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The prosody of the prefix *ge-* in (early) West Germanic

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Overview

Research question: Are prosodic words determined by syntactic structure or by rhythmic principles?

- The phrasing of prosodic words is determined by
  - morphological structure
  - rhythmic principles
- Evidence from the *ge*-prefix:
  - Corpus studies (Old Saxon, Old English & Old High German)
  - Production experiment in Modern German

Prosody-Syntax Interface

- Starting point: prosodic constituent structure reflects syntactic constituent structure to a large extent (a.o., Selkirk 1986, Nespor and Vogel 1986, Selkirk 2011)
- Match theory (Selkirk 2011) proposes that
  - each syntactic clause corresponds to an intonational phrase (ι)
  - each syntactic phrase corresponds to a phonological phrase (φ)
  - each syntactic word corresponds to a prosodic word (ω)
- But: evidence of extensive non-isomorphism between syntactic and prosodic structure (a.o., Jun (1993), Gee and Grosjean (1983), Cheng (1973), Ferreira (1993))
- Non-isomorphism especially with function words (a.o., Truckenbrodt (1999), Selkirk (1995))
- Assumption of an independent prosodic structure with several influencing factors – among them: syntactic structure (e.g., Shattuck-Hufnagel and Turk (1996), Beckmann (1996))

Rhythmic organisation of prosodic structure

Prosodic phrasing in Germanic languages:

- 'leftwards' oriented encliticisation of function words regardless of syntactic constituency
- supports independent prosodic structure, which can be influenced by, but is often independent of syntactic structure
- trochaic foot as the fundamental driving force, also across word boundaries (Abercrombie (1964), see also Cutler (1996))
- Is prosodic structure determined by rhythmic principles? (a.o., Sweet (1885), Sievers (1901), Lahiri and Plank (2010))

Prosodic words

Elusive definition – some assumptions:

a) Lexical words form prosodic words, functional words don't - except if they are placed at the initial or final position of an intonational phrase, are in focus, or are 2+syllabic (see discussion in Shattuck-Hufnagel and Turk (1996), Bögel (2021))

b) Possible acoustic indication: increased closure duration of stops in word-initial position (Cooper 1991)

c) Prosodic words can be larger or smaller than lexical words

d) Based on foot structure: "minimally a stressed foot [...] and maximally a single lexical word combined with any associated unstressed function words" (Wheeldon 2000)

The rhythmic phrasing of prosodic words

Unclear: Whether morphologically complete words can be prosodically ‘split’.

- Indicated in literature:

	Phonological	**Morphological**
Sweet (1904)	(I’m a) (freid)	[I’m] [afraid]
Eisenberg (2006)	(Frisch ge) (wagt ist)	[Frisch] [gewagt] [ist]
	(halb ge) (wonnen)	[halb] [gewonnen]

The rhythmic phrasing of prosodic words

morphosyntactic phrasing:	x́] [x x́ x]
prosodic phrasing:	x́ x)(x́ x)

Some evidence for rhythmic phrasing:

- Diachronic data: Old Saxon, Old English, and Old High German orthography
- Synchronic data: German experimental data

The *ge-* prefix in early West Germanic

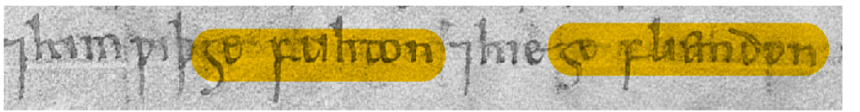
- Common across several word categories
- the common origin, Proto-Germanic **ga/gi*, is assumed to have marked perfectivity and resultativity in preverbal position a.o. (Streitberg 1891, van Kemenade & Los 2003)
- Pronounced [jə] in OS and OE and [gə] in OHG
- Vanished in Modern English (except for remnants in words like *alike, aware*) but remained in Modern German and Low German

Orthography in early West Germanic

Word division is less strict:

- Short words often run together
- Compounds are often divided into two parts
- Occasionally, the *ge-* prefix can be found attaching to previous words detaching from the following stem or both

Example from Parker/Winchester Chronicle: (Corp. Chris. MS 173, facsimile by Flower and Smith 1941)



... and him with gefuhton and hie gefliemdon ...

