DM and Nano meet Germanic iterative (*)*r*

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DM meets Nano II
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Introduction

Shared issues between DM & Nano:

- **Roots/root size**: What kind of syntactic animal is a "root" and do roots come in different sizes? Do roots have meaning?
- How do **root-adjacent/categorizing morphemes** interact with (various classes of) roots?
  - Theme vowels & conjugational class markers (Oltra-Massuet 1999, Oltra-Massuet & Arregi 2005; Spyropoulos et al. 2015; Panagiotidis et al. 2017; Grestenberger 2022; Simonović & Mišmaš 2023; Calabrese & Petrosino 2023; Kovačević et al. 2024; Cortiula 2023; Vanden Wyngaerd 2026)
  - Categorizing/derivational morphemes (de Belder 2011; Lowenstamm 2014; Grestenberger 2023)
  - (verbal) templates (Doron 2003; Alexiadou & Doron 2012; Kastner 2020)
- **Typology of root-adjacent elements?** Roots, affixes, adjuncts, (semi-)functional heads?
  - Cavirani-Pots 2020; Gouskova & Bobaljik 2022; Cavirani-Pots et al. 2023
- Are they "**ornamental**"/required by PF/the morphological component or do they introduce (abstract) **meaning**?
  - BECOME, DO, CAUSE verbalizers (Folli & Harley 2004, 2007; Harley 2013 etc.)
  - DIMENSION, DIRECTION, POINT, etc. in adjectivizers (Vanden Wyngaerd et al. 2020; Caha et al. 2024; Vanden Wyngaerd et al. 2025)

Today's goals

- present a case study from Germanic from two different angles and
- discuss the division of labor between roots & root-adjacent categorizers from a DM & Nano perspective using the Germanic (iterative?) suffix(es) (*)*(V)r*
  - Laura: adjectival/verbal uses of (*)*r* in the older Germanic languages & diachrony
  - Karen: adjectival/verbal uses of *-er-* in Dutch
- How do DM & Nano handle "categorial flexibility"?
- Which predictions emerge from the different accounts?
- Discussion/summary

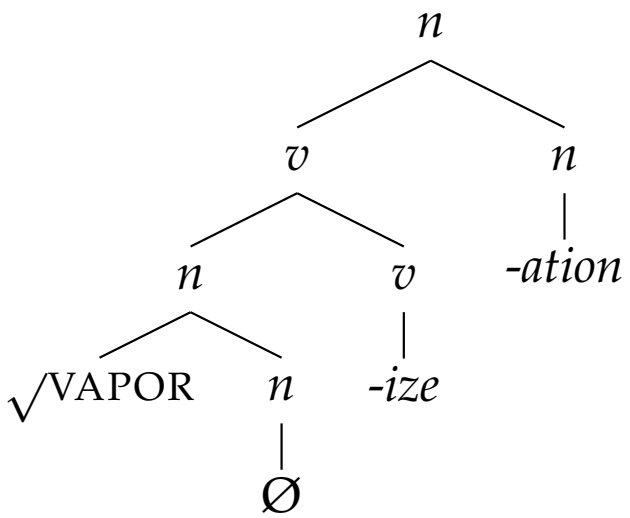
Part I (aka Laura's DM part): German(ic) (*)*r*-"iteratives"

(based on joint work with Martina Werner, Paige Anderson & Dorothea Sichrovsky)

Background: Categorizers vs. derivational affixes in DM

- Categorizers turn acategorial roots into elements that can be manipulated by the syntax
  - How many are there (*v*, *n*, *a* ...?); what features (or "flavors") can they carry?
- Categorizers can be covert/"zero"
- Roots are always "the same size", even in accounts that assume a basic root ontology (e.g., THING, EVENT, STATE)
  - Harley 2005, Anagnostopoulou & Samioti 2014, Alexiadou & Lohndal 2017 ...

(1) Categorizers vs. "derivational affixes"



→ "low" vs. "high" attachment

Categorization & meaning: verbalizers in DM

- verbal stem-forming morphology = verbalizer v with different features or "flavors"
  - v_{CAUSE}: causatives
  - v_{BECOME}: anticausatives/inchoatives
  - $v_{\text{BE/STATE}}$: states
  - v_{DO} or v_{ACT}: unergative activity verbs
  - ... (no established typology of v-heads), cf. Folli & Harley 2004, 2007; Harley 2005, 2009, 2013; Alexiadou & Lohndal 2017; Panagiotidis et al. 2017, etc.
- Argument/event structure alternations result from the interaction of v and Voice
  - Alexiadou & Anagnostopoulou 2004; Alexiadou & Doron 2012; Alexiadou 2013; Harley 2013, 2017; Alexiadou et al. 2015; Schäfer 2017, etc.

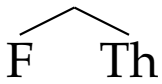
Categorization & form

Oltra-Massuet (1999); Oltra-Massuet & Arregi (2005); Calabrese (2023): the vocalic "'themes" of, e.g., Spanish conjugational classes do not spell out functional heads such as *v* but *adjoin* to them postsyntactically, (2).

(2) Morphological well-formedness condition on Spanish nouns & verbs (Oltra-Massuet & Arregi 2005: 46)

a. At MS, all syntactic functional heads require a theme position.

b. F → F



(3) Spanish complex verbalizers (Fábregas 2017: 7)

a. *-iz-a-* (*autor-iz-a-r* 'to authorize')

b. *-ific-a-* (*clas-ific-a-r* 'to classify')

c. *-e-a-* (*tont-e-a-r* 'to act silly')

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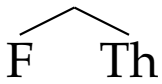

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→ categorizing elements can be heads or adjuncts

Goal today

The first case study approaches verbalizers such as *-(e)r-* from a *diachronic* perspective — where do categorizers come from and how do they develop?

- Core claim: new categorizers arise through unidirectional reanalysis of root-adjacent material (Grestenberger 2023)
- This reanalysis leads to predictable morphosemantic functions of categorizing morphology
  - ... at least initially, but further diachronic reanalysis is always possible.

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→ Basically, the idea is that if we understand what these elements were "five minutes ago", then that can help us understand what they are now.

- ... and how the functional "workload" is distributed between root and categorizer, a core concern of both Nano & DM.

Case study: *-(e)r-* in PDG

Verbalizing *-(e)r-* appears in three major subclasses of verbs in PDG (present-day German):

(4) a. Deverbal/root-based:
   (i) *flatt**er**-n* 'to flutter'
   (ii) *flack**er**-n* 'flicker'
   (iii) *folg-**er**-n* 'to infer, deduce (*folg-en* 'to follow')
   (iv) *steig-**er**-n* 'to increase' (*steig-en* 'to rise, increase')

b. Denominal to substantives with (old or synchronic) plurals in *-er*:
   (i) *ver-gött-**er**-n* 'to treat as a god' (*Gott*, pl. *Gött-er*)
   (ii) *blätt-**er**-n* 'to leaf through' (*Blatt* 'leaf, page', pl. *Blätt-er*)

c. Deadjectival to comparatives and positives in *-er*:
   (i) *mild-**er**-n* 'to make mild' (*mild*, comp. *mild-er*)
   (ii) *ver-größ-**er**-n* 'to enlargen' (*groß*, comp. *größ-er* 'large, big')
   (iii) *säub**er**-n* 'to clean' (*sauber* 'clean')

-(e)r- in PDG

- Focus today = class I, where -(e)r- seems to act as an (iterative) *verbalizer*
  - E.g., Wilmanns 1895: 93; Henzen 1957: 224; Meid 1967: 264; Birkhan 1985: 184
- While the -(e)r- of classes II and III is arguably contained in the derivational base
- Cognates for this class can be found at least for North-West Germanic (e.g., OHG *flogarōn*, ON *fløgra* 'fly around, flutter')
- Diachrony & origin: The handbooks generally propose that positive adjectives in Gmc. *-*ar*- (+ some comparative forms) were resegmented in the context of verbal derivation
  - e.g., OHG *wachar* 'awake':
    [[*wachar*]$_{A}$-*ōn*]$_{V}$ 'to be(come) awake, vigilant' → [[*wach*]$_{\sqrt{}}$-*arōn*]$_{V}$

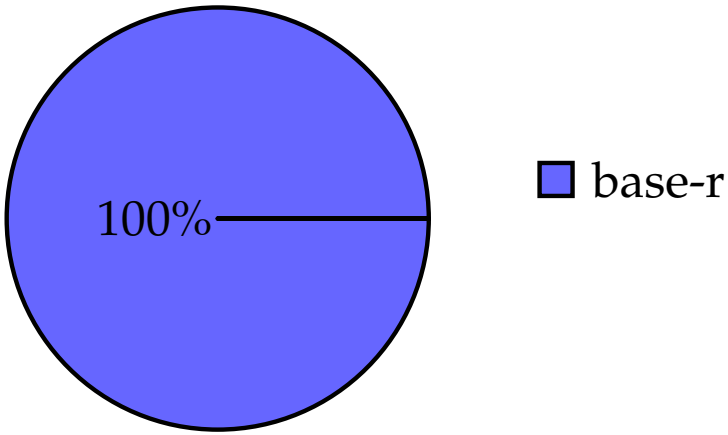
Problems

- Deadjectival verbs are cross-linguistically associated with CoS ("causative alternation") verbs/degree achievements, not with (deverbal?) iteratives
  - PDG *sauber* 'clean' →: *säuber-n* 'to clean'
  - Engl. *flat*: *to flatt-en*
- Why would the reanalysis of adjectival/comparative morphology give rise to *iterative* Aktionsart?
- Can we track the development of this Aktionsart in the transmitted history of the older Germanic languages?

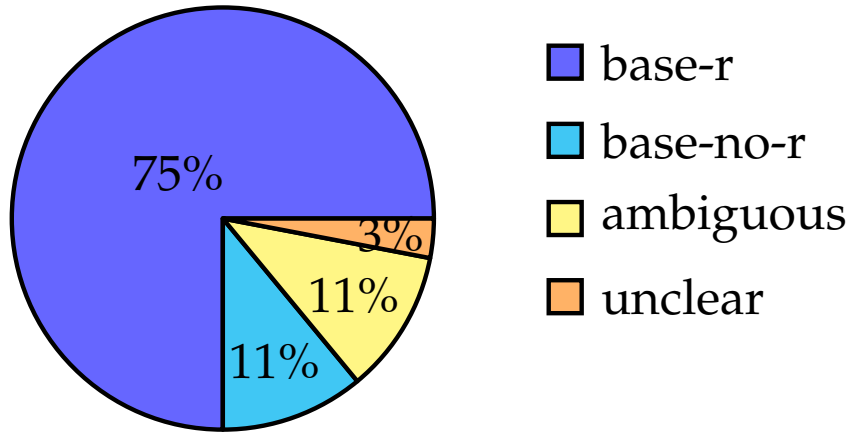
Data & Methods

- Collection of derived verbs containing *-r-* in Gothic, Old High German (OHG), Old English (OE), Old Norse (ON)
  - + preliminary work on Old Saxon (OS) & Old Frisian (OFr)
  - Exclusion of *primary verbs* with roots ending in *-r*, e.g., Go., OHG, OE *faran*, ON *fara* 'move, drive' < 1. **per* 'cross' (LIV^2: 472)
- All derived verbs containing an *-r-* before the ending, whether from a base in *-r* or as part of the suffix, were collected in the database, e.g.:
  - OE *beterian* 'improve' < *betre* 'better' (base-r)
  - OE *scimrian* 'to glitter' < *scīma* 'beam, gleam' (base no-r)
- Corpora/sources: (Etymological) dictionaries, text archives, annotated corpora
  - Kroonen 2013 (Gmc.); ANEW (ON); EWA, Bergmann 1991, Pfeifer 1993 (OHG); Bosworth–Toller, DOE (OE); Wulfila project (Go.), etc.
  - For OHG: cross-checked through compilation of OHG *r*-adjectives and associated verbs based on Heidermanns (1993) & EWA
- Categories/entry: Meaning, base, base-r (y/n), base-meaning, base-cat; (...)
  - Preliminary classification: Aktionsart (state, activity, achievement, accomplishment), transitivity, cognates, ...

