

There Are No Constructions

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Constructions

(1) **Construction:**

A linguistic expression Γ is a construction if (a) and (b) hold.

- a. There is evidence that Γ is composed of smaller parts $\alpha_1 - \alpha_n$.
- b. The formal or functional properties of Γ cannot be determined on the basis of the properties of $\alpha_1 - \alpha_n$.

Prototypical constructions: **idioms**

Standard assumption in rule-based grammars:

1 Γ s that are constructions belong in the **lexicon**.

- The unpredictable properties of constructions must be captured by special lexical rules (Chomsky (1980)), or by postulating listed syntactic objects (Di Sciullo & Williams (1987), Jackendoff (1997)).

2 Γ s that are not constructions are generated in a **rule-based part of a grammar**.

- If the properties of a linguistic expression are fully predictable on the basis of the properties of its components, the linguistic expression does not exist in the lexicon but is derived by grammatical rules (in the structure-building components morphology and syntax).

State of Affairs

Conceptual problem: an inhomogeneous theory, with two possible sources for complex linguistic expressions: lexicon vs. grammatical rules.

Radical ways out:

- The **role of constructions is strengthened** (Jackendoff (1997, 2002), Culicover & Jackendoff (2005)), such that constructions may cover most, or even all, of what is traditionally derived by rule-based systems (Ackerman & Webelhuth (1998), Goldberg (2003, 2006), Tomasello (2003), among many others).
- The **role of rules is strengthened**, such that rules may cover most, or even all, of what is usually accounted for by invoking constructions.

Claim:

- Closer inspection of apparent constructions often reveals that rule-based accounts can and should be given after all, provided that grammatical rules are of a highly abstract nature.
- If this result can be generalized, the role of constructions may be minimal: Only **morphemes** are constructions (and need to be stored in the lexicon); all other linguistic expressions are derived by grammatical rules in morphology or syntax.

Double Articulation: Morphemes as Constructions

One of the defining properties of natural language (next to **recursion**; cf. Chomsky (1957), Hauser et al. (2002), Friederici et al. (2006)):

- (2) **Double Articulation** (Martinet (1964), Eisenberg (2000), Williams (2005)): Linguistic expressions can be encoded at two different levels: They can be separated into minimal units that **bear** meaning (morphemes) and into minimal units that **distinguish** meaning (phonemes).

Double articulation ensures that discrete infinity can be gained on the basis of a very small inventory of primitive items.

Conclusion:

All morphemes (that consist of more than one phoneme) are constructions because although grammatical rules **restrict** the combination of phonemes into morphemes (phonology), the properties of a morpheme cannot be **predicted** on the basis of the properties of its parts, and morphemes must thus be stored.

Hypothesis (also see Marantz (1998), with “root” instead of “morpheme”): Only morphemes are constructions.

Overview

Four case studies from German:

- transformational deficiency:
- verbless directives:
- clause structure parallelism:
- suppletive verb inflection:

***dass Fersengeld von ihm gegeben wurde,
dass ihm von ihr ein Korb gegeben wurde**

Nieder mit den Studiengebühren!

***Mit den Studiengebühren nieder!**

Halb zog sie ihn, halb sank er hin,

***Halb zog sie ihn, er sank halb hin**

b-i-n, b-i-s-t

Result: In all four cases,

- 1 there is evidence that the relevant linguistic expressions are composed of smaller parts;
- 2 there are aspects of the form of the relevant linguistic expressions that look unpredictable at first sight;
- 3 closer scrutiny reveals that a rule-based account is both viable and empirically superior (because it correctly predicts restrictions on variation).

Note: There are many more cases that instantiate the same pattern; see, e.g., Müller (1997a) on binomial formation in German (**klipp und klar** vs. ***klar und klipp**).

Caveat

- To prove such an approach viable, one must argue that both **formal** and **interpretational** properties of seemingly irregular linguistic expressions can be shown to be systematic after all.
 - I will have nothing interesting to say about the latter issue.
- (3) Techniques for a **compositional interpretation of idioms** (see Ruhl (1975), Chomsky (1980), Pesetsky (1985), Gazdar et al. (1985), Everaert (1991), Nunberg et al. (1994), Sailer (2003), Wunderlich (2004) for various versions and complications):
- a. **spill the beans**:
 - (i) **spill** means 'divulge' in the context of **beans**
 - (ii) **beans** means 'information' in the context of **spill**.
 - b. **kick the bucket**:
 - (i) **kick** can mean 'die' in the context of **bucket**.
 - (ii) **bucket** is an expletive in the context of such a **die** (or the identity function).
 - (iii) **the** is an expletive in the context of an expletive (other cases of expletive articles: nominal predicates).

My main focus is on **formal properties of complex linguistic expressions** in the morphology and syntax of German that seem to resist rule-based accounts. ☰ 🔍 ↻

Background Assumptions

Assumption:

- **derivational, minimalist grammar** (Chomsky (1995, 2001, 2005, 2008))
- with **local optimization** procedures (Heck & Müller (2000, 2003, 2007)) and
- a **post-syntactic morphological realization** of functional heads (distributed morphology; Halle & Marantz (1993, 1994), Noyer (1992), Halle (1997), Harley & Noyer (2003), Embick & Noyer (2001)).

(4) **Organization of Grammar:**

- a. lexicon: list of morphemes, no rules
- b. numeration: selection of morphemes, enrichment of morphemes with non-inherent features, derivational morphology, composition
- c. syntactic derivation: Merge, Move, Agree plus optimization of all XPs (XPs as cyclic nodes); perhaps also parts of derivational morphology, composition
- d. inflectional morphology
- e. (phonological realization, semantic interpretation)

Features and Derivations

- (5) **Two types of features that drive operations** (Heck & Müller (2006); based on Adger (2003), Roberts & Roussou (2002), Sternefeld (2006)):
- Structure-building features (edge features, subcategorization features) trigger (external or internal) Merge: [**•F•**]
 - Probe features trigger Agree: [***F***].
- (6) **Last Resort** (LR):
Every syntactic operation must discharge either [**•F•**] or [***F***].
- (7) **Feature Condition** (FC):
A feature [**•F•**] or [***F***] on X must be discharged before XP can be embedded (or become a final root).

The Phenomenon

Observation (Frazer (1970), Nunberg, Sag & Wasow (1994), Jackendoff (1997), O'Grady (1998); Burger (1973), Fleischer (1982; 1997), Sailer (2003) on German):

Idioms resist transformations to various degrees.

Implicational generalization:

If an idiom α dominates an idiom β on the opacity hierarchy, and transformation δ can affect α , then δ can also affect β .

(8) a. Opacity hierarchy:

$XP_{opaque} > XP_{semi-opaque} > XP_{semi-transparent} > XP_{transparent}$

b. Integrity Hierarchy:

Intact $>$ affected

(9) A transformation **affects** an XP iff it applies to a proper subpart of XP. (Movement out of XP makes XP incomplete and thereby always affects it.)

Note:

The Opacity hierarchy encodes a taxonomy of idioms arrived at in the Soviet school of phraseology (Vinogradov (1946; 1947), Šanskij (1972), Černiševa (1970)).

(10) Soviet taxonomy of idioms:

- Frazeologičeskije sraščenija ("Phraseologische Fügungen")
- Frazeologičeskije edinstva ("Phraseologische Ganzheiten")
- Frazeologičeskije sočetanija ("Phraseologische Verbindungen")
- Frazeologičeskije vyraženiija ("Phraseologische Ausdrücke")

Idiom Classes

(11) Idiom classes in German:

a. **Opaque VPs:**

Fersengeld geben, Fraktur reden, Bauklötze staunen

b. **Semi-opaque VPs:**

den Stier bei den Hörnern packen, die Flinte ins Korn werfen, Feuer fangen, den Vogel abschießen, ins Gras beißen, den Löffel abgeben

c. **Semi-transparent VPs:**

einen Korb geben, goldene Brücken bauen, die Suppe versalzen, ins Handwerk pfuschen

d. **Transparent VPs:**

- (i) light verb constructions: zur Aufführung bringen, in Verbindung stehen, Prüfung unterziehen
- (ii) reanalysis constructions: Buch lesen (vs. zerstören), Film sehen (vs. widmen)

How are idiom classes determined if semantic interpretation of idioms is always compositional?

- (i) number of separate contextually determined meanings
- (ii) number of contextually determined expletives

Transformational Deficiency 1

(12) Verb-Second:

- a. Fritz gab₁ gestern Fersengeld t₁
Fritz gave yesterday heel money
- b. Sie packte₁ den Stier bei den Hörnern t₁
she seized the bull at the horns
- c. Sie gab₁ ihm einen Korb t₁
she gave him a basket
- d. Maria las₁ ein Buch t₁
Maria read a book

(13) Topicalization:

- a(?) Fersengeld₁ hat der Fritz t₁ gegeben
heel money has ART Fritz given
- b. Den Stier₁ hat sie t₁ bei den Hörnern gepackt
the bull has she at the horns seized
- c. Einen Korb₁ hat sie ihm t₁ gegeben
a basket has she him given
- d. Ein Buch₁ hat Maria t₁ gelesen
a book has Maria read

Transformational Deficiency 2

(14) Passive:

- a. *daß Fersengeld₁ vom Fritz t₁ gegeben wurde
that heel money by ART Fritz given was
- b. daß der Stier₁ von ihr t₁ bei den Hörnern gepackt wurde
that the bull by her at the horns seized was
- c. daß ihm ein Korb₁ von ihr t₁ gegeben wurde
that him a basket by her given was
- d. daß ein Buch₁ von Maria t₁ gelesen wurde
that a book by Maria read was

(15) Internal modification:

- a. *daß Fritz geliehenes Fersengeld gegeben hat
that Fritz borrowed heel money given has
- b. *daß sie den großen Stier bei den Hörnern gepackt hat
that she the big bull at the horns seized has
- c. daß sie ihm einen ganz schönen Korb gegeben hat
that she him a quite nice basket given has
- d. daß Maria ein neues Buch gelesen hat
that Maria a new book read has

Transformational Deficiency 3

(16) Wh-Movement:

- a. *Was für ein Fersengeld₁ hat der Fritz t₁ gegeben ?
 what for a heel money has ART Fritz given
- b. *Was für einen Stier₁ hat sie t₁ bei den Hörnern gepackt ?
 what for a bull has she at the horns seized
- c(?) Was für einen Korb₁ hat sie ihm t₁ gegeben ?
 what for a basket has she him given
- d. Was für ein Buch₁ hat Maria t₁ gelesen ?
 what for a book has Maria read

(17) Left dislocation:

- a. *Fersengeld₁ das wollte der Fritz t₁ geben
 heel money that wanted ART Fritz give
- b. *Den Stier₁ den hat sie t₁ bei den Hörnern gepackt
 the bull that has she at the horns seized
- c. *Einen Korb₁ den hat sie ihm t₁ gegeben
 a basket that has she him given
- d. Ein Buch₁ das hat Maria t₁ gelesen
 a book that has Maria read

Variation: “Our intuitions in this domain are ... robust and ... consistent across speakers” (Nunberg, Sag & Wasow (1994, 507)). “Idioms, more than most aspects of language, vary enormously from speaker to speaker. [...] What is important is that the general claims about idioms ... hold true for each speaker” (Frazer (1970, 23)).

