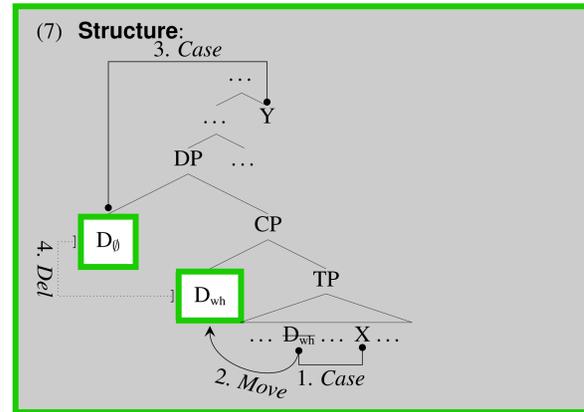
Copy of the arg features of the *wh*-phrase in the lexical array results in two items: D<sub>0</sub> and D<sub>wh</sub>. The copied argument features (arg<sub>α</sub>) remain on D<sub>wh</sub>.

##### Syntactic Component:

Merge of D<sub>wh</sub> in the embedded clause. Valuation of D<sub>wh</sub>'s unvalued case feature via Agree with case assigning head X. Movement (Copy+Merge) of D<sub>wh</sub> to SpecC of the embedded clause. Merge of D<sub>0</sub>. Valuation of D<sub>0</sub>'s case feat. via Agree with case assigning head Y.

##### Post-Syntactic Component:

Deletion of the copied arg feat.s on D<sub>wh</sub> under c-command and identity.



### 3 The Analysis

#### Assumptions:

- Case features are rather **case slots** to which case features are added (cf. also Assmann et al. 2013).
- **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. Béjar and Řežáč's 2009 decomposition of person; for similar ideas, see Trommer 2006; 2008; Caha 2009). (The decomposed case features are abstract in (8). Exchanging the abstract case features by concrete features does not change the main idea of the analysis.)

- (8) **Case Decomposition**  
NOM [ $\alpha, \beta, \gamma$ ]  $\supset$  ACC [ $\alpha, \beta$ ]  $\supset$  DAT [ $\alpha$ ]

- The **identity condition of deletion** will be **revised** slightly: deletion can apply if the copied feature set is a subset of the original feature set, that is, all features in the copied feature set must have a matching feature in the original feature set.

#### Analysis:

##### Identical case

- (9) Ich folge [DP D [CP wem ich vertraue]]  
I follow  $\emptyset_{(\alpha)}$  who<sub>(\alpha, \beta, \gamma)</sub> I trust

##### Case of embedded clause lower on the hierarchy

- (10) [DP D [CP Wen Maria mag]] wird eingeladen  
 $\emptyset_{(\alpha, \beta, \gamma)}$  who<sub>(\alpha, \beta, \gamma)</sub> Maria like is invited

##### Case of matrix clause lower on the hierarchy

- (11) \*Er zerstört [DP D [CP wer ihm begegnet]]  
he destroys  $\emptyset_{(\alpha, \beta)}$  who<sub>(\alpha, \beta, \gamma)</sub> him meets

#### Syncretism Exception:

The morphological operation **Impoverishment** can apply in the syntax already (Keine 2010; Doliana 2013). The relevant rule with respect to FRs would be that in the context of inanimate nominative *was*, the nominative feature [ $\gamma$ ] deletes and *was* bears only the accusative features [ $\alpha, \beta$ ].

- (12) [ $\gamma$ ] →  $\emptyset$  / [+wh-anim]

Consequently, in (13), [ $\gamma$ ] deletes (marked as (/)) and a fatal case mismatch in FRs is circumvented, since the covert head and overt *was* possess an identical case feature set.

- (13) Er tut immer [DP D [CP was mich ärgert]].  
he does always  $\emptyset_{(\alpha, \beta)}$  what<sub>(\alpha, \beta, \gamma)</sub> me annoys

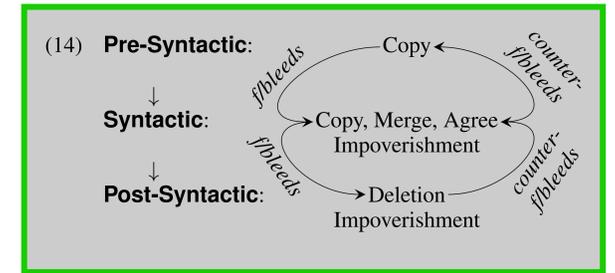
### 4 The Patterns of Rule Interaction

#### Ordering:

Since the three components are strictly ordered, the operations that apply in different components are ordered as well.

#### Patterns of Interaction:

(cf. Pullum 1979)  
Operations that apply earlier in the derivation can affect the application of operations that apply later (**feeding**, **bleeding**, cf. Kiparsky 1971; 1976), but not vice versa (**counter-bleeding**, **counterfeeding**, *ibid.*).



#### 4.1 Case Assignment (Counter)Bleeds Deletion

##### Opaque Interaction of Case Assignment and Copy Deletion:

Usually, valuation of different cases **bleeds** Copy deletion due to a violation of the identity condition. However, in contexts where a case mismatch is allowed, this bleeding relation is not given; hence, we have a **counter-bleeding** relation.

##### Resolving Opacity by Reanalysis:

This counter-bleeding relation **cannot be resolved by re-ordering** the operations because syntactic case assignment must in any case precede post-syntactic deletion. Instead, the opacity is resolved by

1. decomposing the case values and
2. revising the identity condition of deletion.

#### 4.2 Impoverishment Bleeds Bleeding

##### Opaque Interaction of Case Assignment and Copy Deletion:

Usually, valuation of different cases **bleeds** Copy deletion due to a violation of the identity condition. However, in contexts where the case markers of the assigned cases are syncretic, this bleeding relation is not given: again, we have a **counter-bleeding** relation.

##### Resolving Opacity by Involving Impoverishment:

This counter-bleeding relation is resolved by ordering **impoverishment after case assignment** in the syntactic component, **but before post-syntactic copy deletion**: Case assignment feeds impoverishment and impoverishment feeds deletion. Thus, the bleeding interaction between case assignment and deletion is bled by impoverishment.

#### 4.3 Summary

An opaque interaction between a rule A and a rule B cannot always be resolved by **re-ordering** A and B. Two other strategies were shown:

1. **Reanalysis:** the opaque interaction does not arise in the first place
2. **Involving a third rule C:** C is ordered inbetween A and B and prevents direct interaction of rule A and B.

### References

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