On the internal structure of Serbian *-(n)je* nominalizations

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ABSTRACT

The paper deals with the internal syntactic structure of deverbal *-nje* nominals in Serbian. The tests from the licensing of event-related modifiers (*by*-phrases and instrumental DPs) support the hypothesis that *-nje* nominals are derived from passive participles by adding the suffix *-je* (Marvin 2002; Simonović & Arsenijević 2014). Building on Simonović & Arsenijević (2014), I further observe that the licensing of referential and non-referential event modifiers exhibits a complex set of correlations with the aspectual properties of the base, phonological faithfulness to the base, and semantic compositionality. Semantic opacity and phonological unfaithfulness do not always go hand in hand, and I treat them as two separate components of a process of lexicalization, which is syntactically constrained (Marantz 1997). I argue that the presence of full VoiceP structure including a v^0 referring to an event diagnosed by the licensing of referential event modifiers (Alexiadou et al. 2014) constitutes a phase, which blocks lexicalization. This structure is present in *-nje* nominals derived from secondary imperfectives, which always license referential event modifiers and exhibit semantic compositionality and phonological unfaithfulness. Smaller structures derived from perfectives or primary imperfectives do not license referential event modifiers (hence, they do not constitute a full phase), which is what makes them susceptible to lexicalization.

KEYWORDS

nominalizations, passive participles, event-related modifiers, aspect, lexicalization

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1. INTRODUCTION

The internal (syntactic) properties of *-nje* nominalizations¹ in Serbian² have attracted a considerable amount of attention in the recent literature. [Simonović & Arsenijević \(2014\)](#) and [Bašić \(2010\)](#) argue that these nominalizations are derived from passive participles, which end in *-n* or *-t*, by the addition of the independently attested nominalizing suffix *-je* (1).

(1)	a.	slika-ti	→	slika-n	→	slika-n-je
		paint-INF		paint-PASS.PTCP		paint-PASS.PTCP-NMLZ
		‘paint’		‘painted’		‘painting (gerund)’
	b.	uganu-ti	→	uganu-t	→	uganu-t-je
		sprain-INF		sprain-PASS.PTCP		sprain-PASS.PTCP-NMLZ
		‘sprain’		‘sprained’		‘a sprain’

This hypothesis predicts that *-nje* nominals should show evidence of the presence of internal verbal structure. Relying on [Grimshaw’s \(1990\)](#) classification of nominalizations, [Bašić \(2010\)](#) observes that nominalizations derived from imperfective verbs combine with measure phrases measuring out the runtime of the event while those that are derived from perfectives are incompatible with these phrases. This leads [Bašić \(2010\)](#) to conclude that perfective-derived nominalizations are either derived directly from roots or they involve some minimal amount of verbal structure (e.g. ResP) but not a full *vP/VoiceP* because they do not show signs of the presence of event semantics hosted by *vP*. Imperfective-derived *-nje* nominalizations are, thus, structurally richer and include higher layers of verbal structure (*vP/VoiceP*).

[Simonović & Arsenijević \(2014\)](#) draw virtually the same conclusion as [Bašić \(2010\)](#) but from a different angle. They observe that imperfective-derived nominalizations exhibit full productivity, semantic compositionality and prosodic faithfulness to the base while perfective-derived nominalizations are far less productive, semantically opaque and phonologically unfaithful to the base (2). They capture these diverging properties of the two classes of *-nje* nominals by assuming that imperfective-derived nominalizations involve full verbal structure including a phasal head (*v*), which induces compositional semantics and retains the phonological properties of the base form. Perfective-derived nominalizations, on the other hand, involve a flattened structure, which results in semantic opaqueness and altered phonology.

(2)	a.	pri'zna-va-ti	→	pri'zna-va-n-je
		admit-IPFV-INF		admit-IPFV-PASS.PTCP-NML
		‘admit’		‘admitting’

¹I use the label ‘*-nje* nominalizations’ to refer to nominalizations that end in *-nje* or *-će /tje/*. The ending *-nje* is more frequent, which is why I use it for this label.

²I use the label “Serbian” primarily to restrict the empirical domain of the claims that will be made in the paper since this research is based on the Serbian portion of the broader Bosnian-Serbian-Croatian (BCS) dialect continuum. I assume that what is claimed to hold for BCS should automatically hold for Serbian, which is a subset of BCS, but the reverse does not necessarily hold.

- b. prizna- $\emptyset$ -ti → prizna- $\emptyset$ -n-je
 admit-PRF-INF admit-PRF-PASS.PTCP-NMLZ
 ‘admit’ ‘admittance/public recognition’³

In this paper, I will add further evidence for the hypothesis that *-nje* nominals are derived from passive participles. A number of authors have proposed that the combinability of verbal and deverbal derivations with *by*-phrases and instrumental DPs diagnoses the presence of complex verbal structure via the assumption that these phrases introducing event participants (agents, instruments) have to be licensed by VoiceP (Kratzer 1994; Alexiadou & Anagnostopoulou 2009; Alexiadou et al. 2015; *inter alia*) (2a). The fact that *-nje* nominals license *by*-phrases is a strong piece of evidence that they incorporate Voice_{PASS}, whose presence inside these nominals is to be expected only if they are built from passive participles. The same tests will show, however, that certain perfective-derived nominals can license *by*-phrases and instrumental DPs as well (3b). Crucially, perfective-derived nominalizations reject *by*-phrases with a strongly referential nominal complement while allowing generics and abstract nouns (3b).

- (3) a. sasluš-a-va-n-je svedok-a od strane nadležnih lica /
 interrogate-IPFV-PASS.PTCP-NMLZ witness-GEN from side authorized persons
 inspektora Ilića
 inspector Ilić
 ‘authorized persons’ / inspector Ilić’s interrogating of the witness’
 b. sasluš-a- $\emptyset$ -n-je svedok-a od strane nadležnih lica /
 interrogate-PRF-PASS.PTCP-NMLZ witness-GEN from side authorized persons
 ??inspektora Ilića
 inspector Ilić

The licensing of *by*-phrases and instrumental DPs is further correlated with aspectual properties of the base, semantic compositionality and phonological faithfulness to the base; however, these correlations are not as straightforward as suggested by Simonović & Arsenijević. *Nje*-nominals derived from secondary imperfectives license both referential and non-referential event modifiers; they are always semantically compositional and phonologically faithful to the base (3a). Nominals derived from perfective verbs are always phonologically unfaithful to the base, but they can be semantically compositional (i.e. they can denote the same event-kind denoted by the underlying verb), and when they are, they license non-referential event modifiers (3b). Other perfective-derived nominalizations, however, are completely opaque. The nominalization in (4) denotes an entity, and it never combines with *by*-phrases.

- (4) uzemlj- $\emptyset$ -en-je strujnog kola (*od strane električara)
 inter-PRF-PASS.PTCP-NMLZ electric current from side electricians
 ‘the ground of the electric current (*by electricians)’

³Simonović & Arsenijević (2014) use a more complex system of phonological annotation in their examples. I have simplified the annotation noting only the position of lexical stress, which is illustrative enough for my present purposes.

Nominals derived from primary imperfectives tend to be phonologically faithful to the base, semantically compositional, and to license non-referential event modifiers (5a). Significantly, there are *-nje* nominals derived from primary imperfectives, which are not semantically compositional nor phonologically faithful to the base (phonological unfaithfulness entails semantic opaqueness but it is a one-way correlation since there are opaque nominals which are phonologically faithful to the base) (5b). Finally, some *-nje* nominals derived from primary imperfectives exhibit semantic non-compositionality while retaining the phonological properties of the base. For instance, the noun *čitanje* is phonologically faithful to the base verb *čitati* (‘read’) but it can have both a compositional meaning (‘reading’) and a lexicalized one (‘interpretation’).