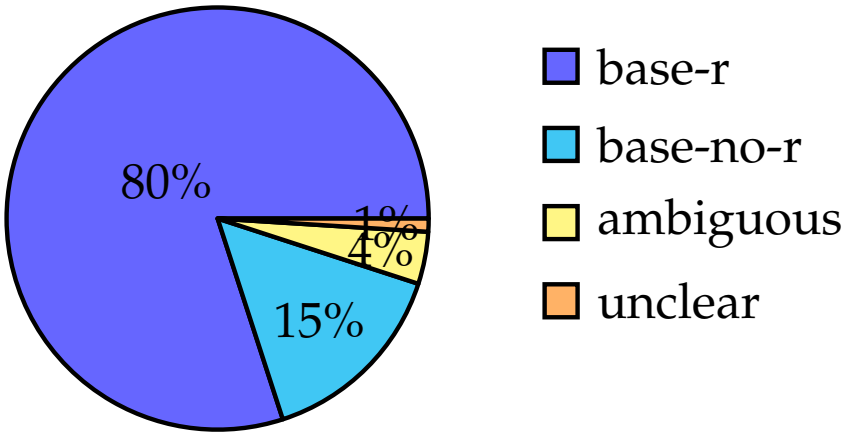
Results: base-r (y/n)



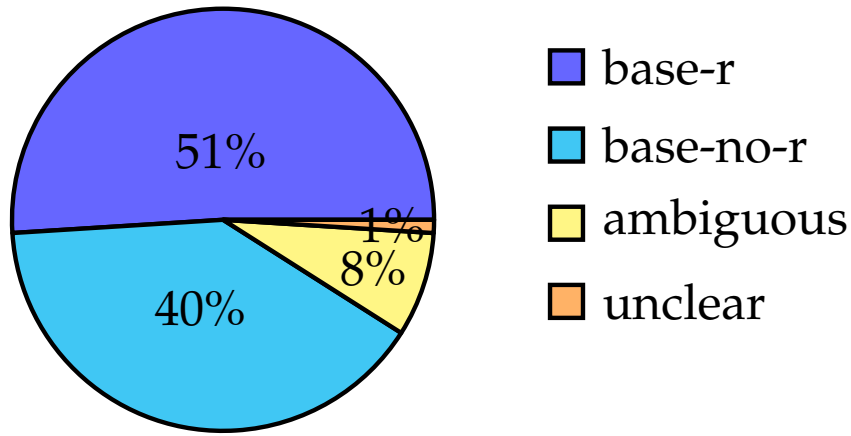
(a) Gothic *r*-verbs (n = 14)



(b) OHG *r*-verbs (n = 90)

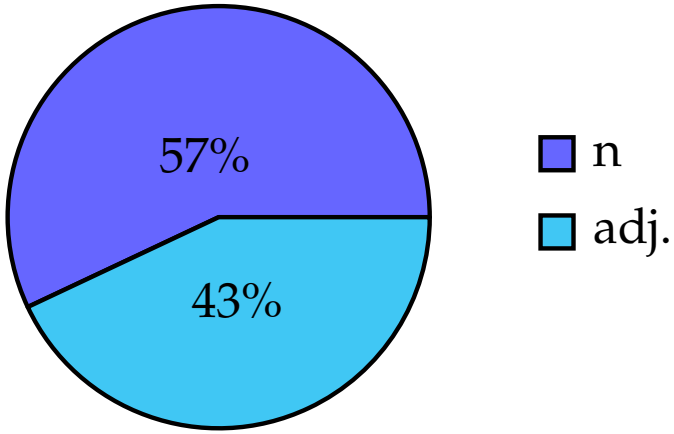


(c) OE *r*-verbs (n = 69)



(d) ON *r*-verbs (n = 80)

Results: a closer look at base-r (y)



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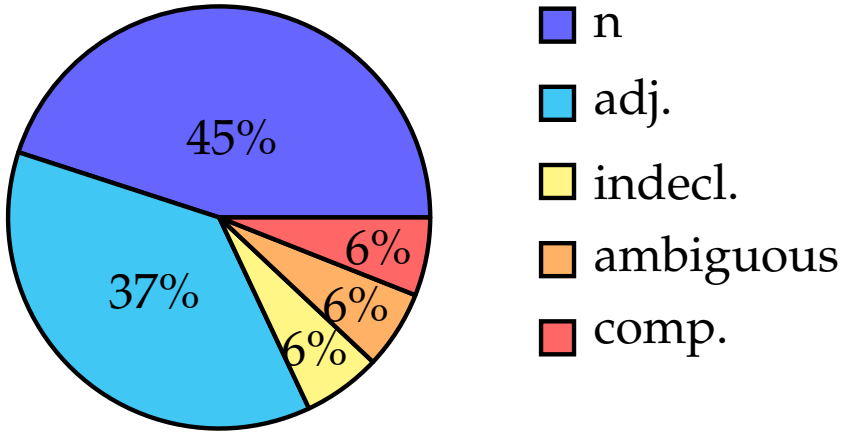
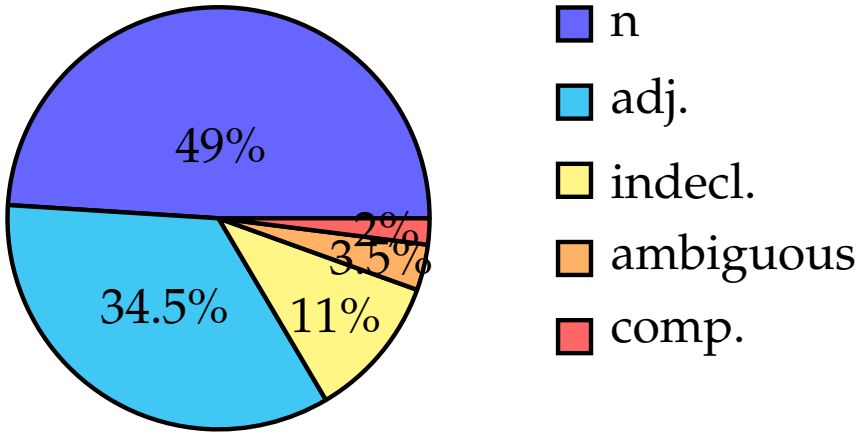
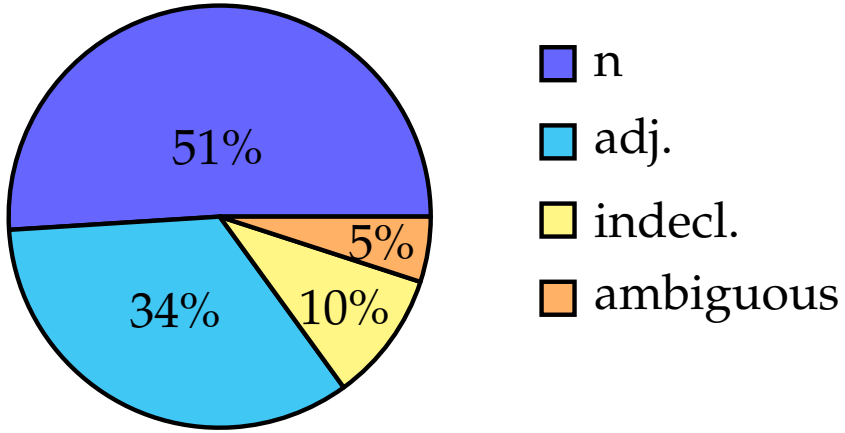


(b) OHG: base-r (n = 67)

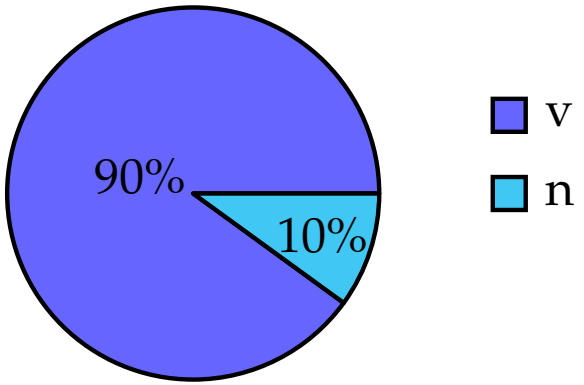


(c) OE: base-r (n = 55)

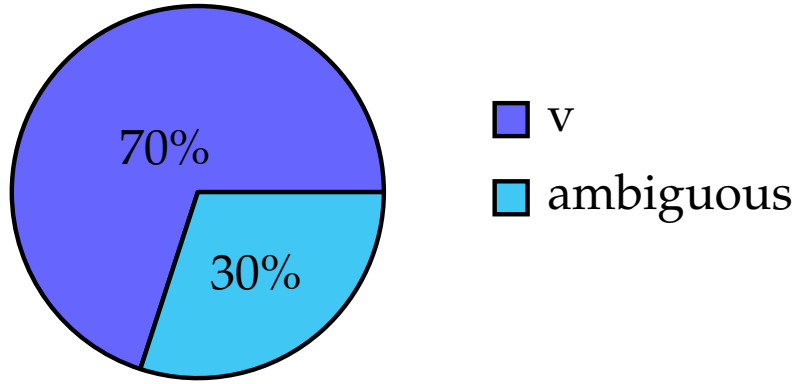


(d) ON: base-r (n = 41)

Results: a closer look at base-r (n)



(a) OHG: base-no-r (n = 10)



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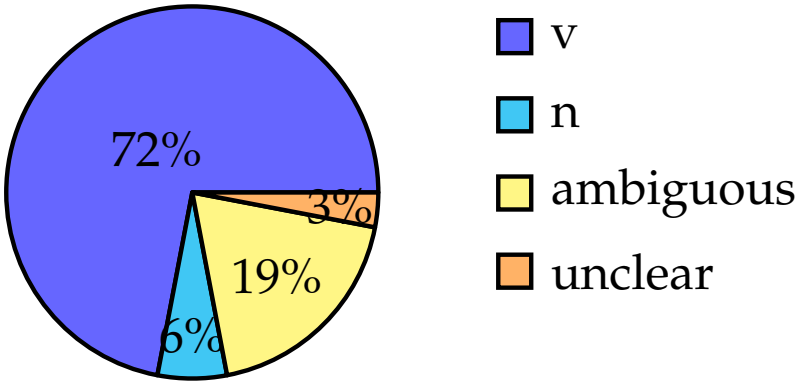


(c) ON: base-no-r (n = 32)

Results: Aktionsart

Essentially, if r = part of the base, the derived verb is denominal or deadjectival, if $r \neq$ part of the base, the derived verb is deverbal.

Results: Aktionsart

Essentially, if *r* = part of the base, the derived verb is denominal or deadjectival, if *r* ≠ part of the base, the derived verb is deverbal.

(Preliminary) generalizations w.r.t. Aktionsart:

- Base = adj.: states ('be x'), adj./comp.: degree achievements/COS verbs ('become x', 'make x')
- Base = n: activities ('do x', e.g., OHG *last**(a)r**-ōn* 'to slander, talk smack' : *lastar* 'offense'), accomplishments (e.g., OHG *zimb**(e)r**-en* 'to build' : *zimbar* 'building material'), cf. Harley (1999, 2005)
  - Some denominal activity verbs are close to iteratives in terms of Aktionsart → uniform analysis for these and the (de)verbal iteratives/intensives? (Weidhaas & Schmid 2015; Cavirani-Pots et al. 2023; Cavirani-Pots & Van Craenenbroeck 2026)
- Base = v: activities/iteratives (e.g., OHG *flog**ar**ōn* 'fly around, flutter', *gang**ar**ōn* 'wander around', *sweb**ar**ōn* 'float, swim')

Summary of results

- Denominal *r*-verbs are mostly accomplishments, deadjectival ones are degree achievements & states
- ... and therefore a subclass of denominal & deadjectival verb formation more generally – these just happen to be from stems that end in *-r*
- Deverbal *r*-verbs are mostly activities, the *-r* is not part of the base → activity-forming verbalizer with iterative Aktionsart?

