

## The interaction between theme vowels and secondary imperfectives in Slovenian: The curious case of *ava* and *eva*

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ABSTRACT

Our analysis targets two Slovenian secondary imperfectivizers characterized by comparable frequency and surface form, *eva* and *ava*. We consider arguments in favour of various morphological segmentations in an attempt to establish their structure. Both are argued to end in the theme vowel *a*, which also contains the hiatus-repairing floating segment *ʷ*. In *eva*, the theme vowel *ʷa* is preceded by the surviving morpheme *e* from the original perfective verb. In the case of *ava*, the theme vowel *ʷa* is combined with the morpheme *av*, which also occurs in various different environments. We further argue that the surviving morpheme *e* from *eva* is not a theme vowel, but rather a derivational affix – just like *av*.

**KEYWORDS** secondary imperfective · imperfectivizers · theme vowels · unaccusatives

### 1 INTRODUCTION

The central question of this paper is the internal structure of secondary imperfectivizers and their relation to theme vowels of the corresponding perfective verbs. In Slovenian, while there is no clear overall correspondence between the theme vowel class and the choice of the secondary imperfectivizing suffix, in specific domains some strong correlations can be identified.

We focus on two secondary imperfectivizers, similar in surface form and frequency. The first is *eva*, illustrated by the secondary imperfective *izžarevati* ‘to radiate.IPFV’. This imperfectivizer is prevalent in secondary imperfectivizations of verbs of the theme vowel class *e/i*, e.g., *izžareti* ‘to radiate.PFV’.<sup>1</sup> The other imperfectivizer under scrutiny is *ava*, illustrated by *preigravati* ‘to outplay.IPFV’. Among the perfective verbs targeted by *ava* there is an over-representation of the theme vowel class *a/a*, e.g., *preigrati* ‘to outplay.PFV’. We consider arguments in favour of various morphological segmentations of *eva* and *ava*. Specifically, we attempt to identify theme vowels, both the ones contributed by the perfective base (which we term ‘surviving’) and the ones added in the imperfective form, and distinguish them from other participating morphemes. We arrive at an analysis in which the two secondary imperfectivizers preserve the phonological material of their perfective counterparts to different extents. Both *eva* and *ava* are argued to end in the theme vowel *a*, which also contains the hiatus-repairing segment *ʷ* (which we mark as a superscripted *ʷ*). This element surfaces in the case of *eva*, where what precedes the theme vowel *ʷa* is the surviving item *e* from the original perfective verb. In the case of *ava*, on the other hand, the theme vowel *ʷa* is combined with the morpheme *av*, which also occurs in various different environments. We further argue, following Simonović & Mišmaš

<sup>1</sup>Slovenian theme vowel classes are based on the exponent of the theme vowel in non-finite (first part of the name) and finite forms (second part of the name) E.g., a verb from the theme vowel class *e/i* will have the exponent *e* in non-finite forms and the exponent *i* in finite forms, as illustrated by the pair *izžar-e-ti* ‘to radiate’ *izžar-i-mo* ‘we radiate’.

(2022), that the surviving morpheme *e* is not a theme vowel, but rather a derivational affix – just like *av*. This means that, while different with respect to the preservation of material from the perfective base verb, both *ava* and *eva* have the same structure, i.e. derivational affix + theme vowel <sup>v</sup>*a*.

The rest of the article is organized as follows. In §2 we introduce the overall system of theme vowels and secondary imperfectivization in Slovenian. In §3 we present arguments for analysing the final segments of all secondary imperfectivizers as theme vowels. In §4 we show evidence that the most common theme vowel in secondary imperfectivizers, *a/a*, is equipped with a floating segment <sup>v</sup>, which surfaces to prevent hiatus. In §5 we present the arguments for independent morphemes *av* and *ev*, showing that the arguments for *av* are much stronger. In §6, we return to the arguments for the preservation of *a* and *e*, i.e. the theme vowels of the perfective bases, in *ava* and *eva*, respectively. In §7, the final analysis of the two secondary imperfectivizers is presented. §8 concludes the paper.

## 2 FROM SIMPLEX VERBS TO SECONDARY IMPERFECTIVES

### 2.1 THE STRUCTURE OF THE SLOVENIAN VERB

Minimally, a Slovenian verb form consists of a root, a theme vowel and inflection. As already mentioned in footnote 1, theme vowels can have different exponents in finite and non-finite forms, which is why theme vowel classes are named after theme vowel combinations. This is also why verbs are illustrated by two forms: the infinitive and the first person plural present tense form. In (1) we list all theme vowel classes in Slovenian, ranked by their size assessed based on the 3000 most frequent verbs (excluding the highly irregular *biti* ‘to be’, *imeti* ‘to have’ and *iti* ‘to go’).<sup>2</sup>

(1) Theme vowel classes in Slovenian

TV-class	example (infinitive, PRS.1PL)		size of the class (N=3000)
<i>a/a</i>	<i>del-a-ti, del-a-mo</i>	‘work’	34.9%
<i>i/i</i>	<i>hod-i-ti, hod-i-mo</i>	‘walk’	28.8%
<i>a/je</i>	<i>or-a-ti, or-je-mo</i>	‘plough’	12.5%
$\emptyset/e$	<i>nes-<math>\emptyset</math>-ti, nes-e-mo</i>	‘bring’	11.0%
<i>ni/ne</i>	<i>vr-ni-ti, vr-ne-mo</i>	‘give back’	4.8%
<i>e/i</i>	<i>sed-e-ti, sed-i-mo</i>	‘sit’	4.2%
<i>a/i</i>	<i>sliš-a-ti, sliš-i-mo</i>	‘hear’	1.2%
<i>a/e</i>	<i>br-a-ti, ber-e-mo</i>	‘read’	1.2%
$\emptyset/ne$	<i>sta-<math>\emptyset</math>-ti, sta-ne-mo</i>	‘cost’	0.9%
<i>e/e</i>	<i>sm-e-ti, sm-e-mo</i>	‘may’	0.4%

While we generally assume theme vowels to be purely ornamental, as in Marvin (2002) for Slovenian, it has been argued in the past that some smaller classes of theme vowels in fact have syntactic/semantic content. For example, verbs of the class *ni/ne* in Slovenian are semelfactives (Dickey 2001) and *n* can be taken as a suffix (Greenberg 2006: p.73). Moreover, as will become relevant in what follows, *e/i* verbs are typically unaccusative and the theme *e* has been analysed as a derivational affix in Simonović & Mišmaš (2022).

‘Simplex’ verbs, like the ones shown in (1), tend to be imperfective. Such verbs can get perfectivized through prefixation. The resultant perfective prefixed forms can get imperfectivized again through suffixation, a phenomenon referred to as secondary imperfectivization. Example (2) shows this for the verb *delati* ‘to work’. A similar process can be observed with considerably rarer prefixless perfective verbs, illustrated in (3)

<sup>2</sup>This sample represents the Slovenian sub-base of the larger Database of the Western South Slavic verbal system (Arsenijević et al. to appear), a list of verbs annotated for different properties, among them theme vowel class, argument structure, (im)perfectivity etc. While the Database has yet to be published in its entirety, the first two parts are available (i.e., on inflection in Marušič et al. 2022 and on derivation in Milosavljević et al. 2023). In what follows we refer to the Slovenian sample as the Database.

by the verb *plačati* ‘to pay’. Prefixation does not change the aspect of the verb in this latter case and both the prefixless and the prefixed perfectives can be imperfectivized by suffixation.

