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THE SYNTAX AND SEMANTICS OF PSYCH VERBS IN ENGLISH AND SERBIAN

DOCTORAL DISSERTATION

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	<p>This dissertation tackles the data from Serbian psych verbs from the standpoint of the classification of the same category of verbs in English informed by cross linguistic research (Levin 1994). The empirical contribution of the dissertation lies in the fact that the data are described and classified following the crosslinguistically-established formal criteria (cf. Levin 1994) while drawing on the previous descriptions, which were primarily informed by functionalist approaches (Štrbac 2006; Milenković 2017).</p> <p>The descriptive investigation gave rise to a series of theoretical questions pertaining to the argument structure of these verbs, the thematic roles that they assign and the syntactic status of different types of NPs that are found with these verbs, case assignment mechanisms, and the role of the morpheme SE. These questions are tackled separately, in dedicated chapters, within the framework of Distributed Morphology (Halle and Marantz 1993).</p> <p>Regarding the role of SE, the data from Serbian psych verbs (based primarily on event modifier licensing) motivate the existence of a semantic class between anticausatives and reflexives which I label ‘semi-reflexives’. The proposed class of ‘semi-reflexives’ is then used as a basis to bridge the gap between the two opposing views on the nature of the anticausative SE (Chierchia’s 2004 ‘Reflexive view’ and the ‘Standard Analysis’ a la Parsons 1990 or Schäfer and Vivanco 2016). This solution opens the door to understanding the lack of psych verb anticausatives in English.</p> <p>Oblique case-marked bare NPs expressing experiencers or stimuli with some Serbian psych verbs are argued to be arguments by showing that they cannot be analyzed as adjuncts or complements, and the origin of different oblique case forms (specifically, genitive and dative) is attributed to two different applicative heads (Source Applicative and Goal Applicative) building on Pykkänen (2008).</p> <p>The possibilities of deriving n-participles and -(n)je nominalizations from Serbian psych verbs were explored under the assumptions that passive participle formation is governed by argument structure properties (Embick 2004) and -(n)je nominalizations are derived from passive participles (Marvin 2002; Simonović and Arsenijević 2014). The ambition behind these investigations was to reveal important facts in both directions (i.e. about the formation and internal structure of passive participles and -(n)je nominals and about the argument structure of psych verbs that underlie them). In a nutshell, it is argued that n-participles can be derived only from those verbs that contain an agentive component (VoiceP), and a somewhat modified version of the hypothesis that -(n)je nominals can be derived only from those verbs that also derive n-participles can be maintained.</p>
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The academic custom of acknowledging other people's contributions to one's work reflects a rather important realization, which is widespread in academia (even though it is quite probably underappreciated there as well) unlike in many other spheres of life. This realization can be formulated in many ways, but I find the following words of the renowned philosopher of African American origin, Dr. Cornell West, a rather poignant and profound way of stating it: "I am who I am because somebody loved me, somebody cared for me, somebody attended to me, and somebody focused on me". The notion of the Relational Self in contemporary psychology would have offered a more technical and, perhaps, less esoteric-sounding way of stating this, but I think the reason why I was drawn towards Dr. West's phrasing is precisely because of the rhetorical strength with which it confronts the notion of a "self-made person" that continues to dominate our societies. The fact that writing these acknowledgements is so widespread in academia demonstrates that we all share the intuition that our achievements are proportional to the amount of care we receive from others, and this care ought to be recognized.

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I still remember one class in my second year of undergraduate studies, when, faced with the problem of analyzing the syntax of determiners in English, I came up with the idea, which seemed completely original to me at that time (but, of course, it wasn't), that the determiner could be analyzed as the head of its own projection. Nataša Milićević, who taught this course that introduced us, English majors, to the basic notions of Generative Syntax, suggested that I do some independent research regarding the so-called "DP Hypothesis", which I knew nothing about at the time, and

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The collective move online during the COVID-19 pandemic brought a lot of anxiety and hardship, but it also opened the door to new forms of collaboration by normalizing online meetings, seminars, conferences, and workshops. At the beginning of this turbulent period, the linguistic collective gathered around the Slavic Department at the University of Graz, Austria lead by Boban Arsenijević invited me to join them for their weekly reading group meetings. I cannot emphasize enough how beneficial and significant these Thursday mornings with Boban, Marko Simonović, Stefan Milosavljević, Svitlana Antonyuk, Stefano Quaglia and Petra Mišmaš have been for me during these difficult times. In an important way, the creative energy that I gathered during these meetings gave me the necessary fuel to complete this dissertation. I must also stress that Boban and Marko's work on nominalizations in Serbo-Croatian has been a source of inspiration for me as one chapter of this dissertation related directly to their work, and, hopefully, builds upon it. Finally, I need to thank Marko for being an unmatched creator of positive atmosphere and an amazing co-author. Marko is the kind of person who turns research into fun and enjoyment without diminishing its productivity.

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ABSTRACT

Psych verbs or experiencer verbs are a class of verbs that entail emotional states on the part of one of the participants in the situation they denote (Dowty 1991). This class of verbs raises important challenges for some of the core theories and assumptions in the Generative Framework such as the Uniformity of Theta Assignment Hypothesis (Baker 1998) or Binding Theory (Chomsky 1986). Previous research suggests that assuming that these challenges are only apparent can lead to improvements of the theories in question as well as yield important insights into the category of experiencer verbs itself (Belletti and Rizzi 1988; Pesetsky 1994; Landau 2010).

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The descriptive investigation gave rise to a series of theoretical questions pertaining to the argument structure of these verbs, the thematic roles that they assign and the syntactic status of different types of NPs that are found with these verbs, case assignment mechanisms, and the role of the morpheme SE. These questions are tackled separately, in dedicated chapters, within the framework of Distributed Morphology (Halle and Marantz 1993).

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Oblique case-marked bare NPs expressing experiencers or stimuli with some Serbian psych verbs are argued to be arguments by showing that they cannot be analyzed as adjuncts or complements, and the origin of different oblique case forms (specifically, genitive and dative) is attributed to two different applicative heads (Source Applicative and Goal Applicative) building on Pykkänen (2008).

The possibilities of deriving *n*-participles and *-(n)je* nominalizations from Serbian psych verbs were explored under the assumptions that passive participle formation is governed by argument structure properties (Embick 2004) and *-(n)je* nominalizations are derived from passive participles (Marvin 2002; Simonović and Arsenijević 2014). The ambition behind these investigations was to reveal important facts in both directions (i.e. about the formation and internal structure of passive participles and *-(n)je* nominals and about the argument structure of psych verbs that underlie them). In a nutshell, it is argued that *n*-participles can be derived only from those verbs that contain an agentive component (VoiceP), and a somewhat modified version of the hypothesis that *-(n)je* nominals can be derived only from those verbs that also derive *n*-participles can be maintained.

Key words: psych verbs, case, participles, nominalizations, morpheme SE, Serbian, English

REZIME

Psihološki glagoli predstavljaju klasu glagola koji uvode presupozicije o emocionalnim stanjima jednog od učesnika u situaciji koju označavaju (Dowty 1991). Ova klasa glagola se pokazala problematičnom za neke od ključnih teorijskih postavki u Generativnoj gramatici kao što su Hipoteza o uniformnom dodeljivanju tematskih uloga (Baker 1988) i Teorija vezivanja (Chomsky 1986). Prethodna istraživanja, ipak, pokazuju da pretpostavka da su ovi izazovi ipak samo prividni može dovesti kako do unapređenja teorije tako i do boljeg razumevanja klase psiholoških glagola (Belletti i Rizzi 1988; Pesetsky 1994; Landau 2010).

Ova disertacija pristupa psihološkim glagolima u srpskom jeziku iz perspektive klasifikacije ove kategorije glagola u engleskom jeziku zasnovane na višejezičkim istraživanjima (Levin 1994). Empirijski doprinos ove disertacije leži u činjenici da su podaci opisani i klasifikovani prateći formalne kriterijume, a uzimajući u obzir i prethodne opise ove klase glagola u srpskom jeziku, koji su primarno zasnovani na funkcionalističkim pojmovima (Štrbac 2006; Milenković 2017).

Deskriptivni deo istraživanja doveo je do skupa teorijskih pitanja koja se tiču: (i) argumentske strukture ovih glagola, (ii) tematskih uloga koje dodeljuju i sintaksičkog statusa različitih tipova imeničkih sintagmi koje se javljaju sa ovim glagolima, (iii) mehanizama dodeljivanja padeža i (iv) uloge morfeme SE. Ova pitanja se razmatraju pojedinačno, u zasebnim poglavljima, a kao teorijski okvir odarana je Distribuirana morfologija (Halle i Marantz 1993).

U pogledu uloge morfeme SE, podaci ukazuju na postojanje semantičke klase između antikauzativnih i refleksivnih izraza, koji su za potrebe ove disertacije nazvani "semi-refleksivnim". Na osnovu ovog koncepta mire se dva suprotstavljena pristupa prirodi antikauzativne upotrebe morfeme SE („Refleksivni pristup” Chierchia 2004 i „Standardni pristup” - Parsons 1990 or Schäfer and Vivanco 2016). Ovim rešenjem se, takođe, otvara prostor za objašnjenje nepostojanja antikauzativnih oblika psiholoških glagola u engleskom jeziku.

Samostalne imeničke sintagme u kosim padežima koje uvode ekspirijensere ili stimuluse sa nekim od psiholoških glagola u srpskom jeziku analizirane su kao argumenti na osnovu dokaza da se ne mogu tretirati kao adjunkti ili dopune, dok se poreklo različitih kosih padeža (preciznije, genitiva i dativa) pripisuje dvama različitim vrstama aplikativnih centara (Aplikativ izvora i Aplikativ cilja) prateći Pylkkänen (2008).

Mogućnosti izvođenja trpnog glagolskog prideva i *-(n)je* nominalizacija od psiholoških glagola u srpskom jeziku istražuju se pod pretpostavkom da se pasivni participi (u konkretnom slučaju trpni glagolski pridev) formiraju pod uticajem svojstava argumentske strukture (Embick 2004), a *-(n)je* nominalizacije se izvode od trpnog glagolskog prideva (Marvin 2002; Simonović i Arsenijević 2014). Cilj ovog postupka bio je da se otkriju značajne činjenice u oba pravca (tj. u vezi sa izvođenjem i unutrašnjom strukturom trpnog glagolskog prideva i *-(n)je* nominalizacija i u vezi sa argumentskom strukturom samih glagola u osnovi. U najkraćem, iznosi se tvrdnja da se trpni glagolski pridevi mogu izvesti samo od glagola koju uključuju agentivnu komponentu (VoiceP) i da se u izvesnoj meri modifikovana hipoteza da se *-(n)je* nominalizacije izvode samo od onih glagola koji takođe izvode trpni glagolski pridev može održati.

Ključne reči: psihološki glagoli, participi, nominalizacije, morfema SE, srpski jezik, engleski jezik

1. Introduction

Psychological (Psych) verbs are probably the unruliest class of verbs. As the development of Generative Grammar has demonstrated, comprehensive theories of the verbal domain are usually based on data that involves verbs from other classes. Psych verbs have been an afterthought in mainstream linguistic theorizing. Yet, when they are more carefully considered, they tend to pose challenges to the prevailing theories such as the Binding Theory (Chomsky 1986) or the Uniformity of Theta Assignment Hypothesis (UTAH) (Baker 1988) [see Section 2.2.]. As a result, this class of verbs has attracted a lot of attention from linguists who attempted to explain their atypical behavior.

This dissertation represents an attempt to contribute to the discussion on Psych verbs by shedding light on data from Serbian, a language that has received relatively little attention in this domain. Even in the traditional Serbian literature, Psych verbs have appeared on the radar quite recently with a couple of comprehensive investigations (Štrbac 2006; Milenković 2017 *inter alia*). However, these studies, written in Serbian, do not use the terminology and theoretical tools of formal linguistics, which makes them virtually inaccessible to the broader linguistic community.

The basic thrust of this dissertation is to provide a comprehensive formal description of Serbian Psych verbs by comparing them to their English counterparts while bearing in mind existing crosslinguistic observations and classifications. The idea is to unpack the category of Psych verbs in Serbian in light of what is generally known about these verbs and identify the properties that are different or unexpected from the standpoint of the current state of the art in linguistic theory.

The central set of properties that set Serbian Psych verbs apart from the English verbs of this class can be illustrated with reference to the examples in (1). First, a number of Serbian Psych

verbs realize one of their participants in the form of a n oblique case-marked bare NP. Sometimes this oblique-case marked bare NP expresses the Experiencer (1b), but in other cases, the Stimulus³ participant takes this form (1a, 1c). Second, these oblique case-marked bare NPs can carry different case forms such as dative (1a, 1b), and genitive (1c). Third, often, though not always, these atypical expressions of the participants in the situation denoted by the verb, are accompanied by the obligatory pseudo-reflexive morpheme SE, as shown in all the examples in (1).

- (1) a. Jovan se raduje pobedi.
 Jovan.NOM SE rejoice victory.DAT
 ‘Jovan is looking forward to victory.’
- b. Jovanu se sviđa ova pesma
 Jovan.DAT SE like this.NOM song.NOM
 ‘Jovan likes this song. / This song appeals to Jovan.’
- c. Jovan se plaši istine.
 Jovan.NOM SE scare truth.GEN
 ‘Jovan is afraid of the truth.’

None of these properties can be found in English as English has no suffixal oblique cases nor does it have a pseudo-reflexive morpheme SE.

In light of these observations, the core questions that this dissertation will attempt to answer are:

³ As will be demonstrated in subsequent chapters, the exact thematic role of the non-experiencer participant with psych verbs can vary and various different labels can be found in the literature including *Theme*, *Causer*, *Target of emotion*, *Subject Matter*, and others (Pesetsky 1994). I will use the term *Stimulus* as a cover term for all non-experiencer participants when my goal is to abstract away from these more fine-grained distinctions.

- (i) What is the syntactic and semantic status of oblique case-marked bare NPs with Serbian Psych verbs? Should they be analyzed as adjuncts, complements or arguments?
- (ii) What is the role of different case forms (primarily, dative vs. genitive) on these oblique case-marked bare NPs?
- (iii) What is the role of the pseudo-reflexive SE morpheme with Psych verbs?
- (iv) What are the argument structure properties of different Psych verbs?
- (v) What do the answers to (i)-(iv) reveal about the syntax and semantics of Psych verbs cross-linguistically?

In what follows, I will explain the theoretical and descriptive significance of these questions. In broader terms, the motivation behind all these questions is to examine whether existing linguistic theories and explanations regarding the specific phenomena they address can be extended to Psych verbs or this segment of the verbal lexicon requires a separate set of explanations. Along with the established tradition within the generative approach, the guiding hypothesis will be that the challenges that Psych verbs pose for the established theories are only apparent and precisely because of their exceptional behavior, when carefully examined, they actually provide deeper insights and allow us to make the existing theories more precise and empirically adequate (Belletti and Rizzi 1988; Pesetsky 1994; Landau 2010).

The question in (i) concerning the status of oblique case-marked bare NP elements that are observed in (1) raises a number of interesting issues. For instance, if these elements behave like adjuncts, then, their realization as bare NPs becomes problematic given the longstanding question of the status of bare NP adjuncts (cf. Larson 1985). On the other hand, if these NPs are arguments, the fact that they carry oblique cases makes them atypical since arguments typically carry structural

case (nominative/accusative). Finally, if the proper analysis of oblique case-marked bare NPs in (1) is to treat them as complements, we are still left with the issue of their exceptional status as typical oblique-case complements of verbs are realized as PPs (2).

- (2) a. Steven is talking about poetry.
b. Stevan priča o poeziji.
Stevan.NOM talks about poetry.LOC
'Stevan is talking about poetry.'

Regardless of what the correct answer to (i) turns out to be, the examples in (1) also give rise to important questions about the origins of different oblique case forms on bare NPs. In particular, this question concerns the existence of systematic reasons why, for instance, the NP that names the Experiencer in (1b) carries dative case while in (1a) this case form appears on the NP naming the non-Experiencer (call it 'Stimulus') participant. What is more, the NP that introduces the Stimulus participant carries genitive case in (1c). The deeper issue here is whether these different case forms and their distribution between the participants involved in the event/state denoted by the verb can be accounted for in structural terms (e.g. by their structural position within the extended VP or by covert prepositions). The other logical possibility is that the case forms that they carry are purely idiosyncratically determined based on the lexical properties of the verbs (Woolford's 2004 'lexical case').

Question (iii) concerns the role of the morpheme SE, which participates in numerous argument structure alterations producing reflexives, anticausatives, impersonal passives and middles (see Marelj 2004). The issue is complicated by the fact that the verb in (1b) cannot be used without SE (so-called 'frozen entry'), while the verbs in (1a) and (1c) can (3).

- (3) a. Jovana raduje pobeda.
 Jovan.ACC rejoice victory.NOM
 ‘The victory makes Jovan happy.’
- b. *Jovana sviđa ova pesma.
 Jovan.ACC appeal this.NOM song.NOM
 Intended: ‘This song appeals to Jovan.’
- c. Jovana plaši istina.
 Jovan.ACC scare truth.NOM
 ‘Jovan is scared of the truth.’

As shown in (3a) and (3c), the dropping of SE is accompanied by changes in case forms on the NPs naming the participants in the event/state. For instance, in (1a) with SE, the NP expressing the Experiencer carries nominative case while the Stimulus participant is realized in the form of a dative case-marked NP. In (3a), on the other hand, when this same verb is used without SE, the NP that introduces the Experiencer carries accusative case while the Stimulus NP receives nominative case. These issues illustrate only one part of the puzzle concerning the role of SE with Psych verbs given the wide range of argument structure effects that this morpheme is associated with. For example, certain Psych verbs with SE have a reflexive interpretation but others do not (4). Similarly, anticausative uses of SE are possible with some verbs belonging to this class but not with others (5). The latter issue is made even more interesting by the fact that in languages like English, anticausative Psych verbs tend to be (rather mysteriously) blocked (Alexiadou and Iordăchioaia 2014) (6).

- (4) a. Ivan se hrabri.
 Ivan.NOM SE encourage
 ‘Ivan is encouraging himself.’
- b. Ivan se nervira.
 Ivan.NOM SE annoy
 ‘Ivan is annoyed.’ / # ‘Ivan annoys himself.’
- (5) a. Ivan se razbesneo.
 Ivan.NOM SE anger
 ‘Ivan got angry.’
- b. *Ivan se boli.
 Ivan.NOM SE pain
 Intended: ‘Ivan is in pain.’
- (6) *John angered.

All of these properties raise numerous issues about the syntactic and semantic contribution of SE and its interaction with argument structure properties, which are responsible for its uneven distribution across different classes of (Psych) verbs.

Finally, the question in (iv) deals with the proper way of analyzing and representing different Psych verbs in terms of their argument structure. This question is, of course, related to the previous one given the fact the possibilities of combining SE with different verbs to produce reflexives, anticausatives, middles or impersonal passives correlates with the argument structure features of particular verbs. However, questions about argument structure are also relevant in terms of explaining the possibilities of deriving passive participles (Embick 2004) and other deverbal

elements (e.g. nominalizations). For instance, in English, unaccusative verbs fail to derive passive participles and *ing*-nominalizations (7).

- (7) a. *died soldiers
 b. *Peter's arriving

In Serbian, some Psych verbs are able to derive passive participles but others are not (8).

- (8) a. *prijani student
 pleased.PASS.PRT students
 Intended: 'pleased students'
 b. iznervirani student
 annoy.PASS.PRT students
 'annoyed students'

The question regarding the possibilities of deriving passive participles feeds directly into the issue of the derivability of the so-called *-nje* nominals (similar to English *-ing* nominals) given the proposal that these nominalizations are derived from passive participles (Marvin 2002; Simonović and Arsenijević 2014). A strict interpretation of this analysis would predict *-nje* nominals to be impossible with verbs that cannot derive passive participles.

This short preview into the kinds of issues that are encountered in the domain of Psych verbs demonstrates that a thorough exploration of this class of verbs promises to yield insights into numerous important aspects of grammar ranging from case, the nature of reflexive and anticausative forms, the formation of passive participles and nominalizations and various others. In that sense, the aim of this thesis is to provide such insights alongside a comprehensive formal description of this class of verbs.

The dissertation is structured as follows. Chapter 2 provides a very general and basic theoretical background for the study of Psych verbs outlining the reasons why this category of verbs has attracted so much research interest as well as the specific rationale for focusing on the Serbian data against the backdrop of what is known about these verbs in English and beyond. The chapter situates the present study within the broader theoretical framework of Minimalism (Chomsky 1995, *et seq*) and Distributed Morphology (Halle and Marantz 1993; Marantz 1997; Harley and Noyer 1999). It also presents a basic descriptive overview and classification of Psych verbs in English (Levin 1994), which will be used as a lens into the description of the Serbian data. Finally, an overview of the recent literature on Serbian Psych verbs is offered underscoring the point that these studies are closer in spirit to the functionalist approach to linguistic research and most of them are written in Serbian, motivating a formally and comparatively-oriented study such as this one.

Chapter 3 raises the question of the role of SE with Psych verbs tackling a number of different issues. First, it offers a description of the distribution of the various possible readings of SE (reflexive, anticausative, middle, etc.) with different classes of Psych verbs. Second, it provides a formal account capturing this distribution by assuming that reflexive readings are available only with verbs that project VoiceP and include an Agent argument (Kratzer 1994) while anticausative readings are available with verbs that include an eventive version of v (Folli and Harley 2005). Thirdly, relying on tests from the licensing of different types of event modifiers (Alexiadou and Anagnostopoulou 2009 *inter alia*), it is established that Serbian Psych-verb anticausatives are structurally different from typical anticausatives. The structural representation of this difference points towards a sort of middle-ground solution to the overarching debate around the status of SE with anticausatives, where one view maintains that reflexive semantics is present in those uses as

well (Chierchia 2004), while the other perspective is that the reflexive SE and anticausative SE are not semantically related (Schäfer and Vivanco 2016). Basically, I argue that a significant portion of Psych verb anticausatives should be treated as ‘semi-reflexives’ (a notion that will be formally defined in Chapter 3) while pointing out that reflexive semantics should not be extended to all anticausatives. The existence of this ‘semi-reflexive’ function of SE in Serbian could also potentially account for the puzzling lack of Psych verb anticausatives in English (Alexiadou and Iordăchioaia 2014) where such an element is lacking. Finally, the chapter addresses the question of the so-called ‘frozen entries’ or Psych verbs that are never used without SE arguing that these uses of SE are different from both reflexive and anticausative uses.

Chapter 4 addresses the issue of the syntactic status of oblique case-marked bare NPs naming the participants with certain types of Psych verbs, as illustrated in (1). These elements could be plausibly analyzed as adjuncts, complements or arguments. Using a number of tests that are available in the literature, I first establish that they are not adjuncts. Next, I establish that oblique case-marked bare NPs such as the ones in (1) are not dominated by oblique prepositions and argue that they are, in fact, truly bare NPs, motivating the conclusion that they are arguments even though they do not carry case forms typical for arguments (nominative/accusative).

In Chapter 5, I tackle the question of the possibilities of passive participle formation with Psych verbs. I first provide the descriptive picture identifying the kinds of Psych verbs that are capable of deriving these forms as well as those that are not. Next, I proceed to provide a formal account of these derivations arguing that the agentive (VoiceP) structure is the only viable input to passive participle formation (Embick’s 2004 PassP).

Chapter 6 builds on the findings and conclusions of Chapter 5 and applies them to the question of deverbal *-nje* nominalizations. Building on the assumption that these nominals are

derived from passive participles (Marvin 2002; Simonović and Arsenijević 2014), I adopt the strong version of this hypothesis, which predicts that *-nje* nominalizations cannot be derived from verbs that do not derive passive participles. I address some of the potential criticisms of this hypothesis and offer further support from the domain of Psych verbs. In this chapter, I address other issues related to *-nje* nominalizations such as the (imperfect but strong) correlations between the possibilities of stress shift and lexicalization addressed by Simonović and Arsenijević (2014). I offer a Marantzian (1997) account of these phenomena by defining specific structural constraints that either allow or block stress shifts and lexicalization.

In Chapter 7, I return to the problem of oblique case-marked bare NPs focusing specifically on explaining the mechanisms behind the assignment/licensing of different oblique case forms (genitive and dative) that are encountered on the NPs introducing event/state participants with Psych verbs, such as those in (1). Relying on the mainstream typology of case forms in generativism (Woolford 1997, 2006), I argue that these case forms should not be analyzed as instances of idiosyncratic (so-called ‘lexical’) case. Instead, I associate these different forms with specific semantic and syntactic environments. In particular, building on the work of McGinnis (1998), Cuervo (2003), Pylkkänen (2008) and Harley (2020), I argue that NPs bearing genitive (1c) and dative case forms (1a-b) originate in different types of so-called Low Applicative Phrases introducing sources and goals, respectively.

Chapter 8 concludes the dissertation and outlines the possibilities for further research.

2. Theoretical background, scope and rationale of the study

The aim of this chapter is to provide the basic coordinates of this study in terms of the main theoretical assumptions that guide the investigation. Moreover, the goal is to define the empirical scope and the main motivation for the present research. Section 2.1 offers the basic outline of the so-called neoconstructionist approach to the structure of verbs, in particular, and derivational morphology, more broadly, whose primary assumption is that syntax is responsible for the formation of words/lexemes in addition to building phrases and clauses. As such, the neoconstructionist approach places derivational morphology within the purview of syntax.

In the second section of this chapter [Section 2.2.], I outline some of the challenges that Psych verbs pose for linguistic theories and the most important ways in which these challenges have been addressed so far. Because the problems that Psych verbs pose for some of the core assumptions of the formal approaches to syntax and semantics and generativism in particular, there is a wide array of topics covered in the formal literature on these verbs, and consequently, the number of works addressing these topics is exceptionally large. For that reason, it will not be possible to offer a truly comprehensive review of the literature that would do justice to the state of the art in the field regarding this research domain. The goal of this section will, thus, be to illustrate the kinds of challenges this class of verbs poses for the prevailing theories within the generative framework. In addition, the section will also review the most successful ways in which these challenges have been addressed so far.

The third section [Section 2.3.] will deal with the description of Psych verbs in English drawing primarily on Levin's (1994) seminal work on the classes and grammatical properties of verbs in this language. The English data will be presented in light of the theoretical concerns outlined in Section 2.1. The classification of English Psych verbs carried out by Levin (1994) is

also important because it includes a detailed discussion on an additional subclass (so-called *marvel*-type verbs) that is rarely discussed in most of the other influential works on this subject, but as I will show later it finds its counterpart in Serbian as well.

In the fourth section of this chapter [Section 2.4.], my goal will be to give a brief overview of the descriptive literature on Psych verbs in Serbian. These verbs have been recognized as an interesting research domain in recent years by both Serbian and Croatian scholars. However, the approaches that they assume and the research questions they raise exhibit very little overlap with the goals and interests of the formal approaches. Nonetheless, these investigations have yielded interesting empirical observations, which this study will build upon.

The chapter closes with a section on the issues encountered in an attempt at classifying Serbian Psych verbs according to the chosen criteria. The final section will describe the basic morphosyntactic and semantic properties of this class of verbs in Serbian highlighting the points where they diverge from the more broadly attested patterns. The issues that are encountered in the process of classification simultaneously raise important theoretical questions such as the ones about the argument structure of Psych verbs; role of SE and its effects on argument structure; the roles of the obligatory PPs and oblique case-marked bare-NP expressions and the syntactic origins and potential semantic contributions of oblique cases. The problems identified in this section constitute the main research questions that will be addressed in the subsequent chapters.

2.1. Theoretical background: neoconstructionist approaches to the structure of the verb phrase

As I have already suggested, this section will lay out the most basic theoretical notions that inform this study both in terms of the choice of descriptive criteria and the focus on particular issues and puzzles instead of some others that could be equally or more interesting from some

other theoretical perspective. The individual chapters of the dissertation will raise more concrete questions that emerge from the data itself, but the overall approach and focus as well as the nature of these individual investigations are derived from the set of theoretical principles and assumptions which will be presented in this chapter. Of course, these chapters will be equipped with more focused reviews of the previous literature relevant for the issue at hand.

Since Chapters 3, 5 and 6 will deal with three different kinds of morphological forms derived from Psych verbs (SE anticausatives and reflexives, passive participles and nominalizations, respectively), I first want to address the question of the theoretical justifiability of analyzing various morphologically related structures in parallel and using the morphosyntactic and semantic behavior of one structure as evidence for the morphosyntactic representation of another. The answer to this question has changed considerably over the course of the development of generative approaches. During its six-decade-long history, generative theory has gone from treating syntax and morphology as fully integrated in the initial period (Standard Theory, Chomsky, 1957, 1965) over an intervening era in which a sharp dividing line was drawn between these two components (X-Bar Theory, Chomsky 1970, 1981, 1986) to the most recent stance that all structure-building takes place within a single component, which once again means that syntax and morphology cannot be disentangled (Chomsky's 1995 Minimalism combined with Distributed Morphology, Halle and Marantz 1993; Marantz 1997, and subsequent work). Therefore, contemporary generative theory gives a full justification for an analysis and description of Psychological verbs that draws on data from morphologically related nouns and adjectives in addition to the data on the verbs themselves. The goal of this section will be to give a brief overview of the mainstream generative thinking about these matters in order to substantiate this claim.

In the early days of generative linguistics, the generative power that was attributed to syntax swallowed the morphological component. Chomsky's (1957) central thesis about the Autonomy of Syntax situated structure building completely within its domain. Of course, this was not meant to imply that syntax was completely responsible for the phonological shape of linguistic expressions and their semantic interpretation, so the existence of Semantics and Phonology as separate components was acknowledged from the outset (Aronoff 1976). However, there was no immediate necessity to postulate the existence of Morphology as a separate module, which is why its operations were divided up between syntax, the only module responsible for structure building, and phonology, the module that takes care of sensory-motor externalization (Aronoff 1976).

The Sound Pattern of English (SPE), Chomsky and Halle's (1968) seminal work on phonology, although fully situated in the framework of early generativism, began to expose cracks in this initial view by pointing to certain procedures that might be called morphological. Aronoff (1976) argues that the notion of 'readjustment' rules in SPE is an example of such procedures. These are the rules that operate on syntactic structure to create a viable input for phonology. For instance, the English verb *go* with its base form pronunciation /gəʊ/ is pronounced as /went/ in the context of past tense. Clearly, this result cannot be obtained by the application of a phonological rule because this is a clear instance of suppletive allomorphy, whereby the root changes its shape in a (synchronically) completely unpredictable way depending on the morphosyntactic context. In the initial division of labor, it was difficult to characterize such rules as either syntactic or phonological, and it seemed that a separate module was necessary to accommodate them.

Despite these issues that appeared on the margins of linguistic research in the first two decades of generative linguistics, it was not until Chomsky's (1968) seminal work on nominalizations that the issue of the division of labor between morphology and syntax became the

focus of the discussion. In this paper, Chomsky (1968) addresses the question whether NPs headed by gerunds (1a), *-ing* nominals (1b) and *-ion* nominals (1c) in English are all derived from the same underlying structure that is also found in a sentence with a morphologically related verb (1d).

- (1) a. [Destroying that book] was a tragedy.
- b. [The destroying of that book] was a tragedy.
- c. [His destruction of that book] was a tragedy.
- d. He destroyed that book.

Chomsky (1968) observes that gerunds (1a) reject the article (2a), which is one of the central characteristics of typical NPs; also, they assign accusative case to their object and accept adverbial modification (2b). On the other hand, *-ing* nominals and *-ion* nominals combine with articles, take genitive complements and allow only adjectival modification (2c).

- (2) a. *The destroying that book was a tragedy.
- b. Completely destroying that book was a tragedy.
- c. The/His complete(*ly) destruction *(of) that book was a tragedy.

On the basis of these discrepancies, Chomsky (1968) concludes that gerunds are derived from clauses while nominalizations are nominal throughout, which means that they are derived in the lexicon. To strengthen his conclusion, Chomsky (1968) points to the paradigm in (3). The impossibility of nominalizing the sentence (3b) illustrated by the unacceptability of (3d) is unexpected if nominalizations are derived from sentences, but under the lexicalist view, one could simply say that there are no nominal counterparts of the transitive verb *grow*.

- (3) a. The tomatoes grow.
b. John grows tomatoes.
c. The tomatoes' growth.
d. *John's growth of tomatoes.

This proposal initiated the so-called *Lexicalist Hypothesis*, or the idea that derivational morphology is independent from syntax and takes place in the lexicon, and this is the view that Chomsky has maintained in his most recent takes on the subject (Chomsky 1995). The version of the Lexicalist Hypothesis adopted by Chomsky (1995) is termed Weak Lexicalist Hypothesis, and according to this hypothesis, only derivational morphology is assumed to be independent from syntax and contained within the lexicon. The alternative, the Strong Lexicalist Hypothesis, locates both inflectional and derivational morphology in the lexical component and outside syntax.

Abney's (1987) DP hypothesis, together with other work from the late Government and Binding (GB) period, disturbed the foundations of Lexicalism. Abney's (1987) argumentation in favor of the DP hypothesis was based on a re-analysis of the facts that Chomsky (1968) relied on to articulate the Lexicalist Hypothesis. According to Abney (1987), the differences between gerunds, *-ing* nominals and *-ion* nominalizations can be accounted for by assuming varying degrees of common structure with the presence of the DP layer on top of all three phrases ensuring the same syntactic distribution of all three elements. However, he maintained the idea that gerunds were derived from verbal roots while *-ing* and *-ion* nominalizations stem from nominal roots.

Baker's (1988) study of incorporation and grammatical function-changing phenomena showed that syntax can affect the shape of a word beyond the domain of what is normally

considered inflectional morphology. Baker (1988, pp. 10-11) points to examples such as those in (4) from a Bantu language, Chichewa, to illustrate the process of morphological causativization.

(4) a. Mtsuko u-na-gw-a.

waterpot SP-PAST-fall-ASP

‘The waterpot fell.’

b. Mtsikana a-na-u-gw-ets-a mtsuko.

girl SP-PAST-OP-fall-CAUS-ASP waterpot

‘The girl made the waterpot fall.’

(Baker 1988, pp. 10-11)

Looking at the verb forms in (4a) and (4b), one can observe that the transitive (causative) version in (4b) is morphologically more complex containing the suffix *-ets*, whose purpose is to introduce the semantics of causation and the external argument.

What the examples in (4) suggest is that morphological shape of the verb in Chichewa is determined by its syntactic configuration. Further, Baker (1988) observes that a number of other grammatical function-changing operations illustrate the interaction between morphology and syntax. In English, this interaction is exemplified by passives, where the removal of the external argument and the promotion of the internal argument to clausal subject is manifested morphologically in the form of the *-ed* suffix on the lexical verb and the presence of the passive auxiliary *be*.

The intuition that a clear demarcation line between morphology and syntax cannot be made gained traction with the accumulation of examples such as those in (4) from various languages, and it became increasingly clear that syntactic theory needs to accommodate significant portions of morphology in some fashion. The precise features of the model of this relationship

between syntax and morphology became a matter of debate, but the view that all language structures are built by the application of the operation Merge and assigned interpretations at the interfaces represents the point of agreement between various currents of generative linguistics known as neo-constructionist approaches (Acedo Matellan 2010).

Perhaps the most influential current from the neoconstructionist family of approaches is Distributed Morphology (DM) (Halle and Marantz 1993). Under DM, the tasks that were traditionally associated with the morphological component are *distributed* among different sub-modules. Harley and Noyer (1999) offer the following model of the architecture of grammar (Figure 1).

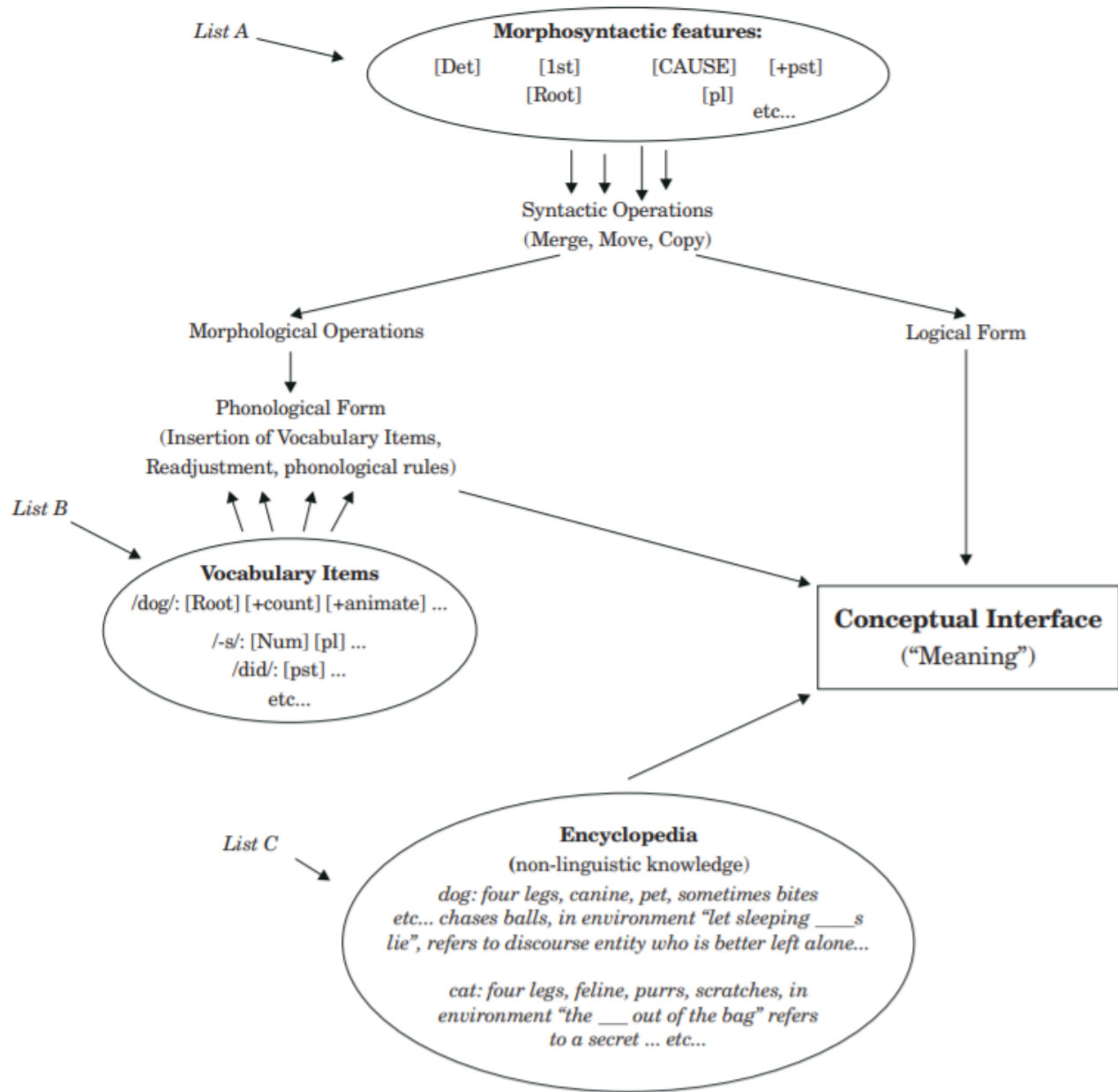


Figure 1: The architecture of grammar under DM, reproduced from Harley and Noyer (1999, p. 3)

As can be observed from the model, the traditional generative notion of the Lexicon is substituted with a collection of morphosyntactic features ([+plural], [+past], [CAUSE], etc.), which also contains acategorial roots (notated with the square root symbol “√”, e.g. √BREAK). The syntactic operations Merge, Move and Copy are applied to these morphosyntactic features in

syntax, as the only structure-building component. Once formed, these structures are shipped off to the Logical Form, which relies on the Encyclopedia to assign meanings to these structures, and the meaning of a particular root will depend on the syntactic environment in which it is merged. The advantage of this assumption is apparent in languages like English, where sentences like (5) (quoted in Pinker 1994, p. 201) but originally due to William J. Rapaport) are fully grammatical and interpretable.

(5) Buffalo buffalo Buffalo buffalo buffalo buffalo Buffalo buffalo.

The sentence in (5) combines three different meanings of the root $\sqrt{\text{BUFFALO}}$: (i) the kind of animal also known by the name American Bison, (ii) the verb *buffalo*, which is a synonym of *bully*, and (iii) and the proper name Buffalo, which is the name of a city in the US. Therefore, the sentence can be paraphrased as “American bison from Buffalo bullied by (other) American bison from Buffalo bully (still other) American bison from Buffalo”. According to DM, these different meanings are assigned to the root $\sqrt{\text{BUFFALO}}$ by the Encyclopedia based on the syntactic context in which they appear (as complement of *n*, *v*, *a*, etc.).

At the phonological interface, structures that are formed by syntax can undergo morphological operations that prepare the output of syntax for phonological externalization. These operations include Merger, Fusion, head-to-head movement and Fission, and the ways in which they apply are language specific (Halle and Marantz 1993). For instance, in German, the lexical verb moves from *v* to T to C thereby deriving the V2 effect, while in English the verb stays in its original position (Besten 1983). Under Merger, two heads are merged into the same position in the structure but still kept formally separate so that it is possible to delineate one from the other upon externalization. Halle and Marantz (1993) analyze the affix-hopping effect in English, whereby

the tense suffix is pronounced on the main verb, as an instance of Merger. It is crucial that the vocabulary item that externalizes the tense-suffixed lexical verb can still be divided into two segments. Fusion is a morphological operation, which fuses two heads that are subsequently pronounced as a single element. Case suffixes in languages like Serbian, which instantiate gender, number and case as a single morpheme could be taken an example of Fusion because all these morphosyntactic properties would come from different functional heads, but in the end, they are all expressed by means of a single suffix ($\sqrt{\text{KUC}}+\text{a}$ 'house.FEM.SG.NOM). Finally, Fission is the process that separates a particular head from a fused element under certain conditions (Halle and Marantz 1993).

After the application of morphological operations, vocabulary items (i.e. linear strings of sounds corresponding to clearly defined chunks of syntactic structure) are inserted into individual nodes in the syntactic tree. Crucially, a single vocabulary item can instantiate only one terminal node, but given the existence of head-to-head movement, Fusion, Fission and Merger, these nodes can be quite complex. When it comes to the rules that govern vocabulary insertion, Halle and Marantz (1993) as well as most other authors who adopt this framework assume a version of Kiparsky's (1973) Elsewhere Condition that they label the Subset Principle in DM. According to the Subset Principle, vocabulary items are marked for a set of features, and a particular vocabulary item can externalize a particular terminal node only if the terminal node in question contains exactly the same features as the lexical item or the set of features on the lexical item is a proper subset of the set of features on the terminal node. In case of competition between two lexical items, the one that has more features in common with the terminal node wins (the Elsewhere Condition).

That morphology is indeed distributed and that crucial parts of it have to be made abstractly syntactic, without reference to semantics and phonology is shown by Harley (2014) with respect

to the question of the identity of roots. Harley (2014) argues that roots cannot be identified based on semantics because their semantics can vary a lot from context to context and some bound roots seem to have no independent semantics at all. For instance, the English root $\sqrt{\text{DOMIN}}$ does not appear without suffixes (i.e. it is a bound root), and its meaning is not fixed in the words that are derived from it such as *dominate* or *dominatrix* (Harley 2014). On the other hand, root suppletion shows that the identity of roots cannot be established phonologically either. Consider the Hiaki examples in (6).

- (6) a. vuite ~ tenne → ‘run.SG ~ run.PL’
 b. siika ~ saka → ‘go.SG ~ go.PL’
 c. weama ~ rehte → ‘wander.SG ~ wander.PL’
 d. kivake ~ kiime → ‘enter.SG ~ enter.PL’
 e. vo’e ~ to’e → ‘lie.SG ~ lie.PL’
 f. weye ~ kaate → ‘walk.SG ~ walk.PL’;
 g. mea ~ Sua → ‘kill.SG.OBJ ~ kill.PL.OBJ’ (Harley 2014, p. 234)

These examples from the Uto-Aztekan language, Hiaki, illustrate root suppletion in the context of different verb/number combinations. Examples (6a-g) exhibit pairs of completely different roots expressing meanings that differ only in the grammatical category of number. The approach that ties the identity of roots to phonological shape would be forced to treat these pairs as completely different roots, but then it is difficult to explain why each member of the pair has a gap in its grammatical number paradigm.

With the DM apparatus in place, Marantz (1997) turns Chomsky’s (1968) argument for Lexicalism into an argument for a derivationist account (*a la* DM) that treats verbs and

nominalizations as “derivational cousins”. Instead of asking whether nominalizations are derived from sentences via transformation, Marantz (1997) suggests that verbs and nominalizations are derived from the same acategorial roots. With verbs and gerunds, these roots are embedded under v , which explains adverbial modification (adverbs attach to verbal projections) and accusative case on the object (v assigns accusative) while with nominalizations the root is the complement of n so only adjectival modification and genitive complements are allowed. Crucially, the reason why (7a) is possible but (7b) is not is due to the fact that nominalizations do not contain verbal structure (v) in them. As a result, they cannot accommodate an external argument. The only position for the -’s genitive DP in these constructions is, thus, as a Possessor, which gets interpreted as the Agent/external cause with *destruction* but not with *growth*. What blocks this interpretation of the Possessor DP as Agent/external cause with $\sqrt{\text{GROW}}$ is the fact that unlike *destroy*, *grow* is an internally caused event where the cause of growth resides within the Theme and is related to its inherent properties (Levin and Hovav 1995).

(7) a. John’s destruction of the book.

b. *John’s growth of tomatoes.

(Marantz 1997, pp. 213-214)

The advantage of this approach over Chomsky’s (1968) lexicalist proposal is that it offers an account of why $\sqrt{\text{GROW}}$ but not $\sqrt{\text{DESTROY}}$ blocks external arguments under nominalization, while Chomsky (1968) treats the lack of transitive nominalization with *grow* as an arbitrary gap in the Lexicon. Furthermore, Marantz’s (1997) analysis opens the door to using evidence from nominalizations to gain insight about the related verbs and vice versa. In particular, his analysis of the lack of transitive nominalization with $\sqrt{\text{GROW}}$ provides evidence for treating such verbs as a separate category as in Levin and Rappoport Hovav (1995).

Before closing this section, it is important to state that there are other neo-constructionist approaches that share with DM the assumption that word formation takes place in syntax but implement it using a different architecture. One such approach is Nanosyntax (Starke 2010). There are three significant points of difference between Nanosyntax and DM (Caha 2018). First, according to Nanosyntax, each terminal node is occupied by exactly one morphosyntactic feature, and all features in a structure are hierarchically ordered by syntax whereas in DM, terminal nodes can contain unordered bundles of features. Second, Nanosyntax denies the crucial assumption of DM that Spell-Out can target only terminal nodes and suggests that vocabulary items correspond to spans of syntactic structure. Third, Nanosyntax dispenses with a separate Morphological module suggesting that syntax feeds directly into phonology. This means that Nanosyntax does not rely on a complex set of morphological operations of DM (head-to-head movement, Fission, Fusion and Merger), which makes this approach simpler.

While there are substantial architectural differences between DM and Nanosyntax, it is often difficult to find empirical testing grounds that could demonstrate the advantage of one over the other. Nonetheless, there are certain achievements of Nanosyntax that cannot so easily be recast in DM. For instance, Caha's (2009) approach to case morphology couched in the framework of Nanosyntax provides an account of a whole host of disparate phenomena related to morphological case that cannot receive a straightforward explanation in competing theories. The essence of this contribution is in that it provides an account of a sweeping cross-linguistic generalization that case syncretism can target only contiguous stretches of cases on the Case Hierarchy (Blake 2001). The case hierarchy is a typologically-derived construct, which orders cases on the basis of the observation that the presence of a particular case in a language might predict the presence of

another case. In that sense, Case Hierarchy can be seen as an example of Greenberg's (1963) Implicational Universal. The hierarchy is given in (8).

(8) INST>LOC>DAT>GEN>ACC>NOM

What the hierarchy in (8) suggests is that the presence of, for instance, instrumental in a given language, implies the presence of locative, which implies the presence of dative, and so on down the hierarchy, but the reverse pattern does not hold (e.g. the presence of accusative does not imply the presence of genitive).

Caha (2009) observed that syncretism cannot cover discontinuous stretches of this hierarchy. In other words, there is no syncretism that covers nominative and dative to the exclusion of accusative and genitive. Employing the theoretical apparatus of Nanosyntax, Caha (2009) hypothesizes that Case Hierarchy is the product of a syntactic hierarchy of case features ordered in a layered structure with instrumental being the highest layer and nominative being the lowest. The facts from case syncretism are, thus, explained via the notion of spanning, whereby case suffixes can correspond to spans of heads within this structure, which can be of various sizes, but they cannot instantiate non-contiguous heads to the exclusion of those in between.

Another theoretical model in the neoconstructionist family is the so-called Exoskeleton. Borer (2005a, 2005b, 2014) proposes a model of morphology (and syntax), which rivals both DM and Nanosyntax. Borer (2005a, 2005b, 2014) agrees with DM and Nanosyntax when it comes to the assumption that syntax is the only structure-building mechanism and that morphological explanations reduce to syntactic ones. Where Borer departs from these two approaches is in her rejection of the postulate of categorizing heads. While she assumes the existence of acategorial roots, she argues that the notion of empty categorizing heads that turn roots into nouns, verbs or adjectives is superfluous, and it faces an important overgeneration problem (i.e. it predicts the

grammaticality of structures that are unattested). The essence of her argument is that the empirical appeal of null categorizing heads is restricted to cases of zero-category shift, which is very productive in English, but it encounters serious problems when faced with other morphological outputs. For instance, the examples in (9) demonstrate that a large number of English lexemes can be used both as nouns and as verbs depending on the syntactic context. When combined with articles, they function like nouns, and when combined with verbal elements (infinitival particles in 9), they function like verbs.

- | | | | | | |
|--------|-----|--------|-------|--------|-------|
| (9) a. | the | salute | to | salute | |
| | b. | the | form | to | form |
| | c. | the | chair | to | chair |
| | d. | the | floor | to | floor |
| | e. | the | lamp | to | lamp |
| | f. | the | dance | to | dance |
| | g. | the | kiss | to | kiss |
| | h. | the | run | to | rum |
| | i. | the | walk | to | walk |
| | j. | the | feed | to | feed |
| | k. | the | show | to | show |
- (Borer 2014, p. 123)

DM captures this phenomenon by assuming that these lexemes enter syntax as categoriless roots, and they become nouns when they are embedded under a silent *n*. By the same token, if *v* is projected on top of these items, they become verbs.

Where this analysis encounters problems, according to Borer (2014), is when extended to items that have already been categorized by means of overt suffixes. The dataset in (10) demonstrates that nominalizations with overt suffixes cannot be zero-converted into verbs. Similarly, verbs derived with verbalizing suffixes cannot be used as nouns (11).

- (10)
- | | | | |
|----|----------------|------------------|----------------------|
| a. | a salutation | *to salutation | |
| b. | an arrival | *to arrival | |
| c. | a neighborhood | *to neighborhood | |
| d. | a writer | *to writer | |
| e. | the kindness | *to kindness | |
| f. | the ability | *to ability | (Borer 2014, p. 125) |

- (11)
- | | | | |
|----|-----------------|----------------|----------------------|
| a. | *a crystalize | to crystalize | |
| b. | *an instantiate | to instantiate | |
| c. | *an acidify | to acidify | |
| d. | *an encase | to encase | |
| e. | *a fatten | to fatten | |
| f. | *an enlighten | to enlighten | (Borer 2014, p. 125) |

Of course, re-categorization is a widely attested linguistic phenomenon. For example, the noun *colony* derives the verb *colonize*, which in turn derives the noun *colonization*. Therefore, if a zero nominalizer and a zero verbalizer belong to the syntactic inventory of the language, one would expect them to combine with overt categorizers to derive re-categorized outputs, but this never happens. Also, it is impossible to verbalize a root and then nominalize it without overt suffixes by simply stacking two silent categorizers on top of each other. Both of these possibilities are

excluded in DM by the assumption that zero categorizers can only attach directly to roots, but Borer (2014) argues that this is an unnecessary stipulation since the problem can be avoided by dispensing with zero categorizers altogether.

Borer (2005a, 2005b, 2014) assumes that categoryless roots are always overtly categorized in their syntactic context. When there is a clear categorizing morpheme (*-er, -ion, -ize, etc.*), it will be sufficient to categorize the root. However, when there is no morpheme of that kind, higher functional structure will decide. For instance, roots merged under a D^0 will be interpreted as nouns whereas roots merged under Asp^0 or T^0 will be interpreted as verbs.

While there is certainly merit in Borer's criticism of DM and the research done under the framework of Nanosyntax has produced some significant results primarily in the domain of case morphology in Slavic and beyond, at present, DM remains the most influential neoconstructionist approach to morphology. Most of the literature dealing with the phenomena that will be addressed in this dissertation is based on DM, and the theoretical concerns that are raised are formulated in this framework. As a result, the research questions that I will tackle will be cast in DM terms and the analysis that will be provided will rely on the assumptions of this approach.

2.2. Psych verbs in linguistic theory

Psych verbs or Experiencer verbs are defined primarily on the basis of their lexical semantics, but their lexical semantics is associated with a broad set of syntactic and semantic peculiarities that have attracted the interest of numerous linguists in the past decades. Arguably the most widely used semantic definition of Psych verbs comes from Dowty (1991). According to him, Psych verbs are those verbs that trigger entailmentS about emotional states of one of their participants. Emphasis should be placed on the phrase "emotional states" because the term Psych verbs might cause one to think that all verbs that involve mental state or psychological state

semantics belong to this class, but this is not the case. Verbs of cognition (*think, believe, know, etc.*) certainly trigger entailments about psychological states, but their syntactic and semantic properties set them apart from Psych verbs, whose meaning revolves around emotional states. Also, it is important to pay attention to the fact that Dowty's (1991) definition implies that these verbs have more than one participant. Most accounts of Psych verbs address only those verbs that have two participants (Belletti and Rizzi, 1988; Levin B. 1994; Landau 2010 *inter alia*). Finally, the term 'participant' is used deliberately here because not all the verbs that belong to this class are analyzed as having two arguments.

Psych verbs are a rather complex and quite heterogeneous class of verbs. They can be both transitive and intransitive, but when they are intransitive they often have to be accompanied by an obligatory complement. The Experiencer participant can appear both as the subject and the object of transitive sentences, and with intransitive verbs as the subject and as the oblique-cased or PP complement. Therefore, even without any interest in linguistic theory, one can recognize that the reason why these verbs attract so much attention from linguists is that they exhibit complex, but still clearly not chaotic syntactic and semantic behavior. However, from the standpoint of theoretical linguistics, they are a remarkably interesting class of verbs because they pose serious challenges to some of the most influential accounts (cf. Baker 1988). In addition, some of the facts about their syntax and semantics, while perhaps not directly challenging for prevailing theories, are, nonetheless, profoundly puzzling. Thus, the goal of this section is to outline some of these interesting facts about Psych verbs as well as the ways in which they have been addressed in the literature.

One of the most influential theoretical proposals in generative linguistics concerns the link between syntactic structure and thematic structure (θ -structure). The idea that there is a link

between the syntactic structure of the VP representing an eventuality and the structure of the conceptual event representation has been around ever since the beginnings of Generative Syntax (Chomsky's 1965 notion of Deep Structure or Fillmore's 1968 proposal about Deep Cases). In the Government and Binding framework (Chomsky 1986, 1993), this idea was articulated most forcefully in the form of Baker's (1988) Uniformity of Theta Assignment Hypothesis (UTAH). UTAH states that NPs are assigned theta roles in fixed syntactic positions such that a particular theta role is always assigned in the same position. The most straightforward consequence of this in the syntax of English is the fact that in (12), the NP in the subject position, *John*, is interpreted as the doer (Agent) of the kissing event while the object NP, *Mary*, is interpreted as the Patient (Theme).

(12) John kissed Mary.

There have also been other proposals that link thematic roles to syntactic structures. For instance, Perlmutter and Postal (1984) suggested that thematic roles are linked to syntactic positions but not determined by them. This looser view predicts some variation in terms of the syntactic positioning of NPs with particular thematic roles, and therefore requires certain constraints and additional rules, which is why Pesetsky (1994) argues that the conceptual simplicity and appeal of UTAH compels us to pursue it as the "null-hypothesis" in order to see how far it can go in terms of explaining linguistic facts.

Due to its conceptual appeal and promise, a modified version of UTAH became part of the mainstream generative syntax, and Chomsky's (1995) Minimalist Program takes it as one of the background assumptions. However, as soon as it was articulated, UTAH encountered a profound challenge precisely in the domain of Psych verbs. Consider (13) from Pesetsky (1994, p. 18).

(13) a. The paleontologists liked the fossil

b. The fossil pleased the paleontologist.

(13a) and (13b) represent a virtually identical extralinguistic situation, at least at the conceptual level. The verbs *like* and *please* can be considered synonyms, and yet, the Experiencer participant, *the paleontologist*, is realized as the subject with *like* and as the object with *please*. Consequently, the Stimulus participant is also realized in different positions with these two verbs. It is hard to explain these facts while continuing to assume UTAH, which is why some linguists rejected this hypothesis from the outset (Rosen 1984).

It is worth bearing in mind that the apparent violations of UTAH are contained within specific classes of verbs (e.g. Psych verbs), and the pair in (13) cannot be found among the synonyms of the verb *kill*, for instance. A plausible strategy, in that regard, is to assume that the behavior of Psych verbs is an anomaly that reveals the atypical syntactic and semantic behavior of Psych verbs rather than representing an empirical falsification of UTAH.

One of the earliest and most influential works in this line of thinking comes from Belletti and Rizzi (1988). These authors observe that thematic role assignment is not the only syntactic domain in which Psych verbs exhibit anomalous behavior. The areas in which Italian Psych verbs exhibit puzzling syntactic behavior include anaphoric cliticization, the lack of arbitrary *pro* reading of the subject, the lack of periphrastic causative constructions with Psych verbs, and some others, but arguably the most significant and theoretically important puzzle is related to anaphor binding. Namely, Psych verbs do not abide by the usual binding patterns observed with other verbs. The pair of examples in (14) from Belletti and Rizzi (1988, p. 312) is crucial here.

(14) a. Questi pettegolezzi su di se preoccupano Gianni piu di ogni altra cosa.

These gossips about se worry Gianni more than any other thing

‘These gossips about himself worry Gianni more than anything else.’

- b. **Questi pettegolezzi su di se descrivono Gianni meglio di ogni biografia ufficiale.*
 these gossips about se describe Gianni better than any biography official
 ‘These gossips about himself describe Gianni better than any official biography.’

