Towards an Integrated Cognitive-Linguistic Theory of Morphology and Morphological Change

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What is the domain of morphology?

morphology

inflectional morphology

e.g. *-s* (plural)
-ed (past)
-s (genitive)

derivational morphology

e.g. *govern+ment*
mis+manage
book+box

non-morphemic word-formation

e.g. *TV, BBC, ad, flu*

conversion
e.g. $hammer_V$

→ Cognitive Linguistics can elucidate the processes underlying these different phenomena

word-formation

(from Schmid 2011: 15)

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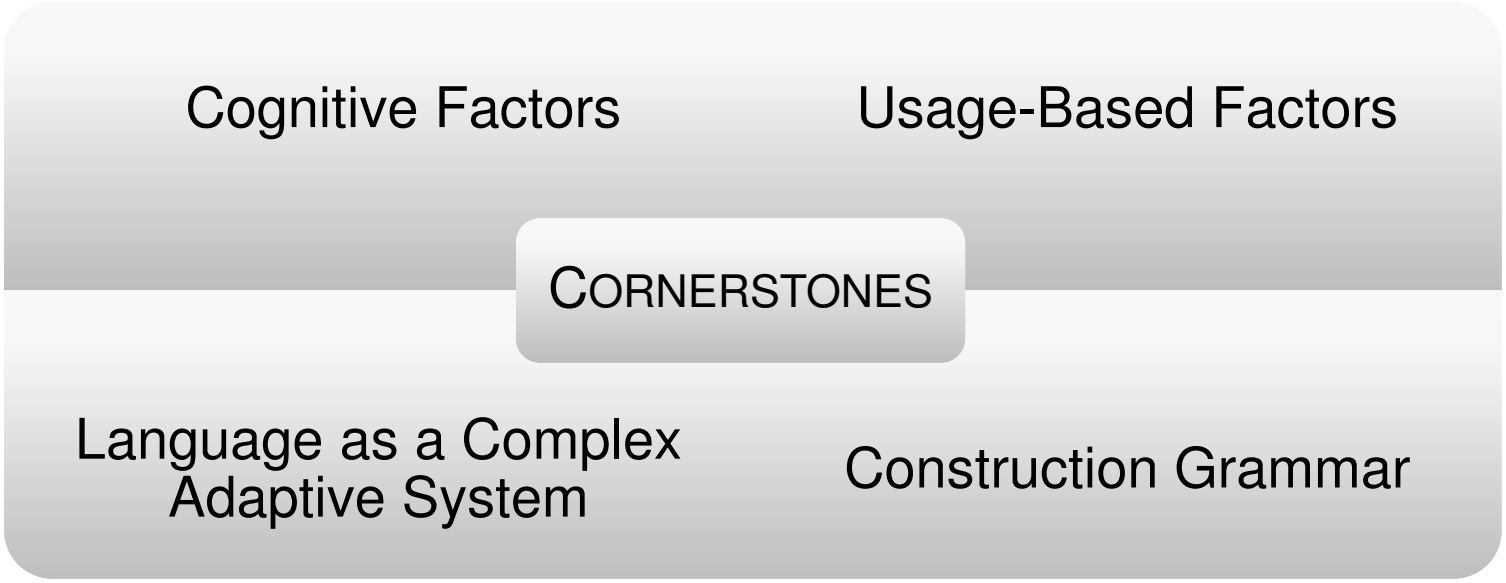
Desiderata for a Cognitive-Linguistic Theory of Morphology

- What processes are involved in the **development**, **processing**, and **acquisition** of morphology and how do these give rise to structure?
- Integration of findings from different frameworks in morphology research into a Cognitive-Linguistic theory of morphology and morphological change



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Theories of Morphology in CL and CxG

- Cognitive Grammar (Langacker 1987, 1991, 2008; Tuggy 2005; Taylor to appear)
- Cognitive Morphology (Gaeta 2005, 2010)
- Cognitive-semantic approaches (Lampert 2009, Lampert & Lampert 2010)
- Construction Morphology (Booij 2010a, b, 2013)