- (2) a. del -a -ti, del -a -mo  
work -TV -INF, work -TV -PRS.1PL  
‘to work, we work’ imperfective
- b. pre- del -a -ti, pre- del -a -mo  
PREFIX- work -TV -INF, PREFIX- work -TV -PRS.1PL  
‘to rework, we rework’ perfective
- c. pre- del -ova -ti, pre- del -uje -mo  
PREFIX- work -SI -INF, PREFIX- work -SI -PRS.1PL  
‘to rework, we rework’ imperfective
- (3) a. plač -a -ti, plač -a -mo  
pay -TV -INF, pay -TV -PRS.1PL  
‘to pay, we pay’ perfective
- b. iz- plač -a -ti, iz- plač -a -mo  
PREFIX- pay -TV -INF, PREFIX- pay -TV -PRS.1PL  
‘to pay out, we pay out’ perfective
- c. plač -eva -ti, plač -uje -mo  
work -SI -INF, work -SI -PRS.1PL  
‘to pay, we pay’ imperfective
- d. iz- plač -eva -ti, iz- plač -uje -mo  
PREFIX- pay -SI -INF, PREFIX- pay -SI -PRS.1PL  
‘to pay out, we pay out’ imperfective

## 2.2 IDENTIFYING THE SECONDARY IMPERFECTIVIZERS

Examples (2) and (3) feature the secondary imperfectivizer *ova*, which surfaces as *eva* in non-finite forms following a subset of consonants and as *uje* in finite forms. This imperfectivizer is not to be confused with the imperfectivizer *eva*, which surfaces as *eva* after all consonants and in both finite and non-finite forms. Moreover, even in contexts where both imperfectivizers are realized as *eva*, it is possible to distinguish the two by the stress pattern: the underlying *ova* always has the stress on the final vowel (e.g., *iz-plač-éva-ti* ‘to pay out’), whereas the underlying *eva* always has stress on the first vowel (*iz-žar-éva-ti* ‘to radiate’).<sup>3</sup>

Our focus in this contribution will be on clearly suffixal secondary imperfectivizers, like the ones shown so far. Other ways of deriving secondary imperfectives, which we leave aside here, include changing the theme vowel class (as in *vz-nik-ni-ti* → *vz-nik-a-ti* ‘to emerge.PFV, IPFV’), ablaut (typically accompanied by a change of a theme vowel, e.g. *za-pre-Ø-ti* → *za-pir-a-ti* ‘to close.PFV, IPFV’) and suppletive forms (*vreči* → *metati* ‘to throw.PFV, IPFV’). Focusing on clearly suffixal imperfectivizers in Slovenian, (4) shows the four most common suffixes found in the secondary imperfectives in our database.

<sup>3</sup>Perhaps a more accurate way of referring to the imperfectivizers would be to use both the finite and the non-finite version, as is done throughout the paper when referring to theme vowels. In that case, we would refer to *ova/uje*, *ava/ava*, *eva/eva*, *ja/ja* etc. Our decision to use a single representation in this paper is due to the fact that *ova(/uje)* is the only imperfectivizer that has two different allomorphs, and the two imperfectivizers in focus here always have the same exponent in the non-finite and the finite form.

## (4) Four most common secondary imperfectivizers in the database (N out of 417)

Secondary imperfectivizer	PFV	example IPFV		N	%
ja	<i>po-mer-i-ti</i> →	<i>po-mer-ja-ti</i> , <i>po-mer-ja-mo</i>	‘try on’	203	48.7%
ova	<i>za-pis-a-ti</i> →	<i>za-pis-ova-ti</i> , <i>za-pis-uje-mo</i>	‘write down’	162	38.8%
ava	<i>pre-igr-a-ti</i> →	<i>pre-igr-ava-ti</i> , <i>pre-igr-ava-mo</i>	‘outplay’	26	6.2%
eva	<i>za-rd-e-ti</i> →	<i>za-rd-eva-ti</i> , <i>za-rd-eva-mo</i>	‘blush’	26	6.2%

In the overview above, we represent secondary imperfectivizers as single morphemes which linearly occupy the same position as the theme vowel in the perfective verbs they are derived from. This is an initial simplification for presentation purposes and we will discuss further decomposition of the listed suffixes, as well as the possible preservation of the original theme vowels from the perfective verb further below.

Before moving on, a remark is in order regarding the way secondary imperfectivizers are usually glossed in the generative literature and our reasons for departing from this notation. Due to the surface overlap of the final segments of *ova*, *ava* and *eva*, a host of literature on Slovenian (and other Slavic languages, e.g., Filip & Carlson 1997, Arsenijević 2006) glosses the sequence *va* as the exponent of the secondary imperfectivizer, whereas the preceding vowel is segmented together with the root. Lumping all the instantiations of *ova*, *ava* and *eva* (as well as some other examples, see below) under the same heading makes this *va* the most common imperfectivizer in Slovenian, which is also how it is often discussed.

This *va*-segmentation has been assumed for Slovenian in, e.g., Žaucer (2009). The examples quoted in Žaucer (2009) are *pre-ora-va-ti* ‘to plow up.IPFV’, *pri-frfota-va-ti* ‘to arrive fluttering.IPFV’, *za-vezo-va-ti/za-veza-va-ti* ‘to tie up.IPFV’, *na-polnje-va-ti* ‘fill up.IPFV’, *vz-digo-va-ti* ‘to lift up.IPFV’ and *za-li-va-ti* ‘to be flooding.IPFV’.<sup>4</sup> In (5), we repeat these examples with the corresponding perfective verb and the segmentation assumed here.

## (5) Examples from Žaucer (2009) in the segmentation assumed here

PFV	IPFV	Gloss	Secondary imperfectivizer
<i>pre-or-a-ti</i>	→ <i>pre-or(-a)-ava-ti</i>	‘plough up’	<i>ava</i>
<i>pri-frfot-a-ti</i>	→ <i>pri-frfot(-a)-ava-ti</i>	‘arrive fluttering’	<i>ava</i>
<i>za-vez-a-ti</i>	→ <i>za-vez(-a)-ava-ti</i>	‘tie up’	<i>ava</i>
<i>za-vez-a-ti</i>	→ <i>za-vez-ova-ti</i>	‘tie up’	<i>ova</i>
<i>na-poln-i-ti</i>	→ <i>na-poln-i-ova-ti</i>	‘fill up’	<i>ova</i>
	[napownjevati]		
<i>vz-dig-ni-ti</i>	→ <i>vz-dig-ova-ti</i>	‘lift up’	<i>ova</i>
<i>za-li-Ø-ti</i>	→ <i>za-li-va-ti</i>	‘flood’	TV change

As our glossing of the first three examples in (5) makes clear, we are remaining agnostic as to the survival of the original theme vowel *a* from the perfective verb in the secondary imperfectivizer when what follows is *ava*. This essentially means that a *va*-analysis is still possible in such examples.<sup>5</sup> However, the same *va* cannot be assumed in the following three examples, since the preceding vowel in these examples, *o*, is not a (verbal) theme

<sup>4</sup>Žaucer (2009) focuses on the position of the secondary imperfectivizer and not on its structure and remains explicitly agnostic about the vowel preceding *va*. In the context of *pre-ora-va-ti*, he explicitly refers to the final vowel of *ora* as “stem-final/thematic vowel *-a-*” (Žaucer 2009: p.36).

<sup>5</sup>The same is true of the final example. We will present our analysis of such examples in §4.

vowel in Slovenian. In addition, while the first three examples keep the same (*a*)*va* in the present tense (e.g., *preoravamo* ‘we plough up’), *ova* always alternates with *uje* (e.g., *zavezujemo* ‘we tie up’), *u* being another segment that does not figure as a theme vowel in Slovenian.

