

Categorizers in diachrony: Introduction

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What are categorizers?

- ▶ Stem forming/word class-determining morphology

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- ▶ Stem forming/word class-determining morphology
- ▶ ... immediately raises the question(s):
 - ▶ What are (morphosyntactic) categories/word classes?
 - ▶ How many are there?
 - ▶ Are they “universal”?

What are categories?

- ▶ Much literature on the status of morphosyntactic/lexical categories (“noun”, “verb” ...), e.g., Vogel & Comrie 2000, Baker 2003, Rauh 2010, Panagiotidis 2011, Wiltschko 2014
- ▶ Definitions based on
 - ▶ Syntax/syntactic contexts (subj./obj. vs. predicate); formal syn-sem features ($\pm N$, $\pm V$): Baker 2003; Panagiotidis 2011; Wiltschko 2014
 - ▶ No categorial features, only roots + syntactic context: Borer 2005a, 2005b, 2013
 - ▶ Semantics/meaning (e.g., object/thing vs. dynamic event/action): Sasse 1993, Wierzbicka 2000, Schachter & Shopen 2007
 - ▶ Morphology (e.g., case vs. T/Asp-morphology), morphosyntactic features: Himmelmann 2005
- ▶ ... but less research on the morphology of these categories (i.e., categorizers) themselves.

What are categorizers (II)?

First pass:

- ▶ Form (inflectional) stems
- ▶ Mediate between root/lexical meaning and (derivational &) inflectional categories (Voice, Aspect, Mood, Tense; Definiteness, Number, Case ...)
- ▶ Provide specific function (?)
 - ▶ Verbal domain: Argument structure/ Aktionsart/Voice (*genus verbi*)?
 - ▶ Nominal domain: Gender, animacy, mass/count ?

Why categorizers?

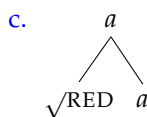
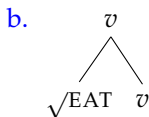
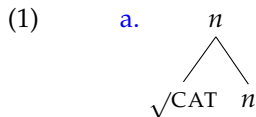
- ▶ Across frameworks, there is agreement that morphosyntactic categorization corresponds *to some extent* to ontological category (\approx “notional” definitions)
 - ▶ Reference/“thing” = N
 - ▶ Predication/event = V
- ▶ But there are many exceptions; no 1:1 correspondence
- ▶ Moreover, categorization is not a requirement imposed by the meaning/interpretative component of grammar:

“In a language where the grammatical properties and behaviour of morphosyntactic words is completely predictable on the basis of the ontological category of their denotata, there is no need for an additional (grammatical) level of lexical categories.”

(Himmelmann 2005: 86)

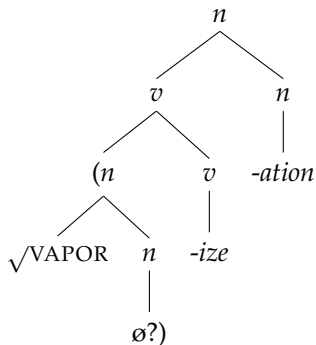
Categorizers in DM

- ▶ On the other end of the theoretical spectrum, arguments have been made that categorization is not strictly a *syntactic* requirement, either, but some sort of “interface condition” (e.g., Embick & Marantz 2008, Chung 2012)
- ▶ In **Distributed Morphology (DM)** (Halle & Marantz 1993 etc.), categorially unspecified **roots** combine with (overt/covert) categorizing heads “in the syntax”/via Merge:



Categorizers in DM

(2) Categorizers vs. derivational morphemes



Categorizers vs. derivational morphemes

- ▶ Some DM literature uses a distinction between “inner” suffixes that attach to the root (or before the first categorizing head), which have different properties than “outer” suffixes which attach to already categorized stems (e.g., Marantz 1997, 2007, Alexiadou et al. 2015, Alexiadou & Lohndal 2017)
 - ▶ In the Exoskeletal Model (XSM): Borer 2005a, 2005b, 2013; de Belder 2011 ...
 - ▶ In comparative IE linguistics/typology: “primary” vs. “secondary” derivation
- ▶ Categorizers that select the root and have a different status than word class-changing derivational morphemes:
 - ▶ Root-conditioned allomorphy (and allosemy, Marantz 2013)
 - ▶ Lexically specified/idiosyncratic meaning “fixed” at first phase/categorial affix (Marantz 1997, 2013; Panagiotidis et al. 2017)

The usefulness of this distinction (in DM and beyond) is open to debate ...