VP Idioms as Constructions?

State of affairs:

- VP idioms are evidently composed of smaller parts: individual words, sometimes even open slots (der Hafer x sticht, x's Schäfchen ins Trockene bringen, in x's Fußstapfen treten, steht in x's Hand, mit x's Meinung nicht hinter dem Berg halten, es x geben).
- Still, it looks like the property of transformational deficiency cannot be derived systematically.

Question:

Do we need have to assume that German VP idioms are **syntactic constructions**?

Answer:

Probably not. The restrictions, and the implicational generalization underlying the data, follow from simple, non-construction-specific principles if minimalist grammars permit local optimization.

Harmonic Alignment

(18) **Harmonic Alignment** (Prince & Smolensky (1993, 136)):

Suppose given a binary dimension D_1 with a scale $X > Y$ on its elements $\{X, Y\}$, and another dimension D_2 with a scale $a > b > \dots > z$ on its elements $\{a, b, \dots, z\}$. The **harmonic alignment** of D_1 and D_2 is the pair of Harmony scales H_X, H_Y :

- $H_X: X/a \succ X/b \succ \dots \succ X/z$
- $H_Y: Y/z \succ \dots \succ Y/b \succ Y/a$

The **constraint alignment** is the pair of constraint hierarchies C_X, C_Y :

- $C_X: *X/z \gg \dots \gg *X/b \gg *X/a$
- $C_Y: *Y/a \gg *Y/b \gg \dots \gg *Y/z$

(19) a. **Opacity hierarchy:**

$XP_{opaque} > XP_{semi-opaque} > XP_{semi-transparent} > XP_{transparent}$

b. **Integrity Hierarchy:**

Intact > affected

(20) **Harmonic alignment:**

- $H_{in.}: XP_{op}/in. \succ XP_{s-op}/in. \succ XP_{s-tr}/in. \succ XP_{tr}/in.$
- $H_{aff.}: XP_{tr}/aff. \succ XP_{s-tr}/aff. \succ XP_{s-op}/aff. \succ XP_{op}/aff.$

(21) **Constraint alignment:**

- $C_{in.}: *XP_{tr}/in. \gg *XP_{s-tr}/in. \gg *XP_{s-op}/in. \gg *XP_{op}/in.$
- $C_{aff.}: *XP_{op}/aff. \gg *XP_{s-op}/aff. \gg *XP_{s-tr}/aff. \gg *XP_{tr}/aff.$

Analysis

Proposal:

The generalization concerning transformational deficiency follows from the fact that constraints that trigger transformations are interspersed with the subconstraints of the $C_{aff.}$ hierarchy.

Analysis:

The features that trigger the respective transformations are interspersed with the subconstraints of $C_{aff.}$ that was created by harmonically aligning the Opacity hierarchy and the (binary) Integrity Hierarchy.

(22) Ranking in German:

[•fin•], [•top•] \succ

[•pass•] \succ

[•wh•], [•mod•] \succ

[•ld•] \succ

*XP_{op}/aff. \succ

*XP_{s-op}/aff. \succ

*XP_{s-tr}/aff. \succ

*XP_{tr}/aff.

- **Ineffability:** In cases where feature discharge would have to violate a higher-ranked harmonic alignment constraint demanding that an XP is not affected by a transformation, it can be assumed that either the in-situ (or unaffected) candidate, or the **empty output** is the optimal candidate; the derivation then breaks down.

Conclusion

Harmonic alignment captures implications: If a given item α on a scale Σ has property δ , then any item β that is lower on Σ than α also has δ .

(23) **Dividing lines across idioms:**

- a. Verb-second, topicalization: all
- b. Passive: opaque vs. semi-opaque, semi-transparent, transparent
- c. Wh-Movement: opaque, semi-opaque vs. semi-transparent, transparent
- d. Left dislocation: opaque, semi-opaque, semi-transparent vs. transparent

Main point:

- 1 There is evidence that VP idioms in German are composed of smaller parts: **word status, exceptions to transformational deficiency.**
- 2 However, the properties of the VP idioms (in particular, their transformational deficiency) can be determined on the basis of the properties of the individual lexical items: A **rule-based approach is possible**, and well motivated because it derives the implicational generalization that if an idiom α dominates an idiom β on the opacity hierarchy, and transformation δ can affect α , then δ can also affect β
- 3 Conclusion: VP idioms in German are **not syntactic constructions.**

The Phenomenon

Observation (Jacobs (2008)):

Verbless directives in German (which instantiate “directional-resultative predication”) have properties that seem to resist a rule-based approach; at least at first sight, they look like clear cases of syntactic constructions.

(24) **Adverb-‘mit’-directive construction:**

- a. Her mit {dem Geld / dem gestohlenen Geld / dem Geld, das du mir gestohlen hast}!
- b. Weg mit dem {Krempel / dem alten Krempel / dem alten Krempel auf dem Speicher}!
- c. Nieder mit {den Studiengebühren / den sozialfeindlichen Studiengebühren / den sozialfeindlichen Studiengebühren für Erstsemester}!

(25) **PP-‘mit’-directive construction:**

- a. In den Müll mit {diesen Klamotten / diesen geschmacklosen Klamotten / diesen Klamotten von H&M}!
- b. Zur Hölle mit {dieser Regierung / dieser unfähigen Regierung / dieser Regierung, die keines ihrer Versprechen gehalten hat}!

A Similar Construction

(26) **Adverb-PP-directive construction:**

- a. Raus aus {meinem Haus / meinem frisch renovierten Haus}!
- b. Hinein ins {Vergnügen / große Badevergnügen / große Badevergnügen in der Kurtherme Bad Sassendorf}!

Note:

I will ignore this case because it can be analyzed in terms of ellipsis without too much ado.

- (27) a. Geh raus aus meinem Haus!
- b. Spring hinein ins Vergnügen!

Problems for a Rule-Based Approach

Dilemma (Jacobs (2008)):

- 1 An approach to **mit**-directive constructions in terms of **ellipsis** does not seem viable because the source is ungrammatical.
- 2 An approach to **mit**-directive constructions in terms of **structure-building rules** does not seem viable because it would require implausible assumptions.

(28) **'mit'-directive construction:**

- a. Her mit {dem Geld / dem gestohlenen Geld / dem Geld, das du mir gestohlen hast}!
- b. In den Müll mit {diesen Klamotten / diesen geschmacklosen Klamotten / diesen Klamotten von H&M}!

The Ellipsis Approach and Its Failure

Jacobs (2008, 26):

“Diese Probleme lassen sich übrigens nicht dadurch aus der Welt schaffen, dass mein verblose Direktiva auf zugrundliegende vollständige Sätze zurückführt, indem man ein unhörbares Imperativ-Verb postuliert. Dagegen spricht unter anderem die Inkompatibilität aller in Frage kommenden Verben mit als Thema-Argument interpretierten *mit*-Phrasen.”

(29) **Ellipsis analysis of adverb-‘mit’-directives:**

- a. *Gib (geh, trag, bring, ...) her mit dem Geld!
- b. *Bring (...) weg mit dem Kreppe!
- c. *Mach (...) nieder mit den Studiengebühren!

(30) **Ellipsis analysis of PP-‘mit’-directives:**

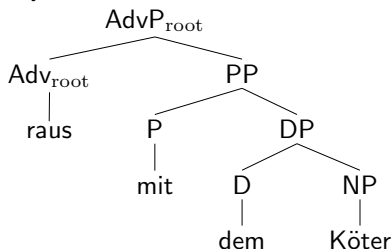
- a. *Schmeiß (...) in den Müll mit diesen Klamotten!
- b. *Schick (...) zur Hölle mit dieser Regierung!

The Structure-Building Approach

(31) **Lexical entries:**

- a. *raus*: {[Adv], [root], [•P:mit•]}
- b. *mit*: {[P], [•D•], [*dat*]}
- c. *dem*: {[D], [dat], [•N•], [*dat*]}
- d. *Köter*: {[N], [dat]}

(32) **A possible structure for ‘mit’-directives:**



Failure of the Structure-Building Approach 1

Four problems identified by Jacobs:

- 1 irregular behaviour of adverbs with respect to subcategorization
- 2 problems with illocutionary force
- 3 irregular meaning assignment to adverbs
- 4 problems with required head status of adverbs

Problem 1:

Normally, adverbs do not subcategorize other items (incl. PPs). In (33), choice of P is free, which shows that the adverb does not carry out subcategorization/selection.

(33) dass Peter {raus auf die Wiese / in den Garten / zur Haltestelle} lief

Problem 2:

In a compositional interpretation, it must be the adverb that contributes the **directive operator** DIR that encodes illocutionary force. However, this is incompatible with the assumption that one and the same lexical item cannot have both lexical meaning and be the locus of illocutionary force. (If there were a C head, this problem would disappear, but there isn't.)

Failure of the Structure-Building Approach 2

Problem 3:

The interpretation that needs to be assigned to the adverbial (viz., $\lambda w.[\text{RAUS}(w)]$) differs from the one that it normally needs to have, even though it intuitively seems to carry its old meaning in relation to the 'mit'-phrase.

Problem 4:

Adverbs do not typically have head status. (At least, clausal projections are not normally projections of adverbial heads.)

Conclusion:

A construction-based analysis of 'mit'-directives is called for.