As can be seen in (14), the anaphor *se* (‘himself’) contained within the complement of the noun *pettegolezzi* (‘gossip’) is bound by the Experiencer, *Gianni*, in the object position with the Psych verb *preoccupare* (‘worry’) but this binding relation is impossible with the non-Psych verb *descrivere* (‘describe’) in (14b). The pattern in (14b), with a non-Psych verb, is expected from the standpoint of the Binding Theory as the referential expression in the object position is not supposed to bind an anaphor contained inside the subject NP because the object never c-commands the subject. However, assuming identical structures for (14a) and (14b), this is exactly what we observe in (14a) – the referential expression in the object position seems to bind the anaphor in the subject position without c-commanding it. Therefore, Psych verbs appear to challenge the Binding Theory as well.

The way Belletti and Rizzi (1988) account for this puzzling feature of Psych verb syntax is by assuming that both the Binding Theory and UTAH are correct, and there is something special going on in the syntax of Psych verbs. They propose the structure in (15) for the derivation of *preoccupare* (‘worry’) verbs.

(15) Theme_j [_{VP} [_V e_j Experiencer]

What (15) shows is that the Stimulus argument *Questi pettegolezzi su di se* (‘these gossips about himself’), which they label as ‘Theme’, is actually generated in the complement of V as all Themes are supposed to under UTAH. The Experiencer argument is merged in the SpecVP position, as a sister of V’, where it is higher than the Theme argument, which is how it gets to c-command the

anaphor in the Theme NP.⁴ Finally, the Theme argument is then moved to the derived subject position (Spec IP/TP), which is how it becomes the surface subject without actually being the D-Structure subject.

The appeal of this approach stems from the fact that it accounts for two seemingly unrelated peculiarities of this class of verbs by showing how they might not only be related to one another, but they actually follow from the same underlying cause, which is the discrepancy between the D-Structure subject and S-Structure subject. Still, Belletti and Rizzi's (1988) analysis leaves a number of facts unexplained, and the exploration of these facts makes it clear that their proposal is simply too rigid to accommodate all the complexities of this class. Further investigation propelled by the complications and challenges to their proposal, nonetheless, seems to strengthen the impression that their initial intuition was on the right track.

Pesetsky (1994) observes that the analysis offered in Belletti and Rizzi (1988) generates wrong predictions about a subclass of object Experiencer verbs. Namely, the analysis illustrated in (15) is structurally parallel to the standard analysis of unaccusatives (Burzio 1986; Perlmutter, 1978). According to the Unaccusativity Hypothesis, intransitive verbs belong to two different classes labeled unergatives and unaccusatives, and the distinction is made on the basis of the thematic role of the only argument, which also correlates with a number of syntactic properties. The difference between unergatives and unaccusatives reduces to the fact that the subject carries the thematic role of Theme with unaccusatives, while with unergatives it is interpreted as the Agent of the event denoted by the verb. Burzio (1986) and much subsequent work assume that the subject of unaccusatives originates as a D-Structure object, and then moves to the S-Structure subject

⁴ Note that Belletti and Rizzi (1988) assume that the SpecVP position filled by the experiencer argument branches to the right whereas phrases in the Spec position are typically assumed to branch to the left in head initial languages. They provide no specific independent motivation for this assumption other than the fact that it captures the data at hand.

position. The structure in (16) illustrates the derivation of the unaccusative VP with the verb *fall* and NP/DP *John* as the Theme, which moves to the subject position.

(16) $John_j$ [_{VP} [_V fall e_j]]

Comparing (16) with the analysis of object Experiencers from Belletti and Rizzi (1988) in (15), one can spot a very clear similarity. In fact, apart from the fact that the structure of object Experiencers (15) contains an additional argument (i.e. the Experiencer) within the VP, the structures in (15) and (16) are identical. In both cases, the Theme argument originates inside the VP, as the complement of the verb, and is subsequently moved to the VP-external subject position. What this suggests is that object Experiencers are structurally unaccusative.

In Pesetsky's (1994) view, this structural parallelism between object Experiencers and unaccusatives generates wrong predictions with respect to the choice of the auxiliary verb in languages in which auxiliaries are selected on the basis of the unergative/unaccusative distinction as well as with respect to passivization. Namely, if all object Experiencers are structurally unaccusative, we expect them to pattern with other unaccusatives with respect to auxiliary selection in languages like Italian. However, this is not the case because some object Experiencers in Italian take the *be*-auxiliary characteristic of unaccusatives while others take the *have*-auxiliary, characteristic of unergatives. Similarly, some object Experiencers allow passivization while others do not. What Pesetsky (1994) observes is that the availability of passivization correlates with the selection of the *have*-auxiliary. The object Experiencer verbs that allow passivization (17) also select the *have*-auxiliary (18) while typical unaccusatives select the auxiliary *be* (19).

(17) a. Gianni e disgustato dalla corruzione di questo paese.
Gianni is disgusted by.the corruption of this country
'Gianni is disgusted by the corruption in this country.'

- b. Gianni e affascinato da questa prospettiva.
Gianni is fascinated by this prospect
'Gianni is fascinated by this prospect.' (Belletti and Rizzi 1988, p. 47)
- (18) a. questa prospettiva ha affascinato Gianni.
this prospect has fascinated Gianni
'This prospect has fascinated Gianni.'
- b. la corruzione di questo paese ha disgustato Gianni
the corruption of this country has disgusted Gianni
'The corruption in this country has disgusted Gianni.'
- (19) a. Gianni è caduto.
Gianni is fallen
'Gianni has fallen.'
- b. Gianni è morto.
Gianni is died
'Gianni has died.'
- c. Gianni è arrivato.
Gianni is arrived
'Gianni has arrived.'

Once again, Belletti and Rizzi's (1988) analysis would predict the lack of both *have*-auxiliaries and passivization with object Experiencers. The reality is that both of these properties can occur with a set of object Experiencers, and they go hand in hand, as shown in (17-19). By the

same token, pointing to examples such as (20), Pesetsky (1994, p. 51) shows that *piacere* ('appeal') verbs, which are stative and select for an oblique-case Experiencer, disallow passivization. These verbs also combine with *be*-auxiliaries.

- (20) a. A Gianni piace questo libro.
to Gianni pleases this book
'This book pleases Gianni.'
- b. *Questo libro e stato piaciuto (da Gianni).
this book was been pleased by Gianni
Intended: '*This book was appealed (to) by Gianni.'
- c. *(A) Gianni e stato piaciuto (da questo libro).
to Gianni was been pleased by this book
Intended: 'Gianni was appealed to by this book.' (Pesetsky 1994, p. 51)

Pesetsky (1994), thus, concludes that object Experiencers do not constitute a homogenous class, and instead suggests that there are two separate kinds of object Experiencers. The *piacere* ('appeal') class conforms to the unaccusative analysis presented in Belletti and Rizzi (1988) while the verbs that belong to the *preoccupare* ('worry') class cannot be analyzed as unaccusatives unless one is willing to drop the auxiliary selection and passivization tests, in which case it becomes difficult to see which features unite the verbs that belong to this class and the original distinction between unergatives and unaccusatives loses its core empirical motivating force.

Pesetsky (1994) proposes an alternative analysis for *preoccupare*-type verbs, which relies on the semantic criteria that set these verbs apart. Namely, while *piacere* ('appeal') verbs are stative, the majority (though not all) *preoccupare* ('worry') verbs denote events. This difference can be seen with English verbs belonging to these two types (21). The classic *in X time/for X time*

test that distinguishes between telic eventualities (accomplishments and achievements) and atelic ones (states and activities) shows that *preoccupare*-type verbs like *annoy* allow a telic reading, which is compatible with *in X time*. The same reading is unavailable with atelic (stative) verbs like *appeal*.

- (21) a. The movie annoyed John in 5 minutes/ for 5 minutes.
b. The movie appealed to John *in 5 minutes/ for 5 minutes.

Furthermore, the semantic contribution, or the thematic role, of the non-Experiencer participant is different with these two classes of verbs. Belletti and Rizzi (1988) use the label ‘Theme’ when discussing the thematic role of this participant with both *piacere* (‘appeal’) and with *preoccupare* (‘worry’) verbs, but Pesetsky (1994) suggests that the label ‘Theme’ is not appropriate for the non-Experiencer argument with *preoccupare* (‘worry’) verbs. Instead, he proposes the label ‘Causer’ for the thematic role of this argument. Indeed, causative semantics is present with *annoy* in (21a) but not with *appeal* in (21b) because (21a) can be paraphrased as in (22a) while such a paraphrase is not possible for (21b) as shown in (22b).

- (22) a. The movie caused John to be annoyed.
b. *The movie caused John to be appealed.

Pesetsky (1994), thus, proposes a bimorphemic analysis of *preoccupare*-type verbs and retains the monomorphemic, unaccusative analysis of *piacere*-type verbs from Belletti and Rizzi (1988).⁵ To accommodate this difference syntactically, he relies on Larson’s (1988) decompositional view of VP in terms of the *v*P-shell according to which the VP consists of a lower portion that hosts the lexical semantics of the verb in question and a higher, functional part containing a light verb with

⁵ The monomorphemic vs. bimorphemic distinction is not entirely accurate because causative verbs do not necessarily consist of exactly two morphemes and stative psych verbs are not always morphologically simplex. The crucial point, however, is that causative verbs, in fact, contain an additional morpheme which realizes the causative component.

the meaning of CAUSE. The two components are merged into one item via head-movement in the course of the derivation.

Pesetsky's (1994) analysis of object Experiencers in terms of the *v*P-shell is supported by morphological evidence from languages like Russian and other Slavic languages in which *preoccupare*-type verbs usually consist of two morphemes. This can be illustrated with an example from Serbian in (23), where the *preoccupare*-type verb, *iznervirati* ('annoy'), in (23a), is bimorphemic, consisting of the perfectivizing prefix *iz-* and the stem *nervirati* ('annoy') whereas the *piacere*-type verb, *prijati* ('appeal') is monomorphemic.

- (23) a. Film je iznervirao Jovana.
 movie.NOM AUX annoyed Jovan.ACC
 'The movie annoyed Jovan.'
- b. Jovanu je prijao film.
 Jovan.DAT AUX appeal movie.NOM
 'The movie appealed to Jovan.'

Another important contribution from Pesetsky (1994) concerns the difference between Subject Matter and Target thematic roles. By introducing the thematic role of Causer with object Experiencers and substituting it for Theme, which is the label that was used by Belletti and Rizzi (1988), Pesetsky (1994) already expanded the existing inventory of thematic roles with Psych verbs. However, by looking into adjectival Psych expressions, he observed that the non-Experiencer participant realized as part of the adjectival phrase can actually have two different thematic contributions, which he termed 'Target' (of emotion) and 'Subject Matter' (of emotion).

The pair of examples in (24) from Pesetsky (1994, p. 56) suggests that introducing the thematic role of Causer does not solve the problem that Psych verbs pose for UTAH. In these two examples, the same participant, *the article in the Times*, carrying roughly the same semantic contribution, appears in two different syntactic positions. So, the addition of the Causer thematic role alone cannot account for the two different realizations of the expressions that introduce it in (24). More precisely, the question would be why the Causer thematic role takes the role of the subject in (24b) while in (24a), it is expressed by means of a directional PP.

- (24) a. Bill was very angry at the article in the Times [Target]
b. The article in the Times angered/enraged Bill. [Causer]

Pesetsky (1994) takes the presence of the directional preposition *at*, a necessary element that introduces the NP in (24a), as a cue that the conceptualization of the mental state of anger in English (and possibly beyond) is directional so in cases when the object of anger is not realized as a Causer (24a), it receives the thematic role of Target. Of course, this contrast in the thematic contribution of the phrase *the article in the Times* is accompanied by the difference in the kind of eventuality that is denoted by the two predicates in (24). While the predicative expression in (24a) has a stative semantics, the verbs *anger/enrage* in (24b) clearly denote an event with a causative meaning. Furthermore, while (24a) is true only if Bill's anger is directed at the content of the article itself, (24b) is true so long as the article is the cause of Bill's anger, but the anger might be directed at something else entirely (e.g. an instance of government corruption that is revealed in the article).

The thematic role of Subject Matter appears in examples such as (25a). The difference between (25a) and (25b) is truth conditional. Whereas the television set is what occupies John's

thoughts in (25a), in (25b), the television set is merely the cause of John's worry, but he might actually be worrying about something else entirely.

- (25) a. John worried about the television set.
b. The television set worried John.

The truth conditional difference between the two structures in (25) is made clear by the contrast in (26) provided by Pesetsky (1994, pp. 57-58). The sentence in (26a) is self-contradictory but the one in (26b) is not. This is because the truth of the construction with the Stimulus participant expressed by means of a PP entails the truth of the construction in which the Stimulus participant is located in the subject position, but not *vice versa*. Therefore, asserting that John worried about Mary's poor health makes it impossible to subsequently deny that Mary's poor health worried John as in (25a). However, the reverse is not the case, as one can first assert that Mary's poor health worried John, and later deny that John worried about Mary's poor health as in (26b) since the former does not entail the latter.

- (26) a. #John worried about Mary's poor health, but Mary's poor health did not worry John.
b. Mary's poor health worried John, but John did not worry about Mary's poor health.

It is worth noting that both utterances in (26) contain verbs whereas in (24a) the Target thematic role is introduced by the adjectival construction *angry at*. There is a well-developed and intricate account of that difference in Pesetsky (1994), but it is not particularly significant for our purposes here.

The section on the significance of Psych verbs for linguistic theory would not be complete without probably the most extensive empirical survey of the syntactic and semantic behavior of

Psych verbs across languages and one of the most influential theoretical accounts to date provided in Landau (2010). Landau (2010, p. 4) begins by observing that “[i]n just about any language where Psych(ological) verbs have been studied in any depth, some special properties of these verbs have emerged”. In that sense, psychological verbs are probably the most puzzling and linguistically interesting class of verbs. Landau (2010) lists the most puzzling properties of Psych verbs that have been observed cross-linguistically and proceeds to give a unified account of all of them. I will briefly go over these interesting properties of Psych verbs listed in Landau (2010), and sketch the account he offers because any formal description and account of Psych verbs needs to be set against the backdrop of these crosslinguistic observations.

The first puzzling property of Psych verbs is observed concerning clitic doubling in Greek (27).

(27) a. O Jannis (TIN) ghnorise tin Maria se ena party.
 the John (CL.ACC) met the Mary in a party.
 ‘John met (her) Mary at a party.’

b. Ta epipla ?*(TON) enohlun ton Petro.
 the furniture ?*(CL.ACC) bother the Peter
 ‘The furniture bothers Peter.’

(Landau 2010, p. 4)

With non-Psych verbs clitic doubling of the accusative DP is optional (27a), but it becomes obligatory with Psych verbs (27b).

Another crucial property of Psych verbs is their atypical behavior when it comes to binding. One such fact has already been mentioned with reference to Belletti and Rizzi’s (1988) work. However, this property can be found not just in Italian but in English and many other languages. In (28a), the non-Psych verb *resemble* allows the subject to bind the reciprocal anaphor in the

object. However, the subject cannot bind the reciprocal anaphor in the object with a Psych verb like *concern* (28b).

- (28) a. John and Mary resemble each other.
 b. ?*John and Mary concern each other. (Landau 2010, p. 4)

Next, in Russian, the accusative object can optionally receive genitive case under negation (29a). With Psych verbs, however, this optional genitive case on the object is unavailable.

- (29) a. Ja ne našel tzvety / tzvetov.
 I.NOM not found flowers.ACC / flowers.GEN
 ‘I didn’t find (the) flowers.’
 b. Šum ne ogorčil ni odnu devočku / *odnoj devočki.
 noise.NOM not upset no one.ACC girl.ACC / *one.GEN girl.GEN
 ‘The noise didn’t upset a single girl.’ (Landau 2010, p. 4)

Once again, the object of Psychological verbs does not behave according to the rules that apply to typical objects.

Objects that carry the thematic role of Experiencer exhibit atypical behaviors when it comes to resumptive pronouns in a number of languages. Landau (2010, p. 5) provides the following example from Hebrew (30).

- (30) a. ze ha-iš₁ še-ha-ma’amar te’er (?oto₁).
 this the-man that-the-article described (?him)
 ‘This is the man that the article described.’
 b. ze ha-iš₁ še-ha-ma’amar hid’ig *(oto₁).

this the-man that-the-article worried *(him)

‘This is the man that the article worried.’

In (30a), a relative clause containing a non-Psych verb normally does not require a resumptive pronoun, although the appearance of such a pronoun is at least marginally possible. With Psych verbs inside the relative clause, the resumptive pronoun is obligatory.

Finally, dative Experiencers tend to exhibit behaviors that are not characteristic of other dative arguments. For instance, in French, a dative Experiencer can control the null subject of adjunct clauses, but other dative arguments cannot.

(31) a. [PRO_{1/*2} remis(*e) sur pied], son mari₁ s’adresse a’Yolande₂
PRO_{1/*2} re-put on foot, her husband₁ addressed to Yolande₂
‘Once recovered, her husband addressed Yolande.’

b. [PRO_{1/2} remis(e) sur pied], son mari₁ manque a’Yolande₂.
PRO_{1/2} re-put on foot, her husband₁ misses to Yolande₂
‘Once recovered, Yolande misses her husband.’ (Landau 2010, p. 5)

In (31b), the dative Experiencer can control the subject of the adjunct clause, so the sentence is ambiguous between the reading on which Yolande recovered and the reading on which her husband recovered. In contrast, with a non-Psych verb in (31a), the sentence can only mean that Yolande’s husband recovered because the dative argument cannot control the null subject of the non-finite adjunct clause.

Landau (2010) argues that these puzzling properties of Psych verbs can be explained by assuming that Experiencers are actually locative expressions, which means that they are always introduced by a preposition (overt or covert), and they undergo covert locative inversion, which

lands them in the subject position at LF. These two assumptions explain why object Experiencers do not exhibit the normal behavior of accusative-marked objects in Greek, Russian and Hebrew. The reason is that they do not, in fact, carry structural accusative at all. Also, their peculiar binding properties and their ability to control the null subject of non-finite adjunct clauses stems from the fact that they actually land into a subject position at LF, which enables them to c-command elements that appear to be higher in the syntactic hierarchy.

To prove his thesis, Landau (2010) draws on some other influential analyses of Psych verbs, which have already pointed at the locative-like characteristics of subject Experiencers (Arad 1998; Speas 1990). For instance, Arad (1998) points out that locative metaphors are ubiquitous in Psych predicates. The English expression ‘be *in* love’ is only one case in point, but there are languages in which subject Experiencers appear almost exclusively as locative expressions. Landau (2010, p. 12), citing McCloskey and Sells (1988), points to examples such as (32) from Irish. In (32), both examples of Psych verbs contain clearly locative expressions, and such expressions are the norm for Psych predicates in the language.

- (32) a. Ta` fuath Y Ag X.
 is hatred Y At X
 ‘X hates Y.’
- b. Ta` eagla roimh Y ar X.
 is fear before Y on X
 ‘X is afraid of Y.’

Crucially for Landau’s (2010) argument, locative expressions appear with object Experiencers in this language as well, and in some other languages, too. So, Landau’s (2010)

analysis of the peculiarities of Psych verbs, or what he calls ‘Psych effects’, comes down to the idea that they are all locatives, which is why the Experiencer does not behave like a typical object and why these verbs exhibit unexpected binding and control patterns.

The most significant problem with Landau’s (2010) account, as pointed out also by Carnie (2011), is that it resorts to two covert elements to explain the data at hand. In other words, he needs to postulate a null locative preposition with accusative-marked object Experiencers and a covert, LF-movement (a version of locative inversion) of the Experiencer, which ensures the right c-command configuration to account for the observed atypical binding and control patterns. The data from various languages that he uses to make the case for the locative syntax of Experiencers is very interesting and thought-provoking, and it definitely demands an explanation, but it does not prove directly that there is a covert preposition with accusative-marked Experiencers or that these arguments undergo LF movement in other languages as well.

At the same time, this account raises other important questions concerning case assignment as it complicates the story about accusative case, which is usually treated as structural case assigned in a particular syntactic configuration (Woolford 2006). This problem is not apparent in English because DPs that appear as complements of prepositions always carry accusative case as there are no oblique cases. However, in languages with rich case morphology such as Serbian, locative expressions usually involve locative case or other oblique cases (33):

- (33) a. *Lopta je u kutiji.*
ball.NOM AUX in box.LOC
‘The ball is in the box.’
- b. *Lopta je ispod kutije.*
ball.NOM AUX under box.GEN

‘The ball is under the box.’

c. Lopta je pred kutijom.

ball.NOM AUX in.front.of box.INST

‘The ball is in front of the box.’

Accusative case does not appear in locative expressions at all, and it can be found inside prepositional phrases only in resultative constructions (34). Such PPs do not appear with stative verbs or activities (Arsenijević and Gehrke 2009).

(34) Ivan je u-bacio loptu u kutiju

Ivan.NOM AUX in-threw ball in box.ACC

‘Ivan threw the ball into the box.’

Arsenijević and Gehrke (2009) explain the origin of accusative case inside PPs in resultative constructions in structural terms by associating it with the verb itself. This is significant, of course, because many Psych verbs are activities or states, and a resultative analysis of accusative case cannot be applied to them. Moreover, Arsenijević and Gehrke’s (2009) reasoning points in the direction of showing that accusative case inside PPs should be treated as a subspecies of structural accusative case rather than assuming that accusative can either be structural or non-structural case.

In light of these observations, the appeal of Landau’s (2010) account of the origin of accusative case on the object of object Experiencer verbs diminishes when one looks at a language with rich case morphology like Serbian. The reason for this is that the object of object Experiencer verbs continues to bear accusative case while locative expressions can have accusative case only in resultative constructions. However, the majority of Psych verbs cannot be analyzed in resultative terms. In that sense, Landau’s (2010) analysis blurs the boundaries between accusative, on the one hand, and other oblique cases, on the other.

What this brief sample of the most influential analyses of Psych verbs in the domain of theoretical linguistics demonstrates is the exceptional behavior of this category of verbs across languages. From backward binding in English and Italian over resumptive pronouns in relative clauses in Hebrew to the lack of accusative-genitive alternation under negation in Russian, Psych verbs show a clear tendency towards atypical syntactic (and semantic) patterns. What is more, theoretical accounts of these verbs have shown that these peculiarities of Psych verbs can be explained without abandoning the most important concepts in generative linguistics, such as the UTAH and Binding Theory. Still, the theoretical and empirical work is far from complete when it comes to these verbs.

2.3. Classification and description of Psych verbs in English

Levin (1994) provides a comprehensive classification and description of Psych verbs in English, which will be used as the basis for the selection, classification, and analysis of Serbian Psych verbs in this study. According to her, there are four classes of Psych verbs in English with counterparts in other languages. Each of these classes of verbs is associated with a number of syntactic and semantic properties. These are: *admire*-type, *amuse*-type, *appeal*-type and *marvel*-type verbs. I will dedicate a short subsection to providing a brief description of each of these classes following Levin's (1994) classification.

2.3.1. *Admire*-type verbs

The first category of Psych verbs identified by Levin (1994) consists of the so-called *admire*-type verbs. The name of the category comes from the verb *admire*, which is considered to be a prototypical member of this class. Belletti and Rizzi (1988), who offer a three-way division of Psych verbs based on Italian, refer to this class as *temere* ('fear') verbs while Landau (2010)

offers the most language-neutral term – Class 1 verbs.⁶ These verbs exhibit a number of common properties. Their Experiencer argument is syntactically realized as the subject while the Stimulus argument is realized as the object. In addition, these verbs usually denote states, and these characteristics hold across different languages.

English does not allow what is known as a causative alternation with Psych verbs (compare 35 and 36). Some transitive verbs (usually those with a proper Theme argument which undergoes a change of state) can turn into intransitive, unaccusative verbs by promoting the Theme argument to the subject position (35). This phenomenon is known as causative alternation.

- (35) a. The students sank the boat.
b. The boat sank.
- (36) a. The students admired the teacher.
b. *The teacher admired.

However, verbs such as *admire*, although transitive, do not allow causative alternation (36). This fact could be taken as a formal indication of the idea that the direct object of *admire*-type verbs is not a proper or affected Theme, which is also fairly clear from the purely semantic point of view.⁷

Next, *admire*-type verbs share an interesting property known as Possessor object alternation (37). This alternation refers to the possibility of two different types of objects occurring with these verbs. On the one hand, verbs such as *admire* can have a more or less concrete object in the position of the direct object (37a) optionally followed by a PP introducing the abstract quality that motivates admiration (or whichever other emotional state is denoted by the verb itself). On the other hand, they can also take an abstract property in their object position, in which case the

⁶ Landau's (2010) terminology will be employed throughout this dissertation precisely because it is language neutral.

⁷ The object of admiration in (25) is not necessarily affected by this eventuality in the sense that it does not undergo any kind of change of state.

concrete entity characterized by this property appears as the Possessor of the NP in the object position (37b).

- (37) a. I admired him for his honesty.
b. I admired his honesty.

Moreover, most *admire*-type verbs allow sentential or clausal complements (38) as well as sentential extrapositions (39).

(38) The students liked that the teacher spoke in British English.

(39) The students liked it that the teacher spoke in British English.

Levin (1994) also comments on the morphological properties of these verbs and their capacity to produce deverbal and agentive nominals, and *-able* adjectives. With respect to deverbal nominalizations, *admire*-type verbs allow Experiencers but not Themes as genitive-marked arguments (40).

- (40) a. The students' enjoyment of the class
b. *The class's enjoyment by students

Levin (1994) divides *admire*-type verbs according to their meaning into positive and negative *admire*-type verbs. Some of the representative positive *admire*-type verbs are: *appreciate*, *cherish*, *enjoy*, *esteem*, *like*, and *love*. The subclass of negative *admire*-type verbs includes verbs such as *despise*, *dread*, *envy*, *fear* and *hate*.

2.3.2. *Amuse*-type verbs

The most numerous class of Psych verbs in Levin's (1994) classification are the so-called *amuse*-type verbs. Elsewhere in the literature, these verbs are known as *preoccupare* 'worry' verbs (Belletti and Rizzi 1988), object Experiencer verbs (Pesetsky 1994) or simply Class 2 verbs (Landau 2010). Unlike *admire*-type verbs, whose Experiencer argument is in the subject position, *amuse*-type verbs have the Stimulus argument in the subject position and the Experiencer in the object position (41).

(41) The teacher amused the students.

Another important property of these verbs, which sets them apart from *admire*-type verbs, is that their default reading is eventive rather than stative.⁸ These verbs can have a derived habitual reading, but their primary meaning is eventive and only a few are inherently stative. Pesetsky (1994) uses this fact to argue that the thematic role of the Stimulus argument is different with these two types of verbs. The eventive semantics of *amuse*-type verbs licenses the *vP* projection on top of VP, which hosts the semantics of CAUSE and the Stimulus argument is actually merged in the Spec of this projection. As a result, its actual thematic role is Causer.

A fact that goes against Pesetsky's (1994) idea of treating *amuse*-type verbs as akin to typical causative transitives is that like *admire*-type Psych verbs but unlike typical causatives, most *amuse*-type verbs do not allow causative alternations (42).

- (42) a. The teacher amused the students.
b. *The students amused (at the teacher).

⁸ They belong to Vendler's (1957) accomplishments or achievements (events) rather than states and activities.

However, like typical causative transitives, *amuse*-type Psych verbs generally allow middle alternations (43). In (43b), the object of the typical transitive construction in (43a) becomes the subject of an intransitive construction with an implied generic Agent giving rise to what is known as a middle construction (cf. Marelj 2004; Lekakou, 2004; Lekakou and Pitteroff 2018 *inter alia*).

- (43) a. The teacher amused young students.
b. Young students amuse easily.

Levin (1994) also notes that in certain syntactic configurations, these verbs allow elided or arbitrary PRO objects (44). In (44b), the object of the verb *amuse* is not expressed, leaving its interpretation arbitrary.

- (44) a. That joke never fails to amuse little children.
b. That joke never fails to amuse.

Amuse-type verbs also allow what Levin (1994) calls Possessor Subject/Possessor-Attribute Factoring Alternation. This type of alteration is illustrated in (45). As can be seen from the example, this is the type of alteration whereby a verb allows an animate entity in its subject position (45a) as well as allowing a property or object belonging to that animate entity in the same position (45b).

- (45) a. The teacher amused the students with his jokes.
b. The teacher's jokes amused the students

Sentential complements of these verbs can be extraposed (46).

- (46) a. That the teacher had a funny hat amused the students.
b. It amused the students that the teacher had a funny hat.

In contrast to *admire*-type Psych verbs, *amuse*-type verbs can combine with resultative secondary predicates (47). This fact can be taken as evidence that the object of these verbs (i.e. the Experiencer) undergoes a change of state, albeit an abstract, internal change in mental state. If the Experiencer undergoes a change of state with these verbs, it can be analyzed as akin to typical Themes while the Stimulus argument can be viewed as a Causer, which is the position taken by Pesetsky (1994).

(47) That movie bored me silly/to tears. (Levin 1994, p. 190)

Derived nominals allow only the Experiencer and not the Stimulus as their genitive modifier (48).

- (48) a. The students' amusement (at the teacher).
b. *The teacher's amusement of the students.

Finally, agentive nominals (49) and *-able* adjectives (50) are allowed with some of these verbs but not with others.

- (49) a. enchanter
b. *depresser

- (50) a. excitable
b. *amusable

Levin (1994) lists 220 verbs of this type.⁹ It is quite probably the case that such a large collection of verbs could be further subdivided as the contrast in (49) and (50) suggests. In fact, Levin (1994) mentions Grimshaw's (1990) suggestion that these verbs could be classified according to whether or not they allow agentive interpretations. The subject of *amuse*, for instance, can be interpreted as either an Agent or a Causer, as illustrated in (41) and several subsequent examples. However, the subject of *concern* cannot be interpreted as an Agent (51). Example (51) cannot be taken to

⁹ Some of the other examples are: *astonish, cheer, encourage, hurt, scare, shame, worry, etc.*

mean that Steven did something on purpose to cause some concern on John's part. This distinction might be the reason why some of these verbs allow *-er* nominals while others do not.

(51) Steven concerned John.

Another possible criterion that might be relevant for the further sub-classification of *amuse*-type verbs is aspect. While it is true that most of these verbs are eventive, there are quite a few verbs with stative meanings. The English verb *pain* is one example of a stative verb of this type. Again, this potential demarcation line will be significant in the discussion of Serbian Psych verbs belonging to this class.

2.3.3. *Marvel*-type verbs

Even though Levin (1994) defines Psych verbs as verbs with two arguments entailing a psychological state on the part of one of the participants, she also includes verbs which appear to be intransitive but involve an obligatory PP adverbial expressing the Stimulus. She treats *admire*-type and *amuse*-type verbs as transitive verbs with two arguments, and the other two classes are analyzed as intransitive verbs with obligatory complements. The list of verbs belonging to the *marvel*-type contains 80 verbs, and Levin (1994) divides them into nine classes according to the preposition that introduces the Stimulus argument.¹⁰

The prototypical verb that belongs to this class is *marvel* (52):

(52) John marveled at the beauty of the sunset.

In (52), the Experiencer appears as the subject of an atypical intransitive construction. The reason why this construction is not a typical intransitive construction is that it actually expresses a relationship between two entities, *John* and *the beauty of the sunset*; however, the Stimulus is expressed with a PP headed by a fully lexical preposition, which suggests that it is not an argument

¹⁰ The relevant prepositions are: *about, at, for, from, in, of, on, over, and to*.

of the verb. While PPs headed by semantically impoverished prepositions which are akin to case markers (e.g. genitive *of* or dative *to*) and usually expressed by bare NPs in languages with richer case morphology are often treated as arguments, PPs that are headed by prepositions that carry some degree of lexical semantics are normally not considered to be arguments. However, because PPs like the one in (52) are obligatory with this class of verbs, Levin (1994) treats them as complements. With the verb *marvel*, the preposition that introduces the Stimulus argument is *at*. Other verbs that occur with the same preposition are: *cheer, cringe, enthuse, exult, fume, gladden, madden, marvel, rage, rejoice, sadden, sicken, swoon, thrill, wonder* (Levin, 1994).

As a general observation about *marvel*-type verbs, it can be said that many of them can be used as *amuse*-type verbs in which case the Stimulus appears as the subject and the Experiencer takes the role of the object.

Levin (1994) also observes that these verbs are rarely studied in the investigations of Psych verbs, which is a correct observation because most classifications of Psych verbs follow Belletti and Rizzi (1988), who distinguish between subject Experiencers (their term is *temere* verbs), object Experiencers (they call them *preoccupare* verbs) and oblique-cased Experiencers or *piacere* ‘appeal to’ verbs (see the following subsection). However, *marvel*-type verbs would be subject Experiencers with an oblique-cased Stimulus. Since most subsequent works rely on Belletti and Rizzi’s (1988) classic account, *marvel*-type verbs have generally been neglected (see, for instance, Landau (2010), whose rather influential crosslinguistic analysis does not address *marvel*-type verbs).

Finally, owing to the lack of agentivity, these verbs fail to derive agentive nominals (**marveler at*), and they do not produce resultative constructions because they are stative verbs (i.e. they do not denote a change of state).

2.3.4. Appeal-type verbs

Appeal-type verbs are, in a sense, less heterogeneous than *marvel*-type verbs because there are only three different types of prepositions that combine with these verbs to yield three different subclasses. These are the prepositions: *at*, *on* and *to*. Levin (1994) observes that this is the smallest class of Psych verbs in English as it includes only five different verbs. This fact makes English exceptional from a crosslinguistic perspective because these verbs tend to be much more common in other languages (Levin 1994). In (53), one can see that the Experiencer is part of a prepositional phrase, so it is analyzed as a complement rather than an argument.

(53) Loud music appeals to Peter.

The Stimulus is realized as the subject and these verbs are typically stative. In languages that have morphological case-marking the Experiencer carries dative case with these verbs (Landau 2010).

As in the case of *marvel*-type verbs, verbs belonging to this class do not derive agentive nominals (because they lack the agentivity component) and they do not give rise to resultative predicates (because they are not change-of-state verbs).

2.4. The empirical scope and previous studies of Psych verbs in Serbian

Even though this study situates itself firmly in the generative and formalist tradition, its major goal is, nonetheless, to offer a comprehensive description of Psych verbs as a class. To achieve this goal, it is necessary to provide a synthesis of the literature on Psych verbs in the Serbian tradition, which is the aim of this section. This brief overview of previous work on the subject will simultaneously offer a justification for the present study and define its scope. Namely, while there are a number of works on this topic both in the Serbian and in the Croatian tradition, most of them do not use the same definition of Psych verbs that is used in the formalist literature, and the descriptions and classifications that emerge from these works prioritize functionalist and

semantic criteria over the formal ones, which makes them less accessible to researchers with a formalist interest in these verbs. Therefore, in this section, I will provide my working definition of Psych verbs and outline the descriptive focus of the study at hand by showing where it departs from the previous works.

As a general observation about the state of the art in the Serbian literature, it can be said that the interest in Psych verbs that is evident in theoretical linguistics is not matched by the amount of attention these verbs have received in the Serbian tradition. Perhaps the best proof of this is the fact that the central reference handbook on the syntax of Serbian (Piper, Ružić, Tanasić, Popović and Tošović 2005) does not contain a section on these verbs nor does it have an index entry for ‘Experiencer’ or ‘Psychological verbs’. This fact is understandable given the strictly morphosyntactic focus of the handbook as various chapters are structured around different morphosyntactic properties (e.g. tense, case, etc.) and Psych verbs can be seen as a lexico-semantic class. Nonetheless, as has already been shown with respect to other languages, these verbs pose a number of challenges for numerous generalizations regarding case, aspect and argument structure, and so a section on them would offer a convenient survey of the exceptions to these rules and generalizations.

One feature of the Serbian literature on Psych verbs is that these verbs have usually been examined not as one single category but in smaller sub-groups or in comparisons of two or more individual verbs. However, the relevant works contain important observations and insights. To take one example, Arsenijević (2006) addresses the differences between the verbs *voleti* (‘love’) and *zaljubiti se* (‘fall in love’) from the standpoint of cognitive linguistics, also incorporating insights from diachronic studies. She observes that the most significant contrast in the meanings of these two verbs lies in the fact that the meaning of *voleti* (‘love’) contains a volitional component

also manifested in the etymology of the verb (it is derived from the root *vol-* with the meaning of volition), whereas *zaljubiti se* ('fall in love') does not have that semantic component. The formal differences between the two verbs, such as the presence of the obligatory *se* morpheme with *zaljubiti se* ('fall in love') can, thus, be taken as an indication of this semantic contrast.

Another article by the same author (Arsenijević 2015) looks at the somewhat larger group of verbs denoting fear. Her focus is on the subtle semantic differences that arise as a consequence of the differences in the grammatical realizations of a Psychological predicate. For instance, all three sentences in (54) express a similar state, one of fear. However, according to Arsenijević (2015) the verbless structure in (54a), where the Experiencer is realized as an accusative-marked NP corresponds to a situation in which the Experiencer is affected by the emotion in question in a completely passive way. In (54b), where the Experiencer is a nominative-marked subject, the emotion in question is conceptualized as a process over which the Experiencer exercises some degree of control. In (54c), where the Experiencer is the subject and the verb itself incorporates a morpheme denoting the emotion, there is also a cognitive component to the meaning of the verb such that the Experiencer is interpreted as being cognitively engaged with the emotion in question (Arsenijević 2015).

- (54) a. Strah me je.
 fear me.ACC AUX
 'I am afraid.'
- b. Ja osećam strah.
 I.NOM feel.1SG.PRES fear.ACC
 'I feel fear.'
- c. Ja strahujem.

I.NOM fear.1SG.PRES

Literally: ‘I am fearing.’

These intuitions are also supported by the data from a survey that targeted differences in the meanings of these three structures.

Arsenijević (2015) also contributes an interesting set of structures and a detailed discussion of semantic differences between these structures. For instance, the example in (54a) includes a verbless predicate, which represents a relatively frequent way of expressing emotional meanings in Serbian. There are other similar constructions, some of which are illustrated in (55). While in (55a) the main predicate is expressed in the form of the noun *muka* (‘trouble/hardship/torture’) combined with the copular verb *be*, in (55b) and (55c), the main predicate is adjectival. It can also be observed that the Experiencer argument takes accusative case in (54a), while in all three sentences in (55) it carries dative case.

- (55) a. Muka mi je od učenja.
 nausea.NOM me.DAT AUX from studying.GEN
 ‘I am sick of studying.’
- b. Loše mi je.
 bad me.DAT AUX
 ‘I am feeling bad.’
- c. Hladno mi je.
 cold me.DAT AUX
 ‘I am feeling cold.’

Nonetheless, these structures do not belong to the class of Psych verbs *per se*, which is why they will not be analyzed in this dissertation. Still, they are extremely interesting from the point of view of formal linguistics because they raise questions about clausal structure, case assignment and various other important theoretical topics.

As is apparent from these examples, there are various ways of expressing psychological meanings in Serbian, and it is impossible to provide a thorough account of all of them in a single dissertation. Consequently, for the purposes of this research, I first created a list of Psych verbs that served as the empirical scope of all the research questions I intended to investigate in the dissertation. While compiling the list, I relied on Levin's (1994) list and classification. Dowty's (1991) definition, according to which verbs that trigger entailments about emotional states of one of the participants in the situation denoted by the verb is quite useful, because it clearly excludes verbs like *plakati* ('cry') or *smejati se* ('laugh'). These verbs are clearly related to emotions, but at the same time they do not trigger entailments about precise emotional states. The verb *smejati se* ('laugh') has a rather clear denotation and a speaker who is familiar with this denotation can clearly determine the set of situations in which this verb can be appropriately used. However, these situations can involve quite different emotional states on the part of the person being described or no particular emotional state at all. While most people laugh when they are happy or amused, some people laugh when they are anxious, scared or they might laugh in order to pretend they are amused when, in fact, they are not. The same applies to the situation denoted by the verb *plakati* ('cry') as most people cry when they are sad, but a lot of people also cry when they are happy or ecstatic. In short, these verbs describe physical states that correlate with certain emotional states but not in a one-to-one fashion, which is why it is safe to conclude that they do not trigger entailments about emotional states and consequently fall out of the category of Psych verbs.

Dowty's (1991) definition also excludes other verbs of physical states that are in other ways associated with emotional states but do not establish this kind of one-to-one mapping or correspondence. One could mention many such verbs, but I will restrict myself to a few illustrative examples: *vikati* ('yell'), *maziti/milovati* ('cuddle'), *ljubiti* ('kiss'), *udarati* ('hit'), etc. While all these verbs can and often do lead to certain emotional states on the part of the participants in the verbal situation, these emotional states are not necessary components of these verbal situations.

Previous work that has been done on Serbian and Croatian Psych verbs has resulted in lists that do not fully conform to the crosslinguistically established criteria that define this class of verbs. Nonetheless, they provided a very useful starting point. Generally, the lists and classifications that are available for Serbian and Croatian define the class of Psych verbs too broadly. Indeed, not all of these studies use the term 'Psych verbs'. In that sense, what follows is not intended as a criticism of these studies. However, because of this mismatch in the definition, the lists and classifications offered by various authors could not be directly put to use in a study of this kind. For instance, Milenković (2017) labels these verbs 'verbs that denote emotions'. Consequently, Milenković (2017) includes all the verbs whose denotation (or sometimes even the connotative meaning) includes some kind of emotional component. Such a definition overlaps with the definition of Psych verbs while at the same time including a lot of verbs that are not taken into account in formal linguistic investigations of this class. Milenković (2017) includes verbs like *ljubiti* ('kiss'), *maziti* ('cuddle'), etc., whose denotations do not match the definition of Psych verbs, as explained above. Moreover, this author analyzes intransitive verbs which involve only one participant even though such verbs are normally not included in the discussions of Psych verbs (Levin 1994).

I should note that Milenković (2017) builds on a previous investigation of these verbs by Štrbac (2006), who defines the empirical scope in a similar way. Štrbac (2006) uses the term ‘verbs of emotional content’ to pick out the category of verbs that represent the focus of her study. She divides them into three classes: verbs of emotional states, verbs of emotional relations and verbs of caused emotional relations. Verbs of emotional states include intransitive Psychological verbs such as *radovati se* (‘rejoice’), *strepeti* (‘fear’), *bojati se* (‘be afraid’). One should immediately take note of the fact that these verbs are not necessarily one-place predicates as both *radovati se* (‘rejoice’) and *bojati se* (‘be afraid of’) actually express relations between two entities (the Experiencer and the Stimulus); however, they are not typical transitives as the Stimulus is realized in the form of an oblique case-marked NP. Verbs of emotional relations are verbs like *voleti* (‘love’) and *želiti* (‘want’). These are basically subject Experiencer verbs, although Levin (1994) analyzes verbs like *want* as a separate class of verbs (she calls them ‘verbs of desire’). The third category, verbs of caused emotional relations, includes verbs such as *nervirati* (‘annoy’) and *tešiti* (‘comfort’), which would, in formal classifications, be treated as object Experiencers (Pesetsky 1994) or Class 2 Psych verbs (Landau 2010).

It is apparent that Štrbac’s (2006) classification partly overlaps with the classification system adopted here but at the same time is also shows some incongruities. While the authors coming from the formal perspective rely on strictly morpho-syntactic properties of these verbs, Štrbac (2006) starts from functional-semantic criteria. In particular, she includes some intransitive eventive verbs such as *uplašiti se* (‘get scared’) into the category called ‘verbs of emotional states’. Moreover, verbs such as *voleti* (‘love’) and *zaljubiti se* (‘fall in love’) are treated as belonging to the same class despite the fact that they exhibit a host of different morphosyntactic properties (Arsenijević 2006). For instance, the verb *voleti* (‘love’) takes a nominative subject (the

Experiencer) and an accusative object (Stimulus) while the verb *zaljubiti se* ('fall in love') takes a nominative subject (the Experiencer) and the Stimulus participant is realized in the form of a PP. In sum, the morphosyntactic properties, which are of crucial importance in Levin's (1994) classification and in all other classifications couched in the formal approaches to language, are not of crucial importance in Štrbac's (2006) study. Again, this is completely understandable owing to the theoretical approach that Štrbac (2006) bases her study on, but a more formally-oriented reader might find it more difficult to appreciate and make use of the data.

One more collection of Psychological verbs that is relevant for a discussion of this class of verbs in Serbian has been made available in recent years. It was created as a result of a project entitled *Valency Database of Croatian Verbs* (Institute of Croatian Language and Linguistics).¹¹ The project sought to compile a database of argument structures of different verbs in Croatian. Because Psychological verbs represent a class of verbs with the most diverse argument structures in terms of formal properties, this verbal category attracted the most attention of the researchers working on this project. The database is available online.¹² The researchers working on this project published several accounts of different specific issues related to describing, classifying and analyzing Psych verbs. Daković (2016) analyzes Psychological verbs with a dative-marked complement focusing on this particular syntactic and semantic status of these elements. Oraić Rabušić (2016) describes the possibilities and restrictions on the use of clausal complements with this class of verbs again trying to define the syntactic role of these constituents. Brač and Oraić

¹¹ While Serbian and Croatian are formally recognized as two separate languages, they were considered two varieties of the same language called Serbo-Croatian in the past. Regardless of the formal institutional treatment, it is hard to deny that the two languages/varieties are extremely close particularly in the domain of grammar, which is what motivates the assumption that the insights about one language/variety can be applied to the other (see Kordić 2010). I have chosen to refer to the language under investigation as Serbian reflecting the current official nomenclature, but I refrain from the assumption that the language/variety I am referring to is a distinct linguistic code meriting autonomous investigation to the exclusion of other varieties.

¹² LINK: <http://valencije.ihjj.hr/en/page/what-is-e-glava/15/?language=en>

Rabušić (2016) tackle the status of instrumental-marked complements with Psychological verbs while Šaravanja (2006) provides a broader description of this class of verbs, raising a number of questions about their argument structure.

As is obvious from the topics addressed in the publications that emerged from this project, the researchers who worked on Croatian took a more formal perspective and the choice of the label for this class of verbs reflects the established usage in formal syntax and semantics. For that reason, the list of verbs that they assembled is closer to the definition of Psych verbs applied in this dissertation. Nonetheless, the list still contains some verbs that do not belong to this class according to mainstream views. For instance, the list contains lexemes such as *očekivati* ('expect') or *trebati* ('need'), whose equivalents are placed in different classes in Levin's (1994) classification of English verbs, and, indeed, they do not conform to Dowty's (1991) definition as they do not trigger entailments about clearly definable emotional states.

I am not assuming that there should be a complete match between the classes of Psych verbs in different languages. It is clearly possible that a particular verb exhibits the properties of Psych verbs in one language but its equivalent in another language could show a different behavior. However, I do believe that the crosslinguistic evidence motivates the hypothesis that Psych verbs are a natural class defined by the set of semantic and morphosyntactic properties which distinguish them from other verbs. In that sense, verbs can vary from one language to another in the number of Psych properties they have with some of them being more typical and others less so.

I should mention the verb *trebati* ('need') in Croatian/Serbian illustrated in (56) as a good example of this borderline case.

- (56) a. Petru trebaju nove patike.
 Peter.DAT need new sneakers.NOM

‘Peter needs new sneakers.’

b. Petar treba nove patike.

Peter.NOM needs new sneakers.ACC

‘Peter needs new sneakers.’

As shown in (56), this verb can be realized as a simple transitive (56b) with a nominative-marked subject and an accusative-marked Theme object, but it can also take the form in (56a), where the Experiencer appears inside a dative-marked NP while the Theme takes the form of a nominative-marked NP. I should point out that the Croatian part of the Serbo-Croatian dialect continuum makes use of both versions illustrated in (56), while the other version in (56a) is much more dominant in Serbian (Kovačević and Milićev 2016).

The version of *trebati* (‘need’) that involves a dative case-marked Experiencer and a nominative case-marked subject can be seen as having more Psych verb properties than the simple transitive version. Given Dowty’s (1991) semantic definition of Psych verbs, both of these verbs are clearly borderline as it is not clear that the eventuality that they denote necessarily involves an entailment about a mental state. This verb could simply denote a lacking relation whereby an entity lacks another entity. This meaning can be illustrated with the English equivalent of this verb in (57). The fact that an inanimate entity can be used as the subject of a sentence containing this verb demonstrates that an entailment about an emotional state is not a necessary component of this verb’s semantics.

(57) Our house needs a new roof.

However, there is another potential English equivalent of this verb that involves a mental state semantics and that is the verb *miss* (58). As shown in (58b), this verb does not allow an inanimate subject, suggesting that it does carry an entailment about a mental state.

(58) a. I miss his innovative ideas.

b. #Our house misses a new roof.

The verb *trebati* ('need') can be used with NPs denoting inanimate entities in the position of the dative case-marked argument (59), suggesting that it does not necessarily entail a mental state. However, the very presence of a dative case-marked argument in the pre-verbal position is one of the distinctive properties of Psych verbs (60).

(59) Mom autu trebaju nove gume.

My.DAT car.DAT need new.NOM tires.NOM

'My car needs new tires.'

(60) Jovanu prija topla voda.

Jovan.DAT appeal warm.NOM water.NOM

'Warm water appeals to Jovan.'

Furthermore, unlike English, Serbian does not have the dedicated Psych verb equivalent of this verb. The closest Serbian counterpart of the English verb *miss*, which is *nedostajati* ('miss'), can also have a use in which it can be combined with dative case-marked NPs denoting inanimate entities (61).

(61) a. Petru nedostaju Jovanine šale.

Petar.DAT miss Jovana's jokes.NOM

'Petar misses Jovana's jokes.'

b. Petrovoj kući nedostaje krov.

Petar's house.DAT miss roof.NOM

'Petar's house needs a roof.'

Therefore, it seems that the meaning covered by these two verbs can freely oscillate between typical Psych verb meanings and non-Psych verb meanings. Still, their morphosyntactic properties speak in favor of treating them as Psych verbs, which allow metaphorical extensions that can cover non-Psych meanings.

On the other hand, a verb like *očekivati* ('expect'), also listed as a Psych verb in the *Valency Database of Croatian Verbs*, does not exhibit any of the typical Psych verb properties. Semantically, it triggers no clear entailments about emotional states. It does not even have a discernable emotional polarity that could be mapped on a scale from positive to negative since it can freely be used in situations associated with negative emotions (62a), as well as those associated with positive ones (62b).

(62) a. Optuženi očekuje presudu.
defendant.NOM expects/awaits verdict.ACC

'The defendant is expecting a verdict.'

b. Budući otac očekuje vest o rođenju deteta.
future.NOM father.NOM expects news.ACC about birth.LOC child.GEN

'The future father is expecting the news about the birth of his child.'

Typical Psych verbs cannot be used in this way since they are always associated with a definable emotion that can be mapped onto an emotional polarity scale. What is more, this verb is a simple transitive verb without the morphosyntactic properties characteristic of Psych verbs. In that sense, there is no compelling reason to classify it as a Psych verb. I would, thus, suggest that Dowty's (1991) semantic definition of Psych verbs be combined with the distinctive set of morphosyntactic

properties of this class observed crosslinguistically makes it possible to make decisions as to whether or not a particular verb should be counted as a Psych verb on a case-by-case basis.

Finally, the crucial drawback of the list of Psych verbs that was made available as a result of this project, however, is that it contains only 57 verbs, which is a relatively low number. To put this number into perspective, it is sufficient to note that Levin's (1994) list of English verbs contains 350 different verbs. That number of 57 verbs is, in fact, even lower because in some cases aspectual variants of the same lexeme were included as different verbs (e.g. *usuditi se* 'dare.perf' and *usuđivati se* 'dare.imperf'). Once those verbs that do not belong to the class of Psych verbs are eliminated as well, the total number is closer to 40.

One of the primary goals of this dissertation was to expand the existing lists of Serbian Psych verbs while eliminating those lexemes that do not conform to the criteria defined by Dowty (1991) and implemented by Levin (1994) in her classification of English verbs. To achieve this goal, I relied on the lists mentioned above and supplemented them with Šipka's (2016) *Serbian grammatical dictionary*, from which I extracted all the verbs that passed the criteria for membership in the class of Psych verbs.

The reason I chose Šipka's (2016) dictionary over all the other dictionaries of Serbian is due to the structure of this dictionary itself. Namely, typical dictionaries normally list the words alphabetically. However, Šipka's (2016) dictionary orders the lexemes according to their endings. Even though it is not always the case that all the lexemes that end in the same string of graphemes actually contain the same suffix (e.g. the fact that *painting* and *bring* both end in "ing" does not mean that these two words share the same suffix), this ordering method ensures that all the lexemes with the same suffixes were grouped together alongside other words which end in the same string of graphemes. Since Serbian dictionaries list verbs in their infinitival forms and there are only two

infinitive suffixes (*-ti* and *-ći*) all the verbs were classified under these two suffixes, which made the search much easier. I went through the collection of verbs listed in Šipka's dictionary and extracted those that exhibited the properties of Psych verbs described in this section. This collection of verbs was then supplemented by additional items extracted from Milenković (2017) applying the same selectional criteria.

The final list contained 157 different verbal forms (Appendix 1). Different aspectual versions of the same verb form, which were not associated with a semantic shift or a shift in argument structure properties were not counted as different items on this list¹³. The basic forms

¹³For instance, *voleti* ('love.IPF') and *zavoleti* ('love.PF') were counted as the same lexeme. However, verbs that undergo a shift in argument structure or change their meaning as a result of an aspectual change were counted separately (i-ii).

- (i) a. *diviti se nekome*
 admire.IPF SE someone.DAT
 'admire someone'
- b. *zadiviti nekoga*
 admire.PF someone.ACC
 'amaze someone' lit. 'cause someone to admire you'
- (ii) a. *osećati hladnoću*
 feel.IPF cold.ACC
 'feel cold'
- b. *predosetiti nesreću*
 feel.PF misfortune.ACC
 'foresee misfortune'

The pattern in (i) also shows that the aspectual change resulting in argument structure properties is accompanied by the removal of SE in (ib). Consequently, verbs that undergo a change in the case forms that appear on their arguments as a result of an alternation involving the addition/removal of SE were counted as separate verbs. Specifically, this means that cases like (iii) were listed separately. However, verbs that undergo a typical anticausative transformation in the presence of SE (ic) where the stimulus participant is no longer expressed as an oblique case-marked bare NP argument, but as an optional PP adjunct were listed only once in their typical transitive form.

- (iii) a. *Ivan plaši Mariju.*
 Ivan.NOM scares Marija.ACC
 'Ivan scares Marija'
- b. *Marija se plaši Ivana.*
 Marija.NOM SE scare Ivan.GEN
 'Marija is afraid of Ivan'
- (iv) a. *Ivan je iznervirao Mariju.*
 Ivan.NOM AUX annoy Marija.ACC
 'Ivan annoyed Marija'
- b. *Marija se iznervirala (zbog Ivana)*
 Marija.NOM SE annoyed because Ivan.GEN
 'Marija got annoyed (because of Ivan)'

from Appendix 2 exhibit different aspectual properties (see Appendix 2 for full aspectual paradigms of the verbs in Appendix 1). Verbs like *veseliti* ('cheer (up)') that have three different aspectual variants (imperfective, perfective, secondary imperfective), like *uveseliti* ('cheer up') and *uveseljivati* ('cheer up repetitively'), respectively. There are also verbs like *obožavati* ('adore'), which have only one aspectual version. The aspectual paradigms of psych verbs (i.e. the availability of different aspectual forms with different verbs) show rather interesting properties that seem to correlate with argument structure motivating an elaborate investigation that goes beyond the scope of this dissertation. However, the reader is referred to Kovačević (2021) for a preliminary discussion of those issues.

This basic list of verbs and their aspectual versions constituted the empirical domain of the dissertation. The research questions that are asked in different chapters of the dissertation are answered on the basis of this sample. Consequently, the descriptive generalizations that are established are applicable to this set of verbs.

2.5. Serbian Psych verbs: data and the issue of classification

As I suggested in the previous section, Serbian Psych verbs have been investigated and classified from various aspects. Milenković (2017) approaches Psych verbs in Serbian from the perspective of lexical semantics and lexicology. As a result, the classification that she provides is informed by the notions that are relevant for that perspective. She divides Psych verbs into those that are *primarily emotional* in her terminology, which means that the primary meaning of the verb is related to emotions, and those that are *secondarily emotional*, which means that the emotional meaning is derived metaphorically from some other primary meaning. Primarily emotional verbs are then divided into emotionally active and emotionally passive verbs. Emotionally active verbs are defined as verbs that denote externally-induced emotional states. For instance, verbs like

povrediti ('insult') are typical representatives of this class. It seems, therefore, that this category roughly corresponds to the crosslinguistically established category of Object Experiencer verbs (i.e. those verbs where the Experiencer is realized in the object position).

The class of emotionally passive verbs in Milenković's (2017) classification consists of all those verbs that denote emotional states that 'originate in the Experiencer'. The upshot is that this class of verbs encompasses a number of formally different verbal lexemes. For example, the verb *besneti* ('rage') illustrated in (63a) and the verb *boleti* ('pain') illustrated in (63b) belong to this category despite their numerous formal differences.

- (63) a. Ivan besni na svoje kolege.
 Ivan.NOM rage at REFL.POSS colleagues.ACC
 'Ivan is raging at his colleagues.'
- b. Ivana boli glava
 Ivan.ACC pain head.NOM
 'Ivan has a headache.'

The verb *besneti* ('be angry') is an intransitive verb which can take an optional complement/adjunct in the form of a PP expressing the Target of emotion (Pesetsky 1994). On the other hand, the verb *boleti* ('pain') is a stative transitive verb with the Experiencer argument realized as an accusative-marked NP, usually positioned preverbally, while the Stimulus/Theme is realized as a nominative-marked NP. The reason why Milenković (2017) classifies the verb *boleti* ('pain') as an emotionally passive verb is presumably because in the majority of its uses the Stimulus does originate 'inside' the Experiencer as it normally refers to a body part. However, this

does not have to be the case as there are examples such as (64), where the Stimulus argument refers to an abstract entity, which is clearly not located inside the Experiencer in any meaningful way.

- (64) Ivana boli nepravda.
Ivan.ACC pain injustice.NOM
‘Injustice pains Ivan’

In sum, Milenković’s (2017) classification focuses on conceptual criteria related to the lexical semantics of the verbal lexeme in question and does not take formal criteria into account or, at least, the formal criteria are not given a lot of weight, which is why formal investigations of Psych verbs would face difficulty when it comes to obtaining data from Milenković’s (2017) dissertation.

Another classification of Serbian Psych verbs that can be found in the literature comes from Štrbac (2006). This classification divides the category of Psych verbs into three classes: ‘verbs of emotional states’, ‘verbs of emotional relations’ and ‘verbs of caused states’. Verbs of emotional states are intransitive verbs with the Experiencer realized as the subject while other participants might be expressed in the form of adverbials (65).

- (65) a. Marko se boji mraka.
Marko.NOM SE scare dark.GEN
‘Marko is afraid of the dark.’
- b. Marko uživa u jelu i piću.
Marko.NOM enjoys in food.LOC and drink.LOC
‘Marko enjoys food and drinks.’

As shown in (65), the Stimulus participant can take the form of a bare NP as in (65a) or a PP as in (65b). Also, from a formal perspective, one might take note of the fact that the verb in (65a) appears

with the SE morpheme while the one in (65b) does not. However, as Štrbac (2006) does not rely primarily on formal criteria, these verbs are grouped together into a single class.