Analysis: getting adjectival morphology into the *v*-domain

- Starting point: *-(e)r-* is not an inherited verbalizer, it must have become reanalyzed as one in the history of (proto-)NW Germanic
  - No such verbalizer reconstructed for PIE/PGmc.
  - Gothic doesn't have it
- Reasonable to assume that this happened in the context of cross-categorial derivation → denominal/deadjectival verbs (Grestenberger 2022, 2023)
- Deadjectival verbs are the better candidates than denominal ones because:
  - Gmc. **-ra-/*-ri-; *-rja-* are adjectival rather than nominal stem-forming suffixes
  - No uniform function associated with nominal (*)*-(a)r*
  - NB *agent*-noun forming **-(a)ri* (borrowed from Lat. *-ārius*) became productive only later and was crucially only *denominal* at this stage (Wilmanns 1895: 284–5)

Types of *r*-adjectives in Germanic

- Gmc. **-ra-* (< **-ro-*; & variants): inherited primary adjective-forming suffix
- Two types:

1. From PC roots
   - **dap-**ra**-* 'heavy'
   - **haid-**ra**-* 'clear'
   - **hai-**ra**-* 'grey'
   - **mag-**ra**-* 'meager'
   - etc.
2. "verbal adjectives" from eventive/non-PC roots
   - **bit-**ra**-* 'biting; bitter' : **beit-a-* 'bite'
   - **klib-**ra**-* 'sticky : **kleib-a-* 'stick'
   - **slip-**ra**-* 'slippery' : **sleip-a-* 'slip'
   - **wak-**ra**-* 'awake, aware' : **wak(na)-* 'wake up'
   - **wit-**ri**-* 'knowing, knowledgeable' : **wait-* 'know'
   - **skei-**ri**-* 'shining' : **skei-* 'shine'
   - etc.

r-adjectives & deadjectival verbs

Verbs derived from type 1 = degree achievements & statives, e.g.:

(5) Deadjectival *r*-verbs in OHG

Statives & fientives			
(h)lūttar-ēn	be bright, clear	*lūt(t)ar*, *hlūt(t)ar*	bright, clear
finst(a)r-ēn	become dark	*finstar*, *finstir*, *finster*	dark
timber-ēn	become murky	*timber*	somber, murky
Factitives			
bittar-en	make bitter	*bittar*	bitter
(gi)lūttir-en, *liut(e)r-en*	clear, make bright	*lūt(t)ar*, *hlūt(t)ar*	bright, clear
heitar-en	be/make cheerful	*heitar*	clear, cheerful
magar-en	make thin	*magar*	meager, thin
(ir-)munt(a)r-en	make alert	*muntar*	awake, alert
sūbir-en, *sūb(e)r-en*, *sūbar-ōn*	make clean	*sūber*, *sūb(i)ri*	clean

Deadjectival verbs: Morphosemantics

- Expected, since verbs derived from gradable adjectives (property concepts, PCs) are generally degree achievement verbs cross-linguistically (causative alternation/"factitive-fientive alternation"; statives)
  - Hay et al. 1999; Kearns 2007; Kennedy & Levin 2008; Bobaljik 2012; Beavers & Koontz-Garboden 2020; Vanden Wyngaerd et al. 2020, 2025; Fábregas 2023; Vyshnevska 2025, a.m.o.
- The patient undergoes a change of state (CoS) between the degree to which a property P (e.g., *wide*) holds at the beginning of the event and the degree to which it holds at the end

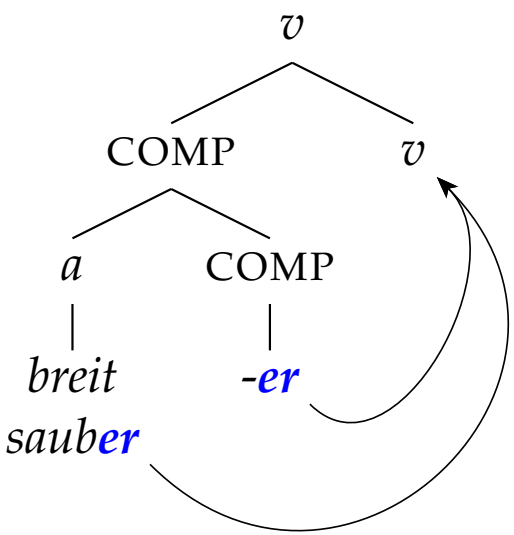
(6) a. They widen-ed the road
b. The road widen-ed

- Degree achievements vary w.r.t. telicity: *atelic* if derived from adjectives that lack a "salient reference value" (Kearns 2007; Fábregas 2023)
- The transition between/iteration of subevents in degree achievements can give rise to an activity/"iterative" reading
  - Kearns 2007; Bobaljik 2012; Beavers & Koontz-Garboden 2020; Fábregas 2023

Deadjectival verbs: Morphosyntax

In that case, a straightforward reanalysis of adjectival *-(e)r* would give us verbal *-(e)r* in deadjectival degree achievement verbs:

(7) Reanalysis of positive/comparative *-(a/e)r* as verbalizer



- Bobaljik (2012): deadjectival degree achievements are based on the comparative, not the positive (e.g., *to worsen*, *to better*)
- But the comparative morpheme isn't always overt – because the verbalizer expresses comparison/DEG?

Deadjectival verbs: Problems

Why (7) is nevertheless probably not how the "iterative" class arose:

- We would expect the resultant verbalizer to derive (factitive/fientive) CoS verbs, cf. the reanalysis of adj. *-ig* → factitive *-ig-* in the history of German:
  - MHG *rein-**ec*** 'clean' : *rein-**eg**-en* 'to clean'
    OHG, MHG *(h)reini*, *rein(e)* : *(h)rein-en* 'to clean'
  - OHG, MHG sat 'sated, full' : x, x = MHG *set(t)-**ig**-en* 'make full, sated' (older *set(t)-en*, *sat(t)-en*))
- If adj. *-(e)r-* had undergone the same reanalysis, we would expect degree achievement verbs, not (exclusively) atelic iteratives
  - Cf. *ver-breit-**er**-n* 'make broad(er)' but *aus-breit-en* 'spread out', *ver-breit-en* 'spread' (*breit* 'broad'); OHG factitives from non-suppletive comparatives, e.g., *līhter-ōn*, *liehter-ōn* 'enlighten, make lighter'

Iteratives

The iterative class is thus markedly different from the deadjectival degree achievement class in terms of its

1. syntax (telic/atelic vs. always atelic)
2. semantics (degree/scale vs. iteration of event)
3. derivational base (adj./"adjectival root" vs. verb/eventive root).

(8) OHG iteratives/"pluractionals" in *-Vr-*

Iterative		**Base**	
*flog-**ar**-ōn*	fly around, flutter	*fliog-an*	fly, float, glide
*gang-**ar**-ōn*	walk around, wander	*gang-an*	go, walk
*irscab-**ar**-ōn*	scrape together, snatch	*(ir)scab-an*	scrape, scratch
*sweb-**ar**-ōn*	float, drift	*sweb-ōn*	float, drift
*uob-**er**-ōn*	practise, peruse	*uob-en*	practice, do
*wimm-**er**-en*	swarm, teem with	*wi(u)m(m)-en*	swarm, teem with

Background: iteratives

- Event-internal pluractionals: event consists of a plurality of subevents
  - E.g., *flutter*, *nibble*, *hop*, *waver*, *knock*, *jump* ...
- Iteratives/pluractionals are (atelic) activity verbs, not (telic) achievements/CoS verbs
  - Dressler 1968; Cusic 1981; Wood 2007; Tovena & Kihm 2008; Tovena 2010; Greenberg 2010; Grestenberger & Kallulli 2019, etc.
- Morphosyntax: iterative as event modifier, e.g., $\sqrt{\text{ACTION}}$ that adjoins to *v*P (Kastner 2020)

Proposal: *r*-adjectives & iterativity

- **Proposal**: while deadjectival verbs from gradable/type 1 adjectives gave rise to degree achievements, deadjectival verbs from type 2 adjectives ("verbal adjectives") gave rise to *r*-iteratives
- Cf. inflectional difference in OHG: weak cl. I (*-jan*) factitives vs. weak cl. II (*-ōn*) iteratives

→ Starting point for the reanalysis would be *r*-verbs classified as ambiguous between base-r & base no-r in our sample

Proposal: *r*-adjectives & iterativity

(9) Verbs derived from type 2/deverbal iteratives (base a;v)

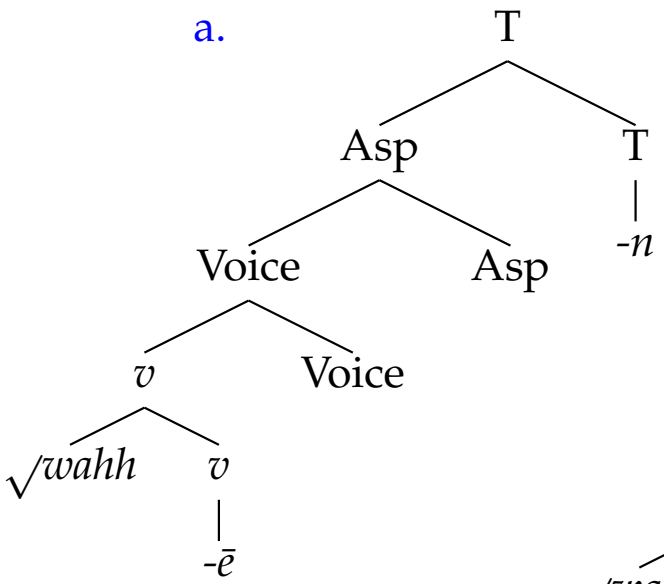
OHG					
***r*-iterative**		***r*-adj.**		**primary (strong) verb**	
*wahh**ar**-ōn*	be alert	*wahh**ar**, wach**ar***	alert, vigilant	*wach-ēn*	be awake, vigilant
*weig**ar**-ōn*	be obstinate, refuse	*weig**ar***	obstinate, combative	*wīg-an*	oppose, fight
*flog**ar**-ōn, flag**ar**-ōn*	flutter, flicker	**flak**ra**-*, OE *flac**or***	flickering	**flakk/g-ōn*, ME *flakken*	flutter, flicker
*ir-lung**ar**-ōn*	wander around	*lung**ar***	capable	*gi-lingan*	suceed
OE					
***r*-iterative**		***r*-adj.**		**primary (strong) verb**	
*stam**(e)r**-ian*	stammer	*stam**or***	stammering	**stimm-an*, MHG *stamen*	stop, falter
*slid**r**-ian*	slip, slither	*slid**or***	slippery	*slidan*	slide
*sic**er**-ian*	trickle, sink down	**sig**ra**-*, MHG *seig**er***	trickling; shale	*seon*, OHG *sīhan*	ooze, trickle; filter

Reanalysis: *r*-adjectives & iterativity

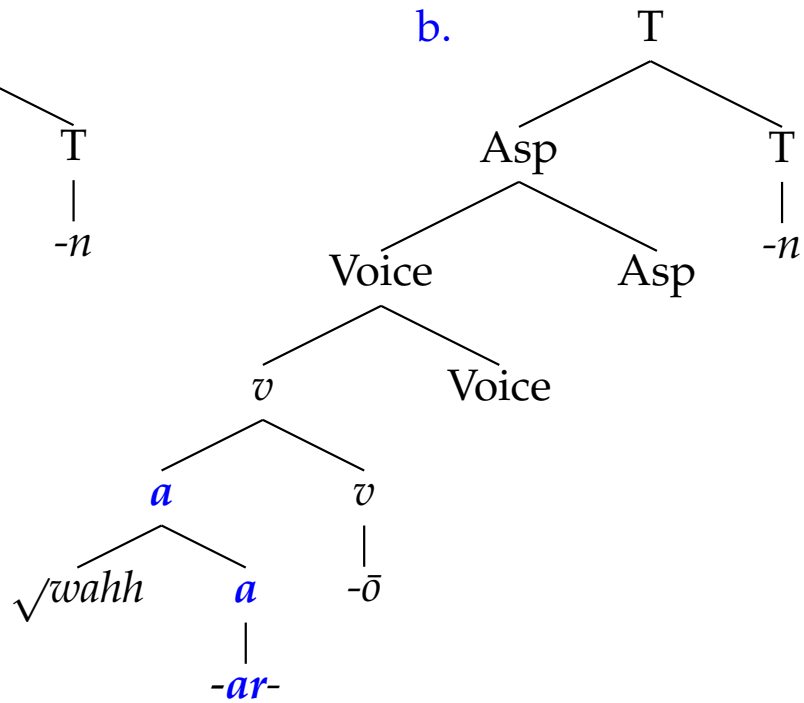
- In deadjectival verbs from type 2 adjectives, *-(a)r-* was reanalyzed as root modifier and then as verbalizer
- Presumably because they were no longer seen as derived from synchronic *r*-adjectives such as those in (9).
- Hence new base = root or primary strong stem ± "root modifier", cf. (10).

