

There is no such thing as a verbal derivational affix

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- 2 The main claim
- 3 Methodology
- 4 Decomposing and deconstructing verbal derivational affixes
- 5 Conclusions and prospects

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The puzzle

What does it take to be a verbal derivational suffix?

- All derivational suffixes are categorizers (Borer, 2005).
- All derivational affixes are roots (Lowenstamm, 2014).
- Some derivational affixes are roots, others are heads (Creemers et al., 2018).
- Borer's account does not predict multi-categorial affixes.
- Lowenstamm cannot account for the fact that by far the most multi-categorial affixes are shared between nouns and adjectives (cf. De Belder 2011; Borer 2013; Creemers et al. 2018).
- Creemers et al. (2018) allow any kind of (phonological) exponents for both roots and categories.

Today's talk

- We focus on Bosnian/Croatian/Montenegrin/Serbian (BCMS), a language with
 - (prima facie) rich derivational verbal morphology
 - theme vowels.
- As observed already in descriptive sources (Marković, 2018), verbal derivational suffixes end in theme vowels that are independently attested in simplex verbs, e.g. *-a-* in simplex verbs like *čit-a-ti* 'read', but also in suffixes like *av-a* that serves as the secondary imperfectivising suffix, or *ir-a*, which integrates loan verbs.

Same theme vowels following roots and derivational affixes

Gloss	Root	Derivational Affix	Theme Vowel	Infl
'read.INF'	čit		a	ti
'read.PRS.1PL'	čit		a	mo
'interpret.INF'	interpret	ir	a	ti
'interpret.PRS.1PL'	interpret	ir	a	mo
'write.INF'	pis		a	ti
'write.PRS.1PL'	pis		je	mo
'photograph.INF'	fotograf	is	a	ti
'photograph.PRS.1PL'	fotograf	is	je	mo

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The main claim

- **There is no such thing as verbal derivational affix.**
- All plausible candidates are decomposable into two primitive units, also found in simple verbs: roots and theme vowels.
- The key analytic benefit of our account is that all verbalisation is done by a limited set of theme vowels (for theme vowels as verbalizers see (Svenonius 2004 for Russian, Jabłońska 2007 for Polish, Biskup 2019 for Czech, Milosavljević and Arsenijević 2022; Kovačević et al. 2024 for Serbo-Croatian).
- This reduces the lexical verbal domain into two syntactic building blocks: roots and verbalizers.
- In contrast to Creemers et al. (2018), we propose that roots and categorizers can also be distinguished by their exponents, with the latter being expressed, at most, by a single vowel.

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Our empirical source: WeSoSlaV

- Our proposal is informed by quantitative insights from the *Annotated Database of the Western South Slavic Verbal System* (WeSoSlaV, Arsenijević et al. 2024; Marušič et al. 2022; Milosavljević et al. 2023).
- The database consists of the 5300 BCMS and 3000 Slovenian most frequent verbs retrieved from the *srWaC*, *hrWaC*, *bsWaC* and *meWaC* corpora for BCMS (Ljubešić and Klubička 2014) and from *Gigafida*, the Slovenian National Corpus for Slovenian (Logar-Berginc et al. 2012).
- Each verb is annotated for a fixed set of over 40 different properties, including grammatical aspect, characteristic morphemes (the root, theme vowels, prefixes, suffixes) and their special properties (e.g. root allomorphy), prosodic prominence, deverbal nominalizations etc.

Derivational affixes in WeSoSlaV

WeSoSlaV comprises multiple columns devoted to individual suffixes appearing in the verbs. We have identified three broad classes of suffixes:

- 1 Verbal suffixes. These include:
 - secondary imperfectivizers consisting of more than just theme vowels;
 - verbalizers used (also) in loanword integration, which consist of more than just theme vowels;
 - other suffixes with a clear semantic contribution in the verbal domain (typically aspectual semantics, or diminution).
- 2 Multifunctional suffixes.
- 3 Suffix-like items and other 'borderline' morphemes.

Secondary imperfectivizing suffixes

- A frequent pattern in Slavic languages is a triplet of verbs sharing the same root, ordered with respect to complexity.
- The morphologically simplest verb is imperfective, the next one, with additional morphology, is perfective (often involving a prefix), and the most complex verb is a secondary imperfective (SI), which is a suffixed version of of the perfective.