Apart from showing up preceded by vowels which are not (verbal) theme vowels in Slovenian, the assumed *va* also fails to show up with all elements that are attested as verbal theme vowels. For instance, there are no secondary imperfectivizers in *-ni-va-ti* from the theme vowel class *ni/ne*. As for the second-largest theme vowel class (*i/i*), there is only a single example compatible with the *va*-analysis: *dob-i-ti* → *dob-i-va-ti* ‘get’. Finally, in the theme vowel class  $\emptyset/e$ , all cases compatible with a *va*-analysis are concentrated in the class of vowel-final roots (e.g., *za-li- $\emptyset$ -ti* → *za-li-va-ti* ‘flood’), but there are no comparable cases with consonant-final roots (e.g., *nagris- $\emptyset$ -ti* → *nagriz-ova-ti* ‘gnaw’, but no cases like *nagris- $\emptyset$ -ti* → *nagriz-va-ti*).

In summary, we have not presented compelling reasons to outright dismiss *va* altogether. However, we have demonstrated that at least the imperfectivizer *ova* cannot be analyzed on the same grounds as other imperfectivizers. We therefore keep referring to *ava* and *eva*, but we will consider several options for unifying them in the following sections. In the following subsection, we turn to the issue of selection of the imperfectivizer based on the theme vowel of the perfective verb.

### 2.3 PREDICTING THE SECONDARY IMPERFECTIVIZER

Generally, there is no correlation between the theme vowel of the perfective verb and the imperfectivizer that gets added to that perfective verb. Verbs from one theme vowel class can be imperfectivized with different secondary imperfectivization suffixes and secondary imperfectivization suffixes can appear with more than one theme vowel class. This is shown in the following two tables, where examples are given for each theme vowel-suffix combination attested in our database. The first verb of the example is always perfective, the second imperfective. The theme vowel classes are grouped into those that include unaccusative verbs in the top half and those that do not in the bottom classes (for reasons which will become clear in §6). Two examples are in brackets. These are non-derived perfective verbs with their imperfective pair. Where the cell is empty, no example for the theme vowel-suffix combination can be found in the Database.

(6) Suffixation with *ja* and *ova/eva, uje*

TV-class	<i>ja/ja</i>	<i>ova/uje</i>
e/i		<i>o-skrb-e-ti</i> → <i>o-skrb-ova-ti</i> 'take care of'
Ø/ne	<i>o-sta-Ø-ti</i> → <i>o-sta-ja-ti</i> 'stay'	
e/e		
ni/ne	<i>pre-ki-ni-ti</i> → <i>pre-kin-ja-ti</i> 'stop'	( <i>dvig-ni-ti</i> → <i>dvig-ova-ti</i> ) 'lift'
Ø/e	<i>iz-ves-Ø-ti</i> → <i>iz-va-ja-ti</i> 'carry out'	
a/je		<i>pri-kaz-a-ti</i> → <i>pri-kaz-ova-ti</i> 'show'
a/e		<i>za-pelj-a-ti</i> → <i>za-pelj-eva-ti</i> 'drive'
a/i		<i>za-drž-a-ti</i> → <i>za-drž-eva-ti</i> 'hold'
a/a	<i>do-d-a-ti</i> → <i>do-da-ja-ti</i> 'add'	<i>iz-plač-a-ti</i> → <i>iz-plač-eva-ti</i> 'pay'
i/i	<i>pred-stav-i-ti</i> → <i>pred-stavl-ja-ti</i> 'introduce'	<i>zaposl-i-ti</i> → <i>zaposl-ova-ti</i> 'employ'

(7) Suffixation with *ava* and *eva*

TV-class	<i>ava</i>	<i>eva</i>
e/i	<i>za-let-e-ti</i> → <i>za-let-ava-ti</i> 'crash'	<i>iz-žar-e-ti</i> → <i>iz-žar-eva-ti</i> 'radiate'
Ø/ne		<i>raz-o-de-Ø-ti</i> → <i>raz-o-d(e)-eva-ti</i> 'reveal'
e/e		<i>s-po-raz-um-e-ti</i> → <i>s-po-raz-um-eva-ti</i> 'agree'
ni/ne		( <i>mi(n)-ni-ti</i> → <i>min-eva-ti</i> ) 'go by'
Ø/e		<i>pre-šte-Ø-ti</i> → <i>pre-št(e)-eva-ti</i> 'count'
a/je	<i>iz-kop-a-ti</i> → <i>iz-kop-ava-ti</i> 'dig out'	
a/e		
a/i	<i>po-lež-a-ti</i> → <i>po-lež-ava-ti</i> 'lie down'	
a/a	<i>u-ravn-a-ti</i> → <i>u-ravn-ava-ti</i> 'align'	
i/i	<i>o-dobr-i-ti</i> → <i>o-dobr-ava-ti</i> 'approve'	( <i>lot-i-ti</i> → <i>lot-eva-ti</i> ) 'start'

While the two tables show a considerable level of unpredictability of imperfectivizing suffixes (if we use the theme vowel class of the perfective verb as a predictor), it is not the case that anything goes. There is only one theme vowel combination that is attested with all four suffixes (i/i). More interestingly for our comparison of *ava* and *eva*, the overview in Table (7) shows something quite close to complementary distribution between the two suffixes. While the theme vowel classes that host unaccusative verbs tend to take *eva*, those that do not host any unaccusative verbs tend to take *ava*. Finally, Table (7)

also shows that there is a strong tendency for the theme vowel of the perfective verb to overlap with the initial vowel of the secondary imperfectivizer, but that there are also quite a few exceptions.

As already previewed in the introduction, the main question of this article is the correct analysis of the two imperfectivizers. In order to arrive at the correct analysis, we will consider different segmentations of the suffixes *eva* and *ava*. In the following section, we start from the final segment of the suffix.

### 3 STARTING FROM THE END: SECONDARY IMPERFECTIVIZERS END IN THEME VOWELS

As a first step in our analysis of the internal structure of the secondary imperfectivizers, we show arguments that all secondary imperfectivizers end in theme vowels. This analysis has been proposed by Quaglia et al. (2022), who argue that Slavic secondary imperfectivizers can be viewed as ‘mini verbs’, contributing their own theme vowel that surfaces preceding inflectional morphology. This is based on the observation that, more generally, ‘secondary imperfectivizers, at least in Slovenian and B/C/M/S, end in a theme vowel.’<sup>6</sup> On this analysis, three out of the four secondary Slovenian imperfectivizers represented in (4) end in the theme vowel *a/a*, whereas one, *ova*, ends in the theme vowel *a/je*.

For Slovenian, stress constitutes an additional argument for unifying all secondary imperfectives as ending in the same two theme vowels. In general, Slovenian verbs allow stress in two positions: on the theme vowel and on the syllable preceding the theme vowel.<sup>6</sup> Crucially, Simonović (2023) shows that verbal prosody depends on the lexical specification on the theme vowel.

If we now consider the distribution of stress patterns in simplex *a/a* verbs, (8), simplex *a/je* verbs, (10), secondary imperfectives with *a/a*, (9), and secondary imperfectives with *a/je*, (11), we see that simplex verbs allow various prosodic patterns, but secondary imperfectives ending in the same theme vowel all have the same prosody. Specifically, secondary imperfectives that belong to the class *a/a* have stress on the syllable preceding the theme vowel, whereas all secondary imperfectives ending in the theme vowel *a/je* have stress on the theme vowel in the infinitive form. We take this as a strong argument that all secondary imperfectivizers end in the two specific theme vowels, since (as stated above) stress placement depends on the prosodic specification on the theme vowel.

In (9) and (11) the secondary imperfectivizers are underlined in all the examples (we add the perfective base in brackets; the translation is for both the imperfective and perfective examples). Apart from examples illustrating secondary imperfectivizers discussed in the previous sections, we also included examples of verbs which involve less regular and even suppletive patterns (*vreči* → *metati* ‘to throw.PFV, IPFV’), as even they obey the stated generalization.