(10) Strong verb *wahhēn* (a.) vs. deadjectival *(a)r*-verb *wahharōn* (b.)

a.



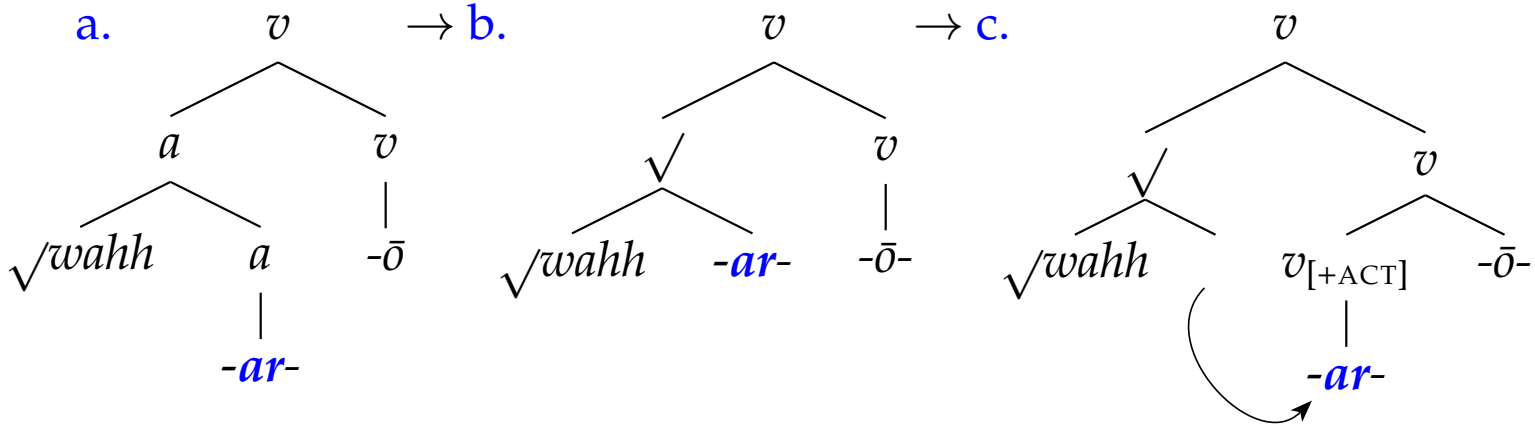
b.



Reanalysis: *r*-adjectives & iterativity

- In deadjectival verbs from type 2 adjectives, *-(a)r-* was reanalyzed as root modifier and then as verbalizer
- Assuming that it is a head and not a ($\sqrt{}$/*v*P-)modifier, since it determines inflectional class
  - E.g., Gouskova & Bobaljik (2022)

(11) Reanalysis of *-(a)r-* as a $\sqrt{}$-modifier > *v* head



- (11c): recall Span. complex verbalizers *-iz-a-*, *-ific-a-*, etc.

Reanalysis: Morphosemantics

Origin of the iterative reading?

- Some type 2 adjectives have a dispositional reading: *wahhar* 'vigilant'; *lungar* 'prone to succeed', *weigar* 'prone to fight, combative'
- ≈ P['tendency-to']/"agentive quale" (Fábregas 2020) → reanalyzed as agentive/activity *v*?

→ Crucially, type 2 adjectives are built from *eventive* roots and thus differ from adjectives that lexicalize primary *states* (/PCs).

- Combination of root + categorizer results in specific "flavor" of the reanalyzed element

Part II (aka Karen's Nano part): Dutch *-er-* in the verbal and adjectival domain

Starting point

- Grestenberger et al. (To appear): verbal iterative *-er* in Germanic finds its origin in the adjectivizing proto-Germanic *-r* that combines with "eventive roots"
- Goal of this part: provide support from Dutch, which has:
  - adjectival *-er-* formations that have iterative meanings
  - verbal *-er-* iteration patterns.

Dutch verbal iterative *-er*

klak(k)-(en)	make one clack	klakk-er-(en)	make a repeated clacking sound
knap(p)-(en)	crack	knapp-er-(en)	crack repeatedly

Dutch verbal iterative *-er*

-er verb	Meaning (EN)	Simplex	Meaning (EN)	Base class
I. Iterative/frequentative formations				
glibberen	slip repeatedly on a slippery surface	*glippen*	slip on a slippery surface	Semelfactive
kladderen	scribble repeatedly; paint badly	*kladden*	scribble, smear	Activity
klakkeren	make a repeated clacking sound	*klakken*	make a clacking sound	Semelfactive
klapperen	make a repeated clapping sound	*klappen*	clap; chatter	Semelfactive
klepperen	make a repeated clattering sound	*kleppen*	make a klep sound	Semelfactive
knapperen	crack repeatedly	*knappen*	make a cracking sound	Achievement/Semelfactive
knipperen	blink repeatedly	*knippen*	snip	Semelfactive
snotteren	sniff repeatedly	*snuiten*	blow one's nose	Semelfactive
spetteren	splash repeatedly	*spatten/spetten*	splash	Semelfactive
sputteren	sputter repeatedly	*spuiten*	squirt, spray	Semelfactive
stotteren	stutter	*stoten*	bump, knock	Semelfactive
stuiteren	bounce repeatedly	*stuiten*	bounce	Semelfactive/Achievement
toeteren	honk repeatedly	*toeten*	honk	Semelfactive
wapperen	flap, flutter	*wappen/wabben*	slap	Semelfactive
wipperen	bounce repeatedly	*wippen*	bounce	Semelfactive
II. Not clearly iterative				
glimmeren	sparkle, shimmer	*glimmen*	glow without a flame	State
glinsteren	emit a shimmering light	*glimmen*	glow without a flame	State
kieperen	tumble, fall	*kiepen/kippen*	tip over, overturn	Achievement
verpletteren	crush completely	*(ver)pletten*	flatten, crush	Accomplishment
waaieren	fan out	*waaien*	blow	Activity
III. Idiomatic formations				
kneuteren	grumble; mope; chat cozily	*kneuten*	grumble	Activity
peuteren	pick or pry repeatedly	*poten*	plant; stick into the ground	Activity/Accomplishment

(selected and modified after Cavirani-Pots et al. 2023)

Dutch adjectival *-er(ig)* formations

	Base	Gloss	A	Gloss
V	huil-(en)	cry	huil-erig	whiney, crying often
	kniez-(en)	sulk	kniez-erig	inclined to sulk
A	vlot	fluent/smooth	vlot(t)-erig	fairly fluent/smooth
	zoet	sweet	zoet-erig	sweetish
N	hout	wood	hout-erig	like wood/stiff
	bloed	blood	bloed-erig	bloody/blood-stained
	appelmoes	apple sauce	appelmoez-erig	fond of apple sauce

- Deadjectival and denominal formations can have pejorative meaning.
- Highly productive, but many formations are **ambiguous** between adjective-, noun-, and verb-based analyses.
- *-erig* is considered one morpheme

(based on Smessaert et al. (2019); De Haas & Trommelen (1993))

Dutch adjectival *-ig* formations

	Base	Gloss	A	Gloss
V	treur-(en)	to mourn	treur-ig	sad
A	triest	sad	triest-ig	sad
N	humeur	humour	humeur-ig	moody

Data collection and methodology

- I extracted all *-erig* and *-ig* adjectives from *Van Dale* (A–N, Part I, 1976).
- I cleaned the data, removing deadjectival formations, and formations with an *-(e)r* base, yielding a final dataset of 110 *-erig* adjectives.
- Each *-erig* A was manually classified as *deverbal*, *denominal*, or *denominal + deverbal*.
- I identified *-ig*-adjectives with the same base in the same dictionary.
- I carried out the quantitative analysis and statistical tests in R.

Deverbal *-erig* adjectives rarely have *-ig* counterparts

Base of *-erig* A	Total	With *-ig* match	%
N	74	27	**36.5**
V	36	4	**12.5**

- Fisher's exact test: $p = 0.0063$
- Odds ratio = 4.54 (95% CI: 1.39–19.56)
- There is a significant association between the category of the base of Dutch *-erig* adjectives and the availability of a corresponding *-ig* adjective
- **The odds of having a corresponding *-ig* adjective are nearly five times higher for *-erig* adjectives with a nominal base than for deverbal *-erig* adjectives.**

Deverbal *-erig* adjectives are mainly based on body action verbs

Adjective	Meaning	Adj. reading	Verbal base	Aktionsart of base
I. Stative property (15)				
boezerig	stormy; turbulent	Stative property	*boezen*	Activity
doenerig	affected; self-important	Stative property	*doen*	Activity
drijterig	diarrhoeic	Stative property	*drijten*	Activity
droelerig	chilly; drowsy	Stative property	*droelen*	State/Activity
gloeierig	having a burning sensation	Stative property	*gloeien*	State/Activity
hebberig	greedy	Stative property	*hebben*	State
jennerig	teasing; playful	Stative property	*jennen*	Activity
jeukerig	itchy	Stative property	*jeuken*	State
kleumerig	feeling chilly	Stative property	*kleumen*	State/Activity
kleverig	sticky	Stative property	*kleven*	State
kliemerig	sticky; muddy	Stative property	*kliemen*	Activity
knoeierig	sloppy; clumsy	Stative property	*knoeien*	Activity
knutterig	cosy; endearing	Stative property	*knutten*	Activity
kruiperig	servile	Stative property	*kruipen*	Activity
neukerig	miserable; wretched	Stative property	*neuken*	Activity
II. Iterative (5)				
beverig	trembling repeatedly or continuously	Iterative/continuous	*beven*	Activity
gaperig	repeatedly feeling like yawning	Iterative	*gapen*	**Semelfactive**
geeuwerig	repeatedly inclined to yawn	Iterative	*geeuwen*	**Semelfactive**
hikkerig	repeatedly hiccupping	Iterative	*hikken*	**Semelfactive**
lacherig	inclined to laugh; repeatedly laughing	Iterative	*lachen*	**Semelfactive**/Activity
III. Habitual (6)				
beredderig	constantly fussing; always arranging things	Habitual	*beredderen*	Activity
dreinerig	constantly whining	Habitual	*dreinen*	Activity
dwingerig	always forcing others	Habitual	*dwingen*	Activity/Accomplishment
heisterig	constantly bustling; agitated	Habitual	*heisteren*	Activity
huilerig	crying easily; often crying	Habitual	*huilen*	Activity
jankerig	repeatedly whining	Habitual	*janken*	Activity
IV. Dispositional / inclined to (10)				
aanhalerig	inclined to seek physical closeness; affectionate	Dispositional	*aanhalen*	Activity
aanpapperig	overly familiar; clingy	Dispositional	*aanpappen*	Activity
bijterig	inclined to bite	Dispositional	*bijten*	Semelfactive
blufferig	inclined to bluff	Dispositional	*bluffen*	Activity
draaierig	inclined to spin; dizzy	Dispositional	*draaien*	Activity
gillerig	inclined to scream	Dispositional	*gillen*	Semelfactive/Activity
hangerig	inclined to loaf around	Dispositional	*hangen*	State/Activity
klagerig	inclined to complain	Dispositional	*klagen*	Activity
kniezerig	inclined to brood	Dispositional	*kniezen*	Activity/State
muggenzifterig	inclined to nitpick	Dispositional	*muggenziften*	Activity