Jacobs' Construction Analysis of 'mit'-Directives

(34) raus mit dem Köter

- a. Phon: /X mit Y/
- b. Cat: [U X_{Adv,dir} [PP *mit*_P Y_{NP,dat}]]
- c. Sem: DIR_{ill}(sp, adr, [GO-END(x,w) & Y'(x) & X'(w)])

(35) in den Müll mit den Klamotten

- a. Phon: /X mit Y/
- b. Cat: [U X_{PP,dir} [PP *mit*_P Y_{NP,dat}]]
- c. Sem: DIR_{ill}(sp, adr, [GO-END(x,w) & Y'(x) & X'(w)])

Note:

This analysis evades the problems in 1–4: The (otherwise peculiar) properties are properties of the **construction**, not properties of **lexical items**.

Towards a Rule-Based Approach

Claim:

An ellipsis approach is readily available after all once a slightly more abstract approach to syntax is adopted: One must give up the naive idea that a simple addition of lexical items to 'mit'-directives will produce a well-formed string.

Proposal:

The verb-based paraphrases that one has to look for with 'mit'-directives like those in (a) are not those in (b), but those in (c).

- (36) a. Nieder mit den Studiengebühren!
 b. *Mach(t) (...) nieder mit den Studiengebühren!
 c. Macht(t) (...) die Studiengebühren nieder!
- (37) a. In den Müll mit diesen Klamotten!
 b. *Schmeiß(t) (...) in den Müll mit diesen Klamotten!
 c. Schmeiß(t) (...) die Klamotten in den Müll!

Hypothesis:

'mit'-directives are the product of a **grammatical-function changing** operation that results from the addition of an **antipassive**-like head to v.

Antipassive

(38) **Antipassive alternation in Chukchee** (Paleosibirian; Comrie (1979)):

- a. Yemronə-na qərir-ərkən-in ekək
 Yemron-ERG₁ search-PRS-3.SG₁.3.SG₂ son-ABS₂
 'Yemron is searching for his son.'
- b. Yemron ine-lqərir-ərkən (akka-gtə)
 Yemron-ABS₁ APASS-search-PRS.3SG₁ (son-DAT)
 'Yemron is searching (for his son).'

Generalizations (Baker (1988), Bittner & Hale (1996))

- An APASS (antipassive) morpheme can be attached to the verb.
- APASS makes assignment of structural case to the direct object (the absolutive in ergative systems) impossible; the verb becomes intransitive.
- The direct object is demoted; it is either left out or realized as an oblique phrase.
- The subject is typically unaffected, but it changes its case in ergative systems: It bears absolutive case (due to the lack of a direct object receiving structural case).

Argument Demotion in 'mit'-directives

Prediction:

If 'mit'-directives are antipassive-like constructions, it should be possible to leave out the demoted direct object (i.e., the 'mit'-phrase). This prediction is confirmed.

(39) Lack of 'mit'-phrase realization in adverb contexts:

- a. (i) Weg mit dem Krempel!
- (ii) Weg!
- (iii) *Mit dem Krempel!
- b. (i) Nieder mit den Studiengebühren!
- (ii) Nieder!
- (iii) *Mit den Studiengebühren!

(40) Lack of 'mit'-phrase realization in PP contexts:

- a. (i) In den Müll mit diesen Klamotten!
- (ii) In den Müll!
- (iii) *Mit diesen Klamotten!
- b. (i) Zur Hölle mit dieser Regierung!
- (ii) Zur Hölle!
- (iii) *Mit dieser Regierung!

Note:

The construction approach has nothing to say about these asymmetries; and it needs to stipulate additional constructions for the (ii)-examples.

Analysis 1

Outline:

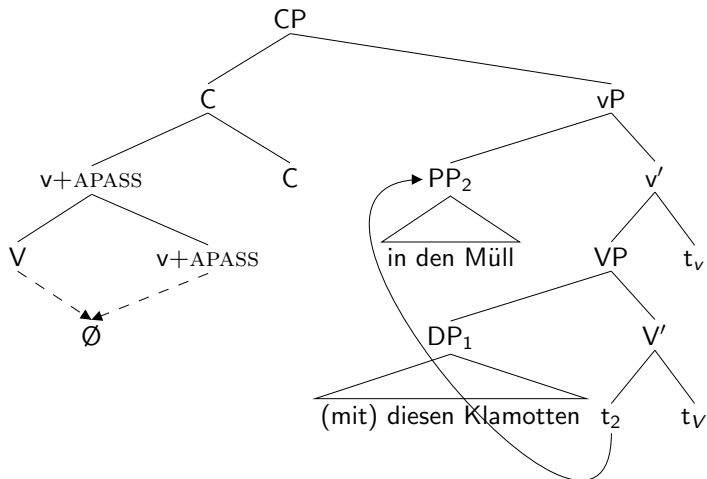
- An abstract **antipassive-like morpheme** $APASS$ optionally shows up in the numeration; if present, it attaches to v .
(Alternative: There is an $APASS$ -phrase with $V+v$ -to- $APASS$ movement in the syntax.)
- $APASS$ on v removes v 's ability to assign structural case; it **absorbs** [$*acc$].
- The object must therefore be realized as an **oblique** (or not at all); the preposition that fits the directional-resultative meaning of the verbs involved is *mit*.
- In accusative-type languages, Burzio's Generalization then implies that a normal external argument cannot be selected anymore by v either (a passive-like effect). Suggestion: As a consequence of $APASS$ on v , impoverishment of the subcategorization feature on v applies – [$\bullet D \bullet$] on v becomes a **defective** [$\bullet X \bullet$] (a general EPP property) that is insufficient to trigger external Merge; the external argument cannot be realized syntactically anymore.
- Morphological realization of all categories (functional and lexical) takes place post-syntactically (Marantz (1995, 1998)). Vocabulary items like *geben*, *bringen*, *machen*, *schmeißen*, *schicken*, etc. cannot be inserted in $V+v+APASS$ because the $APASS$ morpheme has created a feature context that is incompatible (given the Subset Principle). As a result, only a **zero verb** can be inserted (or none at all).

Analysis cont'd

- Little *v*'s EPP property [$\bullet X \bullet$] triggers movement. The lower item moves (despite the MLC); if the higher item (the demoted object) moves, the defective subcategorization feature of *v* is still sufficient to create a violation of the θ -criterion.
(Alternative: Object demotion is in fact phrase-structural, as in Larson's (1988) approach to double object constructions. On both approaches, it is ensured that the object cannot move to Spec_v; therefore it cannot acquire nominative case by T, as in real passives.)
Movement of the adverb/PP is very much like stylistic fronting in Icelandic, under Holmberg's (2000) analysis.
- APASS induces obligatory verb-second (V-to-C) movement in German.
- Topicalization cannot apply because this operation requires a overt verb form in C in German (unless we are dealing with gapping contexts.)
- Consequently, the resulting structures must be verb-first, which can be interpreted as an imperative or as a yes-/no question.

The Structure of 'mit'-directives

(41) A new structure for 'mit'-directives:



Problems for Structure-Building Analyses Solved

Problem 1:

Normally, adverbs do not subcategorize other items (incl. PPs).

Solution:

Under the present analysis, adverbs do not subcategorize anything.

Problem 2:

One and the same lexical item cannot have both lexical meaning and be the locus of illocutionary force.

Solution:

Lexical meaning is carried by the adverb/PP; illocutionary force is on C.

Problem 3:

The interpretation that needs to be assigned to the adverbial (viz., $\lambda w.[\text{RAUS}(w)]$) differs from the one that it normally needs to have, even though it intuitively seems to carry its old meaning in relation to the 'mit'-phrase.

Solution:

The interpretation of the adverb/PP is the same as it is in other clauses.

Problem 4:

Clausal projections are not normally projections of adverbial heads.

Solution:

The adverb/PP does not project a clause.

Consequences: External Arguments

Prediction:

In 'mit'-directive constructions, external arguments cannot be realized at all, even though external arguments can optionally be realized in imperatives.

This prediction is confirmed.

- (42) a. Macht (ihr) die Studiengebühren nieder!
 b. *Nieder ihr mit den Studiengebühren!
 c. *Nieder mit den Studiengebühren von euch!
- (43) a. Schmeiß (du) die Klamotten in den Müll!
 b. *In den Müll du die Klamotten!
 c. *In den Müll die Klamotten von dir!

Consequences: Sentence Mood

Observation:

Nothing in the present analysis specifically requires an imperative interpretation. The only thing that is required is that the resulting sentence is verb-first.

Prediction:

Unless further restrictions are imposed, 'mit'-directives should be compatible with both an **imperative** and a (yes/no) **interrogative** interpretation of the sentence. This prediction is borne out.

- (44) a. In den Müll mit den Klamotten? (Oder was soll ich damit machen?)
 b. Auf zum Fest?
 c. Also zur Hölle mit ihm?
 d. Also was jetzt: Nieder mit den Studiengebühren oder nicht?

In the present rule-based approach, this follows from the fact that 'mit'-directives are verb-first clauses. In the construction-based approach, one has to basically duplicate the existing constructions, and minimally change imperative semantics to interrogative semantics in one of the two sets.

Consequences: Syntactic Activity of 'mit'-Directives

Prediction:

- The rule-based approach predicts that, where all restrictions that follow from the analysis are satisfied, 'mit'-directives should behave just like all other sentential objects. In particular, they should be accessible for further external and internal Merge.
- The construction-based approach predicts that the 'mit'-directive construction is inaccessible for further syntactic rules (unless extensions are stipulated that bring the approach closer to a rule-based approach).

Observation:

The internal structure of 'mit'-directives is accessible by further syntactic rules. (Also cf. Müller, St. (2006) on resultative constructions.)

Modification

Observation (Jacobs (2006)):

Modification of 'mit'-directives works exactly as it does in regular transitive sentences; the restrictions are identical. This is a problem for the construction-based approach, but it follows directly from the rule-based approach.

(45) **Modification in transitive clauses:**

- a. Schmeiß den Krempel weg!
- b. Schmeiß den Krempel schnell weg!
- c.?*Schmeiß den Krempel sorgfältig weg!

(46) **Modification in 'mit'-directives:**

- a. Weg mit dem Krempel!
- b. Schnell weg mit dem Krempel!
- c.?*Sorgfältig weg mit dem Krempel!

Movement

Observation:

In varieties that permit P stranding, 'mit'-directives can (marginally) involve P stranding, too. This is expected under the rule-based approach, and unexpected under the construction-based approach (which would seem to need to postulate yet another construction in each case).