- (8) Stress options in simplex *a/a* verbs
- a. On the theme: *igr-á-ti* ‘play’
  - b. Preceding the theme: *dél-a-ti* ‘work’
  - c. Two syllables before theme: *prídíg-a-ti* ‘preach’
- (9) Stress options in imperfective verbs ending with *a/a*
- a. On the theme: **No examples**
  - b. Preceding the theme: *pre-igr-áv-a-ti* (*preigráti*) ‘to re-play’, *iz-kop-áv-a-ti* (*izkopáti*) ‘dig out’, *iz-žar-év-a-ti* (*izžaréti*) ‘shine’, *do-dá-j-a-ti* (*dodáti*) ‘add’, *pri-háj-a-ti* (*príti*) ‘come’, *pre-vz-ém-a-ti* (*prevzéti*) ‘take over’, *določ-a-ti* (*določíti*) ‘determine’
  - c. Two syllables before theme: **No examples**

<sup>6</sup>Some denominal verbs allow stress on the position even more to the left, i.e. *prídigati* ‘to preach’ (related to *prídiga* ‘sermon’) in (8). Such verbs are extremely rare.

- (10) Stress options in simplex a/je verbs
- On the theme: *or-á-ti* ‘plough’
  - Preceding the theme: *rís-a-ti* ‘draw’
  - Two syllables before theme: *vér-ov-a-ti* ‘believe’
- (11) Stress options in imperfective verbs ending with a/je
- On the theme: *pri-kaz-ov-á-ti* (*prikázati*) ‘show’, *da-j-á-ti* (*dodáti*) ‘give’,  
*jem-á-ti* (*vzéti*) ‘take’, *met-á-ti* (*vréči*) ‘throw’
  - Preceding the theme: **No examples**
  - Two syllables before theme: **No examples**

Having established that all secondary imperfectivizers end in a theme vowel, we can preliminarily parse the two secondary imperfectivizers in focus here into *av-a* and *ev-a*, respectively.<sup>7</sup>

#### 4 THEME VOWEL BRINGS THE HIATUS REPAIR

Having established that secondary imperfectivizers end in theme vowels and that all the secondary imperfectivizers ending in a non-alternating *a* contain the same theme vowel (a/a), we are in position to consider evidence that the contribution of the theme may go beyond the final vowel of the imperfectivizer and its prosodic specification. There are indications that the consonant *v* (which typically gets pronounced as a labiodental approximant before vowels, and as a bilabial approximant before consonants and word-finally) could be realizing a part of the underlying representation of the theme vowel a/a as well. We have seen such a case in (5), where the pair *za-li-Ø-ti* → *za-li-va-ti* ‘flood’ was considered in the context of the proposed imperfectivizer *va*. In (12), we show further deverbial and denominal verbs in which a hiatus-resolving *v*-insertion can be reconstructed.<sup>8</sup> This type of hiatus resolution cannot be considered phonological or productive in Slovenian, as the hiatus-resolving *j* is the norm and *j* actually can appear with the same bases. It therefore stands to reason to assume that the hiatus-resolving *v* is part of the lexical representation of certain morphemes in the form of a floating element that gets realized only if it prevents hiatus (see Tranel 1995, Magomedova & Slioussar 2017, Enguehard 2017 and references therein for floating elements). In this case the more precise representation of the theme vowel would be <sup>v</sup>*a*/<sup>v</sup>*a*. Assuming this representation allows us to subsume cases like *za-li-Ø-ti* → *za-li-va-ti* ‘flood’ and the first three examples in (12) under the general rubric of imperfectivisation by means of theme vowel change (on a par with, e.g., *določ-i-ti* → *določ-a-ti* ‘determine’).

- (12) Hiatus-resolving *v* in a/a verbs

base	form with	
	hiatus-resolving <i>j</i>	hiatus-resolving <i>v</i>
<i>po-kri-Ø-ti</i> ‘cover.PFV’	<i>po-kri-j-e</i> ‘she covers.PFV’	<i>po-kri-v-a-ti</i> ‘to cover.IPFV’
<i>pre-šte-Ø-ti</i> ‘count.PFV’	<i>pre-šte-j-e</i> ‘she counts.PFV’	<i>pre-šte-v-a-ti</i> ‘to count.IPFV’
<i>plju-ni-ti</i> ‘spit.PFV’	/	<i>plju-v-a-ti</i> ‘spit.IPFV’
<i>dob-i-ti</i> ‘get.PFV’	/	<i>dob-i-v-a-ti</i> ‘get.IPFV’
<i>intervju</i> ‘interview.NOM.SG’	<i>intervju-j-a</i> ‘interview.GEN.SG’	<i>intervju-v-a-ti</i> ‘to interview’

<sup>7</sup>See Gribanova (2015) for a similar decomposition for Russian secondary imperfective suffixes *va* and *y/iva*.

<sup>8</sup>Note that we also included the secondary imperfective *pre-šte-v-a-ti* ‘to count.IPFV’, which we also listed in (20) as *pre-št(e)-eva-ti*. This type of verbs indeed presents an analytical dilemma, to which we return in §6.2.



The proposed analysis also straightforwardly accounts for the fact that all examples of the previously assumed imperfectivizer *va* in the theme vowel class  $\emptyset/e$ , are concentrated in the class of vowel-final roots (e.g., *za-li- $\emptyset$ -ti*  $\rightarrow$  *za-li-va-ti* ‘flood’), but there are no comparable cases with consonant-final roots (e.g., *nagris- $\emptyset$ -ti*  $\rightarrow$  *nagriz-ova-ti* ‘gnaw’, but no attested cases like *nagris- $\emptyset$ -ti*  $\rightarrow$  *nagriz-va-ti*).

Assuming the floating *v*-element as part of the underlying representation of the theme vowel does not necessarily help us choose the correct segmentation of the two imperfectivizing suffixes in focus here. Since the floating element gets realized to prevent hiatus from surfacing, both *a-<sup>v</sup>a* and *av-<sup>v</sup>a* will have the same surface form *ava*. We therefore still need to consider both *a* and *av* (and, by the same token, *e* and *ev*) as candidates for the morpheme preceding <sup>v</sup>*a*. As will be shown, all options can be backed by some arguments. We start in the following section by addressing the arguments for *av* and *ev*.

## 5 ARGUMENTS FOR *av* AND *ev* AS MORPHEMES

Before turning to the arguments for *av* and *ev*, it is instructive to briefly focus on a morpheme that has been reconstructed in the same position and is not jeopardized by the analysis involving a theme vowel. This is the morpheme that surfaces as *ov~u* within the secondary imperfectivizer *ova/uje*. Since neither *o/ov* nor *u* figure as theme vowels in Slovenian, the presence of a derivational morpheme preceding the theme vowel *a/je* is uncontroversial. Furthermore, *ov* is attested in various other categorial environments, which led Simonović & Mišmaš (2020) and Simonović (2023), working in the framework where derivational affixes are analysed as roots, to propose an analysis where there is a root  $\sqrt{ov}$  which can select various categories and be selected by various categories. We follow these analyses and list some of the various other uses of *ov*. First, there is a class of *ova* verbs, distinct from the secondary imperfectivizations in that they, in addition to not having a perfective counterpart without *ov*, allow the preservation of the nominal stress, indicating that the verbalized  $\sqrt{ov}$  can also select nouns.