Paradigm Function Morphology

- ▶ Categorical information = part of the lexical entry of a lexeme/stem
- ▶ Stems are stored as “morphologically unstructured expressions” (Bonami & Stump 2016: 457)
 - ▶ “Metarules” capture generalizations across and within stem classes
- ▶ category is defined via an **L-index** (Bonami & Stump 2016)
- ▶ ... or via a **semantic function (sf)**, e.g., ‘R’ (reference) for nouns, ‘E’ (event) for verbs ... (Spencer 2016) → semantic primitives that reflect *ontological* category (to some extent)

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Focus is on the generation of paradigms from stem allomorphs + inflectional endings, implications for diachrony of categorial stem classes not clear.

Typological approaches

E.g., Aikhenvald 2000; papers in Vogel & Comrie 2000 and Knobloch & Schaefer 2005.

- ▶ Canonical/prototypical vs. non-canonical/non-prototypical instantiations of word classes (N, V ...), e.g., Wierzbicka (2000)
 - ▶ “mixed” categories (gerunds, participles...)
- ▶ Sharp distinction between categorizing/stem forming and derivational (word class-changing) morphology (e.g., Himmelmann 2005)
- ▶ Cross-linguistic variation: Predication vs. reference not necessarily *formally* distinct
- ▶ Newly grammaticalized (grammaticized) word-class changing affixes tend to form *subclasses* (e.g., agent nouns vs. verbal abstract; declension classes) rather than blanket “word classes” (N, V); e.g., Himmelmann (2005)

Diachrony of inflectional classes

- ▶ Purpose/function of declension/conjugation classes?
 - ▶ Purely ornamental/“morphomic” (Aronoff 1994; Stump 2001; Maiden 2005, 2009)
 - ▶ Morphological interface/well-formedness condition (Oltra-Massuet 1999; Oltra-Massuet & Arregi 2005; Embick 2010, etc.)
 - ▶ Association with argument structure/Aktionsart (to some extent)? Oltra-Massuet 1999 (?); O'Neill 2013; Panagiotidis et al. 2017; Bertocchi 2017, Bertocchi & Pinzin 2020; Grestenberger 2022b
- ▶ Psychologically “real” for speakers, can become input for further grammaticalization (not a “dead end”, Maiden 2005)
- ▶ Diachrony of inflectional classes/“theme vowels”, etc.? → Talk by **Calabrese**

Diachrony of inflectional classes

N.B. the issue of the function of inflectional classes seems to be more controversial for verb classes than for nouns. For nominal classes, it seems uncontroversial that gender/declension class is associated with specific functions, e.g.,

- ▶ feminine – verbal abstracts and/or collectives (e.g., Greek, Latin, modern Romance languages, Arabic, Hebrew ... Nussbaum 2014; Hasselbach 2014ab; Dali & Mathieu 2021) → Talk by **Hasselbach-Andee**
- ▶ individuation/formation of singulatives (Nussbaum 2014; Fellner & Grestenberger 2016; Nurmio Forthcoming, Kagan & Nurmio 2023)
- ▶ diminutive formation/atomicity (Wiltschko 2006; De Belder et al. 2014)

Interim summary

Recurring questions & issues across frameworks:

- ▶ Is categorization a “morpho-lexical” primitive or are there morphosyntactic/morphosemantic correlations that determine the choice of (sub)categorizer?
- ▶ How many “primary” categorizers are there? Just *n*, *v*, or also *a*, prep (more?) Universal or language-specific
- ▶ Are there different “flavors” of *v*, *n* ...? (Folli & Harley 2005; Acquaviva 2009, 2019) → **Alfieri**’s talk on *a*
- ▶ Do root-categorizing *v*’s, *n*’s etc. differ from “higher” (derivational) *v*’s, *n*’s, and if yes, how?

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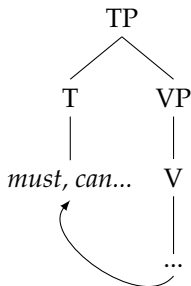
Our goal is to address these issues from a *diachronic* perspective — where do categorizers come from and how do they develop?

Where do categorizers come from?

