Modularity in OT-Morphosyntax

Jochen Trommer

Institute of Cognitive Science

University of Osnabrück

D-49069 Osnabrück

e-mail: jtrommer@uos.de

http://www.ling.uni-osnabrueck.de/~trommer/

Overview

➤ Models of Modularity: Distributed Optimality

➤ The Problem: Global Morphosyntactic Competition

➤ Ineffability: German Free Relatives

➤ Global Competition and Ineffability: English Negation

Models of Modularity

Options

➤ Lexicalism
  (Chomsky, 1995; Wunderlich, 1995)

➤ Postsyntactic Morphology (Chomsky and Halle, 1968; Halle
  and Marantz, 1993)

➤ No Modular Architecture of Morphosyntax (Bresnan, 1999)

Distributed Optimality (Trommer, 2002)

a. Syntax   (lexical Items $\Rightarrow$ syntactic chains)
b. Chain Interpretation (syntactic chains $\Rightarrow$ single heads)
c. Head Interpretation   (heads $\Rightarrow$ vocabulary items)

An Example

a. $[+D+1+pl]_i$ $[+I]$ $[[+D+1+pl]_i$ $[+V]]_{VP}$

b. $[+D+1+pl][+Nom]]$ $[+I]$ $[[$~~$+D+1+pl$~~$$ $[[+V][+Agr+1+pl]]$ $]_{VP}$

c. $/wir/ \leftrightarrow [+D+1+pl]$　　$/trink/ \leftrightarrow [+V]$　　$/\text{-en}/ \leftrightarrow [+Agr+pl]$

The Problem:Global Morphosyntactic Competition

English Negation (Bresnan, 1999)

a. *Isn't he leaving?*
b. **Amn't I leaving?*
c. *Aren't I leaving?*
d. *Am I not leaving?*

The Argument

➤ *Amn't* is disfavored by a morphophonological constraint

➤ There must be an output for: *Amn't I leaving?*.
This is: *Am I not leaving?* (or: *Aren't I leaving?*)

➤ These structures differ syntactically

⇒ Blocking b. implies morphosyntactic competition

Ineffability: German Free Relatives

German Free Relatives (Marantz, 1999)

a. Ich   zerstöre, was   mich ärgert
   I   destroy   what   me   upsets
b. *Ich zerstöre   wer/wen   mich ärgert.
   I   destroy   who:NOM/ACC me   upsets

Case Conflict
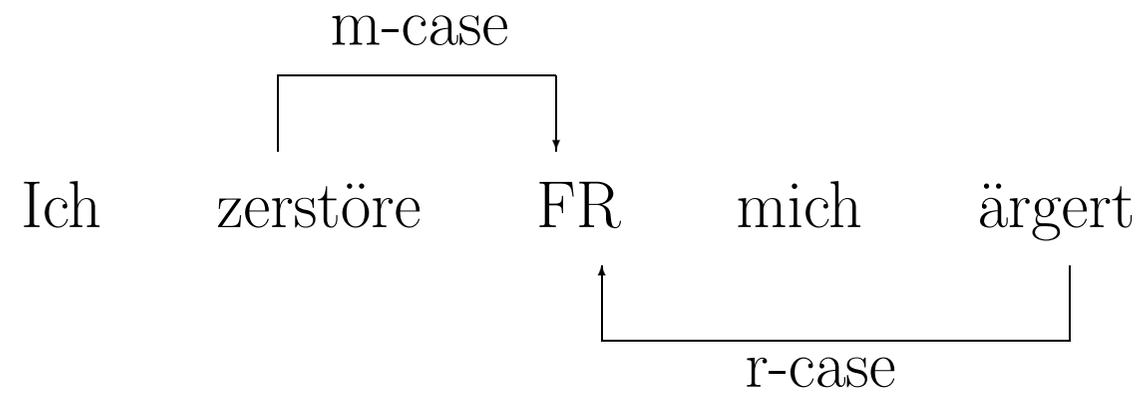
Problems

➤ Under OT assumptions there should be no ineffable structures

➤ Possible Solution: Ineffable FR is blocked by a different syntactic construction (Vogel, 2002)

➤ **But:** This implies syntactic evaluation on the basis of morphological details, hence global morphosyntactic competition

A Modular Approach to Ineffability

The output of a morphosyntactic grammar module is ungrammatical, if it is illegible or irrecoverable at the interface

Illegibility: The output of a module might not be a suitable input for the subsequent module.

Irrecoverability: The suppression of specific morphosyntactic features makes it impossible to recover the semantic content of a syntactic structure.

Analysis of Free Relatives

➤ Chains of FR pronouns are assigned two cases

➤ FR heads with two cases are uninterpretable at Head Interpretation

➤ If any case is deleted at Chain Interpretation, the FR construction is grammatical, otherwise ungrammatical

Evidence: nonmatching Free Relatives

Typology of case conflict resolution in FRs (Vogel, 2002:12)

Conflict	Hindi	Engl.	Icel.	Ger.A	Ger.B	Gothic
m=NOM;r=ACC	-		M	R	R	R
m=NOM;r=OBL	-	-	M	R	R	R
m=ACC;r=OBL	-	-	M	R	R	R
m=ACC;r=NOM	-		M	R	-	M
m=OBL;r=NOM	-	-	M	-	-	M
m=OBL;r=ACC	-	-	M	-	-	M
m=r	-	FR	FR	FR	FR	FR

Ineffable FR Structure (Hindi)

Input: $[+\text{Acc}]_{\text{m-case}} \rightarrow \text{Chain}_i \leftarrow [+\text{Nom}]_{\text{r-case}}$

	PARSE Case	. . .
☞ NP$_i$ [+Nom +Acc] ✝		
NP$_i$ [+Nom]	*!ACC	
NP$_i$ [+Acc]	*!NOM	

Effable FR Structure (Icelandic)

Input: $[+\text{Acc}]_{\text{m-case}} \rightarrow \text{Chain}_i \leftarrow [+\text{Nom}]_{\text{r-case}}$

	PARSE m-case	*CaseCase	PARSE r-case
NP$_i$ [+Acc +Nom]		*!	
☞ NP$_i$ [+Acc]			*
NP$_i$ [+Nom]	*!		