(13) Denominal *ova*-verbs

nominal base	<i>ova/uje</i> -verb
<i>vér-a</i> ‘faith’	<i>vér-ov-a-ti</i> and <i>ver-ov-á-ti</i> ‘to believe’
<i>déd</i> ‘grandfather’	<i>déd-ov-a-ti</i> and <i>ded-ov-á-ti</i> ‘to inherit’
<i>pot</i> ‘travel’	<i>pót-ov-a-ti</i> and <i>pot-ov-á-ti</i> ‘to travel’

The same affix shows up in denominal kind adjectives that denote the material something is made of.

(14) Denominal *ov*-adjectives

nominal base	adjective
<i>paradižnik</i> ‘tomato’	<i>paradižnik-ov</i> ‘made of tomatoes’
<i>žvepl-o</i> ‘sulphur’	<i>žvepl-ov</i> ‘sulphuric’
<i>lip-a</i> ‘linden’	<i>lip-ov</i> ‘made out of linden’

Finally, *ov* also shows up between other morphemes, where no specific meaning can be assigned to it, but it can help make a lexical distinction. Below we quote two pairs of adjectives ending in the adjectivizer *en*. Both members of the pair share the nominal base, but one of them also has the morpheme *ov* in the same position.

(15) Denominal *ov-en*-adjectives and *en*-adjectives

nominal base	<i>ov-en</i> -adjective	<i>en</i> -adjective
<i>jezik</i> 'language, tongue'	<i>jezik-ov-en</i> 'related to language'	<i>jezič-en</i> 'related to tongue'
<i>plod</i> 'fruit'	<i>plod-ov-en</i> 'related to a/the fruit'	<i>plod-en</i> 'fertile'

The question is then whether we can find similar evidence for *ev* and *av*. Before considering such evidence, a remark is in order. While evidence from other categorial domains can help confirm that a morpheme is present, the absence of such multifunctionality does not prove that a morpheme does not exist. This is because in the affixes-as-roots frameworks not all affixes are assumed to show up in different categories. Affixes are taken to be similar to "lexical" roots in that they can surface in several or only one environment.<sup>9</sup>

## 5.1 AV AS A MORPHEME

Evidence for *av* in various categorial environments has been overviewed in Simonović (2023). Here we restrict ourselves to quoting several representative examples of *av*-derivations. We start with nominal *av*-derivations in (16). One specificity of the nominal *av* is that it shows up in various declension classes. In the examples in (16), the first *av*-noun is masculine, whereas the remaining ones are feminine.<sup>10</sup>

(16) *av(a)*-nouns

base (category)	<i>av(a)</i> -noun
<i>rok-a</i> 'hand' (noun)	<i>rok-av</i> 'sleeve'
<i>skušnj-a</i> 'rehearsal' (noun)	<i>skušnj-av-a</i> 'temptation'
<i>vez-a-ti</i> 'to bind' (verb)	<i>vez-av-a</i> 'binding, inflection'
<i>nar</i> (root)	<i>nar-av-a</i> 'nature'

In (17), we show *av* coupled with the nominalizer *ic-a* selecting various categorial environments.

(17) *av-ica*-nouns

base (category)	<i>av-ic-a</i> -noun
<i>rok-a</i> 'hand' (noun)	<i>rok-av-ic-a</i> 'glove'
<i>znoj-Ø</i> 'sweat' (noun)	<i>znoj-av-ic-a</i> 'extreme sweating (in medicine)'
<i>kap-a-ti</i> 'to drop' (verb)	<i>kap-av-ic-a</i> 'gonorrhoea'
<i>klap</i> (root)	<i>klap-av-ic-a</i> 'oyster'

Finally, in (18), we show examples of the adjectivizing *av*.

(18) *av*-adjectives

base	category	<i>av</i> -adjective
<i>grb-a</i> 'hump'	noun	<i>grb-av</i> 'humpbacked'
<i>sluz</i> 'slime'	noun	<i>sluz-av</i> 'slimy'
<i>norč-ev-a-ti</i> se 'to make fun'	verb	<i>norč-av</i> 'buffoonish'
<i>bles</i>	root	<i>bles-av</i> 'stupid'

<sup>9</sup>Similarly, as argued by Arad (2003), roots *may* be assigned different interpretations in different contexts, but the fact that something only has a single interpretation cannot be taken as evidence that it is not a root.

<sup>10</sup>What we quote as the category of the base is the category in which the respective root appears in the morphologically simpler environment given to the left of the *av*-derivation. This is not necessarily the category that is inherited in the *av*-derivation. As a matter of fact, based on prosodic facts, Simonović (2023) argues most of the quoted examples are root derivations.

We take these data as compelling evidence that *av* is an independent morpheme in Slovenian.

## 5.2 EV AS A MORPHEME

Before reviewing evidence for *ev* as an independent morpheme, a remark is in order concerning the allomorphy of the affix *ov* discussed at the beginning of this section. The affix *ov* shows up as *ev* following a set of consonants traditionally termed soft (*j, c, č, ž* and *š*). For instance, the verb *norč-ev-a-ti se* ‘to make fun’, quoted in (18), may appear as containing the morpheme *ev*. However, given the fact that its present tense form is *norč-u-je-mo se* ‘we make fun’, we know that this is actually an *ova/uje* verb with predictable allomorphy. The same holds of the adjective *češnj-ev* ‘made of cherries’, which we could add to the list in (14). On the other hand, the secondary imperfectivizer *eva* shows up after all consonants. For this reason, in this section we are looking for a morpheme *ev* which is not restricted to the position after *j, c, č, ž* and *š*.

The search for an independently motivated *ev* keeps revolving around a very limited list of roots, which all end in *e* and show up with the additional *v* preceding several vowel-initial affixes. We overview these roots in (19).

(19) Roots which provide arguments for the morpheme *ev*

root	form without <i>v</i>	<i>ev-en</i> -adjective	<i>ev-ek</i> -noun	<i>ev-a-ti</i> -verb
$\sqrt{\text{STE}}$	<i>šte-Ø-ti</i> ‘count’	<i>šte-v-en</i> ‘countable’	<i>se-šte-v-ek</i> ‘total’	<i>se-šte-v-a-ti</i> ‘add’
$\sqrt{\text{DNE}}$	<i>dne</i> ‘day.GEN.SG’	<i>dne-v-en</i> ‘daily’		
$\sqrt{\text{HTE}}$	<i>hot-e-ti</i> ‘want’	<i>za-hte-v-en</i> ‘daunting’	<i>za-hte-v-ek</i> ‘request’	<i>za-hte-v-a-ti</i> ‘request’
$\sqrt{\text{DE}}$	<i>de-Ø-ti</i> ‘put’	<i>pri-za-de-v-en</i> ‘eager’	<i>vz-de-v-ek</i> ‘nickname’	<i>pri-za-de-v-a-ti</i> ‘affect’
$\sqrt{\text{PE}}$	<i>pe-Ø-ti</i> ‘sing’	<i>pe-v-en</i> ‘singable’	<i>pri-pe-v-ek</i> ‘chorus’	<i>pre-pe-v-a-ti</i> ‘sing’
$\sqrt{\text{SPE}}$	<i>u-sp-e-ti</i> ‘succeed’	<i>pri-spe-v-en</i> ‘contributed’	<i>pri-spe-v-ek</i> ‘input’	<i>pri-spe-v-a-ti</i> ‘contribute’

Given the restricted scope of this list, but also given the fact that all these roots end in *e*, it seems more plausible to endow these roots with a floating *v*-element than to assume an independent morpheme *ev*.