Štrbac's (2006) 'verbs of emotional relations' express emotional states that are characterized by some kind of relationship between two entities, with the Experiencer being the subject. Once again, one finds verbs with different formal characteristics being grouped together. Example (66a) illustrates a simple transitive verb with the Experiencer in the subject position and the Stimulus in the object position. However, in (66b), the Stimulus is realized in the form of a genitive-marked bare NP while the verb itself occurs with the SE morpheme.

- (66) a. Marko obožava Ivanu.
Marko.NOM adore Ivana.ACC
'Marko adores Ivana.'
- b. Marko se uželeo Ivane.
Marko.NOM SE desire Ivana.GEN
'Marko longs for Ivana.'

A more formal examination of these verbs would suggest that the verbs that appear with the SE morpheme in (65a) and (66b) should belong to the same class. In addition to the obligatory presence of SE, these two verbs are linked by the fact that the Stimulus argument is realized in the form of a genitive case-marked bare NP in both cases. However, Štrbac (2006) places them in separate classes.

The third class in Štrbac's (2006) classification is labeled 'verbs of caused states'. The majority of these verbs exhibit all the properties of Object Experiencers in Belletti and Rizzi's (1988) classification. Namely, they are eventive verbs with the Experiencer in the object position

and Stimulus in the subject position. A typical representative of this class is the verb *vređati* ('insult') (67).

- (67) Petar vređa Mariju.
 Petar.NOM insults Marija.ACC
 'Petar is insulting Marija.'

Nonetheless, Štrbac (2006) insists that the most important criterion for membership in this class is the fact that the Experiencer is a passive recipient of a particular emotional state. This leads her to include verbs with dative case-marked Experiencer arguments in this class (68).

- (68) Novi Sad joj je omilio nojeva pera i
 Novi Sad her.CL.ACC AUX cause.like ostrich's feathers and
 svilene donje suknje.
 silk under skirts
 'Novi Sad made her like ostrich's feathers and silk undershirts.' (Štrbac 2006, p. 97)

The inclusion of verbs such as the one in (68) into this class shows that formal criteria were of secondary importance in this classification.

To the best of my knowledge, there are no available formal classifications of Serbian (or Croatian) Psych verbs in the literature. Therefore, the goal of this dissertation will be to offer such a classification. However, this is not an easy and straightforward task because it raises a number of questions that cannot be solved in an *ad hoc* manner and demand a principled and theoretically-informed decision. By the end of this section, I will spell out these questions and dilemmas. In line with the general principles of generative linguistics, my theoretical and methodological assumption will be that Serbian data do not merit a unique analysis and classification, and that Serbian Psych verbs should in principle be classified according to the same criteria that are used

in crosslinguistic treatments of Psych verbs (Landau 2010). Nonetheless, making the Serbian data conform to the established classifications will require making a number of assumptions, but I hope to show that each of these assumptions ultimately pays off in terms of explaining the behavior of these verbs beyond their mere classification.

I will first exemplify those verbs that conform to Levin's (1994) classification in order to show that the attempt to classify Serbian Psych verbs according to the crosslinguistically established classifications shows promise. After that, I will illustrate more problematic cases and describe them in detail, and finally, I will offer a sketch of the analysis that enables us to find a place for each of those verbs inside one of the existing categories.

First off, there are numerous examples of Levin's (1994) *admire*-type verbs. These are the verbs that are usually labeled Subject Experiencers while Landau (2010) calls them Class 1 verbs (69).¹⁴

- (69) a. John loves Mary.
b. Jovan voli Mariju.
Jovan.NOM loves Marija.ACC
'Jovan loves Marija'

Apart from the fact that Serbian has case inflections while English does not, the structures in (69a) and (69b) exhibit virtually identical formal properties. The verbs are stative and the Experiencer occurs in the subject position (in Serbian it carries overt nominative case) while the Stimulus is in the object position (it carries accusative case in Serbian). I will refer to these verbs as 'Class 1 verbs'.

Next, there are many verbs that can be classified as *amuse*-type verbs following Levin's (1994) classification. These are usually eventive verbs with the Experiencer in the object position

¹⁴ Throughout the dissertation, I will mostly refer to these verbs as 'Class 1 psych verbs' or 'Class 1 experiencers'; however, I will occasionally resort to the label 'Subject Experiencers' as well.

and the Stimulus in the subject position (70). Other terms that are used for this class of verbs are Object Experiencers or Class 2 verbs (Landau, 2010). Henceforth, I will use the term ‘Class 2 verbs’ to refer to these verbs.

- (70) a. John angered Mary.
 b. Jovan je razbesneo Mariju.
 Jovan.NOM AUX PF.anger Marija
 ‘Jovan angered Marija.’

It is important to note that a lot of verbs that belong to this class also carry perfectivizing prefixes whose semantics contains a causative component, as observed by Pesetsky (1994) for Russian. However, this is not necessarily the case as there are plenty of non-prefixed imperfective verbs in this category (71).

- (71) Jovan nervira Mariju.
 Jovan.NOM annoys Marija.ACC
 ‘Jovan annoys Marija.’

Next, Levin’s (1994) *appeal*-type verbs are also attested in Serbian. Other labels that are often used are Oblique-cased Object Experiencers (Belletti and Rizzi 1988) and Class 3 verbs (Landau 2010).¹⁵ In English, these are stative verbs with the Theme participant in the subject position and the Experiencer inside a PP headed by *at*, *on*, or *to* (72a).

- (72) a. Nice weather appeals to me
 b. Petru prija lepo vreme.
 Petar.DAT appeal nice.NOM weather.NOM

¹⁵ I will use the term ‘Class 3 verbs’ to refer to this set of verbs.

‘Nice weather appeals to Petar.’

The Serbian equivalent of *appeal* realizes the Experiencer argument in the form of a dative case-marked bare NP. The difference between an oblique-cased bare NP and a PP is by no means negligible. However, while there are other verbs that realize the Experiencer argument as a dative case-marked bare NP (e.g. *dosaditi* ‘bore’, *štetiti* ‘harm’, *škoditi* ‘harm’, *smetati* ‘bother’, *dopadati se* ‘appeal to’, *sviđati se* ‘like’), I did not find any examples of Experiencers realized inside PPs. Faced with the absence of verbs that encode the Experiencer argument in the form of a PP, I can either conclude that the dative-marked bare NP is the equivalent of English PPs in these constructions or that Serbian has no verbs that would belong to this class. The fact that speaks in favor of treating the structures in (72) as equivalents apart from the fact that the verbs have roughly the same meaning is the directional semantics associated with dative case in Serbian and the preposition *to* in English. This is apparent with ditransitive verbs where the Recipient is realized as a dative NP in Serbian and a PP headed by *to* in English.

As a side note, I should mention that there are some periphrastic structures that allow the Experiencer to be realized inside a locative PP (73), which shows that Experiencers are often associated with locative meanings, as argued by Landau (2010) but in Serbian, this normally becomes apparent once one moves away from Psych verbs *per se* and into the domain of periphrastic constructions expressing similar meanings.

- (73) a. U Petru je vladala tuga.
 in Petar.LOC AUX reign sadness
 ‘Sadness reigned in Petar’
- b. Iz Petra je kipeo bes.
 from Petar.GEN AUX seethe anger.NOM

‘Petar seethed with anger.’

Another important observation about this class of verbs in Serbian is that they are not necessarily all stative. Verbs such as *dosaditi* (‘bore’), *dopasti se* (‘appeal to’), and *svideti se* (‘like’) are perfective (i.e. with eventive semantics), and they allow imperfective versions as well (*dosadivati*, *dopadati se*, *svidati se*, respectively). It should be noted that two out of three of these verbs obligatorily occur with the SE morpheme.

The fourth class in Levin’s (1994) classification is called *marvel*-type verbs. For convenience, I will refer to these verbs as ‘Class 4 verbs’. These are the verbs that realize their Experiencer argument in the subject position while the Stimulus takes the form of a PP. Nine different prepositions can be found in English as heads of these PPs expressing the Stimulus argument. These are the prepositions: *about*, *at*, *for*, *from*, *in*, *of*, *on*, *over* and *to*. Most of these verbs have their Serbian equivalents (74-78). What is particularly interesting is that the Serbian equivalents of these verbs usually combine with prepositions that have roughly the same meaning as the prepositions selected for by their English counterparts.

(74) a. Peter worries about his children’s future.

b. Petar brine o budućnosti svoje dece.

Petar.NOM worries about future.LOC REFL.POSS children.GEN

‘Petar worries about his children’s future.’

(75) a. Peter yearns for a better job.

b. Petar žudi za boljim poslom.

Petar.NOM yearns for better.INST job.INST

‘Petar yearns for a better job.’

(76) a. Peter suffers from insomnia.

b. Petra pati od nesаницe.

Petar.NOM suffers from insomnia.GEN

‘Petar suffers from insomnia.’

(77) a. Peter delights in solving linguistic problems.

b. Petra uživa u rešavanju lingvističkih problema.

Petar.NOM delights in solving.LOC linguistic.GEN.PL problems.GEN

‘Petar delights in solving linguistic problems.’

(78) a. Peter anguishes over his bad decision.

b. Petar očajava nad svojom lošom odlukom.

Petar.NOM anguishes over refl.POSS.INST bad.INST decision.INST

‘Petar anguishes over his bad decision.’

What these correlations between verbs and prepositions they select for in English and Serbian seem to suggest is that the link between the verb and the preposition in constructions of this type is not arbitrary, and this observation will be pursued in greater detail in Chapter 4.

Apart from those Serbian Psych verbs that fit the existing classifications rather easily, there are also those that exhibit some exceptional characteristics. I will divide those exceptional verbs into two kinds: those that express the Stimulus participant in the form of an oblique case-marked bare NP and those that realize the Stimulus as a PP with an accusative-cased NP as its complement. The reason why I believe PPs with accusative case-marked complements should be kept separate from other PP Stimuli is the fact that accusative case inside PPs is associated with the semantics

of Goal or Result (Arsenijević and Gehrke 2009). Typical cases where we find accusative case NPs inside PPs are the so-called resultative constructions (79).

- (79) Sportista je ubacio loptu u torbu.
athlete.NOM AUX PF.threw ball.ACC in bag.ACC
'The athlete threw the ball into the bag.'

Accusative case inside PPs is incompatible with purely stative semantics (80a) and locative case has to be used instead (80b). Locative case, in turn, is incompatible with resultatives (80c).

- (80) a. *Sportista je držao loptu u torbu.
athlete.NOM AUX kept ball.ACC in bag.ACC
Literally: 'The athlete kept the ball into the bag'
- b. Sportista je držao loptu u torbi.
athlete AUX kept ball.ACC in bag.LOC
'The athlete kept the ball in the bag.'
- c. *Sportista je ubacio loptu u torbi.
athlete AUX PF.threw ball.ACC in bag.LOC
Intended: 'The athlete threw the ball into the bag'

One should note, however, that accusative case inside PPs is not restricted to clearly resultative constructions as it can occur in sentences like (81).

- (81) a. Sportista je pogledao u torbu.
athlete.NOM AUX PF.look in bag.ACC
'The athlete looked inside the bag.'
- b. Sportista je gledao u torbu.
athlete.NOM AUX looked in bag.ACC

‘The athlete was looking at the bag.’

The sentence in (81a) could perhaps be analyzed as a resultative structure by arguing that it was, in fact, the athlete’s look that metaphorically ended up inside the bag. However, it is more difficult to extend such an interpretation to the directional reading of the same sentence or to the example in (81b), where the verb is also imperfective, and the application of a resultative structure would be misplaced since there is no resultative meaning at all.

The preposition *u* (‘in’) is not the only preposition that licenses accusative case in its complement. Other prepositions that can do that are: *na* (‘on/at’), *pod* (‘under’), *pred* (‘in front of’), and *o* (‘on’), as illustrated in (82). All of these prepositions also have purely locative meanings with other oblique cases, although some of them need to undergo a slight morphological change (e.g. *pod* -> *ispod*).

- (82) a. Petar je stavio knjigu na sto.
 Petar.NOM AUX placed book.ACC on table.ACC
 ‘Petar placed the book on the table.’
- b. Petar je stavio knjigu pod sto.
 Petar.NOM AUX placed book.ACC under table.ACC
 ‘Petar placed the book under the table.’
- c. Petar je stavio knjigu pred televizor.
 Petar.NOM AUX placed book.ACC in.front.of TV.ACC
 ‘Petar placed the book in front of the TV.’
- d. Petar je okačio sliku o klin.
 Petar.NOM AUX hung painting.ACC on nail.ACC
 ‘Petar hung the painting on a nail.’

These directional PPs with accusative case-marked complements appear only with a restricted number of Psych verbs, and not all the prepositions that license accusative case on their complements can be found with Psych verbs. The relevant data are shown in (83).

- (83) a. Petar besni na brata.
 Petar.NOM rage at brother.ACC
 ‘Petar is raging at his brother.’
- b. Petar se zaljubio u Anu.
 Petar.NOM SE fall.in.love in Ana.ACC
 ‘Petar fell in love with Ana.’

The verbs in (83) are, thus, exceptional because they select for these directional/resultative PPs with accusative case on the complement NP, and they do not tolerate their locative counterparts (84).

- (84) a. *Petar besni na bratu.
 Petar.NOM rage at brother.LOC
 Intended: ‘Petar is raging at his brother’
- b. *Petar se zaljubio u Ani.
 Petar.NOM SE fall.in.love in Ana.LOC
 Intended: ‘Petar fell in love with Ana’

The second category of verbs that apparently cannot find their place in Levin’s (1994) classification consists of those verbs that realize their Stimulus participant in the form of an oblique case-marked bare NP. These verbs typically occur with the obligatory SE morpheme (85).

- (85) a. Petar se boji mraka.
 Petar.NOM SE scare dark.GEN
 ‘Petar is afraid of the dark.’
- b. Petar se divi pejzažu.
 Petar.NOM SE admire landscape.DAT
 ‘Petar admires the landscape.’
- b. Petar se ponosi sinom.
 Petar.NOM SE pride son.INST
 ‘Petar prides himself on his son.’

As shown in (85), these oblique-cased bare NP Stimuli can take genitive, dative and instrumental case, and once again, these verbs never occur without SE.

It is not the case, however, that these oblique case-marked bare NPs can occur only with verbs with the obligatory SE morpheme. The examples in (86) show two verbs that do not require SE but allow oblique case-marked bare NP Stimuli.

- (86) a. Petar zavidi Mariji.
 Petar.NOM envies Marija.DAT
 ‘Petar envies Marija.’
- b. Petar veruje Mariji.
 Petar.NOM trusts Marija.DAT
 ‘Petar trusts Marija.’

I was not able to find examples of verbs that appear without SE while allowing genitive or instrumental bare NP Stimuli. The close relationship between the presence of SE and genitive case

on the Stimulus argument becomes apparent when we look at those Class 2 verbs (Object Experiencers) that allow SE anti-causativization (87).

- (87) a. Milana plaše zmiје.
 Milan.ACC scare snakes.NOM
 ‘Snakes scare Milan.’
- b. Milan se plaši zmiја.
 Milan.NOM SE scare snakes.GEN
 ‘Milan is afraid of snakes.’

The example in (87) shows that when we add SE to a Class 2 verb, the Experiencer suddenly receives nominative case while the Stimulus receives genitive.

To sum up this descriptive section, Serbian has clear and uncontroversial examples of Class 1, Class 2 and Class 4 Psych verbs. If we assume that dative case-marked bare NP Experiencers are equivalent to PPs with directional prepositions in English, as was suggested in this section, then Serbian also has Class 3 Psych verbs. However, the question there is why there are also eventive verbs that seem to belong to this class, which is not the case in English. Next, with respect to Class 4 verbs, it was observed that there is an interesting pattern concerning the prepositions that verbs select as heads of the PPs expressing the Stimulus argument in English and Serbian. Namely, in many cases, verbs with similar meanings select for similar prepositions in the two languages, which strongly suggests a non-arbitrary relationship between the verb and the preposition. Moreover, there are certain Psych verbs in Serbian that select for oblique case-marked bare NP complements expressing the Stimulus participant and those that select a PP with an accusative case-marked complement. These verbs stand out from those that can be considered direct equivalents of Class 4 verbs in English. Another phenomenon that was observed with these

‘atypical Class 4 verbs’ is that the presence of the oblique case-marked NP Stimulus correlates with the presence of the SE morpheme with the verb.

The factual observations outlined above raise some important questions whose significance exceeds the issue of classification of Psych verbs. The first question is related to the status of bare NP elements as opposed to PPs with Class 3 and Class 4 verbs. Related to this is the question of the status of oblique case with those bare NP elements. The second question has to do with the role of SE with those verbs that never occur without it as well as those that do and the fact that its presence seems to correlate with oblique cased bare NP Stimuli. More broadly, it is important to know what the argument structure of these verbs is and what kinds of thematic roles they assign to the NPs that appear with them.

These questions will be taken up one by one in the following chapters as they require further theoretical considerations and more thorough empirical descriptions and analyses. The next chapter will raise the question of the role of SE with Psych verbs. The status of obligatory bare NP elements with Serbian Psych verbs in comparison to PPs in both Serbian and English will be tackled in Chapter 4. Chapter 5 addresses the problem of the argument structure of Psych verbs through the lens of passive participle formation as it will be shown that the (im)possibility of deriving these items correlates with a set of argument structure properties, primarily agentivity. Chapter 6 will build on the findings of Chapter 5 by looking into the possibilities of deriving *-nje* nominals have previously been argued to originate precisely from passive participles (Marvin 2002; Bašić 2010; Simonović and Arsenijević 2014). Finally, the origin and status of oblique cases on these bare NP items will be the topic of Chapter 7.

3. Psych verbs and the role of SE¹⁶

The goal of this section is to describe the distribution of the SE morpheme with Psych verbs in Serbian, and to determine its syntactic and semantic role. This is a particularly difficult task because there is a lot of literature on the syntactic and semantic role of SE, and trying to weigh in on those debates is a topic that merits a dissertation in its own right. However, because SE figures so prominently in the syntax and semantics of Psych verbs as suggested in [Section 2.5.], any analysis of these verbs will have to refer to its role. Consequently, instead of focusing specifically on competing accounts and trying to disprove one and support another, I will view the data from Serbian Psych verbs from the perspectives of these accounts and determine which account is better suited for my purposes here. In the process, I will also provide a detailed descriptive picture of what is and what is not possible when it comes to combining SE and Psych verbs in Serbian¹⁷.

The existing literature on the topic of the (pseudo)-reflexive morpheme SE can roughly be divided into two basic positions. Chierchia (2004) argues that every instance of SE carries a reflexive semantics, and he ascribes the difference between typical SE reflexives and SE anticausatives to the difference between agentivity, which is present with typical reflexives, and non-agentive causality, which characterizes anticausatives. In a series of works, Koontz-Garboden (2007, 2009, 2012) recently argued in favor of Chierchia's (2004) position stressing, among other things, the fact that it avoids violating the Monotonicity Hypothesis (Kiparsky 1982). On the other hand, the mainstream position on this issue is that the difference between typical SE reflexives and SE anticausatives is more fundamental in the sense that anticausatives do not include any kind of reflexive semantics (i.e. they only signal the absence of a cause) and the morphological similarity

¹⁶ Some of the research and ideas presented in this chapter have been published in (Kovačević 2020)

¹⁷ Not all the data presented in the descriptive part will be addressed in the proposed analysis, but given that the dissertation also has a descriptive goal and the data do raise some important questions, all the data was included for the sake of completeness.

between these two constructions in terms of the presence of SE is purely coincidental (cf. Schäfer and Vivanco 2016 building on Parsons’s 1990 seminal work on event semantics).

Building on the data from Serbian Psych verbs, I will argue for a middle ground solution. Namely, I will suggest that the mainstream position, the so-called Standard Analysis (Schäfer and Vivanco 2016) fails to make a distinction between typical anticausatives and Psych verb anticausatives, which are unavailable in English but productive in languages with SE, such as Serbian. The main empirical reason why Psych verb anticausatives need to be distinguished from regular or typical anticausatives, at least in Serbian, is illustrated in (1).

- (1) a. Prozor se slomio od vetra / *vetrom
 window.NOM SE break from wind.GEN wind.INST
 ‘The window broke from the wind.’
- b. Stefan se zarepastio ??od bratovog ponašanja/
 Stevan.NOM SE amazed from brother’s behavior.GEN
 bratovim ponašanjem
 brother.INST behavior.INST
 ‘Stevan got amazed at his brother’s behavior.’
- c. Ivan se posekao *od noža / nožem
 Ivan.NOM SE cut from knife.GEN knife.INST
 ‘Ivan cut himself with a knife.’

As shown in (1b), a typical Psych verb anticausative combines with an instrumental case-marked NP signalling the cause and rejects an *od*(‘from’)-PP while an anticausative derived from a regular verb exhibits the opposite pattern (1a). Assuming that the differences in the formal shape of the expression signal semantic differences, the discrepancy illustrated in (1a-b) calls for a different

analysis of Psych verb anticausatives and anticausatives derived from regular verbs. Since Psych verb anticausatives pattern with reflexives (1c), I will argue that they should receive a ‘reflexive-like’ analysis along the lines of Cherchia (2004).

Moreover, the absence of Psych verb anticausatives in English and their availability in Serbian coupled with certain syntactic differences between them and typical anticausatives, which will be illustrated in this chapter, will be taken as the empirical basis for the claim that the Standard Analysis of SE anticausatives is too restrictive. It will be argued that the reflexive analysis of SE anticausatives along the lines of Cherchia (2004) has to be extended to include Psych verb anticausatives but not typical anticausatives, thus capturing the difference in (1a-b). It will also be argued that the special treatment of Psych verb anticausatives is semantically motivated drawing on Talmy (1988) and that the Standard Analysis does not necessarily violate the Monotonicity Hypothesis if one assumes that SE (or the zero-anticausativizer) is merely an alternative exponent of v^0 or Voice⁰ associated with anticausative/reflexives semantics.

This chapter will also touch upon the topic of the existence of so-called ‘frozen entries’ with SE or verbs that always include this morpheme and do not have a corresponding transitive (or intransitive) version without it. Relying on the assumptions of DM, it will be argued that these structures are also derived syntactically, meaning that SE is inserted in the course of the syntactic derivation. Although it might seem odd to argue that SE is added syntactically even when there is no corresponding verbal structure without it, doing so does not contradict any of the principles of DM, and it is difficult to even formulate a competing analysis of this phenomenon within the neoconstructionist framework. Moreover, the syntactic analysis of ‘frozen entries’ is assumed even by authors who approach the matter from the lexicalist point of view (Reinhart 2003, Marelj 2004). A rare opposing view comes from Pesetsky (1994), who assumes that SE is part of the lexical entry

of the verb. Such a position has some rather problematic implications. First, if SE is part of the lexical entry of the verb with ‘frozen entries’ but not with other verbal forms in which it occurs, then it is difficult to say why this morpheme is sometimes added in the lexicon and at other times in syntax. Alternatively, if SE is always part of the lexical entry of the verb, the size of the lexicon is immediately doubled (or nearly doubled) as every verb suddenly gets an additional entry with SE alongside the basic one. Moreover, the idea that SE can be removed in syntax, as Pesetsky (1994) suggests, directly contradicts the Monotonicity Hypothesis (Kiparsky 1982; Koontz-Garboden 2007), which states that syntactic operations can only add structure and they can never remove it. Therefore, the derivationist approach to ‘frozen entries’ is adopted in this chapter.

3.1. Empirical observations

Various authors have observed that in Serbian, SE can have several different functions (Ivić 1962; Marelj 2004; Samardžić 2006; Miličević 2015). The example in (2a) illustrates the reflexive use of SE. In (2b), SE introduces the reciprocal meaning made possible by a coordinated NP in subject position. (2c) is an example of the anticausative use of SE. Finally, the sentences in (2d) and (2e) illustrate the middle and impersonal middle uses of SE (cf. Lekakou & Pitteroff 2018), respectively.

- (2) a. Milan se kupa.
 Milan.NOM SE bathe
 ‘Milan is taking a bath’
- b. Milan i Ivana se vole.
 Milan.NOM and Ivana.NOM SE love
 ‘Milan and Ivana love each other.’

- c. Stolica se slomila.
 chair.NOM SE broke
 ‘The chair broke.’
- d. Kolači se lako prodaju.
 Cookies.NOM SE easily sell
 ‘Cookies sell easily.’
- e. U toj zemlji se lepo živi.
 in that country.LOC SE nicely live
 ‘People live well in that country.’

In addition, there are certain verbs that obligatorily occur with SE. What this means is that these verbs do not have a ‘basic’ transitive use or any other use where they appear without SE. Some of those verbs belong to the category of Psych verbs, as has already been mentioned. Marelj (2004) refers to these verbs as ‘frozen entries’. Three typical examples are given in (3), with the one in (3c) illustrating a Psych verb frozen entry.

- (3) a. Ivan se smeje.
 Ivan.NOM SE laughs
 ‘Ivan is laughing.’
- b. Nesreća se dogodila u petak.
 accident.NOM SE happened in Friday
 ‘The accident happened on Friday.’
- c. Ivan se boji zmija.
 Ivan.NOM SE scare snakes.GEN
 ‘Ivan is afraid of snakes.’

The sentences in (2) and (3) exemplify the inventory of the uses of this morpheme in Serbian. In the following subsections, I will focus on the possibilities of combining SE with different classes of Psych verbs paying special attention to reflexive and anticausative uses and attempt to provide an account of the relevant data that will have significant implications for the understanding of SE in linguistic theory.

3.1.1. Class 1 Psych verbs and SE

I will first lay out some empirical observations concerning the distribution of SE and its different meanings with Psych verbs across different classes. Although the analysis laid out in this chapter will not cover middles and impersonal constructions, as suggested at the beginning of this chapter, I will use this opportunity to outline the possibility of deriving middles with Serbian Psych verbs, primarily for descriptive purposes.

It is not the case that SE combines equally well with all Psych verbs and that all the meanings of SE illustrated in (2) can be generated with all the verbs. Starting with Class 1 Psych verbs, one can say that they can combine with SE, but they do not yield all the meanings in (2). Class 1 verbs do not normally generate reflexive interpretations by adding SE, as evidenced by the example in (4a). Instead, they usually take the full reflexive pronoun form *sebe* ('oneself') (4b).

- (4) a. ??Ivan se voli.
 Ivan.NOM SE loves
 Intended: 'Ivan loves himself.'
- b. Ivan voli sebe.
 Ivan.NOM SE himself
 'Ivan loves himself.'

Reciprocal meanings, on the other hand, are perfectly natural with SE (5).

(5) Milan i Ivana se mrze.

Milan.NOM and Ivana.NOM SE hate

‘Milan and Ivana hate each other.’

Anticausative meanings are completely blocked both with imperfective and with perfective forms of these verbs (6) to the point where it seems difficult to try to assign some intended meaning to those structures.

(6) a. Ivan se voli.

Ivan.NOM SE loves

b. *Ivan se zavoleo.

Ivan.NOM se PF.love

When it comes to middles, the data is somewhat less clear. Under the strict definition, middles are verbal forms that denote certain qualities of the subject rather than an actual eventuality (cf. Marelj 2004). Lekakou (2004, 2005) describes middles as structures that ascribe dispositions to the internal argument of the verb, which is then realized as the sentential subject. The sentence in (2d) and its English translation are typical examples of middles according to this definition. These middle uses can be recognized by the presence of an adverbial such as *easily*. It is not easy to obtain this interpretation with Class 1 verbs, but it seems that it is marginally available (7a), and with perfective versions of these verbs, prototypical middle sentences are perfectly natural (7b).

(7) a. Takva osoba se voli ceo život.

that.kind.of.NOM person.NOM SE love entire.ACC life.ACC

‘One loves that kind of person for their entire life.’

b. Takva osoba se lako zavoli
 that.kind.of person SE easily PF.love

‘It is easy to get to love that kind of a person.’

The example in (7a) could perhaps also be analyzed as a middle, but it does not accept adverbials like *easily*, which is normally taken as a diagnostic for middles (Marelj 2004). However, according to Lekakou and Pitteroff (2018), the manner adverbial or some other similar modifier can be left out under certain circumstances when the disposition ascription accomplished by the middle construction is informative enough without these additional elements. For instance, in (8), the manner adverbial *lako* (‘easily’) can be dropped, and the sentence is still meaningful because there might be some sorts of potatoes that do not have to be peeled.

(8) Ovaj krompir se ljušti.
 this.NOM potato.NOM SE peel

‘This potato peels easily.’ / ‘One is supposed to peel this potato.’

In that sense, middle-like uses that do not involve a manner adverbial but whose primary function is to ascribe a disposition to an entity should still be counted as middles.

In sum, Class 1 verbs do allow anticausative uses of SE while the full reflexive pronoun is preferred in order to get the reflexive meaning. Middles and impersonal sentences are also quite constrained, except, perhaps, with perfective versions of these verbs.

3.1.2. Class 2 Psych verbs and SE

With Class 2 verbs, the picture is more complex, which is to be expected given that this is the most numerous class of Psych verbs in Serbian (as well as in English). When it comes to the reflexive meaning, Class 2 verbs also exhibit a preference for the full reflexive form, which

sometimes needs to be strengthened by adding the adjectival element *sam* ('alone'), sometimes analyzed also as a focus particle (Despić 2011) (9).

- (9) a. Ivan se nervira.
Ivan.NOM SE annoys
'Ivan is annoyed.' NOT 'Ivan annoys himself.'
- b. Ivan nervira ?(sam) sebe.
Ivan.NOM annoys alone himself
'Ivan annoys himself.'

This does not hold for all the verbs in this class as there are quite a few examples of verbs that generate reflexive meanings by adding SE only (10). Nonetheless, this set of verbs constitutes a small minority of the total number of verbs in this class.

- (10) a. Ivan se hrabri.
Ivan.NOM SE encourage
'Ivan is encouraging himself.'
- b. Ivan se unesrećio.
Ivan.NOM SE make.unhappy
'Ivan made himself unhappy.'

Concerning reciprocal meanings, verbs that face problems generating reflexives fail to produce reciprocals with SE while reciprocal readings are completely natural with those verbs that allow reflexive readings with SE (11).

- (11) a. Ivan i Tanja se nerviraju.
Ivan.NOM and Tanja.NOM SE annoy
'Ivan and Tanja are annoyed.'

NOT: ‘Ivan and Tanja are annoying one another.’

b. Ivan i Tanja se hrabre.

Ivan.NOM and Tanja.NOM SE encourage

‘Ivan and Tanja are encouraging one another.’

Class 2 verbs that cannot generate reflexive readings with just SE do not allow reciprocal readings as opposed to Class 1 verbs, which allowed reciprocals while requiring a full reflexive pronoun for reflexive readings.

The constructions with SE usually obtain an anti-causative interpretation with the vast majority of Class 2 Psych verbs in Serbian (12).

(12) a. Stevan se ohrabrio.

Stevan.NOM SE encouraged

‘Stevan got encouraged.’

b. Stevan se iznervirao.

Stevan.NOM SE annoyed

‘Stevan got annoyed.’

c. Stevan se razbesneo.

Stevan.NOM SE anger

‘Stevan got angry.’¹⁸

d. Stevan se zgrozio.

Stevan.NOM SE disgust

‘Stevan got disgusted.’

¹⁸ Note that the translation that was chosen here seems to communicate a slightly lower degree of emotion when compared to the Serbian counterpart.

Class 2 verbs tend to allow typical middle readings with SE in both perfective (13b) and imperfective forms (13a). This is not the case in English, as Class 2 verbs reject middle readings (13c), as observed by Levin (1994).

- (13) a. Milan se lako nervira.
 Milan.NOM SE easily annoy
 ‘It is easy to annoy Milan.’
- b. Milan se lako iznervira.
 Milan.NOM SE easily PF.annoy
 ‘It is easy to annoy Milan.’
- c. *Milan annoys easily.

In contrast to Class 1 verbs, Class 2 verbs do not allow impersonal readings with SE (14).

- (14) Takva osoba se nervira ceo život.
 that.kind.of person.NOM SE annoy entire.ACC life.ACC
 Intended: *‘One annoys that kind of person one’s entire life.’
 Actual: ‘That kind of person is constantly annoyed their entire life.’

The verb *boleti* (‘pain’), although exhibiting the central properties of Class 2 verbs (an accusative-marked Experiencer and a nominative-marked Stimulus) does not combine with SE at all as all the possible readings of SE are ungrammatical with this verb (15).

- (15) a. *Milan se boli.
 Milan.NOM SE pain
 Intended, literal: ‘Milan pains/hurts himself.’

b. *Milan se zboleo.

Milan.NOM SE PF.pain

Intended: ‘Milan started to feel pain.’

c. *Milan se lako boli.

Milan.NOM SE easily pain

Intended: ‘It is easy to hurt Milan.’ / ‘It is easy to get Milan to start feeling pain.’

d. *Takva osoba se boli ceo život.

that.kind.of person SE pain entire life

Intended: ‘One hurts that kind of people one’s entire life.’

To the extent that reflexive, reciprocal, anti-causative, middle and impersonal interpretations are conditioned upon the internal structure of the verb and its argument structure, it is clear that *boleti* (‘pain’) differs from other verbs in this group in precisely those characteristics. Nonetheless, it is a fact that its case pattern matches that of other Class 2 verbs. The exceptional behavior of *boleti* (‘pain’) will be addressed in Chapter 5 dedicated to passive participles and Chapter 6 on nominalizations. In short, it will be argued that this verb, unlike the vast majority of other Class 2 verbs lacks the VoiceP layer completely and contains a special kind of stative *v*, and this assumption can explain all these exceptional characteristics regarding the formation of middles, impersonals, reflexives and anticausatives.

3.1.3. Class 3 verbs and SE

Turning to Class 3 verbs, one observes that they either disallow SE completely or they cannot appear without it. A verb such as *prijati* (‘appeal’) never combines with SE (16). However, class 3 verbs do not preclude reflexive interpretations, as these can be obtained by using the full

reflexive pronoun, *sebe* ('oneself'), strengthened by the focus particle *sam* ('alone') (18). In such cases, the reflexive form appears as the dative-marked element (Experiencer) while the referential NP has the role of the nominative-marked Theme.

- (16) a. Milanu prija čaj.
 Milan.DAT appeal tea.NOM
 'The tea appeals to Milan.
- b. *Milan se prija.
 Milan.NOM SE appeal
 Intended: 'Milan appeals to himself.'
- c. *Čaj se (lako) prija.
 tea.NOM SE (easily) appeal
 Intended: 'It is easy to find tea appealing.' (middle) /
 'One finds tea appealing.' (impersonal)

- (17) Milan smeta samom sebi.
 Milan.NOM bother alone self.DAT
 'Milan bothers himself.'

On the other hand, verbs like *sviđati se* ('like') and *dopadati se* ('like') cannot occur without SE¹⁹, but when it comes to the interpretations associated with this morpheme, only the middle reading seems to be allowed with these verbs (18).

¹⁹ *Dopadati se* and *sviđati se* are very close synonyms, which is why I translate them both as 'like'. Native speakers report vague intuitions about slight semantic differences, which are extremely difficult to pin down, and they are not of crucial significance for my purposes here.

(18) Milan se lako dopadne.

Milan.NOM SE easily like

‘It is easy to get to like Milan.’

Middles are possible only with the perfective forms *dopasti* (‘like’) and *svideti* (‘like’) but not with imperfective ones *dopadati* and *svidati* (19).

(19) a. Milan se lako dopadne.

Milan.NOM SE easily PF.like

‘It is easy to get to like Milan.’

a’. *Milan se lako dopada.

Milan.NOM SE easily IPF.like

Intended: ‘It is easy to like Milan.’

b. Milan se lako svidi.

Milan.NOM SE easily PF.like

‘It is easy to get to like Milan.’

b’. *Milan se lako svida.

Milan.NOM SE easily IPF.like

Like with the previous class of verbs, reflexive interpretations can be obtained by adding the reinforcing reflexive pronoun *sam sebe* (‘self alone’) and this is true for both perfective and imperfective forms (20).

(20) a. Milan se dopada samom sebi.

Milan.NOM SE IPF.like alone.DAT self.DAT

‘Milan likes himself.’

- b. Milan se dopada samom sebi.
 Milan.NOM SE PF.like alone.DAT self.DAT
 ‘Milan got to like himself.’

It should be observed that the addition of the reinforced reflexive does not come as a substitute for SE, which is the case in typical reflexive constructions (21). With these verbs, *sam* is added on top of the already existing ‘reflexive’ morpheme.

- (21) a. Milan se udara.
 Milan.NOM SE hit
 ‘Milan is hitting himself.’
- b. Milan udara (sam) sebe.
 Milan.NOM hit alone.ACC self.ACC
 ‘Milan is hitting himself.’

This fact sets apart Class 3 verbs with SE from those Class 1 and Class 2 verbs which need this reinforced reflexive in order to produce reflexive meanings, but with the latter, the SE morpheme cannot be retained.

- (22) Milan (*se) nervira sam sebe.
 Milan.NOM SE annoy alone.ACC self.ACC
 ‘Milan annoys himself.’

3.1.4. Class 4 verbs and SE

The class of Psych verbs I have provisionally labelled ‘Class 4’ corresponds to Levin’s (1994) *marvel*-type. In English, these are intransitive²⁰ subject Experiencers with an obligatory

²⁰ The notion of transitivity is used here in its narrow sense to capture two-place predicates with a typical nominative-accusative case frame.

Stimulus participant expressed in the form of a PP. In Serbian, some of these verbs take oblique case-marked bare NPs as expressions of the Stimulus participant while others take PPs like their English counterparts. Concerning Class 4 verbs with bare NP complements, one encounters a similar picture as with Class 3 verbs. Namely, these verbs either include the obligatory SE morpheme or they reject it in the majority of its functions. For example, verbs like *zavideti* ('envy') and *verovati* ('trust') cannot produce reflexive, reciprocal and anticausative readings with SE (23).

- (23) a. *Jovan se zavidi.
 Jovan.NOM SE envy
 Intended: 'John envies himself.'
- b. *Jovan i Ana se zavide.
 Jovan.NOM and Ana SE envy
 Intended: 'Jovan and Ana envy each other.'
- c. *Ana se zavidela/ pozavidela.
 Ana.NOM SE IPF.envy/ PF.envy
 Intended: 'Ana became envious.'

However, these verbs do allow middles (24a) and impersonal (24b) readings with SE. They also allow reflexive readings (24c). Note that the potential middle construction in (24a) does not take a nominative case-marked subject like typical middles, so what can be concluded with certainty is only that these verbs allow impersonal structures while middles and reflexives are only marginally present.

- (24) a. Šampionu se lako zavidi.
 champion.DAT SE easily envy
 'It is easy to envy a champion.'

- b. U obdaništu se zavidi onima koji imaju više igračka.
 in kindergarten.LOC SE envy those who have more toys.GEN
 ‘In a kindergarten, one envies those who have more toys.’
- c. Igor zavidi sebi iz mladih dana.
 Igor.NOM envies self.DAT from younger.GEN days.GEN
 ‘Igor envies his younger self.’

Concerning those verbs that obligatorily occur with SE, the situation is somewhat different. Again, they can only produce reflexive readings by adding the reinforced reflexive *sam sebe* while retaining SE (25a). Reciprocals are impossible without adding the complex reciprocal pronoun *jedan drugog* (‘one another’) (25b). Anticausatives are ungrammatical with imperfective versions of these verbs (25c), but perfective forms do allow them (25d). However, it is important to point out that perfective forms of these verbs appear to switch class and become typical Class 2 verbs (26), which is a very interesting phenomenon that deserves an explanation in its own right. When it comes to middles, they are perhaps only marginally possible, if at all (25e). Finally, impersonal uses are perfectly acceptable with these verbs (25f).

- (25) a. Jovan se divi samom sebi.
 Jovan.NOM SE admire alone.DAT self.DAT
 ‘Jovan admires himself.’
- b. Jovan i Ana se dive jedno drugom.
 Jovan.NOM and Ana.NOM SE admire one another.DAT
 ‘Jovan and Ana admire one another.’
- c. *Jovan se divio.

Jovan.NOM SE admired

Intended: ‘Jovan was amazed.’

d. Jovan se zadivio.

Jovan.NOM SE PF.admire

‘Jovan got amazed.’

e. ?Šampionu se lako divi.

champion.DAT SE easily admire

‘One easily admires a champion.’

f. u školi se dive najpametnijoj deci.

in school.LOC SE admire smartest.DAT kids

‘In school, one admires the smartest kids.’

(26) a. Ivan je obradovao Anu.

Ivan.NOM AUX made-happy Ana.ACC

‘Ivan made Ana happy.’

b. Ivan je zadivio Anu.

Ivan.NOM AUX amazed Ana.ACC

‘Ivan amazed Ana.’

In addition to Class 4 verbs with oblique case-marked bare NPs as complements, this class also contains verbs with PP complements. Some verbs of this type appear with an obligatory SE morpheme while others do not include this morpheme. Examples of the verbs with SE are lexemes like *zaljubiti se* (‘fall in love’) and *zabrinuti se* (‘get worried’). These verbs show the following properties when it comes to the functions of SE (27): reflexive interpretations are unavailable

without a full reflexive form in the complement PP, but it is not necessary to strengthen it with the focus particle *sam* (27a). Similarly, reciprocal meanings are not possible without the complex reciprocal pronoun *jedan drugog* (27b). Interestingly, anticausative interpretations are completely natural with these verbs, which might suggest that the role of SE with these verbs is primarily anticausative (27c). However, this raises the question of why simple transitive versions are not possible.²¹ Example (27d) shows that middles are acceptable but degraded²² while (27e) suggests that impersonal meanings are only marginally acceptable.

- (27) a. Jovan se zaljubio *(u sebe).
 Jovan.NOM SE fall-in-love in oneself
 ‘Jovan fell in love with himself.’
- b. Jovan i Ana su se zaljubili *(jedno u drugo).
 Jovan.NOM and Ana.NOM AUX SE fall.in.love one in another
 ‘Jovan and Ana fell in love with one another.’
- c. Jovan se zaljubio.
 Jovan.NOM SE fall.in.love
 ‘Jovan fell in love.’

²¹ Nada Arsenijević (p.c.) points out that the transitive version of this verb was possible in the history of Serbian, but for some reason it became obsolete. If I had to speculate, I would suggest that the eventuality in question simply became reconceptualized from one where the Stimulus is the direct cause of the change of state in the experiencer to one where the experiencer’s mental state occurs without the Stimulus being the active participant in the causal chain.

²² The degraded status of (27d) might be due to a semantic obstacle for a middle interpretation of this verb. Given the semantics of this verb in Serbian, it might be difficult to ascribe the property of being easy to fall in love with to a person. Given what was said in the footnote above, the lack of a transitive counterpart of this verb in the contemporary variety of Serbian points in the direction of the hypothesis that the eventuality it denotes is conceptualized as one in which the Stimulus is not an active participant in the causal chain. Consequently, the mental state that it denotes is perceived as arising in the experiencer as a result of the experiencer’s own characteristics and dispositions rather than those of the Stimulus.

- d. ?U Jovana se lako zaljubi.
 in Jovan.ACC SE easily fall.in.love
 ‘It is easy to fall in love with Jovan.’
- e. ??U srednjoj školi se prvi put zaljubi.
 in middle school.LOC SE first time fall.in.love
 ‘People fall in love for the first time in high school.’

Concerning the verbs without SE, one finds a similar pattern. Reflexive readings are possible with a full reflexive inside the PP (28a) while reciprocal readings are obtained by means of a complex reciprocal pronoun (28b). Anticausative readings cannot be generated by adding SE, as illustrated by the ungrammaticality of the example that includes this morpheme in (28c). However, the grammaticality of the example in (28c) without SE shows that these verbs can be used as simple intransitives as well. Middle-like and impersonal constructions with SE are fully grammatical, as illustrated in (28d) and (28e), respectively. Still, one should bear in mind that the nature of the structure in (28d) is not completely clear as the PP *u odmoru* (‘in vacation’) cannot be treated as the subject of the sentence, which we find in typical middles, nor can it be seen as the object of the sentence involving both participants. Still, this construction does show some of the central semantic features associated with middles. For instance, it ascribes a particular property or a disposition (Lekakou 2005) to the entity denoted by the NP in the complement of the PP.

- (28) a. Uživa u sebi.
 enjoys in oneself
 ‘(He/she) enjoys him/herself.’

- b. Uživaju jedno u drugome.
 enjoy one in another
 ‘They enjoy one another.’
- c. Uživa (*se).
 enjoy SE
 ‘He/she is having a good time.’
- d. U odmoru se lako uživa.
 in vacation.LOC SE easily enjoy
 ‘It is easy to enjoy one’s vacation.’
- e. Na plaži se uživa u sunčanju.
 on beach.LOC SE enjoy in sunbathing.LOC
 ‘People enjoy sunbathing on the beach.’

What the examples in (28) show quite clearly is that reflexive and anticausative readings with SE pattern in one direction while middles and impersonal readings are part of a different phenomenon. However, it is not the case that the availability of reflexive readings correlates perfectly with the availability of anticausatives, as was observed with respect to Class 1 and Class 2 verbs, too. Nonetheless, in light of the examples in (28), it is quite clear that anticausatives and reflexives have more in common with one another than they do with middles and impersonals. Also, as will be explained in the next subsection, certain theoretical accounts of anticausatives and reflexives establish a principled link between the two (Chierchia 2004). This justifies analyzing reflexives and anticausatives from one perspective and middles and impersonals from another. The remainder of this chapter will be devoted to the analysis of reflexives and anticausatives with Psych verbs,

while the empirical landscape presented in this subsection can be used as a descriptive basis for a future study of middles and impersonals.

3.2. Reflexives and anticausatives with Psych verbs

This subsection will present an analysis of the observations about the distribution of reflexives and anticausatives with Psych verbs. In order to do that, I will review the most influential existing proposals about the status of SE crosslinguistically and then apply those proposals to the Serbian data in order to evaluate their explanatory power.

There are two competing views concerning the syntactic and semantic contribution of SE (see Schäfer and Vivanco 2016 for an overview). The standard view, which Schäfer and Vivanco (2016) attribute originally to Parsons (1990) and subsequent work, holds structures with SE to be identical with English anticausatives. Therefore, the alternations in (29) and (30) should have identical semantic effects.

(29) a. Peter opened the door.

b. The door opened.

(30) a. Petar je otvorio vrata.

Petar.NOM AUX opened door

‘Petar opened the door.’

b. Vrata su se otvorila.

door AUX SE opened

‘The door opened.’

If anticausatives of the English type have the same syntax and semantics as SE anticausatives, the semantics of SE would take the form of (31b) with (31a) spelling out the semantics of the transitive version.

- (31) a. $\lambda x \lambda y [(y) \text{ CAUSE } [\text{BECOME } [(x) \text{ open}]]]$
b. $\lambda x [\text{BECOME } [(x) \text{ open}]]$ (Schäfer and Vivanco 2016)

What one can infer about the semantics of an anticausative (31b) in comparison to the semantics of a transitive (31a) is that anticausativization removes an entire layer of structure which includes the semantics of CAUSE and the external argument (y). Now, for the semantics in (31b) to be applicable to (30b), (30b) should have the same meaning as (29b). On the standard view, the presence of SE in anticausatives in a language like Serbian (and various others) does not have a semantic contribution and its phonological identity with the reflexive marker is a matter of coincidence.

A different view about the status of SE comes from Chierchia (2004). On this view, the phonological identity between the reflexive marker and the anticausative marker is taken as an indication of semantic identity rather than pure coincidence. More precisely, Chierchia (2004) argues that SE has the same semantic contribution with reflexives and with anticausatives. Under this analysis, (29b) and (30b) do not have the same meaning and SE in (30b) introduces reflexive-like semantics. The crucial difference between a typical reflexive construction and an anticausative one lies in the thematic role of the external argument. With reflexives, the thematic role of the external argument is Agent while with anticausatives it is the thematic role of Effector. The exact semantics for the transitive and anticausative versions of the verb *sломити* ('break') adapted from Schäfer and Vivanco (2016) is given in (32).

- (32) a. $[\text{slomiti}] = \lambda x \lambda y \lambda s \lambda e [\exists v [\text{CAUSE}(v, e) \wedge \text{EFFECTOR}(v, y) \wedge \text{BECOME}(e, s) \wedge \text{THEME}(s, x) \wedge \text{broken}(s)]]]$
- b. $[\text{se}](\text{slomiti}) = \lambda x \lambda s \lambda e [\exists v [\text{CAUSE}(v, e) \wedge \text{EFFECTOR}(v, x) \wedge \text{BECOME}(e, s) \wedge \text{THEME}(s, x) \wedge \text{broken}(s)]]]$

As is apparent from the formulae in (32), what SE does in (32b) is to identify the thematic role of Theme with the thematic role of Effector, which is how the anticausative meaning is produced. A reflexive meaning would introduce the thematic role of Agent on top of the transitive semantics in (32a), and then, SE would identify the Agent with Theme.

Chierchia's (2004) account has two important conceptual advantages. The first advantage has already been mentioned and it has to do with the fact that it explains the phonological identity between the reflexive SE and anticausative SE by treating the two versions of SE as semantically identical as well. Secondly, this account avoids violating the Monotonicity Hypothesis that goes back to Kiparsky (1982). According to this hypothesis, word formation can only add meaning components but not remove them. The standard analysis of SE faces the problem of potentially violating Monotonicity because if (30b) has the semantics in (31b), it is easy to observe that the semantics of the form with SE is simpler than the semantics of the transitive form, while the form with SE is morphologically more complex.

In addition to these conceptual strengths, Chierchia's (2004) account could potentially deliver some empirical advantages as well. Koontz-Garboden (2009) observes that under the standard analysis of SE anticausatives, the transitive form builds on the semantics of an anticausative, and, therefore, it entails it. This means that the transitive version cannot be true unless the anticausative version is true, as well. On the other hand, Chierchia's (2004) account

does not establish this entailment relationship so that the transitive version can be true or false irrespective of the truth or falsity of the anticausative version.

This difference in the relationship between the anticausative and transitive form gives us different predictions when it comes to negation. Namely, under Chierchia's (2004) account, it should be possible to negate the anticausative version and then assert the transitive one because the transitive version does not entail the anticausative. On the other hand, this should not be possible on the standard analysis. Koontz-Garboden (2009) observes that this prediction is borne out for Spanish, and the Serbian data seems to confirm this (33).

- (33) Stolica se nije slomila. Ti si je slomio.
chair SE neg.AUX broke you AUX it.CL broke
'The chair didn't break. You broke it.'

In light of these conceptual and empirical advantages, one is tempted to dismiss the standard analysis and adopt Chierchia's (2004) account. However, Schäfer and Vivanco (2016) show that the arguments in favor of the latter approach are not as powerful as they might seem at first glance and that there are some strong counterarguments that speak in favor of the standard analysis. First, they point out that there are analyses of SE anticausatives that assume the standard approach without violating Monotonicity (Piñón 2001; Doron 2003; Schäfer 2008; Alexiadou, Anagnostopoulou and Schäfer 2015), which means that adopting Chierchia's (2004) view is not the only way to avoid this violation.

With regard to the empirical evidence from entailment between transitives and anticausatives, Schäfer and Vivanco (2016) observe that the availability of negation in (33) does not constitute evidence in favor of Chierchia's (2004) view because it represents an example of

metalinguistic rather than truth-conditional negation. The difference between these two types of negation has been recognized in the linguistic literature. Sentence (34) is an example of metalinguistic negation because negation in the first sentence does not negate the truth of the entire proposition (if the truth of the entire proposition were negated the sentence would assert that the movie is not good, i.e. it is bad). Instead, negation denies the scalar implicature of the sentence whereby the description that is given in the sentence reflects the upper boundary (i.e. the movie is good but nothing more than that) of the assessment in question. In concrete terms, the statement that the movie is good, which is negated in (34), conversationally implies, following Grice's (1975) maxim of quantity, that the property 'good' reflects the upper boundary of the expressed positive description. Language users usually expect their interlocutors to employ the linguistic expressions that they have at their disposal in the most informative and efficient manner, so they do not expect their interlocutors to describe a movie as good if they think it is in fact excellent or fantastic. So, by negating the statement that the movie is good in (34), the speaker, in a sense, accuses the interlocutor of flouting the maxim of quantity in their previous utterance thereby creating this conversational implicature. Crucially, in (34), the speaker is not negating the actual truth-content of this previous utterance.

(34) This movie is not good. It is fantastic.

Schäfer and Vivanco (2016) propose that anticausatives are, in fact, scalar implicatures. This means that by selecting an anticausative instead of a transitive (which does entail the anticausative), one is implying that the cause of the event is unknown or unimportant. By denying the anticausative version in (33), one is actually denying this implicature. They support their analysis by pointing out that negation in examples such as (33) exhibits the properties of

metalinguistic rather than truth-conditional negation. For instance, they show that in Spanish, the form of negation that is used in these sentences does not license the polarity item *siquiera* ('even'), which is licensed under sentential negation only (35).

- (35) a. #El vaso no se rompió siquiera, tú lo rompiste.
the glass no SE broke even you it broke
'The glass didn't (even) break, you broke it.'
- b. #Los precios no aumentaron siquiera, tú los aumentaste.
the prices no increased even you them increased
'The prices didn't (even) increase, you increased them.'
- c. #El rosal no floreció siquiera,
the rosebush no blossomed even
el jardinero lo hizo florecer.
the gardener it made blossom
'The rosebush didn't (even) blossom, the gardener made it blossom.'
- d. #El niño no se puso enfermo siquiera, tú lo infectaste.
the child no SE get sick even you him infected
'The child didn't (even) get sick, you infected him.' (Schäfer and Vivanco 2016)

In (35a), the first clause conversationally implies, but crucially does not entail, that there was no external cause or that the cause is unknown because as per the basic conversational conventions (Gricean Maxims) the speaker is expected to be as informative as possible. In this case, being as informative as possible would mean not withholding information about the cause or misleading the interlocutor into thinking that the external cause did not exist. By denying the first

clause, the speaker reacts against this conversational implicature without denying the truth-conditions of the sentence.

On the other hand, in a reflexive sentence, negation licenses this NPI, suggesting that the two versions of SE have a different status (36).

(36) El niño no se lavo siquiera, lo lavo la niñera.
the kid no SE washed even, him washed the nanny

‘The kid didn’t even wash, the nanny washed him.’ (Schäfer and Vivanco 2016)

In sum, Schäfer and Vivanco (2016) show that the conceptual and empirical arguments in favor of Chierchia’s (2004) analysis do not force us to dismiss the standard analysis and that the standard analysis has some important advantages over this view, particularly if SE anticausatives are analyzed as scalar implicatures.

3.2.1. Psych verb anticausatives as semi-reflexives

In what follows, my intention is not to prove or disprove either of the two broader approaches to the role of SE with anticausatives because I am convinced that both of them have important strengths (but also some weaknesses). Therefore, I will not try to diffuse or strengthen the arguments against Chierchia’s (2004) analysis raised by Schäfer and Vivanco (2016). Instead, I want to compare the applicability of these two approaches to Serbian Psych verbs. Specifically, I will argue that Chierchia’s (2004) approach helps us make sense of the possibilities of anticausative formation with Serbian Psych verbs by means of the insertion of SE. Such constructions are systematically absent in English, which is a language without SE. Furthermore, I will suggest that the presence of these anticausatives in Serbian makes sense precisely if SE has the kind of semantics proposed by Chierchia (2004) and other researchers who have applied this framework (Koontz-Garboden 2009). That said, I want to limit my remarks to Psych verb

anticausatives. The analysis that I will present will, thus, draw a demarcation line between Psych verbs and other classes of verbs, which, I would suggest, is necessary given the fact that Psych verbs are exceptional in that they do not participate in the causative alternation in English, and they exhibit some special properties in this regard in Serbian as well.

Let us first consider the crucial data points that will be analyzed. Namely, as shown in (12), repeated here as (37), the majority of Class 2 verbs in Serbian produce perfectly grammatical SE anticausatives.

- (37) a. Stevan se ohrabrio.
 Stevan.NOM SE encourage
 ‘Stevan got encouraged.’
- b. Stevan se iznervirao.
 Stevan.NOM SE annoyed
 ‘Stevan got annoyed.’
- c. Stevan se razbesneo.
 Stevan.NOM SE anger
 ‘Stevan got angry.’
- d. Stevan se zgrozio.
 Stevan.NOM SE disgust
 ‘Stevan got disgusted.’

On the other hand, as observed by Levin (1994), English Class 2 Psych verbs do not participate in the causative alternation, i.e. they do not produce anticausatives. This is evident from the

periphrastic English translations of the Serbian constructions in (37), as well as the ungrammaticality of the constructions in (38).²³

- (38) a. *Peter angered.
b. *Steven annoyed.
c. *John insulted.
d. *Tom disgusted.

The resistance of Class 2 verbs to causative alternations in English could, perhaps, be accounted for assuming Landau's (2010) analysis of all Experiencer arguments as covert obliques. If object Experiencers carry inherent accusative case, and they are, in fact, all obliques, then, one could assume that only 'true' objects, which carry structural accusative case in transitive constructions are able to participate in causative alternations.

While this approach might seem promising in light of the English data, it would fail to provide an explanation for the existence of SE anticausatives with Class 2 verbs in Serbian. Assuming, with Schäfer and Vivanco (2016), that SE anticausatives are only superficially different from English anticausatives, one would not expect them to occur with Serbian Class 2 verbs either.

If, on the other hand, SE anticausatives do not mean the same thing as 'zero' anticausatives of the English type, there is no reason to expect such a parallelism. Moreover, if Chierchia's (2004) approach to SE anticausatives is on the right track, one would expect the reflexive component of the semantics of SE anticausatives to emerge most clearly in these contexts. As Schäfer and

²³ Levin (1994) observes that the vast majority of Class 2 verbs do not participate in the causative alternation, but there are also some exceptions. The following verbs do produce viable anticausatives: cheer, delight, enthuse, gladden, grieve, madden, obsess, puzzle, sadden, sicken, thrill, tire, weary, worry. However, as suggested by Levin (1994) herself, it is not completely clear that these verbs belong to Class 2 as they are also listed with *marvel*-type verbs (Class 4) due to the fact that they take a PP complement in addition to the experiencer.

Vivanco (2016) observe, it is quite difficult to maintain the idea about reflexive semantics of anticausatives in a lot of cases. For instance, in (39a), Serbian (just like the majority of languages that make use of SE) employs SE to generate the anticausative of the verb *otvoriti* ('open'). However, insisting that SE contributes reflexive semantics in this case would amount to saying that a gap somehow caused itself to come about. This would, of course, be a logical impossibility as a thing cannot be its own cause. Arguably, our awareness of the fact that things cannot cause themselves into existence is what rules out the use of a reflexive in such examples in English (39b).

- (39) a. Rupa se otvorila.
gap SE opened
'A gap opened.'
- b. A gap opened (*itself).