(47) **P-stranding in transitive clauses:**

- a. Wirf die Klötze da rein!
- b. Wirf da die Klötze rein!

(48) **P-stranding in 'mit'-directives:**

- a. Da rein mit den Klötzen!
- b. Da mit den Klötzen rein!

(49) a. Bring den Krempel dahin!
 b. Bring da den Krempel hin!
 c. Dahin mit dem Krempel!
 d. Da mit dem Krempel hin!

Conclusion

A rule-based approach to 'mit'-directives is problematic only as long as one assumes that an ellipsis approach must be naive (such adding lexical material results in a regular sentences). In contrast, a rule-based approach is straightforward if 'mit'-directives are analyzed as full CPs that are headed by a verb with an attached anti-passive morpheme whose PF-realization is zero, and that triggers **object demotion**. This evades all pieces of counter-evidence (Jacobs' four problems) against a rule-based approach, and it covers further effects that the construction-based approach has little to say about.

Main point:

- 1 There is evidence that 'mit'-directives in German are composed of smaller parts: **word status, accessibility for syntactic rules that access the internal structure.**
- 2 However, the properties of 'mit'-directives can be determined on the basis of the properties of the individual lexical items: A **rule-based approach is possible**, and well motivated because (a) it makes a compositional approach to semantic interpretation possible, and (b) it predicts syntactic effects that must remain a mystery under the construction-based approach.
- 3 Conclusion: 'mit'-directives in German are **not syntactic constructions.**

The Phenomenon

Observation (Waßner (2001)):

There are restrictions on the shape of phase (CP) edges in adjacent CPs with idiomatic connectives in poetic use.

(50) **Variations on a line in Goethe's "Der Fischer"**:

- a. $[_{CP_2} \text{ Halb}_i \text{ zog sie ihn } t_i] \leftrightarrow [_{CP_1} \text{ halb}_i \text{ sank er } t_i \text{ hin }]$
 half pulled she him half sank he down
- b. $[_{CP_2} \text{ Sie zog ihn halb}_i] \leftrightarrow [_{CP_1} \text{ er sank halb}_i \text{ hin }]$
 she pulled him half he sank half down
- c. $[_{CP_2} \text{ Sie zog ihn halb}_i] \leftrightarrow [_{CP_1} \text{ halb}_i \text{ sank er } t_i \text{ hin }]$
 she pulled him half half sank he down
- d. $*[_{CP_2} \text{ Halb}_i \text{ zog sie ihn } t_i] \leftrightarrow [_{CP_1} \text{ er sank halb}_i \text{ hin }]$
 half pulled she him he sank half down

Note:

The phenomenon is more general. It is not a simple parallelism effect (given the (c)-examples).

More Data

(51) More parallel CPs:

- a. $[\text{CP}_2 \text{ Bald}_i \text{ bin ich } t_i \text{ hier}] \leftrightarrow [\text{CP}_1 \text{ bald}_i \text{ bin ich } t_i \text{ dort}]$
 soon am I here soon am I there
- b. $[\text{CP}_2 \text{ Ich bin bald hier}] \leftrightarrow [\text{CP}_1 \text{ ich bin bald dort}]$
 I am soon here I am soon there
- c. $[\text{CP}_2 \text{ Ich bin bald hier}] \leftrightarrow [\text{CP}_1 \text{ bald}_i \text{ bin ich } t_i \text{ dort}]$
 I am soon here soon am I there
- d. $*[\text{CP}_2 \text{ Bald}_i \text{ bin ich } t_i \text{ hier}] \leftrightarrow [\text{CP}_1 \text{ ich bin bald}_i \text{ dort}]$
 soon am I here I am soon there

Generalization:

If CP_1 and CP_2 are parallel, the edge of CP_1 must be affected by non-subject topicalization if the edge of CP_2 is affected by non-subject topicalization (but not vice versa).

Basic Assumptions

The basic rule:

Williams (1999, 2003) argues for a rule called Shape Conservation. Versions of this rule are adopted within an optimality-theoretic approach in Müller (1997b, 2001) (for co-argument NPs) and in Müller (2000) (for vPs).

Claim:

Shape Conservation with CP (phase) edges accounts for the restriction on non-subject topicalization in parallel CPs in German.

(52) **SCP** (Shape Conservation for Phase Edges):

Phase edges have an identical shape throughout the derivation.

(53) **Edge** (Chomsky (2000), Chomsky (2001)):

The edge of an XP contains SpecX and X.

Computation of SCP violations:

Given the edge of CP_α , SCP violations for CP_β are computed as follows:

- (i) Compare the n-th edge constituent of CP_α with the n-th edge constituent of CP_β and assign a * if the two items do not have an identical shape (relevant: categorial and movement-related features).
- (ii) For each edge constituent of one CP that does not correspond to an edge constituent of the other CP, assign a *.

Features and Movement

Topicalization and V/2:

Topicalization in German is triggered by features on C; so is V/2 movement in German (see Grewendorf (2002) and references given there).

[•F•]

(54) Features of declarative C in German:

- a. $C_d = [C \text{ dass}]$
 C_d does not trigger movement.
- b. $C_e = [C \emptyset_{[\bullet\text{EPP}\bullet]}, [\bullet\text{fin}\bullet]}$
 C_e triggers V/2 movement of the finite verb and movement of some XP to SpecC; given the MLC, this will then normally be the subject.
- c. $C_t = [C \emptyset_{[\bullet\text{EPP}\bullet]}, [\bullet\text{top}\bullet], [\bullet\text{fin}\bullet]}$
 C_t triggers V/2 movement of the finite verb and movement of some [top]-marked XP.

(55) MLC (Minimal Link Condition):

Movement to an XP position applies to the closest XP.

Assumption:

With two parallel CPs as in (50) and (51), CP_2 is optimized before CP_1 , and generation and optimization of CP_1 takes place on the basis of CP_2 , whose properties are still accessible.

(Parallelism implies pseudo-subordination.)

Note:

In an account of the data in, e.g., (50), two options must be considered for each C. First, C can be C_e or C_t in CP_2 . Second, C can be C_e or C_t in CP_1 .

CP₂ is Subject-Initial

First option: C of CP₂ is C_e.

T₁: Parallelism: Subject-initial CP₂

Input: [C _e ∅ _[•EPP•] , [•fin•]], [TP sie ihn halb zog _[fin]]]	FC	SCP	MLC	LR
O ₁ : [CP ₂ [C _e ∅] [TP sie ihn halb zog]]	*!*			
O ₂ : [CP ₂ sie _i [C _e ∅] [TP t _i ihn halb zog _j]]	*!			
→ O ₃ : [CP ₂ sie _i [C _e zog _j -∅] [TP t _i ihn halb t _j]]				
O ₄ : [CP ₂ halb _k [C _e ∅] [TP sie ihn t _k zog]]	*!		*	
O ₅ : [CP ₂ halb _k [C _e zog _j -∅] [TP sie ihn t _k t _j]]			*!	

Note:

Based on the optimal output O₃ in T₁, there are two possible continuations: CP₁ may have C_e, as in T₂, or C_t, as in T₃.

T₂: Parallelism: Subject-initial CP₂ ↔ subject-initial CP₁

Input: [CP ₂ sie _i [C _e zog _j -∅] [TP t _i ihn halb t _j]] ↔ [TP er halb hin sank _[fin]], [C _e ∅ _[•EPP•] , [•fin•]]	FC	SCP	MLC	LR
O ₃₁ : CP ₂ ↔ [CP ₁ [C _e ∅] [TP er halb hin sank]]	*!*	**		
O ₃₂ : CP ₂ ↔ [CP ₁ er _i [C _e ∅] [TP t _i halb hin sank]]	*!	*		
→ O ₃₃ : CP ₂ ↔ [CP ₁ er _i [C _e sank _j -∅] [TP t _i halb hin t _j]]				
O ₃₄ : CP ₂ ↔ [CP ₁ halb _k [C _e ∅] [TP er t _k hin sank]]	*!	*	*	
O ₃₅ : CP ₂ ↔ [CP ₁ halb _k [C _e sank _j -∅] [TP er t _k hin t _j]]		*!	*	

CP₂ is Subject-Initial cont'd

T₃: Parallelism: Subject-initial CP₂ ↔ connective-initial CP₁

Input: [CP ₂ sie _i [C _e zog _j -∅] [TP t _i ihn halb t _j]] ↔ [TP er halb _[top] hin sank _[fin]], [C _t ∅ _{[•EPP•],[•top•],[•fin•]]}	FC	SCP	MLC	LR
O ₃₁ : CP ₂ ↔ [CP ₁ [C _t ∅] [TP er halb hin sank]]	*!***	**		
O ₃₂ : CP ₂ ↔ [CP ₁ er _i [C _t ∅] [TP t _i halb hin sank]]	*!*	*		
O ₃₃ : CP ₂ ↔ [CP ₁ er _i [C _t sank _j -∅] [TP t _i halb hin t _j]]	*!			
O ₃₄ : CP ₂ ↔ [CP ₁ halb _k [C _t ∅] [TP er t _k hin sank]]	*!	*	*	
→ O ₃₅ : CP ₂ ↔ [CP ₁ halb _k [C _t sank _j -∅] [TP er t _k hin t _j]]		*	*	

Conclusion:

(56-ab) are both optimal outputs.

(56) Subject-initial CP₂:

- a. [CP₂ Sie zog ihn halb_i] ↔ [CP₁ er sank halb_i hin]
 she pulled him half he sank half down
- b. [CP₂ Sie zog ihn halb_i] ↔ [CP₁ halb_i sank er t_i hin]
 she pulled him half half sank he down

CP₂ is Connective-Initial

Second option:

C of CP₂ is C_t.

T₄: Parallelism: Connective-initial CP₂

Input: [C _t ∅ _[•EPP•] , [•top•], [•fin•]], [TP sie ihn halb _[top] zog _[fin]]]	FC	SCP	MLC	LR
O ₁ : [CP ₂ [C _t ∅] [TP sie ihn halb zog]]	*!*			
O ₂ : [CP ₂ sie _i [C _t ∅] [TP t _i ihn halb zog _j]]	*!*			
O ₃ : [CP ₂ sie _i [C _t zog _j -∅] [TP t _i ihn halb t _j]]	*!			
O ₄ : [CP ₂ halb _k [C _t ∅] [TP sie ihn t _k zog]]	*!		*	
→ O ₅ : [CP ₂ halb _k [C _t zog _j -∅] [TP sie ihn t _k t _j]]			*	

CP₂ is Connective-Initial 2

Note:

Based on the optimal output O₅ in T₄, there are two possible continuations: CP₁ may have C_t, as in T₅, or C_e, as in T₆.