No iterative, habitual or dispositional readings with deverbal *-ig* As

Adjective	Meaning	Adj. reading	Verbal base	Aktionsart of base
I. Stative property (23)				
aanhorig	belonging to; pertaining to	Stative property	*aanhoren*	State
aanlandig	facing the shore; onshore	Stative property	*aanlanden*	Achievement
aanwezig	present	Stative property	*aanwezen*	State
bedillig	fault-finding	Stative property	*bedillen*	Activity
begerig	eager; desirous	Stative property	*begeren*	State
bevallig	graceful; charming	Stative property	*bevallen*	State
bijzig	drafty	Stative property	*bijzen*	Activity/Process
buizig	timid; fearful	Stative property	*buizen*	State
duchtig	substantial; considerable	Stative property	*duchten*	State
geburig	neighbouring	Stative property	*geburen*	State/Relation
gelovig	believing; faithful	Stative property	*geloven*	State
gevallig	pleasant; agreeable	Stative property	*gevallen*	State
gretig	eager; avid	Stative property	*greten*	State
hitsig	lustful; in heat	Stative property	*hitsen*	Activity
hobbig	soft; flabby	Stative property	*hobben*	State/Process
inhalig	greedy	Stative property	*inhalen*	Activity/Accomplishment
innig	intimate; heartfelt	Stative property	*innen*	Activity/Accomplishment
installig	disparaging	Stative property	*installen*	Activity
inwendig	internal	Stative property	*inwenden*	Achievement/Accomplishment
kribbig	irritable	Stative property	*kribben*	Activity
mokkig	sulky	Stative property	*mokken*	Activity/State-like
mollig	plump; rounded	Stative property	*mollen*	Activity/Process
nalatig	negligent; careless	Stative property	*nalaten*	Achievement/Activity
II. Continuous (2)				
gedurig	continuous; incessant	Continuous	*geduren*	State/Process
gronzig	incessant; all day long	Continuous	*gronzen*	Activity/Process

- Iterative, habitual, and dispositional readings are notoriously absent with *ig*-adjectives.
- Deverbal *ig*-adjectives do not seem to have semelfactive bases.

What is new?

- Dutch *-erig* can combine with A, N, V bases, but only gives rise to iterative/habitual/dispositional readings with V bases.
- The iterative reading is not mentioned in De Haas & Trommelen (1993) and Smessaert et al. (2019).
- Verbal bases that combine with *-erig* hardly ever combine with *-ig* (and vice versa)
- In other words: there seems to be a selectional restriction between the verbal base and *-erig*/*-ig*.
- Verbal bases that combine with *-erig* seem a coherent class conceptually (body action verbs, involuntary actions, or recurrent behavioural events).
- Iterative/habitual/dispositional readings arise solely with V bases + *-erig*, not with V bases + *-ig*.
- Iterative readings both in verbal *-er* patterns, and *-erig* As seem to arise predominantly with semelfactive verbal bases.

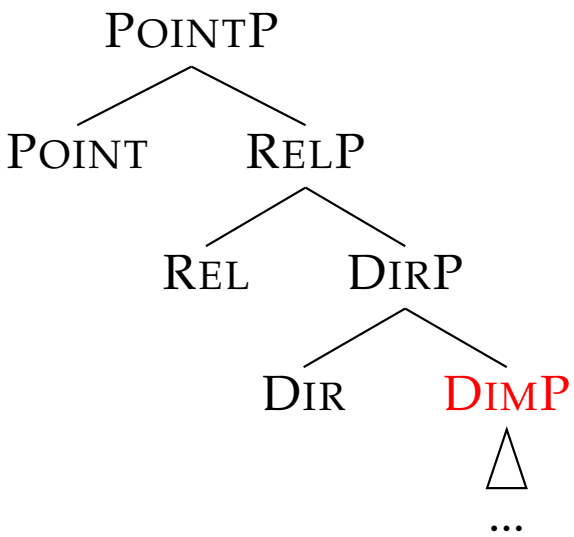
What do we take from these results?

- *-er* is an independent morpheme rather than an opaque part in a simplex suffix:
  - *-erig* can be decomposed in *-er* + *-ig*
- Since eventive roots select for different adjectivizing suffixes (i.e. *er-ig* vs. *ig*), eventive roots cannot be acategorial (or featureless).
- It makes sense to assume that the distribution of *(-er)-ig* is a consequence of the size and shape of the eventive/verbal root. (cf. Taraldsen 2010; Márkus 2015; Caha et al. 2019; Vanden Wyngaerd et al. 2025)

Decomposing adjectives

cf. Caha et al. (2024); Vanden Wyngaerd et al. (2025)

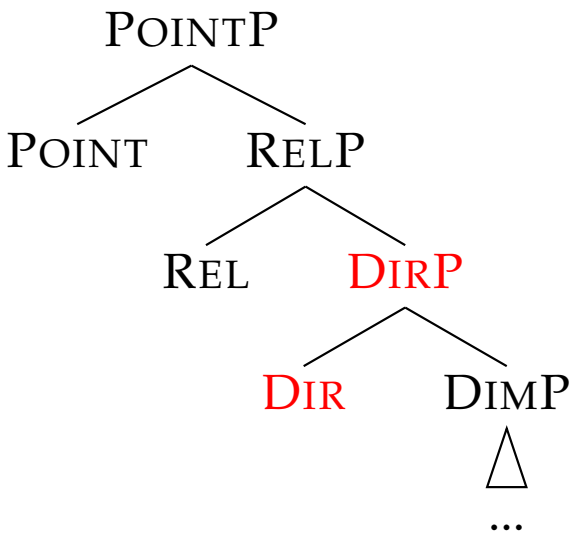
1. Adjectives contain a DIMENSION (DIM);



Decomposing adjectives

cf. Caha et al. (2024); Vanden Wyngaerd et al. (2025)

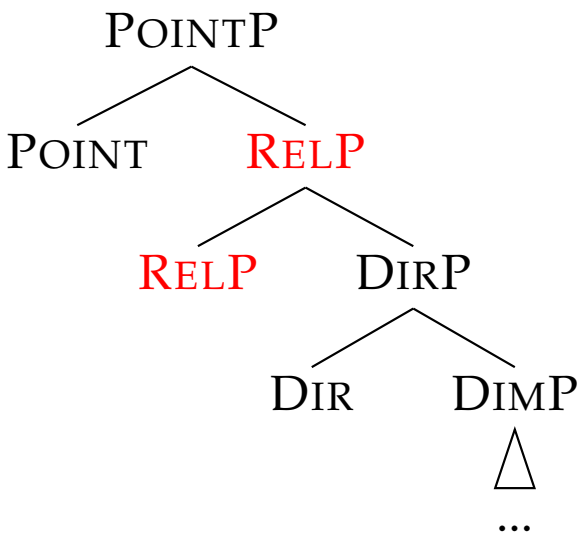
1. Adjectives contain a DIMENSION (DIM);
2. an ordering (DIR) of values along some dimension, providing a scale (defines gradable adjectives);



Decomposing adjectives

cf. Caha et al. (2024); Vanden Wyngaerd et al. (2025)

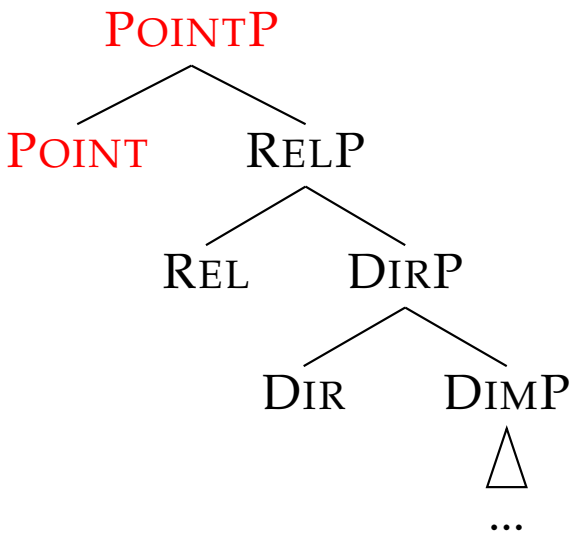
1. Adjectives contain a DIMENSION (DIM);
2. an ordering (DIR) of values along some dimension, providing a scale (defines gradable adjectives);
3. A RELATIONAL head, establishing a relation between the scale and an individual, comparable to a measure function



Decomposing adjectives

cf. Caha et al. (2024); Vanden Wyngaerd et al. (2025)

1. Adjectives contain a DIMENSION (DIM);
2. an ordering (DIR) of values along some dimension, providing a scale (defines gradable adjectives);
3. A RELATIONAL head, establishing a relation between the scale and an individual, comparable to a measure function
4. a POINT on the scale, representing the standard. POINT divides the scale into two parts, one which exceeds this point and another one, which does not.

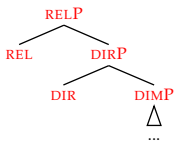


Derivation and containment

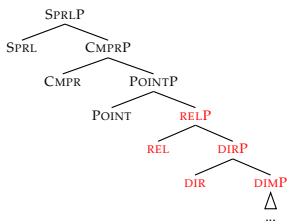
- Derivation is either:
  - a consequence of recursion of *fseqs* (with any combination possible)
  - a consequence of one *fseq* that respects some form of containment (A>N>V) (see for instance also Lundquist (2008), Starke (2009), Clercq (2013), Taraldsen Medová & Wiland (2019), Cavirani-Pots & Van Craenenbroeck (2026), Goryczka (2026))
  - a combination of the two?

Containment

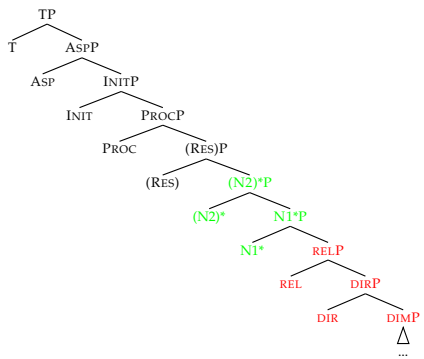
Common core of categories



Adjectival fseq



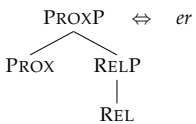
Verbal fseq



(cf. Taraldsen Medová & Wiland (2019))

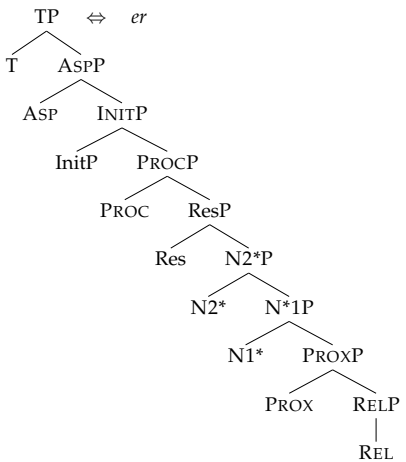
What does *-er-* lexicalise?

- *-er-* has an approximative and sometimes pejorative effect with A bases (zoet'sweet' vs. zoet-er-ig - 'sweet-ish')
- I propose that *-er(ig)* formations lexicalise an **optional** head in the adjectival field, between REL and POINT. I call this head PROX, which stands for APPROXIMATION.
- PROX operates on REL and changes the relation with POINT: the degree of the argument the adjective is predicated of only approaches — never reaches — the standard encoded by POINT.
- Since *-er-ig* is required in the formation of As from V bases, I assume it can also lexicalise **a core ingredient** of the adjectival decomposition: REL.



What does *-er-* lexicalise?