While this line of reasoning seems correct in cases such as (39), it does not necessarily apply in the context of Psych verbs. Namely, it is certainly difficult to see how an inanimate entity could do something to bring about some kind of change of state onto itself and this problem is most obvious in cases like (39), where a reflexive reading would imply an inanimate entity being the cause of its own existence, which is a logical contradiction. With animates, and in the domain of Psych verbs in particular, this issue does not play such a prominent role because it is certainly possible to imagine an animate entity bringing about some change of state in or on itself consciously or unconsciously.

Talmy (1988) formulates a framework that one can use when thinking about causality in the domain of Psych predicates. He argues that linguistic facts reveal that we conceptualize the human psyche as being divided into a center and a periphery, where the center is under one's control and it tends towards repose. On the other hand, the periphery is more dynamic and tends

to move the center from repose. Talmy (1988) illustrates this divided nature of the self with reference to examples such as (40).

(40) I held myself back from responding.

The use of a reflexive in (40) makes sense only if the self is seen as divided into a periphery which tends towards responding and a center that resists it. Therefore, with Psych predicates, it is certainly possible to imagine one part of the psyche acting on another to produce a change in mental/emotional state, thus amounting to a reflexive situation.

Consider a verb like *iznervirati se* ('get annoyed') in (41). In the situation described in (41), a reflexive reading would involve one part of Ivan's psyche (the periphery) acting upon the other (center) and producing a change of emotional state. Such a reading is fully compatible with Chierchia's (2004) proposal.

(41) Ivan se iznervirao.

Ivan.NOM SE annoyed

'Ivan got annoyed.'

On the other hand, it seems to be incompatible with the non-reflexive, standard account of anticausatives, where the sentence would mean only a change of Ivan's emotional state without any reference to Talmy's (1988) "divided self" model.

The crucial question here is whether insisting on Talmy's (1988) model of the divided self adds anything to our understanding of Psych verb anticausatives such as (41). If it does not, then we are not compelled to prefer Chierchia's (2004) approach over the standard account as Chierchia's (2004) approach to anticausatives would give us a reflexive-like reading of (40), which is in line with Talmy's (1988) model. I would argue that Talmy's model (1988) is helpful in one important aspect. Consider the examples in (42).

- (42) a. Ivan je iznervirao Marka.
 Ivan.NOM AUX annoyed Marko.ACC
 ‘Ivan annoyed Marko.’
- b. Marko se iznervirao zbog Ivana.
 Marko.NOM SE annoyed because.of Ivan.GEN
 ‘Marko got annoyed because of Ivan.’

The sentences in (42) would, for all intents and purposes, have identical denotations under the standard analysis. (42a) would denote an event of annoying with Marko being the Theme of the event and Ivan being the cause (or potentially the Agent). (42b) would also denote an event of annoying with Marko being the Theme and Ivan being the cause. The only difference would be that in (42b) the cause would be expressed by means of a PP (and, consequently, the case form on the NP would be different).

On the reflexive analysis of SE anticausatives, the denotations of these sentences would not be the same. (42a) would have the semantics paraphrased above while (42b) would entail that Marko was simultaneously the Effector and the Theme of the event of annoying with Ivan being the reason or *indirect* cause (in the sense of Croft 2012; Wolff 2003, etc.) of the event as expressed by the *zbog* (‘because-of’)-PP. If we were to enrich this description using Talmy’s (1988) vocabulary, we would say that (42b) means that Ivan did something that triggered an internal conflict inside Marko, which ultimately resulted in the change in Marko’s emotional state. What we gain from this perspective is that we are ascribing a certain level of responsibility for Marko’s change of state to Marko himself because we are saying that what Ivan did was not necessarily a sufficient condition for the change in Marko’s emotional state.

I would argue that assuming distinct denotations for (42a) and (42b) helps us explain the way in which native speakers, in fact, use these sentences as they are not used in identical situations. That is, one could use them in the same situation, but what one would be saying in those situations would be different. If one were to choose (42a) to describe a particular situation one would communicate that what Ivan did was objectively serious enough to annoy another person (it was the direct cause of annoyance). By contrast, such an entailment would be avoided if one were to choose the sentence in (42b) because then, one would be saying that Marko could have reacted otherwise as what Ivan did was not necessarily a sufficient condition or the direct cause of annoyance.

To see the importance of this distinction in action, consider the pair in (43). The sentence in (43a) sounds odd because the first part entails that whatever Ivan did was a sufficient condition to annoy Marko, which is why denying that he actually did something (bad) creates a contradiction. In (43b), we are saying that Marko was the Effector of the change in his own emotional state, which is why it is perfectly natural to deny that Ivan did something (bad) as doing so does not contradict the first part of the sentence.

- (43) a. #Ivan_i je iznervirao Marka, ali on_i nije uradio ništa.
 Ivan AUX annoyed Marko, but he NEG.AUX do nothing
 ‘Ivan annoyed Marko but he did not do anything.’
- b. Marko se iznervirao zbog Ivana_i
 Marko SE annoy because-of Ivan
 ali on_i nije uradio ništa.
 but he NOT.AUX do nothing
 ‘Marko got annoyed because of Ivan but he did not do anything.’

Now, compare the pair in (43) with the pair in (44). Once again, there is a significant difference in meaning between the two sentences in (44). The sentence in (44a) clearly indicates that Ivan is the direct cause of the change of state that affected the door. On the other hand, (44b) is acceptable only if Ivan did something that ultimately led to the door being open, but not if he was the one who turned the knob. In that sense, the range of contexts in which (44b) is acceptable is quite restricted. For instance, one could utter (44b) if the situation involved an automatic door, which can open by itself, and Ivan approaching it was sufficient to open it. In contrast, contexts in which sentences containing Psych verb anticausatives with *zbog* ('because-of')-PPs are used are not so tightly restricted.

(44) a. Ivan je otvorio vrata.

Ivan.NOM AUX opened door

'Ivan opened the door.'

b. Vrata su se otvorila zbog Ivana.

door AUX SE opened because.of Ivan.GEN

'The door opened because of Ivan.'

In sum, Chierchia's (2004) analysis of SE helps us make sense of the fact that anticausatives of Psych verbs are perfectly productive in Serbian as opposed to a language like English, where these anticausatives are almost completely absent. What is more, a reflexive-like analysis of Psych verb anticausatives explains certain important facts about their use. The way Psych verb anticausatives are used reveals that they indeed treat the Experiencer as being the crucial link in the causal chain leading up to the change in their emotional state.

3.2.2. Reflexive and reciprocal constructions with Psych verbs

Having discussed the distribution of anticausative readings with SE within the class of Psych verbs, I want to turn to the issue of the distribution of fully reflexive readings with SE. As has already been shown, not all Psych verbs allow reflexive readings with SE, and the availability of these readings seems to be impacted by the class which a particular verb belongs to. Consider the examples in (45). The sentence in (45a) shows that a reflexive reading is possible with Class 1 verbs although it is somewhat degraded. However, a reciprocal reading is perfectly natural (45a'). On the other hand, many Class 2 verbs do not allow purely reflexive readings with SE, nor do they produce reciprocal readings (45b, 45b'). Finally, the ungrammaticality of the examples in (45c) and (45d) shows that reflexive readings are impossible with Class 3 and Class 4 verbs.

(45) a. ?Ivan se voli/ mrzi/ obožava.

Ivan.NOM SE loves/ hates/ adores

'Ivan loves/hates/adores himself.'

a'. Ivan i Ana se vole.

Ivan.NOM and Ana.NOM SE love

'Ivan and Ana love one another.'

b. Ivan se nervira.

Ivan.NOM SE annoy

'Ivan is annoyed.' / NOT: 'Ivan annoys himself.'

b'. Ivan i Ana se nerviraju.

Ivan.NOM and Ana.NOM SE annoy

'Ivan and Ana are annoyed.' / NOT: 'Ivan and Ana annoy one another.'

- c. *Ivan se prija.
 Ivan.NOM SE appeal
 Intended: ‘Ivan appeals to himself.’
- d. *Ivan se zavidi.
 Ivan.NOM SE envy
 Intended: ‘Ivan envies himself.’

Still, it is not the case that all Class 2 verbs disallow reflexive readings as there are those that allow it (46).

- (46) a. Ivan se hrabri.
 Ivan.NOM SE encourage
 ‘Ivan is encouraging himself.’
- b. Ivan i Ana se hrabre.
 Ivan.NOM and Ana.NOM SE encourage
 ‘Ivan and Ana are encouraging one another.’

I would suggest that the distribution of reflexive and anticausative readings of SE with Psych verbs can be accounted for via a simple implementation of Chierchia’s (2004) analysis, which is fully in line with current approaches to the extended VP structure. The correlations between reflexive and anticausative readings of SE across different classes of Psych verbs together with the mismatches that can be seen in (45a) and (45b) can be captured by treating the thematic role of Agent and the thematic role of cause as two separate entities hosted by different projections. Such a view is strongly supported by morphological evidence for the distinctness of *v*P hosting the semantics of CAUSE and VoiceP hosting the agentive semantics (Harley 2013). Following Chierchia (2004), I would argue that SE has simple reflexive semantics, and the distinction between reflexives and

anticausatives comes about as a result of different merge sites. With reflexives, SE is merged with Voice⁰ while with anticausatives, it is merged with v^0 . I treat the insertion of SE into Voice⁰ as a case of head-to-head adjunction created by Merge rather than Move. In other words, standard head movement displaces one head from a lower position and adjoins it to another head in a higher position (Travis 1984). Given that Chomsky (2001) reduces Move to an internal instance of Merge, I assume that any approach that postulates head movement (e.g. DM) must also allow the creation of complex heads via Merge.²⁴

The difference between transitive structures and reflexive structures lies in the fact that reflexive structures do not involve an additional NP/DP merged in SpecVoiceP. Instead, the insertion of SE into Voice⁰ induces the identification of the external argument with the internal one.²⁵ The complex head created by the insertion of SE into Voice⁰ is essentially a combination of agentivity and reflexivity. The semantics of this combination is the semantics of true or pure reflexives, which are agentive configurations where the Agent is identified with the Theme.

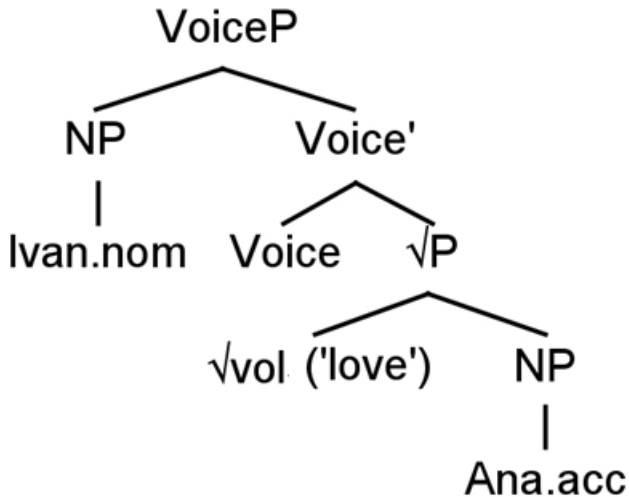
The lack of the anticausative reading with Class 1 verbs can, thus, be attributed to the lack of vP while the presence of the reflexive reading would be due to the presence of VoiceP. Thus, I would propose the tentative structure in (47) for Class 1 verbs in their non-reflexive, transitive uses, which can, then, serve as the basis for reflexivization.²⁶

²⁴ Chomsky's (2001) identification of Move and Merge entails that whenever one operation is available, the other one must be, too. In that sense, banning head-to-head adjunction via Merge while allowing head-to-head adjunction following Move would be a purely stipulative ban demanding strong independent evidence.

²⁵ The logic of this proposal is quite similar to that of Medova (2009), following a line of research going back at least to Kayne (1986). Medova (2009) implements these ideas in the framework of Nanosyntax, but as far as I am aware, the differences between DM and Nanosyntax are not of crucial significance for the issues at hand.

²⁶ I describe the structure in (47) as tentative because I still have not discussed the issue of the presence/absence of vP . So far, I have merely suggested that these verbs lack a causative/eventive component, but this does not entail the complete lack of vP .

- (47) Ivan voli Anu.
 Ivan.NOM loves Ana.ACC
 ‘Ivan loves Ana.’

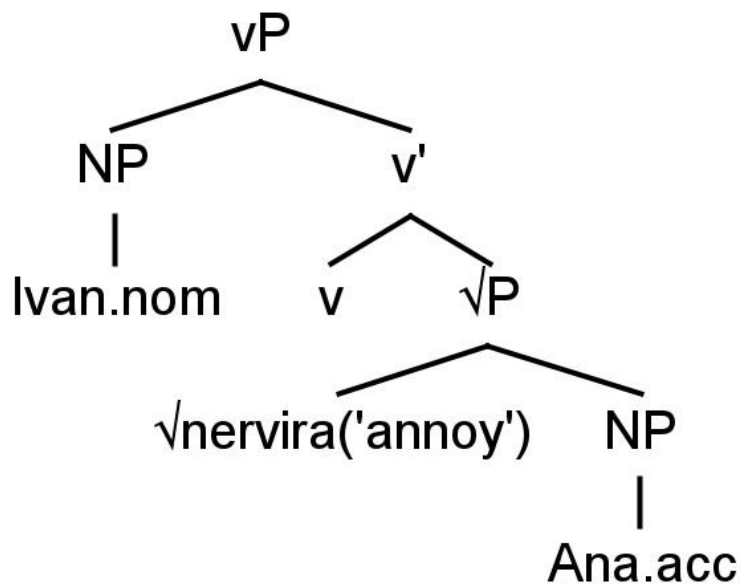


What the structure in (47) entails is that Class 1 verbs like *voleti* ('love') contain an Agent participant. This might appear controversial as this class of verbs is traditionally known as 'subject Experiencers', which implies that they have an Experiencer participant in the subject position. However, at least since Pesetsky (1994), it has been assumed that what has been traditionally referred to as the 'Experiencer' thematic role is more of a cover term and that this participant does not have the same role in all its occurrences. Consequently, it is possible to say that it plays the role of an Agent with Class 1 verbs and Theme with Class 2 verbs, which is the approach taken in Arad (1998).

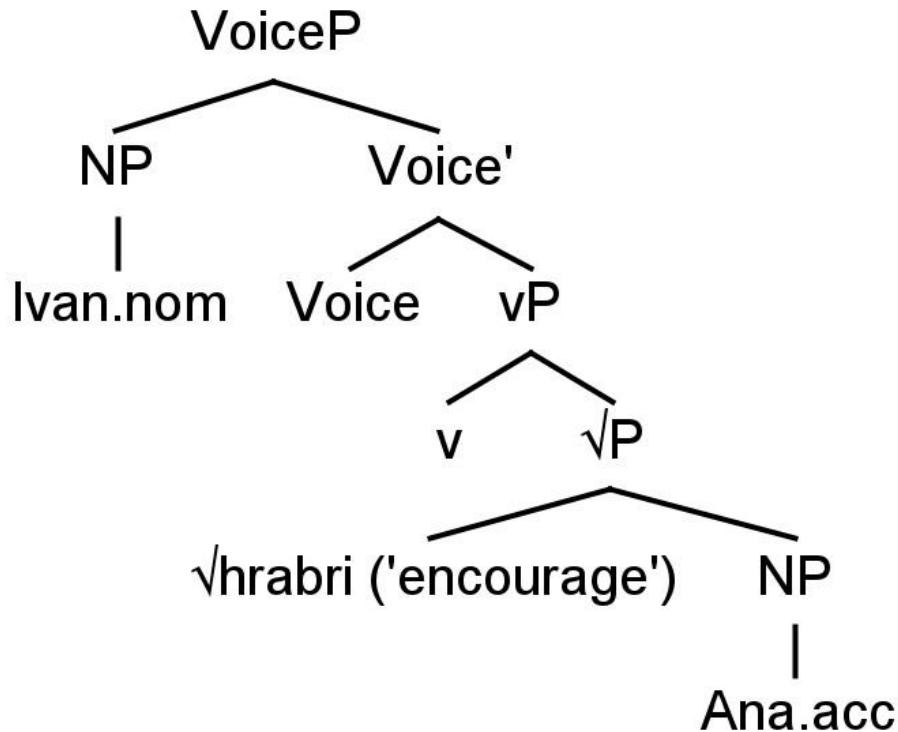
The idea that verbs like *voleti* ('love') involve an Agent participant is not particularly controversial in Serbian grammar either. Arsenijević (2006) argues that the main difference between *voleti* ('love') and *zaljubiti se* ('fall in love') lies in the agentive interpretation of the subject of *voleti* ('love'). One piece of evidence that she offers in favor of this view relies on the

etymology of *voleti* ('love'), which shares the root with *volja* ('will'). According to Arsenijević (2006), this root involves volitional semantics associated with agentivity. She further backs up this semantic distinction with survey data showing that native speakers do associate the verb *voleti* ('love') with agentivity and volition significantly more than verbs like *zaljubiti se* ('fall in love'). In Chapter 5, the idea about the presence of VoiceP with Class 1 verbs will be supported with reference to the possibilities of passive participle formation and *by*-phrase licensing as well. In contrast to the reflexive reading which arises when SE is merged with Voice⁰, the anticausative reading comes about when SE is merged with the *v*⁰. Therefore, I propose the structure in (48) for object Experiencers that do not allow reflexive readings, and the structure in (49) for those that do.

- (48) Ivan nervira Anu.
 Ivan.NOM annoys Ana.ACC
 'Ivan annoys Ana.'



- (49) Ivan hrabri Anu.
 Ivan.NOM encourages Ana.ACC
 ‘Ivan encourages Ana.’



The presence of VoiceP in (49) makes available the reflexive reading because SE can be adjoined to Voice⁰ to produce it. Notice now that (49) also contains a vP layer. This is because Class 2 verbs are causative transitives, and vP encodes causativity (Harley 2013). I propose that the presence of the causative vP layer is the necessary precondition for deriving anticausatives since anticausatives are generated by merging SE with v⁰. This is, in fact, the case as the sentence

in (50) with the verb from the structure in (49) is ambiguous between a reflexive and anticausative reading without additional context.

(50) Ivan se hrabri.

Ivan.NOM SE encourages

‘Ivan encourages himself.’/ ‘Ivan is getting encouraged.’

The way in which this ambiguity can be accounted for, then, is by assuming that it arises as a result of merging SE into two different head positions (v^0 or Voice⁰). Merging SE into v^0 gives rise to the semantics translated as ‘Ivan is getting encouraged’, where getting encouraged is conceptualized as an internally driven change of state. Following Chierchia’s (2004) line of reasoning being pursued here, one could say that Ivan is simultaneously the cause and the Theme of the ‘getting-encouraged’ event, but crucially not the Agent as he is not acting purposefully. The other potential meaning of (50) is precisely the purely reflexive reading translated as ‘Ivan encourages himself’. Structurally, this meaning arises by inserting SE into Voice⁰ and creating the complex head which is simultaneously agentive and reflexive. This structure identifies the Theme and the Agent leading to the interpretation where Ivan is purposefully doing something (e.g. reading or thinking about inspiring people and their achievements) with the intention of making himself more courageous.

It should be emphasized once more that anticausative semantics is quite clearly not restricted to eventive verbs. Namely, while the sentence in (50) has an eventive counterpart in (51), which is again ambiguous between a reflexive and an anticausative reading, the only difference between the two is related to aspect, as is obvious from the morphological makeup of these verbs given the perfectivizing prefix on the verb in (51).

(51) Ivan se ohrabrio.
Ivan.NOM SE encouraged

‘Ivan encouraged himself.’/ ‘Ivan got encouraged.’

I take the contrast between (50) and (51) to be purely aspectual without any changes in argument structure. In other words, whichever way the resultative/telic meaning in (51) is derived, it does not alter the basic extended VP structure proposed for (50), and the ambiguity of (51) is due to the same mechanism assumed for (50) and explained above.

3.2.3. When reflexive and anticausative meanings are absent: the role of SE with Class 3 and Class 4 Psych verbs

In the previous two subsections [Sections 3.2.1 and 3.2.2], I outlined the basic distribution of reflexive and anticausative uses of SE with Serbian Psych verbs. A notable fact about this distribution is that only Class 1 and Class 2 verbs are able to derive these meanings (and, as was observed, there are illustrative exceptions within these two classes as well). Class 3 and Class 4 verbs, on the other hand, present us with a very different and puzzling picture. Namely, they are consistently unable to derive these constructions, and consequently, they cannot combine with SE. Still, there are some verbs belonging to these two classes which obligatorily combine with SE (i.e. they do not have a ‘basic’ form without SE). This subsection will be devoted to accounting for these puzzling observations.

In an attempt to provide an analysis of SE with Class 3 and Class 4 verbs, we encounter two questions. The first question is why certain verbs in these two classes always reject SE, and the second one is why other verbs from these classes never appear without it. Ideally, there should be a common answer to both questions. Namely, a single explanatory mechanism should be able to account both for the lack of reflexive and anticausative uses of SE with these verbs and the

reason why this morpheme (without these semantic effects) is obligatory with some Class 3 and Class 4 verbs. Assuming with DM that complex morphological units are syntactically derived, there is no option but to treat SE that appears with those verbs that always require it as an exponent of some syntactic layer (see also Marelj 2004 and Chierchia 2004 for arguments that SE is derived even with the so-called ‘frozen’ entries or verbs that never appear without SE). If this is the right way to go, then the question becomes which syntactic layer SE is the exponent of. Also, with regard to those verbs that never appear with SE, the question is why they do not have this layer of structure.

To answer these questions, I will start with several basic observations. Namely, the reason why verbs that always require SE and verbs that do not combine with it end up in the same category is linked to the cases on their arguments/complements. For instance, (52) and (53) illustrate two Class 3 verbs, one of which requires an obligatory SE morpheme (53) while the other one always rejects it.

- (52) a. Ivanu (*se) prija čaj.
 Ivan.DAT SE appeal tea.NOM
 ‘Ivan finds the tea appealing.’
- b. *Ivan se prija.
 Ivan.NOM SE appeal
 Intended: ‘Ivan appeals to himself.’
- c. *Čaj se prija.
 Tea SE appeal
 Intended: ‘One finds the tea appealing.’

(53) a. Ivanu *(se) sviđa čaj.

Ivan.DAT SE appeal tea

‘Ivan likes the tea.’

b. *Ivan sviđa čaj.

Ivan.NOM likes tea

Intended: ‘Ivan likes the tea.’

c. *Čaj sviđa Ivana.

Tea likes Ivana.ACC

Intended: ‘Ivan likes the tea.’

These two verbs are different in terms of their aspectual paradigms. Namely, *prijati* (‘appeal’) is always stative (54) while *sviđati se* (‘like’) also has an eventive counterpart (55).

(54) a. Ivanu prija čaj.

Ivan.DAT appeal tea.NOM

‘The tea appeals to Ivan.’

b. *Ivanu je zaprijao čaj.

Ivan.DAT AUX PF.appeal tea.NOM

Intended: ‘The tea began to appeal to Ivan.’

(55) a. Ivanu se sviđa čaj.

Ivan.DAT SE like tea.NOM

‘Ivan likes the tea.’

b. Ivanu se svideo čaj.

Ivan.DAT SE PF.like tea.NOM

‘Ivan liked the tea.’

Therefore, these verbs are quite different both in terms of their aspectual features and in terms of the presence/absence of SE forms. Nonetheless, they have one important feature in common, which is the distribution of cases on their arguments. Namely, with both verbs, the Experiencer argument carries dative case while the Stimulus is realized as a nominative-marked NP. As aspectual features and the combinability with SE are not the primary criteria in the classifications of Psych verbs and, instead, morphosyntactic realizations of arguments represent the most important consideration, the decision to classify these two verbs together seems justified.

At this point, we can state this observation in the form of the following generalization: the distribution of cases on arguments of the form nominative-oblique case (dative or genitive) is available only in non-causative environments (under “non-causative” I mean eventualities that lack a causative component). Let us restate this generalization in structural terms by saying that this distribution of cases on arguments can take place only in the absence of a causative v head because causative v is responsible for the licensing/assignment of accusative. This would mean that in the examples in (52) and (53), there is either no v head at all or there is a special type of v head, which does not carry causative semantics and does not require the presence of accusative on the internal argument. In the case of those verbs that require the obligatory SE morpheme (53), if we are committed to the principles of DM, we are compelled to choose the latter option because this special non-causative v would be required as the host of SE in these constructions. In the case of structures like (52), we are not immediately compelled to assume the presence of this extra syntactic head and if there is one, it would have to be null.

With regard to the structures like (55) with the obligatory SE morpheme, I should note that they are analyzed as syntactically derived even in more lexically oriented approaches. For instance, Marelj (2004), who approaches the constructions with SE from the perspective of Reinhart’s

(2003, 2016) Theta System, treats the structures with SE (in languages that have this morpheme) as syntactically derived, as opposed to similar structures in languages without SE, which are derived in the lexicon. In concrete terms, even though an anticausative verb like the one in (56) in English would be treated as derived in the lexicon through the application of what Reinhart (2003, 2016) calls Arity Operations, the Serbian equivalent with SE would be derived in syntax, and the presence of this morpheme would be an indication of syntactic derivation.

(56) The chair broke.

Following Chierchia (2004) and Reinhart (2003), Marelj (2004) extends this syntactic analysis of SE to what she calls ‘frozen entries’ such as (53). Part of the reason for this decision is theory internal because she treats SE as an exponent of a syntactic manipulation of the argument structure of a particular verb. Assuming that SE can also be inserted in the lexicon would blur the boundaries between lexical and syntactic languages in this domain. More broadly, however, she observes that the ‘frozen entries’ could, in fact, be anticausative versions of potential, but for some independent reason unrealized, transitive entries. With regard to the verb *desiti se* (‘happen’), which is never used without SE, Marelj (2004) argues that it could be treated as an unaccusative version of a transitive verb which would mean something like [BRING ABOUT]. However, in Serbian, this particular meaning is realized in the form of a different lexeme due to some contingent reasons. The evidence for this view comes from languages in which the meanings of [HAPPEN] and [BRING ABOUT] are morphologically related. One example comes from Hebrew (57).

(57) *xolel* ‘bring about’ -> *hitxolel* ‘happen/take place’ (Marelj 2004, p. 265)

One should note that in the Hebrew example in (57) the unaccusative meaning is morphologically more complex and has an additional morpheme *hit* which seems to have a similar role to that of SE in Serbian.

The analysis of examples without SE (52) in comparison to those with SE (53) raises the question about the distinction between typical anticausatives and unaccusatives because one might be tempted to simply say that the difference between (52) and (53) is only superficial, and these forms are underlyingly the same glossing over some potential distinctions. However, it has been observed that unaccusatives and anticausatives exhibit different behaviors when it comes to some syntactic tests (Haegeman 1994). Take the pair in (58) as an example of this discrepancy.

- (58) a. There arrived a group of students from abroad.
b. *There broke a chair.

(58a) shows that unaccusatives can be used in *there*-constructions while anticausatives cannot (58b). The syntactic difference between unaccusatives and anticausatives has received support in psycholinguistic studies as well, where the presence of the trace of the moved NP after unaccusatives can always be detected in language processing, which is not the case with all anticausatives (Friedmann, Taranto, Shapiro, and Swinney 2008). So, unaccusatives and anticausatives might not involve completely identical underlying syntactic structures. Otherwise, it would be difficult to account for the contrast in (58), as well as Friedman et al.'s (2008) experimental evidence. Languages such as Serbian, where anticausatives involve an additional morpheme (SE), contribute an additional reason for a possible distinction between the two categories.

In light of this mismatch between unaccusatives and anticausatives, one should be wary of treating the structures in (52) and (53) as identical as well. The discrepancy between anticausatives

and unaccusatives is morphologically marked in Serbian (with the SE morpheme). Apart from a very small number of verbs such as the one in (53), SE anticausatives have transitive counterparts. However, Serbian also has simple ('SE-less') unaccusatives (59). These verbs do not have transitive counterparts and they do not combine with SE.

- (59) a. Jovan je pao.
 Jovan.NOM AUX fell
 'Jovan fell.'
- b. Jovan je umro.
 Jovan.NOM AUX died
 'Jovan died.'

It has been observed that unaccusatives can form so-called *l*-participles also known as active participles in the traditional literature but not *n*-participles, which are traditionally labeled passive participles²⁷ (Aljović 2000)(60).

- (60) a. pali anđeo
 fall.L.PRT angel
 'fallen angel'
- a'. *padnut anđeo
 fall.PASS.PRT angel
 Intended: 'fallen angel'
- b. umrli pisac
 die.L.PRT writer
 'dead author'

²⁷ The Serbian terms are *radni glagolski pridev* (lit. 'active verbal adjective') for the active participle/*l*-participle and *trpni glagolski pridev* (lit. passive verbal adjective) for the passive/*n*-participle.

- b'. *umrni pisac
 die.PASS.PRT writer
 ‘dead writer’

On the other hand, verbs that produce SE anticausatives allow passive participles or *n*-participles but not *l*-participles. In that sense, the distinction between anticausatives and unaccusatives, which is morphologically apparent as well, surfaces once again in the domain of participle formation.

- (61) a. Stolica se slomila.
 chair SE broke
 ‘The chair broke.’
- b. slomljena stolica
 break.PASS.PRT chair
 ‘broken chair’
- c. *slomila stolica
 break.L.PRT chair

Returning now to Class 3 verbs in (52) and (53), we can see that they do not exhibit the characteristics of either anticausatives or unaccusatives. They do not produce either of the two participles (62-63).

- (62) a. Jovanu se sviđa čaj.
 Jovanu.DAT SE like tea.NOM
 ‘Jovan likes the tea.’
- b. *sviđani čaj/ Jovan
 like.PASS.PRT tea/ Jovan.NOM

- c. *svidali čaj/ Jovan
like.L.PRT tea/ Jovan.NOM

- (63) a. Jovanu prija čaj
Jovan.DAT appeal tea.NOM
'The tea appeals to Jovan.'

- b. *prijali čaj/ Jovan
like.L.PRT tea/ Jovan.NOM

- c. *prijani čaj/ Jovan
like.PASS.PRT tea/ Jovan.NOM

In this respect, these verbs behave like unergatives, which also disallow both types of participles

(64)

- (64) a. Dečak trči.
boy runs
'The boy is running.'
- b. *trčani dečak
run.PASS.PRT boy
- c. *trčali dečak
run.L.PRT boy

I should note that the inability of the verbs in (62) and (63) to yield participle forms is not a characteristic of the entire category of Psych verbs, as Psych verbs of other classes (Class 2) conform to the same patterns observed with non-Psych verbs (65).

- (65) a. Ivan je iznervirao Jovana.
 Ivan.NOM AUX annoyed Jovan.ACC
 ‘Ivan annoyed Jovan.’
- b. Jovan se iznervirao.
 Jovan.NOM SE annoyed
 ‘Jovan got annoyed.’
- c. iznervirani Jovan
 annoy.PASS.PRT Jovan.NOM
 ‘annoyed Jovan’
- d. *iznervirali Jovan
 annoy.L.PRT Jovan.NOM

At this point, we can conclude that Class 3 verbs in (52) and (53) (with and without SE) exhibit identical behavior when it comes to the tests that tease apart unaccusatives, anticausatives, and unergatives, and they pattern with unergatives in failing to produce either of the two types of participles. What is crucial for our purposes here is that the presence/absence of obligatory SE with Class 3 verbs does not make a significant difference in the syntactic behavior of the verb, and verbs with obligatory SE do not pattern with anticausative verbs. I take this to mean that whatever the SE morpheme does with these verbs, its function is not identical to anticausative (and, for that matter, reflexive) SE.

Given that SE does not have the anticausative function with those Class 3 verbs that obligatorily appear with this morpheme while it cannot combine with other Class 3 verbs, one can assume that Class 3 verbs do not project either causative vP or VoiceP. In that sense, they are non-causative and non-agentive. The absence of these functional layers precludes anticausative and

reflexive forms under the analysis developed in this section. These verbs could still in principle include a version of *v* that is not marked for causativity given the ‘flavors of *v*’ approach (Folli and Harley 2005).

3.2.4. Layers of verbal structure inside SE forms of Psych verbs

The internal structure of verbal items can be further explored with respect to the licensing of various event modifiers. An extensive line of research on the internal structure of verbal participles, for instance, has revolved around the presence/absence of different verbal layers (*v*P, VoiceP) inside these participles (Gehrke 2013, 2015; Alexiadou and Anagnostopoulou 2009; Alexiadou, Iordăchioaia, Cano, Martin and Schäfer 2013; Alexiadou, Gehrke and Schäfer 2014, *inter alia*). In this subsection, I will look at the combinability of SE anticausatives derived from Serbian Psych verbs with different event modifiers in order to diagnose the presence of different layers in their internal structure. In the previous subsection, I made tentative proposals concerning the presence of various layers of verbal structure with different classes of Psych verbs in Serbian. These proposals have implications for the licensing of event modifiers. Therefore, the availability of SE forms derived from these verbs can be used as a test of the predictions stemming from these proposals, and consequently, the proposals themselves.

I will have to preface that discussion with a brief excursus into the reasoning behind the postulated link between internal functional structure of various verb-derived items and the licensing of various types of event participants and event modifiers. After that, I will try to adapt those diagnostics to Serbian and explain why I will use a particular event modifier as an indicator of the presence or absence of a particular verbal layer. Finally, I will make a connection between the observations about the presence of various verbal layers in SE anticausatives with the observations about the possible structural locations of SE made in the previous two subsections.

I will show that the analysis presented in the previous subsection needs to be modified to accommodate some nuances in the distribution of relevant event modifiers. In the previous section, it was argued that the difference between reflexive and anticausative uses of SE can be captured by assuming that SE merges with the Voice head with reflexives and with *v* head with anticausatives. In this section, I will show that a distinction has to be made between Psych verb anticausatives and typical anticausatives since Psych verb anticausatives exhibit an important component of reflexivity, which is not present with typical anticausatives. This distinction will be encoded by assuming that the structure proposed for anticausatives applies to typical anticausatives, as well as a restricted group of Psych verb anticausatives, while the majority of Psych verb anticausatives project VoiceP as well, and this layer of structure is responsible for their reflexive flavor. Crucially, Psych verb anticausatives are still not identical to reflexives. To accommodate for this distinction as well, I will assume that in reflexive structures the subject is located in SpecVoiceP while with ‘reflexive-like’ Psych verb anticausatives, it is located in SpecvP.

3.2.4.1. Diagnosing the presence of internal verbal structure

Kratzer (2000) observes that adjectival participles in German can be divided into two classes according to whether or not they can be combined with the *immer noch* (‘still’) adverbial (66).

- (66) a. Die Geisslein sind immer noch versteckt.
 the little goats are still hidden
 ‘The small goats are still hidden’
- b. Das Theorem ist (*immer noch) bewiesen.
 the theorem is (*still) proven

Literally: ‘The theorem is still proven’ (Kratzer 2000, pp. 385-386)

As shown in (66), participles like *bewiesen* (‘proven’) cannot be combined with *immer noch* (‘still’), but participles like *versteckt* (‘hidden’) can. Kratzer (2000) ties this distinction between the two kinds of participles to Parsons’s (1990) observation that states resulting from the culmination of some events can be undone while states that emerge after the culmination of other events cannot (reversible v. irreversible states). In (67a), the goats can be discovered once they are hidden, which means that they will not be hidden anymore whereas in (67b), if the theorem is proven it stays proven forever after (i.e. the results of the proving event cannot be undone). Kratzer (2000) calls those participles that can combine with *immer noch* (‘still’) *target state participles* and those participles that do not combine with this adverbial she terms *resultant state participles*. These different meanings associated with the two classes of participles also reveal a structural difference, which she encodes in terms of target state participles being derived from a category-neutral root and resultant state participles being derived from a VP.

Looking at English adjectival participles, Embick (2004) observes a distinction of a similar kind. He points to examples such as (67).

- (67) a. This door was built open/*opened.
b. This door was built closed.

What (67) shows is that there are some participles like *opened*, which always imply an event having taken place. This is the reason why this participle is incompatible with the context of (67a) because nothing can happen to a door before it is built. Therefore, a door can only be built open given that *open* is an adjective that does not carry the event implication. A participle like *closed* does not have its adjectival counterpart and so it is ambiguous between the purely adjectival/stative reading that does not trigger an event implication and the verbal one, which does. Embick (2004)

calls the adjectival participles *stative* and the verbal ones *resultative*. Like Kratzer (2000), Embick (2004) associates this distinction between purely stative/adjectival participles like *closed* and the eventive one with a structural distinction whereby the former are derived directly from a root while the latter are derived from a ν P which carries eventive semantics.

Alexiadou and Anagnostopoulou (2008) observe that Kratzer (2000) and Embick (2004) propose roughly the same structures to encode different things. Namely, Kratzer's (2000) target state participles (e.g. *hidden*) do not correspond to Embick's (2004) stative participles (e.g. *closed*) even though both are supposed to be derived from a categoryless root. Therefore, Kratzer's (2000) classification does not make room for purely stative participles that have no event implications such as *closed*. On the other hand, Embick's (2004) distinction between stative and resultative participles would classify both Kratzer's (2000) classes as resultatives, thereby failing to make the distinction she is arguing for. Alexiadou and Anagnostopoulou (2008) propose a three-way division that is supported by Greek morphological data. In Greek, Embick's (2004) stative participles are derived by means of the suffix *-tos*, while another suffix, *-menos*, is used to build resultatives. Therefore, Embick's (2004) distinction matches the morphological facts from Greek. Still, Alexiadou and Anagnostopoulou (2008) propose that a further division can be made within *-menos* participles to account for Kratzer's (2000) observation, and they do so by proposing that in Greek, Kratzer's (2000) target state participles are built from ν Ps by adding the suffix *-menos*, but this same suffix can be added to VoiceP's in order to build Kratzer's (2000) resultant state participles. In short, according to Alexiadou and Anagnostopoulou (2008), Greek participles can be derived from categoryless roots (i.e. Embick's stative participles), ν Ps (Kratzer's target state participles) and VoiceP's (Kratzer's resultant state participles).

The evidence for the presence of VoiceP with some participles in Greek comes from the fact that they can be combined with *by*-phrases (68).

- (68) a. Ta keftedakia ine tiganis-men-a apo tim Maria.
the meatballs are fried by the Maria
'The meatballs are fried by Maria.'
- b. *Ta keftedakia ine tigan-ita apo tin Maria.
the meatballs are fried by the Maria
'The meatballs are fried by Maria.'

(Alexiadou and Anagnostopoulou 2008, p. 35)

Alexiadou and Anagnostopoulou (2008) follow Kratzer (1994) in assuming that *by*-phrases have to be licensed by the presence of VoiceP in the structure, which is why the ability of a participle to combine with a *by*-phrase indicates the presence of VoiceP. By this logic, however, VoiceP is absent from adjectival participles in German (and English) as they do not allow *by*-phrases (69).

- (69) *Die Zeichnung ist von dem Kind angefertigt.
the drawing is by the child produced
'The drawing is produced by the child.'

(Alexiadou, Gehrke and Schäfer, 2014 p. 126)

What is more, German adjectival participles do not pass other tests for the presence of the external argument such as control into purpose clauses and blocked disjoint reference (Alexiadou, Gehrke and Schäfer 2014). The way Alexiadou and Anagnostopoulou (2008) deal with this crosslinguistic discrepancy is by assuming that Greek *-menos* participles include VoiceP while this projection is absent in German and English.

Building on Gehrke's (2013) work, Alexiadou et al. (2014) argue that adjectival participles project VoiceP even in English and German. The crucial observation here is that the sentence in (69) becomes grammatical as soon as the definite article inside the *by*-phrase is changed into an indefinite one (70).

- (70) Die Zeichnung ist von einem Kind angefertigt.
the drawing is by a child produced
'The drawing is produced by a child.'

(Alexiadou, Gehrke and Schäfer 2014, p. 126)

The acceptability of a *by*-phrase containing an indefinite DP in (70) suggests that the reason why the *by*-phrase is not acceptable in (69) is not due to the fact that the participle is unable to license a *by*-phrase (70 shows that it is), but due to some other factor blocking definite DPs in this context.

Alexiadou et al. (2014) argue that German adjectival participles do in fact project the VoiceP layer, which licenses *by*-phrases. However, the reason why definite DPs are blocked in these contexts is because participles, unlike verbal passives, do not refer to a particular event. Instead, they denote an event kind. Consequently, the event modification that they license is acceptable so long as it can be construed as kind modification. When applied to the contrast between (69) and (70), this explanation works as follows. The fact that the definite DP inside the *by*-phrase is unacceptable in (69) is not because there is no VoiceP to license it, but because the definite DP cannot be construed as modifying an event kind. In order for a particular child to be an Agent in a drawing event, there has to be a particular drawing event involved. In contrast, the reason why (70) is acceptable is because the DP has generic reference. This is important because a generic Agent does not have to modify an event particular. In other words, what the sentence in

(70) entails is that the drawing in question appears to be the result of a generic drawing event carried out by a generic child. Therefore, the features of the drawing itself reveal who the author (Agent) is or more precisely of what age they are.

The way in which crosslinguistic variation in this domain between German and English, on the one hand, and Greek, on the other, is explained under this approach is by assuming that Greek adjectival participles, unlike English and German ones, do instantiate the event, which allows them to freely combine with *by*-phrases of all kinds (Alexiadou, Gehrke and Schäfer 2014). The reason why English and German adjectival passives do not instantiate the event (i.e. it stays in the kind domain) is tied to the presence of aspectual morphemes in Greek adjectival participles, which do not appear with English and German ones (Alexiadou, Gehrke and Schäfer 2014). Simplifying Alexiadou et al.'s (2014) technical implementation of this assumption, one can say that the presence of the aspectual marker in Greek adjectival passives is responsible for instantiating the event by assigning it run time before the participle gets stativized by inserting the adjectival passive head. In contrast, in English and German, the event does not get instantiated before the insertion of the stativizing adjectival passive head because there is no aspectual marker that could do this.

What this brief outline of the literature on these topics reveals is that different kinds of event modifiers have to be licensed by the appropriate functional projection in the extended VP domain. Consequently, the combinability of these event modifiers with SE anticausatives can be used to explore their internal structure. Before applying these tests, I will have to define the diagnostic tools for Serbian, and show that they can, in fact, be used in this way. There are several different event modifiers that I will use for these purposes so I will first describe their characteristics.

3.2.4.2. The diagnostics for different layers of verbal structure in Serbian

The first event modifier that will be used to test the internal structure of SE anticausatives is the *by*-phrase. The Serbian equivalent of English *by*-phrases is the *od strane* (lit. ‘from the side of’)-PP. While prescriptive grammars often emphasize that *od strane*-PPs are stylistically marked and that they should be avoided, the linguistic fact is that they are, nonetheless, present in usage. Within the context of this dissertation, however, the question is whether they can be used as a diagnostic for the presence of VoiceP in a given structure like the English *by*-phrase. I will suggest that they can. Looking at the distribution of *od strane* (‘by’)-PPs in Serbian, we can conclude that like English *by*-phrases, they appear most frequently in verbal passives (71).

- (71) Kuća je sagrađena od strane poznatog graditelja.
house.NOM AUX built from side famous.GEN builder.GEN

‘The house was built by a famous builder.’

Serbian tends to behave like English and German and unlike Greek in terms of licensing *by*-phrases with adjectival passives as they tend to produce ungrammatical outcomes when combined with adjectival passives. In Serbian, the difference between verbal and adjectival passives is more apparent than in English but less so than in German. Unlike verbal passives, adjectival passives require the copular verb BE²⁸, which is apparent in the following examples (72).

- (72) a. Vrata su još uvek zatvorena.
door BE more ever closed
‘The door is still closed.’
- b. Vrata su zatvorena pre sat vremena.
door AUX closed before hour time

²⁸ In (72a), the verb form *su* is glossed as BE because it is assumed to be a realization of the copula (BE) whereas in (72b), the same form is glossed as AUX because it is treated as a past tense auxiliary.

‘The door was closed an hour ago.’

c. Vrata su bila zatvorena pre sat vremena.
door AUX BE closed before hour time

‘The door was closed an hour ago.’

The participle in (72a) can only be interpreted as an adjectival passive. The presence of the adverbial *still* indicates that this would be a target state passive in Kratzer’s (2000) terminology, which is a kind of adjectival passive. Example (72b) contains a verbal passive, which names a particular closing event that took place an hour ago. While the participle in (72b) has the same form as the one in (72a), (72b) can be interpreted only as an eventive verbal passive due to the presence of the temporal adverbial *pre sat vremena* (‘an hour ago’). This adverbial situates the eventuality in the past and forces an eventive reading. Sentence (72c) illustrates the past tense use of an adjectival passive, and it shows that the presence of the copular verb BE, in addition to the auxiliary BE, is required for a past tense use of an adjectival passive.

Now, in relation to Alexiadou et al.’s (2014) account, one would expect Serbian adjectival passives to behave like Greek ones because the participles incorporate aspectual affixes, the only difference being that these affixes are prefixal in Serbian and suffixal in Greek. However, this is not what happens as Serbian adjectival passives tend to reject *by*-phrases (73).

(73) ?*Vrata su još uvek zatvorena od strane portira.
door BE more ever closed from side doorman

‘The door was closed an hour ago by the doorman.’

In (73), the combination of the temporal adverbial *još uvek* (‘still’) ensures the adjectival passive interpretation, and the outcome is highly degraded if not completely unacceptable. This suggests

that *by*-phrases do not combine with adjectival passives in Serbian. The English translation of this sentence is grammatical but only under the eventive reading. The intended, adjectival reading of the English equivalent of the Serbian sentence is also ungrammatical.

I will not delve deeper into the significance of the inability of Serbian adjectival passives to license *by*-phrases despite the fact that they do incorporate aspectual morphemes (this will become an issue in Chapter 5, dealing with Psych verb participles). What is important for my purposes here is the point that *by*-phrases have to be structurally licensed in Serbian because then they can be used to diagnose the presence of VoiceP. In the previous subsections (3.2.1; 3.2.2 and 3.2.3), a series of proposals was presented concerning the presence of VoiceP with different SE derivations from Psych verbs, and this diagnostic can now be used as a test of those proposals.

With this diagnostic at hand, let us now return to the question of the internal structure of various verbal constructions involving SE. First off, as expected, the reflexive SE never combines with the *by*-phrase (74). This, of course, holds with non-Psych verb reflexives as well (75).

(74) *Ivan se voli od strane Petra.
 Ivan.NOM SE love from side Petar.GEN
 Literally: ‘*Ivan loves himself by Peter.’

(75) *Dete se češlja od strane majke.
 child.NOM SE comb from side mother
 Literally: ‘*The child is combing herself by her mother.’

Assuming reflexive constructions are agentive, which seems uncontroversial at least for prototypical reflexives (75), the unacceptability of the *by*-phrase in these constructions can be attributed to semantic incompatibility rather than the lack of VoiceP as its licensor. Thus, theoretically, it is possible that these structures are syntactically well-formed but semantically

uninterpretable, but there could also be a syntactic mechanism that would filter them out. I will not delve into these issues further. Suffice it to say that *by*-phrases are incompatible with purely reflexive structures, just as they cannot be combined with simple transitives (**Peter kissed Mary by Tom*).

Some but not all Class 2 verbs also allow reflexive interpretations, as observed in the previous subsection. For instance, (76a') has a reflexive interpretation while (76b') only has the anticausative one.

- (76) a. Petar hrabri Ivana.
 Petar.NOM encourages Ivan.DAT
 ‘Peter is encouraging Ivan.’
- a'. Ivan se hrabri.
 Ivan.NOM SE encourage
 ‘Ivan is encouraging himself.’
- b. Petar nervira Ivana.
 Petar.NOM annoys Ivan.DAT
 ‘Peter is annoying Ivan.’
- b'. *Ivan se nervira
 Ivan.NOM SE annoy
 Intended: ‘Ivan is annoying himself.’

As expected, those Class 2 verbs that do allow reflexive interpretations do not combine with *by*-phrases either (77).

- (77) *Ivan se hrabri od strane Petra.
 Ivan.NOM SE encourage from side Petar.GEN

Literally: ‘*Ivan is encouraging himself by Peter.’

Anticausatives with SE do not combine with *by*-phrases (78). Of course, this also applies to non-Psych verbs (79).

(78) *Ivan se iznervirao od strane Petra.

Ivan.NOM SE annoyed from side Petar.GEN

Literally: ‘*Ivan got annoyed by Peter.’

(79) *Kuća se srušila od strane majstora.

house.NOM SE fell from side craftsman.GEN

Literally: ‘*The house fell by the craftsman.’

It is worth pointing out that the incompatibility of *by*-phrases with SE anticausatives could be explained from the standpoint of the standard approach to SE because anticausatives do not project VoiceP under this account (Schäfer and Vivanco 2016). However, this incompatibility can also be explained following Chierchia’s (2004) analysis because a *by*-phrase denoting an Agent would clash with the presence of an Effector argument with the entailment that the impulse for the event originated in the effector itself. In that sense, the data in (78) and (79) do not necessarily tilt the scale in the direction of either of the theories.

Next, following Harley (2013) and various other authors in the assumption that VoiceP is separate from *v*P (a distinction which has been amply documented with reference to various languages that treat them as morphologically separate), we can look for certain diagnostics that could enable us to answer the question of the presence of *v*P with SE anticausatives. This investigation has consequences for the discussion about the role of SE because showing that *v*P is present with SE anticausatives could be seen as evidence against the standard account and in favor

of Chierchia’s (2004) approach. To see why this is so, one should consider the semantic formulae for the transitive and anticausative versions of the verb *open* provided by Schäfer and Vivanco (2016) and shown here in (80).

- (80) a. $\lambda x \lambda y [(y) \text{ CAUSE } [\text{BECOME } [(x) \text{ open}]]]$
 b. $\text{b.} \lambda x [\text{BECOME } [(x) \text{ open}]]$

Assuming that at least the semantics of CAUSE is hosted by νP , the semantic structures proposed by these authors translate into a view of anticausatives which does not necessarily require the presence of νP (i.e. they are in line with Chomsky’s 1995 proposal about the structure of unaccusatives). Therefore, testing for the presence of νP with anticausative forms of Psych verbs is significant because it could help in teasing these different approaches apart.

Alexiadou et al. (2015) explore the licensing of different types of external arguments across languages as a way of testing for the presence of various verbal layers. For instance, in German, Agents are introduced by means of *von*(‘from’)-PPs (the German equivalent of English *by*-phrases); *mit*(‘with’)-PPs introduce instruments while *durch*(‘through’)-PPs and sometimes *von*(‘from’)-PPs are used to include Causers. The availability of these phrases with different verbal forms is, thus, taken as an indication of the presence/absence of a particular layer of verbal structure.

To illustrate, German passives allow Agents, instruments and Causers (81a). On the other hand, German anticausatives disallow Agents and instruments (81b) while allowing Causers (81c).

- (81) a. Die Vase wurde von Peter / durch den Erdstoß /
 the vase was by Peter / through the earth.tremor /
 mit dem Hammer zerbrochen.
 with the hammer broken

‘The vase was broken by Peter / by the earthquake / with the hammer.’

- b. Die Vase zerbrach *von Peter / *mit dem Hammer.
the vase broke by Peter/ with the hammer

‘The vase broke *by Peter/*with the hammer.’

- c. Die Vase zerbrach durch ein Erdstoß.
the vase broke through an earthquake

‘The vase broke from an earthquake.’

(Alexiadou, Anagnostopoulou and Schäfer 2015, p. 33)

Alexiadou et al. (2015) take these facts as clear indication that the VoiceP layer is present in German passives but not in anticausatives because they assume that Agents and instruments are licensed by Voice.

In Serbian, instruments are expressed by means of instrumental-marked bare NPs while *od*(‘from’)-PPs are used to express Causers (Kovačević 1988; Ivić 1954). When it comes to the distribution of these expressions, Serbian exhibits a similar pattern as German (82).

- (82) a. Vaza je razbijena od strane Petra/ čekićem /
vase.NOM AUX broken from side Petar.GEN/ hammer.INST/
??od zemljotresa.
from earthquake.GEN

‘The vase was broken by Peter / with a hammer / from the earthquake.’

- b. Vaza se razbila *od strane Petra / *čekićem /
vase.NOM SE broke from side Petar.GEN/ hammer.INST /
od zemljotresa.
from earthquake.GEN

‘The vase broke by Peter / with a hammer / from the earthquake.’

In (82a), *od strane* (‘by’)-PPs and instrumental NPs are completely grammatical with a passive verb form but the *od* (‘from’)-PP introducing a Causer is severely degraded. In contrast, the anticausative verb form in (82b) rejects *od strane* (‘by’)-PPs and instrumentals while accepting *od* (‘from’)-PPs.

However, it is not the case that all anticausatives reject instrumental NPs. For instance, (84) exemplifies an anticausative verb which does combine with instrumental, and in this case, the *od* (‘from’)-PPs is somewhat degraded. It is worth pointing out that anticausatives such as the one in (83) represent a minority, and the vast majority of them reject instrumentals and accept *od* (‘from’)-PPs.

- (83) Kanal se napunio smećem/ ?od smeća.
canal SE filled garbage.INST/ from garbage.GEN

‘The canal got filled with garbage’

With regard to the licensing of *od* (‘from’)-PPs, in light of the above examples, it seems that they are licensed by *v*P. A closer examination reveals that they are actually not licensed syntactically but semantically. This is revealed by examples such as (84).

- (84) Bokser je bio plav od udaraca / *od strane protivnika.
Boxer.NOM AUX BE blue from hits.GEN / from side opponent

‘The boxer was bruised from hits /by the opponent.’

The example in (84) does not contain a verbal form at all as it represents an adjectival/predicative construction. While an *od strane* (‘by’)-PP is unacceptable in this context, an *od* (‘from’)-PP is fully grammatical. A straightforward explanation for this contrast is that *od strane* (‘by’)-PPs have

to be licensed syntactically by Voice, but *od*(‘from’)-PPs are licensed semantically if the sentence allows for an interpretation that would involve some kind of causative relationship.

Another point about the distribution of *od*(‘from’)-PPs is that they are generally not compatible with agentive constructions (85).

- (85) Ivan je polomio stolicu / ??od besa / iz besa
 Ivan.NOM AUX broke chair / from anger.GEN / out-of anger.GEN
 ‘Ivan broke the chair out of anger.’

While the *od*(‘from’)-PP is in principle acceptable in (85), it is incompatible with an agentive interpretation of the sentence. What this means is that the *od*(‘from’)-PP in (85) forces a reading where Ivan is not the Agent but a Causer (i.e. he did not perform the action on purpose). The agentive interpretation can be obtained if the cause is expressed by means of an *iz*(‘from’)-PP. *Iz*(‘from’)-PPs and *od*(‘from’)-PPs are virtually synonymous, as is apparent from their translations, but as Kovačević (1988) points out, the distribution of *iz*(‘from’)-PPs expressing cause is rather restricted because they typically combine with NPs denoting emotions or mental states (86).

- (86) Ivan je (*slučajno) upucao šefa iz osvete / iz besa/
 Ivan.nom AUX accidentally shot boos out.of revenge / out.of anger/
 iz ljubomore.
 out-of jealousy
 ‘Ivan (accidentally) shot his boss out of revenge / anger / jealousy.’

Nonetheless, I would like to stress that *iz*(‘from’)-PPs do not clash with agentive semantics as the sentence in (86) is always agentive, which is evidenced by the unacceptability of the adverbial *slučajno*, meaning ‘accidentally’. On the other hand, this adverbial is compatible with a sentence

(89) Vaza je razbijena od strane Petra / čekićem /
vase.NOM AUX broken from side Petar.GEN / hammer.INST /
??od zemljotresa.
from earthquake.GEN

‘The vase was broken by Peter / with a hammer / by the earthquake.’

Assuming that VoiceP is present with passives, which is what explains the licensing of *od strane* (‘by’)-PPs, the implicit Agentive semantics that this layer of structure introduces clashes with the semantics of the *od*(‘from’)-PP, as do all Agents.

To sum up, *od strane*(‘by’)-PPs diagnose the presence of VoiceP; instrumental NPs are also licensed by VoiceP while *od*(‘from’)-PPs denote causes that are semantically licensed if the denotation of the given sentence allows a type of prior indirect cause, but they clash with agentive semantics so they diagnose the absence of VoiceP. With these diagnostics at hand, let us examine the internal structure of SE anticausatives with Psych verbs.

3.2.4.3. Diagnosing the presence of verbal structure with SE anticausatives

The distribution of instrumental NPs and *od*(‘from’)-PPs with Psych verb anticausatives is not homogenous. As has been shown, only Class 2 Psych verbs produce proper anticausatives. However, they can be divided into four classes when it comes to the licensing of instrumental NPs and *od*(‘from’)-PPs (90).

(90) a. Jovan se zaprepastio bratovim ponašanjem /
Jovan.NOM SE amazed brother.INST behavior.INST
??od bratovog ponašanja.
from brother’s behavior.GEN

‘Jovan got amazed by his brother’s behavior.’

- b. Jovan se razbesneo *sestrinim ponašanjem
 Jovan.NOM SE angered sister's.INST behavior.INST
 / od sestrinog ponašanja.
 from sister's behavior.GEN
 'Jovan was angered by his sister's behavior.'
- c. Jovan se ohrabrio bratovim ponašanjem /
 Jovan.NOM SE encouraged brother's.INST behavior.INST
 ?od bratovog ponašanja.
 from brother's behavior.GEN
 'Jovan encouraged himself with his brother's behavior.'
 'Jovan got encouraged by his brother's behavior.'
- d. Jovan se osramotio svojim ponašanjem /
 Jovan.NOM SE embarrassed self's.INST behavior.INST
 *od svog ponašanja.
 from self's behavior.GEN
 'Jovan embarrassed himself with his behavior.'

There are verbs that allow instrumental NPs while only marginally (if at all) allowing *od*('from')-PPs (90a). Then, there are verbs that allow only *od*('from')-PPs and reject instrumental NPs (90b). Some verbs license both of these causal expressions (90c). Finally, there are verbs that reject *od*('from')-PPs and accept instrumentals but the interpretation is always reflexive, as evidenced by the translation in (90d). To the extent that the distribution of these causal expressions is indicative of structural features, the data in (90) show clearly that Class 2 verbs are not structurally identical.

In the previous subsection, I suggested that instrumental NPs and *od strane*('by')-PPs are licensed by VoiceP while *od*('from')-PPs are rejected by VoiceP. I will use these criteria as a diagnostics for the presence of functional structure with the different anticausatives in (90).

The assumption that instrumental NPs are licensed by Voice while *od*('from')-PPs are rejected by Voice explains why they exhibit at least partial complementary distribution. Instrumental NPs are used in transitive agentive constructions and with passive participles where *od*('from')-PPs are disallowed while *od*('from')-PPs are used with anticausatives, where instrumental NPs are normally blocked. We encounter two kinds of exceptions to this generalization. One exception is the limited availability of instrumental NPs with certain anticausatives, as illustrated in (83), repeated here as (91) as well as the co-occurrence of instrumental NPs and *od*('from')-PPs with certain Psych verb anticausatives, such as (90a) and (90c).

- (91) Kanal se napunio smećem/ ?od smeća.
 canal SE filled garbage.INST / from garbage.GEN
 'The canal got filled with garbage.'