## 5.3 SUMMING UP THE ARGUMENTS FOR AV AND EV AS MORPHEMES

The aim of this section was to review evidence for *av* and *ev* being morphemes based on their appearance in different categorial environments. We follow Simonović (2023) who indeed shows that in addition to secondary imperfective verbs, *av* can (similarly to *ov*) appear in both nouns and adjectives with different kind of bases, which we take as an argument for *av* being an independent morpheme. There is, on the other hand, not enough evidence to claim the same for *ev*, since *ev* only ever appears with a limited number of roots, which additionally also end in *e*, making it hard to claim that it is in fact an independent morpheme. In the following section, we consider evidence that the first vowels of *ava* and *eva* are in fact theme vowels surviving from the perfective base verb.

## 6 ARGUMENTS FOR THE SURVIVING THEME VOWELS *a* AND *e* IN *ava* AND *eva*

To explore the arguments for the preservation of *a* and *e* in the two secondary imperfectivizers under consideration, we examine two sets of data from our database. First, in §6.1, we focus on the largest theme vowel classes featuring the theme vowels *a* and *e* (*a/a* and *e/i*, respectively) and consider how they form secondary imperfectives. The expectation is that, if *ava* and *eva* preserve the theme vowel from the original perfective verb, they should do so in most cases or in a clearly defined subset of cases. On the other hand, if there is no theme vowel preservation and secondary imperfectivizers are simply vowel-initial (as is uncontroversially the case for *ova*), no clear correlation is expected. Then, in §6.2, we take the opposite direction. We take as our starting point the secondary imperfectives in our database and establish which theme vowel class their perfective bases belong to. If the original theme vowels are in fact preserved, we expect a clear correlation: *ava* verbs will generally be the imperfective counterparts of verbs that display the theme vowel *a*, and *eva* verbs will tend to be imperfectivized counterparts of verbs with the theme vowel *e*.

### 6.1 COMPOSING SECONDARY IMPERFECTIVES

We start from the *a/a*-class. In order to establish how verbs in the *a/a*-class form secondary imperfectives, we constructed secondary imperfectives for all verbs in the Database that were annotated as prefixed, perfective and belonging to the theme vowel-class *a/a*. As the following table shows, all four secondary imperfectivizers are used with *a/a* verbs. However, *eva* is only used in one (shaky) example.<sup>11</sup> More importantly for our purposes, *ava* is not the most common secondary imperfectivizer applied to *a/a* verbs and therefore the preservation of the original theme vowel does not arise from the data as the major pattern. The alternative we wanted to explore is that the preservation pattern is minor but predictable from some other factor. One candidate for this factor that we can obtain from the database is the argument structure. It may be the case that only *a/a* verbs with a certain argument structure have their theme vowel preserved. The database contains information on argument case marking, so we established that the *a/a* class predominantly consists of verbs which take an accusative argument, as 72% of all *a/a* verbs are annotated as taking an accusative argument. We therefore repeated the same procedure, just restricting ourselves to the *a/a* verbs which take an accusative argument. As can be seen from the percentages in Table (20), the distribution does not change radically.

(20) Distribution of secondary imperfectivizers targeting *a/a* verbs

sec- ondary imperfec- tivizer	% (No.) of all verbs tak- ing the imper- fectivizer	% (No.) of accusati- ve-selecting <i>a/a</i> verbs taking the imperfec- tivizer	Example (PFV→IPFV)
<i>ova</i>	63% (34)	68.2% (30)	<i>izboljšati</i> → <i>izboljševati</i> 'to better'
<i>ja</i>	22.2% (12)	25% (11)	<i>dodati</i> → <i>dodajati</i> 'to add'
<i>ava</i>	13% (7)	6.8% (3)	<i>preigrati</i> → <i>preigravati</i> 'to replay'
<i>eva</i>	1.9% (1)	0	( <i>zastarati</i> → <i>zastarevati</i> ) 'to become invalid'

The data considered so far do not give strong support for preservation of the theme

<sup>11</sup>In the relevant example it is not clear if the secondary imperfective *zastarevati* 'to become obsolete/invalid' is formed from *zastarati* 'to become invalid' or the form *zastareti* 'to become obsolete'.





(24) Secondary imperfective verbs for *e/i*-unaccusatives

prefix	perfective, imperfective, gloss
iz-	<i>izgoreti, izgorevati</i> 'burn out'
od-	<i>odcveteti, odcvetevati</i> (also <i>odcvetati</i> ) 'finish blooming'
do-	<i>dozoreti, dozorevati</i> 'ripen'
z/s-	<i>zogleneti, zoglenevati</i> 'char', <i>zgoreti, zgorevati</i> 'burn', <i>zboleti, zbolevati</i> 'become sick', <i>zbledeti, zbledevati</i> 'fade', <i>strohneti, strohnevati</i> 'putrefy', <i>spodleteti, spodletevati</i> 'fail'
za-	<i>zastareti, zastarevati</i> 'become old', <i>zarjaveti, zarjavevati</i> 'rust', <i>zardeti, zardevati</i> 'blush', <i>zapozneti, #zapoznevati</i> 'be late', <i>zaledeneti, zaledenevati</i> 'freeze', <i>zakrneti, zakrnevati</i> 'atrophy', <i>zakasneti, zakasnevati</i> 'be late', <i>zagoreti, zagorevati</i> 'catch fire', <i>zablodeti, zablodevati</i> 'get lost'
u-	<i>uveneti, uvenevati</i> 'wither'
raz-	<i>razcveteti, razcvetevati</i> (also <i>razcvetati</i> ) 'blossom', <i>razboleti, razbolevati</i> 'become sick'
pre-	<i>preživeti, #preživevati</i> (also <i>preživljati</i> ) 'survive', <i>prepereti, preperevati</i> 'decay', <i>pregoreti, pregorevati</i> 'burn out', <i>preboleti, prebolevati</i> 'recover'
po-	<i>porumeneti, porumenevati</i> 'become yellow', <i>poroženeti, poroženevati</i> 'become callused', <i>porjaveti, porjavevati</i> 'brown over', <i>pordeti, pordevati</i> 'become red', <i>ponoreti, ponorevati</i> 'go crazy', <i>ponarodeti, ponarodevati</i> 'become popular', <i>poledeneti, poledenevati</i> 'freeze over', <i>pogoreti, #pogorevati</i> 'burn down', <i>počrneti, počrnevati</i> 'become black', <i>poblazneti, poblaznevati</i> 'go crazy', <i>pobesneti, pobesnevati</i> 'become angry'
o-	<i>ovdoveti, #ovdovevati</i> 'become widowed', <i>ozeleneti, ozelenevati</i> 'become green', <i>oveneti, ovenevati</i> 'wither', <i>otrđeti, otrđevati</i> 'harden', <i>otopeti, otopevati</i> 'become numb', <i>ostareti, ostarevati</i> 'become old', <i>oslepeti, oslepevati</i> 'become blind', <i>oslabeti, oslabevati</i> 'become weak', <i>osiveti, osivevati</i> 'become gray', <i>osiroteti, #osirotevati</i> 'become orphaned', <i>osameti, osamevati</i> 'become alone', <i>orumeneti, orumenevati</i> 'become yellow', <i>opusteti, opustevati</i> 'become desolated', <i>oleseneti, olesenevati</i> 'become wooden', <i>okosteneti, okostenevati</i> 'ossify', <i>okamneti, okamnevati</i> 'become stone', <i>okameneti, okamenevati</i> 'become stone', <i>ogoleti, ogolevati</i> 'become stripped (of plants)', <i>okoreti, okorevati</i> 'harden'

As evident from the the table, all the secondary imperfectives have the secondary imperfectivizing suffix *eva*. It should be noted, however, (i) that in some cases there are two possibilities for the secondary imperfective form and (ii) that some forms are rather rare or unusual. For instance, *oslepevati* 'to become blind.IPFV' only has one hit in the Slovenian National Corpus Gigafida. Some of the reported forms are not attested at all in Gigafida (and these were, as mentioned above, marked with a #). Crucially, in all such cases, *eva* is the only way to derive a secondary imperfective for these verbs.