T₅: Parallelism: Connective-initial CP₂ ↔ connective-initial CP₁

Input: [CP ₂ halb _k [C _t zog _j -∅] [TP sie ihn t _k t _j]] ↔ [TP er halb _[top] hin sank _[fin]], [C _t ∅ _{[•EPP•],[•top•],[•fin•]]}	FC	SCP	MLC	LR
O ₅₁ : CP ₂ ↔ [CP ₁ [C _t ∅] [TP er halb hin sank]]	*! **	**		
O ₅₂ : CP ₂ ↔ [CP ₁ er _i [C _t ∅] [TP t _i halb hin sank]]	*! *	**		
O ₅₃ : CP ₂ ↔ [CP ₁ er _i [C _t sank _j -∅] [TP t _i halb hin t _j]]	*!	*		
O ₅₄ : CP ₂ ↔ [CP ₁ halb _k [C _t ∅] [TP er t _k hin sank]]	*!	*	*	
→ O ₅₅ : CP ₂ ↔ [CP ₁ halb _k [C _t sank _j -∅] [TP er t _k hin t _j]]			*	

CP₂ is Connective-Initial 3

T₆: Parallelism: *Connective-initial CP₂ ↔ subject-initial CP₁

Input: [CP ₂ halb _k [C _t zog _j -∅] [TP sie ihn t _k t _j]] ↔ [TP er halb hin sank _[fin]], [C _e ∅ _{[•EPP•],[•fin•]}]	FC	SCP	MLC	LR
O ₅₁ : CP ₂ ↔ [CP ₁ [C _e ∅] [TP er halb hin sank]]	*!*	**		
O ₅₂ : CP ₂ ↔ [CP ₁ er _i [C _e ∅] [TP t _i halb hin sank]]	*!	**		
O ₅₃ : CP ₂ ↔ [CP ₁ er _i [C _e sank _j -∅] [TP t _i halb hin t _j]]		*!		
O ₅₄ : CP ₂ ↔ [CP ₁ halb _k [C _e ∅] [TP er t _k hin sank]]	*!	*	*	
→ O ₅₅ : CP ₂ ↔ [CP ₁ halb _k [C _e sank _j -∅] [TP er t _k hin t _j]]			*	*

CP₂ is Connective-Initial 4

Conclusion:

(57-a) is an optimal output, (57-b) is not: SCP triggers input neutralization by forcing movement which is not feature-driven.

(57) Connective-initial CP₂:

- a. [_{CP₂} Halb_i zog sie ihn t_i] ↔ [_{CP₁} halb_i sank er t_i hin]
 half pulled she him half sank he down
- b. * [_{CP₂} Halb_i zog sie ihn t_i] ↔ [_{CP₁} er sank halb_i hin]
 half pulled she him he sank half down

In general:

SCP can be violated so as to fulfill FR, but not in order to respect LR.

Note:

This analysis does not rely on construction-specific assumptions. In fact, the very same system can be shown to underlie the phenomenon of **successive-cyclic movement** (Müller (2003)).

Conclusion

Main point:

- 1 There is evidence that parallel CPs in German are composed of smaller parts: **complete internal transparency**.
- 2 However, the properties of the parallel CPs (the fact that they are formulaic, and, in particular, the absence of the fourth pattern) can be determined on the basis of the properties of the individual lexical items: A **rule-based approach is possible**, and well motivated because it derives the absence of the fourth pattern (in contrast to construction-based approaches).
- 3 Conclusion: Parallel CPs in German are **not syntactic constructions**.

Constructions in Morphology

Claim (Jacobs (2008, 33)):

“Mit jedem solchen Beispiel wird die Annahme, konkrete komplexe Konstruktionen seien kein wesentlicher Bestandteil der Sprachtheorie, etwas weniger einleuchtend. Gänzlich unplausibel wird sie jedoch, wenn man den Blick von der Syntax in die Morphologie lenkt. Dass es dort viele Phänomene gibt, die nur konstruktionistisch erfassbar sind [...], muss ich hier allerdings nicht zeigen, denn es ist schon oft gezeigt worden.”

German Verb Inflection: Weak and Strong Paradigms

(58) a. Weak conjugation

glauben ('believe')

	Präsens	Präteritum
1.SG	glaub-e	glaub-te
2.SG	glaub-s-t	glaub-te-s-t
3.SG	glaub-t	glaub-te
1.PL	glaub-en	glaub-te-n
2.PL	glaub-t	glaub-te-t
3.PL	glaub-en	glaub-te-n

b. Strong conjugation

rufen ('call')

	Präsens	Präteritum
1.SG	ruf-e	rief
2.SG	ruf-s-t	rief-s-t
3.SG	ruf-t	rief
1.PL	ruf-en	rief-en
2.PL	ruf-t	rief-t
3.PL	ruf-en	rief-en

Observation: There are many instances of **syncretism** in these paradigms.

- All cases of syncretism (incl. **partial (or block) syncretism** with s-t) can be derived with the endings of the weak and strong conjugations, given **feature decomposition** (which yields natural classes) and **underspecification** (Bierwisch (1961), Wiese (1994), Wunderlich (1996), Eisenberg (2000), Frampton (2002), Müller (2006)).
- Stem alternation with strong verbs also emerges as fully systematic (Ross (1967), Ségéral & Scheer (1998), Wiese (2006)).
(Also see Halle & Marantz (1993) vs. Albright & Hayes (2002) vs. Pinker (1991) on strong verbs in English.)

German Verb Inflection: Suppletive Paradigm

(59) **Suppletive conjugation** *sein* ('be')

	Präsens	Präteritum
1.SG	bin	war
2.SG	bist	warst
3.SG	ist	war
1.PL	sind	waren
2.PL	seid	wart
3.PL	sind	waren

Observation:

There is evidence that the individual word forms are composed of smaller units:
partial syncretism.

Partial Syncretism in the Suppletive Paradigm: Subanalysis

(60) **Pike's (1965) subanalysis of verb inflection with *sein* ('be') in German:**

1.sg	b		i	n	
2.sg	b		i	s	t
3.sg			i	s	t
1.pl	z		i	n	t
2.pl	z	a	i		t
3.pl	z		i	n	t
inf	z	a	i	n	

Claim (Baerman et al. (2005)):

“Whatever the merits of such an analysis, it is not one which is compatible with most morphological models”.

Side remark: Pike's (1965) article contains two further analyses of inflectional phenomena in German: a subanalysis of definite article inflection (**der, die, das**, etc), and a subanalysis of personal pronouns, including suppletion phenomena (**ich, mich, mir, meiner**, etc.).

Observation: Pike-style analyses have independently been developed for these phenomena in current morphological theories:

- Wunderlich (1997a), Wiese (1999) on the inflection of definite articles
- Wiese (2001), Fischer (2006) on the inflection of personal pronouns

Subanalysis in Current Morphological Theories

Question:

Do we have to assume that the verb forms in (60) are **morphological constructions**?

Answer:

Probably not:

Subanalysis is pursued in many current morphological theories:

- **Distributed Morphology**: noun inflection in Latvian and Russian (Halle (1992, 1994)), Afro-Asiatic prefix conjugation (Noyer (1992)), argument encoding markers on verbs in Georgian and Potawatomi (Halle & Marantz (1993)), Spanish object clitics (Halle & Marantz (1994)), verb inflection in Kiowa (Harbour (2003)), noun inflection in Icelandic (Müller (2005)), verb inflection in Menominee (Trommer (2006b), Nevins (2007)), various other phenomena (papers collected in Müller & Trommer (2006))
- **Paradigm Function Morphology** (and other stem-and-paradigm approaches): Bulgarian verb inflection (Stump (2001)), argument encoding markers on verbs in Georgian and Potawatomi (Anderson (1992))
- **Minimalist Morphology** (Wunderlich (1996, 1997b))
- **Network Morphology**: noun inflection in Russian (Corbett & Fraser (1993)), Dhaasanac verb inflection, Dalabon verb inflection (Baerman et al. (2005)), deponent verbs in Latin (Hippisley (2007))

Distributed Morphology: Background Assumptions 1

(61) Late vocabulary insertion:

- a. Functional morphemes like *v*, *Agr*, and *T* contain fully specified bundles of morpho-syntactic features in syntax; however, they do not yet contain phonological material.
- b. Inflection markers are vocabulary items that pair phonological and (often underspecified) morpho-syntactic features; they are inserted post-syntactically in accordance with the Subset Principle.

(62) Subset Principle (Halle (1997)):

A vocabulary item **V** is inserted into a functional morpheme **M** iff (i) and (ii):

- (i) The morpho-syntactic features of **V** are a subset of the morpho-syntactic features of **M**.
- (ii) **V** is the most specific vocabulary item that satisfies (i).

(63) Specificity of vocabulary items (Lumsden (1992), Noyer (1992), Wiese (1999)):

A vocabulary item **V_i** is more specific than a vocabulary item **V_j** iff there is a class of features **F** such that (i) and (ii) hold.

- (i) **V_i** bears more features belonging to **F** than **V_j** does.
- (ii) There is no higher-ranked class of features **F'** such that **V_i** and **V_j** have a different number of features in **F'**.

Distributed Morphology: Background Assumptions 2

(64) **Feature hierarchy** (for determining specificity):

Tense > Person > Number

Assuming vocabulary insertion to be post-syntactic opens up the possibility of operations applying after syntax but before morphological insertion that change the morphosyntactic feature specification. This derives systematic mismatches between morphology and syntax.

(65) **Impoverishment** (Bonet (1991), Halle & Marantz (1993, 1994), Bobaljik (2002), Frampton (2002)):

Morpho-syntactic features can be deleted post-syntactically before vocabulary insertion takes place; this effects a “retreat to the general case”.

(66) **Fission** (Noyer (1992), Frampton (2002), Müller (2005)), **not** Halle & Marantz (1993)): If insertion of a vocabulary item V with the morpho-syntactic features β takes place into a fissioned morpheme M with the morpho-syntactic features α , then α is split up into β and $\alpha-\beta$, such that (a) and (b) hold:

- a. $\alpha-\beta$ is available for further vocabulary insertion.
- b. β is not available for further vocabulary insertion.