- (5)

a.

njegovo

pošto-va-n-je

oc-a

/

*prema

oc-u

his

respect-IPFV-PASS.PTCP-NMLZ

father-GEN

towards

father-DAT

‘him respecting (his) father’
- b.

njegovo

pošto-va-n-je*

oc-a

/

prema

oc-u

his

respect-IPFV-PASS.PTCP-NMLZ

father-GEN

towards

father-DAT

‘his respect for his father’

To sum up the observed correlations I propose the typology of *-nje* nominalizations in Serbian given in Table 1.

As is apparent from Table 1, nominalizations derived from secondary imperfectives (Type 1) are totally predictable. They are always semantically compositional, phonologically faithful to the base and they license both referential and non-referential event modifiers. Perfective-based nominals (Type 2) are always phonologically unfaithful, and they do not license referential event modifiers; however, if they are semantically compositional, they also license non-referential event modifiers (Type 2a). Otherwise, fully lexicalized perfective-based nominals do not license any kind of event modifiers (Type 2b). *Nje*-nominals derived from primary imperfectives (Type 3) are the least predictable type. Like Type 2 nominals they do not license referential modifiers, but they can license non-referential ones, and those that do are also semantically

Table 1. The typology of *-nje* nominals in Serbian

Type	Sub-type	Aspect of the verbal base	Referential event modifiers	Non-referential event modifiers	Compositionality	Phonological faithfulness
Type 1		Secondary imperfective	+	+	+	+
Type 2	a	Perfective	–	+	+	–
	b	Perfective	–	–	–	–
Type 3	a	Primary imperfective	–	+	+	+
	b	Primary imperfective	–	–	–	+/–

compositional and phonologically faithful to the base (Type 3a). Semantically opaque Type 3 nominals do not license any kind of event modifiers, but they are not necessarily phonologically unfaithful to the base (Type 3b).

To account for this complex set of correlations, I resort to the idea that semantic opaqueness and phonological unfaithfulness result from a process of lexicalization, which is syntactically constrained. Here, I would argue that the present account improves upon [Simonović & Arsenijević \(2014\)](#) who invoke an unconstrained notion of ‘forced lexicalization’ to capture the exceptions to the more rigid generalization that they offer. Under the present account, lexicalization is blocked by the presence of a full phasal boundary fitting the more general agenda in Distributed Morphology (DM) whereby predictable outputs are seen as direct products of syntactic processes while the unpredictable ones (e.g. idioms) are treated as syntactically-constrained but not necessarily totally accounted for (cf. [Marantz 1997](#)).

With respect to the data at hand, full VoiceP structure including a v^0 that refers to an event constitutes a phase blocking lexicalization. Such a structure is present only in *-nje* nominals derived from secondary imperfectives (3a) because these structures involve an additional aspectual layer on top of v^0 that assigns reference to the event variable hosted by v^0 . [Alexiadou et al. \(2014\)](#) use virtually the same device to capture the fact that Greek adjectival passives license referential event modifiers, which are blocked with German adjectival passives, because they contain an additional aspectual layer. In the absence of this higher aspectual projection dominating it, v^0 fails to act as a full phase, thus opening the door to lexicalization processes in the form of semantic and phonological shifts.

The paper is organized as follows. Section 2 links the present study to the preceding analyses introducing the hypothesis that *-nje* nominals are derived from passive participles. It also addresses some of the more general issues that such a hypothesis faces together with the reasons why I believe they do not justify the abandonment of this proposal. Section 3 uses the data from the licensing of event modifiers in support of the conclusion that *-nje* nominals are indeed derived from passive participles. Section 4 provides a unified analysis of the correlations between the aspectual properties of verbal bases, event modifier licensing, semantic compositionality and phonological opaqueness ([Table 1](#)). Section 5 concludes the paper and discusses the avenues for further research.

2. -NJE NOMINALIZATIONS IN SOUTH SLAVIC

One of the basic assumptions of DM is that syntax is the only structure building mechanism responsible for generating all complex linguistic structures. This assumption departs from the traditional position that derivational morphology is part of the lexicon and the basic units of syntax correspond to words or lexemes regardless of their internal complexity. In DM, morphological complexity is the product of the application of basic syntactic operations (Merge and Move) which combine categoryless roots with morphosyntactic features introduced by functional projections ([Harley & Noyer 1999](#)). The immediate consequence of this innovation is that the explanatory mechanisms of syntax can account for phonological and semantic, as well as syntactic properties of derived lexemes.

Marantz's (2001) analysis of English *-er* and *-ee* nominalizations is a useful illustration of how the mechanisms of DM can account for the interplay of syntax, semantics, and phonology at the level of the word. He observes that the suffix *-er* attaches to verbal base-forms, retains the prosodic shape of the base and its output is always semantically compositional, denoting the external argument of the verbal base (6a).⁴ On the other hand, the suffix *-ee* is much less restricted in terms of the base-forms it attaches to since it can combine with verbs, nouns and categoryless roots alike (6b–d). Moreover, *-ee* always alters the prosodic shape of the base by attracting lexical stress, and the semantic output of *-ee* derivations is much less predictable than that of *-er* derivations.

- (6) a. employ + *-er* → employ^{er} ('the one who employs')
 b. employ + *-ee* → employ^{ee} ('the one who is employed')
 c. 'amput(ate) + *-ee* → amput^{ee} ('the one whose body part has been amputated')
 d. 'debt + *-ee* → debt^{ee} ('the one who is in debt')

Marantz (2001) accounts for this divergent behavior of these two nominalizing suffixes by assuming that *-er* attaches to *v*Ps while *-ee* attaches to roots. This assumption is motivated by the fact that the suffix *-ee* is apparently not selective when it comes to the categorial status of the base it attaches to as shown in (6b–c), and that it can apparently attach to bound roots (6c). The same assumption can also explain the semantic and phonological properties of lexemes derived by means of these two suffixes. The presence of a categorizing head, *v*, with *-er* nominalizations fixes the semantic and phonological features of the base, which results in semantically compositional and phonologically faithful outputs. By contrast, the suffix *-ee* merges with a categoryless root. The absence of a categorizing head between the root and the suffix gives rise to semantically opaque outputs. Finally, the fact that this suffix is always stressed is explained by the assumption that the prosodic shape of the base is not fixed either due to the lack of an intervening categorizer while the suffix itself carries a phonological instruction regarding stress assignment.

Marvin (2002) shows that the same type of analysis can be applied to various nominalizations in Slovene. Her analysis of *-nje* nominalizations is of primary importance for our purposes here. Traditional grammars of Slovene assume that *-nje* is a simple nominalizing affix attaching to verbal stems to produce nouns. Furthermore, traditional grammars recognize an additional suffix *-tje*, which is also a simple nominalizer with roughly the same function. According to Marvin (2002), however, the inventory of derivational suffixes in Slovene can be simplified by assuming that these nominals are derived by attaching an already attested nominalizing suffix *-je* to passive participles also capturing the fact that verbs whose passive participles end in *-n* produce nominals ending in *-nje* while verbs whose participles end in *-t* derive *-tje* nominalizations.