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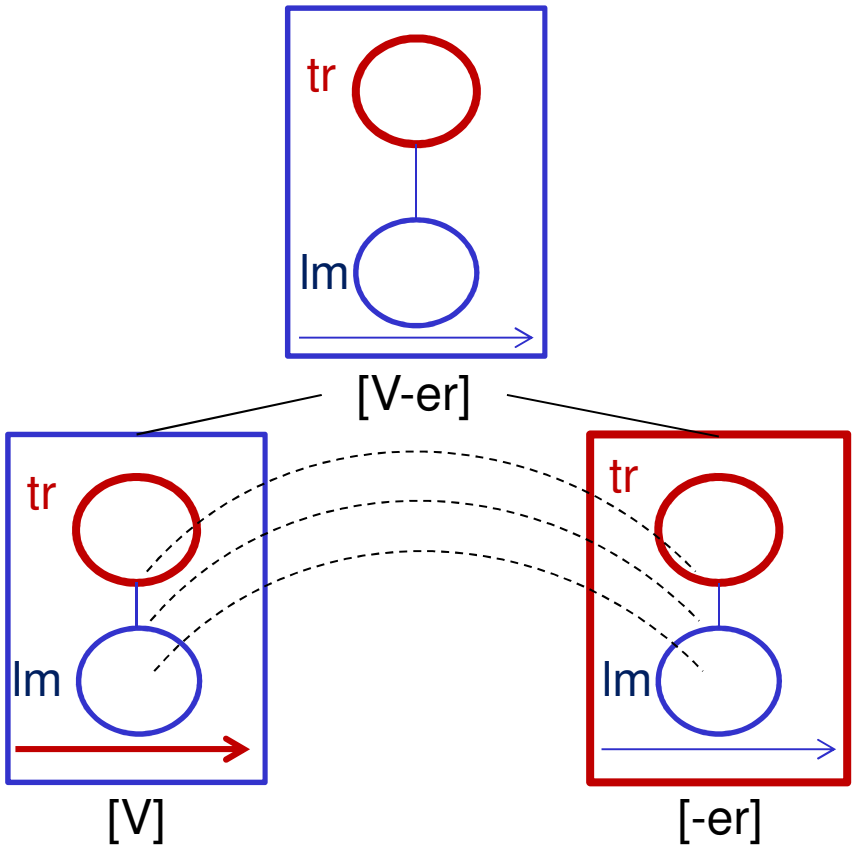
A case study: *er*-Nominals in Cognitive Grammar...



(Taylor 2002: 271)

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...and in Construction Morphology

$[[x]_V$ -ər$]_N$ ‘one who Vs’

PHON
SYN

SEM

(Booij 2010c: 507)

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Common assumptions and key differences

- “Primacy of semantics” (Geeraerts 1997)
- Generalization commitment, cognitive commitment (Lakoff 1991)
- Rule-based vs. schema-based approach
- Building-block metaphor vs. schema abstraction
- “constructions all the way down” vs. scepticism against the concept of ‘construction’ due to the heterogeneity of morphological phenomena

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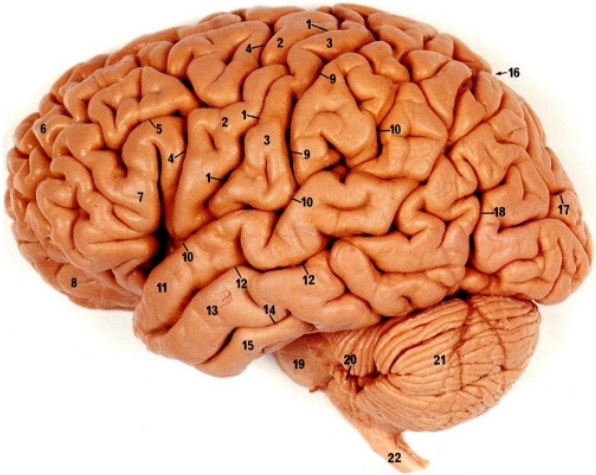
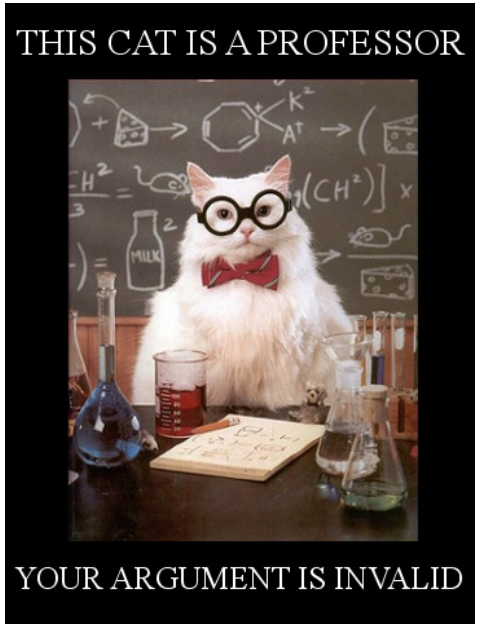
- Language as a **complex adaptive system**