- All functional heads in German are subject to fission.
- This increases the possibilities for subanalysis (in addition to the presence of functional heads).

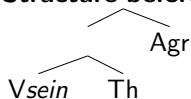
Feature Decomposition and Natural Classes

(67) **Person features:**

- a. There are three features: $[\pm 1]$, $[\pm 2]$, $[\pm 3]$
(Noyer (1992), Wiese (1994), Frampton (2002)), Trommer (2006a,b), Nevins (2007)).
- b. Cross-classification yields eight possible persons in the world's languages; some combinations are semantically excluded.
- c. All combinations of persons (including first person inclusive) can form a natural class, reflected in syncretism patterns (Cysouw (2003), Baerman et al. (2005)).
- d. Vocabulary items can bear underspecified person information and thus encode natural classes of persons; this derives instances of syncretism.

Structure for Analysis

(68) **Structure before vocabulary insertion:**



Assumptions:

- 1 At least in the case of **sein** ('be'), **V** is filled only post-syntactically, by vocabulary insertion.
- 2 **Th** is a theme vowel position associated with the lexical head (Halle (1992, 1994), Halle & Marantz (1994), Oltra Massuet (1999), Oltra Massuet & Arregi (2005)). Th may be base-generated or enter the derivation by dissociation, and it may or may not project.
- 3 **Agr** contains Φ -features (relevant in the present contexts are person and number, which can be morphologically realized)
- 4 I abstract away from a possible **T** since I focus on present tense inflection here.

Analysis: Vocabulary Items

(69) Vocabulary insertion rules in Distributed Morphology

- a. (i) /b/ \leftrightarrow *Vsein* /__ [-3,-pl]
 (ii) /z/ \leftrightarrow *Vsein* /__ [+pl]
- b. (i) /a/ \leftrightarrow [+ β] /__ *Vsein*, [-1,+2,+pl]
 (ii) /ɪ/ \leftrightarrow [+ α] /__ *Vsein*
- c. (i) / \emptyset / \leftrightarrow [-1,+2] /__ *Vsein*, [+pl]
 (ii) /s/ \leftrightarrow [-1] /__ *Vsein*, [-pl]
 (iii) /n/ \leftrightarrow [-2] /__ *Vsein*
 (iv) / \emptyset / \leftrightarrow [-pl] /__ *Vsein*, [+1]
 (v) /t/ \leftrightarrow [\pm pl] /__ *Vsein*

Remarks:

- The /__ notation is supposed to be neutral with respect to linear order.
- The necessity for contextual features arises because the system displays extended (multiple) exponence (Matthews (1972)), a fact already noted by Pike (1965)). Contextual features are not discharged by insertion in the case of fissioned heads.
- The availability of a natural class comprising first and second person (encoded by the feature [-3]) makes it possible to dispense with a special rule introducing zero marking for third person singular contexts.

Analysis: Vocabulary Insertion

(70) **Subanalysis of the suppletive paradigm:**

1.sg			
2.sg			
3.sg			
1.pl			
2.pl			
3.pl			

(71) **Vocabulary insertion rules**

Analysis: Vocabulary Insertion

(70) Subanalysis of the suppletive paradigm:

1.sg	b		
2.sg	b		
3.sg			
1.pl			
2.pl			
3.pl			

(71) Vocabulary insertion rules

V (i) /b/ ↔ Vsein /__ [-3,-pl]

Analysis: Vocabulary Insertion

(70) Subanalysis of the suppletive paradigm:

1.sg	b		
2.sg	b		
3.sg			
1.pl	z		
2.pl	z		
3.pl	z		

(71) Vocabulary insertion rules

- V (i) /b/ ↔ Vsein /__ [-3,-pl]
 (ii) /z/ ↔ Vsein /__ [+pl]

Analysis: Vocabulary Insertion

(70) Subanalysis of the suppletive paradigm:

1.sg	b		
2.sg	b		
3.sg			
1.pl	z		
2.pl	z	a	
3.pl	z		

(71) Vocabulary insertion rules

- V (i) /b/ ↔ Vsein /__ [-3,-pl]
 (ii) /z/ ↔ Vsein /__ [+pl]
 Th (i) /a/ ↔ [+β] /__ Vsein, [-1,+2,+pl]

- Vsein is associated with a Th position bearing the abstract features [+α,+β] (Oltra Massuet (1999)).

Analysis: Vocabulary Insertion

(70) Subanalysis of the suppletive paradigm:

1.sg	b		
2.sg	b		
3.sg			
1.pl	z		
2.pl	z	a	
3.pl	z		

(71) Vocabulary insertion rules

- V (i) /b/ \leftrightarrow *Vsein* /__ [-3,-pl]
 (ii) /z/ \leftrightarrow *Vsein* /__ [+pl]
 Th (i) /a/ \leftrightarrow [+ β] /__ *Vsein*, [-1,+2,+pl]
 (ii) /l/ \leftrightarrow [+ α] /__ *Vsein*

- *Vsein* is associated with a Th position bearing the abstract features [+ α ,+ β] (Oltra Massuet (1999)).
- [+ β] outranks [+ α], and the Strict Cycle Condition predicts the order of exponents.

Analysis: Vocabulary Insertion

(70) Subanalysis of the suppletive paradigm:

1.sg	b		
2.sg	b		
3.sg			
1.pl	z		
2.pl	z	a	\emptyset
3.pl	z		

(71) Vocabulary insertion rules

- V (i) /b/ \leftrightarrow *Vsein* /__ [-3,-pl]
 (ii) /z/ \leftrightarrow *Vsein* /__ [+pl]
 Th (i) /a/ \leftrightarrow [+ β] /__ *Vsein*, [-1,+2,+pl]
 (ii) /l/ \leftrightarrow [+ α] /__ *Vsein*
 Agr (i) / \emptyset / \leftrightarrow [-1,+2] /__ *Vsein*, [+pl]

- *Vsein* is associated with a Th position bearing the abstract features [+ α ,+ β] (Oltra Massuet (1999)).
- [+ β] outranks [+ α], and the Strict Cycle Condition predicts the order of exponents.
- Person features are more specific than number features, [± 1] is more specific than [± 2]; [-pl] and [+pl] are more specific than [$\pm pl$] (contextual features do not count for specificity).

Analysis: Vocabulary Insertion

(70) Subanalysis of the suppletive paradigm:

1.sg	b		
2.sg	b		s
3.sg			s
1.pl	z		
2.pl	z	a	\emptyset
3.pl	z		

(71) Vocabulary insertion rules

- V (i) /b/ \leftrightarrow Vsein /__ [-3,-pl]
 (ii) /z/ \leftrightarrow Vsein /__ [+pl]
- Th (i) /a/ \leftrightarrow [+ β] /__ Vsein, [-1,+2,+pl]
 (ii) /l/ \leftrightarrow [+ α] /__ Vsein
- Agr (i) / \emptyset / \leftrightarrow [-1,+2] /__ Vsein, [+pl]
 (ii) /s/ \leftrightarrow [-1] /__ Vsein, [-pl]

- Vsein is associated with a Th position bearing the abstract features [+ α ,+ β] (Oltra Massuet (1999)).
- [+ β] outranks [+ α], and the Strict Cycle Condition predicts the order of exponents.
- Person features are more specific than number features, [± 1] is more specific than [± 2]; [-pl] and [+pl] are more specific than [$\pm pl$] (contextual features do not count for specificity).

Analysis: Vocabulary Insertion

(70) Subanalysis of the suppletive paradigm:

1.sg	b		n
2.sg	b		s
3.sg			s
1.pl	z		n
2.pl	z	a	∅
3.pl	z		n

(71) Vocabulary insertion rules

- V (i) /b/ ↔ Vsein /__ [-3,-pl]
 (ii) /z/ ↔ Vsein /__ [+pl]
- Th (i) /a/ ↔ [+β] /__ Vsein, [-1,+2,+pl]
 (ii) /l/ ↔ [+α] /__ Vsein
- Agr (i) /∅/ ↔ [-1,+2] /__ Vsein, [+pl]
 (ii) /s/ ↔ [-1] /__ Vsein, [-pl]
 (iii) /n/ ↔ [-2] /__ Vsein

- Vsein is associated with a Th position bearing the abstract features [+α,+β] (Oltra Massuet (1999)).
- [+β] outranks [+α], and the Strict Cycle Condition predicts the order of exponents.
- Person features are more specific than number features, [±1] is more specific than [±2]; [-pl] and [+pl] are more specific than [±pl] (contextual features do not count for specificity).

Analysis: Vocabulary Insertion

(70) Subanalysis of the suppletive paradigm:

1.sg	b		n	\emptyset
2.sg	b		s	
3.sg			s	
1.pl	z		n	
2.pl	z	a		\emptyset
3.pl	z		n	

(71) Vocabulary insertion rules

- V (i) /b/ \leftrightarrow Vsein /__ [-3,-pl]
 (ii) /z/ \leftrightarrow Vsein /__ [+pl]
- Th (i) /a/ \leftrightarrow [+ β] /__ Vsein, [-1,+2,+pl]
 (ii) /l/ \leftrightarrow [+ α] /__ Vsein
- Agr (i) / \emptyset / \leftrightarrow [-1,+2] /__ Vsein, [+pl]
 (ii) /s/ \leftrightarrow [-1] /__ Vsein, [-pl]
 (iii) /n/ \leftrightarrow [-2] /__ Vsein
 (iv) / \emptyset / \leftrightarrow [-pl] /__ Vsein, [+1]

- Vsein is associated with a Th position bearing the abstract features [+ α ,+ β] (Oltra Massuet (1999)).
- [+ β] outranks [+ α], and the Strict Cycle Condition predicts the order of exponents.
- Person features are more specific than number features, [+1] is more specific than [+2]; [-pl] and [+pl] are more specific than [\pm pl] (contextual features do not count for specificity).