Simonović & Arsenijević (2014) extend Marvin's (2002) analysis of Slovene *-nje* nominalizations to Serbian and provide additional insight concerning the diverging characteristics of

⁴Alexiadou & Schäfer (2010) note that this suffix can also attach to toponyms to derive names of inhabitants (London + *-er* → Londoner) suggesting that such examples involve root derivations.

perfective-derived and imperfective-derived nominalizations. The idea that *-nje* nominalizations are derived by adding the nominalizing suffix *-je* to the passive participles is attractive because this suffix is already a productive nominalizer in Serbian (7). Nominalizations ending in *-nje*, thus, become a subclass of the outputs produced by this suffix and the traditional suffixes *-nje* and *-će*⁵ disappear from the inventory of nominalizers. They propose that the semantic contribution of *-je* corresponds to the universal grinder meaning that turns a predicate over individuals into a predicate over masses (Arsenijević 2007).

- (7) a. gran-a + -je → gran-je
 branch-NOM.SG branch-NMLZ
 ‘branch’ ‘(a heap of) branches’
- b. pošten + -je → pošten-je
 honest honest-NMLZ
 ‘honest’ ‘honesty’

In terms of the differences between *-nje* nominalizations derived from imperfective and perfective verbs, the generalization that they put forward is that imperfective-derived nominalizations retain the prosodic shape of the verbal base whereas perfective-derived ones always alter the prosody of the stem (8).

- (8) a. reš-ava-ti → reš-ava-n-je
 solve-IPFV-INF solve-IPFV-PASS.PTCP-NMLZ
 ‘solve’ ‘solving’
- b. reš-Ø-iti → reš-Ø-en-je
 solve-PRF-INF solve-PRF-PASS.PTCP-NMLZ

(adapted from Simonović & Arsenijević 2014)

Furthermore, imperfective-based *-nje* nominalizations exhibit full compositionality and productivity in contrast to perfective-based ones which tend to be semantically opaque and far less productive.

The analysis that Simonović & Arsenijević (2014) propose for the observed differences between perfective and imperfective-derived nominalizations is stated in standard DM terms. Specifically, they assume that imperfective-derived nominalizations include full verbal structure, which is why they exhibit prosodic faithfulness and semantic compositionality. In contrast, the internal verbal structure of perfective-based nominalizations is ‘flattened’, which means that they are listed as simple nominals outside of the paradigm of the underlying verb. The lack of internal verbal structure with perfective-based nominalizations explains their opaque semantics and phonological unfaithfulness.

Bašić’s (2010) analysis of Serbian nominalizations is very similar to that of Simonović & Arsenijević (2014); however, she reaches these conclusions from a different perspective. Bašić’s (2010) analysis is not restricted to *-nje* nominalizations and her primary focus is on the syntactic

⁵Serbian Latin script spells the affricate sound /tj/ as ć.

properties of these items. Following Grimshaw (1990), she divides nominalizations into two classes: Complex Event Nominals (CENs) and Result Nominals (RNs). All the examples of CENs she provides are imperfective-derived *-nje* nominals (9a) while the class of RNs is broader, and it includes zero-derived nominalizations (9b) as well as perfective-derived *-nje* nominalizations. According to Bašić (2010), the main syntactic difference between CENs and RNs comes down to the absence of *vP* with RNs. The reason why she argues that *vP* is absent with RNs is because unlike CENs, these nominals cannot combine with measure phrases measuring out the runtime of the event (9b).

- (9) a. Potpis-iva-n-je dokumenat-a je dugo traj-alo.
 sign-IPFV-PASS.PTCP-NMLZ documents-GEN.PL AUX.3SG long last-PTCP.N
 ‘Signing the documents lasted long.’
- b. *Potpis-∅ je dugo traj-ao.
 sign-NMLZ AUX.3SG long last-PTCP.M
 ‘Signature lasted long.’
- (Bašić 2010, 42)

The fact that these measure phrases are disallowed with RNs is taken as a signal of the lack of the event variable introduced by *v*.

It is important to bear in mind that the proposal that *-nje* nominals are derived from passive participles encounters a series of empirical challenges. On the strictest reading of this proposal, one could hypothesize that verbs that do not produce passive *-n* participles should not derive *-nje* nominals either. Another hypothesis one could derive from this proposal is that verbs whose participles end in *-n* derive *only -nje* nominals while those whose participial forms end in *-t* produce *only -će* nominalizations. There are individual examples contradicting both of these hypotheses. For example, some unaccusative and unergative verbs that do not seem to have participial forms within their verbal paradigms, nonetheless, produce *-nje* nominalizations (Simonović & Arsenijević 2014) (10).

- (10) a. trča-ti → *trča-n → trča-n-je
 run-INF run-PASS.PTCP run-PASS.PTCP-NMLZ
 ‘run’ ‘run’ ‘running’
- b. pada-ti → *pada-n → pada-n-je
 fall-INF fall-PASS.PTCP fall-PASS.PTCP-NMLZ
 ‘fall’ ‘fallen’ ‘falling’

Moreover, there are verbs whose participial forms end in *-t* while the corresponding nominalizations end in *-nje* rather than *-će* (11).

- (11) računa-ti → računa-t / ??računan → *računaće / računanje
 calculate-INF calculate-PASS.PTCP calculate-PASS.PTCP calculate-PASS.PTCP-NMLZ
 ‘calculate’ ‘calculated’ ‘calculating’

While it is possible to take these examples as empirical falsifications of the proposal that relates *-nje* nominalizations to passive participles, there are various reasons not to go in that direction.

First off, despite the obvious existence of these counterexamples, the generalization that *-nje* nominalizations strongly correlate with *-n* participles while *-će* nominalizations correlate with *-t* participles still holds. What these examples show is that the correlation is not perfect, but it is, nonetheless, very strong. Dispensing with the idea that *-nje* nominals are derived from passive participles would render this strong correlation completely mysterious. In addition, in the case of the observation that unergatives and unaccusatives do not produce passive participles while deriving *-nje* nominalizations (10), the empirical picture is slightly more complex. While these verbs do not yield typical passive participles used in verbal passive or as prenominal modification, a lot of them can, nonetheless, produce impersonal passives as observed by (Aljović 2000) and illustrated in (12).

- (12) a. Na ovom krevetu je nedavno spava-n-o.
 on this bed AUX.3SG recently sleep-PASS.PTCP-N
 ‘This bed has recently been slept in.’
 b. Po ovoj travi je nedavno trča-n-o.
 on this grass AUX.3SG recently run-PASS.PTCP-N
 ‘This grass has recently been run over.’ (Aljović 2000)

Pressing the issue further, one can observe that in a lot of cases, a verb’s inability to derive any kind of passive participle including the impersonal passive does seem to predict its inability to derive *-nje* nominals (13).

- (13) boja-ti se → *boja-n → *boja-n-je
 fear-INF REFL fear-PASS.PTCP fear-PASS.PTCP-NMLZ
 ‘fear’ ‘feared’ ‘fearing’

Regarding the mismatches in the participial and nominal ending (11), one should point out that many such cases could involve (potential) participial doublets. For example, the participial form *računan* ‘calculate.PRT’ marked as degraded in (11) is actually a preferred option in the Croatian variety, at least from the standpoint of normative grammar.⁶ Also, Standard Serbian has participial doublets with a number of verbs (14).