"Vocabulary-driven" Effability (*was*)

Input: $[+\text{Acc}]_{\text{m-case}} \rightarrow$ Chain $[+\textbf{Neut}]_i \leftarrow [+\text{Nom}]_{\text{r-case}}$

	*[-Masc Struct]	PARSE Gend	PARSE r-case	PARSE ACC/NOM
NP$_i$ [+**Neut** +Acc +Nom]	*!			
NP$_i$ [+**Neut** +Acc]	*!		*	
NP$_i$ [+**Neut** +Nom]	*!			*
NP$_i$ [+Acc +Nom]		*!		
☞ NP$_i$ [+**Neut**]			*	*

"Vocabulary-driven" Ineffability (*wer/wen*)

Input: $[+\text{Acc}]_{\text{m-case}} \rightarrow \text{Chain } [+\textbf{Masc}]_i \leftarrow [+\text{Nom}]_{\text{r-case}}$

	*[-Masc Struct]	PARSE Gend	PARSE r-case	PARSE ACC/NOM
☞ NP$_i$ [+**Masc** +Acc +Nom] ☨				
NP$_i$ [+**Masc** +Acc]			*!	
NP$_i$ [+**Masc** +Nom]				*!
NP$_i$ [+Acc +Nom]		*!		
NP$_i$ [+**Masc**]			*!	*

Evidence: No Nom/Acc contrast in neuter DPs

(1)   **adjectival inflection:** 'a new one'

    a. *ein neu-**er*** (Nom.)/ *einen neu-**en*** (Acc.)

    b. *ein neu-**es*** (Nom./Acc.)

(2)   **Determiners:** 'the big one'

    a. ***der*** *gross-e* (Nom.)/ ***den*** *grossen* (Acc.)

    b. ***das*** *gross-e* (Nom./Acc.)

(3)   **Personal pronouns:** 'he/it'

    a. ***er*** (Nom.)/ ***ihn*** (Acc.)

    b. ***es*** (Nom/Acc.)

Consequences

➤ Case resolution in FRs happens only at Chain Interpretation

➤ No constraint interaction between Chain Interpretation and Head Interpretation is necessary

➤ Modularity can be maintained

Global Competition and Ineffability: English Negation

Possible Positions of Neg

a. *Isn't she coming?/*Is not she coming.*
b. *She isn't coming/ she is not coming.*
c. **Is shen't coming./?Is she not coming?*

Corresponding Syntactic Configurations
(Frampton, 2001)

a. [[[Aux Tense] Neg] Q]
b. [[Aux Tense] Neg]
c. [[Aux Tense]Q] ... [Neg]

Relevant Hierarchies

Embeddedness: Free $\gg$ Peripheral $\gg$ Embedded
Phonological weight: Strong form $\gg$ weak form

Correlation between the Hierarchies

	Syntactic Structure	Description	Reduction
a.	[[[Aux Tense] Neg]Q]	Embedded part of a HAS	Reduction obligatory
b.	[[Aux Tense] Neg]	Peripheral part of a HAS	Reduction possible
c.	[Aux Tense] ... [Neg]	Not part of a HAS	Reduction impossible

Formalization by Harmonic Alignment
(Prince and Smolensky, 1993)

*strong/Embedded ≫ *strong/Peripheral ≫ *strong/Free

*weak/Free $\qquad$ ≫ *weak/Peripheral ≫ *weak/Embedded

English Negation (Variety I)

Input: [[[Aux Tense] Neg] Q] (Embedded Neg)

	*AMN'T	*strong/Embedded	PARSE PER-NUM	*weak/Embedded
Amn't I coming?	*!			*
Am not I coming?		*!		
☞ **Aren't** I coming?			*	*
Are not I coming?		*!	*	

English Negation (Variety II)

Input: [[[Aux Tense] Neg] Q] (Embedded Neg)

	*AMN'T	*strong/Embedded	PARSE PER-NUM	PARSE NEG
Amn't I coming?	*!			*
Am not I coming?		*!		
Are not I coming?		*!	*	
Aren't I coming?			*!	
☞ **Am** I coming? ✝				*

Additional Evidence

(Bresnan's account) "makes the prediction that dialects that allow *Am I not leaving?* instead of *Aren't I leaving?* should disallow *Is he not leaving?*. That is, *Am I not leaving?* should be much better as a sentential negation than *Is he not leaving* in such dialects since *amn't drives the grammaticality of *Am I not leaving?* while *isn't* is a fine word. However Bresnan presents no evidence that there is such a ^{ok}*Am I not leaving?/*Is he not leaving?* dialect, and discussions with native speakers of *??Aren't I leaving?* dialects suggests that there is no such dialect. Thus Bresnan's specific proposals are untenable, regardless of the the theoretical assumptions." (Marantz, 2000:3)

Conclusions

➤ Ineffability obviates Global Morphosyntactic Competition

➤ Modularity can be maintained

➤ **But:** Bresnan's arguments still hold for lexicalist versions of modularity

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