'... and fought with them and put them to flight...'

Are these prosodic reflexes?

Hardly any research on this topic - mentionings in, e.g., Nübling (1992), Frey (1988), Fleischer (2009), and Parkes (1992)

Historical reasoning:

- Greek and Roman tradition after the first century was the *scriptio continua*
- Written word was a record of the spoken word, texts were read out loud (*elocutio*)

“An early medieval text was always either a program for or a record of the spoken word” (Treitler 1984: 141)

Preparation for a declamation: finding the right spot to take a breath, and when to pause to indicate a sense unit

⇒ Not far-fetched to assume leftovers of these traditions in early West Germanic scripts

Corpus Study I: Old Saxon

Text used: The Heliand
(Cotton Caligula A. VII)

- Epic about the life of Christ
- Manuscript written in Winchester England, presumably by a Saxon scribe
- Composed in the 10th century

Method:

- Automatic search for *ge*-prefixed verbs and their preceding neighbors in transcription (modern word division)
- Manual search in the manuscript for orthographic varieties

Results

Four possible orthographic distributions of *ge-* sorted by previous word category (lexical or function word)

Division	Total	Prec. function word	Prec. lexical word
word *ge*-verb:	93 %	23.7 %	76.3 %
word-*ge* verb:	3.2 %	85.3 %	14.7 %
word-*ge*- verb:	2.6 %	66.6 %	33.3 %
word *ge* verb:	1.2 %	61.5 %	38.5 %

- If *ge-* deviates from the expected pattern, then preferably with a preceding function word.
- Majority of the preceding function words are
  - part of the verbal complex VC (45), e.g., preverbal negator, infinitival marker
  - the monosyllabic adverb so (12)

Results

- In the VC: variation possible: in 82 out of 127 cases *ge-* does not attach to the previous material
- Negation particle and infinitival marker: close to obligatory, only 3 of 49 cases are not attached

Corpus Study II: Old English

Text used: facsimile of the Anglo-Saxon Chronicles (Parker/Winchester chronicles) (Corp. Chris. MS 173, facsimile by Flower and Smith 1941)

- ‘History’ of England on 62 pages
- Written by a single scribe until 891 (then followed by others)
- Ends in 1070

Method:

- Automatic search for *ge*-prefixed verbs and their preceding neighbors in transcription (modern word division, non-tagged)
- Manual search in the facsimile for orthographic varieties

Results

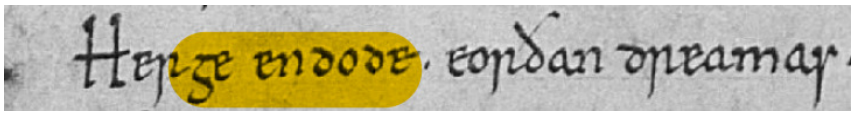
Four possible orthographic distributions of *ge-* in percent sorted by previous word category (lexical or function word)

Division	Total	Prec. function word	Prec. lexical word
word *ge*-verb:	55.8 %	33.4 %	64.6 %
word-*ge* verb:	10.4 %	87.5 % (37.5 % are ⊤)	12.5 %
word-*ge*- verb:	22.6 %	88.5 % (24.1 % are ⊤)	11.5 %
word *ge* verb:	11.2 %	41.8 %	55.8 %

- If *ge-* attaches to previous word, then preferably to a function word
- Majority of the preceding function words are
  - part of the verbal complex VC (46), e.g., auxiliaries
  - sentence-initial adverbs (29) like *here, there*, etc ...
- Rest are subject/object pronouns or stranded prepositions

Results

- In the VC: variation possible: 17 out of 46 cases *ge-* does not attach to the previous material.
- Sentence-initial adverb: close to obligatory, only 2 of 29 cases are not attached.