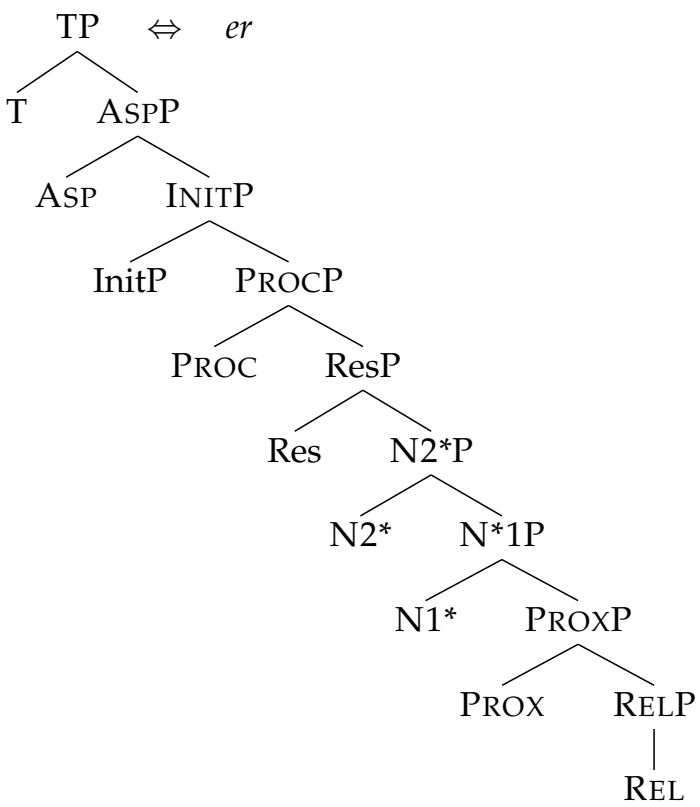
- *-er-* is also a **verbaliser**, giving rise to iteration with (predominantly) semelfactive roots.
  - Verbalising properties: *-er* lexicalises INIT, PROC and RES(Ramchand 2008).
  - Semelfactive root selection: *-er* lexicalises two nominal layers (N*1, N*2). Other verbal predicates will be argued to lexicalise less (or no) nominal structure, cashed out here as N*1.
    (cf. Taraldsen Medová & Wiland 2019).
    This intuition finds support in the fact that:
    - the base of the majority of verbal iterative *-er* formations is also nominal (*knappen/knap, knippen/knip, stoten/stoot*, . . .).
    - the base verb can often be paraphrased by "to make a N" or "to give a N"
- *-er* lexicalises grammatical Aspect (ASP) and present tense (T).

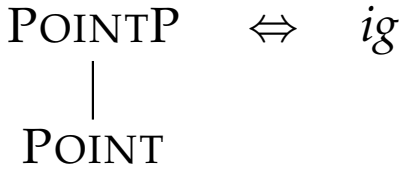


How do *-er-* verbs give rise to iteration?

- Given containment of categories, the verbal iterative reading could be argued to follow from the presence of PROX too.
- How could that work?
  - When PROX, which inherently involves approximation, combines with the structure of semelfactive/punctual roots, PROX forces the interpretation of the punctual event to be stretched over a time span to be able to approximate over the event. PROX hence results in a pluralisation of the punctual event into subevents, yielding an iterative (durative) reading (cf. S-summing, by Rothstein (2004)).

Lexical items:-*er* and -*ig*

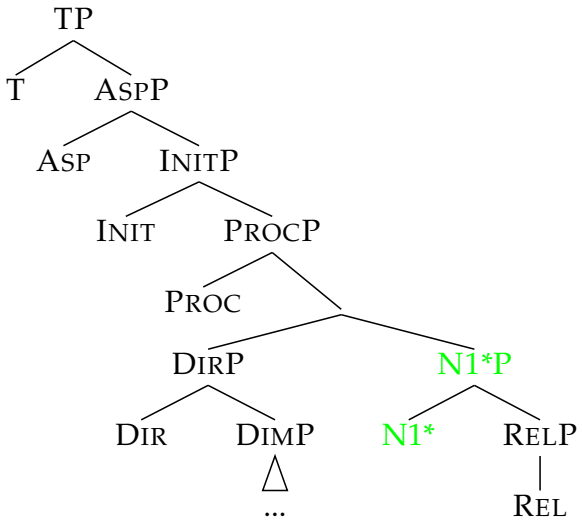




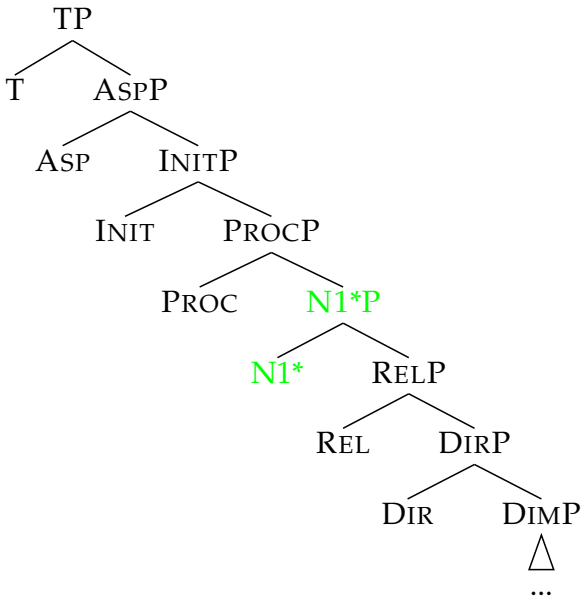
Lexical items: Verbal roots for Patterns I-II-III

	Base	Gloss	V-*er*	A-*ig*	A-*er-ig*
I	huil-(en)	to cry	*huil-er-(en)	*huil-ig	huil-er-ig
II	hits-(en)	to incite	*hitser-(en)	hits-ig	?hitserig
III	knap(p)-(en)	to snap/crack	knap(p)-er-(en)	*knap(p)-ig	knap(p)-er-ig
IV	geeuw-(en)	to yawn	*geeuw-er-(en)	*geeuw-ig	geeuw-er-ig

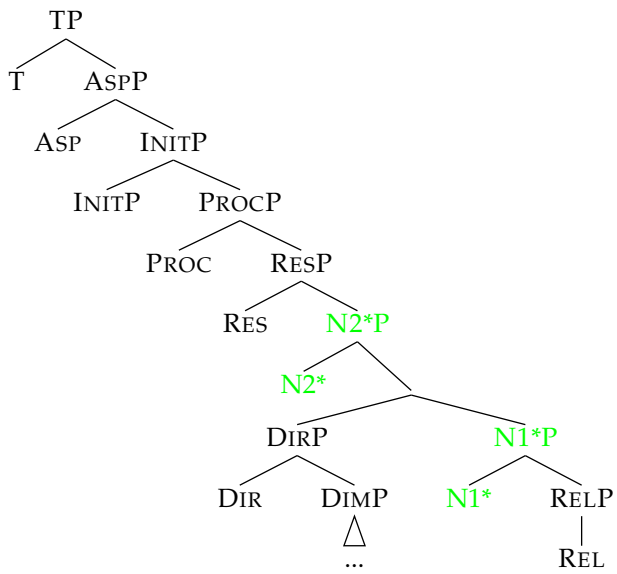
Type I: *huil-(en)* 'cry'



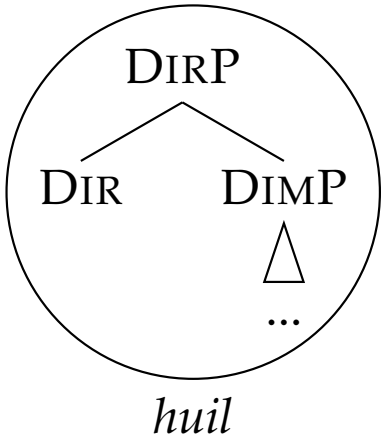
Type II: *hits-(en)* 'incite'

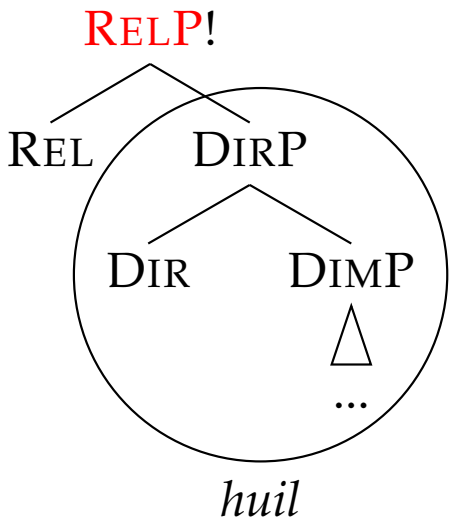


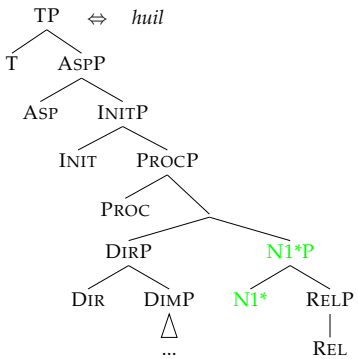
Type III: *knap(p)-(en)* 'crack'

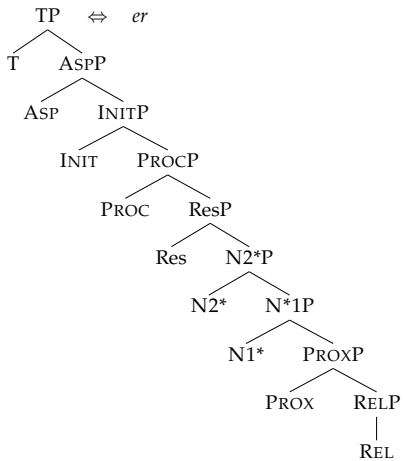


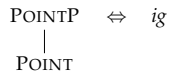
Pattern I: *huil-erig* 'tearful'









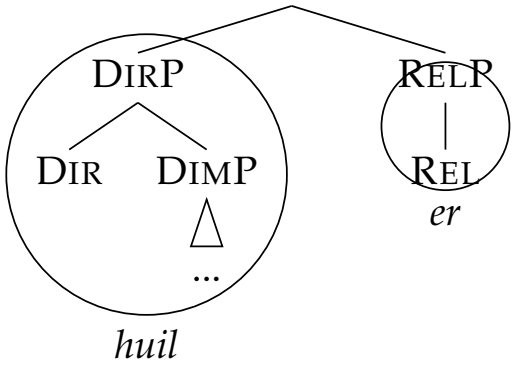


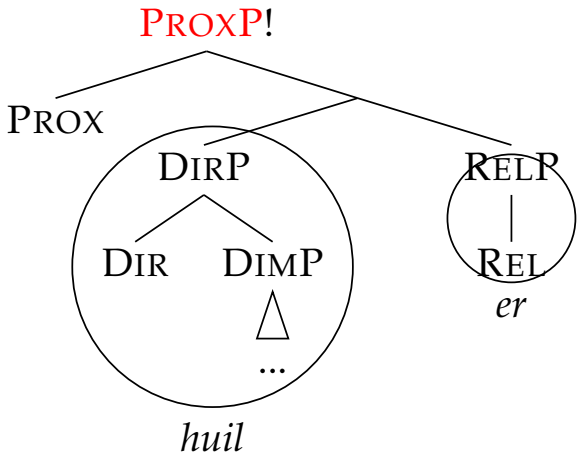
Lexicalisation algorithm

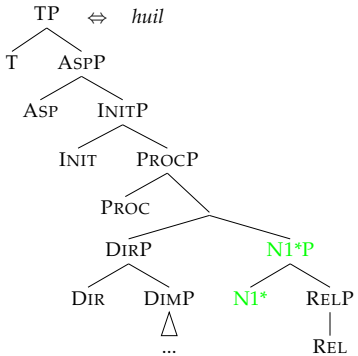
- merge-f
- if fail, evacuate closest labelled node
- if fail, pied-pipe

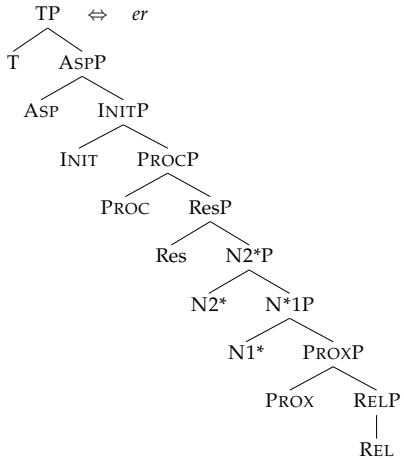
(De Clercq et al. 2025)

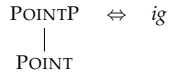
Pattern I: *huil-erig* 'tearful'



