

# What is it then, this Grammaticalization?

## Diachronic Language Models

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# Introduction: Background

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Mengden and Simon (2014): What is it then, this Grammaticalization?

- goal: refine the terms and notions around grammaticalization
- workshop “Refining Grammaticalization” at Freie Universität Berlin in February 2012<sup>1</sup>
- special issue in *Folia Linguistica*<sup>2</sup>

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<sup>1</sup>Program: [https://www.geisteswissenschaften.fu-berlin.de/en/v/Refining\\_Grammaticalization/Programme\\_120220.pdf](https://www.geisteswissenschaften.fu-berlin.de/en/v/Refining_Grammaticalization/Programme_120220.pdf) [accessed 18.10.2023]

<sup>2</sup><https://www.degruyter.com/journal/key/flin/48/2/html> [accessed 28.10.2023]

# Grammaticalization: First Definitions

1. process from a *lexical* to a *grammatical* expression (Meillet, 1912)
2. shift from “*less grammatical*” to “*more grammatical*” (Kuryłowicz, 1965)
3. change from *analytic* to *synthetic* constructions

## Adverb constructions in romance languages

Latin *clara mente* → Italian *chiaramente*, French *clairement*<sup>3</sup>

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<sup>3</sup>(Lehmann, 2015, p. 22)

# Grammaticalization: Renovation and Innovation

- renovation: new forms for old categories (e.g. new analytic (1a) and old synthetic (1b) perfect in French, passé composé and passé simple)

## (1) Perfect forms in romance languages

a. nous **avons** parlé

b. nous parlâ**mes**

- innovation: creation of new grammatical categories (e.g. progressives in English)

→ all grammatical categories and phenomena that we know today are a product of grammaticalization

# Grammaticalization: Phases

Where does grammaticalization start, and where does it end?

→ gradual change of state, open-ended process

LEVEL	discourse		syntax		morphology		morpho- phonemics	
TECHNIQUE	isolating	>	analytic	>	synthetic- agglutinating	>	synthetic- flexional	> zero
PHASE		↑		↑		↑		↑
	syntacticization		morphologization		demorphemicization		loss	
PROCESS	grammaticalization							

**Figure 1:** Lehmann (2015, p. 15)

# Grammaticalization: Problems (i)

- inflation of the concept: more research → more grammaticalization cases → wider and fuzzier concept
  - heterogeneity of definitions (*lexical* → *grammatical*, *less grammatical* → *more grammatical*)
  - definition add-on: emergence of new grammatical values and/or categories?
  - "we have arrived at a concept of grammaticalization that seems to include almost anything we see changing or emerging which is somehow associated with the realm of grammar, that is, ultimately, anything except lexical semantic change and sound change" (Mengden & Simon, 2014, pp. 354–355)
  - "the more inflation, the less value"?



## Grammaticalization: Problems (ii)

- If grammaticalization is defined by a set of non-necessary features, can we speak of an ...?
  - *epiphenomenon*: concomitant with other processes
  - *composite change*: several small-scale processes occurring in clusters
- is grammaticalization a *uni-* or *bidirectional* process? Is it *reversible*? Does *degrammaticalization* exist?
- chicken-egg-problem: grammaticalization defined by grammatical expressions, grammatical expressions as result of grammaticalization?

## Lehmann's parameters

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# Recap: Paradigmatic and Syntagmatic relations

	← SYNTAGMATISCH →			
↑ PARADIGMATISCH ↓	<i>Sabrina</i>	<i>glaubt</i>	<i>das</i>	<i>nicht.</i>
	<i>Herr Boll</i>	<i>bereute</i>	<i>die Aussage</i>	<i>doch.</i>
	<i>Sie</i>	<i>vollzog</i>	<i>die täglichen Anweisungen</i>	<i>aufs Wort.</i>

Figure 2: Paradigmatic and syntagmatic relations<sup>4</sup>

<sup>4</sup><https://grammis.ids-mannheim.de/progr@mm/5288> [accessed 30.10.2023]

# Lehmann's parameters

idea: autonomy and loss of autonomy of linguistic signs

→ measured in weight, variability, cohesion

PARAMETER	AXIS	
	PARADIGMATIC	SYNTAGMATIC
WEIGHT	integrity	structural scope
COHESION	paradigmaticity	bondedness
VARIABILITY	paradigmatic variability	syntagmatic variability