The idea that instrumental NPs are licensed by VoiceP commits us to the notion that VoiceP is present in all those structures where instrumental NPs are acceptable. This would further imply a reflexive analysis of examples such as (91), (90a) and (90c). While this could potentially be done relying on Chierchia's (2004) analysis of anticausatives, I do not think that applying a fully reflexive analysis to all these examples can ultimately deliver the desired results. For one thing, it seems necessary to maintain a semantic contrast between (90a) and (90c), where (90c) can clearly have a reflexive reading, as indicated by the English translation but such a denotation is missing

with (90a). In other words, while one can purposefully try to encourage oneself (by thinking about another person's brave act, for instance) as in (90c), it is not so easy to see how one can amaze oneself in the same volitional manner. Therefore, we definitively have a semantic contrast between (90a) and (90c) which needs to be accounted for. On top of this, it is even more difficult to see how a reflexive analysis extends to examples with inanimate subjects such as (91) since inanimates cannot act upon themselves in any meaningful way. On the other hand, the standard analysis of SE argued for by Schäfer and Vivanco (2016) fares no better because it leaves mysterious not only the crosslinguistic difference between languages that employ SE to derive anticausatives and those that do not, but also the fact that some anticausatives license instrumental NPs (with different interpretations) while some license *od*('from')-PPs. In the next subsection, I will provide a sketch of an account that promises to reconcile the two opposing views while accounting for the data at hand (Schäfer and Vivanco 2016; Chierchia 2004).

3.2.4.4. Reflexives as anticausatives? – gradients of reflexivity

I would argue that what the data presented in (90) speak in favor of a middle-ground solution reconciling Chierchia's (2004) view that all anticausatives are reflexives and Schäfer and Vivanco's (2016) account whereby there is no systematic link between these two kinds of structures in spite of the presence of SE (or its equivalent) in many languages. I propose that VoiceP is present with those SE forms that have purely reflexive interpretations and missing in those without it.²⁹ This basically means that prototypical reflexivity emerges in combination of two features, [REFLEXIVE] contributed by SE and [AGENT] supplied by VoiceP. SE can also

²⁹LF derives the interpretation by directly reading it off of syntactic structure. Structures that involve VoiceP and the reflexive marker SE are interpreted as pure reflexives. Those that involve only VoiceP without SE are interpreted as simple agentives without reflexivity, while structures with SE lacking the VoiceP layer are interpreted as anticausatives. In the remainder of the section, I make a structural distinction between psych-verb anticausatives and typical anticausatives which relies on the same mechanism.

introduce the feature [REFLEXIVE] in contexts where the feature [AGENT] is missing, deriving what I will call ‘semi-reflexive’ readings arising in the combination of the feature [REFLEXIVE] and the feature [CAUSE] carried by the causative v^0 when there is an overt argument of v^0 [CAUSE] in Spec v P position. Finally, pure anticausative meanings or typical anticausative meanings arise when the feature [REFLEXIVE] combines with a v^0 [CAUSE] without an argument in its specifier position, in which case the argument of [CAUSE] is interpreted as generic. I will argue that the data from Psych verbs motivate the existence of the second category [REFLEXIVE; CAUSE], explaining the presence of reflexive semantics in the absence of agentivity, the licensing of instrumental case-marked NP Causers. The same account will also prove promising when it comes to explaining the puzzling lack of Psych verb anticausatives in English tying it to the absence of SE and the inability to derive the [REFLEXIVE; CAUSE] type of construction. The account will be illustrated and explicated in what follows.

In the previous subsection, we left the presence of instrumental case-marked NP Causers with some Psych verb anticausatives unexplained. Following the analysis presented above, I assume that these are licensed by a filled Spec v P position, which also triggers a reflexive-like interpretation of SE anticausatives along the lines of Chierchia (2004). In other words, the difference between typical anticausatives and anticausatives derived from Psych verbs, which license instrumental case-marked NPs, lies in the position of the subject. With Psych verb anticausatives, the Spec v P position is filled by the subject (i.e. its copy) while with typical anticausatives, the Spec v P position is empty. What this account delivers is the semantic distinction between Psych verb anticausatives, which have some reflexive flavor without being fully reflexive (90a) since they lack the agentive component. Moreover, it allows us to explain the fact that these verbs license instrumental case-marked NPs expressing the Causer/Instrument (90a). The account

also captures the apparent lack of any kind of reflexive semantics with typical anticausatives involving inanimate entities, which cannot be conceived as acting on themselves in any way.

In some of the approaches that assume the distinctness of VoiceP and v P (Harley 2013) it is assumed that v P does not project a Spec position, and instead the argument of CAUSE is semantically bound by the DP in SpecVoiceP position. Harley (2013) follows Hale and Keyser (2002), who assume that the projection introducing the external argument is always added independently to an already formed verbal structure. This assumption fits her observation that in Hiaki, a language that has overt morphological markers for causatives (v) and Applicatives, the Applicative head which intervenes between the causative morpheme and the entire structure can, then, be assigned an Agent (92). In (92), the causative suffix *-tua* (the spellout of v) is realized below the Applicative suffix *-ria*, which introduces the applied argument (in this case ‘little child’). The Agent (‘I’) is subsequently added to the structure via VoiceP, which is projected above the Applicative head. According to Harley (2013), the fact that the Applicative head is higher than the causative marker (v^0) forces the conclusion that the Agent must be introduced by a projection other than v P. If the Agent were introduced in Spec v P, the Applicative argument would scope over the entire situation including the external argument, which would yield an incorrect semantics.

(92) Nee ili usi-ta avion-ta ni’i-tua -ria.

I little child-ACC plane-ACC fly-CAUS-APPL

‘I made an airplane fly for the / a little child.’ (Harley 2013, p. 50)

Harley (2013), thus, assumes that v P introduces only the semantics of CAUSE, while the external argument is merged later as the Spec of VoiceP.

While I agree with Harley (2013) that a separate projection is needed to introduce the external argument in order to derive the fact that the Agent scopes over the Applicative argument,

I do not believe that this analysis forces the stipulation that ν P does not include a Spec position. The same effect would be obtained if the Agent simply moves from Spec ν P to SpecVoiceP, and such an analysis would not require a separate mechanism whereby the Agent semantically binds the argument of CAUSE, which is semantically active but syntactically unrealized. Instead, the copy of the DP introducing the Agent would also simultaneously be the syntactic argument of ν^0 (CAUSE) by virtue of it being located in Spec ν P.

Another approach that assumes the distinctness between VoiceP and ν P comes from Merchant (2008), who uses it as an explanation for Voice mismatches under ellipsis (93).

- (93) a. (1)The janitor must remove the trash whenever it is apparent that it should be.
b. b. The system can be used by anyone who wants to. (Merchant 2008, p. 169)

Under the syntactic identity approach to ellipsis, the structure that is elided should be identical to the structure of the antecedent. The examples in (93) show that an active-voiced ellipsis site can be identified with a passive-voiced antecedent and vice versa. Merchant (2008) assumes that these facts could be captured straightforwardly by assuming that what is elided is a phase, and hence, a ν P (Chomsky 2008). Up to the level of ν P, there is no distinction between a passive and an active construction and in both cases the Agent is in Spec ν P. What accounts for the difference between active and passive is a higher projection, VoiceP, which can either be active or passive. The DP introducing the Agent moves from Spec ν P to SpecVoiceP, where it is demoted by the passive version of Voice⁰ but preserved by its active counterpart. (The idea of ‘Spec ν P to SpecVoiceP’ movement is also articulated in Collins 2005).

I follow Merchant’s (2008) approach in assuming that ν P does indeed have a Spec and the argument of CAUSE moves to SpecVoiceP to become an Agent. This approach is also more suitable for cases when the external argument actually has the role of Causer as in (94) because

the alternative would be to either say that the wind is somehow an Agent in SpecVoiceP despite being inanimate or that Spec ν P is present in this construction but not in those with proper Agents.

(94) The wind opened the door.

The idea that a Causer moves to become an Agent, on the other hand, might violate the strict ban on DP/NPs having multiple thematic roles acquired by movement into θ -positions (Baker 1988). However, the theoretical grounding for the ban on movement into θ -positions has disappeared in Minimalism due to Chomsky's (1995) abandonment of D-Structure as a theoretically significant construct. Further, Chomsky's (2001, 2005) reduction of Move and Merge to two flavors of the same operation (Internal and External Merge, respectively) makes it extremely difficult to explain why External Merge into θ -positions would be allowed while Internal Merge should be blocked. The removal of the ban on movement into θ -positions has produced some extremely interesting theoretical achievements allowing Bošković and Takahashi (1999) to reduce scrambling as a seemingly optional movement to a Last Resort operation driven by LF-movement into θ -positions and Hornstein (1999) to dispense with null arguments (PRO) observed in the so-called control constructions by deriving them through movement into θ -positions.³⁰ In what follows, I will, thus, assume that movement from Spec ν P to SpecVoiceP upgrading the Causer to Agent falls squarely in the theoretical mainstream of Minimalism.

Going back to the empirical issues at hand, the assumption that VoiceP is present whenever instrumental NPs are licensed would face a great difficulty explaining examples with inanimate subjects, like (91) repeated here as (95).

(95) Kanal se napunio smećem / ?od smeća.
 canal.NOM SE filled garbage.INST / from garbage.GEN

³⁰ For an application of the same logic to morphological issues related to aspect in Slavic see Jabłońska (2004).

‘The canal got filled with garbage.’

It is impossible to reconcile the idea that the canal is an Agent in (95) with any meaningful definition of the Agent theta role. However, one could argue that it can have a thematic role of Causer as inanimate objects are, in fact, typical Causers. As I have pointed out in [Section 3.2], Schäfer and Vivanco (2016), following Alexiadou et al. (2015) and Doron (2003), argue that the reflexive-like analysis of inanimate Causers runs into a conceptual difficulty predicting self-contradicting semantics for sentences like (96), where a reflexive-like analysis would give rise to a denotation according to which the gap caused its own existence.

(96) A gap opened.

I agree with the abovementioned authors that examples like (96) pose a great difficulty for an account of SE that extends the reflexive semantics to all the cases where this element appears. However, I would argue that this type of analysis is not problematic precisely in those cases where I am claiming it should apply, namely, some Psych verbs and a very limited number of anticausatives with inanimate subjects like (95).

Talmy’s (1988) notion of the divided psyche accounts for cases where we observe purely reflexive readings in the domain of predicates denoting psychological dynamics (39, repeated as 97).

(97) I held myself back from responding.

He argues that the reflexive reading of sentences such as (97) is possible because the conceptual framing of the sentence is one in which the central part of the psyche is acting against a peripheral part. There is no reason why this reasoning could not be extended to examples such as (90a), repeated here as (98).

(98) Jovan se zaprepastio bratovim ponašanjem /
 Jovan.NOM SE amazed brother.INST behavior.INST /
 ??od bratovog ponašanja.
 from brother's behavior.GEN

‘Jovan got amazed by his brother’s behavior.’

The sentence in (98) is not reflexive, but under the account being developed here it exemplifies this semi-reflexive or reflexive-like denotation [REFLEXIVE; CAUSE], where the subject is not an Agent in control of the process affecting his mental state. Rather, it is the other way around, the subject does not have control over this process. In Talmy’s (1988) terms, while in (97) the central part of the psyche overpowers the peripheral one, in (98), the peripheral part overpowers the central part. It could be said that the peripheral part of the psyche acts as a Causer acting upon the central part. Therefore, in (98), the instrumental NP is possible but the *od*(‘from’)-PP is degraded because the subject is in SpecvP (i.e. it has the thematic role of Causer), licensing instrumental NPs.

Regarding those cases where instrumental NPs are possible with SE anticausatives involving inanimates as in (99), there are reasons to distinguish the thematic role that the subject has in those situations from typical SE anticausatives that do not license instrumental NPs such as (99).

(99) Vrata su se otvorila *vetrom/ od vetra.
 door AUX SE open wind.INST / from wind.GEN

‘The door opened from the wind.’

This distinction can be explained on the basis of the observation that the instrumental NP and *od*(‘from’)-PP signal different causality patterns. I have already suggested that *od*(‘from’)-PPs denote the initial cause or the cause that merely initiates the event. In that sense, this cause is not

necessarily present in the run-time of the eventuality. On the other hand, an instrumental NP cause denotes a type of cause that is necessarily present during the run-time of the eventuality. The examples in (100) illustrate what I mean by this.

- (100) a. Petar je presekao hleb nožem.
 Petar.NOM AUX cut bread knife.INST
 ‘Peter cut the bread with a knife.’
- b. Kanta se napunila vodom.
 bucket SE filled water.INST
 ‘The bucket filled with water.’
- c. Tvrđava je opkoljena neprijateljskom vojskom.
 fortress AUX surrounded enemy.INST army.INST
 ‘The fortress is surrounded by the enemy army.’
- d. Plafon je podbočen čeličnom šipkom.
 ceiling AUX supported steel.INST pole.INST
 ‘The ceiling was supported with a steel pole.’

In (100a), the instrumental NP, *nožem* (‘knife’), participates in the process component of the cutting event (in Ramchand’s 2008 terminology). In other words, this simply means that the knife is present during the unfolding of the cutting event. In (100b), which is analogous to (98), the instrumental NP, *vodom* (‘water’), also participates in the unfolding of the event in question (a filling event). It could be said that the instrumental NP and the nominative subject are co-causes of the event. A similar pattern can be observed in stative situations (100c, 100d) where the state named by the verb is ‘maintained by’ (Neeleman and De Koot 2012) the joint presence of the subject and the entity denoted by the instrumental case-marked NP.

Returning to examples such as (91a) and (91b), repeated here as (101a) and (101b), respectively, in (101a), we also observe an instrumental-marked Causer argument alongside a nominative-marked Experiencer while an *od*(‘from’)-PP is rejected. The example in (101b) shows the opposite pattern – the instrumental NP is rejected while an *od*(‘from’)-PPs is grammatical.

- (101) a. Jovan se zaprepastio bratovim ponašanjem /
 Jovan.NOM SE amaze brother.INST behavior.INST
 ??od bratovog ponašanja.
 from brother’s behavior.GEN
 ‘Jovan got amazed by his brother’s behavior.’
- b. Jovan se razbesneo *sestrinim ponašanjem /
 Jovan.NOM SE anger sister’s.INST behavior.INST
 od sestrinog ponašanja.
 from sister’s behavior.GEN
 ‘John was angered by his sister’s behavior.’

Assuming that the presence of an instrumental NP (co)-Causer diagnoses the presence of an external argument (in Spec ν P and/or SpecVoiceP), the example in (100a) should be analyzed as a (semi-)reflexive structure with the Experiencer NP *Jovan* (‘John’) carrying the thematic role of Causer assigned in Spec ν P and Theme in the complement of $V^0/\sqrt{\quad}$.

With respect to examples like (101b), the rejection of the instrumental NP and the grammaticality of the *od*(‘from’)-PP should be taken as a signal of the lack of the external argument, which would license the instrumental NP denoting a (co)-Causer and block the *od*(‘from’)-PPs. In other words, the Experiencer NP *Jovan* (‘John’) is not Spec ν P nor in

SpecVoiceP because these positions are absent with these constructions. This means that it has to stay in the complement of the root, where it receives the thematic role of Theme.

The question that arises with respect to examples such as the one in (101b) concerns the role of SE in these non-reflexive structures. If we were to adopt an analysis of the kind proposed in Chierchia (2004), we would subscribe to a view that treats all instances of SE as having reflexive semantics. On the other hand, the standard analysis would treat all non-reflexive instances of SE as introducing anticausative semantics (Schäfer and Vivanco 2016). We have seen that anticausatives of Psych verbs split into two groups when it comes to the licensing of different expressions of cause with one group licensing instrumental NPs like reflexives and the other licensing *od*(‘from’)-PPs like anticausatives. This split was taken as a point of departure for an analysis that steers the middle course between these two opposing views. What this entails is that SE can potentially carry over its reflexive semantics even outside of the category of purely reflexive uses to generate semi-reflexive anticausatives. On the other hand, SE can also indicate an unspecified cause, giving rise to the pure anticausative semantics. As stated at the beginning of this subsection, the purely reflexive semantics emerges when SE is combined with Voice⁰; semi-reflexivity is the product of the combination of SE with *v* [CAUSE] in the presence of an overt argument of [CAUSE] in Spec v P. Finally, pure anticausatives are derived when SE is merged with *v* without an overt argument in its Spec position, resulting in the generic interpretation of the external argument of [CAUSE].

So far, the account explains the distribution of instrumental case-marked NP Causers with Psych verb anticausatives, which are analyzed as semi-reflexives, by assuming that they are licensed by the presence of an argument in Spec v P position. It also explains the licensing of *od*(‘from’)-PPs with typical anticausatives and exceptional Psych verb anticausatives (101b) based

on the idea that these structures do not include any external argument positions (SpecvP or VoiceP), which would clash with the direct cause semantics of these PPs.

Finally, looking for additional, independent evidence for the current proposal, we can consult syntactic tests that distinguish between internal and external arguments with intransitive verbs. Namely, if the Experiencer NP is in SpecvP with semi-reflexive Psych verb anticausatives whereas it is in some VP/root internal position with purely anticausative ones, then any test that diagnoses a difference between the internal and the external argument should, by hypothesis, yield different outcomes for the two structures. There are not a lot of such tests and they are not highly reliable as native speaker judgments tend to vary considerably, but one test that could prove helpful comes from Aljović (2000), which is why I will apply it here in full knowledge of its limited reliability.

Aljović (2000) suggests that Left Branch Extraction (LBE) could be used to tell apart unaccusatives (with an internal argument) from unergatives (with an external argument) in Serbo-Croatian. She points to the following contrast (102).

- (102) a. Koji_i je prvi stigao [t_i student]?
 which is first arrived student
 ‘Which student arrived first?’
- b. ??Koji_i je prvi telefonirao [t_i student]?
 which is first telephoned student
 ‘Which student telephoned first?’
- c. Koji_i je [t_i student] prvi telefonirao?
 which is student first telephoned
 ‘Which student telephoned first?’

(Aljović 2000, p. 6)

Namely, the unaccusative verb *stići* ('arrive') allows LBE from its internal argument NP, which is realized post-verbally in example (102a). In contrast, the unergative verb *telefonirati* ('telephone') blocks this extraction if its argument is realized post-verbally (102b) while allowing it in preverbal position (102c). I would point out, once again, that the contrast between (102a) and (102b) could vary from speaker to speaker, and in my judgment, it would, perhaps, be somewhat less sharp than what is stated by Aljović (2000), but I, nonetheless, find the contrast perceptible.

Applying this test to the examples in (101), we would expect the verb *zaprepastiti se* ('amaze'), which exemplifies the semi-reflexive use of SE to exhibit behavior that is more similar to unergatives because its subject is in SpecvP as opposed to the verb *razbesneti se* ('anger'), whose subject is VP/root internal. In my judgement, the examples in (103) indicate that this prediction is borne out.

- (103) a. ??Koji se zaprepastio student?
 which SE amazed student
 'Which student got amazed?'
- b. ?Koji se razbesneo student?
 which SE angered student
 'Which student got angry?'

LBE, indeed, seems to be more degraded with semi-reflexive anticausatives (103a) than with pure anticausatives (103b). Thus, this test, as far as its reliability goes, suggests that there does seem to be a contrast between these two kinds of Psych verb anticausatives in Serbian, with those that are closer to typical anticausatives in allowing *do*('from')-PPs behaving more like unaccusatives and

those that are closer to reflexives in allowing instrumental NPs exhibiting a somewhat different behavior, which is closer to unergatives.

Another test that we could employ here comes from what Ilić (2013) calls dative anticausative construction with a negatively affected interpretation. Ilić (2013) observes that anticausatives can be combined with dative NPs to give rise to an interpretation where the (animate) referent of the dative-marked NP is negatively affected by the event denoted by the anticausative verb (104):

(104) Marku su se srušili svi mostovi.

Mark.DAT AUX SE fall.down all bridges.NOM

‘Mark lost all his hope.’ / ‘Literally: ‘To Mark all the bridges fell down.’

(Ilić 2013, p. 37)

This also extends to unaccusatives without SE but not to unergatives (105).

(105) a. Marku je pukla čaša.

Marko.DAT AUX broke glass.NOM

‘Marko’s glass broke.’

b. ??Marku je trčalo dete.

Marko.DAT AUX ran child.NOM

‘Marko’s child ran.’

In other words, the dative anticausative construction with negatively-affected interpretation also seems to draw the line between unergatives and unaccusatives, and, therefore, we would expect it to be sensitive to the difference between the two kinds of Psych verb anticausatives discussed above if they, indeed, have different structures (106).

- (106) a. Marku se razbesnelo dete.
 Marko.DAT SE angered child.NOM
 ‘Marko’s child got angry.’
- b. ??Marku se zaprepastilo dete.
 Marko.DAT SE amazed child.NOM
 ‘Marko’s child got amazed.’

The contrast in (106) might suggest that this is, indeed, the case. Reflexive-like Psych verb anticausatives are less likely to participate in dative anticausative constructions while more typical anticausatives like *razbesneti se* (‘anger’) do.

The nuanced and varied judgements involved in these two tests warn against treating the data presented here as definitive or conclusive evidence in either direction. The judgements that are presented here should be read as illustrations of certain tendencies that can serve as independent indications of the correctness of the proposed analysis rather than direct proofs.

3.3. The lack of Psych verb anticausatives in English

If the analysis of SE anticausatives with Psych verbs laid out here is on the right track, it could potentially shed some light on the puzzling lack of causative alternation with Psych verbs in English. As has already been pointed out, on the standard approach to SE anticausatives, which treats these constructions as structurally identical to anticausatives derived from causative alternations in languages that do not have the SE morpheme, one would not expect to observe this crosslinguistic correlation between the presence/absence of SE and presence/absence of causative alternation with Psych verbs. Alexiadou and Iordăchioaia (2014) address the puzzling lack of causative alternation with Psych verbs in English in contrast to languages like Greek and Romanian, where object Experiencers produce anticausatives quite freely. They show that even

those cases in which English seems to allow causative alternation with Psych verbs do not qualify as instances of causative alternation after all (107). Namely, the fact that *grieve*, which is one of the rare object Experiencers in English that seems to allow causative alternation, fails to combine with the “in X time” adverbial shows that it does not allow an eventive change-of-state reading, which is the necessary component of causative alternation (108).

- (107) a. Sue grieved over the court decision for/*in half an hour.
 b. Sue grieved at the court decision for/*in half an hour.
 c. The court decision grieved Sue for/*in half an hour.

(108) The chair broke *for/in five minutes.

Alexiadou and Iordăchioaia (2014) do not provide a full account of this crosslinguistic mismatch between English, on the one hand, and Greek and Romanian, on the other. However, they do suggest that the lack of causative alternation in English might be a peculiarity of English due to a combination of diachronic factors including, among other things, a change in reflexivity marking.

Here, I would like to suggest that the lack of causative alternation with Psych verbs in English might be due to the lack of SE in the system³¹. It has been argued so far that the SE morpheme in Serbian can generate: (i) purely reflexive constructions (109a); (ii) semi-reflexive structures with Psych verbs structurally closer to unergatives (109b); and (iii) purely anticausative structures which are rather similar to unaccusatives (109c).

- (109) a. Ivan se brije.
 Ivan.NOM SE shaves
 ‘Ivan is shaving (himself).’

³¹ This is not meant to imply that the lack of SE in a language automatically entails the lack of psych verb anticausatives since the inventory of the language in question could, in principle, include another morpheme that would derive the same outcome. In fact, Greek might be a case in point since it does not have the exact equivalent of SE but it does have the so-called “non-active” morpheme that performs some of the same functions.

b. Ivan se iznervirao.

Ivan.NOM SE annoyed

‘Ivan got annoyed.’

c. Ivan se razbesneo.

Ivan.NOM SE angered

‘Ivan got angry.’

The English anticausative structure does not match any one of these structures. Namely, as has already been mentioned, English anticausatives are not structurally identical to unaccusatives despite the widespread assumption to the contrary. As Haegeman (1994) observed, unaccusatives can be embedded under *there*-constructions while anticausatives and unergatives cannot (110).

(110) a. There arrived three pirates.

b. *There broke a chair.

c. *There sang three girls.

Haegeman (1994) takes the example in (110) as clear evidence of structural dissimilarity between typical unaccusatives and ‘derived unaccusatives’ or anticausatives. On her account, the reason why anticausatives do not combine with *there*-constructions is due to the fact that the single argument of these verbs is merged externally, and it competes with *there* for the subject position. To this, one might add Ackema and Schoorlemmer’s (1995) claim that with middles, the Theme argument is actually merged externally. If there is any structural similarity between middles and anticausatives, and there are reasons to assume there is, Ackema and Schoorlemmer’s (1995) claim speaks in favor of the idea that the only argument of anti-causatives finds itself in the external argument position. Therefore, the idea that with Psych verb anticausatives exhibiting some

properties of reflexivity the Experiencer is located in SpecvP is certainly not without a precedent in the literature.

If English anticausatives are not structurally the same as unaccusatives, they are also different from unaccusative-like SE forms in Serbian (109c). An anticausative derived from a Psych verb would, therefore, have to be similar to the reflexive-like construction in Serbian because they both pattern with unergatives in that they seem to involve an external argument in SpecvP. This means that the English anticausative derived from a Psych verb with the Experiencer in the external argument (SpecvP) position would require reflexive-like semantics because a DP referring to an animate entity in SpecvP is to be interpreted as a genuine external argument with the thematic role of Causer. If the Experiencer is at the same time the Causer of the mental state that he or she undergoes, it follows that the entire eventuality is conceived as semi-reflexive. The reason that this semantics is blocked in English but allowed in languages with SE might be due to the difference in the ways in which reflexivity is marked in these different languages. Namely, in English, reflexive semantics can be obtained only by means of a full reflexive pronoun merged in the position of the internal argument while the function of the causative alternation is to signal the lack of external argument (Schäfer and Vivanco 2016). Consequently, the reflexive-like semantics that would arise under Psych verb causative alternation is inexpressible in English.

Overall, the goal of the previous subsection was to show that not all SE forms derived from Psych verbs in Serbian are the same. This has been done on the basis of the combinability with different expressions of causation whereby verbs like *zaprepastiti se* ('amaze') have been shown to combine with instrumental NPs while verbs like *razbesneti se* ('anger') combine with *od*('from')-PPs. Moreover, the latter allow LBE if their only argument is realized postverbally, but the former do not. To account for this difference, I proposed an analysis in which verbs like

zaprepastiti se ('amaze') are treated as semi-reflexives whereas verbs like *razbesneti se* ('anger') are treated like unaccusatives. In structural terms, this was implemented by assuming that the single argument of the former is located in SpecvP (where it receives the thematic role of Causer). On the other hand, the single argument of the latter stays in the VP/root complement position, where it receives the thematic role of Theme.

3.4. On 'frozen entries'

In terms of broader implications, the analysis presented in this section suggests that Cherchia's (2004) analysis of SE forms is on the right track as it points towards the idea that reflexive semantics should not be restricted only to agentive contexts (i.e. those meanings that can be realized with full reflexive pronouns like *him/her/itself* in English). At the same time, his analysis runs into serious difficulties when applied to the most typical anticausatives pointed out by Schäfer and Vivanco (2016). However, I have tried to show that Schäfer and Vivanco's (2016) rejection of the extension of reflexive semantics outside of the context of pure reflexives might not be justified either. Instead, I opt for a tripartite division of SE forms into: (i) pure (agentive) reflexives; (ii) semi-reflexives (causative reflexives); and (iii) typical anticausatives. It has been pointed out that the analysis of certain SE forms derived from Psych verbs in Serbian as semi-reflexive has the potential to explain not just their semantic peculiarities but also their ability to license instrumental case-marked Causer NPs. Further, the logic behind this analysis could potentially account for the puzzling lack of causative alternation with Psych verbs in English based on the assumption that the combination of features [REFLEXIVE; CAUSATIVE] is not lexicalized in this language³².

³² I have to point out that while English cannot derive structures such as (i), which are available by means of SE forms in Serbian (ii), English can, nonetheless, productively derive the same meaning using the auxiliary verb *get* as indicated in the translation of (ii) and additionally illustrated in (iii). It is possible that in the absence of SE carrying

One piece of the puzzle about the role of SE with Psych verbs concerns the existence of the so-called ‘frozen entries’ or those verbs that never occur without SE. As has been pointed out, there are a number of Psych verbs, which always include the SE morpheme (111).

- (111) a. Jovan se boji mraka.
 Jovan.NOM SE scare dark.GEN
 ‘Jovan is afraid of the dark.’
- a’. *Mrak boji Jovana.
 dark.NOM scare Jovan.ACC
 Intended: ‘Darkness scares Jovan.’
- b. Jovanu se sviđa muzika.
 Jovan.DAT se like music.NOM
 ‘Jovan likes music.’
- b’. *Muzika sviđa Jovana.
 Music.NOM like Jovan.ACC
 Intended (roughly): ‘Music fascinates Jovan.’
- c. Jovan se divi Mariji.
 Jovan.NOM SE admire Marija.DAT
 ‘Jovan admires Marija.’

the feature combination [REFLEXIVE; CAUSATIVE], English still possesses a *v* head with this feature combination, which is phonologically instantiated as *get*.

- (i) Steven annoyed.
 (ii) Stevan se iznervirao.
 Stevan.NOM SE annoyed
 ‘Stevn got annoyed.’
 (iii) Steven got angry.

c'. *Marija divi Jovana.

Marija.NOM admire Jovan.ACC

Intended (roughly): 'Marija fascinates Jovan.'

The fact that there are no corresponding entries without SE associated with these roots could be taken as a challenge to the view that SE is inserted in syntax, which is a view one is committed to if one espouses the postulates of DM. The alternative is to assume that SE originates in the lexicon as part of the lexical entry for these verbs and there are simply no entries without SE. The lexicalist approach to SE would entail that the verbs that do exhibit both forms (with and without SE) have two separate entries in the lexicon for these two forms. A more radical lexicalist option is to assume that all verbs that occur with SE are stored in the lexicon together with this morpheme and that it can be eliminated over the course of the syntactic derivation to produce the forms without SE.

The idea that SE is stored in the lexicon and syntactically removed is articulated in Pesetsky (1994). The starting point of his argument is the existence of 'frozen entries' or *reflexiva tantum* forms in his terminology. He reasons that the existence of forms that never occur without SE in languages like French and Russian suggests that SE is part of the lexical entry. He goes on to suggest that this unusual direction of the syntactic derivation can be accounted for in light of his proposal, which involves the presence of a null causative morpheme CAUS, which introduces causative semantics and the thematic role of Causer. He argues that this morpheme would also eliminate SE from the lexical entry that inherits it from the lexicon explaining why the version without SE needs to have causative semantics as well.

Pesetsky (1994) does not provide an explicit semantics for SE, and assuming that it carries no semantic contribution would not necessarily hurt his proposal. In that sense, the idea that SE is eliminated over the course of the syntactic derivation would not constitute a violation of Monotonicity Hypothesis as this hypothesis bans the elimination of meaning components as a consequence of adding morphological material. On the other hand, his proposal would introduce the possibility of morphological structure removal in the inventory of syntactic operations. Given the conceptual disadvantage of this approach and its incompatibility with DM, it is desirable to provide an explanation for the existence of ‘frozen entries’ that does not complicate the system to such an extent.

The idea that each verb that appears with SE also has a separate lexical entry without it would solve the problem of ‘frozen entries’ by stipulating that these verbs simply do not have their counterparts without SE. Of course, this does not explain the problem in any profound way as it merely relocates it to the domain of the lexicon. Moreover, the semantic and syntactic relationship between the forms with and without SE is of such a regularity that the idea that these rules have to be stated lexically for each entry individually appears too cumbersome and contradicts the conceptual drive to account for such regularities derivationally.

Of course, the derivational approach to SE runs into the problem of the existence of ‘frozen entries’ and it cannot produce a profound explanation for them. Marelj (2004) simply assumes that these ‘frozen entries’ are derived syntactically as well, but their potential counterparts without SE are simply not realized. In the terminology of DM, this could be accounted for by exploiting the difference between the list of vocabulary items (List 2) and the list of roots (List 1) (see Harley and Noyer 1999). According to this view, vocabulary items instantiate complexes of heads created by head movement. In the case of ‘frozen entries’ such as *bojati se* (‘fear’), it could be said that it

is a vocabulary item that instantiates a complex head including an anticausative (or semi-reflexive) v merged on top of the abstract root $\sqrt{\text{BOJ}}$ together with the root itself, which, then, head moves to adjoin this v . On the other hand, the alternative structure containing a causative vP on top of this root simply does not have a corresponding vocabulary item. The reasons for the absence of this particular vocabulary item could be the result of contingent (e.g. diachronic) factors. Grković-Major (2013) notes the existence of the transitive form of this verb in earlier varieties of Serbian (see also Section 7.3. where this problem re-appears).

There is also some synchronic evidence that this approach is on the right track. For instance, there are some ‘frozen entries’ that lack the version without SE only in one aspectual version but not in the other. Consider the verb *diviti se* (‘admire’) which is a ‘frozen entry’ as illustrated in (112c). However, this verb lacks the form without SE only in its imperfective version. Its perfective counterpart is not a ‘frozen entry’ (112).

- (112) a. Jovan se zadiovo novim filmom.
 Jovan.NOM SE PF.admire new.INST movie.INST
 ‘Jovan was fascinated by the new movie.’
- b. Novi film je zadiovo Jovana.
 new.NOM movie.NOM AUX PF.admire Jovan.ACC
 ‘The new movie fascinated Jovan.’

These facts suggest that the structure containing the abstract root $\sqrt{\text{DIV}}$, a causative vP and the projection that hosts the semantics of perfective aspect can be instantiated by means of the vocabulary item *zadiovo* (‘admire, fascinate’). Thus, for some idiosyncratic reason, there is no vocabulary item instantiating the complex consisting of the abstract root $\sqrt{\text{DIV}}$, a causative vP and imperfective aspect.

Similarly, there are pairs of close synonyms where one member of the pair is a frozen entry and the other one is not. For instance, the verb *plašiti (se)* is a close synonym of the verb *bojati se* ('fear'). However, as shown in (113), the verb *bojati se* does not have a counterpart without SE while the verb *plašiti (se)* does.

- (113) a. Marko plaši Ivana.
 Marko.NOM scares Ivan.ACC
 ‘Marko scares Ivan.’
- a’. Ivan se plaši Marka.
 Ivan.NOM SE scare Marko.GEN
 ‘Ivan is afraid of Marko.’
- b. *Marko boji Ivana
 Marko.NOM scare Ivan.ACC
 Intended: ‘Marko scares Ivan.’
- b’. Ivan se boji Marka.
 Ivan.NOM SE scare Marko.GEN
 ‘Ivan is afraid of Marko.’

The examples in (113) show that these verbs are not only close synonyms but that their morphosyntactic properties are virtually identical. With both *bojati se* and *plašiti se*, the Experiencer takes nominative case while the Stimulus participant is expressed by means of a genitive case. Therefore, the examples with *plašiti (se)* illustrate exactly what the alternation with SE would look like with *bojati se* if this verb could drop this morpheme. Nonetheless, one should

note that *plašiti se* has both aspectual options with and without SE (113), but *bojati se* does not (114).

- (114) a. Marko stalno plaši Ivana.
 Marko.NOM always scare Ivan.ACC
 ‘Marko scares Ivan all the time.’
- b. Marko je uplašio Ivana.
 Marko.NOM AUX PF.scared Ivan.ACC
 ‘Marko scared Ivan.’
- c. Ivan se plaši Marka.
 Ivan.NOM SE scare Marko.GEN
 ‘Ivan is afraid of Marko.’
- d. Ivan se uplašio Marka.
 Ivan.NOM SE PF.scared Marko.GEN
 ‘Ivan got scared of Marko.’
- (115) a. Ivan se boji Marka.
 Ivan.NOM SE scare Marko.GEN
 ‘Ivan is afraid of Marko.’
- b. *Ivan se zabojavao Marka.³³
 Ivan.NOM se scared Marko.GEN
 ‘Ivan got scared of Marko.’

³³ Note that the option with *pobojati se* (‘get scared a little/somewhat/for a short while’) is possible in Croatian (link: http://hjp.znanje.hr/index.php?show=search_by_id&id=eVxmUBQ%3D), and some Serbian speakers accept this form, too. The prefix *po-*, however, with the quantificational meaning ‘a little/somewhat/for a short while’ introduces a very special type of perfectivity typically treated as ‘superlexical’ (Jablonska 2004).

In that sense, it is not possible to say that these two verbs are completely identical in both syntactic and semantic terms, but it could very well be the case that the impoverished paradigm of *bojati se* is actually the consequence of the fact that the meanings that would be instantiated by the gaps in this paradigm can freely be expressed with *plašiti (se)*.

While these facts do not prove that ‘frozen entries’ like *bojati se* (‘fear’) and *diviti se* (‘admire’) are syntactically derived, they do add weight to the conceptual argument that they should be analyzed that way. Namely, the alternative options such as treating all forms with SE as stored in the lexicon and the idea that these verbs are actually stored with SE, which is then eliminated in syntax to produce the versions without SE, do not add anything substantial to our understanding of these forms while at the same time making the system significantly more complex. On the other hand, the theoretical apparatus of DM enables us to interpret the lack of SE-less forms with ‘frozen entries’ as the consequence of the incidental lack of vocabulary items that would instantiate these chunks of structure. The fact that the verb *diviti se* (‘admire’) can occur both with and without SE, in its perfective version as well as the fact that the closest synonym of *bojati se* (‘fear’), which is *plašiti (se)* also has both forms strongly suggests that there is no systematic obstacle for the realization of the gaps in the paradigms of these two verbs and that these gaps are simply a matter of dialectological/diachronic coincidence.

As has already been observed in Chapter 2, these ‘frozen entries’ exhibit one additional puzzling property. Namely, they consistently realize their Stimulus participant in the form of an oblique case-marked bare NP. The correlation between the presence of obligatory SE and oblique case-marked bare NPs as expressions of the Stimulus participant suggests that the complete story about frozen entries cannot be told without an account of the status of these bare NP elements. This issue will be taken in the following chapter.

4. The status of oblique case-marked bare NP elements with Serbian

Psych verbs

This section will address the role of oblique case-marked bare NP expressions introducing participants in the eventualities denoted by Psych verbs. Under ‘oblique case-marked bare NP elements’, I am referring to NPs both simple and complex NPs which are not complements of prepositions. The focus will be on their syntactic and semantic status. Syntactic theory provides us with three possibilities when it comes to capturing the syntactic status of these elements. They could be characterized as arguments, adjuncts or complements, and the goal of this section will be to determine which of these labels fits best for them. The argument of this section will be that oblique-cased bare NP elements that can be found with Psych verbs with the SE morpheme are best analyzed as arguments. It will be shown that the analysis of these elements as bare NP adjuncts is both conceptually and empirically untenable as they do not behave like adjuncts on a number of tests nor is it possible to extend the existing accounts of bare NP adjuncts to cover these cases (cf. Larson 1985). It will also be argued that these elements cannot be analyzed as complements either because the existing accounts of verbal complements as developed for English face some important conceptual and empirical obstacles when confronted with these data (Neeleman 1997). The only remaining option will be to treat these elements as arguments. Once it is shown that these expressions should be treated as arguments, a set of questions about the status and origin of the case forms that they carry opens up. The goal of this chapter will not be to provide an answer to these questions; however, they will be tackled in Chapter 7.

One possible approach to bare NP elements with Psych verbs is to treat them as adjuncts. The fact that these elements can be left out under certain conditions might be taken as evidence in favor of this approach. It is certainly a fact that it is easier to leave out the genitive NP expressing

the Stimulus with *bojati se* ('fear') (1), for example, than it is to leave out the nominative case-marked subject or the accusative case-marked object of its transitive synonym *plašiti* (2):

- (1) a. Ivan se boji Marka.
 Ivan.NOM SE scare Marko.GEN
 'Ivan is scared of Marko.'
- b. Ivan se boji (kad je pored Marka).
 Ivan.NOM SE scare when AUX beside Marko.GEN
 'Ivan is scared (when he is near Marko).'
- (2) a. Marko plaši Ivana.
 Marko.NOM scare Ivan.ACC
 'Marko scares Ivan.'
- b. *Marko plaši.
 Marko.NOM scares
 Intended: 'Marko is scared.'
- c. *Plaši Ivana (kad je pored Marka).
 scare Ivan.ACC when AUX beside Marko.GEN
 Intended 'Ivan is scared when he is near Marko.'

At the same time, one should note that even when the genitive-marked bare NP is left out, the participant that it expresses is always implied. For instance, when someone utters (3), the source of fear is always assumed, and it is contextually determined.

- (3) Bojim se (mraka).
 scare.1.SG SE dark.GEN
 ‘I am afraid (of the dark).’

This fact sets apart verbs that express the Stimulus participant by means of a bare NP from verbs that express it with a PP. For instance, the sentences in (4) can be uttered without there being any clear implication about the source of the mental state in question.

- (4) a. Ivan se razbesneo.
 Ivan.NOM SE angered
 ‘Ivan got angry.’
- b. Ivan uživa.
 Ivan.NOM enjoys
 ‘Ivan is enjoying himself.’

As has been demonstrated in the previous chapter, it is certainly possible to express the cause of the mental state in (4a) by adding the *od* (‘from’)-PP as in (5). However, the existence of this cause is by no means implied or entailed in (4a).

- (5) Ivan se razbesneo zbog/ od bratovog ponašanja.
 Ivan.NOM SE angered because/ from brother’s behavior.GEN
 ‘Ivan got angry because of his brother’s behavior.’

This contrast between *bojati se* (‘fear’) and *razbesneti se* (‘anger’) in terms of whether or not the cause or source of emotion is implied can be illustrated by means of the following test modeled on Chierchia’s (2004) ‘*by itself/da sé*’ test (see also Schäfer and Vivanco 2016 for criticism). The test concerns the interpretative contrast in (6).

- (6) a. Bojim se samog sebe.
 scare.1.SG SE alone.GEN self.GEN
 ‘I am afraid of myself.’
- b. Divim se samom sebi.
 admire.1.SG SE alone.DAT self.DAT
 ‘I admire myself (alone).’
- c. Razbesneo sam se sam od sebe.
 angered AUX.1.SG SE alone from self.GEN
 ‘I got angry for no apparent reason.’

In (6), the phrase *sam sebe* (lit. ‘oneself alone’) is combined with *bojati se* (‘fear’) and *diviti se* (‘admire’), on the one hand (6a-a’) and *razbesneti se* (‘get angry’) (6b). The meaning of this phrase, however, is not the same in these sentences. Namely, (6a) means that the person is literally afraid of themselves (e.g. of something they could do under given circumstances). Similarly, in (6a’), the meaning is that they admire themselves. On the other hand, (6b) does not mean that the person got angry at themselves, nor does it mean that they did something to get themselves angry. It simply means that there was no clearly discernible outside cause that lead to the Experiencer’s mental state. I take this contrast as evidence that the genitive case-marked expression introduced by bare NPs with Class 4 verbs (6a-a’) necessarily denotes a participant in the eventuality rather than being an adjunctive expression of cause, which is the case with *od*(‘from’)-PPs with unaccusatives and anticausatives (6b).

In sum, bare NP elements expressing the Stimulus participant with Psych verbs can be dropped more easily than regular (nominative or accusative-marked) arguments, but they clearly do not have the same status as adjuncts because if they are dropped, they are always implied. I

treat this as a subspecies of a particular phenomenon of the possibility of dropping the object with certain classes of verbs (e.g. *Mary is eating (dinner)*). In that sense, just because these bare NP elements can be dropped more easily than some arguments does not automatically mean that they are adjuncts.

The fact that these bare NPs cannot be treated as adjuncts is also apparent from a number of other tests. As a general rule, movement out of adjuncts is significantly more restricted than movement out of arguments. Bošković (2018) uses this rule as a way of separating bare NP adjuncts from arguments. He builds on his observation that unlike in English, where it is impossible to move a left branch of a DP (7a) while it is possible to extract the complement of the noun (7b)³⁴, in Serbian, the opposite is the case (Bošković 2014). In other words, LBE is possible (8a) while the movement of the NP complement is quite degraded (8b). His explanation for these facts is derived from the notion of NP/DP parameter where DP, which is assumed to be a phase, is not present in Serbian, a language without articles. The presence of DP blocks LBE in English, but its absence allows it in Serbian. In languages that do not project the DP layer, NP is a phase, which is why the movement of the NP complement is blocked in Serbian but allowed in English (Bošković 2014).

- (7) a. *Whose_i did you see t_i car?
 b. Who_i did you see a picture of t_i?
- (8) a. Čiji_i si video t_i auto?
 whose.ACC AUX.2.SG saw car.ACC
 ‘Whose car did you see?’

³⁴ Note that the NP that is being extracted in (7b) is strictly speaking a complement of what seems like a preposition of. However, mainstream generativism typically treats of-PPs in the complement position of a noun as DPs where *of* is an analytical expression of genitive case rather than being a full-fledged preposition (Selkirk 1977).

- b. ??Koga_i si video sliku t_i?
 who.GEN AUX.2.SG saw picture.ACC

Intended: ‘Who did you see a picture of?’

Bošković (2018) observes that the movement of the NP complement is completely ruled out when the movement takes place out of a bare NP adjunct (9a). In contrast, when the movement takes place out of an argument, the sentence is degraded but still marginally acceptable.

- (9) a. *Moga djeda_i je trčao [šumom t_i].
 my.GEN grandfather.GEN AUX.3SG run forest.INST

‘He ran through the forest of my grandfather.’

- b. ??Moga djeda_i je volio [šumu t_i].
 my.GEN grandfather.GEN AUX.3SG loved forest.ACC

‘He loved the forest of my grandfather’. (Bošković 2018, p. 269)

Applying this test to oblique case-marked bare NPs with Psych verbs in Serbian, one can observe that they behave like arguments. The sentence in (10), while still degraded, is not completely unacceptable, which is precisely what one would expect if the movement is taking place out of an argument rather than an adjunct, according to Bošković (2018).

- (10) ???Mog dede se divila šumi
 my.GEN grandfather.GEN SE admired forest.DAT

‘She admired my grandfather’s forest’

I should note, though, that this test is not applicable to genitive case-marked bare NPs for independent reasons. Namely, (11) shows that the extraction of the complement of the genitive case-marked bare NP with Psych verbs such as *bojati se* (‘fear’) is ungrammatical.

- (11) *Mog dede se bojala šume.
 my.GEN grandfather.GEN SE scared forest.GEN

‘She was afraid of my grandfather’s forest.’

The example in (11) could, thus, be taken as suggesting that genitive case-marked bare NPs that introduce the Stimulus participant with Psych verbs such as *bojati se* (‘fear’) are actually adjuncts while dative case-marked ones are arguments (10). However, there are reasons to believe that the ungrammaticality of (11) is due to a different kind of effect. What also sets (11) and (10) apart is the fact that in (11), the NP complement being moved as well as the head of its phrase carry genitive case. In (10), the complement carries genitive case, of course, while the head noun is dative case-marked. This is of importance because movement of an element across another element with the same case marking seems to be blocked or at least strongly degraded across the board in Serbian. This is best illustrated on the basis of long-distance scrambling data (12).

- (12) a. Petra_i je Stefan rekao da Ivan voli t_i.
 Petar.ACC AUX Stefan.NOM said that Ivana.NOM loves
 ‘It was Petar who Stefan said that Ivana loves.’

- b. *Petar_i je Stefan rekao da t_i voli Ivanu.
 Petar.NOM AUX Stefan.NOM said that loves Ivana.ACC
 Intended: ‘Steven said that Peter loves Ivana.’

- c. Petru_i je Stefan rekao da se t_i svideo poklon.
 Petar.DAT AUX Stefan.NOM said that SE liked gift.NOM
 ‘Stefan said that Peter liked the gift.’

- d. *Petru_i je Stefan Milošu rekao da se t_i
 Petar.DAT AUX Stefan.NOM Miloš.DAT said that se
 svideo poklon.
 liked present

Intended: ‘Stefan told Miloš that Peter liked the gift.’

What is apparent from the data in (12) is that long distance scrambling is completely grammatical in Serbian so long as the scrambled element does not cross over an element carrying the same case on its way to the left periphery of the matrix clause (Kovačević 2014). This is an effect that has been observed in other languages, too (see Kuno 1980 and Saito 1985 for discussions of a virtually identical phenomenon in Japanese).

The actual explanation for this effect is not particularly important for our purposes here but the fact that it exists can be taken as a strong indication that (11) is not ungrammatical because the moved element originates inside an adjunct. Rather, the ungrammaticality of (11) stems from the fact that the moved element is a genitive case-marked NP, which crosses over another genitive case-marked NP.

As has already been shown, genitive and dative are not the only two oblique case forms that can occur on bare NPs that appear with Psych verbs. There are a number of verbs that take instrumental-marked NPs (13a). The complements of these instrumental-marked bare NPs can be moved without causing a fatal violation associated with movement out of adjuncts or crossing over effects (13b).

- (13) a. Ponosim se [uspehom svog sina].
 pride.1.SG SE success.INST self's son.GEN
 ‘I am proud of my son’s success.’

- b. ??[Svog sina]_i se ponosim [uspehom t_i].
 self's son.GEN SE pride.1.SG success.INST
 'I am proud of my son's success.'
- c. *[Svoga sina]_i sam verovao [u uspeh t_i].
 self's son.GEN AUX.1.SG believed in success.ACC
 'I believed in my son's success.'

(13b) shows that instrumental NPs are not islands for extractions. Therefore, even though they do not allow cliticization, which is a sign that they might actually be PPs headed by a null P (Milićev and Bešlin 2019), they do not create a complete barrier for movement of NP complements. However, when we try to extract a genitive case-marked NP complement out of an NP, which is a part of a PP complement of the verb, the result is complete ungrammaticality (13c). In that sense, instrumental case-marked bare NPs do not seem to have identical status as PP complements, even though evidence from cliticization (the fact that they do not allow clitics) suggests that they do involve a null P⁰. Faced with these two conflicting pieces of evidence with regard to the status of instrumental case-marked bare NPs, I will treat them as borderline cases between PP complements and oblique case-marked bare NPs, which quite clearly have a different status.

The data from movement suggests that the bare NPs that appear with Psych verbs are closer to arguments than to adjuncts. There is also a conceptual reason to reject the idea that these elements are adjuncts. These bare NPs are clearly different from typical bare NP adjuncts. The very existence of bare NP adjuncts is a problem for case theory because it is difficult to account for the origin of case on the NP under the view that cases are assigned or licensed by particular heads in the structure (Chomsky 1993; Chomsky 1995). Larson (1985) observes that bare NP adjuncts usually carry locative or temporal meanings as in (14).

- (14) a. I saw John that day.
b. John was headed that way.

His explanation for the origin of case with these bare NPs draws precisely on the fact that they have these specific meanings (temporal, locative). Larson (1985) argues that the nouns that appear as heads of bare-NP adjuncts carry a special feature [F], which carries over to the entire NP headed by these nouns. This feature has the ability to case mark the NP internally, i.e. independently of an external case assigner/licensor. On Larson's (1985) account the rather restricted set of nouns that can appear as heads of bare NP adjuncts indicates that the kind of case marking that takes place with these elements is highly idiosyncratic. For example, (15) is ungrammatical because the noun *period* apparently does not carry this [F] feature that would case-mark the NP independently.

- (15) *It appeared that John would learn to swim that period. (Larson 1985, p. 614)

Turning now to the bare NPs that we find with Psych verbs in Serbian, we can immediately observe that they do not have locative or temporal meanings that are typically associated with bare NP adjuncts nor are there similar restrictions in terms of which nouns can appear as heads of these NPs. Therefore, there is no principled way of extending Larson's (1985) analysis to these data, and in that sense, there is a major conceptual difficulty associated with the idea that these bare NPs should be treated as adjuncts.

Having rejected the possibility of treating oblique case-marked bare NPs that appear with Psych verbs in Serbian as adjuncts, the next thing to consider is the possibility of treating them as complements. While this is certainly a conceptually more plausible possibility, I will show that this approach runs into serious conceptual and empirical difficulties as well. The syntactic status of verbal complements, as opposed to arguments and adjuncts, is itself a matter of some

controversy. As Neeleman (1997) observes, the prevailing views on phrase structure, case assignment and the architecture of grammar in models of generative grammar that preceded the Minimalist Program (Chomsky 1995) made verbal complements somewhat of a neglected subject. Next, he argues that the tools introduced by Minimalism allow for a correct analysis of these items.

Neeleman (1997) starts by outlining the differences between three different uses of PPs: adjuncts, arguments and complements. He illustrates these different uses on the examples from Dutch (16).

- (16) a. Dat de help op het laatste moment gered werd. *adjunct*
 that the hero at the last moment saved was
 ‘that the hero was saved at the last moment’
- b. dat ik door de polder zou willen afraden. *argument*
 that I through the polder would want to-advise-against
 ‘that I would advise against going through the polder’
- c. Dat Jan op zijn geluk vertrouwt. *complement*
 that John on his luck trusts
 ‘that John counts on his luck’

(Neeleman 1997, p. 91)

According to him, PPs that are used as arguments clearly substitute for more typical arguments (e.g. bare NPs), and syntactically, they could be analyzed as reduced NPs. For instance, the italicized PP in (16b) does not have a simple directional meaning. Rather, it means something like “the way through the polder” because that is what the speaker seems to be advising against (Neeleman 1997). On the other hand, adjunct PPs are different from complement PPs in that they are not obligatory parts of the sentence. Moreover, Neeleman (1997) points out that the P-head does not have a typical prepositional meaning inside complement PPs. The preposition that is used

as the head of the complement PP in (16c) is formally a locative preposition, but there is nothing locative in the semantics of that sentence. In (16a), the preposition has a clear directional meaning.

Neeleman's (1997) account of the PP complements of verbs relies crucially on these two properties of theirs (the semantic vacuity and obligatoriness). In short, he argues that the preposition LF-incorporates into the verb, which is why it has no semantic contribution, while the NP in its complement is computed as an ordinary argument of the verb. Syntactically, however, these elements are, of course, PPs. The LF-incorporation that Neeleman (1997) proposes solves the theta-marking problem as the verb can theta-mark the NP directly after the P-head incorporates at LF. Notice that this account makes sense only if theta-marking takes place "late", at LF, and not "early" at D-Structure as was argued in Chomsky (1993). The abandonment of the notion of D-Structure in Minimalism (Chomsky 1995) is, thus, an essential component of this account.

Concerning the question whether Neeleman's (1997) account can be applied to the data we are interested in here, one immediately runs up against the fact that the potential complements of Serbian Psych verbs we are discussing are not actually PPs like in English and Dutch but oblique case-marked bare NPs. In that sense, in order to apply Neeleman's (1997) to Serbian data, one would need to postulate the existence of null P-heads projected on top of these NPs, which would account for the origin of oblique cases. These null Ps would then incorporate into the verb at LF. There is a serious conceptual difficulty with this move because while it takes care of the origin of oblique case with these NPs (i.e. presumably it would be assigned by the null P), it requires us to postulate the existence of a covert element that covertly incorporates into the verb at LF. This conceptual difficulty, however strong, does not immediately rule out this possibility, but there are strong empirical reasons to reject the hypothesis about the presence of null Ps with these elements.

The relevant evidence comes from cliticization. The dative and genitive marked bare NPs that are found with Psych verbs in Serbian freely allow clitic forms (17).

- (17) a. Mi ih se ne plašimo.
we them.DAT.CL SE NEG fear.1PL
'We are not afraid of them.'
- b. On mu se divi.
he him.DAT.CL SE admire
'He admires him.'

The reason why these facts contradict the analysis of these oblique case-marked elements as PPs is because of the cross-linguistic observation that clitics do not originate inside PPs (Abels 2003). Abels (2003) deduces this ban from two other broader principles: Phase Impenetrability Condition (PIC) and Anti-Locality. According to PIC, elements can move out of a phase only by first moving the specifier of the phase head (Chomsky 2008). Anti-Locality stipulates that movement from the complement position to the specifier position within the same phrase is impossible because it is too local (i.e. the head of a phrase is able to check all the features it can check against a phrase in its complement so there could never be any motivation for complement-to-specifier movement in terms of feature-checking). What these two principles predict is that the complement of the phase head cannot be extracted out of the phase (recall Bošković's 2014 account for the impossibility of moving the NP complement of a noun given that NP is a phase). Clitics that originate inside PPs but subsequently move out are, thus, ruled out. Given the ban on clitics originating inside PPs, the fact that oblique case-marked NPs with Psych verbs can cliticize shows that they do not originate inside PPs as complements of null Ps.

Instrumental bare NP elements that are found with Psych verbs are different from genitive and dative-marked ones in that they do not cliticize. Milićev and Bešlin (2019) point out that there is no instrumental clitic in Serbian and argue that instrumental-marked bare NPs are, in fact, PPs with null P heads citing Abels (2003). The complete lack of instrumental clitics means that Psych verbs that take instrumental complements will not be able to express them with a clitic form. (18a) exemplifies a verb that takes an instrumental-marked bare NP, and (18b) shows that such NPs can be substituted by full pronouns, but a clitic form of that pronoun is simply blocked (18c).

- (18) a. Ivan se ponosi svojom sestrom.
 Ivan.NOM SE prides self's sister.INST
 ‘Ivan is proud of his sister.’
- b. Ivan se ponosi njom(e).
 Ivan.NOM SE prides her.INST
 ‘Ivan is proud of her.’
- c. Ivan *jom se ponosi.
 Ivan.NOM her.CL.INST SE prides
 Intended: ‘Ivan is proud of her.’

In light of this evidence, I will assume, following Milićev and Bešlin (2019), that instrumental-marked bare NPs that are found with Psych verbs are PPs headed by a null P while genitive and dative-marked ones are true NPs. The presence of this null P with instrumental NPs is also apparent from the fact that bare NP instrumental alternates with PPs headed by the preposition *s(a)* (“with”) with an instrumental-marked NP in its complement. However, prescriptive grammars suggest that bare NPs should be used with the meaning of instrument while *s(a)* (“with”) PPs are used for company. With the verb *ponositi se* (“be proud of”) in (18), the Serbian standard prescribes only

the bare NP use. The full PP form with *s(a)* is still used in various non-standard dialects, and a Google search immediately reveals plenty of examples along the lines of (19).

- (19) Devin je moj sin i ponosim se s njim.³⁵
Devin.NOM AUX my son and pride.1.SG SE with him
'Devin is my son and I am proud of him.'

Neeleman's (1997) account also rests on the assumption that the Ps that act as the heads of the obligatory PP complements have no semantic contribution. These Ps certainly seem as though they have no meaning. It is difficult to see what the meaning of the locative preposition *op* ('on') would be in Neeleman's (1997, p. 91) example in (16c) repeated here as (20). It clearly does not have the same meaning that it has when it is used inside a locative PP.