(Bybee 2010; Beckner et al. 2009, Frank & Gontier 2010)

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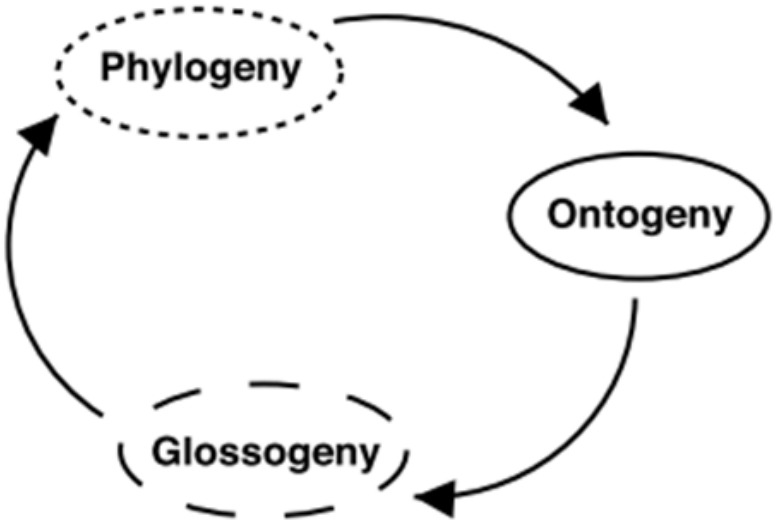
Language is a complex adaptive system, whose emergent structure develops out of the dynamic interaction of a multiplicity of factors on different levels of analysis and on different timescales

communicative functions of language → continuously develop and are sustained by means of constant re-organization and adaptation to both language-internal and extra-linguistic processes of change



Kirby & Hurford 2002, Beckner et al. 2009, Hruschka et al. 2009, Kirby 2012, Steels 2011

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Usage-based Theory and Networks of Exemplar Representations

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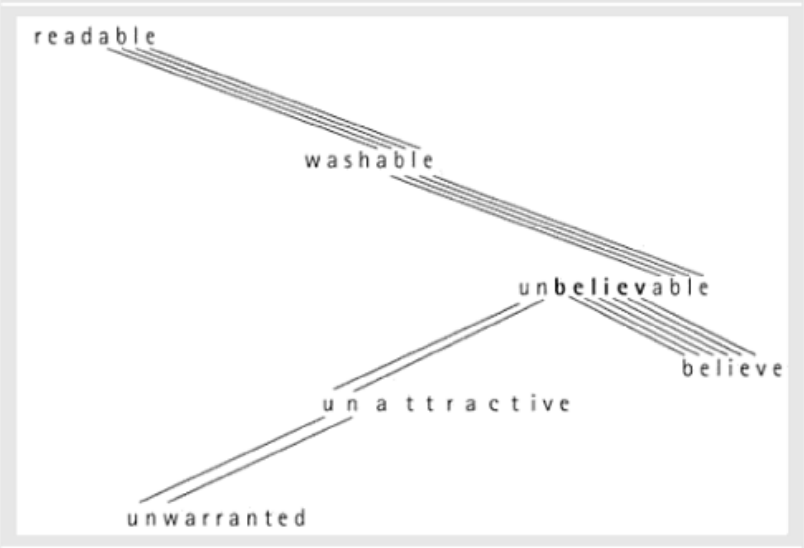
linguistic structure is formed by the repetition and entrenchment of patterns in language use in richly social interactive contexts which get conventionalized in a community

linguistic knowledge consists in abstractions and schematizations from exemplar representations of experience in context

interpersonal communicative and cognitive processes feed into and shape the emergence of linguistic structure (Bybee 2013; Ellis 2013; Slobin 1997)