**Figure 3:** Lehmann (2015, p. 132)

# Lehmann's parameters: From weak to strong grammaticalization

PARAMETER	WEAK GRAMMATICALIZATION	PROCESS →	STRONG GRAMMATICALIZATION
INTEGRITY	bundle of semantic features; possibly polysyllabic	<u>attrition</u> →	few semantic features; oligo- or monosegmental
PARADIGMATI- CITY	item participates loosely in semantic field	<u>paradigmaticization</u> →	small, tightly integrated paradigm
PARADIGMATIC VARIABILITY	free choice of items according to communicative intentions	<u>obligatorification</u> →	choice systematically constrained, use largely obligatory
STRUCTURAL SCOPE	item relates to constituent of arbitrary complexity	<u>condensation</u> →	item modifies word or stem
BONDEDNESS	item is independently juxtaposed	<u>coalescence</u> →	item is affix or even phonological feature of carrier
SYNTAGMATIC VARIABILITY	item can be shifted around freely	<u>fixation</u> →	item occupies fixed slot

**Figure 4:** Lehmann (2015, p. 174): Correlation of grammaticalization parameters

# Lehmann's parameters: Hierarchization

How do Lehmann's parameters interact? How are they connected?

- Norde and Beijering (2014): clustering approach (main mechanisms, primitive changes, side effects)
- Wiemer (2014): prototypes and problems with hierarchization

# Hierarchization: Clustering

Syntactic variability	Degree of flexibility, number of syntactic slots
Syntactic autonomy	Degree of syntactic integration, cohesion, dependencies
Morphosyntactic properties	Definiteness, inflection, subcategorization features
Morphological compositionality	Discrete internal morpheme boundaries
Phonological substance	Number of phonemes, segmental features (e.g. full vs. reduced vowels)
Prosodic weight	Stress, sandhi effects
Semantic substance	Referential meaning
Semantic compositionality	Meaning as sum of composite parts
Subjectivity	Expression of speaker's belief or attitude
Intersubjectivity	Speaker-addressee interaction

**Figure 5:** Norde and Beijering (2014, p. 409): Parameters of the clustering approach (primitive changes)

		<i>gonna</i>	<i>ism</i>	<i>y'know</i>
MAIN MECHANISMS				
	Categorical reanalysis	MAJOR > MINOR; MINOR; bridging context	MAJOR > MINOR; MAJOR; no bridging context	MAJOR > MINOR; bridging context
	Semantic reinterpretation	REF > REL	REL > REF	REF > COMM
PRIMITIVE CHANGES				
Linguistic level	Parameter			
Syntax	Syntactic variability	–	+	+
	Syntactic autonomy	–	+	+
Morphology	Morphosyntactic properties	–	+	–
	Morphological compositionality	–	∅	–
Phonology & phonetics	Phonological substance	–	∅	–
	Prosodic weight	–	+	∅
Semantics	Semantic substance	–	+	–
	Semantic compositionality	–	∅	–
Discourse & pragmatics	Subjectivity	+	∅	+
	Intersubjectivity	∅	∅	+
SIDE EFFECTS				
	Paradigmaticization	☑	☐	☑
	Obligatorification	☑	☐	☐
	Condensation	☑	☑	☒
	Layering	☑	☑	☑
	<i>Typological generality</i>	☑	☑	☑

Norde and Beijering (2014, pp. 414–415): Examples of clustering



## **Primary vs. secondary grammaticalization**

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# Grammaticalization Levels<sup>5</sup>

## **Primary Grammaticalization**

shift from a major to a minor category, as well as a shift from referential to relational meaning

## **Secondary Grammaticalization**

a shift from a minor to a minor category, as well as a shift from relational to (other) relational meaning

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<sup>5</sup>(Norde & Beijering, 2014, p. 406)

## Secondary grammaticalization

Breban (2014): 5 interpretations of secondary grammaticalization

1. as morphophonological and morpho-syntactic change after primary, functional grammaticalization
2. second grammaticalization process in a grammaticalization chain
3. involves semantic specialization or widening of an earlier grammaticalized meaning
4. process whereby a grammatical construction as a whole (generalizing over all its uses) or a whole grammatical category becomes more grammatical
5. watered-down definition as any change from grammatical to grammatical

# **Grammaticalization vs. Subjectification and Pragmaticalization**

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## Subjectification

linguistic expression acquires meanings that convey the speaker's attitude or viewpoint → new meaning more subjective than original meaning

- (1) They *must* be married. 'deontic modal' (some external force requires them to) → 'epistemic modal' (it is obvious that they are)<sup>6</sup>

## Pragmaticalization

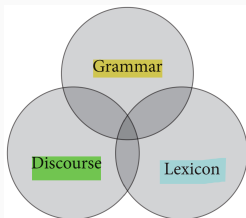
development of function words from words whose etymological origin lies in lexical (*I think, y'know*) or grammatical expressions (*now, so*)<sup>7</sup>