- ▶ **Reanalysis** of (only root-adjacent?) morphological material (e.g., Haspelmath 1995)
- ▶ **Directionality**: Reanalysis is *directional* - structurally upwards, linearly rightwards
- ▶ **Upwards Reanalysis (UR)** (Roberts & Roussou 2003, Cournane 2014, Alexiadou 2021, Grestenberger 2023): “lower” functional material → “higher” functional material

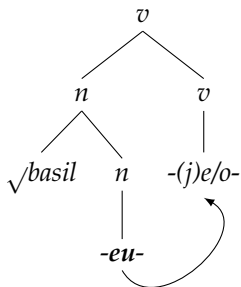
Example: the modal cycle

- (3) UR in the modal cycle: lexical verb > functional verb/auxiliary



Example: nominalizer → verbalizer

- (4) UR in (Ancient to Modern) Greek: nominal *-eu-* + verbalizer
 (*)*-je/o-* → reanalyzed as part of *v*.



- ▶ The same type of reanalysis gave rise to a number of other MG verbalizers, e.g., *-iz*, *-(i)az*, *-on*, *-ar*, *-en* (cf. Panagiotidis et al. 2017)
- ▶ “Conglutination” (Haspelmath 1995)

Diachrony of categorizers

- ▶ If reanalysis/UR applies to derivational morphemes and, e.g., (modal) auxiliaries alike, we expect to see “**cycles**” of **derivational morphology**
 - ▶ Grestenberger 2022ab, 2023
- ▶ Specifically, **cross-categorial derivation** is expected to diachronically give rise to new (reanalyzed) categorizers
 - ▶ Besides better studied cases of “grammaticalization” of, e.g., second compound members into nominal or adjectival derivational suffixes

Categorizers in diachrony: Typology of changes

- ▶ \approx UR-type changes:
 - ▶ $n \rightarrow v$
 - ▶ $v \rightarrow n$ (**Werner**)
 - ▶ $a \rightarrow v$ (Gm. *-ig-*)
 - ▶ $n \rightarrow a$ (Germanic weak adjectives)
 - ▶ $a \rightarrow Asp/Ptcp$
 - ▶ $Ptcp \rightarrow a$
- ▶ “Semantic bleaching” / loss of functional projections & non-UR:
 - ▶ $n_{DIM} \rightarrow n$ (Ilr. *-ka-*, Gm. *-el-*)
 - ▶ singulative $n \rightarrow$ collective/feminine n (**Hasselbach-Andee**)
 - ▶ Spec-head reanalysis (**Tan**)
 - ▶ $a/v/n \rightarrow$ “ornamental” adjuncts (Oltra-Massuet 1999; Oltra-Massuet & Arregi 2005; **Calabrese**)
 - ▶ $a/v/n \rightarrow \emptyset$ (cf. Appendix)

Case studies: $n \rightarrow v$

- ▶ The Akkadian Stative conjugation denotes a state following a change-of-state associated event (Kamil 2023)
- ▶ Purely suffixing verbal paradigm (as opposed to *iprus*, *iparras*, *iptaras*)
- ▶ Made up of base + suffix
 - ▶ Base: derived from Verbal Adjective (VA)
 - ▶ Suffix: 1st & 2nd persons derived from independent personal pronouns, 3rd person of mixed/disputed sources

Case studies: $n \rightarrow v$

- (5) The Akkadian Stative in the ‘simple’ template for \sqrt{prs} ‘cut (off), separate’

	<i>singular</i>	<i>plural</i>
3. <i>masc</i>	<p>paris</p> <p>‘he is cut off’</p>	<p>pars-ū</p> <p>‘they (m.) are cut off’</p>
3. <i>fem.</i>	<p>pars-at</p> <p>‘she is cut off’</p>	<p>pars-ā</p> <p>‘they (f.) are cut off’</p>
2. <i>masc.</i>	<p>pars-āta</p> <p>‘you (m.) are cut off’</p>	<p>pars-ātunu</p> <p>‘you (m. pl.) are cut off’</p>
2. <i>fem.</i>	<p>pars-āti</p> <p>‘you (f.) are cut off’</p>	<p>pars-ātina</p> <p>‘you (f. pl.) are cut off’</p>
1. <i>com.</i>	<p>pars-āku</p> <p>‘I am cut off’</p>	<p>pars-ānu</p> <p>‘we are cut off’</p>

Case studies: $n \rightarrow v$

(6) Akkadian Stative examples

- a. *šumma amēl-u qaqqas-su ašâ*
 if/when man-NOM head-3.SG.M.ACC ašû-disease.ACC
ahiz
 seize.STAT.3.SG.M
 'When a man's head is seized by the ašû-disease' (AMT 6 9:10)
- b. *awilt-um ... ana mutī-ša 2 mār-ī*
 woman-NOM ... DAT husband.CSTR-3.SG.F.ACC 2 son-PL.GEN
ald-at
 bear.STAT-STAT.3.SG.F
 'The woman has borne two sons for her husband.' (AbB 7, 106: 19-21)
- c. *qāti PN₁ u PN₂*
 hand.PL.CSTR PN₁ and PN₂
nash-ā=ma
 tear/pull (out).STAT-STAT.3.PL.F=conjunction
 'The claims of PN₁ and PN₂ are withdrawn.' (CT 4 31b: 6-8)

Case studies: $n \rightarrow v$

While synchronically, the Statives functioned as verbs, diachronically, the form is made up entirely of nominal elements!

