

Templates and phrasal analyses of argument structure constructions

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Template-based phrasal approaches using glue semantics

- Asudeh, Giorgolo & Toivonen (2014): c-structure rule:

$$(1) \quad V' \rightarrow \begin{array}{c} V \\ \uparrow = \downarrow \\ (\text{@BENEFACTIVE}) \end{array} \quad \begin{array}{c} DP \\ (\uparrow \text{OBJ}) = \downarrow \end{array} \quad \begin{array}{c} DP \\ (\uparrow \text{OBJ}_\theta) = \downarrow \end{array}$$

- σ structure with ARG₁, ARG₂, ...
- mappings from ARG₁, ARG₂, ... to GFs
- Template with glue-term:

$$(2) \quad \text{BENEFACTIVE} = \text{@ARG3} \\ \lambda x \lambda y \lambda P \lambda e. P(y)(e) \wedge \text{beneficiary}(e) = x : \\ (\uparrow_\sigma \text{ARG}_2) \multimap (\uparrow_\sigma \text{ARG}_3) \multimap [(\uparrow_\sigma \text{ARG}_2) \multimap (\uparrow_\sigma \text{EVENT}) \multimap \uparrow_\sigma] \multimap (\uparrow_\sigma \text{EVENT}) \multimap \uparrow_\sigma$$

- Christie's c-structure rule for resultatives (2010):

$$(3) \quad V' \rightarrow \begin{array}{c} V \\ \uparrow = \downarrow \end{array} \quad \begin{array}{c} DP \\ (\uparrow \text{OBJ}) = \downarrow \end{array} \quad \begin{array}{c} \{ DP-AP-PP \} \\ (\uparrow \text{XCOMP}) = \downarrow \\ (\downarrow \text{SUBJ}) = (\uparrow \text{OBJ}) \\ \text{@RESULT-T}((\uparrow \text{PRED FN})) \end{array}$$

- Lexical item for transitive verb:

$$(4) \quad \text{hammer } V \lambda e. \text{hammer}(e) : (\uparrow_\sigma \text{REL}) \\ \left(\begin{array}{l} \text{@TRANSITIVE}(\text{hammer}) \\ \lambda P \lambda x \lambda y \lambda e. P(e) \wedge \text{agent}(e) = x \wedge \text{patient}(e) = y : \\ (\uparrow_\sigma \text{REL}) \multimap (\uparrow \text{SUBJ})_\sigma \multimap (\uparrow \text{OBJ})_\sigma \multimap \uparrow_\sigma \end{array} \right)$$

- verb semantics is optional and overwritten by semantic contribution in c-structure