Her geendode eorTHan dreamas
‘In this year Edgar, King of the Angles, died.’

⇒ Cannot be explained via match, but typical Wackernagel position; often forming a trochaic foot

Corpus Study III: Old High German

Text used: De nuptiis Philologiae et Mercurii *Liberus Primus* by Martianus Capella (Codex Sangallensis 872)

- Translation from Latin to German by Notker III. on 84 pages
- Written by two scribes
- Dated to the 11th century

Method:

- Manual search in the manuscript for orthographic varieties

Results

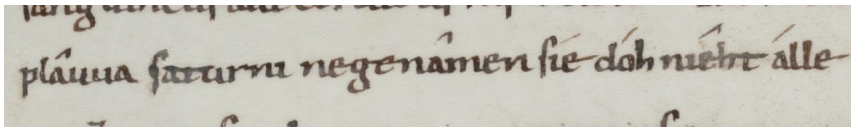
Four possible orthographic distributions of *ge-* in percent sorted by previous word category (lexical or function word)

Division	Total	Prec. function word	Prec. lexical word
word *ge*-verb:	92.6 %	38.4 %	60.4 %
word-*ge* verb:	0 %	0 %	0 %
word-*ge*- verb:	3.9 %	86 %	14 %
word *ge* verb:	3.3 %	50 %	50 %

- If *ge-* deviates from the expected pattern, then preferably with a preceding function word

Results

- *ge-* never detaches from the verbal stem
- Attachment of previous words limited to two items:
  - preverbal negator *ne*
  - infinitival marker *zu*



unde diu plauua saturni negenamen sie doh nieht alle
'And the blue Saturni did not take them all.'

⇒ weak monosyllabic function words in a VC
This pattern is consistent (only two exceptions)

Outlook

OHG uses accents to mark stressed syllables. They frequently extend over the *ge*-prefix
→ prosodic cue?

Overall Results

→ OE: fairly free, but almost obligatory with sentence-initial adverbs
→ OHG: attachment to preceding material very restricted
→ OS: 'intermediate' between OE & OHG: Detachment from verb stem possible
- Detachment from verbal stem possible; mostly with monosyllabic words
- Most consistently in the environments found in OHG

⇒ An overall tendency in early West Germanic manuscripts of monosyllabic function words triggering different orthographic distribution of the *ge-* prefix
⇒ Most regularly across all three languages after *ne*

The *ge-* prefix in Modern German

- occurs with several word categories
- with a verb: productively used to form the participle
- unstressed
- pronounced as a stop [g] (but regional differences)

Production Experiment in Modern German

Design

- negation particles
  - monosyllabic *nie* ‘never’
  - disyllabic *nirgends* ‘nowhere’
- auxiliary
  - monosyllabic *bin* ‘be.1SG’
  - disyllabic *haben* ‘have.1/3PL’
- object nouns with 1-3 syllables with different stress patterns preceded by a trochaic adjective

Hypothesis: If *ge-* is phased into a trochaic foot, it is more likely to do so

a) with material within the same phonological phrase

b) with material that ends in a degenerated trochaic foot (i.e., a stressed syllable)