- ▶ They can be simplified as the VA **base** and the **suffix**.

(7) Stative morphology
 $XaY(i)Z-$ + Stative suffix

- ▶ The base consist of the template $XaY(i)Z$
 - ▶ XYZ serve as placeholders for the triconsonantal roots (e.g. \sqrt{kbd} '(be) heavy', \sqrt{prs} 'separate, cut off', \sqrt{mdd} 'measure')
 - ▶ This template derives from and is identical to the VA template
- ▶ (Nominal) VA: base + case markings (to Agree with noun)
- ▶ (Verbal) Stative: base + Stative suffixes

Case studies: $n \rightarrow v$

- ▶ Suffix paradigm derived from (at least) two sources
 - ▶ 1st & 2nd persons: Independent Personal Pronouns (IPP), cf. (8)
 - ▶ 3rd persons: possibly from the prefixing verbal paradigms, cf. (9) (disputed)

(8) IPP in Akkadian

	<i>singular</i>	<i>plural</i>
3. <i>masc.</i>	šū	šunu
3. <i>fem.</i>	šī	šina
2. <i>masc.</i>	attā	attunu
2. <i>fem.</i>	attī	attina
1. <i>com.</i>	anāku	nīnu

(9) Verbal affixes of the prefixing paradigms

	<i>singular</i>	<i>plural</i>
3. <i>masc</i>	i-XYZ-∅	i-XYZ-ū
3. <i>fem.</i>	i/ta-XYZ-∅	i-XYZ-ā
2. <i>masc.</i>	ta-XYZ-∅	ta-XYZ-ā
2. <i>fem.</i>	ta-XYZ-ī	ta-XYZ-ā
1. <i>com</i>	a-XYZ-∅	ni-XYZ-∅

$n \rightarrow v$: Conclusion

- ▶ The Akkadian Stative shows an example of a synchronic verb that is made up of nominal elements that have been reanalyzed as verbal morphemes when combined
- ▶ The $n \rightarrow v$ reanalysis is extremely common cross-linguistically, often connected to alignment changes
 - ▶ Modern Greek *-ev-*, *-en-*, *-iz-*, etc. (cf. above)
 - ▶ Reanalysis of Pre-Proto-Algonquian verbal nouns as stative verbs in predicative position/“verbless copular sentences” (Oxford 2014: 14–15; Goddard 1974, Proulx 1982)
 - ▶ Reanalysis of deverbal action nouns from transitive verbs as intransitive verbs/antipassives to transitives in Japhug Rgyalrong (Jacques 2014, 2021)

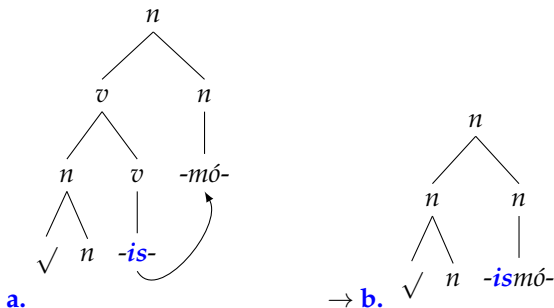
Case studies: $v \rightarrow n$

UR + change of base: historical development of the MG action noun-forming suffix *-ismos* from earlier *-is-* (aorist verb stem) + noun-forming *-mós* (Schwyzer 1939: 493; Manolesou & Ralli 2015).

(10) Ancient Greek deverbal nouns in *-mós*

Present	Aorist	Deverbal noun
<i>oik-íz-ō</i>	<i>oík-is-a</i>	<i>oik-is-mó-s</i> 'foundation of a colony'
house-PRES-1SG	house-AOR-1SG	house-AOR-NMLZ-NOM
<i>dane-íz-ō</i>	<i>dane-is-a</i>	<i>dane-is-mó-s</i> 'money-lending'
loan-PRES-1SG	loan-AOR-1SG	loan-AOR-NMLZ-NOM

Hellenic to Modern Greek: *-ismos* = productive denominal suffix
 (dogmat-**ísmos**, ergat-**ísmos** 'workerism', varoufak-**ísmos** 'Varoufakism', ...)