Analysis: Vocabulary Insertion

(70) Subanalysis of the suppletive paradigm:

1.sg	b		n	\emptyset
2.sg	b		s	t
3.sg			s	t
1.pl	z		n	t
2.pl	z	a	\emptyset	t
3.pl	z		n	t

(71) Vocabulary insertion rules

- V (i) /b/ \leftrightarrow Vsein /__ [-3,-pl]
 (ii) /z/ \leftrightarrow Vsein /__ [+pl]
- Th (i) /a/ \leftrightarrow [+ β] /__ Vsein, [-1,+2,+pl]
 (ii) /l/ \leftrightarrow [+ α] /__ Vsein
- Agr (i) / \emptyset / \leftrightarrow [-1,+2] /__ Vsein, [+pl]
 (ii) /s/ \leftrightarrow [-1] /__ Vsein, [-pl]
 (iii) /n/ \leftrightarrow [-2] /__ Vsein
 (iv) / \emptyset / \leftrightarrow [-pl] /__ Vsein, [+1]
 (v) /t/ \leftrightarrow [\pm pl] /__ Vsein

- Vsein is associated with a Th position bearing the abstract features [+ α ,+ β] (Oltra Massuet (1999)).
- [+ β] outranks [+ α], and the Strict Cycle Condition predicts the order of exponents.
- Person features are more specific than number features, [\pm 1] is more specific than [\pm 2]; [-pl] and [+pl] are more specific than [\pm pl] (contextual features do not count for specificity).
- Something extra must be said for infinitives: impoverishment.

Analysis: Vocabulary Insertion

(70) Subanalysis of the suppletive paradigm:

1.sg	b		l	n	\emptyset
2.sg	b		l	s	t
3.sg			l	s	t
1.pl	z		l	n	t
2.pl	z	a	l	\emptyset	t
3.pl	z		l	n	t
inf	z	a	l	n	

(71) Vocabulary insertion rules

- V (i) /b/ \leftrightarrow Vsein /__ [-3,-pl]
 (ii) /z/ \leftrightarrow Vsein /__ [+pl]
- Th (i) /a/ \leftrightarrow [+ β] /__ Vsein, [-1,+2,+pl]
 (ii) /l/ \leftrightarrow [+ α] /__ Vsein
- Agr (i) / \emptyset / \leftrightarrow [-1,+2] /__ Vsein, [+pl]
 (ii) /s/ \leftrightarrow [-1] /__ Vsein, [-pl]
 (iii) /n/ \leftrightarrow [-2] /__ Vsein
 (iv) / \emptyset / \leftrightarrow [-pl] /__ Vsein, [+1]
 (v) /t/ \leftrightarrow [\pm pl] /__ Vsein

- Vsein is associated with a Th position bearing the abstract features [+ α ,+ β] (Oltra Massuet (1999)).
- [+ β] outranks [+ α], and the Strict Cycle Condition predicts the order of exponents.
- Person features are more specific than number features, [\pm 1] is more specific than [\pm 2]; [-pl] and [+pl] are more specific than [\pm pl] (contextual features do not count for specificity).
- Something extra must be said for infinitives: impoverishment.
- Finally, the analysis needs to be generalized in the Agr domain to verb inflection in general (weak and strong conjugations).

Conclusion

- There are a priori 30 exponents (ignoring the infinitive); the analysis needs 9 rules for vocabulary insertion. Almost all of the instances of **partial syncretism** are **derived** systematically, and only zero exponence requires more than one rule.
- There may be a “**reverse Indo-European bias**” among scholars working on inflectional morphology in Indo-European languages; i.e., a reluctance to apply segmentation techniques that are well established for lesser-studied languages to the well-studied Indo-European languages.

Main point:

- 1 There is evidence that word forms in the suppletive conjugation in German are composed of smaller parts: **partial syncretism**.
- 2 However, the properties of the word forms can be determined on the basis of the properties of the individual vocabulary items: A **rule-based approach is possible**, and well motivated because it derives the cases of syncretism.
- 3 Conclusion: Word forms in the suppletive conjugation in German are **not morphological constructions**.

References

- Ackerman, Farrell & Gert Webelhuth (1998): *A Theory of Predicates*. CSLI Publications, Stanford University.
- Adger, David (2003): *Core Syntax*. Oxford University Press, Oxford, New York.
- Albright, Adam & Bruce Hayes (2002): Modeling English Past Tense Intuitions with Minimal Generalization. In: M. Maxwell, ed., *Proceedings of the Sixth Meeting of the ACL Special Interest Group in Computational Phonology*. ACL, Philadelphia.
- Anderson, Stephen (1992): *A-Morphous Morphology*. Cambridge University Press, Cambridge.
- Baerman, Matthew, Dunstan Brown & Greville Corbett (2005): *The Syntax-Morphology Interface. A Study of Syncretism*. Cambridge University Press, Cambridge.
- Baker, Mark (1988): *Incorporation. A Theory of Grammatical Function Changing*. University of Chicago Press, Chicago.
- Bierwisch, Manfred (1961): Zur Morphologie des deutschen Verbalsystems. PhD thesis, Universität Leipzig.
- Bittner, Maria & Ken Hale (1996): The Structural Determination of Case and Agreement, *Linguistic Inquiry* pp. 1–68.
- Bobaljik, Jonathan (2002): Syncretism without Paradigms: Remarks on Williams 1981, 1994. In: G. Booij & J. van Marle, eds., *Yearbook of Morphology 2001*. Kluwer, Dordrecht, pp. 53–85.
- Bonet, Eulàlia (1991): Morphology after Syntax. PhD thesis, MIT, Cambridge, Mass.
- Chomsky, Noam (1957): *Syntactic Structures*. Mouton, The Hague and Paris.
- Chomsky, Noam (1980): *Rules and Representations*. Blackwell, Oxford.
- Chomsky, Noam (1995): *The Minimalist Program*. MIT Press, Cambridge, Mass.
- Chomsky, Noam (2000): Minimalist Inquiries: The Framework. In: R. Martin, D. Michaels & J. Uriagereka, eds., *Step by Step*. MIT Press, Cambridge, Mass., pp. 89–155.
- Chomsky, Noam (2001): Derivation by Phase. In: M. Kenstowicz, ed., *Ken Hale. A Life in Language*. MIT Press, Cambridge, Mass., pp. 1–52.
- Chomsky, Noam (2005): On Phases. Ms., MIT, Cambridge, Mass.
- Chomsky, Noam (2008): On Phases. In: R. Freidin, C. Otero & M. L. Zubizarreta, eds., *Foundational Issues in Linguistic Theory*. MIT Press, Cambridge, Mass., pp. 133–166.
- Corbett, Greville & Norman Fraser (1993): Network Morphology: A DATR Account of Russian Nominal Inflection, *Journal of Linguistics* 29, 113–142.
- Culicover, Peter & Ray Jackendoff (2005): *Simpler Syntax*. Oxford University Press.
- Cysouw, Michael (2003): *The Paradigmatic Structure of Person Marking*. Oxford University Press, Oxford and New York.
- Di Sciullo, Anna Maria & Edwin Williams (1987): *On the Definition of Word*. MIT Press, Cambridge, Mass.
- Eisenberg, Peter (2000): *Grundriß der deutschen Grammatik. Band 1: Das Wort*. Metzler, Stuttgart.
- Embick, David & Rolf Noyer (2001): Movement Operations after Syntax, *Linguistic Inquiry* 32, 555–595.
- Everaert, Martin (1991): The lexical representation of idioms and the morphology-syntax interface. Ms., Utrecht University.

- Fischer, Silke (2006): Zur Morphologie der deutschen Personalpronomina – eine Spaltungsanalyse. In: G. Müller & J. Trommer, eds., *Subanalysis of Argument Encoding in Distributed Morphology*. Vol. 84 of *Linguistische Arbeitsberichte*, Universität Leipzig, pp. 77–101.
- Frampton, John (2002): Syncretism, Impoverishment, and the Structure of Person Features. In: M. Andronis, E. Debenport, A. Pycha & K. Yoshimura, eds., *Papers from the Chicago Linguistics Society Meeting*. Vol. 38, Chicago, pp. 207–222.
- Friederici, Angela, Jörg Bahlmann, Stefan Heim, Ricarda Schubotz & Alfred Anwander (2006): The Brain Differentiates Human and Non-Human Grammars: Functional Localization and Structural Connectivity, *PNAS* 103, 2458–2463.
- Gazdar, Gerald, Ewan Klein, Geoffrey Pullum & Ivan Sag (1985): *Generalized Phrase Structure Grammar*. Blackwell, Oxford.
- Goldberg, Adele E. (2003): Constructions: A New Theoretical Approach to Language, *Trends in Cognitive Sciences* 7, 219–224.
- Goldberg, Adele E. (2006): *Constructions at Work*. Oxford University Press, Oxford.
- Grewendorf, Günther (2002): *Minimalistische Syntax*. Francke/UTB, Tübingen and Basel.
- Halle, Morris (1992): The Latvian Declension. In: G. Booij & J. van Marle, eds., *Yearbook of Morphology 1991*. Kluwer, Dordrecht, pp. 33–47.
- Halle, Morris (1994): The Russian Declension: An Illustration of the Theory of Distributed Morphology. In: J. Cole & C. Kisseberth, eds., *Perspectives in Phonology*. CSLI Publications, Stanford, pp. 29–60.
- Halle, Morris (1997): Distributed Morphology: Impoverishment and Fission. In: B. Bruening, Y. Kang & M. McGinnis, eds., *Papers at the Interface*. Vol. 30, MITWPL, pp. 425–449.
- Halle, Morris & Alec Marantz (1993): Distributed Morphology and the Pieces of Inflection. In: K. Hale & S. J. Keyser, eds., *The View from Building 20*. MIT Press, Cambridge, Mass., pp. 111–176.
- Halle, Morris & Alec Marantz (1994): Some Key Features of Distributed Morphology. In: A. Carnie, H. Harley & T. Bures, eds., *Papers on Phonology and Morphology*. Vol. 21 of *MIT Working Papers in Linguistics*, MITWPL, Cambridge, Mass., pp. 275–288.
- Harbour, Daniel (2003): The Kiowa Case for Feature Insertion, *Natural Language and Linguistic Theory* 21, 543–578.
- Harley, Heidi & Rolf Noyer (2003): Distributed Morphology. In: L. Cheng & R. Sybesma, eds., *The Second GLOT International State-of-the-Article Book*. Mouton de Gruyter, Berlin, pp. 463–496.
- Hauser, Marc, Noam Chomsky & W. Tecumseh Fitch (2002): The Faculty of Language: What Is It, Who Has It, and How Did It Evolve?, *Science* 298, 1569–1579.
- Heck, Fabian & Gereon Müller (2000): Successive Cyclicity, Long-Distance Superiority, and Local Optimization. In: R. Billerey & B. D. Lillehaugen, eds., *Proceedings of WCCFL*. Vol. 19, Cascadilla Press, Somerville, MA, pp. 218–231.
- Heck, Fabian & Gereon Müller (2003): Derivational Optimization of Wh-Movement, *Linguistic Analysis* 33, 97–148.
- Heck, Fabian & Gereon Müller (2006): Extremely Local Optimization. Ms., Universität Leipzig.
- Heck, Fabian & Gereon Müller (2007): Extremely Local Optimization. Proceedings of WECOL 2006. California State University, Fresno.
- Hippisley, Andrew (2007): Declarative Deponency: A Network Morphology Account of Morphological Mismatches. In: M. Baerman, G. Corbett, D. Brown & A. Hippisley, eds., *Deponency and Morphological Mismatches*. Oxford University Press (for The British Academy), Oxford, pp. 145–173.
- Holmberg, Anders (2000): Scandinavian Stylistic Fronting: How Any Category Can Become an Expletive, *Linguistic Inquiry* 31, 445–483.
- Jackendoff, Ray (1997): *The Architecture of the Language Faculty*. MIT Press, Cambridge, Mass.