- (20) Dat Jan *op* *zijn* *geluk* vertrouwt.
that Jan on his luck trusts
'that Jan trusts his luck'

On the other hand, there are also reasons to believe that these prepositions are not completely meaningless. There are plenty of examples where the meaning of the preposition seems significant. For instance, if we recall Pesetsky's (1994) discussion of Psych verbs, we might notice that he makes a distinction between the thematic role of Target (of Emotion) and the thematic role of Subject Matter. According to Pesetsky (1994) examples like (21a) illustrate the thematic role of Target while sentences like (21b) illustrate the Subject Matter thematic role.

- (21) a. John was angry at the news.
 b. John worried about the television set.

³⁵ Link: <https://www.blic.rs/zabava/bolje-bi-bilo-da-si-platio-devinovu-skolu-nego-sto-nas-mucis-bivsa-ljubav-miroslava/djbbbn4>

While he does not explicitly tie the distinction between Target and Subject Matter to the preposition that heads the PP which introduces this thematic role, one cannot but notice that his examples of Target theta role always involve a directional P while Subject Matter is always introduced with a topical P (*about*).

Pesetsky's (1994) account also treats the PPs that introduce the Target and Subject Matter theta roles as proper PPs, which form parts of what he calls "Cascades". In other words, his account does not negate the semantic contribution of the P-heads within these PPs – it is taken for granted that these P heads do contribute to the meaning of the entire expression. Therefore, Neeleman's (1997) assumption that these Ps do not affect the meaning of the sentence is not uncontroversial at all.

Another potential challenge to Neeleman's (1997) account comes from the fact that English Psych verbs with PP complements usually have counterparts in other languages that take either PPs or oblique case-marked bare NPs with similar semantics. To illustrate, consider the English Psych verb in (22a). The Stimulus participant is realized in the form of a PP headed by the preposition *at*, which has a locative or directional meaning. It would probably be analyzed as having the thematic role of Target if Pesetsky's (1994) terminology were used. The Serbian counterpart of this verb can be found in (22b).

- (22) a. John marvels at the painting.
b. Jovan se divi slici.
 Jovan.NOM SE admire painting.DAT
 'Jovan admires the painting.'

In the Serbian example, the Stimulus participant takes the form of a dative-marked NP. Dative case is, of course, associated with the semantics of Goal or Direction (23).

(23) a. Jovan je krenuo prema Novom Sadu.
 Jovan.NOM AUX heads towards Novi Sad.DAT
 ‘Jovan is headed towards Novi Sad.’

b. Jovan je dao jabuku Petru.
 Jovan.NOM AUX gave apple Petar.DAT
 ‘Jovan gave the apple to Petar.’

The English Psych verb *marvel* has another potential translation equivalent in Serbian, and that is the verb *čuditi se*³⁶. This verb exhibits the exact same characteristics as the verb *diviti se* (24). It appears with the SE morpheme and selects a dative case-marked bare NP as its complement.

(24) Jovan se čudi gluposti svoga brata.
 Jovan.NOM SE marvel stupidity.DAT self's brother.GEN
 ‘Jovan marvels at his brother’s stupidity.’

Other similar cases are too numerous to list here, but I will mention a few related examples. Pesetsky (1994) discusses the adjectival construction in (21a) as a typical example of the Target thematic role. There is a completely analogous structure in Serbian (25). As can be seen in (25), this structure shares all morphosyntactic and semantic properties with its English counterpart.

(25) Jovan je besan / ljut na Stevana.
 Jovan.NOM is mad / angry at Stevan.ACC
 ‘Jovan is mad/angry at Stevan.’

³⁶ Both *diviti se* and *čuditi se* include the semantic component of surprise or bewilderment that is found with the English verb *marvel*. However, unlike *čuditi se*, *diviti se* has a strong element of positive surprise. With *čuditi se*, this positive component is not present.

The Target thematic role is realized as a PP headed by the preposition *na* ('at') which, like English *at* has both locative and directional uses (26). It is worth pointing out that the directional use of *na* is accompanied by an accusative case-marked NP whereas the locative use is characterized by the presence of locative case on the NP.

- (26) a. Jovan je na odmoru.
 Jovan.NOM is at vacation.LOC
 'Jovan is on a vacation.'
- b. Jovan cilja na Stevana.
 Jovan.NOM anims at Stevan.ACC
 'Jovan is aiming at Stevan.'

The fact that the NP complement of the PP in (25) carries accusative case shows that we are dealing with a directional use corresponding to the Target thematic role. Therefore, abstract meanings that are expressed with prepositions in English can be encoded either with prepositions or with oblique cases in Serbian.

The parallel between prepositional phrases that appear in English and PPs/oblique NPs in Serbian goes beyond the meanings discussed by Pesetsky (1994). While he recognizes the thematic role of Target, which is expressed by a PP headed by *at*, and the thematic role of Subject Matter, which is realized as a PP headed by *about*, Pesetsky (1994) does not discuss cases like (27).

- (27) John is afraid of snakes.

In this adjectival construction, the Stimulus is expressed in the form of a PP headed by the preposition *of*. This is, of course, a different preposition from the ones that Pesetsky (1994) discusses with respect to the Subject Matter and Target thematic roles. The preposition *of* does not

have the directional meaning associated with *at* nor a topical meaning associated with *about* so it is not immediately clear that the PP in (27) exemplifies either Subject Matter or Target theta role.

The Serbian counterpart of (27) is a verbal construction with the already mentioned verb *bojati se* ('fear') (28).

- (28) Jovan se boji zmija.
 Jovan.NOM SE scare snakes.GEN
 'Jovan is afraid of snakes.'

As is apparent from (28), the Stimulus is realized in the form of a genitive-marked NP. Furthermore, PPs headed by *of* in English and genitive-marked NPs or *od*('from/of')-PPs in Serbian systematically occur as expressions of the Stimulus participant in constructions that denote the mental state of fear.³⁷ The examples in (29) show that various expressions of fear require a PP headed by *of* as an expression of the Stimulus participant.

- (29) a. John is afraid of snakes.
 b. John's fear of snakes.
 c. John is scared of snakes.

Similarly, in Serbian, synonyms of the verb *bojati se* ('fear') as well as the noun *strah* ('fear') require either a genitive-marked NP or an *od*('from/of')-PP as expressions of the Stimulus participant (30).

- (30) a. Jovan se plaši zmija.
 Jovan.NOM SE scare snakes.GEN
 'Jovan is scared of snakes.'

³⁷ If these do not involve the semantics of direct causation, in which case the nominative-accusative case frame is used.

- b. Jovan se uplašio zmija.
 Jovan.NOM SE scare snakes.GEN
 ‘Jovan got scared of snakes.’
- c. Jovanov strah od zmija.
 Jovan’s fear of snakes.GEN
 ‘Jovan’s fear of snakes.’

These regularities suggest that the conceptualization of the mental state of *fear* makes the expressions that denote this mental state compatible with nominal or prepositional expressions that carry the semantic component that is introduced by the preposition *of* or genitive case. Genitive is, of course, associated with many different meanings, but the meaning that seems to be represented in these examples is the meaning of Source because in all these cases, the Stimulus participant acts as the source of fear.

Pesetsky (1994) argues that the reason why Target is the best label for the thematic role that is found with the adjective *angry* is because the Experiencer’s attention is directed towards the entity in question and this entity is then evaluated in a negative way. By the same token, we can say that the Source of emotion is the thematic role that applies to situations in which the emotion arises within the mind of the Experiencer in relation to the entity in question perhaps even if the Experiencer is not paying attention to the entity at all.³⁸

In light of the above, it is safe to conclude that oblique case marking that is found on Stimulus participants of various Psych verbs in Serbian is not simply a lexical idiosyncrasy of

³⁸ One of the differences between anger and fear is, arguably, that fear arises suddenly when the Experiencer is exposed to the entity that is capable of causing fear or it represents a stable disposition on the part of the Experiencer to experience fear whenever he or she is exposed to it. On the other hand, anger presupposes that the Experiencer is directing his or her attention towards the Stimulus. Similarly, it is not possible to conceive of anger (towards someone/something) as a stable characteristic or disposition of a person.

these verbs. The fact that a certain verb requires a directional expression across its derivational paradigm, not just in Serbian but also in English while another verb requires an expression of source shows that these semantic components are necessary for the semantic computation of these structures. They are built into the conceptualization of these particular emotions. For this reason, the idea that oblique case-marked NPs that are found with Psych verbs in Serbian carry idiosyncratic lexical case in the sense of Woolford (2006) must be rejected [see Chapter 2]. Instead, I would suggest that these NPs carry case forms that are associated with their thematic roles, and in that sense, they are closest to the notion of inherent case in standard terminology .

Summing up, then, we can conclude that genitive and dative case-marked NP expressions that are found with Psych verbs are, indeed, bare NPs. There is no conceptual and empirical motivation to treat them as PPs headed by null Ps. Unlike instrumental case-marked bare NPs that appear with these verbs, genitive and dative case-marked NPs allow cliticization, which is not possible with PPs (Abels 2003; Milićev and Bešlin 2019). Furthermore, they do not constitute full islands for extraction unlike bare NP adjuncts and PP complements (Bošković 2018). Now, with regard to the extraction test, instrumental case-marked bare NPs behave like genitive and dative case-marked bare NPs, and in that sense, they seem to constitute a borderline category. Moreover, the directional meaning of dative case and the source meaning of genitive case seem to be present in these bare NPs as evidenced by the English translation equivalents as well as the fact that these case forms tend to combine with verbs, adjectives, and nouns denoting particular mental states in quite predictable ways. In that sense, these oblique case-marked bare NPs do not qualify for meaningless lexical case and are best characterized as inherent case-marked NPs in theta-positions.

5. Psych verbs and participles

The morphosyntactic and semantic characteristics of passive participles in general and passive participles derived from Psych verbs, in particular, have attracted a significant amount of attention in the literature in recent years (cf. Alexiadou and Anagnostopoulou 2008; Alexiadou, Gehrke and Schäfer 2014; Bruening, 2014; Doron 2014; Embick 2004; Gehrke 2013, 2015; Kratzer 1996; Lundquist 2008; McIntyre 2015, 2013). The research questions that have propelled this line of investigation concern the internal syntactic structure of passive participles in comparison to verbal passives, on the one hand, and the rules that govern participle formation (i.e. the rules that explain why a particular verb can produce a grammatical verbal passive as opposed to others that cannot do so). The research in this domain takes place within the broader DM framework, in which all lexemes that are derived from the same (abstract) root are considered parts of a derivational paradigm. This assumption motivates cross-categorial comparisons and contrasts (comparing nouns, verbs and adjectives derived from the same root) as a way of shedding light on (morpho)syntactic properties and processes that produce these derivational paradigms. The concrete task is to account for the attested and unattested elements of derivational paradigms of particular roots. To illustrate, consider the paradigms in (1) and (2).

- (1) a. John killed a deer.
b. A deer was killed by John.
c. The killed deer was lying in the snow.
d. The killing of the deer was gruesome.
- (2) a. John worried about the exam.
b. *The exam was worried about by John.
c. *The worried (about) exam was difficult.

- d. John's worrying about the exam was unnecessary.

The root $\sqrt{\text{KILL}}$ displays a paradigm which allows a typical transitive verb (1a), a verbal passive (1b), an adjectival passive (1c) and a nominalized form (1d). In contrast, the Psych root $\sqrt{\text{WORRY}}$ does not allow a typical transitive option and requires a PP complement instead of an accusative case-marked DP. Furthermore, it does not allow either a verbal or an adjectival passive (2b-c) while allowing a nominalized form (2d). However, the Psych root $\sqrt{\text{WORRY}}$ can produce a proper transitive with the Experiencer in the object position and the Stimulus in the subject position (the reversal of 2a, *The exam worried John*), which is something that cannot be done with the root $\sqrt{\text{KILL}}$. In its object Experiencer form, the root $\sqrt{\text{WORRY}}$ can derive a passive participle (3b), which does not accept the *by*-phrase, which already makes it different from $\sqrt{\text{KILL}}$. It also allows an adjectival passive as in (3c), but it does not allow a nominalized form (3d).

- (3) a. The exam worried John.
b. John was worried *by the exam/??from the exam/*by Steven.
c. The worried student walked into the classroom.
d. *The exam's worrying of John was exhausting.

One question that emerges from the examples (1-3) is why passive participles (verbal and/or adjectival) and nominalizations are possible with some forms but impossible with others. An answer to this question naturally touches upon the issues of the formation of passives and related issues of case and thematic roles. Another question that arises from these paradigms concerns the internal structure of passive participles. As has already been mentioned in Section 3.2.4.1., Kratzer (1994) observes that only certain types of participles are capable of licensing the *by*-phrase, which is obvious from the contrast between (1b) and (3b). On the basis of those differences, Kratzer (1994) argues that the functional projection that introduces the Agent

argument (called VoiceP) has to be present in the structure of a participle for it to be able to license the *by*-phrase. Alexiadou and Anagnostopoulou (2008, p. 35) apply this test to Greek and show that the difference between two types of participles in this language could be captured by the presence/absence of this projection (4).

- (4) a. Ta keftedakia ine tiganis-men-a apo tin Maria.
 The meatballs are fry.PASS.PRT₁ by the Maria.
 ‘The meatballs are fried by Maria.’
- b. *Ta keftedakia ine tigan-ita apo apo tin Maria.
 The meatballs are fry.PASS.PRT₂ by the Maria.

The fact that the participle in (4a) licenses the *by*-phrase suggests that VoiceP is present in the structure while the fact that the participle in (4b) cannot combine with the *by*-phrase indicates that it lacks this layer of structure.

Returning to the example in (3), recall that Pesetsky (1994) argues that the Stimulus participant which is syntactically realized as the external argument has the thematic role of Causer with object Experiencers. Therefore, the external argument of these verbs is not an Agent, and hence they do not project the VoiceP layer. This fact now helps us explain why this verb cannot combine with a *by*-phrase (3b) since *by*-phrases have to be licensed by VoiceP.

5.1. Psych verb participles in Serbian: data

These introductory remarks sketch out the course of this chapter. My main goal in this chapter will be to try to outline the limits of participle formation with Serbian Psych verbs, and then offer a structural account of those limits. The empirical observations that will be made are: (i) Class 3 and Class 4 Psych verbs do not yield passive participles; (ii) Class 1 verbs also tend to derive passive participles (with only one clear exception) although not all of them are equally

acceptable and equally frequent; and (iii) perfective Class 2 verbs (apart from marginal exceptions) form passive participles, but imperfective ones are not as productive in this domain, owing to the broadly-recognized fact about the constraints on the formation of passives from imperfectives across Slavic (Babby and Brecht 1975; Borik and Gehrke 2018) (see Appendix 4 for the complete data set). To derive these facts, I will argue very simply that VoiceP structure (i.e. the presence of agentivity) is the only viable input to participle formation in Serbian. In the remainder of the section, I will illustrate these observations and provide evidence for the analysis.

First off, a somewhat obvious point is in order here, which is that the conditions for participle formation in English and Serbian are not the same. For example, English allows passive formation under P-stranding (5a), and this, of course, applies to Psych verbs as well (5b).

- (5) a. This bed was slept in by Charles Darwin.
 b. This painting was marveled at by the entire artistic world.

One should note that English is exceptional in this regard even among P-stranding languages because other languages that allow P-stranding do not necessarily allow it under passivization (Maling and Zaenen 1985)

In Serbian, it is generally impossible to form a passive from a verb that does not have an accusative-marked internal argument. So, the Serbian counterpart of (5b) would be (6), which is completely ungrammatical.

- (6) *Ova slika / ovoj slici je divljena od strane
 this painting.NOM this.DAT painting.DAT AUX admired from side
 celog umetničkog sveta.
 entire artistic world

Intended ‘This painting was admired by the entire artistic world.’

Other Psych verbs with oblique case-marked arguments fare no better (7).

- (7) a. Ivanu prija topla čokolada.
 Ivan.DAT appeal warm.NOM chocolate.NOM
 ‘Hot chocolate appeals to Ivan.’
- a’. *Ivan je prijan (od (strane) tople čokolade).
 Ivan.NOM AUX appealed from side warm.GEN chocolate.GEN
 Intended (literally): ‘Ivan was appealed to by hot chocolate.’
- a’’. *Topla čokolada je prijana (od (strane) Ivana).
 warm chocolate AUX appealed from side Ivan.GEN
 Intended (literally): ‘Hot chocolate was appealed to by Ivan.’
- b. Ivanu se svidela pesma.
 Ivan.DAT SE like song.NOM
 ‘Ivan liked the song.’
- b’. *Ivan je sviden / (od (strane) pesme).
 Ivan AUX liked from side song.GEN
 Intended: ‘Ivan was fascinated by the song.’
- b’’. *Pesma je svidena (od (strane) Ivana).
 song AUX liked from side Ivan.GEN
 Intended: ‘The song was liked by Ivan’

The verbs in (7) represent Class 3 Psych verbs with a dative case-marked Experiencer. To the best of my knowledge, there are no Class 3 verbs that can form fully acceptable passive participles.

With other classes of Psych verbs, the situation is not so clear cut. For instance, while many Class 1 verbs do form passives, there are some that do not (8). In (8a), we can see that the verb

voleti ('love') can form a passive participle, but the passive form of the verb *trpeti* ('endure/tolerate') is somewhat degraded (8b'). Also, there are verbs like *mrzeti* ('hate'), which does not form a morphophonologically and semantically transparent passive participle (8c).

- (8) a. Petar voli Anu.
 Petar.NOM loves Ana.ACC
 'Petar loves Ana.'
- a'. Ana je voljena.
 Ana.NOM AUX love.PRT
 'Ana is loved.'
- b. Petar trpi / toleriše Anu.
 Petar.NOM endures / tolerates Ana.ACC
 'Petar tolerates Ana.'
- b'. ?Ana je trpljena / tolerisana.
 Ana.NOM AUX endure.PRT / tolerate.PRT
 'Ana is tolerated.'
- c. Ceo razred mrzi Petra.
 entire class.NOM hates Petar.ACC
 'The entire class hates Petar.'
- c'. Petar je *mržen³⁹.
 Peter.NOM AUX hate.PRT
 'Peter is hated.'

³⁹ With the verb *mrzeti* ('hate'), there is a potentially viable participial form *omražen*, but it involves considerable alternations of the stem – the addition of the prefix *o-*, which does not otherwise appear in the aspectual paradigm of the verb as well as some root allomorphy, particularly the insertion of the vowel /a/ into the root.

When it comes to Class 2 Psych verbs, one can observe that they derive passive participles (both verbal and adjectival) quite freely. However, aspect seems to be a major confounding factor when it comes to mapping out the possibilities of participles formation as a lot of Class 2 verbs have both perfective and imperfective forms (e.g. *nervirati* ‘annoy.ipf’ / *iznervirati* ‘annoy.pf’). The fact that there is a significant interaction between aspect and passive participle formation across Slavic is quite well-known. Babby and Brecht (1975) point out that Russian normative grammars generally regard passive participles derived from imperfectives ungrammatical claiming that with such verbs, passive meanings are conveyed using the (pseudo)-reflexive form (-ся /SE). Babby and Brecht (1975, p. 342) point to the following distinction in traditional description of Voice paradigms of imperfective and perfective verbs in Russian (9-10).

- (9) a. Oleg otkryval kalitku. Imperfective paradigm
 Oleg.NOM opened.IPF gate.ACC
 ‘Oleg was opening the gate.’
- b. Kalitka otkryvala-s’ Olegom.
 gate.NOM opened.IPF.SE Oleg.INST
 ‘The gate was being opened by Oleg.’
- c. *Kalitka byla otkryva-na Olegom.
 gate.NOM was opened.IPF.PRT Oleg.INST
 Intended: ‘The gate was being opened by Oleg.’
- (10) a. Oleg otkryl kalitku. Perfective Paradigm
 Oleg.NOM opened.PF gate.ACC
 ‘Oleg opened the gate.’

b. *Kalitka otkryla-s' Olegom.

gate.NOM opened.PF.SE Oleg.INST

Intended: 'The gate was opened by Oleg.'

c. Kalitka byla otkry-ta Olegom.

gate.NOM was opened.PF.PRT Oleg.INST

'The gate was opened by Oleg.'

This strict ban on the use of imperfective passives has been challenged in more recent literature. For instance, Borik and Gehrke (2018, pp. 60-61) report on a corpus study of contemporary Russian and point to numerous attestations of imperfective passives (11).

(11) a. Pisano eto bylo Dostoevskim v 1871 godu.

written.IPF.PRT that was Dostoevskij.INS in 1871 year

'That was written by Dostoevskij in 1871.'

b. Recepty im pisany byli i na drugoe imja.

prescriptions he.INST written.IPF.PRT were and on other name

'The prescriptions were written by him for different names as well.'

Borik and Gehrke (2018) observe that the restriction on the use of imperfective passive participles is not grammatically encoded. Instead, these structures carry general-factual semantics, which involves the backgrounding of the completion of the event denoted by the verb and requires a quasi-obligatory event modification (in the form of an adverbial) which is, thus, foregrounded. In (11a), the time of the event is foregrounded while in (11b) it is the fact that prescriptions were written for different names. The restricted use of passive participles is, therefore, simply the product of their particular denotation that restricts the number of contexts in which these constructions can be used.

In Serbian, we observe a similar restriction (12). Similar to Russian, as pointed out by Borik and Gehrke (2016), the sentences in (12) seem to require a quasi-obligatory adverbial, which, if it can be dropped at all, appears to be contextually presupposed.

- (12) a. Juče je lopta šutira-na ??(satima).
 yesterday AUX ball.NOM kicked.IPF.PRT hours.INST
 ‘Yesterday, the ball was being kicked for hours’
- b. Juče je škola zatvara-na ??(nekoliko puta)
 yesterday AUX school.NOM closed.IPF.PRT several times
 ‘Yesterday, the school was being closed several times’

In order to provide an analysis of this phenomenon, one would have to engage in an extensive discussion about aspect in Serbian (and Slavic, more generally), which goes beyond the scope of this dissertation. For our purposes, it will be sufficient to acknowledge that imperfective passive participles seem to be restricted (but not banned!) in SC across the board, and this restriction is related to the special semantics of imperfective aspect and not to argument structure of the verb since perfective counterparts of these verbs derive passive participles quite freely.

In the domain of Class 2 psych verbs, we observe a similar effect where passive participles of imperfective verbs tend to be restricted while their perfective counterparts are not (13-14).

- (13) a. Učiteljica je juče iznervira-na od strane
 teacher.NOM AUX yesterday annoyed.PF.PRT from side
 nekoliko učenika.
 several students.GEN
 ‘Yesterday, the teacher was annoyed by several students.’

b. Učiteljica je juče ??(satima) nervira-na od
 teacher AUX yesterday hours.INST annoyed.IPF.PRT from
 strane nekoliko učenika.
 side several students.GEN

‘Yesterday, the teacher was being annoyed by several students for hours.’

(14) a. Sportista je juče ohrabre-n od
 athlete.NOM AUX yesterday encourage.PF.PRT from
 strane svog trenera.
 side self’s coach.GEN

‘Yesterday, the athlete was encourage by his coach.’

b. Sportista je juče ??(satima) hrabre-n od
 athlete.NOM AUX yesterday hours.INST encourage.IPF.PRT from
 strane svog trenera.
 side self’s coach.GEN

‘Yesterday, the athelete was being encouraged by his coach for hours.’

A similar observation can be made in the domain of adjectival passive participles where imperfective ones again appear quite degraded barring the right context. Embick (2004) observes this effect for English where transitive verbs denoting accomplishments and achievements (i.e. verbs that involve some kind of change of state of the Theme participant) freely derive adjectival participles (15). However, adjectival participles derived from transitive activities (i.e. verbs that do not involve a change of state of the Theme participant) sound quite degraded (16).

(15) The door is closed.

(16) #The tires are kicked.

Curcially, Embick (2004, p. 361) argues that the unacceptability of (16) is only apparent since the sentence becomes much better given the right context. He proposes the following one: “Given a scenario in which I work in a tire factory, and I have to kick all of the tires before I can go home, it becomes much better” (Embick 2004, p. 361). Embick (2004) argues that any theory of the formation of passive participles must make the distinction between clearly ungrammatical forms such as (17), for instance and those that are derivable and, hence, grammatical, but simply contextually restricted.

(17) *John seems laughed.

Following Embick (2004), I assume that we must make the same distinction between grammatical but contextually restricted forms and purely ungrammatical ones when discussing the possibilities of forming passive participles from Serbian Psych (and other) verbs. For example, out of context, (18a) involving an imperfective passive participle appears highly degraded in comparison to (18b).

- (18) a. #hrabre-n radnik
 encourage.IPF.PRT worker
 ‘encouraged worker’
- b. ohrabre-n radnik
 encourage.PF.PRT worker
 ‘encouraged worker’

However, again, given the right context, the form in (18a) improves quite drastically (19). A more conservative speaker who might be put off by (19) cannot but agree that it is incomparably better than (20), which involves two passive participles derived from Class 3 verbs.

(19) ?Hrabre-n radnik ostaje veran firmi dok
 encourage.IPF.PRT worker remains faithful company.DAT while
 omalovažavan odlazi.
 humiliate.IPF.PRT leaves
 ‘An encouraged worker remains faithful to the company while a humiliated one
 leaves.’

(20) *Prija-ni radnik ostaje veran firmi dok
 appeal.IPF.PRT worker remains faithful company.DAT while
 smetani Dolazi.
 discomfort.IPF.PRT leaves

Intended: ‘A pleased worker remains faithful to the company while a discomforted one
 leaves.’

Once we allow for this distinction between derivable but contextually restricted forms and strictly ungrammatical ones, then, one can assume that the proper test for the ability of Class 2 verbs to derive passive participles is to see whether it is available with the perfective version, and if it is, then, by hypothesis, the imperfective one will also be available given the right context. Interestingly, there are still cases of Class 2 verbs that fail to derive passive participles even when we set up the criteria in this way. Most Class 2 verbs are like *iznervirati* (‘annoy’) in (21a) in that they allow morphophonologically and semantically transparent passive participles. This verb is also a typical representative of this class of Psych verbs in the sense of being eventive (bimorphemic) and having an accusative case-marked internal argument (see Pesetsky 1994).

(21) a. Petar je iznervirao Anu.
 Petar.NOM AUX annoyed Ana.ACC

‘Peter annoyed Ana.’

a’ Ana je iznervirana.

Ana.NOM AUX annoy.PRT

‘Ana is annoyed.’

b. Petar je razbesneo Anu.

Petar.NOM AUX angered Ana.ACC

‘Peter angered Ana.’

b’. ?*Ana je razbešnjena.

Ana.NOM AUX anger.PRT

‘Ana is angered.’

c. Anu boli glava.

Ana.ACC pain head.NOM

‘Ana has a headache.’

c’. *Ana je boljena.

Ana.NOM AUX pain.PRT

Literally: ‘Ana is pained.’

c’’. *Glava je boljena.

head.NOM AUX pain.PRT

Literally: ‘The head is pained.’

The verb *razbesneti* (‘anger’) in (21b) is also a typical Class 2 verb as it is eventive and has an accusative case-marked internal argument. However, it produces a severely degraded passive participle form. Finally, the verb *boleti* (‘pain’), which is a Class 2 verb in the sense that it has an

accusative case-marked internal argument, but it is not eventive (nor bimorphemic), does not produce a passive participle (21c'-21c'').

Finally, the example in (6), repeated here as (22) for convenience, illustrates the impossibility of forming passive participles from Class 4 verbs (subject Experiencers with an oblique case-marked Stimulus). There are no verbs belonging to this class that can form attested passive participles.

(22) Ova slika / ovoj slici je divljena od strane
this painting.NOM / this.DAT painting.DAT AUX admired from side
celog umetničkog sveta.
entire artistic world

‘This painting was admired by the entire artistic world.’

These data present us with two issues that need to be accounted for. The first thing to explain is the complete lack of participles with Class 3 and Class 4 verbs. Secondly, the lack of passive participles with some Class 1 and Class 2 verbs is also puzzling precisely because a strong tendency of deriving passive participles is evident, but there are, nonetheless, some exceptions.

5.2. Analysis

The analysis that I will present as an answer to these questions is quite simple. I am going to argue that in Serbian, passive participle formation is possible only if the verb that serves as the input to this process projects the VoiceP layer. Put differently, this means that VoiceP represents the appropriate input to passive participle formation. Bruening’s (2014) formalization of adjectival participle formation which includes a separate passive head (PassP) on top of VoiceP allows me to capture this idea from the syntactic perspective. I will arrive at this conclusion by showing that the ability of the verb to assign accusative case seems to be a necessary but not a sufficient

condition for passivization. Also, I will show that eventiveness does not exhibit a consistent correlation with the availability of passive forms. The availability of an agentive reading, however, does seem to correlate with the availability of passive forms (verbal or adjectival), which is why I opt for the analysis that will be presented in this chapter.

First, it is tempting to say that a passive participle is available only if the verb licenses accusative case to its internal argument in light of the fact that Class 3 and Class 4 Psych verbs, whose complements carry oblique case, do not allow passive participles. However, there are plenty of verbs with accusative marked internal arguments that do not derive passive participles both within the class of Psych verbs and outside it (23).

(23) a. Ivana mrzi Mariju.

Ivana.NOM hates Marija.ACC

‘Ivana hates Marija.’

a’. *Marija je mržena.

Marija.NOM AUX hate.PRT

Intended: ‘Marija is hated.’

b. Petra boli glava.

Petar.ACC pain head.NOM

‘Petar has a headache.’

b’. *Petar je boljen.

Petar.NOM AUX pain.PRT

‘Petar is pained.’

c. Petar ima auto.

Petar.NOM has car.ACC

‘Petar has a car.’

c'. *Auto je iman.
car.NOM AUX have.PRT

Intended: ‘The car is had/possessed.’

What these data show is that whichever element of the structure is responsible for accusative case marking/licensing, it is not sufficient for passive formation, and it is, therefore, separate from the segment of the structure which is crucial for passive formation.

One feature that unites all the verbs in (23) is stativity. All the verbs in (23) are stative verbs that license accusative case on their internal argument. This is evidenced by the classic *in X time/for X time*-test teasing apart events (accomplishments and achievements) from states and activities (Dowty 1979). The Serbian equivalent of the *in X time* adverbial that is compatible with events and incompatible with states and activities is a PP headed by the preposition *za* (interestingly, the literal translation of *za* into English would be *for*) (24). On the other hand, the Serbian equivalent of the *for X time* adverbial, which is compatible with states and activities, is a measure phrase (QP/NumP) with a genitive-marked NP in its complement.

(24) a. Ivan je mrzeo Mariju *za pola sata /
Ivan.NOM AUX hated Marija.ACC for half hour /
pola sata
half.GEN hour.GEN

‘Ivan hated Marija in half an hour / for half an hour.’

b. Ivana je bolela Glava *za pola sata /
Ivan.ACC AUX pained head.NOM for half hour /

pola sata.

half.GEN hour.GEN

Literally: ‘Ivan’s head pained him in half an hour/for half an hour.’

c. Ivan je imao auto *za pola godine / pola godine.

Ivan.NOM AUX had car for half year / half.GEN year.GEN

‘Ivan had a car in half a year / for half a year.’

Given the fact that these non-passivizable verbs with an accusative-marked internal argument are all stative, one could argue that only eventive verbs with an accusative-marked internal argument represent a viable input for passivization. In formal terms, one could assume that only an eventive causative ν P, whose head licenses accusative case represents a viable input to passivization (perhaps also assuming that ν P and VoiceP are inseparable). The availability of accusative case with these stative verbs could, then, be accounted for by assuming that the accusative case found in these examples is not structural (along the lines of Landau 2010) or that it is licensed by a different (non-eventive) v head, which is, nonetheless, capable of assigning accusative case, but does not represent a viable input for passivization.

The idea that instances of accusative case illustrated in the examples in (24) are not instances of structural case would retain the link between accusative case on the internal argument and passivization, but at the same time it would make the explanation circular. This is because it would create a situation where all examples of verbs that license accusative case on their internal argument but do not feed passive participle formation could be explained away as instances of non-structural accusative case. Furthermore, the idea that accusative case can be both structural and non-structural erodes the conceptual power of this division of case forms. Therefore, this idea could be rejected on conceptual grounds.

When it comes to the notion that it is the combination of eventive semantics and the presence of accusative case on the internal argument (formalized as the presence of a causative *vP*) that feeds passive participle formation, I would agree that it constitutes a plausible hypothesis. However, this hypothesis is immediately falsified by the fact that a number of stative Class 1 verbs can serve as an input to passivization. This has already been illustrated in (8), but I repeat one relevant example here for convenience (25).

- (25) a. Ivan voli Mariju.
 Ivan.NOM love Marija.ACC
 ‘Ivan loves Marija.’
- b. Marija je voljena.
 Marija.NOM AUX love.PRT
 ‘Marija is loved.’

In addition to the fact that at least some stative verbs that license accusative case on their internal argument can be passivized, there are also examples of eventive verbs that license accusative case on their internal argument that cannot be passivized. (25a) exemplifies an eventive Class 2 verb, which licenses accusative case on its internal argument. However, this verb produces a degraded passive participle form, which is completely rejected by many speakers (26b)⁴⁰.

- (26) a. Ivan je razbesneo Mariju.
 Ivan.NOM AUX angered Marija.ACC
 ‘Ivan angered Marija.’
- b. ??Marija je razbešnjena.
 Marija.NOM AUX anger.PRT

⁴⁰ I should note here that there are speakers who find this passive participle marginally acceptable, but for many speakers I have consulted, the form is unacceptable, and this apparent variation will be addressed in this chapter.

‘Marija is angered.’

The verb in (26) is clearly eventive as shown by the application of the *in X time/for X time test* (27).

- (27) Ivan je razbesneo Mariju za pola sata / *pola sata.
Ivan.NOM AUX angered Marija.ACC for half hour / half.GEN hour.GEN
‘Ivan angered Mary in half an hour / for half an hour.’

Taken together (25) and (26) show that within the class of verbs that license accusative case on their internal argument, there are stative verbs that feed passive participle formation and eventive ones that do not. These facts indicate, quite clearly, that eventivity in combination with the availability of the nominative-accusative case frame cannot be the decisive factor that determines whether or not the verb will be passivizable.

Given that the ability of a verb form to derive passive cannot be inferred from the availability of the accusative case on its internal argument nor from its eventive semantics (see also Collins 2005), we are compelled to look for another decisive factor. I propose that the presence of VoiceP in the extended verbal domain of a given verb is precisely the necessary and sufficient component we are looking for. As has already been mentioned, Brueing (2014) as well as Alexiadou et al. (2014) argue that passive forms are derived by introducing a PassP on top of VoiceP. Thus, in functional terms, VoiceP is input to passive formation.

An alternative view argued for by Sailor and Ahn (2010) among others and also implied by Kratzer (1996) although not explicitly defended in that work, would be that VoiceP handles the distinction between active and passive in terms of its own featural content. In other words, there is an active Voice head, which assigns accusative case (as argued by Kratzer 1996) and projects a Specifier position for the Agent argument, but there is also a passive Voice head, which does not

project a Specifier position for the Agent argument but licenses its realization in the form of a *by*-phrase. Sailor and Ahn (2010) propose a middle VoiceP that would be responsible for middles as well. In sum, in this system, VoiceP is responsible for all voice alternations.

My argument in this section will be that the former view (i.e. Bruening 2014, *inter alia*), where a specialized Passive head is introduced on top of VoiceP, can help us explain the availability of passive forms, at least when it comes to Serbian data. This is because if we are interested in predicting which verb form will be able to derive a passive participle, the best predictor will be the availability of an agentive reading. This relationship between the availability of passive participle and agentivity is straightforwardly captured by the order in which different heads are merged and the specification on what type of structure constitutes viable input to a specific head.

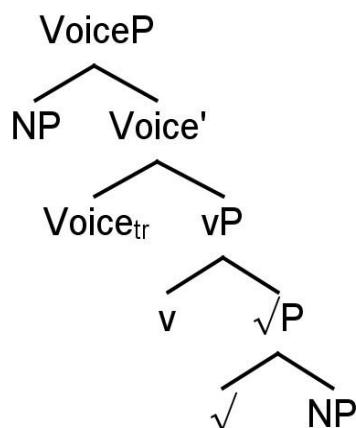
I model my explanation of the availability of passive participles with Psych verbs in Serbian on Bruening's (2014) explanation of the availability of verbal and adjectival passives in English. One of the central pieces of data Bruening (2014) is concerned with is the fact that adjectival passives can be formed from unaccusative verbs in English, but verbal passives cannot (28-29).

- | | | | |
|------|----|---|----------------------------|
| (28) | a. | a recently arrived train | <i>adjectival passives</i> |
| | b. | a fallen tree | (Bruening 2014, p. 385) |
| (29) | a. | * The train was recently being arrived. | <i>verbal passives</i> |
| | b. | * The tree was being fallen. | (Bruening, 2014, p. 385) |

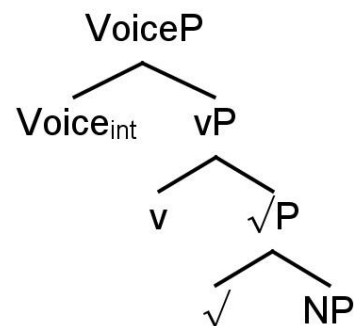
Bruening (2014) accounts for this discrepancy by assuming that the projections that are responsible for the formation of verbal and adjectival passives are located on top of VoiceP. On his analysis, VoiceP is the projection that encodes the difference between transitives and unaccusatives such

that transitive Voice head (Voice_{tr}) projects a Specifier position and licenses accusative case while the unaccusative Voice head (Voice_{intr}) does not project a specifier and does not license accusative case. *v*P is present with both unaccusatives and transitives. Crucially, Bruening (2014) argues that the semantics of the head that produces an adjectival passive (*adj*P) can select for both transitive and unaccusative VoicePs whereas the head that generates verbal passives only selects for a transitive VoiceP. The tree representations in (30), from Bruening (2014, p. 386), illustrate the difference between transitive and intransitive(unaccusative) structures.

(30) a.



b.



Building on Bruening's (2014) account, my explanation for the availability of passive participles (verbal and adjectival) with Psych verbs in Serbian will be that the complete absence of VoiceP with certain verbs is what prohibits the formation of either an adjectival or a verbal passive participle. The case for this claim will, therefore, consist of evidence that agentivity, which is associated with VoiceP, is present with those verbs that derive passive participles while it is absent with those that do not derive them.

The claim that all the verb forms that derive passive participles contain a VoiceP layer is potentially challenged by the availability of passive participles with certain Class 1 verbs. For

instance, a verb such as *voleti* ('love') is certainly not a prototypical example of an agentive verb. A common-sense perspective could even lead us in the direction of assuming that this verb cannot be agentive. After all, one could argue that the very denotation of the verb precludes agentivity as love is not something that one can exert conscious control over. However, the view that Class 1 verbs have an Agent argument is certainly not new in the literature on Psych verbs (cf. Arad 1998; Landau 2010). Moreover, as pointed out in Chapter 2, Arsenijević (2006) compares the verbs *voleti* ('love') and *zaljubiti se* ('fall in love') from the perspective of cognitive linguistics, and the primary contrast that she observes involves the greater degree of rational and volitional control associated with the verb *voleti* ('love'). This lack of control over the situation is formally marked on the verb *zaljubiti se* ('fall in love') by means of the obligatory SE morpheme. Another indication for the presence of the volitional component with the verb *voleti* ('love') comes from the diachronic perspective and the fact that this verb is derived from the root *-vol-*, the original meaning of which was tied to volition, as is apparent from the similarity with the Latin root that is present in the very word *volition* in English (the same root is also present in the Serbian noun *volja* 'will/volition') (Skok 1988, p. 614).

There is also formal evidence in support of the claim that the verb *voleti* ('love') is agentive. One of the standard tests that is used to diagnose the presence of the Agent is the ability of the participle to license a *by*-phrase (Kratzer 1996; Alexiadou et al. 2014; Doron 2014; McIntyre 2013; Gehrke 2013). For Serbian, this would predict that the *od strane* ('from the side of')-PP, which is the equivalent of the English *by*-phrase, should be available with the participle of *voleti* ('love'). The data confirms this prediction. Consider the example in (31), which shows that passive participles derived from *voleti* ('love') can be combined with *by*-phrases.

- (31) Mnoga deca osećaju da su bezuslovno voljena
 Many children feel that AUX unconditionally love.PRT
 od strane svojih roditelja.⁴¹
 from side refl.POSS parents

‘Many children feel that they are unconditionally loved by their parents.’

Admittedly, Class 1 verbs cannot produce a typical verbal passive with a fully referential Agent expressed by means of a *by*-phrase. (32a) illustrates that the acceptability of *by*-phrases with this type of passives is restricted with verbs of this kind. Moreover, such verbs clearly do not allow eventive readings as shown in (32b).

- (32) a. ??Jovan je voljen od strane Ana.
 Jovan.NOM AUX loved from side Ana.GEN
 ‘Jovan is loved by Ana.’
- b. *Jovan je juče voljen.
 Jovan.NOM AUX yesterday loved
 ‘Jovan was loved yesterday.’

The fact that typical eventive verbal passives are ruled out with the verb *voleti* (‘voleti’) is due to the fact that this is a stative verb, which is incompatible with an eventive reading. In other words, only adjectival stative passives are available with such verbs. This can be shown by the fact that adjectival passives require an additional auxiliary BE in the past tense form. For instance, the sentence in (32b) can be remedied by inserting this additional auxiliary (33).

⁴¹ Found online among more than 8,000 hits (LINK: <https://trudnocaizdravlje.rs/supruznik-ne-treba-da-bude-na-drugom-mestu-kad-dodje-dete-trudnoca-i-zdravlje/>). Also found in srWaC.

- (33) Jovan je juče bio voljen (ali danas nije).
 Jovan.NOM AUX yesterday was loved but today AUX.NEG
 ‘Jovan was loved yesterday, but today, he isn’t.’

This extra auxiliary is necessary with adjectives but not with verbal passives (34). Since the participial form of *voleti* (‘love’) behaves like an adjective and not like a verbal passive with respect to this test, we can conclude that this verb can derive an adjectival passive participle but not a verbal one.

- (34) a. Stolica je juče polomljena. *verbal passive*
 chair AUX yesterday broken
 ‘The chair was broken yesterday.’
- b. Stolica je juče bila crvena. *adjectival predicate*
 chair AUX yesterday BE red
 ‘The chair was red yesterday.’

The restricted availability of *by*-phrases with verbs such as *voleti* (‘love’) is, however, related to the fact that *by*-phrases have a much more restricted distribution with adjectival passives compared to verbal ones (Gehrke 2013). The reader is referred to the previous Chapter for a detailed discussion of these facts. What is important for our purposes here is that Gehrke’s (2013) account of similar phenomena in German can be applied to these data from Serbian as well. Namely, the difference between the example in (31), where the *by*-phrase is fully acceptable, and (32a), where it is severely degraded, lies in the referentiality of the NP in the complement of the *by*-phrase. The proper name *Ana* in (32a) is fully referential, which is why the sentence is ungrammatical, while the NP in the complement of the *by*-phrase in (31) is not (it has a generic reading), which is why the sentence is grammatical. The context of the sentence in (31) is one where the author discusses

children's psychological well-being and the importance of parental care. In other words, they are not referring to any specific child or parent or set of children and parents. Therefore, the reading is clearly generic.

In German, which is a language with articles, this impact of (non)referentiality on the acceptability of *by*-phrases with adjectival passives is immediately apparent on the basis of minimal pairs like (35). Both sentences in (35) contain an adjectival passive and a *by*-phrase, and the only difference lies in the article inside the DP in the complement of the *by*-phrase. The unacceptable version contains the definite article while the acceptable one contains an indefinite article.

- (35) a. *Die Zeichnung ist von dem Kind angefertigt.
the drawing is by the child produced
- b. Die Zeichnung ist von einem Kind angefertigt.
the drawing is by a child produced
- 'The drawing is produced by a child.'

(Alexiadou, Gehrke, and Schäfer 2014, p. 126)

Such a contrast in the acceptability of definite and indefinite DPs as part of the *by*-phrase is not observed with verbal passives. The contrast is most clearly visible in German because German adjectival and verbal passives select different auxiliaries, but similar observations have been made for English (McIntyre 2013) and Spanish (Gehrke and Marco 2014). The reason why adjectival passives reject strongly referential DPs as part of the *by*-phrase stems from the fact that they denote an event-kind and not an event particular (Gehrke 2013; Alexiadou et al. 2014). Consequently, they can only tolerate kind modification. Simply put, an event kind cannot be modified by a DP referring to a particular individual.

As illustrated by the contrast between (31) and (32a), the adjectival passive derived from the verb *voleti* ('love') obeys the same restriction, but in Serbian, the distinction cannot be tied to the presence of a definite or indefinite article because the language does not have this category. Still, the information about (in)definiteness is always available in the context.

In sum, then, those Class 1 verbs that can derive a passive participle (e.g. *voleti* 'love') allow adjectival but not verbal passives and with adjectival passives they allow *by*-phrases only if the NP in the complement of the *by*-phrase is not strongly referential (e.g. a pronoun or a proper name). It is possible to account for these facts by assuming the division of the upper layer of the traditional VP into VoiceP, which introduces the Agent argument, and v P, which introduces event semantics (Harley 2013). Accepting Bruening's (2014) proposal that passives are derived by introducing a passive head on top of VoiceP, we can explain why this verb generates the adjectival passive form since we have shown that it does contain the VoiceP layer. On the other hand, this verb cannot produce a verbal passive in the same manner but the explanation for this cannot be due to the lack of VoiceP. Instead, the explanation can be tied to the fact that the verbal passive head (PassP in Bruening's 2014 terminology) requires an event argument, which is introduced by the eventive v P. To account for the lack of verbal passive with *voleti* ('love') we can assume that this particular verb does not contain the portion of the structure responsible for introducing event semantics (v P) at all. However, since v P is also typically treated as a 'verbalizer' or the portion of the structure which takes a categoriless root and turns it into a verb (Harley 2013), we could assume that *voleti* ('love') does have this part of the structure but this particular v^0 is marked as stative.⁴² Consequently, this verb is not a suitable input for the head that derives a verbal passive because it

⁴² I will argue for the latter position in the continuation of this chapter as I will show that a stative causative v^0 is necessary to account for the origin of accusative case with stative Class 2 verbs. The presence of accusative case on the internal argument of stative Class 1 verbs such as *voleti* ('love') can also be attributed to the stative causative v^0 .

either does not have ν P or it has a ν P layer but the head of this phrase does not introduce an event argument. Those Class 1 verbs that do not produce passive participles at all, either verbal or adjectival ones, can be accounted for by assuming that they do not project VoiceP, which is the necessary component of the input to both passive heads.

The same explanation for the lack of passive forms easily extends to Class 3 and Class 4 Psych verbs as these are clearly not agentive so they do not project a VoiceP layer and, thus, do not constitute a valid input to either the adjectival or verbal passive head. With Class 3 verbs the Experiencer is realized in the form of a dative case-marked bare NP and the Stimulus participant appears in the form of a nominative case-marked NP (36).

- (36) Ivanu prija topla čokolada.
 Ivan.DAT appeal warm chocolate.NOM
 ‘Hot chocolate appeals to Ivan.’

The referent of the NP that introduces the Stimulus participant is typically inanimate as illustrated in (36) and animates are disfavored in this position (37a). If they want to communicate something like (37a), speakers will normally opt for a more abstract expression that avoids the animate referent (37b).

- (37) a. ?Ivanu prija Ana.
 Ivan.DAT appeal Ana.NOM
 Attempted: ‘Ana appeals to Ivan.’
- b. Ivanu prija Anino društvo.
 Ivan.DAT appeal Ana’s company.NOM
 ‘Ana’s company appeals to Ivan.’

However, even if animates were perfectly acceptable in this position there would be no reason to assume that they have the thematic role of Agent. In fact, there is no possibility of coercing sentences with an NP referring to an animate entity into an agentive reading by introducing an adverbial such as *namerno* ('on purpose/intentionally') (38), which shows that the agentive reading is simply unavailable and there is no reason to postulate the presence of VoiceP. As a result, these structures are not viable inputs to passive heads.

- (38) *Ivanu namerno prija Ana.
 Ivan.DAT intentionally appeals Ana.NOM
 'Ana (intentionally) appeals to Ivan.'

Class 4 verbs show the same behavior. They involve a nominative-marked Experiencer and an oblique case-marked Stimulus argument (39). Recall that a significant portion of these verbs contain the obligatory non-reflexive SE morpheme (so-called 'frozen entries'), which is inherently non-agentive.

- (39) Ivan se divi slici.
 Ivan.NOM SE admire painting.DAT
 'Ivan admires the painting.'

Even with those Class 4 verbs that do not include the SE morpheme, the agentive interpretation is ruled out. For instance, the verbs *verovati* ('trust') and *zavideti* ('envy') exhibit the properties of Class 4 verbs but they do not include the SE morpheme. The agentive interpretation is completely excluded with these verbs, as evidenced by the fact that they cannot be combined with the adverbials of intentionality (40).

- (40) a. *Ivan namerno veruje Ani.
 Ivan.NOM intentionally believes Ana.DAT
 Intended (literally): ‘Ivan intentionally believes Ana.’
- b. *Ivan namerno zavidi Ani.
 Ivan.NOM intentionally envies Ana.DAT
 Intended (literally): ‘Ivan intentionally envies Ana.’

On a side note, the distribution of the adverbials of intentionality is quite broad in Serbian, and they can even force unaccusative verbs into agentive interpretation in the presence of an animate subject (41).

- (41) Ivan je (namerno) pao.
 Ivan.NOM AUX intentionally fell
 ‘Ivan fell on purpose.’

Since Class 3 and Class 4 verbs cannot even be coerced into agentive interpretations by the introduction of the intentionality adverbial, one can conclude that they are strictly non-agentive, and hence, they never project VoiceP, which accounts for the lack of adjectival and verbal passives with these verbs.

The situation becomes somewhat more complicated with Class 2 verbs because the majority of them do form passive participles, but there are also those that do not. One verb from this class that does not form passive participles is the verb *boleti* (‘pain’) (42). The passive participle derived from this verb is unattested.

- (42) a. Ivana boli glava.
 Ivan.ACC pains head.NOM
 ‘Ivan’s has a headache.’ / Literally ‘Ivan’s head pains him.’

b. *Ivan je boljen (od (strane) glave.

Ivan.NOM AUX pained froma side head

Intended literally: 'Ivan is pained by his head / from his head.'

The inability of this verb to derive a passive participle is fully predicted on the present account. Namely, this verb is also strictly non-agentive. In its most typical uses, the Stimulus argument of this verb refers to the Experiencer's body parts. In metaphorically extended uses, this verb can take an abstract noun in the position of the Stimulus participant as well (43). However, it does not take animates in the position of Stimulus even on this metaphorically extended use (44).

(43) Mariju boli nepravda.

Marija.ACC pains injustice.NOM

'Injustice pains Marija.'

(44) *Mariju boli Stevan.

Marija.ACC pains Stevan.NOM

Intended literally: 'Stevan pains Marija.'

It should be noted that poetic language does allow the use of NPs referring to animates as the Stimulus participant with this verb (45). However, even poetic language would not allow an intentionality adverbial in this construction, showing that the verb is strictly non-agentive.

(45) "Nekako najviše me boliš ti."⁴³

somehow the.most I.ACC pain you.NOM

'Somehow, you pain me the most.'

⁴³ The title and the chorus line of a song by a well-known punk band called Six Pack. Link: <https://tekstovi.net/2,857,50551.html>.

(46) *Namerno me boliš ti.
intentionally I.ACC pain you.NOM

Intended: 'You hurt me intentionally.'

Since this verb does not allow an Agent, and consequently, does not project the VoiceP layer, its inability to derive either a verbal or an adjectival passive participle is predicted on the present account.

The ability of the verb *boleti* ('pain') to license accusative case on the Experiencer argument in the absence of VoiceP raises the question of the origin of accusative case with these verbs. To the extent that accusative case is seen as structural, the absence of VoiceP with the verb *boleti* ('pain') should be taken as a clear indication that VoiceP is not responsible for the assignment of accusative case. Kratzer (1996) argues explicitly that VoiceP is responsible for the assignment of accusative case while according to Chomsky (1995) vP/Agr_oP assigns accusative case to the internal argument. Of course, neither Chomsky (1995) nor Kratzer (1996) assumed that both of these functional heads are present in the structure. In fact, both of them assumed that there is only one functional layer on top of VP/root. More recent work, however, usually involves both of these projections with a clear division of labor such that VoiceP introduces the Agent argument while vP introduces causative semantics and verbalizes the root (Bruening 2014; Harley 2013; Merchant 2008, *inter alia*).

The issue of which of these two heads is responsible for the assignment of accusative case to the internal argument is less clear. Ever since Burzio (1986), the link between the presence of the external argument and the ability of the verb to assign accusative case has been incorporated into the models of the structure of the extended verbal domain. According to Harley (2013), VoiceP is responsible for introducing the external argument while vP merely carries causative

semantics, and it never projects a specifier. On this approach, Burzio's (1986) generalization would have to be encoded by assuming with Kratzer (1996) that VoiceP assigns accusative case to the internal argument since v P never introduces the external argument (and it is present with unaccusative verbs as well). Merchant's (2008) approach is different since it allows v Ps with a specifier position as well as VoiceP, assuming that a DP can move from Spec v P to SpecVoiceP to acquire the thematic role of Agent. On this approach, both VoiceP and v P could theoretically be responsible for the assignment of accusative, but upon closer examination, v P is actually the spot where Burzio's (1986) generalization would have to be encoded as structures without an external argument would be those without Spec v P. In sum, there are two competing hypotheses concerning the locus of accusative case assignment: (i) accusative case is assigned by v^0 ; and (ii) accusative case is assigned by Voice⁰.

The presence of accusative case with a non-agentive (i.e. Voice-less) verb *boleti* ('pain') leaves us no choice but to adopt the former hypothesis and reject the latter one. Recall that the only alternative to these two competing hypotheses with respect to explaining the origin of accusative case with this verb would be to explain it away as an instance of non-structural accusative case, an idea that we rejected on conceptual grounds at the beginning of this chapter. However, here, its shortcomings can be demonstrated on the example of this particular verb. For instance, consider the idea that accusative case is a covert oblique case assigned by a null P, which is what Landau (2010) assumes for all object Experiencers. If that were the case, we would expect some syntactic evidence for the presence of this null P in the structure. We have already seen that Serbian does not allow cliticization out of a PP so if the Experiencer argument with *boleti* ('pain') were a PP headed by a null P, we would expect it to block cliticization (Abels 2003). Recall also, from Chapter 4, that Milićev and Bešlin (2019) show that this test can diagnose null Ps with

instrumental marked NPs. However, (47) shows that cliticization of the accusative-marked Experiencer *ga* is possible with this verb, and so there is no reason to assume that this NP is part of a PP headed by a null-P.

- (47) Juče ga je jako bolela glava.
 yesterday him.CL AUX intensely pained head
 ‘He had an intense headache yesterday.’

Similarly, assuming that accusative case on the internal argument of this verb is lexical would implode the very definition of lexical case as it is defined as case other than accusative assigned to the complement of the verb (Woolford 2006). In sum, there is no other option but to assume that accusative case is assigned by v^0 as it is present with this clearly non-agentive verb.

The idea that accusative case is assigned by v^0 with the verb *boleti* (‘pain’) entails that stative verbs can have a non-eventive version of the causative v^0 because this is a stative verb (48).

- (48) Stevana je bolela glava dva sata / *za dva sata.
 Stevan.ACC AUX pained head two hours.GEN / for two hours
 ‘Stevan had a headache for two hours / in two hours.’

Causativity is often linked to eventivity so that the semantics of CAUSE comes from the causing event introduced by v (Pylkkänen 2008). If that were the case, we would not expect to find causative semantics with stative verbs. From this, one could conclude that (causative) v P cannot be present with states, in which case we would be hard pressed to explain the origin of accusative with a verb like *boleti* (‘pain’). We have shown that there is no VoiceP with this verb, but its stative semantics could lead us to assume that it does not project v P either. On the other hand, if v P is also responsible for ‘verbalizing’ the root, then the very fact that we are dealing with a verb compels us to assume that this layer of structure is present with this item as well, but to explain the origin

of accusative case on the internal argument, this would have to be a type of v^0 that is capable of assigning accusative case. In that sense, what we need for this account to work is to assume that *boleti* ('pain') includes a v^0 which does involve causative semantics (in order to be able to assign accusative case) but does not introduce an event argument because the verb itself is stative.

There are strong reasons to believe that causativity should not be equated with eventivity. Neeleman and Van de Koot (2012) argue against the notion that causation needs to be modeled by resorting to a bi-eventive structure where the causing event leads to the main event, which results in some type of state (49b). Instead, they assume that causation should be modeled as an identification of the Crucial Contributing Factor (CCF) of a particular main eventuality which can be either a state or an event (49a).

- (49) a. $\lambda y \lambda x[[e x [s \dots y \dots]]] \ \& \ x = \text{CCF}]$
 b. $\lambda y \lambda x[e \text{ CAUSE } ([e1 \dots x \dots], [e2 \dots [s \dots y \dots]])]$

(Neeleman and Van de Koot 2012, p. 23)

What this means in syntactic terms is that the projection that introduces the external argument does not necessarily introduce an additional event. It could either be a VoiceP in the sense of Kratzer (1996) or some type of PredP (Bowers 1993), but it cannot be an eventive vP . Their reasons for this conclusion are highly pertinent to our purposes here as they have to do with stative causatives. According to Neeleman and Van de Koot (2012), assuming that the projection that introduces the external argument merely names the CCF rather than denoting a causing event unifies eventive causatives with the class of 'maintenance verbs' (50) in their terminology.

- (50) a. The wall protects the city.
 b. John's uncle supports him financially.
 c. The beam carries the wall above it.

- d. The sheriff upholds the law. (Neeleman and Van de Koot 2012, p. 39)

The verbs in (50) all denote states, but what is common to these states and typical transitive events (51) is that the subjects name CCFs of all these eventualities.

- (51) Tom killed the sheriff.

On the other hand, the assumption that the external argument is introduced by means of a causing event leaves the examples in (50) unexplained as none of these sentences involves a single event, let alone two events linked by a causal relationship.

For our purposes here, it is not necessary to delve deeper into the theorizing of the linguistic representation of causation, but I believe that it is rather clear that causation cannot be equated with eventiveness. Moreover, von Stechow (1996) shows that the semantic ambiguity of sentences with causative transitive verbs containing adverbials such as *again* points in the direction of bi-eventive structure, with *again* modifying either the causing sub-event or the result state (52).

- (52) Steven opened the door again.
- (i) Steven did something again and as a result the door is open.
- (ii) Steven did something and as a result the door is open again.

Therefore, eventive causative v^0 probably does belong to the inventory of functional heads, but a stative causative v^0 does, too, and if it does, it could explain the origin of accusative case on the verb *boleti* ('pain'). In terms of featural composition, the inventory of v heads that is needed to capture the data is presented in (53).