Case studies: $v \rightarrow n$ (11) Reanalysis of Greek *-is(-)mós*

► “Affix telescoping” (Haspelmath 1995)

Case studies: $a \rightarrow \text{Asp/Ptcp}$

- ▶ (Relational/“secondary”) adjectival morphology is a common diachronic source of participial morphology (Haspelmath 1994)
- ▶ E.g., PIE **-nt-* (denominal possessive adj.) \rightarrow (late) IE active participle suffix (Lowe 2014, 2015; Grestenberger 2020)
- ▶ Vedic Sanskrit (VS) *-ín-*, originally a possessive denominal suffix, (12a) \rightarrow deverbal (participial) suffix, (12c), starting from contexts that were ambiguous between a denominal and a deverbal (state-denoting) interpretation, (12b) (Grestenberger 2021).

Case studies: $a \rightarrow \text{Asp/Ptcp}$

(12) Vedic denominal/deverbal adjectives in *-ín-*

a. $n \rightarrow a$

dhána- ‘prize’

parṇá- ‘wing, feather’

dhan-ín- ‘possessing prizes’

parṇ-ín- ‘winged, feathered’

b. $n?/v?/\sqrt{?} \rightarrow a$

kārá- ‘praise song’ / *kar* ‘praise’

vi-rapśá- ‘abundance’ /

vi rapś ‘abound’

kār-ín- ‘praising’

vi-rapś-ín- ‘having abundance’

c. $v \rightarrow a/\text{ptcp}$

ví_{PRVB} car ‘wander off’

ní_{PRVB} ram + loc. ‘stay at’

prá_{PRVB} sak-ṣ ‘conquer’

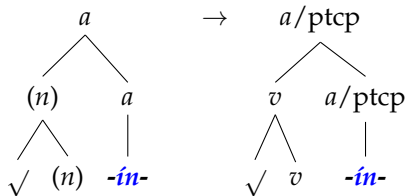
vi-cār-ín- ‘wandering off’

nī-rām-ín- + loc. ‘staying at’

pra-sak-ṣ-ín- ‘conquering’

Case studies: $a \rightarrow \text{Asp/Ptcp}$

(13) UR of Vedic adjectives in *-ín-*



Case studies: *Ptcp* → *a*

- ▶ On the other hand, participial morphology can be reanalyzed as adjectival morphology
- ▶ E.g., OCS adjectives in <-enъ> and <-tъ> are historically participles < PIE *-no-, *-to-
 - ▶ partly, but not exclusively, to “lost” base verbs (14a), (14b)
- ▶ However, some examples seem *not* to go back to a participle → *a*? (14c)

Case studies: *Ptcp* → *a*

(14) OCS adjectives in <-enъ> and <-tъ>

a. **base verb lost in Slavic**

zelenъ 'green'

**zelti* (cf. Lith. *žėlti* 'become green, sprout')

čistъ 'clean, pure'

**čisti* (but caus. *cěditi* 'strain, filter')

čestъ 'frequent, dense'

**česti* (cf. Lith. *kiñsti* 'stuff')

b. **a next to base verb**

čьrvljenъ 'red' / *čьrvenъ* 'id'

čьrviti 'dye red' (← *čьrvъ* 'worm')

c. **no base verb?**

studenъ 'cold'

? genuine adjective?

Case studies: *Ptcp* → *a*

- ▶ While (14a) and (14b) are relatively uncontroversial from a synchronic and diachronic perspective, (14c) is interpreted differently:
 - ▶ Vaillant (1966): *all* adjectives in *-enъ* are old participles, *studenъ* is from *sty(d)nqti* 'cool_{intr.}' (NB: Ablaut problematic - rather *studiti* 'cool_{tr.}')
 - ▶ Arumaa (1985): adjective without mentioning verbal connections
 - ▶ Derksen (2008): PSl. "adjective in *-enъ*" (derived from PSl. **studъ* 'cold, shame'?)
- ▶ Could be due to different diachronic perspectives, *but*
 - ▶ Kiparsky (1975): If *studenъ* were a participle, we would expect not *-d-*, but *-zh-* < **d-j* (cf. Russ. *prostúzhennyj* 'erkältet / to have a cold')

Case studies: *Ptcp* → *a*

- ▶ So phonologically, *studentъ* looks like an adj. with suffix */-enъ/* as opposed to participial */-jenъ/* (cf. *čъrv-l-jenъ* in (14b) or *xval-jenъ* 'praised', PPP of *xvaliti* 'praise')
- ▶ However, of all examples in (14) it is the *only* one that can't be verbalized, see (15).