- (14) preda-ti → preda-n / preda-t → preda-n-je
 hand.in-INF hand.in-PASS.PTCP hand.in-PASS.PTCP hand.in-PASS.PTCP-NMLZ
 ‘hand in/over’ ‘handed in/over’ ‘folklore’ (lexicalized)

These participial doublets tend to acquire various degrees of semantic specialization. The form *predan* in (14) is most frequently used to mean ‘committed’ while the form ending in *-t* is reserved for the compositional meaning. What these examples show is that it is possible to argue that in cases in which we observe formal mismatches between the participial and nominal endings, the mismatch is due to the existence of participial doublets where both forms are

⁶The normative preference for *računan* over *računat* is expressed in the following post on a website offering advice on issues related to standard language use (link: <http://www.lektoriranje.org/jezicni-savjetnik/racunan-ili-racunat>).

actually possible but the one that creates the apparent mismatch is simply more salient, frequent or sanctioned by normative grammars.

Summing up, despite the empirical challenges to the analysis that treats *-nje* nominalizations as derived from passive participles, a closer investigation reveals that these counterexamples do not qualify as outright falsifications of the analysis. The strong, if imperfect, correlation between the participial and nominal endings represents a strong motivation to adopt this analysis. The counterexamples that are encountered do not remove the fact that this correlation exists. What is more, zooming in on these exceptional cases, one finds a much more complex empirical picture suggesting that treating these examples as outright falsifications of the proposed correlation might not be the best analytical move.

3. EVENT-MODIFIER LICENSING WITH SERBIAN *-nje* NOMINALIZATIONS

The proposal that *-nje* nominalizations are derived from passive participles entails that participial structure is present inside these nominalizations. It follows, then, that *-nje* nominalizations should show evidence of the presence of participial structure when submitted to the tests that diagnose different layers of verbal structure that make up passive participles. Previous work dealing with the internal structure of various deverbal elements supplies the means to test this hypothesis. The licensing of various expressions introducing event participants and modifiers such as *by*-phrases and instrumental DPs is assumed to be governed by the presence or absence of specific layers of verbal structure (Kratzer 1994). Applying these tests to Serbian *-nje* nominalizations supports the hypothesis that they contain participial structure. Moreover, perfective-derived nominalizations with eventive denotations pass the test for the presence of internal verbal structure, albeit with some restrictions, contrary to the predictions of Simonović & Arsenijević's (2014) analysis which predicts the presence of verbal structure only with imperfective-derived nominalizations.

Following Kratzer's (1994) Voice Hypothesis, it is assumed that expressions introducing the agent argument are only possible in the presence of VoiceP. Agentive *by*-phrases that occur in passive constructions are, therefore, taken as signals of the presence of VoiceP with passives. Alexiadou et al. (2006) further observe that PPs introducing causer arguments are possible with anticausatives while agents are excluded (15).

- (15) The window broke from the storm / *from John (causer / *agent).
(Alexiadou et al. 2006)

They treat this fact as a signal of the absence of VoiceP with anticausatives and assume that causers are licensed by the causative *v*P.

The same tests are used to broach the presence of verbal structure inside nominalizations. Sichel (2010), for instance, claims that English *ing-of* nominals license the external argument (16b–c) whereas derived (e.g. *-ion*) nominalizations do not (16a).

- (16) a. *Adultery's separation of Jim and Tammy Faye.
b. ?Adultery's separating of Jim and Tammy Faye.
c. ?The separating of Jim and Tammy Faye by adultery. (Sichel 2010, 188)

Sichel (2010) takes examples like (16) as evidence that derived nominals inherit less verbal structure from the underlying verb than *ing-of* nominals. However, Alexiadou et al. (2013) disagree with Sichel's (2010) data as presented in (16) claiming that the correct empirical picture is actually the opposite of (16) (i.e. agents are less marked with derived nominalizations than with *ing-of* nominals). Regardless of what the correct analysis of the difference between English *ing-of* nominals and derived nominalizations with respect to the licensing of external arguments turns out to be, what is important for our purposes is that there are reasons to believe that different deverbal nominalizations share different portions of verbal structure with their underlying verbs, and *by*-phrase licensing is one of the ways to test for these differences.

There is also some crosslinguistic variability when it comes to the licensing of the expressions introducing different event participants in specific constructions. For instance, Greek anticausatives allow PPs introducing instruments, which are illicit with English anticausatives (17).

- (17) a. *The window broke by John / with a stone.
 b. Ta mallia mu stegnosan me to pistolaki.
 the hair my dried-ACT with the hair.dryer
 *'My hair dried with the hair dryer.' (Alexiadou & Anagnostopoulou 2009)

While this apparent difference in the licensing of instruments with anticausatives in English and Greek makes it possible to hypothesize that different layers of structure are responsible for the licensing of these expressions in the two languages, Alexiadou & Anagnostopoulou (2009) argue against this move. Nonetheless, the lesson one can draw from the examples in (17) is that the licensing tests that probe the presence of internal verbal structure with deverbal derivations should be calibrated for each individual language.

Before applying these tests to Serbian *-nje* nominalizations, it is important to demonstrate that they are usable in this language. Like Greek and English, Serbian allows *by*-phrases with verbal and adjectival passives.

- (18) a. Kuća je sagrađe-n-a od strane veštog graditelja.
 house AUX.3SG build-PASS.PTCP-F from side skilful builder
 'The house was built by a skillful builder.'
 b. Kuća se činila sagrađ-en-om / ?sagrađ-en-a
 house REFL seemed build-PASS.PTCP-INS build-PASS.PTCP-NOM
 od strane veštog graditelja.⁷
 from side skillful builder
 'The house seemed built by a skillful builder.'

⁷Adjectival components of the verb *činiti se* 'seem' can take the nominative case form or instrumental case form. The conditions governing the choice of one form or the other are not completely understood, but a slight preference for instrumental should be noted in this example. This is in contrast to (21b), for example, where the nominative case form is better.

- c. *Stolica se slomila od strane nestašnog deteta.
 chair REFL broke from side mischievous child
 *‘Chair broke by a mischievous child.’

It is also important to point out that, unlike English, Serbian does not allow *by*-phrases introducing a creator with non-deverbal nouns (19). In that sense, Serbian seems to show more stringent restrictions when it comes to the licensing of *by*-phrases meaning that only VoiceP can license these elements.

- (19) a. a novel by a famous author
 b. *roman od strane poznatog pisca
 novel from side famous writer
 ‘a novel by a famous writer’

In Serbian, instruments are introduced by means of instrumental case-marked DPs/NPs,⁸ whose distribution mirrors that of *by*-phrases. Instrumental DPs/NPs are licensed with verbal and adjectival passives but not with anticausatives (20). As expected, instrumental DPs/NPs can appear in active sentences with an agent in the subject position (21a). Of course, *by*-phrases introducing the agent cannot be used in active sentences with an instrument in the subject position (21b).

- (20) a. Torta je iseč-en-a tank-im nož-em.
 cake AUX.3SG cut.up-PASS.PTCP-NOM.F thin-INS knife-INS
 ‘The cake was cut up with a thin knife.’
 b. Torta se činila iseč-en-a / ?isečen-om
 cake REFL seemed cut.up-PASS.PTCP-NOM.F cut.up-PASS.PTCP-INS.F
 tank-im nož-em.
 thin-INS knife-INS
 ‘The cake seemed cut up with a thin knife.’
 c. *Vrata su se otvorila šrafciger-om.
 door AUX.3PL REFL opened screwdriver-INS
 *‘The door opened with a screwdriver.’
- (21) a. Jovan je otvorio vrata šrafciger-om.
 John AUX.3SG opened door screwdriver-INS
 ‘John opened the door with a screwdriver.’