- (53) a. stative unaccusative: v [– causative; – eventive]
b. unaccusative: v [– causative; +eventive]
c. stative causative [+causative; – eventive]
d. causative [+causative; +eventive]

The verb *boleti* ('pain') would, thus, incorporate the stative causative version of v^0 (53a). The question that arises at this point is whether there is any evidence of the presence of causative semantics with this stative verb apart from the presence of accusative case. The evidence for the presence of causative semantics with *boleti* ('pain') comes from the selection of clausal arguments.

In Serbian, clausal arguments can be introduced with a number of different complementizers, but two of them are of interest for our purposes here. These are *da* and *što*. These two complementizers have received a significant amount of attention in the literature, and it is beyond the scope of this thesis to address them in great detail. For a detailed discussion of *da*, the reader is referred to Todorović (2012) and references therein. Milićević (2016) provides an extensive analysis of various kinds of clauses introduced by *što*. These works show that *da* and *što* can introduce different structures. *Da* can introduce at least two, but quite probably three, different kinds of clausal items (Todorović and Wurmbrand 2016; Wurmbrand et al. 2020). (54a) shows that *da* can introduce a full CP with an independent tense and a subject that is different from the one in the matrix clause. The structure introduced by *da* in (54b) has a fixed present tense but it allows a subject different from the one in the matrix clause while the *da* complement in (54c) does not allow either an independent subject or an independent tense. Building on the work of Mišeska-Tomić (2003, 2004), Todorović (2012) treats the instance of *da* in (54a) as an indicative complementizer and those in (54b and c) as subjunctive markers.

- (54) a. Ivan je rekao da će Petar doći sutra.
 Ivan.NOM AUX said DA will Petar.NOM come tomorrow
 'Ivan said that Petar would come the next day.'
- b. Ivan želi da Petar dođe sutra.
 Ivan.NOM wants DA Petar.NOM come tomorrow

‘Ivan wants Peter to come tomorrow.’

- c. Ivan mora da (*Petar) dođe.
Ivan.NOM must DA Petar.NOM comes

‘Ivan must come.’ / ‘*Ivan must Peter come.’

As far as *što* clauses are concerned, Milićević (2016) observes that they can introduce specificational pseudoclefts (55a) and free relatives (55b). With specificational pseudoclefts, *što* has to be accompanied by a demonstrative pronoun. On the other hand, *što* can introduce a free relative without the demonstrative pronoun.

- (55) a. Ono / to što Ivan čita su novine.
that / this what Ivan.NOM reads are newspapers.
‘What Ivan reads is newspapers.’

- b. Ivan voli što ga Marija podržava.
Ivan.NOM loves what him Marija.NOM supports
‘Ivan likes it that Marija supports him.’

Interestingly, with object Experiencers, the Stimulus argument can be realized as a free relative only post-verbally (56). If it appears pre-verbally, *što* has to be accompanied by a demonstrative pronoun.

- (56) a. Profesora nervira što ga učenici ne slušaju
Professor.ACC annoys what him students not listen
‘Professor is annoyed that his students do not listen to him.’
- b. *(To) što ga učenici ne slušaju nervira profesora.
that what him students not listen annoys professor.ACC
‘The fact that students do not listen to him annoys the professor.’

The crucial observation for our purposes here is that the *što*-clause that denotes the Stimulus participant is factive, meaning that the truthfulness of the proposition it introduces is part of the entailment of the sentence as a whole. This is what makes *što*-clauses different from subjunctive *da*-clauses, which are, of course, not factive.

While they accept *što*-clauses as expressions introducing the Stimulus participant, object Experiencers tend to reject *da*-clauses in the same position (57).

(57) a. Ivana je iznerviralo što ga je profesor kritikovao.

Ivan.ACC AUX annoyed what him AUX professor criticized

‘The fact that the professor criticized him annoyed Ivan.’

b. *Ivana je iznerviralo da ga je profesor kritikovao.

Ivan.ACC AUX annoy that him AUX professor criticized

‘The fact that the professor criticized him annoyed Ivan.’

Since the Stimulus participant has the thematic role of Causer with object Experiencers, I take the contrast in (57) to imply that the causative semantics of object Experiencers triggers an existential entailment about the Causer argument.

The verb *boleti* (‘pain’) exhibits identical behavior to other object Experiencers in rejecting *da*-clauses (58b), while accepting *što*-clauses (58a) and requiring the pronoun *to* if the Stimulus appears preverbally (58c).

(58) a. Jovana boli što ga ne puštaju napolje.

Jovan.ACC pain.PRES ŠTO him not let outside

‘That he is not allowed to go outside pains Jovan.’

b. *Jovana boli da ga ne puštaju napolje.

Jovan.ACC pain.PRES DA him not let outside

Intended: ‘That he is not allowed to go outside pains Jovan.’

- c. *(To) što ga ne puštaju napolje boli Jovana.
this what him not let outside pains Jovan.ACC

‘The fact that he is not allowed to go outside pains Jovan.’

If the existential entailment about the Causer participant is the reason behind this selectional restriction, we have evidence that *boleti* (‘pain’) does involve causative semantics despite its stativity.

To show that this selectional restriction is indeed the consequence of the existential entailment requirement as part of the causative semantics, we can look at the selectional requirements of those verbs that uncontroversially do not involve relations of causation. There is a consensus in the literature concerning the lack of causative semantic with Class 3 Psych verbs (Pesetsky 1994; Landau 2010). If the requirements of causativity are truly behind the selectional restrictions with object Experiencers, we would expect to find no such restrictions with non-causative Class 3 Psych verbs.

The data confirms this hypothesis. The verb *prijati* (‘appeal’), illustrated below, shows no restrictions of the kind shown in (57) and (58). This verb can freely combine with both *što* and *da*-clauses (59).

- (59) a. Jovanu prija što mu daju čokoladu.
Jovan.DAT appeal.PRES ŠTO him give chocolate

‘The fact that he is allowed to eat chocolate appeals to Jovan.’

- a’. Jovanu prija da mu daju čokoladu.
Jovan.DAT appeal.PRES DA him give chocolate

‘Being given chocolate appeals to Jovan.’

- b. Jovanu smeta što mu daju čokoladu.
 Jovan.DAT bother.PRES ŠTO him give chocolate
 ‘The fact that he is allowed to eat chocolate bothers Jovan.’
- b’. Jovanu smeta da mu daju čokoladu.
 Jovan.DAT bother.PRES DA him give chocolate
 ‘Being given chocolate bothers Jovan.’
- c. Jovanu godi što mu daju čokoladu.
 Jovan.DAT please.PRES ŠTO him give chocolate
 ‘The fact that he is allowed to eat chocolate pleases Jovan.’
- c’. Jovanu godi da mu daju čokoladu.
 Jovan.DAT please.PRES DA him give chocolate
 ‘Being given chocolate pleases Jovan.’

In sum, the selectional restrictions observed with the verb *boleti* (‘pain’) point in the direction of the presence of causative semantics despite the verb’s inherent stativity. I take this as a justification for postulating the presence of a stative causative v^0 , which offers us an explanation for the presence of accusative case on the Experiencer argument with this verb. At the same time, the lack of agentive semantics warrants the assumption about the lack of VoiceP explaining the absence of a passive participle.

Recall that *boleti* (‘pain’) is not the only Class 2 verb that does not derive passive participles. In (21), repeated here as (60) for convenience, I illustrated another verb from this class that does not derive a participle. To reiterate, some speakers find this participial form acceptable but a large number of individuals I consulted including myself reject it, which warrants an

assumption that at least in the I-languages of certain speakers of Serbian the form **razbešnjen* is ruled out.

- (60) a. Ivan je razbesneo Mariju.
Ivan.NOM AUX angered Marija.ACC
‘Ivan angered Marija.’
- b. ??Marija je razbešnjena.
Marija.NOM AUX anger.PRT
‘Mary is angered.’

In order to substantiate this assumption about the unacceptability of this participial form, I will present some illustrative raw corpus data. The Serbian Web Corpus (SrWac) shows a total of 16 hits for this form. By contrast, the participial form of another Class 2 verb, *zabezeknuti* (‘dazzle’), which is significantly less frequent than *razbesneti* (‘anger’) in its active use, shows 1040 hits while the passive participle of *iznervirati* (‘annoy’) has 551 hits. As a point of comparison, the participial form of the verb *boleti* (‘pain’), which none of my consultants found acceptable still shows 15 hits in this corpus. SrWac is made up of a semi-filtered collection of online texts which could contain texts written by non-native speakers or reproductions of archaic texts, etc. This fact about the corpus can explain why forms that the vast majority of native speakers would not use could still show a certain number of hits. This is not to suggest that the form *??razbešnjen* (‘angered’) is totally unacceptable in Serbian but to point out that its use is restricted to a relatively small portion of the total number of users as evidenced by corpus data. There may well be a inter-speaker or perhaps even inter-dialectal variation on this issue.

The reason why *razbesneti* (‘anger’) does not produce a passive participle (in the grammars of some speakers) is not clear at this point. I have argued that what explains the total absence of the

passive participle form with a certain type of verb is the absence of VoiceP while the lack of verbal passive is the consequence of the lack of event argument (eventive v^0). The verb *razbesneti* ('anger') is clearly eventive, as evidence by Dowty's (1979) 'in X time/for X time' test (61).

(61) a. Ivan je razbesneo Mariju za dva minuta.
 Ivan.NOM AUX angered Marija.ACC for two minutes
 'Ivan angered Marija in two minutes.'

b. *Ivan je razbesneo Mariju dva minuta.
 Ivan.NOM AUX angered Marija.ACC two.GEN minutes.GEN
 Intended: 'Ivan angered Marija for two minutes.'

Like other Class 2 verbs, this verb also licenses accusative case to its internal argument (the Experiencer). Eventive causative semantics in combination with the presence of the internal argument is evidence enough to postulate the presence of the v P layer, which is a prerequisite for a verbal passive. However, all of this does not prove that the verb also contains VoiceP, and from the standpoint of the explanation for the lack of passive participles with certain Psych verbs I have developed here, only the lack of this portion of verbal structure could account for this puzzling paradigm gap.

So, the question that we are facing at this point concerns the evidence for the lack of VoiceP with this particular verb. Recall that the test with the insertion of an intentionality adverbial is only partially reliable because even some unaccusative verbs can be forced into an agentive interpretation if they are used with this adverbial (62).

(62) Stevan je namerno pao.
 Stevan.NOM AUX intentionally fell
 'Stevan fell on purpose.'

I have shown that the rejection of this adverbial is a convincing sign that a verb is non-agentive but given examples like (62), it does not follow that a verb that can be combined with this adverbial is necessarily agentive. *Razbesneti* ('anger') does accept this adverbial (63), but this still does not mean that we need to assume that it projects VoiceP.

- (63) Stevan je namerno razbesneo Anu.
 Stevan.NOM AUX intentionally angered Ana.ACC
 'Stevan angered Ana on purpose.'

Nonetheless, assuming that this verb does not project VoiceP merely because it lacks a passive participle would amount to a circular statement, so we have to look for independent evidence for this assumption. One such piece of evidence comes from the discussion of SE forms with these verbs [Section 3.2]. As part of the investigation of the internal structure of SE forms, I used different expressions of causation and established that instrumental case-marked bare NPs need to be licensed by VoiceP while *od*('from')-PPs are licensed by *vP*. Recall that the form *razbesneti se* ('anger SE') and a handful of other forms stood out from the majority of verbs that licensed instrumental case-marked bare NPs (64b) in that it licensed *od*('from')-PPs.

- (64) a. Jovan se razbesneo *bratovim ponašanjem / od
 Jovan.NOM se angered brother's.INST behavior / from
 bratovog ponašanja.
 brother's behavior.GEN
 'Jovan got angry from because of his brother's behavior.'
- b. Jovan se zaprepastio bratovim ponašanjem / ??od
 Jovan.NOM SE amazed brother's behavior.INST from

bratovog ponašanja.
 brother's behavior.GEN

‘Jovan got amazed because of his brother’s behavior.’

This set of facts was explained by assuming that *razbesneti se* (‘anger SE’) is structurally similar to typical anticausatives, which also accept *od*(‘from’)-PPs while rejecting instrumental case-marked bare NPs (65a), while *zaprepastiti se* (‘dazzle SE’) was similar to reflexives constructions, which need not entail an agentive interpretation (65b).

(65) a. Vrata su se otvorila *vetrom / od vetra.
 door.NOM AUX SE opened wind.INST / from wind.GEN
 ‘The door opened from the wind.’

b. Ivan se posekao nožem / od noža.
 Ivan.NOM SE cut knife.INST / from knife.GEN
 ‘Ivan cut himself with a knife.’

Therefore, we have evidence from SE forms which speaks in favor of the absence of VoiceP with *razbesneti* (‘anger’).

While at the topic of SE forms, we can take a look at reflexive uses where this same verb also exhibits somewhat anomalous behavior. Namely, other Class 2 verbs can get a reflexive interpretation by introducing the complex reflexive form *sam sebe* (lit. ‘alone self’) (66a). However, with *razbesneti* (‘anger’) this produces a quite degraded output (66b).

(66) a. Jovan je iznervirao samog sebe.
 Jovan.NOM AUX annoyed alone self
 ‘Jovan annoyed himself.’

- b. ??Jovan je razbesneo samog sebe.
 Jovan.NOM AUX angered alone self
 ‘Jovan angered himself.’

There are other features that make this verb stand out among the vast majority of Class 2 verbs. While other Class 2 verbs retain the same transitive form in both aspectual alternatives (perfective and imperfective) (67), the imperfective version of *razbesneti* (‘anger’) is not transitive but intransitive (68b-c).

- (67) a. Jovan plaši Ana.
 Jovan.NOM scares Ana.ACC
 ‘Jovan scares Ana.’
- a’. Jovan je uplašio Ana.
 Jovan.NOM AUX PF.scared Ana.ACC
 ‘Jovan scared Ana.’
- b. Jovan nervira Ana.
 Jovan.NOM annoys Ana.ACC
 ‘Jovan annoys Ana.’
- b’. Jovan je iznervirao Ana.
 Jovan.NOM AUX PF.annoyed Ana.ACC
 ‘Jovan annoyed Ana.’
- (68) a. Jovan je razbesneo Ana.
 Jovan.NOM AUX PF.angered Ana.ACC
 ‘Jovan angered Ana.’

- b. *Jovan besni Anu.
 Jovan.NOM anger Ana.ACC

Intended: ‘Jovan angers Ana.’

- c. Ana besni (na Jovana).
 Ana.NOM anger at Jovan.ACC

‘Ana is angry at Jovan.’ / Literally: ‘Ana angers at Jovan.’

Following the standard DM assumption that morphologically more complex forms are also syntactically more complex, we quickly arrive at the conclusion that the imperfective forms of these verbs are more basic (note that this does not apply to all the verbs in Serbian) and that perfectives are built on top of them⁴⁴. What this might suggest for the verb *razbesneti* (‘anger’), in particular, is that it stands out from the rest of Class 2 verbs in that its Experiencer participant does not start out as a proper Theme in the complement of the VP/root. Rather, it exhibits the behavior of the class of verbs known as Theme unergatives or verbs of internal causation (Levin and Hovav 1995; Reinhart 2003). These are non-agentive intransitives (hence, not unergatives), which exhibit a different behavior from unaccusatives as the cause of the eventuality denoted by the verb lies inside the Theme itself. They exhibit an array of syntactic differences with unaccusatives across languages. Consider Reinhart’s (2016, p. 82) examples from Hebrew (69) and (70). The Theme unergative cannot realize the Theme argument post-verbally (69b) nor does it allow a possessive dative (69c). Both of these structures are possible with unaccusatives (70). Therefore, the

⁴⁴ There is a small number of verbs such as *dati* (‘give’), which is perfective, whose imperfective form seems to be morphologically more complex *davati* (‘give.ipf’). *Poći* (‘leave’) is another such example where the imperfective form is *polaziti* (‘leave.ipf’). While these are quite frequent verbs with very basic semantics, their behavior in this respect is exceptional as with the vast majority of verbs, the perfective version is more complex. However, irregularities actually tend to be much more common with frequent, basic and familiar words crosslinguistically (cf. English irregular verbs and irregular plurals).

distinction between Theme unergatives and unaccusatives is syntactically and semantically well-motivated.

- (69) a. Šney kumkumim šarku.
two kettles whistled
'Two kettles whistled.'
- b. *Šarku šney kumkumim.
whistled two kettles
'Two kettles whistled.'
- c. Ha-kumkum šarak le Dina.
the kettle whistled to Dina
Intended (literally): 'The kettle whistled to Dina.'
- (70) a. Naflu štey tmunot.
fell two pictures
'Two pictures fell.'
- b. Ha-tmunot naflu le-Dina.
two pictures fell on Dina
'Two pictures fell on Dina.'

I would suggest that the verb form *razbesneti* ('anger') is built on top of a Theme-unergative *besneti* ('to emit/show anger'), while the verbs that retain their transitivity across aspectual alternatives (the majority of Class 2 verbs) have a proper Theme argument. While it is not my goal here to provide a full analysis of this difference, I want to point out that the distinction between VoiceP and *v*P that I have exploited in this dissertation can be utilized at this point as well to

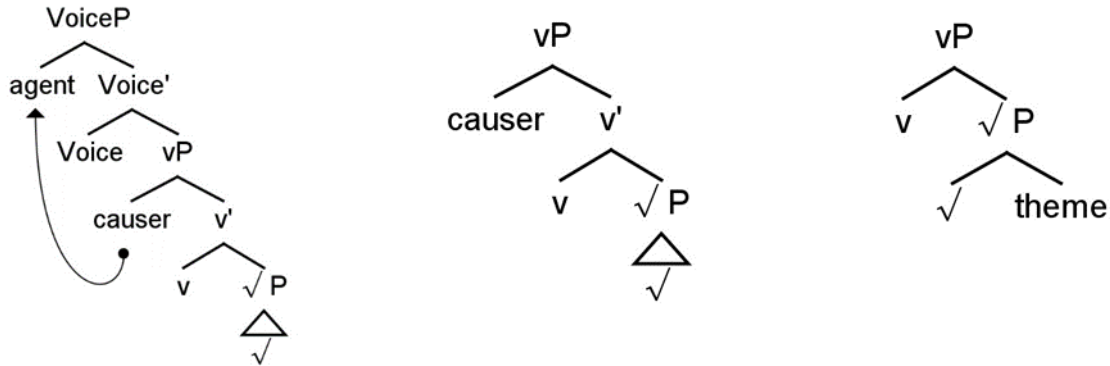
capture the difference between theme unergatives, typical unergatives and unaccusatives as illustrated in (71).

(71)

a) unergative structure

b) theme unergative structure

c) unaccusative structure



As shown in (71a), typical unergatives (*igrati* ‘play/dance’, *trčati* ‘run’, *hodati* ‘walk’, etc.) are different from so-called ‘theme unergatives’ (*sijati* ‘shine’, *pištati* ‘whistle’, *smrdeti* ‘stink’, etc.) in that they project a VoiceP layer hosting an Agent argument. On the other hand, so-called ‘Theme unergatives’ have an external argument, but this argument has the thematic role of Causer rather than Agent, and the VoiceP layer is not projected (71b). Of course, under this analysis, the only argument of a “theme unergative” would not technically be a Theme but a Causer. However, this is in line with the observation that “theme unergatives” and unaccusatives do not assign the same thematic roles to their arguments in the first place. Therefore, the word “Theme” in the label “theme unergatives” must be understood provisionally.

The structure in (71c) could, thus, be applied to Psych verb intransitives like (68c). Note that there is in principle no issue in deriving the transitive verb *razbesneti* (‘anger’) from the structure like the one in (71b) because transitives are readily derived from “theme unergatives”

(72), and the principles of DM do not block the insertion of another ν P layer on top of the already existing one with a theme unergative.

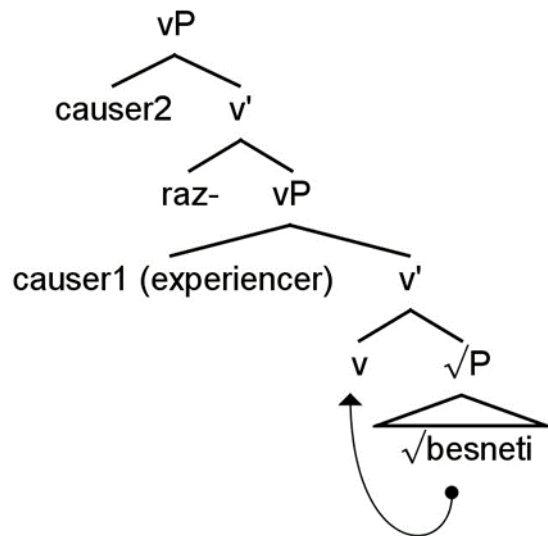
- (72) a. The shoes shine.
b. Peter shined his shoes.

Once the causative ν is inserted on top of the intransitive *besneti* ('show/emit anger') (73a), we get a typical causative transitive construction, and the pure intransitive form is no longer possible (73b). The only way to avoid the external argument at that point is by inserting SE, which I have analyzed as an attachment to the ν head that does not project a Spec position (73c).

- (73) a. Petar je razbesneo Marka.
 Petar.NOM AUX angered Marko.ACC
 ‘Petar angered Marko.’
- b. *Marko je razbesneo.
 Marko.NOM AUX angered
 Intended: ‘Marko got angry.’
- c. Marko se razbesneo.
 Marko.NOM SE angered
 ‘Marko got angry.’

The structure of the form *razbesneti* ('anger') can, thus, be represented as (74) where “Causer1” stands for the locus of internal causation (i.e. the Experiencer), and “Causer2” stands for the external cause.

(74)



The assumption that *besneti* ('show anger/rage') is a Theme unergative brings up the question whether all intransitive Experiencer verbs in Serbian should be treated as Theme unergatives. I would argue that this is not the case. Namely, there is no reason to expect a completely uniform behavior among Psych verb intransitives given the fact that other intransitive verbs are not homogenous in this regard. Therefore, I would assume that within the class of intransitive Psych verbs, there are those verbs that assign a Theme theta role (i.e. unaccusatives, see 75) and those that assign a Causer theta role (i.e. 'theme unergatives', see 76).

- (75) a. Petar pati zbog propuštene prilike
 Petar.NOM suffer because missed.GEN opportunity.GEN
 'Petar suffers because of a missed opportunity.'
- b. Petar strepi zbog Ivanove bolesti
 Petar.NOM strepi because Ivan's illness.GEN

‘Petar frets over Ivan’s illness.’

- c. Petar brine zbog novca.
Petar.NOM worries because money.GEN

‘Petar worries about the money/because of his money issues.’

- (76) a. Petar besni na svoje studente.
Petar.NOM rages at self’s student.ACC

‘Petar rages at his students.’

- b. Petar ludi na svoje studente.
Petar.NOM fulminate at self’s students.ACC

‘Petar fulminates at his students.’

This digression into the internal structure of verbs like *razbesneti* (‘anger’) has hopefully motivated the conclusion that such verbs are different from the majority of Class 2 verbs, which derive passive participles. The other type of verb that never produces a passive participle is *boleti* (‘pain’), and the exceptional structural properties of this verb have also been demonstrated in this section. I have argued that only full VoiceP structures represent a viable input to passive formation. For verbs such as *boleti* (‘pain’), the clear lack of agentive semantics was taken as evidence for the lack of VoiceP. On the other hand, a number of special properties of *razbesneti* (‘anger’) have been listed in order to demonstrate its exceptional nature. The reason why a structure like (74), which was proposed for *razbesneti* (‘anger’) does not present a viable input to passive participle formation can only be speculated on at this point. It could be that the double vP layer that we observe with this verb somehow blocks VoiceP. In other words, there may be a limit on the number of possible verbal layers in the extended verbal projection such that a sequence *VoicP>vP>vP

exceeds this limit. Of course, a limit of this kind would, ideally, have to be derived from some deeper syntactic (or semantic) property, but I will leave the implementation of this statement for further research.

6. Psych verbs and *-nje* nominalizations⁴⁵

In the previous chapter, I addressed the syntactic and semantic properties of adjectival and verbal participles with Serbian Psych verbs. The focus was on explaining the observed restrictions on the formation of these participial forms. An analysis of deverbal *-nje* nominalizations derived from Psych verbs is a natural next step following the investigation of passive participles given Marvin's (2002) proposal that nominalizations are built from adjectival passive participles. Marvin's (2002) original account was aimed primarily at Slovenian; however, the generalizations she establishes for Slovenian are, for the most part, descriptively adequate in the context of Serbian, which is why a number of authors working on Serbian have used Marvin's (2002) account as a point of departure (Arsenijević 2010; Simonović and Arsenijević 2014; *inter alia*).

Adopting the assumption that *-nje* nominals are built from passive participles in its strictest form predicts that all and only those verbs that can generate *-n* participles should be able to derive *-nje* nominals. It has been observed that the strictest version of this prediction undergenerates as there are attested *-nje* nominalizations with verbs that seem to fail to derive *-n* participles (Simonović and Arsenijević 2014). However, I will argue that the observed undergeneration problem is not fatal and that the assumption in question essentially gives the correct predictions for the domain of Psych verbs.

The second part of this chapter will deal with the internal structure of *-nje* nominals. Bašić (2010) and Simonović and Arsenijević (2014) motivate the division of *-nje* nominals into those derived from perfective verbs and the ones that are derived from imperfective verbs. Bašić (2010) argues that imperfective-derived nominalizations contain full extended VP structure while those

⁴⁵ Some of the ideas and observations that this chapter is based on have been published in (Kovačević 2020). A later version of the analysis extended beyond the domain of psych verbs has been published in (Kovačević 2021).

derived from perfective verbs are either root-derived, or they include a minimal portion of the extended VP structure (Ramchand's 2008 ResP). Simonović and Arsenijević (2014) observe that imperfective-derived *-nje* nominals are fully productive, semantically transparent and phonologically faithful to the base while perfective-derived nominals are much less productive, tend towards semantic opaqueness and systematically unfaithful to the phonology of the base. The syntactic account they propose to capture these properties (more or less) converges with Bašić's (2010) proposal that imperfective-derived nominalizations involve full extended VP structure while perfective-based ones are root derived. Combining these two proposals with the line of research that relies on the tests from the licensing of the expressions of event participants (agentive *by*-phrases, instrumental NPs/DPs, *from*-PPs expressing Causers, etc.) to probe the internal functional structure of deverbal derivations (Kratzer 1994, 2000; Alexiadou and Anagnostopoulou 2008; Alexiadou et al. 2014; Gehrke 2013; *inter alia*), I derive the hypothesis that imperfective-derived *-nje* nominals should license the full array of such expressions while perfective-based ones should derive none.

This hypothesis is partially confirmed, but there are some informative exceptions. First, more semantically compositional perfective-derived *-nje* nominals do, in fact, license *by*-phrases and instrumental case-marked NPs/DPs, but only if these are not strongly referential. Second, imperfective-derived *-nje* nominals license all the expressions introducing event participants, but only if they are derived from the so-called secondary imperfectives.

I draw two basic conclusions from these observations. Firstly, the fact that there are both perfective and imperfective-derived *-nje* nominals that license *by*-phrases and instrumental case-marked NPs/DPs is a strong piece of evidence in favor of the claim that these nominals are derived from passive participles as the Voice_{PASS}⁰ is the most suitable candidate for the element that is

responsible for the licensing of such expressions. Secondly, the restriction against strongly referential expressions introducing event participants with perfective-based *-nje* nominalizations and nominalizations derived from primary (i.e. non-secondary imperfectives) is attributed to the lack of event instantiation following Gehrke (2013) and Alexiadou et al. (2014). In other words, only secondary imperfectives refer to events and consequently license strongly referential expressions introducing event participants because the presence of the additional aspectual head on top of v^0 binds the event variable that v^0 introduces. I further argue that v^0 that does not get its event variable bound and instantiated fails to act as a phase that fixes the prosodic and semantic properties of the stem making prosodic and semantic shifts possible but not necessarily triggering them. I suggest that this proposal properly constrains the exceptions to Simonović and Arsenijević's (2014) generalization that imperfective-derived *-nje* nominals show compositional semantics and prosody faithful to the base without any additional stipulations. Namely, Simonović and Arsenijević (2014) invoke a basically unrestricted Forced Lexicalization Rule to explain the existence of certain semantically opaque and prosodically unfaithful *-nje* nominals derived from imperfective verbs. Under the present account, the possibility of such exceptions follows from the proposal that *-nje* nominals derived from primary imperfectives do not refer to events, which is why the v^0 that they incorporate does not act as a full phase fixing the prosodic and semantic properties of the base. In support of this claim, I point out that all the exceptions mentioned in Simonović and Arsenijević (2014) as well as all the additional ones I could find are derived from primary imperfectives (states or activities).

6.1. Deverbal nominalizations in South Slavic

By way of prefacing the discussion on Serbian *-nje* nominalizations derived from Psych verbs, I will provide a brief overview of the most influential works on deverbal nominalizations in

South Slavic in order to demonstrate that the concepts and methodology of the neoconstructionist approaches (primarily DM) can be successfully applied to the data in this domain. The approach to *-nje* nominals derived from Psych verbs in the continuation of this chapter will build directly on the insights of the authors referenced in this section.

Marvin (2002) focuses on two types of nominalizations and argues that they are derived from two different kinds of participles in Slovenian. The first type of nominalizations she investigates are agentive nominalizations. In Slovenian, these nominalizations are most frequently derived by adding the agentive suffix *-ec* ('-er') onto a verbal stem. But the verbal stem in question is not the base form of the verb. Rather, it appears in the form of one of two types of adjectival participles in Slovenian, namely the past or active participle, as it is traditionally referred to (1).

- (1) a. *plaval* ('swim.ACT.PRT') + *-ec* ('-er') → *plavalec* 'swimmer'
b. *moril* ('murder.ACT.PRT') + *ec* ('-er') → *morilec* 'murderer'

(Marvin 2002, p. 94)

The other type of nominalizations Marvin (2002) discusses are the so-called event nominals. These nominals are traditionally analyzed as involving the nominalizing suffix *-nje*, which is added to a verbal stem (2a). However, given that that Slovenian has a passive participle (ending in *-n*) in addition to the active participle (ending in *-l*), Marvin (2002) points out that another morphological decomposition of the same noun *plavanje* ('swimming') in (2a) is possible as in (2b).

- (2) a. *plava* ('swim') + *-nje* ('-ing') → *plavanje* ('swimming')
b. *plavan* ('swim.PASS.PRT') + *je* ('-ing') → *plavanje* ('swimming')

There is an important empirical point that speaks against the analysis in (2a) and in favor of the decomposition in (2b). Namely, the passive participle in Slovenian has two different suffixes. In addition to the more frequent form *-n*, there is also the suffix *-t*. If a verb has a passive participle

form that ends in *-n*, the event nominalization derived from such a verb will end in *-nje* (2), but if the passive participle form of a verb ends in *-t*, its event nominalization will not end in *-nje*, but in *-tje*. Thus, there are still two possible morphological analyses of this type of nominalizations. It could be that a suffix *-tje* is added to the basic verbal form (3a) or it could be that the suffix *-je* is added to the passive participle.

- (3) a. *pe* ('sing') + *tje* ('-ing') → *petje* ('singing')
- b. *pet* ('sing.PASS.PRT') + *je* ('-ing') → *petje* ('singing')

In that sense, there are basically two possible morphological rules for the derivation of event nominals that one could formulate. On the one hand, one could say that nominalizations are formed by adding either a suffix *-nje* or a suffix *-tje* to the basic form. This route is taken by a number of traditional grammars (Toporišič 2000; Stramiljč-Breznik 1999). The alternative would be to say that the suffix *-je* is added to the passive participle form of the verb. The latter rule is clearly preferable as it involves only one suffix, and it incorporates the generalization that the nominalization will end in *-nje* if the passive participle ends in *-n* whereas it will end in *-tje* if the passive participle ends in *-t*. The former rule misses this generalization in addition to postulating the existence of two different suffixes.

Serbian also has deverbal nominalizations that end in *-nje* or *-će*⁴⁶. Moreover, like in the case of Slovenian, the traditional grammars of Serbian usually assume that there are two different atomic nominalizing suffixes as observed by Kovačević (2007). However, Marvin's (2002) observations for Slovenian also hold for Serbian with some exceptions. Serbian has two different kinds of passive participles, one ending in *-n* and another ending in *-t*, and it has deverbal nominals ending in *-nje* and *-će*. The generalization that if the past participle ends in *-n*, the nominalization

⁴⁶The Serbian grapheme *ć* stands for the so-called 'soft' version of the palatal affricate sound /tj/.

will end in *-nje* and if the past participle ends in *-t*, the nominalization will end in *-će* holds for Serbian, as well (4), but not with absolute certainty (some of these deviant examples will be addressed in Section 6.3.2.)

- (4) a. pevan ('sing.pass.prt') + -je ('-ing') → pevanje ('singing')
b. raspet ('crucify.PASS.PRT') + -je ('-ing') → raspeće ('crucifixion')

Abstract nominals denoting a property arising as a result of having participated in an eventuality constitute another very productive class of nominalizations in Serbian. These nominalizations have been analyzed applying the logic of Marvin's (2002) approach by assuming that they involve the addition of the suffix *-ost* to a passive participle stem as in (5a) (see also Arsenijević 2010). The alternative analysis whereby these nominalizations are formed by adding the suffix *-nost* to the base form of the verb is also available (5a).

- (5) a. razočaran ('disappoint.PASS.PRT') + -ost ('-ness') → razočaranost ('disappointedness')
b. razočara ('disappoint') + -ost ('-ness') → razočaranost ('disappointedness')

Of course, the morphological parsing as in (5a), once again, runs up against the fact that those nouns that are built from verbs whose passive participle forms end in *-t*, have a different nominalizing suffix, *-tost* (6b). An analysis based on Marvin's (2002) approach would account for this in a straightforward way as in (6a), while the alternative would be to assume that there are two different suffixes producing *-ost* nominalizations. In other words, the problems for this alternative approach multiply as we consider other classes of nominalization. Furthermore, the analysis of *-ost* nominalizations in line with Marvin's (2002) approach (5a and 6a) also captures the semantics of these nominal forms because these nominalizations denote a quality arising as a result of having participated in the eventuality denoted by the underlying verbal form as indicated in the translations in (5) and (6).

- (6) a. rasut ('spill.PAST.PRT') + ost ('-ness') → rasutost (lit. 'spilledness')
- b. rasu ('spill') + -tost ('-ness') → rasutost (lit. 'spilledness')

In sum, the structural representations of *-nje* and *-ost* nominalizations analyzed according to Marvin's (2002) approach incorporate a substantial chunk of verbal structure involving the vP and VoiceP in addition to the root. This structure, in turn, motivates two concrete predictions that can be made with respect to the syntactic and semantic behavior of these nominalizations. First, *-nje* and *-ost* nominalizations should be possible only with those verbs that can form passive participles given that Marvin's (2002) approach assumes that these nominalizations incorporate passive participles. Second, these nominalizations should show some evidence of the syntactic presence of these verbal layers. The present chapter will focus only on *-nje* nominals derived from Psych verbs; however, it is important to stress that the same logic of decomposing suffixes that were traditionally treated as atomic shows a lot of promise with other Serbian suffixes and generates quite clear and testable predictions that are worth exploring.

Several basic empirical observations will be made in this section. First off, following Bašić (2010), who relies on Grimshaw's (1990) terminology, *-nje* nominalizations will be divided into Complex Event Nominals (CENs) and Result Nominals (RNs) as illustrated in (7). CENs are productively derived from imperfective stems, and they exhibit predictable semantic and prosodic properties, while RNs are only partially productive, and they tend to give rise to semantic opacity and they systematically alter the prosodic properties of the stem by attracting stress to the penultimate syllable (Simonović and Arsenijević 2014).

- (7) a. Jovanovo plašenje dece babarogom. CEN
 Jovan's scaring children.GEN boogeyman.INST

‘Jovan’s scaring of children with the boogeyman

b. Jovanovo razočarenje.

RN

Jovan’s disappointment

‘Jovan’s disappointment.’

In addition, CENs allow both the internal and the external argument while RNs allow only the internal argument (Bašić 2010). Bašić (2010) and Simonović and Arsenijević (2014) capture this complex set of properties by proposing two different structures for the two types of *-nje* nominals. According to Bašić (2010), the fact that CENs allow both the internal and external argument shows that CENs involve the full extended verbal structure (i.e. VoiceP) while RNs include only the minimal amount of structure needed to host the internal argument (ResP or \sqrt{P}). Simonović and Arsenijević (2014) argue that imperfective derived *-nje* nominals (CENs) are semantically compositional and prosodically faithful to the base because they include full verbal structure following the standard assumption that the presence of a categorizing head (i.e. *v*) triggers spellout and induces predictable phonological and semantic properties (Marantz 1997; Marvin 2002). RNs, on the other hand, are listed as separate lexical entries, which means that they do not involve the internal verbal structure (this structure has been ‘flattened’). The lack of internal verbal structure with RNs explains why they exhibit semantic opacity and prosodic unfaithfulness (the absence of the categorizing head entails the absence of spellout).

The conclusions of Chapter 5 on the passive participles derived from Psych verbs together with the analyses presented in Bašić (2010) and Simonović and Arsenijević (2014) allow us to make a series of predictions about the behavior of *-nje* nominals that will be tested in this section. First, in Chapter 5, I argued that the presence of VoiceP (i.e. agentivity) is the prerequisite for the derivation of a passive *-n* participle explaining why non-agentive verbs like *boleti* (‘pain’) or

prijati ('appeal') fail to derive passive participles. If *-nje* nominals are built from passive participles, one would expect that these verbs should not derive *-nje* nominalizations either (8). It will be shown that this prediction is confirmed with the caveat that the addition of the nominalizing suffix has the tendency to improve the acceptability of the underlying participial form (this tendency is illustrated on the complete dataset in Appendix 5). Crucially, while the underlying participial forms tend to be improved or (partially) rescued in the process of nominalization, the examples where this rescue strategy fails occur exactly in those instances where we would expect them under the assumption that *-nje* nominals are derived from passive participles.

- (8) a. *boleti* ('pain') + -n → **boljen* ('pain.PRT') + -je → **boljenje* ('hurting')
- b. *prijati* ('appeal') + -n → **prijan* ('appeal.PRT') + -je → **prijanje* ('appealing')

Second, this same idea will receive an additional piece of evidence from the licensing of *by*-phrases since these items are arguably licensed by *Voice_{PASS}*. The fact that *-nje* nominals can license *by*-phrases can be taken as a signal of the presence of *Voice_{PASS}* in their internal structure, and it is hard to explain the presence of this head absent the assumption that *-nje* nominals are built on top of passive participles.

Third, the structural discrepancy between imperfective and perfective-derived *-nje* nominals proposed by Bašić (2010) and Simonović and Arsenijević (2014) predicts that imperfective-derived nominalizations should license *by*-phrases and instrumental case-marked NPs/DPs following the standard assumption that these items are licensed by *Voice_P*, but perfective-derived ones should reject these expressions since they do not involve this functional layer. I will show that the data reveals a more complex picture in this regard. While it is generally true that imperfective-derived nominals accept *by*-phrases while imperfective-derived ones reject

them (9), it is easy to find attested uses of *by*-phrases with certain perfective-derived nominals as well (10).

- (9) a. oduševljavanje učenika od strane profesora Kostića.
amazing students.GEN from side professor.GEN Kostić.GEN

Literally: ‘??Professor Kostić’s amazing of the students’

- b. oduševljenje učenika *?od strane profesora Kostića
amazement students.GEN from side professor.GEN Kostić.GEN

‘students’ amazement with Professor Kostić’

- (10) razočaranja od strane prekaljenih Majstora⁴⁷
disappointments from side seasoned masters

‘disappointments by seasoned masters’

The decisive factor which determines the distribution of *by*-phrases with perfective-derived nominals seems to be the presence of event implications. More precisely, perfective-derived nominals which carry event implications tend to license *by*-phrases while those that denote emotional states without implications about preceding events reject them (9b). However, even those perfective-derived nominals that include event implications accept generic or weakly referential NPs/DPs within the complements of *by*-phrases and tend to reject strongly referential ones (10).

In order to capture this complex set of facts while retaining the gains made by Bašić (2010) and Simonović and Arsenijević (2014), I propose to loosen the connection between the aspectual properties of the base and the presence/absence of extended verbal structure inside *-nje* nominalizations. The strict position that perfective-derived nominals never involve extended

⁴⁷ Link: <https://www.vreme.com/kultura/cekajuci-erika/>

verbal structure fails to capture the fact that some of them carry event implications and these same ones also license *by*-phrases, albeit only weakly referential ones. Instead, I suggest that extended verbal structure is present with all *-nje* nominals that have event implications. Next, the fact that perfective-derived *-nje* nominals license weakly referential NPs/DPs in the complements of *by*-phrases is attributed to the fact that the event variable introduced by the categorizing v^0 fails to get instantiated by a higher aspectual or tense head, which is why it remains in the kind domain licensing only kind modification (Gehrke 2013; Alexiadou et al. 2014).

Relating this analysis back to Simonović and Arsenijević (2014) attempt to explain the differences in semantic and phonological predictability of the two classes of *-nje* nominals on the basis of the proposed discrepancy related to the presence/absence of verbal structure, I argue that the v head whose event variable is not bound by a higher aspectual or temporal head also fails to act as a phase that fixes the semantic and prosodic properties of the base. Consequently, perfective-derived *-nje* nominals exhibit phonological unfaithfulness to the base and a tendency towards semantic opacity. What is more, the flexibility of this account makes it possible to explain the existence of semantically non-transparent and phonologically unpredictable *-nje* nominals derived from imperfective verbs (11) without further stipulations.

- (11) a. 'poštovati ('respect') → 'poštovanje ('respecting') faithful; event/state implication
 b. 'poštovati ('respect') → pošto'vanje ('respect') unfaithful; no E/S implication

To account for the existence of the prosodically unfaithful and semantically non-transparent *-nje* nominals derived from imperfective stems, Simonović and Arsenijević (2014) propose a Forced Lexicalization Rule, which flattens the internal syntactic structure of a derived item in order to create an independent lexical entry. I argue that the unrestricted nature of this rule threatens to undermine the empirical gains of the original analysis that Simonović and Arsenijević (2014)

propose since it raises the question why this rule applies in these particular contexts only and why it does not apply more generally. The analysis proposed in this chapter avoids these complications because it predicts that unfaithful prosody and opaque semantics can arise in syntactic configurations in which the event variable introduced by v^0 is not bound by a higher functional head. These conditions are always met with perfective-derived nominalizations predicting systematically unfaithful prosody and a tendency towards semantic opacity. However, these conditions sometimes obtain with imperfective-derived nominalizations as well. Namely, with the so-called primary imperfectives denoting states and activities, the event variable introduced by v is not dominated by any other aspectual head, which means that it remains unbound and fails to act as a phase. On the other hand, with the so-called secondary imperfectives, the event variable introduced by v is dominated by the aspectual head of the secondary imperfectivizer triggering obligatory semantic transparency and phonological faithfulness. In other words, only *-nje* nominals derived from secondary imperfectives have to be transparent and phonologically faithful to the base while those derived from perfectives and primary imperfectives are vulnerable to lexicalization processes resulting in phonological unfaithfulness, semantic opacity or both.

6.2. Types of nominalizations in English and Serbian

Three most productive kinds of nominalizations in Serbian are illustrated in (12).

- (12) a. Ivanovo plašenje dece babarogom
 Ivan's scaring children.GEN boogeyman.INST
 'Ivan's scaring children with the boogeyman'
- b. Ivanovo zaprepašćenje bratovim ponašanjem
 Ivan's amazement brother's.INST behavior.INST
 'Ivan's amazement at his brother's behavior'

- c. Ivanova zbuñjenost zadatkom
 Ivan's confusion task.INST
 'Ivan's confusion with the task'

Two nominalization types contain the same suffix *-nje* (12a and 12b) so it is worth outlining the reasons behind the idea that one and the same suffix is actually found with two different types of nominalizations. Of course, there is nothing particularly new in this assumption as the nominalizing suffix *-ing* in English is standardly observed in at least three kinds of nominalizations (13).

- (13) a. Painting them was his biggest success.
- b. The painting of Sistine Chapel was Michelangelo's lifework.
- c. The painting of a woman was on the wall above his desk.

The DP headed by the nominalization in (13a) has the syntactic function of a subject, but other than this distributional fact, internally, it has mostly verbal properties. As the example shows, it does not require an article like other English DPs, and in fact, it rejects both definite and indefinite articles (14a). Moreover, it does not allow adjectival modification (14b). Instead, it takes adverbial modification (14c). Finally, it assigns accusative case to its internal argument while genitive case is ungrammatical in this position (14d).

- (14) a. *The/a painting them was his biggest success.
- b. *Easy painting them was his biggest success.
- c. Painting them so easily was his biggest success.
- d. *Painting of them was his biggest success.

(13b) illustrates a type of nominalizations that does not exhibit any of those strictly verbal properties. For instance, it requires an article, and cannot be used without it (15a). Also, as shown in (15b), these nominalizations reject adverbial modification, while allowing adjectival modification (15c). Finally, this class of nominalizations takes a genitive marked internal argument, and it cannot license accusative case (15d).

- (15) a. *Painting of Sistine Chapel was Michelangelo's lifework.
- b. *The carefully painting of the Sistine Chapel was Michelangelo's lifework.
- c. The careful painting of the Sistine Chapel was Michelangelo's lifework.
- d. *The painting the Sistine Chapel was Michelangelo's lifework.

While the nominalizations in (13a) and (13b) denote events, the nominalization in (13c) denotes an entity (13c) and has a typical nominal semantics. In that sense, one could argue that it is not a nominalization at all if it were not for its morphological composition consisting of a verbal root and a nominalizing suffix. Other than that, this type of nominalizations requires an article (16a), takes adjectival modification (16b), and takes a genitive case-marked complement (16c).

- (16) a. *Painting of a woman was on the wall above his desk.
- b. The beautiful/*beautifully painting of a woman was on the wall above his desk.
- c. *The painting the woman was on the wall above his desk.

Abney (1987) captures the common distributional properties of these different kinds of nominalizations by assuming that they are all headed by a functional projection he labels Determiner Phrase (DP). However, the varying degrees of nominal and verbal properties with these nominalizations are captured by positing various degrees of verbal structure below DP. The fully verbal character of the nominalization in (13a) is explained by assuming that it consists of a full-

fledged VP dominated by a DP. The remaining two types also have nominal projections below DP, which is why they require articles, adjectival modification and genitive case-marked complements (i.e. all of the most typical characteristics of nouns).

Bašić (2010) makes a similar distinction between two types of nominals in Serbian. She does not focus only on the nominals involving the suffix *-nje*, but the distinction she makes cuts across the set of nominals ending in this suffix. Following Grimshaw's (1990) work on English, Bašić (2010) distinguishes between CENs and RNs. One of the tests that she uses to establish this classification involves the presence of the semantics of duration. (17a) exemplifies a nominalization whose duration can be measured. According to Grimshaw's (1990) criteria, the fact that it shows the semantics of duration means that it also denotes an event, which is a property of CENs. The nominalization in (17b), on the other hand, does not allow a measure of duration, and so it does not denote an event, and Bašić (2010) classifies it as a RN.

(17) a. Potpisivanje dokumenata je dugo trajalo.

signing document.GEN AUX long lasted

'The signing of the document took a long time.'

b. *Potpis je dugo trajao.

signature AUX long lasted

'The signature lasted for a long.'

(Bašić 2010, p. 42)

On Bašić's (2010) view, this difference can be accounted for derivationally by assuming that CENs involve a verbal layer (*vP*), which hosts event semantics, while RNs are derived directly from the root⁴⁸. This view is perhaps somewhat problematic from the morphological perspective

⁴⁸Bašić (2010) refines this initial claim later in the paper because she observes that RNs also have to contain the verbalizing layer. She relies on Ramchand's (2008) split VP analysis and argues that RNs are derived by attaching

as there is a reason to believe that additional verbal morphology is present in (17b) in addition to the root and the nominalizing element. The nominalizing suffix is, indeed, absent as, in this particular case, we are dealing with a zero-derived nominalization, which is not a typical situation in Serbian since nominalizations usually involve suffixation. This nominalization consists of the root $\sqrt{\text{PIS}}$ ('write') and a perfectivizing prefix *pod-* ('under'), which represents an instance of verbal morphology on most accounts, and a zero nominalizer.

Bašić (2010) addresses the issue of the presence of perfectivizers with RNs. She relies on the view that the presence of a "perfectivizing" prefix does not have to entail the presence of aspectual heads. Following Svenonius (2004), she suggests that the prefix might be generated in the prepositional domain, which means lower than VP/root. These prefixes can, indeed, signal perfectivity, if they move to a higher aspectual projection, but if they do not move, they do not act as perfectivity markers. This allows Bašić (2010) retain her assumption about the lack of aspectual heads with RNs.

The analysis that Bašić (2010) presents also extends to *-nje* nominalizations some of which belong to CENs while others belong to RNs. The example in (12a) contains a *-nje* nominalization belonging to CENs while the examples in (18) illustrate RNs.

(18) a. Rešenja ovih zadataka su na stolu.

solutions these problems are on table

'Solutions to these problems are on the table.'

b. Ovo je veoma neuverljivo obrazloženje.

this is very unconvincing explanation

'This is a very unconvincing explanation.'

(Bašić 2010, p. 49)

the verbalizer to the ResP while CENs also involve a ProcP. These additional details, which are important for the analysis itself, are not so significant here.

Bašić (2010) takes the same approach to *-nje* nominalizations in Serbian that Marvin (2002) assumes in her analysis of Slovenian nominalizations. In other words, she starts from the hypothesis that these nominalizations are derived from passive participles. However, what is crucial for her analysis is the assumption that with RNs the participle attaches directly to the root and subsequently the nominalizing prefix is attached to the participle. This avoids having any verbal morphology inside RNs, which explains the lack of event implications.

This part of Bašić's (2010) analysis goes against the argument developed in this dissertation, which is that participial suffixes are quite selective. In concrete terms, they attach to VoiceP, which is how the restrictions on participle formation were explained in the previous chapter. In the remainder of this chapter, I will show that Bašić's (2010) approach faces serious difficulties explaining the phenomena surrounding the licensing of various kinds of event modifiers and participants in addition to being unable to explain the restrictions on the derivation of *-nje* nominals conditioned by the rules governing participle formation that were outlined and accounted for in the previous chapter.

6.3. Deriving nominalizations from Psych verbs

With regard to the possibilities of deriving the two types of *-nje* nominalizations under investigation, the analysis of passive participles developed in the previous chapter in combination with Marvin's (2002) approach to nominalizations, yields a very clear prediction with respect to the possibilities of forming these nominalizations from Psych verbs. The strictest prediction is that if *-nje* nominals are derived by adding the suffixes *-je* to a passive participle, it follows that *-nje* nominalizations derived from the verbs that do not form passive participles should be excluded. I will demonstrate that this hypothesis, while facing certain difficulties, is clearly necessary to explain the lack of *-nje* nominals derived from verbs that do not generate *-n* participles. The

argument will be that the absence of certain *-nje* forms remains unexplained unless we assume that these nominals are derived from passive participles; however, the presence of certain forms that are not immediately expected on this hypothesis can be accounted for independently by allowing for the fact that the nominalization process tends to improve or rescue the underlying participial derivation. Crucially, this repair or rescue effect is of restricted power such that it can only improve degraded forms, but it cannot salvage outright ungrammatical constructions.

Let us start with Class 1 Psych verbs (complete data presentation provided in Appendix 5). In the previous chapter, we observed that Class 1 verbs generally tend to derive passive participles although there are some exceptions. Class 1 verbs also lack resultative semantics and their perfective versions, to the extent that they are possible are not resultative, which is why RNs cannot be derived from those verbs so the discussion will focus on CENs only. For instance, *voleti* ('love'), *poštovati*, ('respect'), and *obožavati* ('adore') are verbs that allow passive participles, and predictably, they derive *-nje* nominals as well.

- (19) a. vol ('love') + -n → voljen ('loved') + -je → voljenje ('loving')
- b. poštova ('respect') + -n → poštovan ('respected') + -je → poštovanje ('respecting')
- c. obožava ('adore') + -n → obožavan ('adored') + -je → obožavanje ('adoring')

It worth noting at this point that the *-nje* nominal in (19b), actually has two prosodic forms (20). The one in (20a) carries prosodic stress on the first syllable while the one in (20b) has penultimate stress. The version with the stress on the first syllable retains the stress of the underlying verb and it denotes

- (20) a. 'poštovanje - respecting
- b. pošto'vanje - respect

On the other hand, probably the only clear exception among Class 1 verbs is the verb *mrzeti* ('hate')⁴⁹, which does not derive transparent participles. Instead, this verb does produce a participial form but with a significant phonological change of the stem. This verb does not produce a *-nje* nominalization derived either directly from the stem or from the alternated stem involved in the formation of the passive participle (21).

(21) *mrzeti* ('hate') + -n → *(o)mražen + je → *mrženje / *omraženje

However, there is a nominal form *mržnja* ('hate') derived by means of a different suffix (*-nja*), and it does not seem have verbal semantics. In other words, it merely denotes hate as an emotion in the abstract without projecting a 'Psych event' or 'Psych situation'.

In the Chapter 5 dealing with passive participles, I showed that Class 3 and Class 4 Psych verbs generally do not produce passive participles. This observation was accounted for by assuming that these verbs lack VoiceP, which constitutes necessary input to the head that forms passive participles (Pass or adj in Brueing's 2014 terminology). Thus, we have a prediction that such verbs should not produce *-nje* nominalizations either. This prediction is borne out for Class 3 verbs (22), but some Class 4 verbs seem to be an exception (23). These exceptions will be addressed in Section 6.3.2.

- (22) a. *prija* ('appeal') + -n → **prijan* ('appealed') + je → **prijanje*
 b. *smeta* ('bother') + -n → **smetan* ('bothered') + -je → ??*smetanje*⁵⁰
 c. *škodi* ('harm') + -n →: **škođen* ('harmed') + →je **škođenje*

⁴⁹ As shown in Appendix 5, there are some verbs whose participial forms are degraded or marginally acceptable, and their *-nje* nominals are at least as acceptable if not better, but *mrzeti* ('hate') is an exception.

⁵⁰ A corpus search reveals that this form is actually possible but only in the legal register where it denotes intentional or purposeful interference with someone's rights (e.g. property rights). I would argue that this derivation involves an agentive verbal form given the necessary component of intentionality and it is this difference in the underlying structure of the verb that licenses the derivation of the -n participle and subsequently the -nje form.

- (23) a. divi ('admire') + -n → *divljen ('admired') + -je → divljenje
 b. čudi ('marvel') + -n → *čuđen ('marveled') + -je → čuđenje

When it comes to Class 2 verbs, we saw in the previous chapter that the vast majority of these verbs derive passive participles. Given the hypothesis that *-nje* nominalizations are derived from passive participles, we can predict that these nominalizations should be available with Class 2 verbs. Moreover, most of these verbs, or at least perfective versions of most of these verbs, include resultative semantics, which means *-nje* nominalizations derived from Class 2 verbs should come both in the form of CENs and in the form of RNs. I will show that these predictions are completely borne out. However, RNs are far less productive than CENs, which is an issue that demands some attention.

The previous chapter demonstrated that the preponderance of Class 2 verbs derives passive participle forms. These verbs are, therefore, predicted to, in principle, license both CENs and RNs. It is important to point out that CENs are derived from the imperfective versions of the verbal forms (24), some of which sound quite awkward (cf. 24a) out of context. In Section 5.1. dealing with the possibilities of deriving passive participles from psych verbs, I proposed that the apparent degradedness of these forms is conditioned by a quite specialized semantic denotation of imperfective passive participles (general factual), which is why they are acceptable only in a restricted number of contexts compatible with this particular type of denotation. From the grammatical point of view, however, they are completely well-formed⁵¹. The idea that these

⁵¹ Note that the hypothesis that *-nje* nominals, and particularly the more productive class CENs (the ones derived from imperfectives) are derived from passive participles substantially undergenerates if one assumes that the restrictedness of passive participles derived from imperfectives is interpreted as a signal of their ungrammaticality. However, in Section 5.1., I made the case that the apparent degradedness of these forms is only a consequence of their specialized semantics.

participles are grammatically well-formed can now be supported by the fact that they produce perfectly acceptable *-nje* nominalizations or the nominalizations that they derive are at least significantly less awkward and more frequent than the underlying passive participle forms (see Appendix 5).

- (24) a. *radova+ti* ('delight') + -n → *radova-n* ('delighted') +je → *radova-n-je*
 b. *nervira+ti* ('annoy') + -n → *nervira-n* ('annoyed') + je → *nervira-n-je*
 c. *hrabri+ti* ('encourage') + -n → *hrabre-n* ('encouraged') + je → *hrabre-n-je*
 d. *očara+ti* ('enchant') + -n → *očara-n* ('enchanted') + je → *očarava-n-je*

However, there were a handful of exceptional verbs in this class. The exceptions I focused on in the previous chapter were of two kinds. One of them was the stative verb *boleti* ('pain') and the other one was the verb *razbesneti* ('pain'). The lack of participial forms with these verbs was explained on the basis of the lack of agentive semantics and, hence, VoiceP, which represents the necessary input to participle formation. Crucially, since they do not form passive participles, these verbs are not expected to form *-nje* nominalizations, which is, in fact, the case (25).

- (25) a. *bole* ('pain') + - n → **boljen* ('pained') + -nje → **boljenje*
 b. *razbesne*('anger')+n → **razbešnjen*('angered')+nje → **bešnjenje*/**razbešnjavanje*/

Therefore, even though *-nje* nominalizations have the tendency to improve or rescue passive participle derivations, the completely impossible passive participles will ultimately fail to derive *-nje* nominals as well.

Summing up this subsection, one can conclude that the hypothesis that *-nje* nominalizations are derived from passive participles provides correct predictions for the vast majority of Psych verbs. However, there are some exceptions or unclear cases. Some Class 4 verbs do not form passive participles but do seem to form *-nje* nominals (23). Moreover, some Class 1 verbs derive

two prosodically different *-nje* nominalizations (20). It should, thus, be reiterated that the lack of *-nje* nominals derived from the verbs that lack *-n* participles speaks strongly in favor of the hypothesis that *-nje* nominals incorporate passive participles, but this hypothesis also faces a possible undergeneration problem, falsely predicting the non-existence of some attested forms, which has to be accounted for somehow.

6.3.1. Result Nominals and Psych verbs in Serbian

Result nominals are much less productive than CENs in Serbian (Simonović and Arsenijević, 2014). It simply cannot be argued that the existence of a perfective passive participle predicts the existence of the corresponding RN. The present investigation confirms this observation in the domain of Psych verbs (see Appendix 5). Depending on where one makes the cut off point for acceptability of individual forms, there are between 20 and 40 instances of acceptable RNs in the entire dataset of Psych verbs under investigation. Four examples are provided in (26).