Production Experiment in Modern German

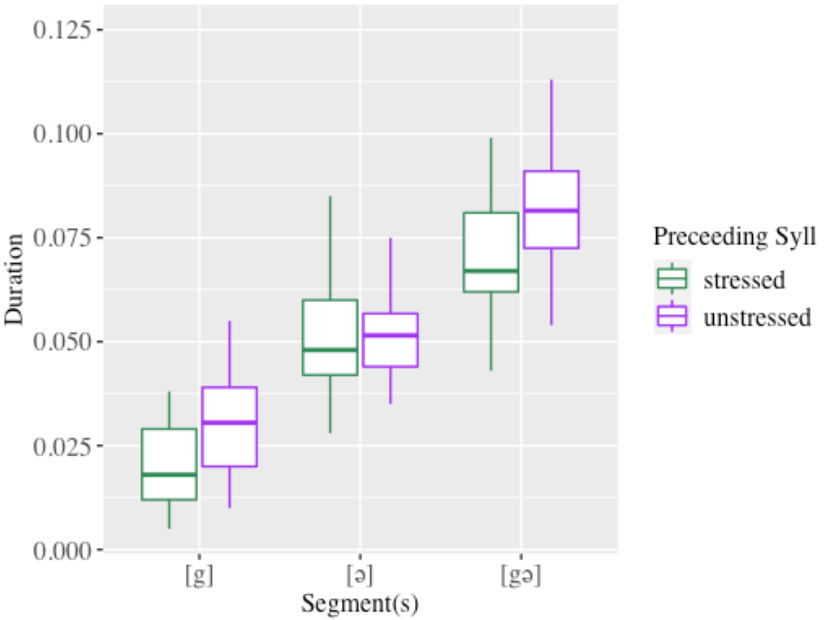
Method

- 10 Native German speakers participated in the experiment (average age was 26.2, 4 males)
- 684 recordings (XXX object nouns, XXX negation particles, XXX auxiliaries)

Measurements

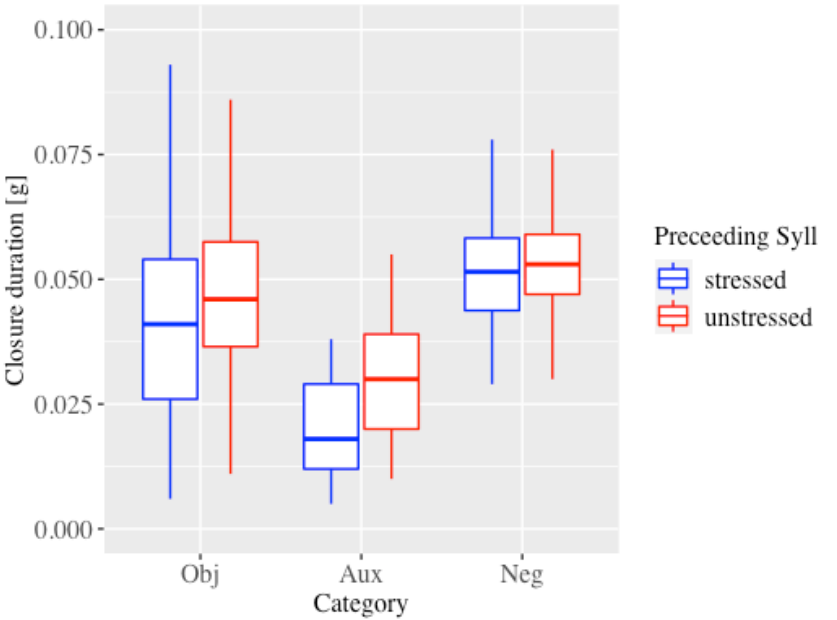
- closure duration of [g]
- duration of [ə]
- duration of [g]+[ə]

Results



Duration of [g], [ə], and [gə] following auxiliaries

Results



Closure duration of [g] following different types of word categories

Discussion

- Objects: the prosodic phrase boundary after the object-NP seems to prevent the *ge-* prefix from incorporating prosodically with the previous material
- Auxiliaries: no larger prosodic boundary after the auxiliary; auxiliary and verb form a phonological phrase
  - monosyllabic: ((,bin ge) (’verb)) ω
  - longer closure duration after disyllabic *haben*

$\Rightarrow$ supports historical data

- Negation: longest closure duration overall $\Rightarrow$ contrasts historical data
  - *ne* is a clitic while *nicht/ nirgends* form separate prosodic words
  - focus accent suggests strong boundary after negation makers (Féry & Kügler 2008)

Summary

- Diachronic & synchronic data indicate that the formation of a trochaic foot can occur across word boundaries → morphologically complete words can prosodically ‘split’
- The process most likely occurs within the domain of a prosodic phrase

References