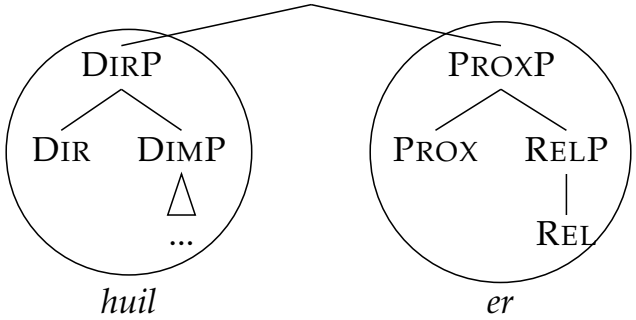


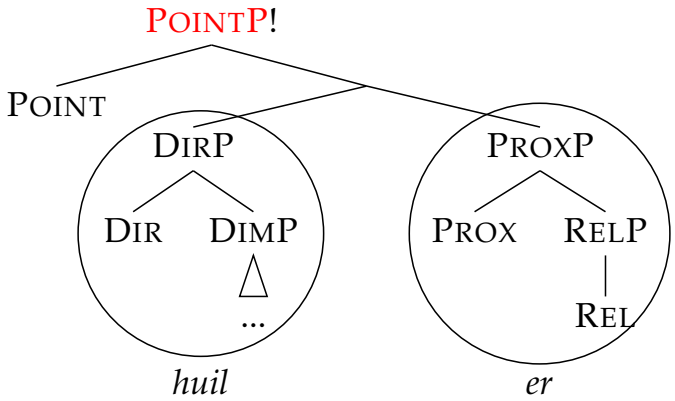


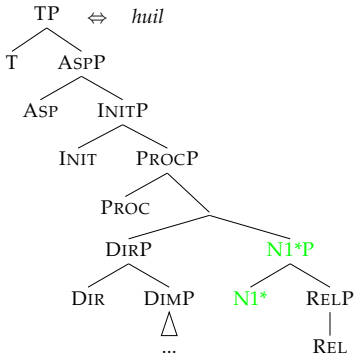


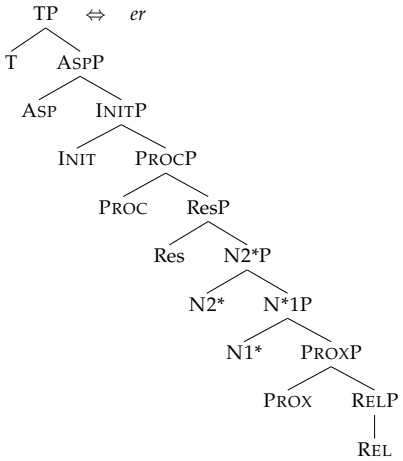


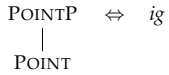
Pattern I: *huil-erig* 'tearful'



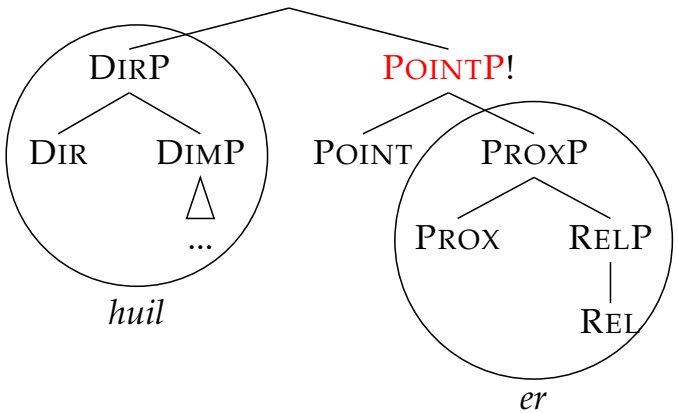


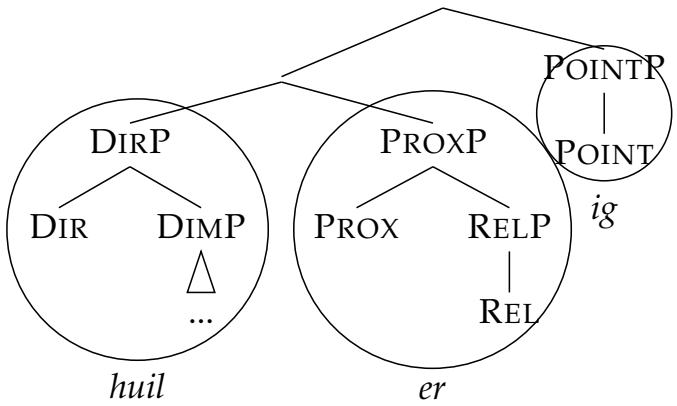


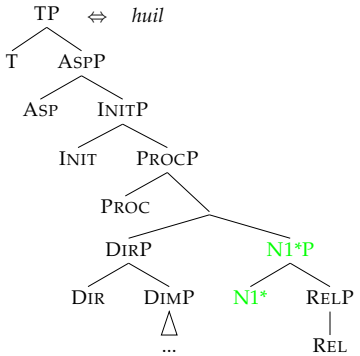


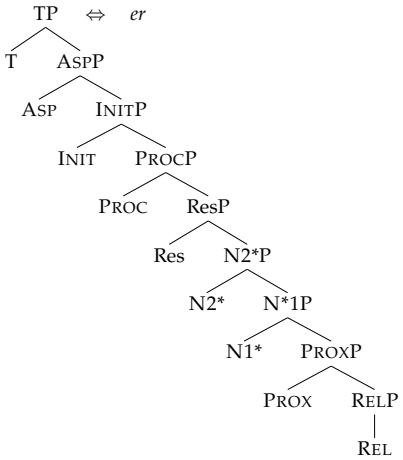


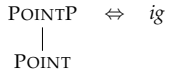
Pattern I: *huil-erig* 'tearful'



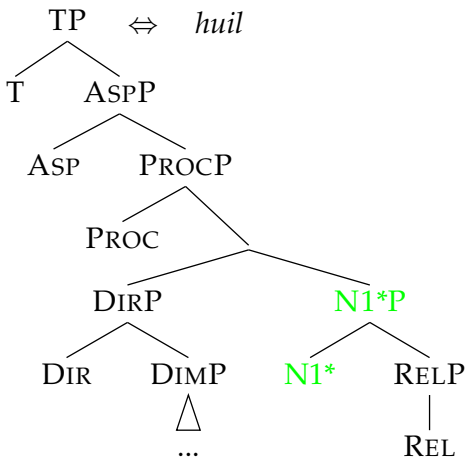


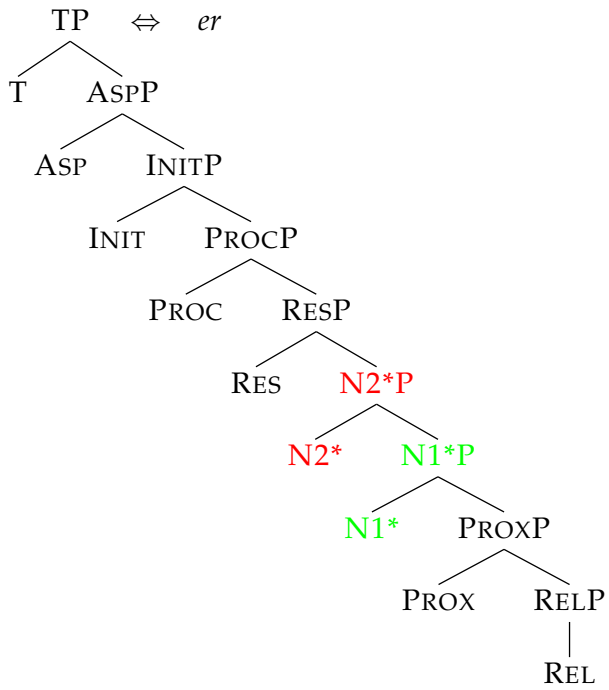




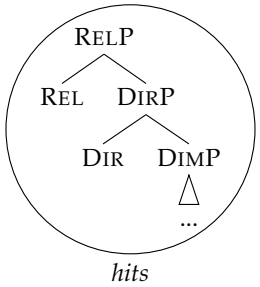


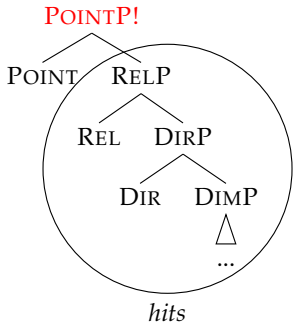
Pattern I: Why *huil-er-(en)?

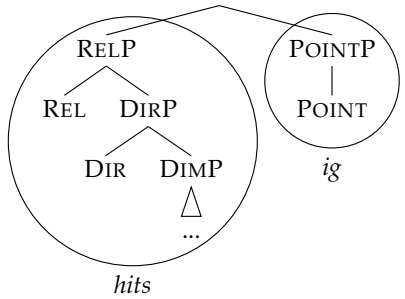


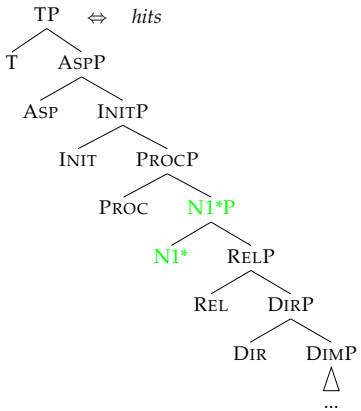


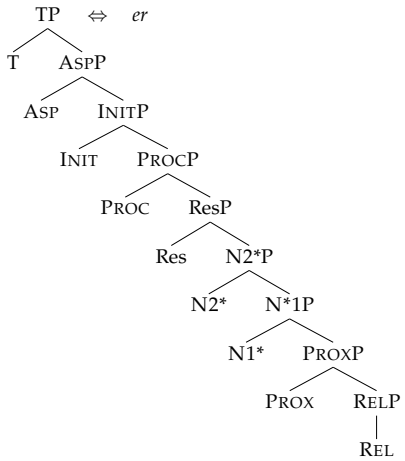
Pattern II: *hits-ig* 'horny'

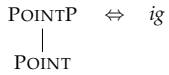




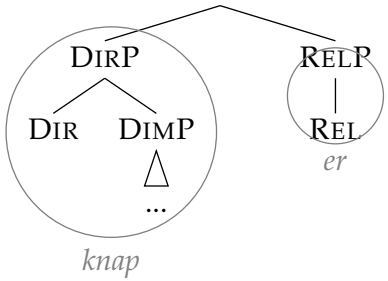


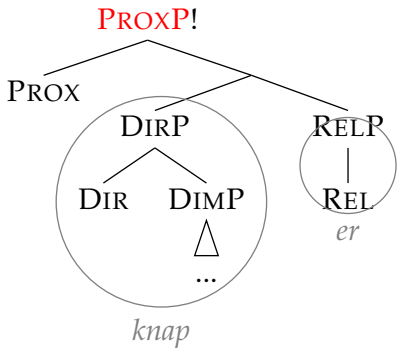


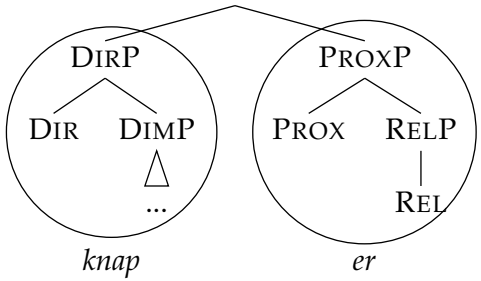


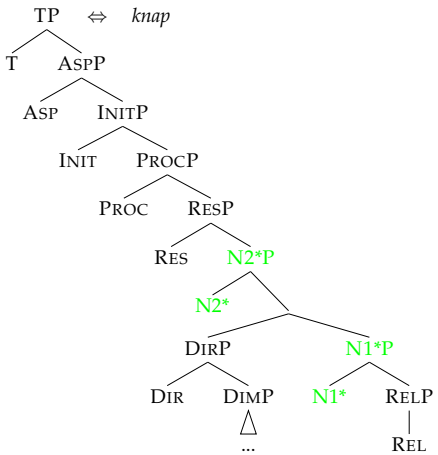


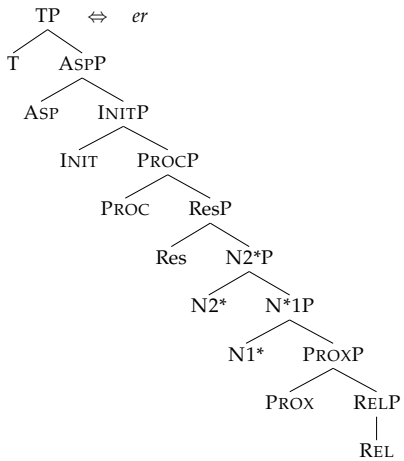
Pattern III: *het knap(p)-er-t* 'it crackles'