Imperfective	Perfective	Sec. Imperfective
čit-a-ti	iz-čit-a-ti	iz-čit-(a)-av-a-ti
read-TV-INF	out-read-TV-INF	out-read-TV-SI-TV-INF
'read'	'read out'	'read out'

Secondary imperfectivizing suffixes

- **ava** and **iva** are default and only productive SI suffixes in Serbo-Croatian (see Simonović et al. 2023)

Inf.	Prs.1pl	Inf.	Prs.1pl
iz-čit- av-a -ti	iz-čit- av-a -mo	pri-vir- iv-a -ti	pri-vir- u-je -mo
out-read-SI-TV-INF	out-read-SI-TV-1PL	at-peep-SI-TV-INF	at-peep-SI-TV-1PL
'to read out'	'we read out'	'to peep'	'we peep'

Verbalizers

- Verbalizers *ira* and *isa* most typically integrate loan verbs:

Inf.	Prs.1pl	Inf.	Prs.1pl
domin- ir-a -ti	domin- ir-a -mo	afirm- is-a -ti	afirm- is-je -mo
dominate-IR-TV-INF	dominate-IR-TV-1PL	affirm-IS-TV-INF	affirm-IS-TV-1PL
'to dominate'	'we dominate'	'to affirm'	'we affirm'

- Verbalizer *ova* verbalizes loan verbs as well as native nominal bases:

Inf.	Prs.1pl	Inf.	Prs.1pl
pamet- ov-a -ti	pamet- u-je -mo	start- ov-a -ti	start- u-je -mo
wisdom-OV-TV-INF	wisdom-OV-TV-1PL	start-OV-TV-INF	start-OV-TV-1PL
'to act smart'	'we act smart'	'to start'	'we start'

Diminutive suffixes

- The suffix **nu** derives diminutive and/or singular verbal predicates (Štarkl et al., 2024; Milosavljević, 2023):

Inf.	Prs.1pl	Inf.	Prs.1pl
spav- nu (-∅)-ti	spav- n-e -mo	trep- nu (-∅)-ti	trep- n-e -mo
sleep-NU-TV-INF	sleep-NU-TV-1PL	blink-NU-TV-INF	blink-NU-TV-1PL
'to sleep a bit'	'we sleep a bit'	'to blink (once)'	'we blink (once)'

- The suffix **ka** derives (non-singular) diminutive verbs:

Inf.	Prs.1pl	Inf.	Prs.1pl
spav- k-a -ti	spav- k-a -mo	ruč- k-a -ti	ruč- k-a -mo
sleep-K-TV-INF	sleep-K-TV-1PL	eat-K-TV-INF	eat-K-TV-1PL
'to sleep (dim)'	'we sleep (dim)'	'to eat (dim)'	'we eat (dim)'

Multifunctional suffixes

- In WeSoSlaV: suffixes that do not have a verbalizing, aspectual or modifying function are annotated as multifunctional as they
 - arguably originate from a different category;
 - have a vague/opaque meaning (if any).
- A typical example is the suffix *ar*:

Inf.	Prs.1pl	Inf.	Prs.1pl
krv- ar-i -ti	krv- ar-i -mo	život- ar-i -ti	život- ar-i -mo
blood-K-TV-INF	blood-K-TV-1PL	life-K-TV-INF	life-K-TV-1PL
'to bleed'	'we bleed'	'to get by'	'we get by'

- The suffix *ar* otherwise derives nomina agentis nouns, such as *slik-ar* 'painter' (cf. *slik-a* 'painting-NOM.SG'), but in the above examples the bases root+*ar* are not attested nor interpretable.

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Decomposing and deconstructing verbal derivational affixes

- Secondary imprefectivizing suffixes are sequences of theme vowels:
 - *ava*: a+a/a
 - *iva*: i+a/je

- The verbalizer *ova* is a sequence of a nominal/adjectival suffix and a theme vowel (o+a/je).

- Verbalizers *ira* and *isa* are sequences of light roots and theme vowels:
 - *ira*: ir+a/a
 - *isa*: is+a/je

- Modifying/diminutive suffixes *nu* and *ka* are sequences of diminutive morphemes (roots) and theme vowels:
 - *nu*: n+∅/e
 - *ka*: k+a/a

Secondary imperfectivizers as sequences of theme vowels

- Quaglia et al. (2022): SI suffixes as mini-verbs consisting of a bound root + TV.
- Marković (2018): SI suffixes consist only of vowels underlyingly.
- Simonović et al. (2023): SI suffixes consist of solely theme vowel material! (The glide component derives from a floating element.)
Secondary imperfectivisation is thus reverbalization, i.e. a procedure whereby a new verb is derived from a perfective verb (Arsenijević et al., 2024).

SI	Quaglia et al. 2022	Marković 2018	Simonović et al. 2023
iva & uje	iv+a & u+je	/i-a/ & /u-e/	i+a & i+je
ava & ava	av+a & av+a	/a-a/ & /a-a/	a+a & a+a

Verbalizer *ova* as a nominal + verbal theme

-o(v)- as a nominal theme? (Zec, 2019; Milosavljević et al., 2021)

- Native bases with which the “verbal” suffix *-ov-* combines are almost always attested as nouns (or adjectives in a couple of examples); see Kovačević et al. (2024).
 - Example: *strah-ova-ti* ‘fear’, the related noun: *strah* ‘fear’
- In Eastern SC, *-ova-* is productive in loan verb integration (e.g. *lajkovati* ‘to like on Facebook’). This receives reductionist power if we assume with Moravcsik (1975) that all borrowed material is nominal. New borrowings only make this evidence more prominent, as virtually every new verbal borrowing from English corresponds to a noun, even in cases where no such noun is attested in English.
 - Example: *ignor-ova-ti* ‘press the ignore button’ and *ignor* ‘the act of ignoring (typically online)’.