We can add to this list the 7 perfective *e/i* unaccusative verbs and their imperfective *eva*-counterparts from Ilc & Marvin (2016: p.159), listed in (25).<sup>16</sup>

- (25) *izgoreti* → *izgorevati* 'burn out', *izzveneti* → *izzvenevati* 'sound off', *odreveneti* → *odrevenevati* 'stiffen', *oveneti* → *ovenevati* 'whither', *pbledeti* → *pbledevati* 'become pale', *pordečeti* → *pordečevati* 'become red', *potemneti* → *potemnevati* 'become dark'

The list in Ilc & Marvin (2016: p.159) also contains three verbs which do not take *eva*, reproduced here in (26).

<sup>16</sup>The lists of unaccusative verbs in Ilc & Marvin (2016) and Simonović & Mišmaš (2022) are different because different diagnostics were used, but note that the majority of verbs identified by Ilc & Marvin (2016) can be found on the other list.

- (26) *odleteti* → *odletati* ‘fly away’, *prileteti* → *priletati* ‘fly in’, *oživeti* → *oživljati* ‘flourish, to resuscitate’

In the three exceptions, the choice of a different secondary imperfectivization suffix seems to be influenced by a related verb with a different theme vowel. First, as already mentioned in footnote 12, the root  $\sqrt{\text{LET}}$  shows up in two unprefixated imperfective verbs, *leteti* and *letati* ‘to fly’, the latter being restricted to undirected motion. This latter verb seems to resurface in secondary imperfectivizations listed above, but also serve as a base for imperfectivization: *priletavati* and *odletavati* are more frequent than *priletati* and *odletati*. Finally, next to *oživeti* ‘to flourish, to resuscitate’ there is a far more frequent verb *oživiti* ‘to revive, resuscitate’, which also has *oživljati* as its secondary imperfective counterpart.

To sum up, the secondary imperfectivizations of a/a and e/i verbs show different results when it comes to the preservation of the original theme vowel. The morpheme *e* is mostly preserved in secondary imperfectivizations. Moreover, it is consistently preserved in the class of unaccusative e/i verbs. On the other hand, a/a does not survive in the majority of the cases.

## 6.2 DECOMPOSING SECONDARY IMPERFECTIVES

We now turn to secondary imperfectives formed with *ava* and *eva* attested in the Database and consider the theme vowel of their perfective bases. Starting with *eva*, table (27) shows the distribution of theme vowel classes of perfective counterparts of *eva* imperfectives together with the number of different roots.<sup>17</sup>

(27) Bases of *eva* imperfectivizations by TV class

Theme of the base	No. of verbs	No. of roots	Example (PFV → IPFV)
∅/e	9	4	<i>prešteti</i> → <i>preštevati</i> ‘to count’
e/i	7	7	<i>dozoreti</i> → <i>dozorevati</i> ‘to ripen’
e/e	4	2	<i>uspeti</i> → <i>uspevati</i> ‘to succeed’
∅/ne	3	1	<i>prizadeti</i> → <i>prizadevati</i> ‘to affect’

The distribution in Table (27) shows that *eva* does not target verbs from all theme vowel classes. Most prominently absent is the a/a-class, which is in fact the biggest theme vowel class in Slovenian. On the other hand, while most verbs that get imperfectivized with *eva* belong to the ∅/e-class, when we only consider verbs with distinct roots, the e/i-class becomes the most prominent.<sup>18</sup> We can therefore again observe a correlation between the e/i-class and the secondary imperfectivizer *eva*, which we can take as an argument for *e* preservation.

There is another noticeable correlation in Table (27): 9 of the 14 roots targeted by *eva* are combined with the theme vowel *e* in the perfective verb, but the remaining 5 end in the vowel *e*. These roots are:  $\sqrt{\text{ŠTE}}$  (e.g., in *pre-šte-∅-ti*, *pre-štej-e-mo* ‘to count, we count’),  $\sqrt{\text{PE}}$  (e.g., in *pre-pe-∅-ti*, *pre-poj-e-mo* ‘to sing, we sing’),  $\sqrt{\text{DE}}$  (e.g., in *pri-za-de-∅-ti*, *pri-za-de-ne-mo* ‘to affect, we affect’),  $\sqrt{\text{GRE}}$  (e.g., in *se-gre-∅-ti*, *se-grej-e-mo* ‘to heat, we heat’) and  $\sqrt{\text{MLE}}$  (e.g., in *pre-mle-∅-ti*, *pre-melj-e-mo* ‘to grind, we grind’). The first

<sup>17</sup>Not included in the table are imperfectivizations of simplex perfective verbs. Three such cases appear in the database: *roditi* → *rojevati* ‘to give birth’ and *lotiti* → *lotevati* ‘to tackle’ from the i/i class and *miniti* → *minevati* ‘to go by’ from the ni/ne class.

<sup>18</sup>For comparison, secondary imperfectives with *ova* include verbs from 8 theme vowel classes (all but ∅/e and ∅/ne).



three have already been listed in Table (19) among roots which can plausibly be analysed as having a floating  $v$ -element. As for the remaining two, given our discussion in §3, from which it follows that the theme vowel  $a/a$  also has a floating  $v$ -element, they as well can be reanalysed as cases of imperfectivization by theme vowel change to  ${}^v a$ . If we take this path, genuine *eva* verbs from Table (27) would be restricted to the classes  $e/i$  and  $e/e$  and theme vowel preservation would be without exceptions for prefixed bases.

Turning now to *ava*, Table (28) overviews the theme classes of the perfective verbs targeted by this suffix.

(28) Bases of *ava* imperfectivizations by TV class

Theme of the base	No. of verbs	No. of roots	Example (PFV→IPFV)
a/a	19	9	<i>poravnati</i> → <i>poravnavati</i> 'to straighten'
a/je	3	2	<i>premetati</i> → <i>premetavati</i> 'to toss'
i/i	2	2	<i>odobriti</i> → <i>odobravati</i> 'to approve'
a/i	1	1	<i>poležati</i> → <i>poležavati</i> 'to crumple'
e/i	1	1	<i>zaleteti</i> → <i>zaletavati</i> 'to collide'

As was the case with *eva*, there is a clear prevalence of theme vowel classes which feature the theme vowel  $a$ : 12 out of 15 roots select an  $a$  in the perfective counterpart. The only  $e/i$  base features the root  $\sqrt{\text{LET}}$ , which we already discussed in §6.1. More interesting is the appearance of two  $i/i$  verbs, especially given the fact that  $i/i$  is one of the default theme vowel classes, see for example Marvin (2002).

This observed tendency should be interpreted keeping in mind what we learned from §6.1, i.e. that most verbs featuring the theme vowel  $a$  do not take the secondary imperfectivizer *ava*. So rather than concluding that *ava* preserves the theme vowel  $a$ , we can conclude that the surface correspondence between the original theme vowel and the initial vowel of the secondary imperfectivizer is an additional facilitator in the selection of the imperfectivizer *ava*.

### 6.3 SUMMING UP THE RESULTS

In §2 we noted that *eva* and *ava* imperfectivizers are similar in frequency and surface form, based on which we have posed the question whether the two also have a similar structure, specifically whether they can be analysed as the same pattern  $Vva$ , where the first position is occupied by the preserved theme vowel from the original perfective verb. As the data in this section has shown, while there is pressing evidence that the morpheme  $e$  from the perfective verbs is preserved in *eva*, no such pressing evidence could be found for  $a$  in *ava*. In the following section we consider the consequences of these findings and present the final analysis.