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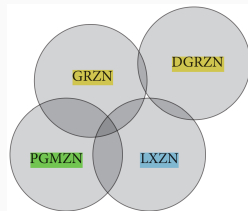
<sup>6</sup>(Winter-Froemel, 2014, p. 511)

<sup>7</sup>(Mengden & Simon, 2014, p. 356)

# Interfaces<sup>8</sup>



**Figure 7:** Synchronic Interfaces



**Figure 8:** Diachronic Interfaces

- GRZN-LXZN: the day *following* his intervention (*following* adjectival or prepositional)
- LXZN-DGRMZN: Too many *ifs* cloud nuclear future.
- GRZN-LXZN-PGMZN: discourse markers (*like, I think*)
- GRZN-PGMZN: modal particles (*denn*)

<sup>8</sup> All figures and examples on this slide taken from Norde and Beijering (2014, pp. 396–401)

# Grammaticalization vs. Pragmaticalization

Differences (Mengden & Simon, 2014, p. 356):

- in grammaticalization we observe scope decrease, while the development of discourse markers is said to show increased syntactic scope compared with their etymological origin

# **Grammaticalization and Construction Grammar**

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# Grammaticalization and Construction Grammar

- traditional, morpheme-based approach: regards history of specific morphemes
- recent, construction-grammar-based approach: regards linguistic phenomena in context, requires syntagmatic collocation with other elements

## Examples<sup>9</sup>

linguistic form	re-interpretation	construction / context
<i>have</i>	auxiliary	participle
<i>going to</i>	future-marker	infinitive
<i>during</i>	preposition	clause with dangling participle

<sup>9</sup>(Mengden & Simon, 2014, p. 358)

# Grammaticalization and Construction Morphology

- grammaticalization in construction morphology: not change in isolated element (word or affix), but the complex word as a whole (“construction”) and its relation with other constructions (Hüning & Booij, 2014)
- “constructionalization” as umbrella term for grammaticalization & lexicalization

- a. general schema for endocentric compounds  
 $< [[a]_{Xi} + [b]_{Yj}]_{Yk} \leftrightarrow [\text{kind of SEM}_j \text{ related to SEM}_i]_k >$
- b. schema for comparative (relative) adjectives  
 $< [[a]_{Ni} + [b]_{Aj}]_{Ak} \leftrightarrow [\text{as SEM}_j \text{ as SEM}_i / \text{very SEM}_j]_k >$   
*schneeweiß, wieselflink, stocksteif* . .
- c. schema for elative compounds with *stock*-  
 $< [[\text{stock}] + [b]_{Aj}]_{Ak} \leftrightarrow [\text{very SEM}_j]_k >$   
*stockalt, stockbesoffen, stockdunkel, stocktaub* . .
- d. schema for adjectives with *stock*- denoting a human trait or behavior  
 $< [[\text{stock}] + [b]_{Aj}]_{Ak} \leftrightarrow [\text{very/extremely/too SEM}_j // \text{SEM}_j \text{ to the core}]_k >$   
The pattern can be used productively; the resulting adjectives carry negative connotations.  
*stockkonservativ, stockkatholisch, stockreaktionär, stockdämlich* . .

**Figure 9:** Hüning and Booij (2014, p. 598)

## Conclusion & Outlook

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- inflation of grammaticalization studies
  - more sharpened notion needed, also to differentiate from other phenomena of language change (subjectification, pragmaticalization)
- rise of *ization*'s (grammaticalization, lexicalization, ...)
- Construction Grammar provides a broader perspective, well-suited for the description of grammaticalization processes
- outcome of the workshop: alternative ways of defining grammaticalization, "a few steps closer to a refined notion of grammaticalization"

## Discussion

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# Own Opinion

Pros	Cons
<ul style="list-style-type: none"><li>• large number of approaches presented and compared</li><li>• shed light on different problems in the theory of grammaticalization</li></ul>	<ul style="list-style-type: none"><li>• no "actual" outcomes</li><li>• highly theoretical, application missing</li></ul>

## Future Work

- maybe the peak of grammaticalization studies was reached in the 2010s, fewer publications nowadays
- other phenomena in the focus of research now?

**Thank you  
for your attention!**

# Discussion Questions

Let's take a look at the grammaticalization discussion from an NLP perspective:

- How can Lehmann's parameters be quantified/modelled in NLP?
- What conclusions can we draw from grammaticalization research for the implementation of diachronic LM's?
- Are these differentiations of importance to NLP at all?



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