Morphology is emergent from domain-general processes (e.g. chunking, categorization, construal, analogy)

"structure emerges locally and is subject to ongoing revision, even while general patterns exhibit apparent stability." (Beckner & Bybee 2009)

Network Representation of the internal structure of a word (from Bybee & Beckner 2010:, Figure 32.3)

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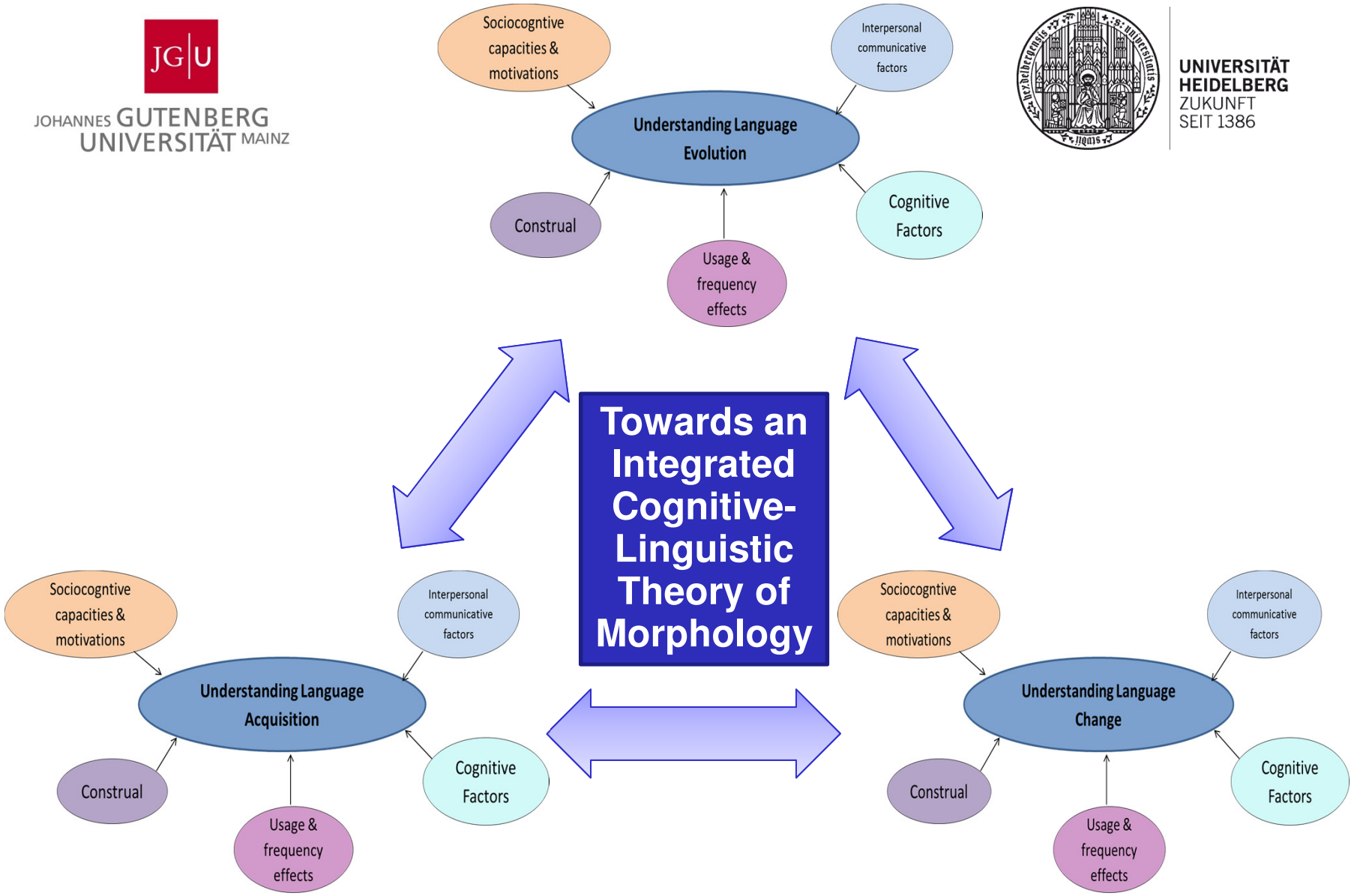