⁸Given the extensive debate on the question whether the DP hypothesis should be extended to articleless languages like Serbian, I remain neutral on the exact status of the traditional noun phrases since the issue is not of crucial importance for my purposes here (see, for example, Bošković 2005, 2008, ET SEQ. for ‘NP accounts’ and Progovac 1998 for a ‘DP account’).

- b. *Šrafciger je otvorio vrata od strane Jovana.
 screwdriver AUX.3SG opened door from side John
 *‘Screwdriver opened the door by John.’

The data in (19–21) motivate the conclusion that *by*-phrases and instrumental DPs/NPs have to be licensed by VoiceP. However, while instrumental DPs/NPs are licensed by both types of Voice⁰, *by*-phrases are licensed only by Voice_{PASS}.

With these tests at hand, we are now in the position to test the various hypotheses about the internal structure of *-nje* nominalizations in Serbian. The proposal that *-nje* nominals are built from passive participles predicts that *by*-phrases should be licensed with these nominalizations since we have now shown that *by*-phrases are licensed by Voice_{PASS}, which is found with verbal and adjectival passives realized in the form of passive *-n* participles. Since instrumental DPs/NPs are licensed by both Voice_{ACT}/Voice_{PASS}, we predict that they should be licensed by *-nje* nominals, too.

Next, [Simonović & Arsenijević \(2014\)](#) as well as [Bašić \(2010\)](#) treat imperfective-derived *-nje* nominals as involving rich verbal structures while assuming that perfective-derived nominals do not involve higher layers of verbal structure. [Bašić \(2010\)](#) argues that they do not involve *vP* and VoiceP while maintaining the possibility that they include ResP in the sense of [Ramchand \(2008\)](#). For [Simonović & Arsenijević \(2014\)](#), perfective-derived nominalizations involve flattened structure, and they are listed as simple nominal lexemes outside the verbal paradigm. These accounts, thus, predict that imperfective-derived *-nje* nominalizations should license *by*-phrases and instrumental DPs/NPs, while perfective-derived ones should not.

The data from the licensing of *by*-phrases and instrumental DPs/NPs are fully in line with the hypothesis that *-nje* nominalizations are derived from passive participles. *By*-phrases are definitely compatible with these elements (22). The same holds for instrumental DPs/NPs (23).

- (22) a. sasluša-va-n-je svedok-a od strane inspektora Ilića
 interrogate-IPFV-PASS.PTCP-NMLZ witness-GEN from side inspector Ilić
 ‘inspector Ilić’s interrogating of the witness’
 b. reša-va-n-je zadatk-a od strane profesora Petrovića
 solve-IPFV-PASS.PTCP-NMLZ problem-GEN from side professor Petrović
 ‘Professor Petrović’s solving of the problem’
- (23) a. slika-n-je pejzaž-a uljan-im boja-ma
 paint-IPFV-PASS.PTCP-NMLZ landscape-GEN oil-INST colors-INS
 ‘painting of the landscape with oil colors’
 b. otključa-va-n-je vrata šrafciger-om
 unlock-IPFV-PASS.PTCP-NMLZ door-GEN screwdriver-INS
 ‘unlocking the door with a screwdriver’

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Native speaker judgments about these constructions can vary to a certain degree, but a cursory investigation of Serbian corpora reveals plenty of examples of this kind (26).⁹

- (26) a. Za to je potrebno i strpljivo podnoš-en-je
 for that AUX.3SG necessary and patient endure-PASS.PTCP-NMLZ
 poniženja od strane ljudi.
 humiliations from side people
 'For that, one also needs to patiently endure humiliations by (other) people.'
- b. zvanična saopšt-en-ja od strane ljudi iz Majkrosofta
 official state-PASS.PTCP-NMLZ.PL from side people from Microsoft
 'official statements by people from Microsoft'
- c. socijalni program i adekvatno
 social program and adequate
 obešteć-en-je od strane države
 reimburse-PASS.PTCP-NMLZ from side state
 'social program and adequate reimbursement by the state'
- d. iselj-en-ja od strane postupajućeg organa
 evict-PASS.PTCP-NMLZ from side authorized organ
 'evictions by the authorized body/institution'
- e. razloga za razočar-an-je od strane Vlade ima
 reasons for disappoint-PASS.PTCP-NMLZ from side government have
 više
 more
 'There are reasons for disappointment by the government.'

The data from the corpus and the examples in (26) illustrate an interesting restriction concerning the distribution of *by*-phrases with perfective-derived *-nje* nominalizations. Namely, the DPs/NPs in the complement position of these *by*-PPs are either generics (26a–b) or corporate entities (26c–e). Indeed, referential singular DPs/NPs tend to be severely degraded if not outright ungrammatical in these contexts (27). The cursory investigation of the corpus undertaken for the purposes of this study revealed no examples of this kind.

- (27) ??sasluš-an-je optuženog od strane inspektora Ilića
 interrogate-PASS.PTCP-NMLZ defendant from side inspector Ilić
 'the interrogation of the defendant by Inspector Ilić'

Therefore, perfective-derived *-nje* nominalizations which denote events can license *by*-phrases and instrumentals but only if these are not strongly referential. Semantically-opaque *-nje* nominalizations, which do not denote events at all, fail to license *by*-phrases and instrumental DPs/NPs. All perfective-derived *-nje* nominals, however, are phonologically unfaithful to the base.

⁹The data were drawn from the Serbian Web Corpus (SrWaC).

If the hypothesis about a radical split between perfective and imperfective-derived *-nje* nominalizations in terms of the presence/absence of internal verbal structure and semantic compositionality/opaqueness cannot be maintained, the question is how to account for the mixed behavior of perfective-derived *-nje* nominals in this respect. In other words, why are some perfective-derived *-nje* nominalizations semantically compositional while others are opaque? Why do semantically compositional ones license *by*-phrases and instrumental DPs/NPs while the opaque ones do not? More interestingly, why are only *by*-phrases with non-referential DPs/NPs in the complement position licensed but strongly referential ones are not? Answering these questions will be the task of the next section.

4. ANALYSIS: THE LINK BETWEEN EVENTIVITY AND PHASEHOOD

The conceptual inventory of DM (Halle & Marantz 1993; Marantz 1997; *inter alia*) provides an effective way of accounting for the correlations between syntactic, semantic and prosodic properties of derived lexemes. DM introduces the assumption that the traditional domain of derivational morphology is distributed between syntax as the only-structure building mechanism, Phonological Form (PF) and Logical Form (LF), which assign auditory externalizations and semantic interpretations to syntactic derivations (Harley & Noyer 1999). This assumption allows for a uniform, syntax-based set of explanations for the syntactic behavior as well as prosodic and semantic characteristics of words.

Marantz (2001) analysis of the differences between English *-er* and *-ee* suffixes illustrated in (6) provides a model for the way in which correlations between phonological and semantic properties are captured in DM. His approach to the discrepancies in the crosslinguistic behavior of verbal and adjectival passives is another case in point, which is particularly relevant for the present analysis. Marantz (1997) points to the data in (28), originally due to Ruwet (1991), as an illustration of the broader generalization that adjectival passives can give rise to idiomatic readings. Eventive uses of the passive forms in (28) remove the idiomatic meanings.