- Jackendoff, Ray (2002): *Foundations of Language*. Oxford University Press, Oxford and New York.
- Jacobs, Joachim (2006): Ein kleines Skopos-Rätsel für Manfred. In: H.-M. Gärtner, S. Beck, R. Eckardt, R. Musan & B. Stiebels, eds., *Between 40 and 60 Puzzles for Krifka*. ZAS, Berlin.
- Jacobs, Joachim (2008): Wozu Konstruktionen?, *Linguistische Berichte* 213, 3–44.
- Larson, Richard (1988): On the Double Object Construction, *Linguistic Inquiry* 19, 335–391.
- Lumsden, John (1992): Underspecification in Grammatical and Natural Gender, *Linguistic Inquiry* 23, 469–486.
- Marantz, Alec (1995): 'Cat' as a Phrasal Idiom: Consequences of Late Insertion in Distributed Morphology. Ms., MIT, Cambridge, Mass.
- Marantz, Alec (1998): No Escape from Syntax: Don't Try Morphological Analysis in the Privacy of Your Own Lexicon. In: A. Dimitriadis, ed., *Proceedings of Penn Linguistics Colloquium 28*. PLC, University of Pennsylvania, Philadelphia.
- Martinet, André (1964): *Elements of General Linguistics*. The University of Chicago Press, Chicago.
- Matthews, Peter (1972): *Inflectional Morphology: A Theoretical Study Based on Aspects of Latin Verb Conjugation*. CUP, Cambridge.
- Müller, Gereon (1997a): Beschränkungen für Binomialbildung im Deutschen, *Zeitschrift für Sprachwissenschaft* 16, 5–51.
- Müller, Gereon (1997b): Parallel Movement. In: F. d'Avis & U. Lutz, eds., *Zur Satzstruktur im Deutschen*. Arbeitspapiere des SFB 340, Nr. 90, Stuttgart/Tübingen, pp. 171–214.
- Müller, Gereon (2000): Shape Conservation and Remnant Movement. In: M. Hirotani, A. Coetzee, N. Hall & J.-Y. Kim, eds., *Proceedings of NELS 30*. GLSA, Amherst, Mass., pp. 525–539.
- Müller, Gereon (2001): Order Preservation, Parallel Movement, and the Emergence of the Unmarked. In: G. Legendre, J. Grimshaw & S. Vikner, eds., *Optimality-Theoretic Syntax*. MIT Press, Cambridge, Mass., pp. 279–313.
- Müller, Gereon (2003): Local vs. Global Optimization in Syntax: A Case Study. In: J. Spenader, A. Eriksson & Ö. Dahl, eds., *Variation within Optimality Theory*. *Proceedings of the Stockholm Workshop*. Stockholm University, Department of Linguistics, pp. 82–91.
- Müller, Gereon (2005): Syncretism and Iconicity in Icelandic Noun Declensions: A Distributed Morphology Approach. In: G. Booij & J. van Marle, eds., *Yearbook of Morphology 2004*. Springer, Dordrecht, pp. 229–271.
- Müller, Gereon (2006): Pro-Drop and Impoverishment. In: P. Brandt & E. Fuß, eds., *Form, Structure, and Grammar. A Festschrift Presented to Günther Grewendorf on Occasion of his 60th Birthday*. Akademie Verlag, Berlin, pp. 93–115.
- Müller, Gereon & Jochen Trommer, eds. (2006): *Subanalysis of Argument Encoding in Distributed Morphology*. Number 84 in 'Linguistische Arbeitsberichte', Institut für Linguistik, Universität Leipzig. Available from: www.uni-leipzig.de/~va/?nav=papiere.
- Müller, Stefan (2006): Phrasal or Lexical Constructions?, *Language* 82(4), 850–883.
URL: <http://hpsg.fu-berlin.de/~stefan/Pub/phrasal.html>
- Nevins, Andrew (2007): The Representation of Third Person and Its Consequences for Person-Case Effects, *Natural Language and Linguistic Theory* 25, 273–313.
- Noyer, Rolf (1992): Features, Positions, and Affixes in Autonomous Morphological Structure. PhD thesis, MIT, Cambridge, Mass.
- Nunberg, Geoffrey, Ivan Sag & Thomas Wasow (1994): Idioms, *Language* 70(3), 491–538.

- Oltra Massuet, Isabel (1999): On the Notion of Theme Vowel: A New Approach to Catalan Verbal Morphology. Master of science thesis, MIT, Cambridge, Mass.
- Oltra Massuet, Isabel & Karlos Arregi (2005): Stress-by-structure in Spanish, *Linguistic Inquiry* 36, 43–84.
- Pesetsky, David (1985): Morphology and Logical Form, *Linguistic Inquiry* 16, 193–246.
- Pike, Kenneth L. (1965): Non-Linear Order and Anti-Redundancy in German Morphological Matrices, *Zeitschrift für Mundartforschung* 31, 193–221.
- Pinker, Steven (1991): Rules of Language, *Science* 253, 530–535.
- Roberts, Ian & Anna Roussou (2002): The Extended Projection Principle as a Condition for the Tense-Dependency. In: P. Svenonius, ed., *Subjects, Expletives, and the EPP*. Benjamins, Amsterdam.
- Ross, John Robert (1967): Der Ablaut bei den Deutschen starken Verben. In: S. G. VI, ed., *Phonologische Studien*. Vol. 8, Akademie-Verlag, pp. 47–117.
- Ruhl, Charles (1975): 'Kick the Bucket' is Not an Idiom. Interfaces 2.4. Washington, DC: Georgetown University.
- Sailer, Manfred (2003): Combinatorial Semantics and Idiomatic Expressions in Head-Driven Phrase Structure Grammar. PhD thesis, Universität Tübingen, <http://w210.uni-tuebingen.de/dbt/volltexte/2003/916/>.
- Ségéral, Philippe & Tobias Scheer (1998): A Generalized Theory of Ablaut: the Case of Modern German Strong Verbs. In: R. Fabri, A. Ortmann & T. Parodi, eds., *Models of Inflection*. Niemeyer, Tübingen, pp. 28–59.
- Sternefeld, Wolfgang (2006): *Syntax*. Stauffenburg, Tübingen. Two volumes.
- Stump, Gregory (2001): *Inflectional Morphology*. Cambridge University Press, Cambridge.
- Tomasello, Michael (2003): *Constructing a Language. A Usage-Based Theory of Language Acquisition*. Harvard University Press, Cambridge, Mass.
- Trommer, Jochen (2006a): Plural Insertion is Constructed Plural. In: G. Müller & J. Trommer, eds., *Subanalysis of Argument Encoding in Distributed Morphology*. Vol. 84 of *Linguistische Arbeitsberichte*, Universität Leipzig, pp. 197–228.
- Trommer, Jochen (2006b): Third-Person Marking in Menominee. Ms., Universität Leipzig.
- Waßner, Ulrich (2001): Halb zog sie ihn, halb sank er hin. Anmerkungen zu einem phraseologischen Konnektor des Deutschen. In: U. Waßner, ed., *Lingua et Linguae. Festschrift für Clemens-Peter Herbermann*. Shaker, Aachen, pp. 447–468.
- Wiese, Bernd (1994): Die Personal- und Numerusendungen der deutschen Verbformen. In: K.-M. Köpcke, ed., *Funktionale Untersuchungen zur deutschen Nominal- und Verbalmorphologie*. Niemeyer, Tübingen, pp. 161–191.
- Wiese, Bernd (1999): Unterspezifizierte Paradigmen. Form und Funktion in der pronominalen Deklination, *Linguistik Online* 4. (www.linguistik-online.de/3_99).
- Wiese, Bernd (2001): Pronominale Deklination. Handout, IDS Mannheim.
- Wiese, Bernd (2006): Form and Function of Verbal Ablaut in Contemporary Standard German. Ms., IDS Mannheim. To appear in: Robin Sackmann (ed.), *Studies in Integrational Linguistics*, Vol. 1. Amsterdam/Philadelphia. Benjamins.
- Williams, Edwin (1999): Economy as Shape Conservation. Handout of talk at DGfS meeting, Universität Konstanz.
- Williams, Edwin (2003): *Representation Theory*. MIT Press, Cambridge, Mass.
- Williams, Edwin (2005): What is Beyond Explanatory Adequacy?. Ms., Princeton University.
- Wunderlich, Dieter (1996): Minimalist Morphology: The Role of Paradigms. In: G. Booij & J. van Marle, eds., *Yearbook of Morphology 1995*. Kluwer, Dordrecht, pp. 93–114.
- Wunderlich, Dieter (1997a): Der unterspezifizierte Artikel. In: C. Dürscheid, K. H. Ramers & M. Schwarz, eds., *Sprache im Fokus*. Niemeyer, Tübingen, pp. 47–55.
- Wunderlich, Dieter (1997b): A Minimalist Model of Inflectional Morphology. In: C. Wilder, H.-M. Gärtner & M. Bierwisch, eds., *The Role of Economy Principles in Linguistic Theory*. Akademie Verlag, Berlin, pp. 267–298.
- Wunderlich, Dieter (2004): Emanzipation der Linguistik in Deutschland. Ein Interview mit Dieter Wunderlich, *Linguistische Berichte* 200, 427–450. 