cf. Hruschka et al. 2009; & Pleyer & Winters 2012

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Conceptual Content & Construal

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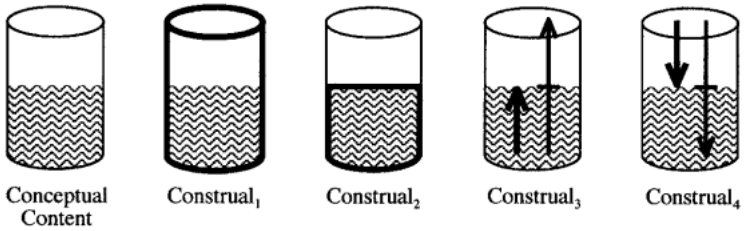
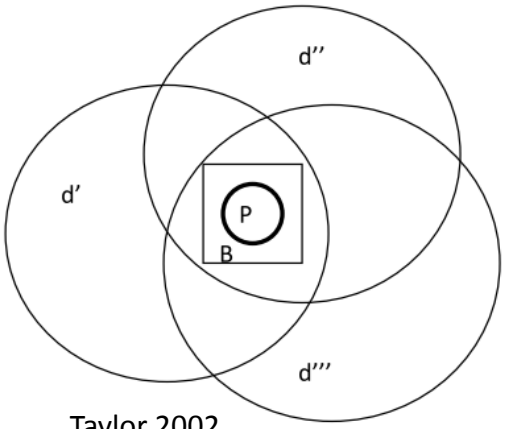
- "Linguistic meaning involves both **conceptual content** and the **construal** imposed on that content." (Langacker 2008: 44)
- **CONSTRUAL**
  - structuring of conceptual content in a specific manner and from a certain perspective (*foregrounding, backgrounding, assigning salience*)
  - invocation and selection of cognitive domains that serve as the basis for the meaning of a construction/expression



Langacker 2008: 44



Taylor 2002

Construal Change as Change in Domain Selection: *-bar*

Old High German (OHG) → New High German (NHG)

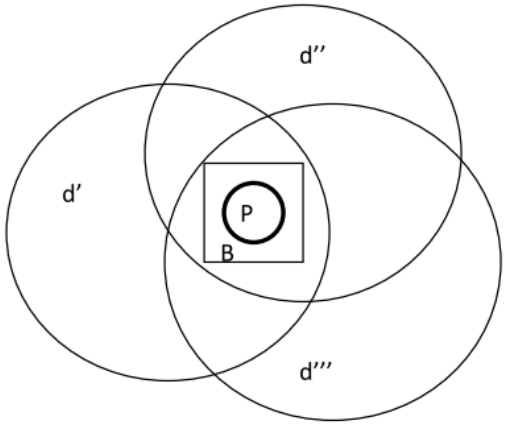
OHG ***-bāri*** '*bearing, capable of bearing/carrying X [concrete]*', cf. also OE ***appelbære*** '*bearing apples*'

OHG *fluohbāri* '*bearing/carrying a curse [abstract]*'

OHG ***liochtbāri*** 'bright' '*capable of being X*'

MHG ***kampfbære*** 'able to fight/fit for fighting' '*capable of doing x*'

NHG ***trinkbar*** 'drinkable', ***machbar*** lit. 'make-able' '*can be x-ed*'



(cf. Flury 1967, Nübling et al. 2010)