Case studies: *Ptcp* → *a*

(15) Slavic deadjectivals from former participles

a. base verb lost in Slavic

OCS *zelenъ* 'green'

→ Russ. *zelenét'* 'become green'

→ Russ. *zelenít'* 'make green'

OCS *čistъ* 'clean, pure'

→ OCS *čistiti* 'clean, purify'

OCS *čęstъ* 'frequent, dense'

→ OCS *učęstiti* 'multiply'

b. *a* next to base verb

OCS *čъrvenъ* 'red'

→ Nšt. *crvèneti* 'become red'

→ Nšt. *crvèniti* 'paint red'

c. no base verb?

OCS *studenъ* 'cold'

/

d. synchronic *ptcp.*

OCS *xvaljenъ* 'praised'

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Case studies: *Ptcp* → *a*

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d. synchronic *ptcp.*

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/

In this regard, *studenъ* behaves like a synchronic participle and not like the former participles lexicalized as adjectives

Conclusion

Morphological strategies for marking (morpho)syntactic/(-)semantic categories differ crosslinguistically, but some diachronic generalizations emerge:

- ▶ The target category usually incorporates/reflects properties of the source category (at least at the initial stage) → reanalysis is local & directional
- ▶ $n \rightarrow v$ extremely common — sample bias?
- ▶ New categorizers are never “across the board” (“just N” or “just V”), but associated with particular types of N, V — constraints on “subclass formation”?

Open questions

- ▶ Counterexamples to (uni)directionality of reanalysis? How are these treated in different approaches?
- ▶ Are there universal pathways by which particular *types* of *n's*, *v's*, etc., arise?
- ▶ Diagnostics for derivational directionality - how do we determine what was there “first” (synchronically / diachronically)? Cf. Slavic case study
- ▶ To what extent does the target category reflect the properties of the source category?
 - ▶ E.g., change in categorizing morphology ↔ argument structure change?
- ▶ Synchronic status and diachronic development of “zero categorizers” (see Appendix)

Thank you!



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Der Wissenschaftsfonds.

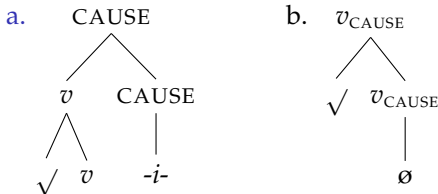
FWF V850-G “The diachrony of verbal categories and categorizers”
(<https://lauragrestenberger.com/categorizers-in-diachrony>)

Appendix: Zero categorizers

- ▶ In DM, categorizers can be covert/“zero” (\emptyset), but this notion has been criticized (esp. Borer 2013, 2014; cf. also the surveys in Dahl & Fábregas 2018; Iordăchioaia & Melloni 2023a)
- ▶ But conceptual and empirical arguments in favor of zero categorizers have been adduced by, e.g., Pesetsky 1995; Dahl & Fábregas 2018; Calabrese 2019; Iordăchioaia 2020; Iordăchioaia & Melloni 2023b; Grestenberger & Kastner 2022
 - ▶ “Making zero morphemes unavailable within a theory is remarkably difficult: if a theory adopts some form of the arbitrariness of the sign, it is conceivable that a morpheme has content but a null phonological representation.” (Dahl & Fábregas 2018: 23)
- ▶ Moreover, there is a diachronic pathway to zero affixation, i.e., loss of category-defining morphology via sound change
 - ▶ E.g., rise of the $n \leftrightarrow v$ conversion pattern(s) in English; labile verbs of the causative alternation through loss of causativizing morpheme, etc.

Appendix: Zero categorizers

- (16) Diachronic pathway of labile verbs in English (van Gelderen 2018; cf. Grestenberger & Kastner 2022: 49)



- (17) Old English causative alternation verbs

anticausative

sittan

'sit'

licgan

'lie'

meltan

'melt, burn up, be digested'

nesan

'escape from/be saved'

scrincan

'shrink/wither'

causative

settan

'set'

lecgan

'lay'

mieltan

'melt/purge'

nerian

'save/protect'

screncan

'cause to shrink'

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