- (28) a. Chaque chose à sa place, et les vaches seront bien **gardées**.
 ‘Each thing in its place and everything will be OK.’
 b. Cet argument est **tire** par les cheveux.
 ‘This argument is far-fetched (lit. pulled by the hairs).’ (Marantz 1997, 209)

Marantz (1997) argues that the discrepancy between verbal and adjectival passives when it comes to idiom formation can be captured by the assumption that the syntactic head that introduces the agent is the boundary for lexicalization/idiomatization. This means that structures that do not include this projection can give rise to idioms, but if this projection is present in the structure idiom formation is blocked. Given the independently motivated assumption that adjectival passives do not include the agent while verbal passives do, the fact that adjectival passives can be turned into idioms is automatically accounted for.

Crucially, Marantz (1997) does not claim that *all* adjectival passives will have idiomatic readings. Instead, his goal is to account for the cases when unpredictable outputs can

potentially arise and to do so based on syntactic constraints such as locality domains. The DM outlook on predictable and unpredictable outputs, thus, focuses on providing fully syntactic accounts of predictable derivations while leaving structurally-specified ‘loopholes’ for lexicalizations. In the remainder of this section, I will develop a syntactic account of the correlations between semantic properties (compositionality/opaqueness), phonological properties (faithfulness to the base) and syntactic properties (the licensing of event modifiers) of Serbian *-nje* nominals. The licensing of event modifiers, particularly referential and non-referential *by*-phrases, will be used as the crucial diagnostic for the internal syntactic properties of various kinds of *-nje* nominals.

The existence of certain restrictions on *by*-phrase licensing has already been observed in the literature. For instance, Rapp (1996) observes that German adjectival passives combine only with specific kinds of *by*-phrases. The contrast in (29) shows that not all kinds of *by*-phrases are possible with adjectival passives in German.

- (29) a. Der Mülleimer ist (*von meiner Nichte) geleert.
 the rubbish.bin is by my niece emptied
 ‘The rubbish bin is emptied by my niece.’ (Rapp 1996, 246)
- b. Die Zeichnung ist von einem Kind angefertigt.
 the drawing is by a child produced
 ‘The drawing is produced by a child.’ (Rapp 1997, 192)

Rapp (1997) analyzes this contrast in terms of relevance for the resulting state. According to her, *by*-phrases can be combined with adjectival passives only if the agent is relevant for the resulting state.

Following a series of papers by Gehrke’s (2012, 2013), Alexiadou et al. (2014) point out that Rapp’s (1997) interpretation of the contrast in (29) is difficult to make sense of from the formal perspective in so far as one continues to assume that Voice is responsible for *by*-phrase licensing. The implications of Rapp’s (1997) analysis would be that certain *by*-phrases are related to Voice and others are related to Res(ult)P (Alexiadou et al. 2014). These authors further point out that the grammatical example in (29b) becomes ungrammatical as soon as one changes the article from the indefinite to the definite one (30).

- (30) *Die Zeichnung ist von dem Kind angefertigt.
 The drawing is by the child produced.
 (Alexiadou et al. 2014, 126)

Gehrke (2013) argues that the correct way to state the restriction on the availability of *by*-phrases with German adjectival passives is in terms of referentiality. More precisely, *by*-phrases that contain DPs that refer to individuals are ruled out with German adjectival passives whereas those that are allowed contain DP complements which remain in the kind-domain. The reason why *by*-phrases with referential complements are disallowed with adjectival passives is because adjectival passives denote event kinds, not event individuals. Consequently, the only modification that is semantically compatible with adjectival passives is kind-modification (Gehrke 2013). To illustrate what this means in concrete terms, a drawing event whose agent is a child is

a special kind of drawing event, and the result of that event (a drawing by a child) is, thus, different from the result of a typical drawing event.

Gehrke (2013) further argues that the reason why adjectival passives merely denote events without referring to them is because the event variable introduced by v has to be assigned temporal reference by a higher head (e.g. T^0). This is precisely what happens with verbal passives where the event variable is assigned reference by T . On the other hand, the adjectival passive includes a stativizing/adjectivizing head, which prevents the event from being instantiated by intervening between v^0 and T^0 . The consequence is that the event remains in the kind domain.

Alexiadou et al. (2014) observe that the restrictions on the distribution of *by*-phrases with adjectival passives, which holds for German, does not hold for Greek. More precisely, Greek has two kinds of participles, *-tos* and *-menos* participles, and only *-menos* participles show no restrictions when it comes to combining with different kinds of *by*-phrases. They argue that the more liberal behavior of Greek *-menos* participles in this regard is due to the presence of an additional aspectual head with these participles responsible for event instantiation.

Gehrke's (2013) account of the difference between German verbal and adjectival passives and Alexiadou et al.'s (2014) analysis of the diverging behavior of Greek adjectival *-menos* passives and German adjectival passives can be directly applied to the observations that were made in this paper regarding *-nje* nominals in Serbian. What is more, there is a direct method of testing the predictive power of this approach on this data. If what determines whether a particular structure will be able to combine with referential *by*-phrases is the presence of a higher aspectual projection within that structure, then we predict that nominalizations that contain participles with more complex aspectual morphology should be able to combine with such *by*-phrases. Alternatively, in cases where there is no evidence of more complex aspectual structure, the prediction is that referential *by*-phrases should be blocked or significantly degraded.

In some cases, the additional aspectual layer with imperfective-derived nominals is morphologically visible (31).

- (31) a. *sasluš-an-je* *perfective base*
interrogate-PASS.PTCP-NMLZ
'interrogation'
- b. *sasluš-a-va-n-je* *secondary imperfective base*
interrogate-IPFV-PASS.PTCP-NMLZ
'interrogating'

However, the aspectual system of Serbian is more complex than what is suggested by (31). In some cases, the perfective version is actually morphologically more complex so one could assume that it contains an additional aspectual layer in comparison to the imperfective version (32).

- (32) a. *peći*
bake.IPFV
'bake'
- b. *is-peći*
PRF-bake

- (35) a. ??peč-en-je kolača od strane profesora Petrovića
 bake.IPFV-PASS.PTCP-NMLZ cake from side professor Petrović
 ‘Professor Petrović’s baking of the cake’
- b. reša-va-n-je zadatka od strane profesora Petrovića
 solve-IPFV-PASS.PTCP-NMLZ problem from side professor Petrović
 ‘Professor Petrović’s solving of the problem’

Another piece of evidence in favor of the view that activity-derived *-nje* nominals do not refer to events might come from the widely-observed fact that simple imperfectives are quite degraded in verbal passives across the board (36). The sentences in (36) are completely severely degraded under the present tense passive reading as indicated in the translations.

- (36) a. ??Petar je jur-en od strane Ane.
 Peter AUX.3SG chase-PASS.PTCP from side Ana
 intended: ‘Peter is being chased by Ana.’
- b. ??Kolač je peč-en od strane Petra.
 cake AUX.3SG bake-PASS.PTCP from side Peter
 intended: ‘The cake is being baked by Peter.’

Summarizing the discussion so far, only *-nje* nominals derived from complex imperfectives (secondary imperfectives) seem to license all kinds of *by*-phrases. Perfective-derived *-nje* nominals and those derived from simple imperfectives fail to license *by*-phrases with referential DPs/NPs in the complement position while licensing non-referential ones. These facts are in line with an analysis based on Gehrke (2013, 2015) and Alexiadou et al. (2014) whereby the inability to license *by*-phrases with referential complements is due to the lack of event instantiation. It has been argued here that the extra aspectual head with complex imperfectives is responsible for event instantiation with *-nje* nominals derived from complex imperfectives as with Greek *-menos* participles. On the other hand, simple imperfectives do not denote events at all, which is why *-nje* nominalizations derived from them do not license *by*-phrases, while perfectives denote events, but due to the lack of a higher aspectual head, the event is not instantiated (hence, only kind modification is allowed).