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German *-lich* vs. *-bar*

- Competition between different adjectival suffixes in German (e.g. *-sam, -haft, -ig, -isch, -lich, -bar*)
- Diachronic development of *-bar* as an example of functional re-organization (cf. Flury 1967)
- *lich* < OHG *līh* ‘body’, e.g. *faterlīh* ‘fatherly’, *truhtinlīh* ‘Christ-like’

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Case Study: German *-lich* vs. *-bar*

Early New High German → New High German (NHG)

~~adverbial marker *gütlich* 'well' > *güt-ig*~~

passival-ornative *gleichförmlich* 'uniform'

→ referential *(weibliche Belange* 'female issues', *geldliche Konsequenz* 'financial concequence')

(cf. e.g. Fleischer & Barz 2012, Kempf in prep.)

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Corpora

Corpus	Total word count	bar-adjectives (types)	bar-adjectives (tokens)	-lich-adjectives (types)	-lich-adjectives (tokens)
Mainz ENHG Corpus	388598	29	144	573	5365
Extended GerManC Corpus	683302	62	430	638	9278

MzENHG Corpus: 80 texts, covering the years 1500-1710
GerManC Corpus: 336 texts, covering the years 1650-1800 (cf. Durrell et al. 2007)

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Measures of Productivity

- Realized Productivity: Type frequency of a construction

  P = V (C, N)
  types of *-bar* in period X / total word count of period X

- Potential Productivity: Number of hapax legomena belonging to the construction in question in relation to the total number of instances of the construction in question

  P = V (1, C, N) / N (C)
  hapax legomena in *-bar* in period X /
  number of *bar*-adjectives (tokens) in period X

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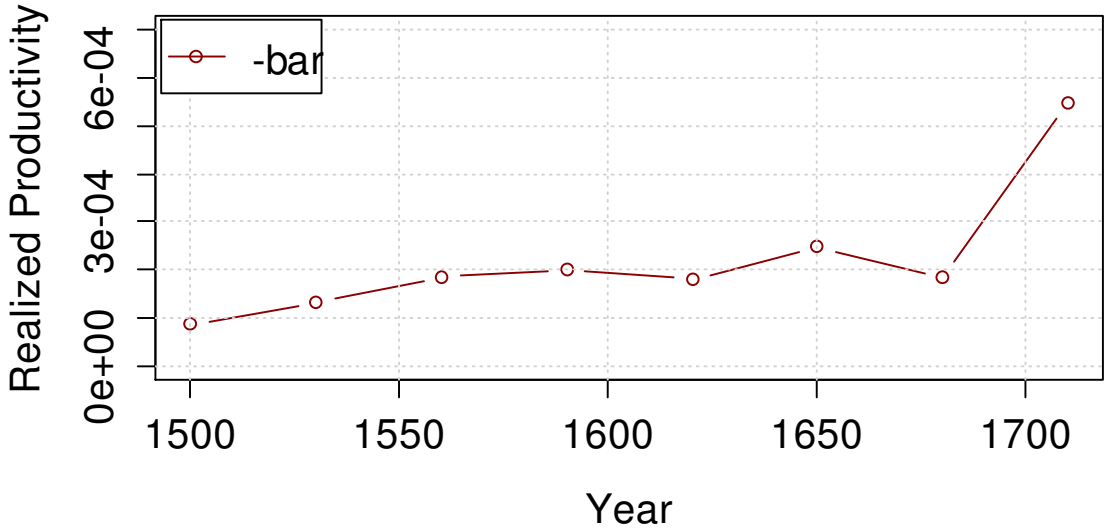
Realized productivity of *-bar*