## 7 FINAL ANALYSIS AND DISCUSSION

The evidence presented in the previous two sections points in the direction of a differential analysis of the two secondary imperfectivizers *ava* and *eva*. While *ava* is more plausibly analysed as a sequence of the derivational affix  $av$  and the theme vowel  ${}^v a$ , *eva* is more plausibly analysed as preserving the morpheme  $e$  from the original perfective verb, to which the theme vowel  ${}^v a$  is added.

We may now wonder how comparable the two imperfectivizers are to the far more common imperfectivizer *ova*, that we have briefly discussed in §5, showing that it is

readily analysed as the bound root  $\sqrt{OV}$  followed by the theme vowel a/je. Now *ava* appears as a perfect mirror picture of *ova*. The two imperfectivizers essentially have the same structure, i.e. they consist of a bound root ( $\sqrt{AV}$  or  $\sqrt{OV}$ ) followed by a theme vowel. Based on this, *ava* and *ova* can be analysed uniformly, specifically as previously proposed for  $\sqrt{OV}$  in Quaglia et al. (2022). These authors propose an analysis in which  $\sqrt{OV}$  is a transitive root, which selects for a voice projection (hosting prefixes), while the theme vowel is taken to be a spell-out of the verbalizing head  $v^0$ , which is introduced into the verbal structure after each root.

The next question is how *eva* fits into this picture. We have identified a domain of nearly perfect correlation between the original theme vowel and the imperfectivizer for *e* and *eva*, i.e. the domain of unaccusative *e/i* verbs. This indicates that the morpheme *e*, which corresponds to syntactic information, is preserved in the derivation of the secondary imperfective. No such claim can be made for *ava* and *ova* (see fn. 18), which imperfectivize a heterogeneous set of bases.

An issue that we have not addressed so far is whether the special properties of the theme vowel *e* identified here, the tendency to correlate with the unaccusative argument structure and to be preserved in secondary imperfectives, set this morpheme apart from the other theme vowels and justify removing it from the list of theme vowels in Slovenian. This is the route followed in Simonović & Mišmaš (2022), where secondary imperfectives are not considered. Simonović & Mišmaš (2022) argue for an analysis of *e* as a derivational affix, which, following Lowenstamm (2014), is viewed as a root. According to this analysis, the root  $\sqrt{E}$  is a transitive root, which can select for roots and can be embedded under a  $v^0$ . In this context it has two segmentally different allomorphs: *e* in non-finite forms and *i* in finite forms. Just as it has contextual PF instructions,  $\sqrt{E}$  has contextual LF instructions and gets the unaccusative interpretation in the context of a root and  $v^0$ , but can get other interpretations in other contexts (similarly to what was shown for  $\sqrt{OV}$  and root  $\sqrt{AV}$  in §5). The root  $\sqrt{E}$  is also argued to show up in different categorial environments and with different meanings. In addition to unaccusative verbs, *e* can also be found in adverbs:

(29) e-adverbs

base (category)	e-adverb
<i>sed-</i> (root) 'sit'	<i>sed-e</i> 'sitting down'
<i>hot-</i> (root) 'want'	<i>hot-e</i> 'wantingly'

Furthermore, *e* is a morpheme in derived nouns of neuter or masculine gender where it denotes humans characterized by some negative property, but there is also a nominal formant *e* in several animate masculine nouns (not denoting a negative property, but rather humans). Crucially, in these cases *e* is not a case ending, but rather an affix, since it persists in throughout the paradigm, joined by a [t] in the forms with an overt case ending (e.g. *počasn-é-t-a* 'slow person.GEN')<sup>19</sup>, which is not the case for nouns with the case ending *e* in the citation form (e.g. *sonc-e* 'sun.NOM', *sonc-a* 'sun.GEN').

(30) e-nouns

base (category)	e-noun
<i>počas(e)n-</i> 'slow' (adjective)	<i>počasn-e</i> 'a slowly moving person'
<i>usran-</i> 'dirty, shitty' (adjective)	<i>usran-e</i> 'a coward, shitty person'
roots	<i>Ton-e, Franc-e</i>

The analysis in Simonović & Mišmaš (2022) further predicts that verbs with  $\sqrt{E}$  behave

<sup>19</sup>The lexical status of this [t] (i.e., epenthesis vs. deletion) is not clear. One argument in favour of an epenthesis analysis is the relative productivity of the [t]-extension in colloquial Slovenian, in cases like *Luka-t-a*, *Marko-t-a*, *espresso-t-a* (genitive singular forms of *Luka*, *Marko* and *espresso*, respectively).

just like other verbs in Slovenian and do in fact get a theme vowel. In this case, this is the phonologically null theme vowel, which is allowed in a very limited number of verbs. Other examples of such verbs include, following Šekli (2010), *imeti* ‘to have’, *iti* ‘to go’ and potentially *biti* ‘to be’, i.e. the three irregular verbs. More importantly, assuming that  $\sqrt{E}$  is embedded under  $v^0$  further predicts that  $\sqrt{E}$  will be preserved in structures that have an embedded verbal structure. Secondary imperfectives are a case in point. The data presented in this paper therefore offers additional support for the analysis proposed by Simonović & Mišmaš (2022) by showing further context of the preservation of *e*. What we leave for future work is how exactly verbs with  $\sqrt{E}$  in fact get imperfectivized, since they have no overt imperfectivizer comparable to *ov* or *av*. One promising line of inquiry is that these verbs are in fact comparable to verbs in which imperfectivization is performed by theme vowel change (from the assumed phonologically null theme vowel to  $v^0a$ ).

## 8 CONCLUSION AND DIRECTIONS FOR FURTHER RESEARCH

In the paper we have focused on two secondary imperfective suffixes, *eva* and *ava*, and argued that both are a combination of a bound root and a theme vowel, as was previously proposed for secondary imperfectivizers in Slavic in general, but specifically for *ova* in Slovenian in Quaglia et al. (2022). However, we have shown that the two also require a differential analysis in that in the case of *eva* the bound morpheme  $\sqrt{E}$  is inherited from the perfective form, while in the case of *ava*, the morpheme is  $\sqrt{AV}$  is part of the imperfectivizer proper. This means that imperfectivization with *ava* can be treated on par with imperfectivization with *ova*, whereas verbs with the the root  $\sqrt{E}$  most probably get their secondary imperfective form by switching from a zero theme-vowel class to the theme vowel class featuring the theme vowel  $v^0a$ .

Based on the proposed analysis, a general picture of secondary imperfective suffixes in Slovenian arises, in which all secondary imperfectivizers follow the same morphological template, that is, all have the form bound morpheme + theme vowel. In light of this, *ja/ja*, which we have left aside in this paper, could be reconsidered. Some initial support for a potential reanalysis of *ja/ja* as a combination of a bound root and a theme vowel comes from Simonović (2020), who shows that *j* is a root in some contexts.

## ACKNOWLEDGMENTS

We thank the FASL 30 audience, the reviewers and the members of the reading group *From Morphophonology to Morphosyntax and back* for their thoughtful questions and comments.

We acknowledge financial support by the Austrian Science Fund FWF (grants I 4215 and I 6258), by the Slovenian Research and Innovation Agency ARIS (grants N6-0113, J6-4614, P6-0382 and BI-AT/23-24-021), as well as by the Austrian Federal Ministry of Education, Science and Research (BMBWF; Scientific & Technological Cooperation grant for the project *Verbal suffixes and theme vowels: Different or the same?*).

## ABBREVIATIONS

1	first person	PFV	perfective
GEN	genitive	PL	plural
IPFV	imperfective	PRS	present tense
INF	infinitive	PTCP	participle
N	neuter	SG	singular
NOM	nominative	TV	theme vowel

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