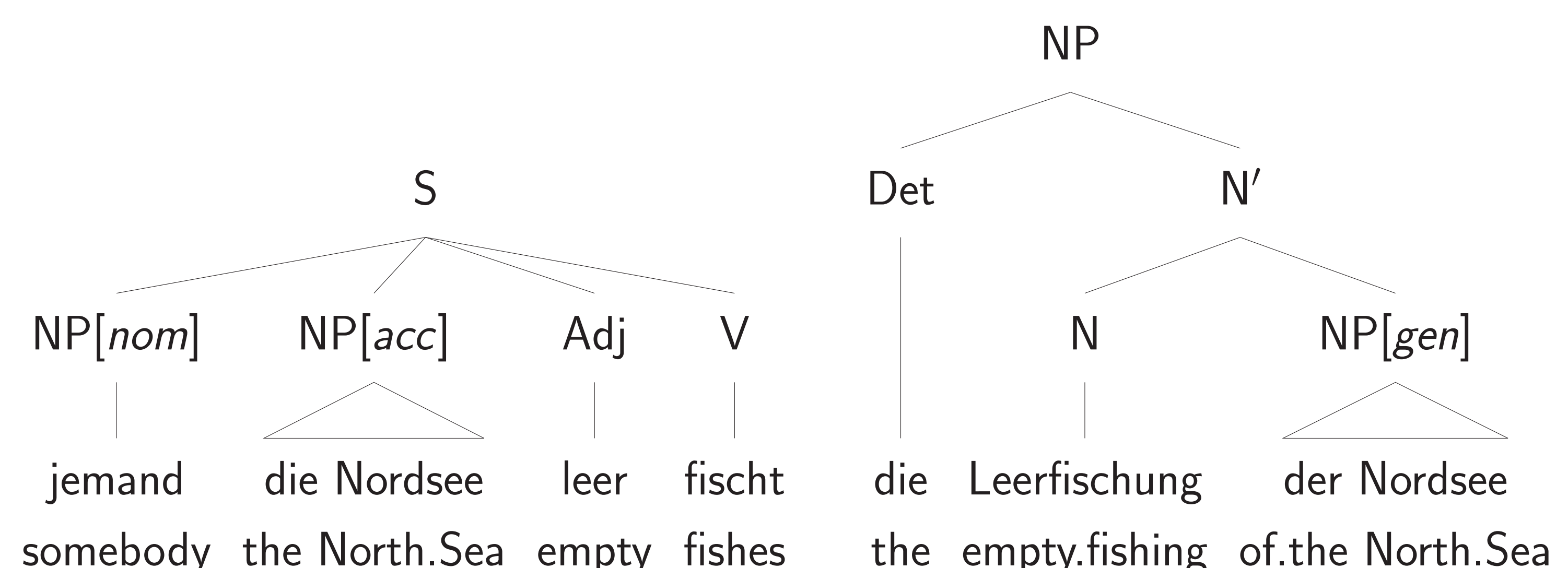
Derivational morphology and valence

- derivational morphology may interact with valence:

(5) a.	lösbar	(NP[nom], NP[acc])
	solvable	
b.	vergleichbar	(NP[nom], NP[acc], PP[mit])
	comparable	
c.	*schlafbar	(NP[nom])
	sleepable	
d.	*helfbar	(NP[nom], NP[dat])
	helpable	

- existence of *leerfischbar* 'empty.fish.able' shows that information about accusative has to be present below word level

Different structures at phrasal and sub-word level



- How are these structures related?
Inheritance does not work (Krieger & Nerbonne, 1993; Müller, 2006, 2010)
- Missing generalization

Missing generalizations

Language internally:

- If the c-structure rule in (1) contributes constraints on mappings, a generalization is missed since a similar rule is needed for the passive.
- If this problem can be solved by declaring all arguments to be optional, the rule does not contribute any information and one could go for the lexical approach.
- Attaching the BENEFACTIVE template to a V node causes problems with coordination (Does the info distribute to both conjuncts?):

(6) My sisters just [baked and gave] me a nutella cupcake with mint chocolate chip ice-cream in the middle [...]. (Müller & Wechsler, 2014)

Cross linguistically:

- English and German benefactive constructions are rather similar:

(7) a.	He	baked	her	a	cake.
b.	Er	buk	ihr	einen	Kuchen.
	he.NOM	baked	her.DAT	a	cake

- This is not captured by the phrasal approach, since German syntax differs from English syntax.
 - V2 (verb initial or final position)
 - scrambling
 - verbal complexes
 - scrambling of arguments of higher heads
 - adjuncts between arguments
- Role/template cannot be coupled with case assignment (dative passive, Acl).
(8) Sie bekam einen Kuchen gebacken.
she got a cake baked
- Benefactive NP can be realized in different clause (extraction).
(9) Dieser Frau hat er behauptet, nie einen Kuchen zu backen.
this.DAT woman has he.NOM claimed never a.ACC cake to bake
- Resultative construction can be combined with benefactive:
(10) [dass] er ihm den Teich leer fischt
that he.NOM him.DAT the.ACC pond empty fishes

Lexical proposal

- Lexical approaches do not have these problems (Simpson, 1983; Bresnan & Zaenen, 1990).
- Lexical rule for adding result predicate and object (Müller, 2002; Briscoe & Copestake, 1999)
- Arguments are added to ARG-ST list.
Mappings from ARG-ST to SPR and COMPS.
- Binary branching

- Schemata for English are a more restrictive variant of the schemata for German (no scrambling). (Müller, 2016, 2015b)
- Generalizations captured both on the lexical and at the phrasal level.

- Phenomena interacting with valence should not be treated at the phrasal level
- HPSG analysis implemented for German and English (Müller, 2007, 2015a)
- Full paper with analysis at
<http://hpsg.fu-berlin.de/~stefan/Pub/lexical-integrity.html>

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