Kendall's $\tau = 0.64$, $p_{\text{one-tailed}} = 0.02$

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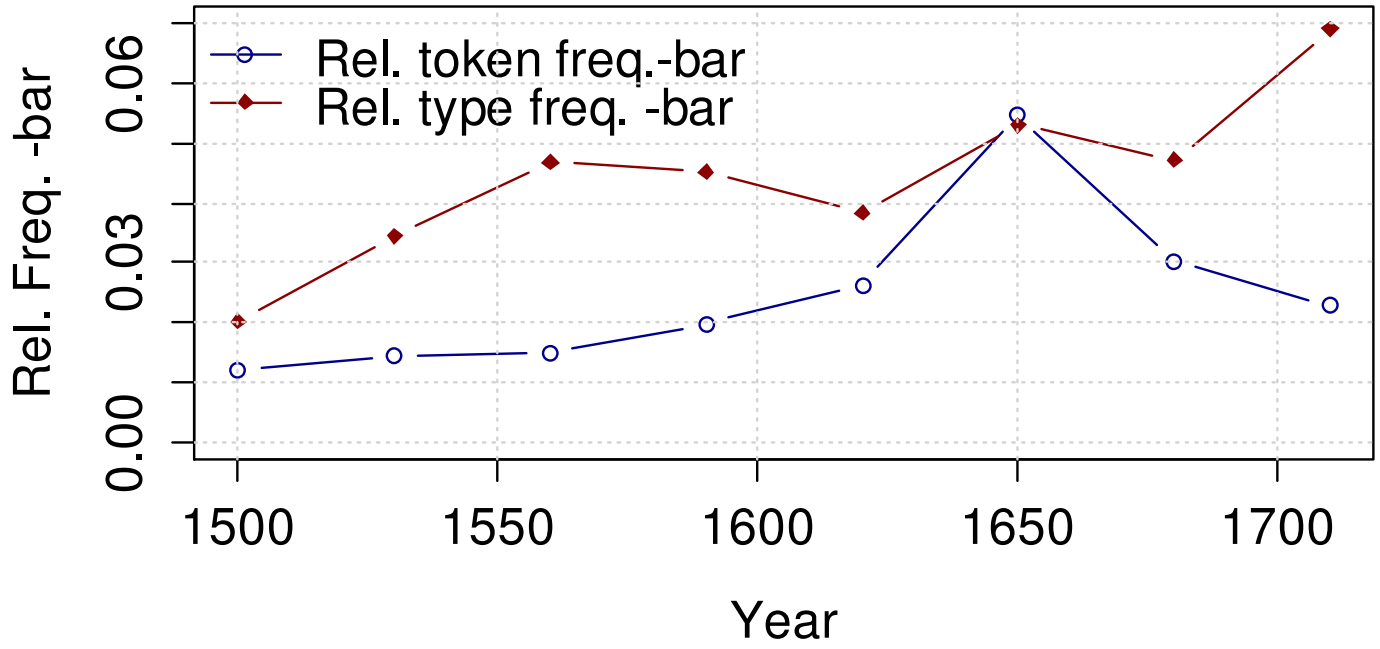
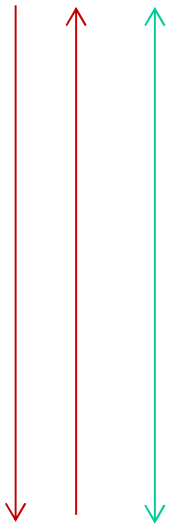
Relative frequency of *-bar* in relation to *-lich*



Relative type frequency: Kendall's $\tau = 0.71$, $p_{\text{one-tailed}} < 0.01$
Relative token frequency: Kendall's $\tau = 0.71$, $p_{\text{one-tailed}} < 0.01$

modifying **conceptual content** of the base



evoking specific **construal alternatives** of the base's conceptual content

Lexical Enrichment

'Motivation' (syntactic transposition)

main functions of word formation (cf. e.g. Dressler1987: 99)

Conclusion

- Combining key notions from Cognitive Grammar, Construction Morphology, and a Complex Adaptive Systems approach to language can help us understand the development of morphological patterns as well as their cognitive representations
- Crucially, morphology can only be understood in a diachronic perspective
- Changes in construal can be singled out as a major factor for constructional (in this case: morphological) change
- These considerations can be linked with empirical approaches as morphological change is manifested in changes of frequency and productivity (cf. Scherer 2005, 2006, Hilpert 2013)
- Future work should also look at and explore in more detail other domain-general cognitive processes that give rise to the emergence of morphological structure, i.e. metaphor, categorization, chunking, analogy.

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Thank you for your attention