In order to make the account more specific and facilitate the remainder of the exposition, I would like to point the reader to the tree representations in (38) illustrating the structures of the *-nje* nominals derived from a primary imperfective, perfective and secondary imperfective based on the same root ($\sqrt{\text{SLUŠ}}$ / $\sqrt{\text{SLUH}}$ with the rough meaning of ‘hear/listen’) (37).

- (37) a. sluš-a-n-je
 hear-THV-PASS.PTCP-NMLZ
 ‘listening/hearing’

- b. sa-sluš-a-n-je
PRF-hear-THV-PASS.PTCP-NMLZ
'interrogation'
- c. sa-sluš-a-va-n-je
PRF-hear-THV-IPFV-PASS.PTCP-NMLZ

In (38), I assume that aspectual markers can be either ν P-internal or ν P external (Svenonius 2004; Milićević 2004; *inter alia*). The fact that perfectivizing prefixes can produce lexicalized meanings (37a–b) is taken as a signal of their position below the categorizing head. By contrast, infix *-va-*, which is responsible for secondary imperfectivization, derives compositional meanings suggesting that it attaches outside ν P. The primary imperfective in (38a) is represented without any aspectual projections because it contains no overt morphological markers of aspect, but assuming that there is a null aspectual head below ν responsible for imperfective aspect would have no significant effect on the analysis presented here so I refrain from making explicit claims in either direction in this paper. Also, I follow Biskup (2019) among others in treating the vowel preceding the consonant /n/, which is an exponent of the participial head, as a theme vowel (glossed THV in 37) located in ν . Crucially, what the structures in (38) show is that secondary imperfectives (38c) are different from perfectives and primary imperfectives (38a–b) in the fact that they include an additional aspectual projection on top of ν P. Following Alexiadou et al. (2014), I assume that this additional aspectual projection assigns temporal reference to the event variable hosted by ν . The referential nature of ν with *-nje* nominals derived from secondary imperfectives is what explains their ability to license referential *by*-phrases. As a result of having its event variable bound by a higher aspectual head, ν becomes a full phase with nominals derived from secondary imperfectives.¹⁰ It is important to stress that because they do not involve a full phasal boundary, the structures in (38a–b), but crucially not the structure in (38c), are susceptible to further lexicalization removing any reference to the underlying event (Simonović & Arsenijević's 2014 'flattened structures') deriving examples such as (4) and (5b).

With the core elements of the analysis of *-nje* nominals derived from different aspectual bases in place, I now turn to the issues surrounding the patterns of phonological (un)faithfulness and semantic compositionality/opacity. The idea that perfective-derived *-nje* nominals lack internal verbal structure which is present with their imperfective-derived counterparts is the basis of Simonović & Arsenijević's (2014) account of the patterns of semantic compositionality/opacity and prosodic (un)faithfulness that they exhibit. Systematic phonological unfaithfulness to the base and semantic opacity of perfective-based *-nje* nominals was attributed to the lack of internal verbal structure. Having now shown that at least those perfective-based nominals that denote events (i.e. do not exhibit full lexicalization) have to involve some internal verbal structure, we are left without an account of their systematic phonological unfaithfulness to the base and a tendency towards lexicalization. In what follows, I will try to provide a novel account of these properties while avoiding a rigid distinction between these two kinds of *-nje* nominals on the basis of the presence/absence of verbal structure. It will be shown that a less rigid account that will be proposed here is better suited to handle some of the more complex details already noted by Simonović & Arsenijević (2014).

The account that will be proposed here relies on one basic assumption given in (39). Following (39), we predict that instances of ν^0 that merely denote events without referring to them as well as those that denote states and activities (in accordance with the mereological approach) do not act as full phasal boundaries.

¹⁰The analysis I developed in this paper does not require all the elements of the representations in (38) to be exactly the way they are shown in those tree structures. What is crucial for my purposes here is that secondary imperfectives involve an additional aspectual projection located outside the ν P setting them apart from primary imperfectives and perfectives. Any analysis of the aspectual system that delivers this result will be compatible with this approach.

- (39) v^0 becomes a full phasal boundary once it is assigned event reference

Concerning the patterns of semantic compositionality/opaqueness and phonological (un-) faithfulness with Serbian *-nje* nominals, the assumption in (39) gives us correct predictions with respect to the data we have observed so far. Namely, perfective-derived *-nje* nominalizations exhibit systematic phonological unfaithfulness to the base either because they do not denote events at all and their internal verbal structure has been erased/flattened or they denote events without referring to them, in which case they do involve internal verbal structure but their v^0 is ‘defective’ in the sense that it does not act as a full phasal boundary.

The present account also captures the complex behavior of imperfective-derived *-nje* nominals. Namely, imperfective-based *-nje* nominals tend to be phonologically faithful and semantically compositional, but this observation does not hold across the board. [Simonović & Arsenijević \(2014\)](#) observe that there are some exceptions to this rule. They focus primarily on instances in which nominalizations are not phonologically faithful to the base. Namely, there are certain imperfective verbs that derive both faithful and unfaithful *-nje* nominalizations (40).

(40)	a.	'putova-ti
travel.IPFV-INF
'travel'	→	'putova-n-je;
travel.IPFV-PASS.PTCP-NMLZ
'travelling'	puto'va-n-je
travel.ipfv-PASS.PTCP-NMLZ
'trip'
	b.	'oseća-ti
feel.IPFV-INF
'feel'	→	'oseća-n-je;
feel.IPFV-PASS.PTCP-NMLZ
'feeling'	ose'ća-n-je
feel.IPFV-PASS.PTCP-NMLZ
'emotion'
	c.	'poštova-ti
respect.IPFV-INF
'respect'	→	'poštova-n-je;
respect.IPFV-PASS.PTCP-NMLZ
'respecting'	pošto'va-n-je
respect.IPFV-PASS.PTCP-NMLZ
'respect'

The observation that the phonologically faithful alternative is semantically compositional while the unfaithful member of the pair is semantically opaque holds for these examples as well. The syntactic behavior of these exceptional cases fits the same pattern as phonologically faithful and semantically compositional members of these pairs show signs of internal syntactic structure (41).

(41)	a.	'poštova-n-je
respect.IPFV-PASS.PTCP-NMLZ
'The official bodies' respecting the law'	zakona
law	od
from	strane
side	nadležnih
official	organa
bodies
	b.	pošto'va-n-je
respect.IPFV-PASS.PTCP-NMLZ
'respect towards (one's) father'	prema
towards	oc-u
father-DAT	/	*oc-a
father-GEN	

The phonologically faithful and semantically compositional member of the pair in (41) licenses genitive case on the postnominal internal argument as well as a *by*-phrase with a generic DP/NP in its complement position (41a). The non-compositional and phonologically unfaithful member of the pair fails to license postnominal genitive and requires a PP instead (41b).

Simonović & Arsenijević (2014) treat these cases as examples of **forced lexicalization**, a mechanism that they argue is needed to account for similar cases outside the domain of *-nje* nominals as well. Forced lexicalization is a process whereby a member of a verbal, adjectival or nominal paradigm is lexicalized (assigned opaque semantics), and it receives phonological properties that are uncharacteristic of its paradigm of origin.