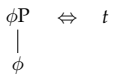




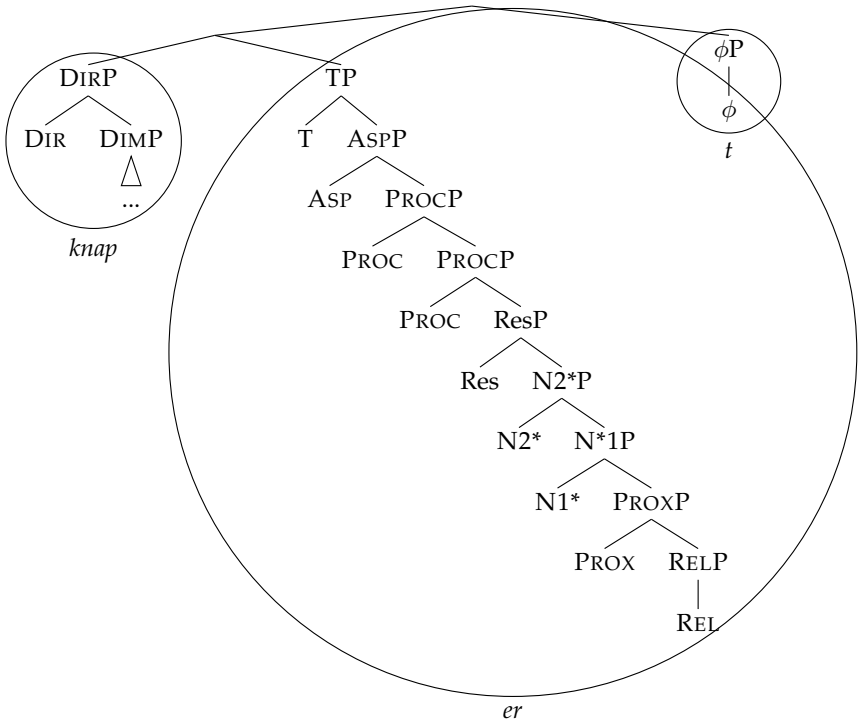


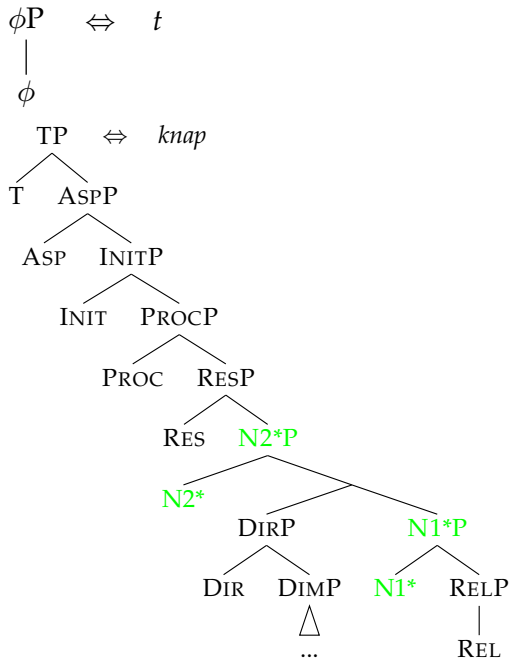


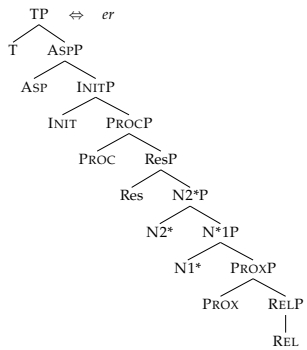




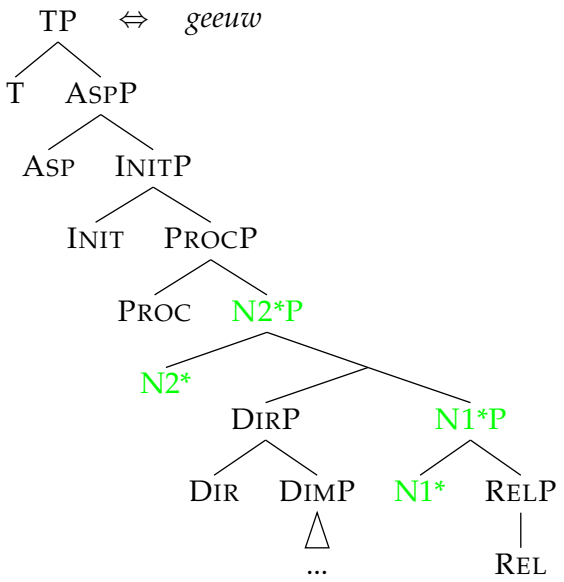
Pattern III: *knap(p)-er-t* 'it crackles'

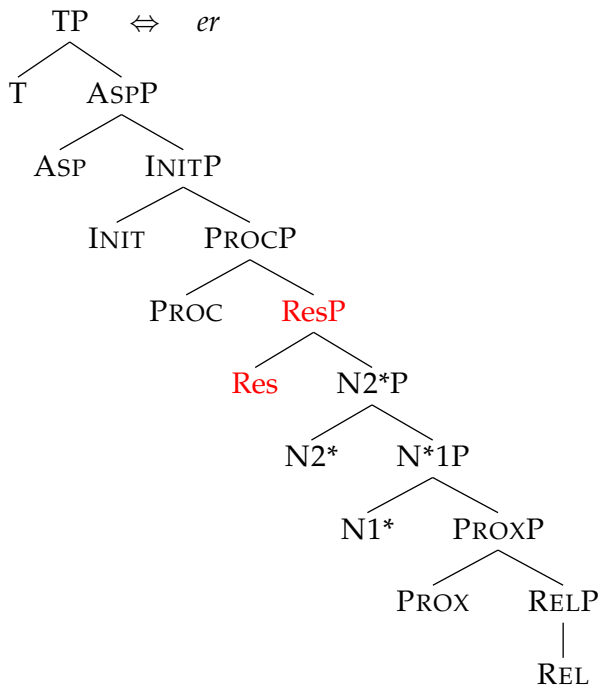






Pattern IV: Why **geeuw-er-(en)* 'yawn repeatedly'?





- Semelfactives that do not combine with *-er* lack Res in their argument structure.
- They are inherently less punctual and have more of an internal duration: *geeuwen* 'yawn', *bijten* 'bite', *beven* 'shake', *lachen* 'laugh' (exception: *hikken* 'hiccup').

Part III: Synthesis

Discussion & implications

Summary

- Laura's part
  - Gmc. verbal iterative **r-* is an adjectival suffix that was reanalyzed as a verbalizer with a particular "flavor"
  - Categorizing affixes seem to be sensitive to different (broadly defined semantic) **root classes**
  - Abstract semantic/formal properties of the base can be inherited by base-adjacent nodes (categorizing/derivational morphology) diachronically
  - The "mapping space" and hence potential for reanalysis is strictly constrained by synchronic node/meaning relationships and adjacency

Summary

- Karen's part
  - Dutch exhibits iterative *-er* not only in the verbal domain, but also in the adjectival domain.
  - The nanosyntactic analysis of Dutch iterative *-er* provides support for Laura's diachronic analysis of Germanic *r.
  - In comparing *er-ig* with *-ig* formations only the presence of *er-ig* triggers habitual/iterative/dispositional readings, providing support for the decomposition of *erig* into *er* and *ig*.
  - The distribution of *-er-ig* vs. *-ig* was argued to be determined by the size and structural shape of the base.
  - Verbal iterative *-er-* appears to be restricted to semelfactive bases, whereas adjectival *-er-ig* formations can be built on verbs with different Aktionsart profiles. We explained this in terms of a consequence of the internal structure of *-er*.

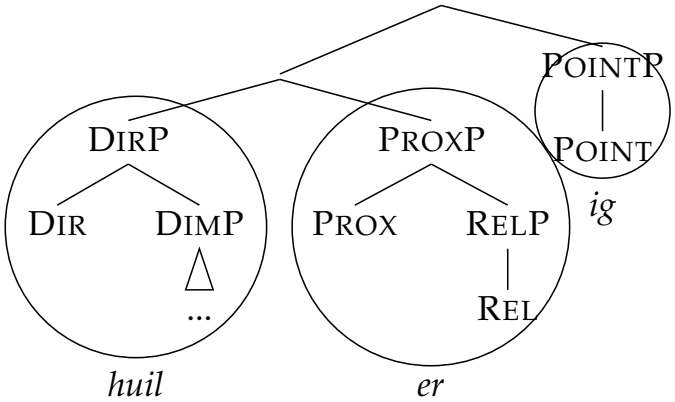
Cross-framework comparison

- Shared results concerning Germanic *r
  - There seems to be a selectional relation between root and categorizer/augment.
  - Iteration seems to be semantically related to “inclination, approximation".
  - The Germanic *r realises syntactico-semantic features, and is not just ornamental/PF material.
- Points of divergence
  - The way lexical items are stored in the lexicon
  - Phrasal lexicalisation vs. terminal insertion
  - Acategorial $\sqrt{SWEET}$ vs. features all the way down
  - Roots lexicalise (categorial) features (nano) vs. no category (DM)
  - containment (nano) vs. flexible combineability at least in cross-categorial contexts (DM)

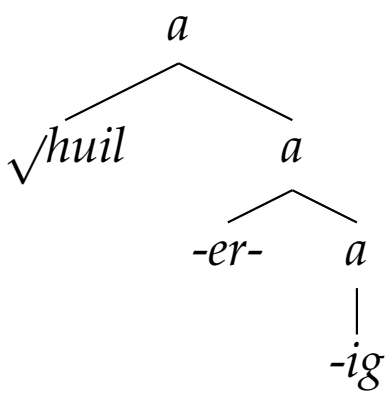
Cross-framework comparison: Dt. *huilerig* in DM vs. Nano

(12) Comparison: Dt. *huilerig* in DM vs. Nano (recall: no **huileren*, **huilig*)

a. Nano



b. DM



Note:

- content/size of HUIL ("root" in DM)
- constituency of *-er-ig*
  - "complex affix formation" (e.g., Matushansky 2024, 2025)

Predictions

- Difference in predictions: *(e)r*-containing lexical items should have a consistent semantic (originally iterative) core (DM) vs. can realize variable "size" (nano)
  - But: diachrony, "semantic bleaching"/loss of content → how much content needs to be part of the *synchronic* analysis?
- (Abstract) meaning of complex word forms is strictly compositional (barring idiom formation and "special meanings" á la Marantz) in DM
- Under the DM analysis **huilig*, **huileren* are not categorically excluded.
- Under the Nano analysis, all types of verbs have some form of A<N<V containment.
- Given containment of categories, the nanoanalysis predicts that verbalising morphology that has a nominal origin will not likely appear with adjectives. This is indeed the case for Dutch iterative *-el* (Cavirani-Pots et al. 2023), which finds its origin in a nominal diminutive marker (Grestenberger & Kallulli 2019, Goryczka 2026).

What we struggled with in our own frameworks

- Laura
  - (apparent?) nonlocal relationships between morphemes
  - how much meaning/"semantic features" to put into derivational morphology at each synchronic stage of development
    - e.g., +ITERATIVE? $\sqrt{}$ACTION? "tendency-to"? cf. Panagiotidis (2024)
  - Selectional restrictions/combinatorial possibilities of roots + suffixes (see Karen's last point) – can/should these follow from the analysis?
- Karen
  - do we need to capture the predominantly non-agentive nature of verbal *-er*? And how?
  - Deciding what is 'optional' in a derivation.
  - Giving all the patterns matching derivations ;-)

Acknowledgments

Thank you!

`https://evocat.univie.ac.at`

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