Verbalizer *ova* as a nominal + verbal theme

- *-ov-* appears as a plural augment in the declension of some nouns (e.g. *strah* 'fear'):

Case	Singular	Plural
Nominativ	strah-∅	strah- ov -i
Genitive	strah-a	strah- ov -a
Dative	strah-u	strah- ov -ima

Verbalizer *ova* as a nominal + verbal theme

- Milosavljević et al. (2021): *-ov-* shows up in various contexts in the nominal and adjectival declensions but is absent from verbs except in the morpheme *-ova-*.
- *o* is the spell out of the nominal/adjectival theme
 - See also Simonović and Kovačević 2023; Kovačević et al. 2024, and Simonović and Mišmaš 2020 for a related state of affairs in slovenian.

Possessive adjectives/pronouns	Unclear semantics	
Milan-ov, njegov	mir-ov-ni	pol-ov-ni
Milan-ov, he-ov	peace-ov-adj	half-ov-adj
'Milan's', 'his'	'peacemaking'	'second hand'

Decomposing verbalizers

- Suffixes *ira* and *isa* can be decomposed into roots *ir* and *is* and theme vowels *a/a* and *a/je*, respectively.

Inf.	Prs.1pl	Inf.	Prs.1pl
domin- ir-a -ti	domin- ir-a -mo	afirm- is-a -ti	afirm- is-je -mo
dominate-IR-TV-INF	dominate-IR-TV-1PL	affirm-IS-TV-INF	affirm-IS-TV-1PL
to dominate	we dominate	to affirm	we affirm

-*ir* in nouns: *komandir* 'commander' (vs. *komand-a* 'command'), *orijentir* 'orientation point' (vs. *orijent-acija* 'orientation') etc.

-*is* in nouns, e.g., *serv-is* 'serve (tennis/volleyball)' (vs. synonymous *serv-a*), *epidermis* (vs. synonymous *epiderm-a*) etc.

Diminutive affixes: diminutive roots + theme vowels

- Suffix *nu/ne* can be decomposed into the diminutive morpheme $n(u)$ and the theme vowel \emptyset/e (Štarkl et al., 2024; Milosavljević, 2023).
 - The vowel *u* is a floating vowel that surfaces when it helps optimize the syllable structure (Štarkl et al., 2024).
- The suffix *ka* consists of the diminutive morpheme *k* and the theme vowel *a/a*.

Infinitive	Present 1pl	Infinitive	Present 1pl
spav- n^u - \emptyset -ti	spav- n-e -mo	spav- k-a -ti	spav- k-a -mo
spav-NU-TV-INF	spav-NU-TV-1PL	spav-K-TV-INF	spav-K-TV-1PL
to sleep a bit	we sleep a bit	to sleep (dim)	we sleep (sim)

Diminutive affixes: diminutive roots + theme vowels

- The suffix *-k-* also marks diminutivity in nouns and adjectives:

Noun	Noun (dim)	Adjective	Adjective (dim)
red-a	red-k-a	siv	siv-k-ast
line-GEN	line-K-GEN	gray	gray-K-AST
'line'	'line'	'gray'	'grayish'

- The suffix *-n-* is not attested as a diminutive in other categories, but it appears as a singularity marker with some nouns:

Noun-Plural	Noun-Singular	Noun-Plural	Noun-Singular
Bugar-i	Bugar-i-n	Kanadan-i	Kanadan-i-n
Bugar-NOM.PL	Bugar-NOM.PL-NOM.SG	Canad-NOM.PL	Canad-NOM.PL-NOM.SG
'Bulgarians'	'Bulgarian'	'Canadians'	'Canadian'

Diminutive affixes: diminutive roots + theme vowels

- Cross-categorial status of diminutive affixes and their conceptual content point towards treating them as roots.
- Cross-linguistically, diminutive affixes are often cross-categorial and often analyzed as roots or otherwise lexical units.
 - See De Belder et al. (2014), De Belder (2022), Guo (2022), Gouskova and Bobaljik (2022), Cavirani-Pots and Villiers (2023), Cavirani-Pots et al. (2023), Manova et al. (2024), Štarkl et al. (2024).

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Conclusions and prospects

- The mirage of verbal derivational affixes arises from the interaction of transitive roots and verbalisers.
- Roots can have various phonological shapes, whereas verbalisers are a closed class that is strictly limited to a single vocalic slot.
- Prospect: test the approach on nominal and adjectival declension domains.

Thanks!

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