While a forced lexicalization mechanism might very well be necessary to account for all the complexities of the derivational morphology of Serbian, such a mechanism needs to be constrained in some way in order to retain the explanatory power of the account pertaining to explain the differences between various types of *-nje* nominals. Such an approach is also in line with general features of the DM program as outline in Marantz (1997) and assumed in much of the subsequent literature in this domain. As it stands, Simonović & Arsenijević's (2014) proposal raises the question as to why the number of examples of imperfective-derived *-nje* nominals undergoing forced lexicalization is so limited relative to the total number of these nominalizations. Moreover, if left unrestrained, the forced lexicalization mechanism could make the account unfalsifiable because every counterexample in the domain of imperfective-derived *-nje* nominals could be swept aside by treating it as the product of this mechanism.

By contrast, the account that has been developed here predicts cases of phonological unfaithfulness and/or opaque semantics with imperfective-derived *-nje* nominals in so far as they originate from bases that do not refer to events (i.e. states and activities). All the examples offered by Simonović & Arsenijević (2014) (40) are, in fact, derived from states (40b–c) and activities (40a). All of the additional examples of imperfective-derived *-nje* nominals exhibiting opaque semantics and phonological unfaithfulness conform to this prediction (42).

(42)	a.	'ima-ti have.IPFV-INF 'have'	→	'ima-n-je; have.IPFV-PASS.PTCP-NMLZ 'having'	i'ma-n-je have.IPFV-PASS.PTCP-NMLZ 'property'
	b.	bo'lova-ti be.sick.IPFV-INF 'be sick'	→	bo'lova-n-je; be.sick.IPFV-PASS.PTCP-NMLZ 'being sick'	'bolova-n-je be.sick.IPFV-PASS.PTCP-NMLZ 'sick leave'
	c.	'peva-ti sing.IPFV-INF 'sing'	→	'peva-n-je; sing.IPFV-PASS.PTCP-NMLZ 'singing'	'peva-n-je sing.IPFV-PASS.PTCP-NMLZ 'canto'
	d.	'čita-ti read.IPFV-INF 'read'	→	'čita-n-je; read.IPFV-PASS.PTCP-NMLZ 'reading'	'čita-n-je read.IPFV-PASS.PTCP-NMLZ 'interpretation'
	e.	'pe-ći roast.IPFV-INF 'roast'	→	'peč-en-je; roast.IPFV-PASS.PTCP-NMLZ 'roasting'	peč-en-je roast.IPFV-PASS.PTCP-NMLZ 'roast'

All of the examples in (42) are derived from states (42a–b) or activities (42c–e). Importantly, examples in (42c–d) show that semantic opacity does not always go hand in hand with unfaithful phonology as the semantically opaque *-nje* nominals derived from these two verbs have

the same phonological properties as the compositional versions. This is similar to what was observed in the domain of perfective-derived *-nje* nominalizations which were all phonologically unfaithful but not all of them were semantically opaque, at least not to the same degree (some of them still denoted the same kinds of events denoted by the underlying verbs whereas others denoted entities).

What I am arguing for here is that a v^0 head that does not refer to an event fails to act as a phasal boundary opening the door to non-paradigmatic behavior of the derived item, which can involve phonological unfaithfulness, semantic opacity or both. What my account leaves open are the precise conditions that govern the phonological changes that take place inside derived items once such changes become possible and the reasons why sometimes phonological changes fail to take place even though there is a semantic shift as well as why they sometimes occur when there is no semantic shift. The account, however, spells out the conditions under which non-paradigmatic behavior, semantic or phonological, of the derived item becomes possible, and these conditions turn out to be syntactically determined. I suspect that the missing pieces of this account will turn out to be phonological in nature, but I will have to leave those for further research.

When it comes to more general implications of this analysis, perhaps the most straightforward one concerns its crosslinguistic applicability. In particular, it is a widely known fact that nominalizations of this type are attested across different Slavic languages so the question (raised by an anonymous reviewer) is to what extent should the present analysis predict their behavior. I would submit, risking a circular response, that one can make predictions about the nominalizations in Slavic languages based on this analysis only in so far as there are reasons to assume that the nominalizations with a similar sounding suffix in all Slavic languages actually constitute a natural class. I do not see any other way of answering this question but through an empirical comparison. Some data that could help in formulating our expectations on this matter have been made available recently, and based on that data, my preliminary assessment is that these nominalizations might not, in fact, be the same across Slavic. Arsenijević (2020) reports on the relative productivity of the suffix *-iel/-je*, which is assumed to be the nominalizing suffix attaching to passive participles in *-nje* nominals in Old Church Slavonic (OCS) and the contemporary South Slavic languages (Serbo-Croatian (SC), Slovene, Macedonian, and Bulgarian). His observation is that in OCS this suffix combines only with perfective stems while in SC and Slovene it combines with both perfective and imperfective ones but with a preference for imperfectives. In Bulgarian and Macedonian, however, the suffix combines only with imperfectives. Another recent comparative study of the productivity of this suffix looking at South Slavic as well as Russian and Polish (Mišmaš et al. 2020) also speaks in favor of the different behavior of these nominals in various Slavic languages. According to Mišmaš et al. (2020), the productivity of the suffix *-je* follows a continuum from West to East. The suffix is most productive in Polish, followed by Slovene, SC, Bulgarian (in that order), and the least productive in Russian. I suspect that it might be necessary to postulate different syntactic and/or semantic functions of this suffix in these languages to capture the variations in productivity. If that is the case, then it would not be possible to apply the present analysis to other Slavic languages without any modifications.

5. CONCLUSION

By way of conclusion, let us summarize the account developed in this paper and spell out what it does and does not accomplish. The tests from the licensing of *by*-phrases and instrumental DPs/NPs were applied to the two types of *-nje* nominals in Serbian to inspect their internal verbal structure. The fact that *by*-phrases and instrumental DPs/NPs are licensed with these nominals is taken as evidence of the presence of VoiceP adding an important piece of evidence to the proposal that *-nje* nominals are derived from passive participles since the presence of a Voice_{PASS} has to be linked to passive participles. The same tests reveal that internal verbal structure has to be present at least with those perfective-derived *-nje* nominals that show strong semantic links to the underlying verbs (i.e. they denote events). This runs counter to [Simonović & Arsenijević \(2014\)](#) who draw a sharp boundary between perfective and imperfective-derived *-nje* nominals by proposing that perfective-derived nominals are structurally flat. However, an important restriction regarding the distribution of *by*-phrases with perfective-derived nominalization is observed as they do not seem to license *by*-phrases with strongly referential DPs/NPs in the complement position. This restriction was accounted for drawing on [Alexiadou et al.'s \(2014\)](#) analysis of the differences between Greek and German (and English) adjectival passives where a similar, if not the same, restriction on the distribution of *by*-phrases was observed. Specifically, it was argued that *by*-phrases with referential DPs/NPs are banned when the event variable introduced by v^0 is not assigned reference by a higher aspectual or tense head, the reason being that in such cases, the event remains in the kind domain allowing (non-referential) kind modification only. The phonological unfaithfulness and the tendency towards semantic opacity of perfective-derived nominalizations was accounted for by assuming that the v^0 that does not instantiate the event does not have full phasal properties, which would induce compositional semantics and phonological faithfulness. This hypothesis was then extended to *-nje* nominals derived from imperfective verbs denoting states and activities explaining their tendency towards phonological unfaithfulness and/or semantic opacity.

The account developed in this paper did not specify the mechanisms governing the phonological and semantic shifts in the domain of *-nje* nominals. It merely derived the conditions when these shifts become possible stressing the fact that they do not always go hand in hand (i.e. they are correlated but the correlation is not perfect). Spelling out these conditions will have to be left for further research.

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