- (26) a. *razočara* ('disappoint') + *-n* → *razočara-n* + *-je* → *razočare/a-n-je* ('disappointment')
- b. *iznenadi* ('surprise') + *-n* → *iznenade-n* + *je* → *iznenade-n-je* ('surprise')
- c. *ohrabri* ('encourage') + *-n* → *ohrabre-n* + *je* → *ohrabre-n-je* ('encouragement')
- d. *zaprepasti* ('amaze') + *-n* → *zaprepašće-n* + *je* → *zaprepašće-n-je* ('amazement')

Our initial hypothesis was that *-nje* nominals are derived from passive participles, and so, verbs that do not have passive participle forms should not produce RNs either. It is important to point out once again that RNs are, of course, derived from perfective verbs. In that sense, our prediction is that only those perfective Psych verbs that derive passive participles should in principle be able to derive RN forms as well, but, again, this does not mean that all those verbs that derive perfective passive participles will have a corresponding RN. Instead, the proper way to state this prediction

is that verbs that do not have perfective passive participle forms in their derivational paradigms will not produce RNs either.

My investigation of Psych verb nominalizations confirms this prediction. Perfective Class 1 verbs fail to produce RNs even though they derive passive participles because they do not have resultative semantics (27). In (27), the perfective form of the verb denotes the initiation of the event (i.e. perfectivization targets the initial segment). Consequently, there is no resultative semantics that is necessary to derive RNs.

(27) zavole + -n → zavoljen + - je → *zavoljenje

No Class 1 Psych verb allows resultative semantics, and so RNs are blocked with this class even though many of these verbs do have passive participles.

Class 3 and Class 4 verbs do not derive RNs because they do not have passive participles⁵². There are perfective verbs in these classes, and an argument can be made that at least some of them involve resultative semantics. The sentence in (28) illustrates a perfective Class 3. While (28) is certainly not a typical transitive construction that is normally found with resultative expressions, the semantics of this sentence clearly includes a resulting state – as a result of the event in question, Ivan is in a state of liking the cookie.

(28) Ivanu se svideo kolač.

Ivan.DAT SE liked cookie.NOM

‘Ivan liked the cookie.’

⁵² Appendix 5 shows that the only exception in this regard is the verb *užasnuti se* (‘get horrified’) belonging to Class 4, which seems to derive a resultative passive participle *užasnut* (‘horrified’) producing the RN *užasnuće* (‘the state of being horrified’). However, this verb has a transitive counterpart *užasnuti* (‘horrify’) belonging to Class 2 so it does not make sense to argue that the perfective passive participle is derived from the SE-form, which makes this example only an apparent exception.

However, this verb does not derive a passive participle, which is why it does not have a corresponding RN form (29).

(29) svidi ('like') + -n → *sviden + je → *svidenje

When it comes to Class 2 verbs, the vast majority of them do have passive participles as well as having perfective forms. In that sense, these verbs are expected to derive RNs. Those Class 2 verbs that do not have passive participle forms, predictably, fail to produce RNs as well (30).

(30) a. zabol ('PF.pain') + -n → *zaboljen + -je → *zaboljenje

b. razbesne ('anger') + -n → *razbešnjen + -je → *razbešnjenje

While the rest of the Class 2 Psych verbs are expected to derive RNs, the fact is that only a minority of them do. All the examples in (26) come from Class 2, but there are not many additional examples. In the entire sample, all the verbs that are able to derive RNs belong to Class 2, but only a portion of those are fully acceptable and widely used (26), and the rest of them are quite degraded and relatively infrequent (*?uzrujanje* 'upsetment', *?užasnuće* 'shock', *?prestravljenje* 'trepidation', *?potištenje* 'dejection'⁵³).

In sum, the initial hypothesis that only those verbs that derive passive participles will be able to derive RNs is confirmed. The fact that not all of those verbs that could in principle produce RNs do so is a separate issue that requires an answer. Simonović and Arsenijević (2014) observe that RNs show a number of other properties that set them apart from CENs. RNs tend to be semantically non-compositional, and they tend to be prosodically different from the stem. (32a) shows that the CEN derived from the imperfective version of the verb *priznati* ('admit') retains the prosodic shape of the stem and builds on its semantics. (32b), however, shows a change in prosodic shape as well as the lack of full semantic transparency.

⁵³ All of these example are attested in corpora but with low frequencies.

- (31) a. priz'navati ('admit') – priz'navanje ('admitting')
b. 'priznati ('PF.admit') – priz'nanje ('admittance')

(Simonović and Arsenijević, 2014)

They account for such observations by assuming that the CEN form is a member of the paradigm of the verbal stem, which is why CENs are fully productive. CENs also retain the internal verbal structure. RNs, on the other hand, do not belong to the verbal paradigm, they are 'structurally flattened', and they are fully lexicalized.

This dichotomy between *-nje* nominalizations from imperfective verbs (CENs), which are compositional, prosodically predictable and productive, and *-nje* nominalizations derived from perfective verbs (RNs), which are (semi-)opaque, unproductive and prosodically-unpredictable, seems to be in line with Bašić's (2010) initial hypothesis that RNs are derived from roots while CENs contain more verbal structure. In DM, categorial heads (*v*, *n*, *a*) are treated as phases (Marantz 1997; Marvin 2002), *inter alia*). The introduction of a phase into a structure results in the phasal-freezing effect as the phase is sent to spell-out. Phasal-freezing fixes the meaning of the root resulting in compositional semantics as well as predicable prosody.

There are strong reasons to believe that this approach to RN derivations is too simplistic, and ultimately untenable. On the one hand, Bašić (2010) departs from the hypothesis that the difference between RNs and CENs can be modelled by assuming the complete lack of verbal structure with RNs. Maybe the presence of aspectual morphology does not have to be taken as a sign of the presence of verbal structure with RNs, but the presence of a theme vowel, often analyzed as a verbalizer (Harley 1995; Svenonius 2004; Fabregas 2017), or the participial suffix cannot be discarded so easily. The solution Bašić (2010) opts for instead is to adopt Ramchand's (2008) split VP hypothesis and to assume that each of the three components of the split vP (InitP,

ProcP, or ResP) can count as a verbalizer⁵⁴. With RNs, of course, only ResP would be present in the structure, which would eliminate event implications.

This modification, however small it might seem, has significant consequences for the possibility of applying Marvin's (2002) account to RNs. Namely, once a verbalizer is present in the structure, it is supposed to induce the phasal freezing effect, which would result in predictable semantics and prosody. Without there being an asymmetry in terms of the presence/absence of the verbalizer between CENs and RNs the differences between the two classes of nominalizations cannot be accounted for relying on Marvin's (2002) account.

The situation can, thus, be stated as follows, the syntactic implications of and Simonović and Arsenijević's (2014) account are that RNs do not have verbal structure at all, while Bašić (2010) claims that only ResP is present with all the higher layers of structure being truncated. The crucial problem with Bašić's (2010) account is that removes the most straightforward way of constraining the generative output of *-nje* nominals. If *-n* participles can be built from ResPs as well as *v*Ps and VoiceP, then, we are left without a clear explanation why certain verbs fail to produce both *-n* participles and *-nje* nominals and why there is a strong correlation between the two. The account that constrains the derivation of *-n* participles by assuming that they can only be formed from VoiceP (Chapter 5) achieves a much higher degree of descriptive adequacy. Furthermore, it explains why there is a strong correlation between the availability of *-n* participles and *-nje* nominals. Finally, in contrast to both Bašić and Simonović and Arsenijević (2014), the present account explains the availability of *by*-phrases and instrumental case-marked NPs/DPs

⁵⁴ In contrast to the more mainstream view where the extended VP is decomposed into two parts VP/*v*P and *v*P, Ramchand's (2008) proposes a tripartite structure reflecting a complete mapping from event structure onto syntactic structure. Since events can have a beginning/initiation, duration/process and ending/result, Ramchand (2008) assumes that the extended VP structure consists of three parts each of which corresponds to one segment of the event structure. Thus, Initiation Phrase (InitP) corresponds to the beginning; Process Phrase (ProcP) represents duration and Result Phrase (ResP) represents the end state. Their proposed hierarchical ordering is InitP>ProcP>ResP.

with RNs, which diagnoses the presence of VoiceP (Section 8.3.3). In the following two subsections, the evidence from the licensing of *by*-phrases and instrumental case-marked NPs/DPs will be presented in support of the present account.

6.3.2. CENs from Psych verbs and internal verbal structure

This subsection will deal with the issues of the presence of verbal structure inside CENs. Recall that both accounts of CENs that have been extensively referred to in this chapter (i.e. Simonović and Arsenijević 2014; Bašić 2010) assume that CENs are derived from participles by adding the suffix *-je* to the participial form. Two predictions follow from this assumption: (i) CENs should be derived only from those verbs that derive passive participles, and (ii) CENs should show evidence of the presence of verbal structure inside them. It has been shown that (i) is violated with respect to certain Class 4 verbs and these cases will be accounted for independently.

First off, I will show that both the prediction (i) and the prediction (ii) from the previous paragraph hold for the vast majority of CENs derived from Psych verbs. CENs that are derived from Psych verbs basically allow all sorts of event modifiers as is expected given the assumption that they are derived from verbal participles which incorporates full VoiceP structure. (32a) shows that with CENs an external argument can be realized in the form of a *by*-phrase, and the internal argument can take the form of a genitive case-marked bare NP.

- (32) a. Uznemiravanje zaposlenih od strane rukovodioca je
 disturbing employees.GEN from side manager.GEN BE
 neprihvatljivo.
 unacceptable
 ‘It is unacceptable for the manager to disturb the employees.’

- b. Ivanovo plašenje dece babarogom / *od babaroge.
 Ivan's scaring children boogeyman.INST from boogeyman.GEN
 'Ivan's scaring of the children with a boogeyman.'
- c. *dečakovo plašenje babarogom / od babaroge
 boy's scaring boogeyman.INST / from boogeyman.GEN
 Intended: 'The boy's fear of the boogeyman'
- d. plašenje dece babarogom/ (*od babaroge)
 scaring children.GEN boogeyman.INST from boogeyman.GEN
 (od strane roditelja)
 from side parents.GEN
 Intended: 'scaring children with the boogeyman by parents'

The example in (32b) shows that the external argument can be expressed by means of a possessive adjective, which I gloss as the equivalent of the so-called Saxon Genitive in English. The same example also shows that instrumental case-marked bare NPs expressing the Causer participant are licensed with CENs while *od*('from')-PPs are ruled out. (32c) shows that the internal argument has to be realized in the form of a postnominal genitive case-marked bare NP. In (32d), we can see that the external argument is not obligatory but that instrumental case-marked bare NPs are licensed even if the external argument is absent.

In the previous chapter, it was argued that the formation of passive participles is conditioned upon the presence of VoiceP in the extended VP structure. Assuming with Marvin (2002) that *-nje* nominals are derived by adding *-je* to the passive participle, we predict the presence of full VoiceP structure with these nominalizations. This prediction accounts for the majority of the observations in (32).

The licensing of *by*-phrases, instrumental case-marked bare NPs, and the rejection of *od*(‘from’)-PPs with CENs illustrated in (32) are all immediately accounted for by the assumption that VoiceP is present with these nominals. In the chapter on passive participles as well as in the chapter on SE forms with Serbian Psych verbs, it was argued that VoiceP licenses *by*-phrases and instrumental case-marked bare NPs while rejecting *od*(‘form’)-PPs. This is exactly what is observed with CENs, so it follows that VoiceP is present with CENs as well.

The obligatoriness of the internal argument is also a phenomenon that needs to be accounted for in some fashion. It is not only that the internal argument has to be expressed with these nominalizations, but as (32c) shows, it must be expressed in the form of a postnominal genitive case-marked bare NP. This observation suggests that genitive case is structural (i.e. obligatorily realized) with these nominals. This is because other instances of postnominal genitive case do not have this property of obligatoriness. Consider (33) with the noun *slika* (‘picture’) in the object position. With this noun, both a possessive adjective and a genitive marked complement are grammatical.

- (33) a. U novčaniku čuvam dedinu sliku.
 in wallet.ACC keep.1.SG grandpa’s picture.ACC
 ‘I keep my grandpa’s picture in my wallet.’
- b. U novčaniku čuvam sliku dede.
 in wallet.ACC keep.1.SG picture grandpa.GEN
 ‘I keep my grandpa’s picture in my wallet.’

Bašić (2010) follows Procházková (2006) in assuming that genitive case-marked internal arguments are associated with the presence of the aspectual head, Asp, with CENs, but she does not provide a detailed account of this relationship. In her analysis, the Asp head is responsible for

licensing aspectual modifiers. Because the ability to license aspectual modifiers and the obligatoriness of genitive case-marked internal arguments characterize CENs but not RNs, she ties both of these properties to the presence of AspP, a layer of structure which is absent with RNs.

The data presented here seem to be in line with the idea that postnominal genitive case is another instance of structural case in addition to nominative and accusative in the verbal domain. In short, the prediction that CENs should provide evidence of the presence of internal verbal structure seems convincing. However, recall that there are certain CENs that are derived from verbs that do not derive passive participles. These are Class 4 verbs illustrated in (34)⁵⁵.

- (34) a. divi ('admire') + -n → *divljen ('admired') + -je → divljenje
 b. čudi ('marvel') + -n → *čuđen ('marveled') + -je → čuđenje

The fact that CENs can be derived from certain verbs that do not produce passive participles challenges the idea that CENs are derived by adding the suffix *-je* to the passive participle form of the verb in question.

Simonović and Arsenijević (2014) also observe that CENs can be derived from verbs that do not form passive participles. The examples in (35) show unaccuative and unergative verbs, which cannot derive passive participles, alongside well-formed *-nje* nominalizations.

- (35) a. zeva-ti → *zeva-n → zeva-n(-)je
 yawn-INF yawn-PASS.PRT yawning
 b. vrišta-ti → *vrišta-n → vrišta-n(-)je
 scream-INF scream-PASS.PRT screaming

(Simonović and Arsenijević 2014)

⁵⁵ As compared to (24), the participial forms in (34) seem significantly less acceptable.

Simonović and Arsenijević (2014) raise these examples in the context of the question whether *-nje* nominals should be analyzed as being derived from passive participles by means of the suffix *-je* or directly from the verb by means of the suffix *-nje*. Even though they argue in favor of the former approach, they suggest that the examples in (36) cannot be taken as decisive evidence in favor of either of the approaches. While the examples in (35) seem to contradict the idea that *-nje* nominals are derived from passive participles since these verbs do not have participial forms, these authors point out that it is possible to assume that the addition of the suffix *-je* rescues the derivation (Simonović and Arsenijević 2014).

Another potential objection to the proposal that *-nje* nominals are derived from passive participles comes from the fact that the correlation between the ending of the participial form and the ending of the nominalization is not perfect. Recall, that one of the arguments in favor of deriving *-nje* nominals from passive participles was based on the fact that verbs that produce *-nje* nominals have passive participles that end in *-n* while those that derive *-će* nominals have passive participles that end in *-t* (36).

- (36) a. rešiti ('solve') → rešen ('solve.PRT') → rešenje ('solution')
- b. raspeti ('crucify') → raspēt ('crucify.PRT') → raspeće ('crucifixion')

The correlation between the participial endings and the nominal endings holds for the vast majority of cases, but there are some exceptions that spoil this picture (37).

- (37) a. priznati ('recognize') → priznat/??priznan ('recognize.PRT') → *priznaće/ priznanje
- b. računati ('calculate') → računat/??računan ('calculate.PRT') → *računaće/ računanje

What we can see in (37) are verb forms that derive passive participles ending in *-t* but then generate nominalizations ending in *-nje* rather than *-će*, which would be expected under the generalization motivating the idea that *-nje* nominals are derived from passive participles.

It appears that the latter objection having to do with the mismatch between the participial and nominal endings is easier to address so I will tackle it first. Namely, while it is true that nominalizations ending in *-će* are completely ruled out in each of these cases, the participial form ending in *-n* is not. For example, in (37b), the participial form ending in *-n* is, in fact, the preferred one in the Croatian variety⁵⁶, and a search of the Serbian web corpus (Srwac) shows that the participial form ending in *-n* is used as well⁵⁷. In other words, there are strong reasons to believe that participial doublets are available in each case where there is this apparent mismatch between the nominal and participial endings, and the mismatch arises simply because one participial form (the one that gives rise to the mismatch) is used more frequently.

The objection that the analysis that derives *-nje* nominals from passive participles undergenerates because it predicts the non-existence of certain attested forms is more challenging, but I would argue that it does not justify the rejection of this proposal. As observed by Simonović and Arsenijević (2014), the undergeneration challenge to this hypothesis comes from the fact that it predicts the ungrammaticality of a set of *-nje* nominals derived from unergatives and unaccusatives. Namely, the idea is that unergatives and unaccusatives do not derive passive participles while having attested *-nje* nominals. Again, Simonović and Arsenijević (2014) suggest

⁵⁶ <http://www.lektoriranje.org/jezicni-savjetnik/racunat-ili-racunat>

⁵⁷ For instance, the example in (i) is attested in the corpus
(i) Životni vek svakog Turkmena računano je po periodima.
life centry every Turkmen calculate.PRT AUX by periods
'the lifespan of every Turkmen was calculated by periods.' (source: nspm.rs)

that the existence of *-nje* nominals derived from verbs that do not seem to produce passive participles is not sufficient evidence against their overall proposal because one could assume that the insertion of the nominalizer *-je* rescues the derivation of the otherwise ungrammatical passive participle.

I do not believe their overall account needs a stipulation involving the derivational rescue effect of *-je*, nor do I think that such a stipulation is conceptually desirable. The fact that ungrammatical structures can be salvaged or rescued over the course of the derivation is a well-known phenomenon in linguistics. For instance, island violations can be rescued by subsequently eliding the portion of the structure in which the violation occurred (Ross 1969). However, such strategies are always tightly constrained (e.g. island violations are tolerated only if the violation is elided). The rescue strategy for *-nje* nominals, as suggested by Simonović and Arsenijević (2014), lacks similar constraints and threatens to make the account unfalsifiable. Still, empirically, the data from psych verb *-nje* nominals (Appendix 5) systematically shows that in cases where passive participle forms of underlying verbs are degraded or only marginally acceptable, the derived nominal tends to be significantly better or sometimes even completely acceptable.

Instead of making the assumption that *-nje* nominalizations are able to completely rescue otherwise ungrammatical derivations, I would suggest that they can undeniably improve grammatical but less frequent or (somewhat) degraded ones. However, they cannot ultimately salvage truly ungrammatical structures. To make this argument, I will first start from the challenge from *-nje* nominals derived from unergatives and unnaccusatives (35) and show that this challenge is only apparent. Starting with unergatives, an influential line of research in generative grammar treats unergative verbs as covertly transitive (Burzio 1986; Hale and Keyser 2002). For instance, Hale and Keyser (2002) assume that unergative verbs contain an incorporated object embedded

under a light verb DO. Their analysis of verbs like *dance* is given in (38). One piece of evidence that is frequently cited in support of this proposal is the availability of cognate objects with these verbs (39).

(38) [vP DO [nP/vP dance]]

(39) She danced a wonderful dance.

Moreover, unergative verbs are agentive and they incorporate VoiceP so following the analysis laid out in Chapter 5, these verbs are expected to produce passive participles in Serbian. In addition to allowing cognate objects, unergative verbs routinely derive the so-called impersonal passives, which shows that *-n* participles are clearly derivable with these verbs (40).

(40) Ovom stazom je mnogo trčano / šetano.

this.INST path.INST AUX much run.PRT / walk.PRT

‘This path has been run/walked on a lot.’

Therefore, I would suggest that the challenge from unergatives is also only apparent as the hypothesis that *-nje* nominals are derived from passive participles does not specify that the participial form has to show all the typical uses of a passive participles (verbal passive, prenominal modification, etc.) and it is enough that such a form is merely derivable in the language, and the derivability of *-n* forms of unergative verbs is confirmed by the existence of impersonal passive forms.

Turning to the issue of unaccusatives, there is, indeed, no broader empirical or theoretical reason predicting the existence of passive participles with these forms. Moreover, in the context of this dissertation, it has been argued that passive participles are derived from VoicePs, but of course, the absence of agentivity (and consequently, the absence of VoiceP) is one of the defining characteristics of unaccusatives. Still, Aljović (2000) notes a rather surprising effect of

imperfective aspect on unaccusativity diagnostics in Serbo-Croatian. Namely, she observes that imperfectivized unaccusative verbs exhibit the properties of unergatives on a number of tests. For instance, unlike their perfective counterparts, they are able to form impersonal passives (41). Imperfective unaccusative verbs exhibit unergative-like behavior on a number of other tests, but I believe that the fact that they can derive impersonal passives is sufficient for our purposes here because it demonstrates that *-n* participles are available with these verbs, and hence, it is not completely surprising that *-nje* nominals derived from these verbs are also available.

- (41) a. Ovim vozom je često dolaž-en-o.
 this train.INST AUX often arrive.IMPF.PRT.NEUT
 ‘This train was often arrived on.’
- Ovim padobranom je često pada-n-o.
 this parachute aux often fall.IMPF.PRT.NEUT
 ‘This parachute was often jumped with.’
- Na ovu pistu je često slijeta-n-o.
 on this runway AUX often land.IMPF.PRT.NEUT
 ‘This runway was often landed on.’ (Aljović 2000, p. 9)

In contrast to imperfective unaccusatives, perfective forms of these verbs do not derive *-n* participles at all as in most cases it is difficult to even imagine what the participial form would sound like (42).

- (42) a. umreti (‘die.PF.INF’) → *umren / *umret / *umrt (‘die.PRT’)
 b. pasti (‘fall.PF.INF’) → *pat / *past / *padnut (‘fall.PRT’)

Aljović (2000) argues that the difference in behavior between imperfective and perfective unaccusative verbs with respect to unaccusativity tests stems from different derivations that they involve. According to her, perfective unaccusatives behave like true unaccusatives because they project an unaccusative verbalizer signaling the lack of an external cause on top of the root projection. However, their imperfective counterparts are built by introducing a causative v^0 on top of this structure. Therefore, Aljović (2000) assumes that imperfective versions of unaccusative verbs are essentially unergative structures.

Crucially, Aljović's (2000) account does not predict that there will be no imperfective unaccusatives in Serbo-Croatian. If that were the case, all imperfective verbs would be expected to derive *-n* participles and subsequently *-nje* nominals, and the account would overgenerate. Instead, what she predicts is that imperfective verbs that are derived from perfective unaccusative verbs will be unergatives. Semantically, these would be imperfectives derived from accomplishments or achievements corresponding either to iterative readings or 'incomplete perfectives' with the so-called 'Imperfective Paradox' semantics (43).

(43) Mozart was finishing Requiem before he died. (Zucchi 2020, p. 1)

However, imperfective verbs that are not derived from perfectives are, of course, possible in this language. These primary imperfectives would correspond to states and activities, and if these verbs do not involve an external argument, they would be expected to involve unaccusative structures. Of course, activities are standardly assumed to involve Agents so one does not expect to see unaccusative activities, but nothing precludes the existence of stative unaccusatives, and I have assumed the existence of these structures in Chapter 4 and Chapter 5. In that sense, this account predicts that only imperfective unaccusatives or stative unaccusatives should not derive *-n* participles, and consequently, *-nje* nominals derived from these verbs should be blocked as well.

This account now correctly predicts the non-existence of *-nje* nominals derived from stative unaccusative Psych verbs. These would be Class 3 verbs (44) as well as certain Class 2 verbs that do not project VoiceP.

- (44) a. *prija* ('appeal') + -n → **prijan* ('appealed') + *je* → **prijanje*
 b. *smeta* ('bother') + -n → **smetan* ('bothered') + *-je* → ??*smetanje*
 c. *škodi* ('harm') + -n → **škoden* ('harmed') + *-je* → **škodenje*
- (45) *boleti* ('pain') + -n → **boljen* ('pain.PRT') + *-je* → **boljenje*

When it comes to Class 4 verbs, we observed another puzzling pattern. Namely, while *-n* participles seem to be blocked with these verbs, *-nje* nominals are still available (46). However, not all Class 4 verbs are able to derive *-nje* nominals as shown by the contrast in (47).

- (46) a. *divi-ti (se)* ('admire') + -n → **divlje-n* ('admired') + *-je* → *divlje-n-je*
 b. *čudi-ti (se)* ('marvel') + -n → **čuđe-n* ('marveled') + *-je* → *čuđe-n-je*
 c. *radova-ti (se)* ('rejoice') + -n → ??*radova-n* ('rejoiced') + *-je* → *radova-n-je*
- (47) a. *divi-ti (se)* ('admire') + -n → **divlje-n* ('admired') + *-je* → *divlje-n-je*
 b. *zavidi-ti* ('envy') + -n → **zaviđe-n* ('envied') + *-je* → **zaviđe-n-je*

While both verbs in (47) seem to lack *-n* participles, only *diviti se* ('admire') is capable of deriving the *-nje* nominalization. In other words, the verb *zavideti* ('envy') is well-behaved given the generalization that verb that do not have *-n* participles should not derive *-nje* nominals either. The question is, then, why the verbs in (46) seem to violate the pattern. I would argue that the answer to this question lies in the obligatory SE morpheme that occurs with these verbs. Namely, the difference between *zavideti* ('envy'), on the one hand, and *diviti se* ('admire') and *čuditi se* ('marvel'), on the other, is due to the fact that the latter cannot be used without SE.

Čuditi se ('marvel') and *diviti se* ('admire') do not seem to be completely identical in all relevant respects either. The verb *čuditi se* ('marvel') as well as some other Class 4 verbs with the obligatory SE morpheme such as *radovati se* ('rejoice') have transitive counterparts (48), but *diviti se* ('admire') is a so-called 'frozen entry', which does not have a transitive counterpart.

- (48) a. Čudi me da nisu bolje pregledali rezultate.
wonder me that NEG.AUX better look.over results.ACC
'I wonder why they did not look over the results better.'
- b. Radujem me što ste pobedili u finalu.
rejoice me that AUX won in finals.LOC
'I am glad that you won in the finals.'

Therefore, it is possible to assume that the reason why we seem to have *-nje* nominals derived from *čuditi se* ('marvel') and *radovati se* ('rejoice') is because they are derived from transitive Class 2 counterparts of these verbs without *se*, which are expected to derive passive participles under this account.

With *zavideti* ('envy') and other Class 4 verbs that do not include the SE morpheme, the transitive counterpart is, of course, non-existent (49).

- (49) *Njeno poznavanje stranih jezika me je zadavelo.
her knowing foreign.GEN languages me AUX envy
Intended: 'Her knowledge of foreign languages caused me to envy her.'

This difference between Class 4 verbs with and without SE motivates the assumption that the transitive counterpart of these verbs makes the *-n* participles, in principle, derivable, which is enough to license the derivation of *-nje* nominals. The addition of the suffix *-je* to the otherwise

degraded *-n* participle does not rescue it but simply improves it. Once again, following Reinhart (2000), Chierchia (2002) and Marelj (2003), I would assume that *diviti se* ('admire') is, in principle, no different from *čuditi se* ('marvel') and *radovati se* ('rejoice') in that its transitive counterpart is derivable but not used in the current variety of the language. Indeed, *diviti se* ('admire') does have a transitive, but perfective counterpart *zadiviti* ('amaze'), which does not come with the obligatory SE morpheme and behaves like a typical Class 2 verb in all relevant respects. Still, *zadiviti* ('amaze') does not seem to have its imperfective transitive counterpart **diviti* ('amaze.ipf'), which would, then, give us the *-nje* nominal. But at the same time, what *zadiviti* ('amaze') shows is that there is nothing that prevents the root $\sqrt{\text{DIV}}$ from occurring in transitive environments. The lack of a transitive *diviti* ('amaze') is there for a puzzle that cannot be ascribed to grammatical properties, and I assume that it is due to language use factors⁵⁸.

To reiterate, I would argue that the *-n* participles derived from Class 4 verbs with SE (46) are all derivable but not all of them are used while those derived from Class 4 verbs without SE (47b) are underivable to begin with. Indeed, native speaker intuitions about the difference between the *-n* participle forms in (46) and (47b) support this claim. Namely, native speakers find the form in (47b) considerably worse than the forms in (46) in spite of the fact that none of them are actually used.

I believe that the distinction between underivable and derivable but unused forms is both theoretically and empirically necessary. Theoretically, there is no reason to expect that the actual linguistic performance will exhaust the entire generative potential of Grammar as pragmatic

⁵⁸ By contrast, consider a Class 3 verb such as *prijati* ('appeal'), which does not derive a *-nje* nominalization or another Class 4 verb, *zavideti* ('envy'), which does not come with the obligatory SE morpheme and does not produce a *-nje* nominalization either. These verbs do not have transitive counter parts at all, either perfective or imperfective. What is more, a hypothetical form **zaprijati* ('appeal.pf'), if it existed, my intuition is that it would simply be an inchoative version of *prijati* ('appeal.ipf') with the meaning 'start to appeal' rather than a transitive verb.

concerns make certain derivable options unnecessary. Empirically, we see that this theoretical stance is correct whenever a new form enters linguistic usage. In such cases, the generative power of Grammar is mobilized to fill a particular gap that has suddenly arisen in language use (see Section 5.1. for a detailed discussion of the difference between ungrammatical and derivable but (restrictively/rarely) used forms in relation to passive participles.

Once we make room for this distinction between underivable and derivable but unused forms, we have all that is necessary for an explanation of the facts that were observed with respect to deriving *-nje* nominals from Class 4 verbs. Namely, *-nje* nominals are possible with Class 4 verbs with SE because all these verbs are, in principle, capable of deriving *-n* participles, but these participles are simply not used for independent reasons. In contrast, Class 4 verbs without SE cannot derive *-n* participles to begin with, which is why they fail to derive *-nje* nominals as well.

Summing up this section, there are strong reasons to believe that *-nje* nominals are derived from passive participles and that the availability of passive participles constrains the derivation of *-nje* nominals. Such a proposal faces some apparent obstacles, but once the data are analyzed more closely, the account provides the correct predictions. The objection that the correlation between the ending of the passive participle and the ending of the nominalization is not perfect has been resolved by the observation that in such cases the verb actually produces two competing participial forms where one is used more frequently, and the nominalization is derived from the less frequent form. The objection that the proposal predicts the non-existence of *-nje* nominals derived from unergatives and unaccusatives contrary to fact because these verbs do not generate passive participles is also mistaken. Namely, unergatives are expected to derive *-n* participles (Burzio 1986; Hale and Keyser 2002), and they indeed derive them in Serbian, which is why *-nje* nominals derived from these verbs are fully accounted for. When it comes to unaccusatives, the situation

becomes clearer once the fact that imperfective versions of unaccusative verbs behave like unergatives in Serbian/Serbo-Croatian (Aljović 2000) is taken into account. Namely, *-nje* nominals derived from proper unaccusatives are underivable while imperfective unaccusatives are able to derive *-n* participles and consequently produce *-nje* nominals as well. Hence, the calibrated prediction of the proposal that *-nje* nominals are derived from passive participles is that perfective and stative unaccusatives should not derive *-nje* nominals, and this proposal actually captures the data. Finally, the data from *by*-phrase licensing also support this proposal since *by*-phrases are routinely licensed with *-nje* nominals derived from imperfective verbs diagnosing the presence of VoiceP, which can hardly be explained if these nominals are not derived from passive participles.

6.3.3. Internal structure of RNs

When it comes to the questions of the internal composition of RNs with Psych verbs, previous research points towards the hypothesis that one should not expect to find evidence of higher verbal layers (*vP*, VoiceP) with these nominals (Bašić 2010; Arsenijević and Simonović 2014). Even though the morphophonology of RNs suggests that these structural layers should be present, the prevailing view in DM is that morphophonological cues can, in fact, be deceiving. Consider Embick's (2004) discussion of verbal participles for instance. He argues that the participial shape does not entail the presence of verbal functional structure. For instance, he observes that the vocabulary item *closed* can be used as a genuine verbal participle, the counterpart of *opened*, but also as an adjective, the counterpart of *open*. He illustrates this with examples such as (50). (50a) shows that the form can function as the adjectival component of a resultative construction with the verb *build*. (50b) and (50c) show that the adjectival form *open* can be used as part of the same construction, but the participial form *opened* cannot. The reason why (50c) is ungrammatical is due to the fact that *opened* implies an opening event, but the possibility of this

event is contradicted by the main verb *build*. However, the participial form closed can be embedded under the verb *build* (50a).

- (50) a. The door was built closed.
b. The door was built open.
c. *The door was built opened.

This suggests that *closed* is ambiguous between an adjectival and a participial reading. Embick (2004) encodes this distinction between the adjectival and the participial uses by assuming that the adjectival form is derived directly from the root whereas the participial form also involves a verbal layer (ν P).

In light of this point, based on the fact that the morphophonology of RNs suggests the presence of higher layers of verbal structure including the participial layer, one should not assume immediately that this structure is actually syntactically realized. Moreover, Simonović and Arsenijević (2014) show that there are strong reasons to believe that the *-nje* suffix does not always produce nominalizations with the complete participial structure. Moreover, Bašić's (2010) analysis motivates the hypothesis that higher layers of verbal structure are absent with RNs.

The hypothesis that RNs do not incorporate ν P or VoiceP provides us with several concrete predictions. So far, we have argued that the presence of VoiceP licenses *by*-phrases and/or instrumental case-marked bare NPs as expressions of the Causer argument. The same projection is responsible for the rejection of *od*('from')-PPs. Therefore, if VoiceP is absent from the structure of RNs, we would expect to find no *by*-phrases or instrumental case-marked bare NPs. On the other hand, as the distribution of *od*('from')-PPs is negatively defined (i.e. on the basis of the absence of VoiceP), there is no reason to expect these items not to occur with RNs.

What we observe with Psych verb nominalizations is that the predictions concerning the licensing of the *by*-phrase are generally borne out. For instance, *by*-phrases are, for the most part, disallowed as illustrated in (51). The RN *oduševljenje* ('amazement') in (51) clearly rejects the *by*-phrase.

- (51) *Markovo oduševljenje od strane brata.
 Mark's amazement from side brother.GEN
 Literally: 'The amazement of Mark by his brother.'

However, there are also exceptions to this tendency. I would like to point out that the judgements might be somewhat problematic in this area so I decided to present some authentic examples I found online. Consider the examples in (52).

- (52) a. Mozda malo razočaranje od strane ljudi na forumu⁵⁹
 maybe little disappointment from side people.GEN at the forum
 'Maybe a small disappointment on the part of the people at the forum.'
- b. razočaranja od strane prekaljenih majstora⁶⁰
 disappointments from side seasoned masters
 'Disappointments by seasoned masters'
- c. Sa druge strane veliko razočaranje od strane Grčke⁶¹
 on other side big disappointment from side Greece.GEN
 'on the other hand, a big disappointment on the part of Greece'

The examples in (52) show that the *by*-phrase can definitely occur with RNs derived from Psych verbs, although one is justified in characterizing those uses as exceptional.

⁵⁹ Link: <https://forum.benchmark.rs/showthread.php?431116-Samsung-Galaxy-S10-Plus/page99>

⁶⁰ Link: <https://www.vreme.com/cms/view.php?id=914134>

⁶¹ Link: <https://forum.benchmark.rs/showthread.php?431116-Samsung-Galaxy-S10-Plus/page99>

When it comes to *od*(‘from’)-PPs, I was not able to find any instances in which this expression of the Causer argument is used with an RN along the lines of (53), which is, at least somewhat surprising given that this expression does not actually have to be structurally licensed as I showed in the chapter on SE forms and passive participles. This item is licensed semantically wherever it is possible to imagine a cause for some resulting state so it can be used quite freely with pure adjectives and nouns without any indication of verbal functional morphology (53).

(53) a. *Markovo oduševljenje od rođendanske žurke.
 Marko’s amazement from birthday.GEN party.GEN
 Intended: ‘Marko’s amazement by (his) birthday party.’

b. *Markovo razočaranje od lošeg rezultata na ispitu.
 Marko’s disappointment from bad.GEN result.GEN on exam.LOC
 Intended: ‘Marko’s disappointment at a bad result on an exam.’

(54) a. Uvek sam imao strah od letenja.
 always AUX.1.SG had fear from flying
 ‘I always had a fear of flying.’

b. Pantalone su mu bile prljave od valjanja po blatu.
 trousers AUX him BE dirty from rolling over mud.LOC
 ‘His trousers were dirty from rolling in the mud.’

* Miloš je bio razočaran od Aninog postupka.
 Miloš AUX BE disappointed from Ana’s move
 Intended: ‘Miloš was disappointed by Ana’s move.’

Given the previous accounts of RNs, which exclude (higher) verbal functional morphology with RNs, the lack of grammatical examples with *od*(‘from’)-PPs, which are rejected in the context of VoiceP, is certainly puzzling. Of course, at this point, one could cast doubt on the generalization that *od*(‘from’)-PPs are rejected in the context of VoiceP that I established in the chapter on SE forms, and I would certainly have pursued that possibility if it was not for the fact that in addition to disallowing *od*(‘from’)-PPs, RNs routinely allow instrumental case-marked bare NPs (55).

- (55) a. Markovo oduševljenje rođendanskom žurkom.
 Marko’s amazement birthday.INST party.INST
 ‘Marko’s amazement with the birthday party.’
- b. Markovo razočaranje lošim rezultatom na ispitu.
 Marko’s disappointment bad.INST result.ISNT on exam.LOC
 ‘Marko’s disappointment with a bad result on an exam.’

In Chapters 3 and 5, I argued that instrumental case-marked bare NPs have to be licensed by the presence of VoiceP. Therefore, dismissing the idea that *od*(‘from’)-PPs are rejected in the presence of VoiceP because this layer of structure is not expected to occur with RNs and there are no *od*(‘from’)-PPs with RNs would require an alternative explanation for the licensing of instrumental case-marked NPs as well.

Since the idea that instrumental case-marked bare NPs are licensed by VoiceP and the idea that *od*(‘from’)-PPs are rejected by VoiceP both originate in this dissertation, it is necessary to show that these ideas should, in fact, be kept despite the potential challenge from RNs. I would suggest, once again following Alexiadou et al. (2014) and Gehrke (2013) that even exceptional licensing of *by*-phrases, which I illustrated in (52) should be taken as an indication of the presence

(‘Greece.gen’). These examples are not technically non-referential. People on forum, seasoned masters and Greece do refer to certain entities. However, they do not have strong reference in the sense that they do not point to a specific individual/set of individuals directly.

The situation is quite similar with *by*-phrases in English adjectival participles. McIntyre (2013) provides the following examples (57).⁶²

- (57) a. The door seemed {broken/opened/painted} (*by Mary).
- b. The road remained {blocked by police/supported by pylons}.
- c. The dictator remained unsupported by the warlords
- d. Edeltraud seemed flattered by {the report/??the journalist}.
- e. # The text seems written by a {genius/foreigner/ghostwriter}.
- f. *The text seems written by John.

The important point here is that the DPs inside the *by*-phrases in the grammatical examples in (50) are not strictly speaking non-referential, which is why Gehrke (2013) and Alexiadou et al. (2014) use the phrase “weak reference” as opposed to non-referentiality. In contrast, strongly referential DPs in (57a) and (57f) are completely ruled out. The contrast between the acceptable and severely degraded versions of (57d) suggests that these effects might also be due to concreteness such that concrete nouns are less acceptable than more abstract ones (Kounios and Holcomb 1994). It is beyond the scope of this dissertation to try to provide a full account of the mechanisms behind this effect. Instead, I want to suggest that the effects we have seen with RNs in terms of the acceptability of *by*-phrases with RNs belongs to the same kind of phenomena as those discussed by Gehrke (2013) and Alexiadou et al. (2014). In that light, to the extent that one

⁶² The examples in (57c) and (57f) have been shortened for convenience by removing portions that are not significant for the present discussion.

is prepared to accept their accounts of the licensing of *by*-phrases with adjectival passives in German and English, it is possible to extend them to Serbian RNs as well.

The examples in (55) show that instrumental case-marked bare NPs are allowed as expressions of Causers with RNs. Since Causers are also event participants, there is strong reason to believe that the same kind of restriction on the distribution that was observed with *by*-phrases should also hold with instrumental case-marked NP Causer. The data in (58) bear this out as there is a clear contrast in acceptability between severely degraded strongly referential NPs and weakly referential abstract NPs that are completely grammatical.

- (58) a. Markovo oduševljenje rođendanskom žurkom / ??bratom.
 Marko's amazement birthday.INST party.INST / brother.INST
 'Marko's amazement with the birthday party / his brother.'
- b. Markovo razočaranje lošim rezultatom na
 Marko's disappointment bad.INST result.INST on
 ispitu / ??profesorom.
 exam.LOC / professor.INST
 'Marko's disappointment by a bad result on an exam / Professor.'

What the examples in (58) make clear immediately is that these restrictions do not hold for possessive adjectives that introduce the Theme argument. The proper name, *Marko*, realized in the form of a possessive adjective in (58) cannot be described as a weakly referential NP under any interpretation. Therefore, it seems that possessive adjectives as expressions of event participants with RNs do not conform to the same restrictions we observe for *by*-phrases and instrumental case-marked bare NPs.

There are two possible ways of approaching this exceptional behavior of possessive adjectives in terms of the referentiality restriction with RNs. On the one hand, one could assume that the lack of restriction of this kind invalidates the point concerning the significance of this restriction with *by*-phrases and instrumental case-marked bare NPs for the internal structure of RNs. I would argue that this approach is untenable because the lack of this restriction with possessive adjectives does not remove the fact that the restriction exists with other expressions of event participants, which is a fact that requires an explanation. For this reason, I will not pursue this possibility further.

The second possible approach is to try to explain why possessive adjectives are exceptional in terms of not abiding by the referentiality restriction with RNs while retaining the assumption that this restriction does, indeed, hold for other kinds of participants. In fact, it is a fairly standard position in the generative literature on the structure of the noun phrase to treat the prenominal possessive as a non-thematic position (Abney 1987; Marantz 1997; Alexiadou 2001, *inter alia*). Such a view is necessary to explain the fact that prenominal possessives, like sentential subjects, can accommodate DPs carrying different thematic roles and they can be attached to nouns that do not project argument structure to signal Possessors. I would, thus, assume that the reason why possessive adjectives in Serbian do not show the same referentiality restriction with RNs as other expressions of event participants is due to the special grammatical status of possessives.

Concerning the realization of the internal argument, it is necessary to say a few words about its syntactic status. Bašić (2010) argues that given their impoverished functional structure (more precisely, the lack of AspP), RNs are unable to license genitive case. As a result, she argues, the internal argument is never obligatory with RNs. She provides the pair of examples in (59) in support of this position.

(59) a. On je rešio *(zadatak).

he AUX solved exercise

‘He solved the exercise’

b. Rešenje (zadatka) je na stolu.

solution exercise AUX on table

‘The solution to the exercise is on the table’

(Bašić 2010, p. 63)

Bašić (2010) points out that it is not possible to drop the internal argument of a transitive verb (59a) but it is possible to drop the internal argument of an RN (59b). Her interpretation of these facts is that arguments with structural case cannot be dropped, which explains the impossibility of dropping the internal argument of a transitive verb whereas, NPs that bear non-structural case can be dropped.

The argument that the possibility of omitting an NP or leaving it unpronounced shows that it carries non-structural case is difficult to maintain for Serbian given the well-known pro-drop phenomenon. Namely, nominative case, which is the most straightforward instance of structural case, is not an obstacle for having an unpronounced subject in Serbian. However, one might assume that pro-drop is a separate phenomenon, and in that sense, Bašić (2010) claim is restricted only to objects. This would also be a questionable move as there are radical pro-drop languages, where the internal argument can be dropped as well (see Neeleman and Szendrői, 2007 for an influential discussion). Nonetheless, even if the exceptional status of internal arguments is granted (at least for languages like Serbian), one still faces the objection that objects of intransitive verbs can be dropped under certain circumstances such as (60) and (61).

(60) A: Ko je rešio ovaj zadatak?

who AUX solved this.ACC task.ACC

‘Who solved this task?’

B: Milan ?(ga) je rešio.

Milan.NOM him.CL AUX solved

‘Milan solved it.’

(61) A: Da li je neko rešio ovaj zadatak?

DA Q.PART AUX someone solved this task

‘Did anyone solve this task?’

B: Milan (ga) je rešio.

Milan.NOM him.CL AUX solved

‘Milan solved it.’

What (60) and (61) demonstrate quite clearly is that there are certain conditions under which the accusative case-marked internal argument of a transitive verb can be dropped. The general rule seems to be that the object can be dropped if it is highly salient in the previous discourse, but the contrast between (60) and (61) also shows that other discourse related factors might play a role as well (specifically, 60B is a response to a *wh*-question while 61B is a response to a yes-no question), and there are certainly other important factors at play. The crucial point is that the possibility of dropping the internal argument of a verb exists in the grammar of Serbian and the conditions that govern this process are largely determined by discourse-related factors.

I would argue that these rules governing the possibilities of dropping the genitive case-marked internal argument of RNs are of a similar kind, though clearly not identical. Namely, there is no doubt that the genitive case-marked internal argument can be dropped in (59b), but it will be dropped only if the referent of the NP is salient in the discourse. Therefore, the conditions that determine whether or not the NP will be dropped are of the same type as those that govern the

possibilities of dropping accusative case-marked objects of transitive verbs. The exact conditions that make it possible to drop the internal argument of a verb might not be the same as those that dictate the possibilities of dropping the internal argument of an RN, but, for our purposes, it is important to recognize that the Grammar allows both of these types of internal arguments to be dropped if those conditions are met.

On top of this, it is difficult to understand why the possibilities of dropping an element would reveal anything about the nature of the case it bears. Case Theory usually references the thematic role of the DP and the syntactic position in which it occurs as the criteria that determine whether it carries structural, inherent or lexical case (cf. Woolford 2006). The likelihood of it being dropped is not taken as a criterion when it comes to determining the nature of case. In the concrete example in (59) with an RN, the NP *zadatka* ('exercise.gen') carries the thematic role of Theme and it is located in the position of the internal argument just like its counterpart in the case of an analogous construction involving a CEN (62).

- (62) Profesorovo rešavanje zadatka je trajalo satima.
professor's solving task.GEN AUX lasted hours.INST
'Professor's solving of the task lasted for hours.'

One struggles to understand why these two NPs would carry two different kinds of genitive case, despite their crucial similarities, simply because the one which appears with an RN is dropped more easily. Therefore, I will assume that the genitive case-marked internal arguments are regular arguments marked with structural genitive case (following Alexiadou 2001).

If genitive-case marked internal arguments of RNs are, indeed, regular arguments, they should abide by the same restrictions in terms of weak referentiality identified for Agents and Causers. I would argue that this is, in fact, the case. Consider (63) and (64). The RN derived from

the Psych verb *smiriti* ('calm') rejects a genitive case-marked internal argument when it has strong reference (63a) while accepting an argument with weaker reference. The same applies to the contrast between (63a) and (64b).

(63) a. *smirenje brata
 calming brother.GEN
 'brother's relaxing'

b. smirenje živaca
 calming nerves.GEN
 'calming of (one's) nerves'

(64) a. *zadovoljenje brata
 satisfying brother.GEN
 'satisfying a/the brother'

b. zadovoljenje pravde/ želje/ zahteva/ naroda
 satisfisfying justice.GEN/ wish.GEN/ request.GEN/ people.GEN

Summarizing the data, we can say that some RNs allow different expressions of event participants (*by*-phrases, instrumental case-marked NPs/DPs or postnominal genitives) but only as long as these are weakly referential. Others, however, disallow expressions of event participants altogether. A sharp division between CENs and RNs of the kind advocated by Bašić (2010) and Simonović and Arsenijević (2014) predicts that RNs should not license these expressions at all because they argue that RNs, unlike CENs, do not contain the extended verbal structure. Therefore, the question in front of us is how to account for those RNs that allow these expressions. Answering

this question would require locating the relevant difference between those RNs that show signs or argument structure and those that do not.

The difference between the two kinds of RNs revolves around eventivity. More precisely, those RNs that exhibit evidence of argument structure also carry event implications while those that do not merely refer to emotions (i.e. they show sign of lexicalization where the link with the semantics of the underlying verb is blurred). This difference is most clearly apparent outside of the Psych verb domain where some RN *-nje* nominals acquire typical nominal semantics denoting entities rather than events (65).

- (65) uzemljenje strujnog kola (*od strane električara)
 interring electric.GEN current.GEN from side electricians.GEN
 ‘the ground of the electric current (by electricians)’

The nominal in (65) denotes a part of an electric current and carries no event implications. It does not imply an interring event ever taking place. Consequently, the *by*-phrase introducing an Agent is strongly rejected. By contrast, other RNs still carry event implications (66), and they readily license *by*-phrase although they still show a strong preference for weakly referential (generic) NPs/DPs inside the *by*-phrase.

- (66) saslušanje svedoka od strane iskusnih
 interrogation witness.GEN from side experienced.GEN
 inspektora / ??Petra.
 inspectors.GEN / Petar.GEN
 ‘The interrogation of the witness by experienced inspectors / Petar.’

In the domain of Psych verb nominalizations, the difference between eventive and non-eventive RNs is blurred by the fact that most of them are actually ambiguous between the two readings as

they sometimes carry event implications and sometimes do not. This effect manifests itself quite clearly when these RNs are embedded under two different kinds of verbs (67).

- (67) a. Osećao sam razočaranje od strane *ljudi / *Petra.
 felt AUX disappointment from side people.GEN Petar.GEN
 ‘I felt disappointment by people / Peter.’
- b. Doživio sam razočaranje od strane ljudi / ?Petra.
 experienced AUX disappointment from side people.GEN Petar.GEN
 ‘I experienced disappointment by people / Peter.’

In (67a), the RN *razočaranje* (‘disappointment’) is embedded under a stative verb *osećati* (feel), and, in that case, it denotes a pure emotion without event implications. However, when the same RN is embedded under an eventive verb *doživeti* (experience) (67b), it denotes the same emotion but with a clear event implication. The sentence can be roughly paraphrased along the lines of “I experienced an event which resulted in disappointment”. The semantic difference in the presence of event implications is associated with a difference in the licensing of *by*-phrases. Whereas the non-eventive RN in (67a) rejects *by*-phrases across the board, the eventive one in (67b) certainly accepts the *by*-phrase with a generic NP/DP in its complement position⁶³. Crucially, however, when

⁶³ Interestingly, in the presence of the eventive verb *doživeti* (‘experience’) even a referential DP in the complement of the *by*-phrase does not cause a harsh violation. I suspect that this is because a *-nje* nominal used as an object of this verb can be re-analyzed as the so-called “decomposed predicate” (Radovanović 2004) or periphrastic predicate. Radovanović (2004) shows that there is a tendency towards decomposing predicates consisting of simple verbal lexemes into periphrastic constructions containing a light verb and a non-referential noun in its object position (i becomes ii).

- (i) Naučnici su analizirali vodu.
 scientists.NOM AUX analyzed water.ACC
 ‘The scientists analyzed the water’
- (ii) Naučnici su sproveli analizu vode.
 scientist.NOM AUX carried-out analysis.ACC water.GEN
 ‘The scientist carried out an analysis of the water’

If the light verb and noun actually form a single semantic unit (e.g. through incorporation or pseudo-incorporation) in (67b), then the eventive light verb could actually instantiate the event variable of the *-nje* nominal thus making referential expressions introducing event participants acceptable.

RNs derived from Psych verbs denote pure emotions without event implications, they do not license *by*-phrases, but when the event is implied weakly referential, *by*-phrases are licensed while strongly referential ones are degraded if not outright ungrammatical.

Following Gehrke (2013) and Alexiadou et al. (2014), I assume that the licensing of *by*-phrases is a signal of the presence of VoiceP in the internal structure of RNs in Serbian contra Bašić (2010) and Simonović and Arsenijević (2014) who argue that RNs have no internal verbal structure or they certainly do not incorporate *v*P and VoiceP. The fact that strongly referential NPs/DPs are generally rejected as complements of *by*-phrases with RNs while weakly referential ones are preferred as shown in (52) seems to be the reflex of the same constraint that holds with English and German adjectival passives (56-57). Namely, the event variable introduced by *v* is not bound by a higher functional head (Asp/T), which is why it remains in the kind domain and consequently only non-referential, kind modification is allowed. Put differently, these RNs merely denote (or imply) events without referring to them, and non-referential elements cannot be modified by referential ones.

Recall that this constraint does not apply to CENs, which allow all kinds of event modifiers (68). The examples in (68) illustrate CENs and they show that referential NPs/DPs are fully acceptable as complements of *by*-phrases, and they readily combine with measure phrases that measure out the runtime of the event referred to by the nominalization.

- (68) a. Saslušavanje svedoka od strane Petra Petrovića
interrogating witness.GEN from side Petar.GEN Petrović.GEN
je trajalo 5 sati.
AUX lasted 5 hours

‘The interrogation of the witness by Petar Petrović lasted 5 hours.’

- b. Uznemiravanje zaposlenih od strane Ilića je
 abusing employees.GEN from side Ilić.gen AUX
 trajalo 5 meseci.
 lasted 5 months

‘The abusing of the employees by Ilić lasted for 5 months.’

Therefore, it cannot be argued that RNs that denote or imply events are structurally as rich as CENs because CENs allow both referential and non-referential expressions of event participants while RNs allow only weakly referential ones. At the same time, however, because event denoting RNs can license *by*-phrases as well as other event participants as long as they do not have strong reference, it cannot be argued that they are completely devoid of verbal structure. Eventive semantics and the licensors for these event participants have to be hosted by some verbal projection within the structure of the RN. It is just that they lack the segment of the structure that is responsible for assigning reference to the event, which would then license referential NPs/DPs as complements of *by*-phrases.

The way I propose to account for the difference between event denoting RNs and CENs is based on the assumption that CENs incorporate an additional aspectual layer (AspP), which is responsible for assigning reference to the event variable introduced by *v*. This additional projection, then, accounts for the fact that CENs, unlike RNs, refer to events and consequently license referential *by*-phrases and other expressions introducing event participants. However, RNs still incorporate VoiceP, which explains why they are capable of licensing at least weakly referential event participants.

The distinction between CENs and RNs can be structurally represented as in (70) using the minimal pair in (69)⁶⁴.

(69) a. uz-ne-mir-a-va-n-je CEN

PF-NEG-peace-THV-IMPF-PASS-N

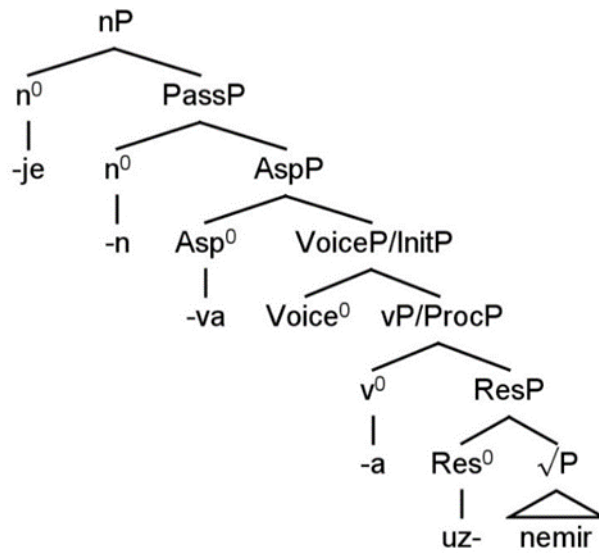
‘disturbing’

b. uz-ne-mir-e-n-je RN

PF-NEG-peace-THV-PASS-N

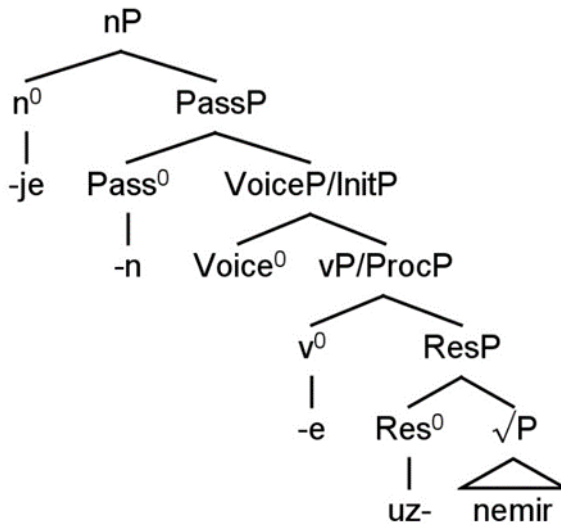
‘disturbance’

(70) a.



⁶⁴ The roots in question are complex containing a negative particle combined with the element meaning ‘peace’ as shown in the glosses in (69). The representations in (70) ignore this fact placing both elements into the root component. This was done in order to abstract away from the complications arising from negative prefixation. Also, the exponent of the v^0 was glossed as a theme vowel (thv) in both examples in (69). I am aware that the notion of theme vowels is a subject of extended debate in the literature but I believe nothing in the analysis presented here hinges upon this choice of label and the reader is free to treat it as provisory. The labels (InitP>ProcP>ResP) reflect Ramchandian (2008) ‘exploded VP’ decomposition and they are given alongside more standard labels (VoiceP>vP).

b.



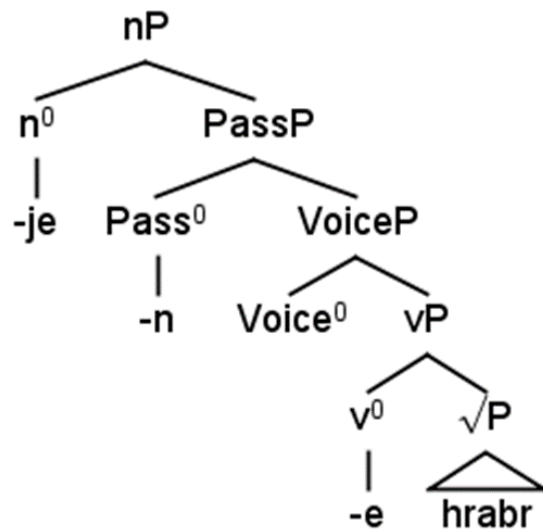
The proposed structural distinction between CENs and RNs in terms of the presence of the additional aspectual layer with CENs is morphologically reflected in the minimal pair in (69) because of the imperfectivizing suffix *-va* in (69a). This immediately raises the question of other cases where the distinction between the CEN and RN in the minimal pair does not immediately show evidence of additional morphological complexity inside the CEN. For example, the set in (71) contains a nominalization derived from a primary imperfective (71a); an RN derived from a perfective stem which is morphologically more complex than the imperfective one (71b); as well as a secondary imperfective, which involves an additional imperfectivizing suffix *-va* on top of the already complex perfective stem (71c).

- (71) a. hrabr-e-n-je
 brave-THV-PASS-N
 ‘encouraging’

- b. o-hrabr-e-n-je
PF-brave-THV-PASS-N
'encouragement'
- c. o-hrabr-i-va-n-je
PF-brave-THV-IMPF-PASS-N
'encouraging (iterative/incomplete)'

Morphological complexity points in the direction of treating the CEN derived from a secondary imperfective (71c) as containing an additional aspectual layer, but it is difficult to argue that the nominal derived from a primary imperfective (71a) is morphologically more complex than the RN derived from a perfective base (71b). If anything, morphology suggests that the RN is morphologically more complex. In the absence of evidence to the contrary, I propose to treat nominalizations derived from primary imperfectives as structurally simpler as well along the lines of (72).

(72)



What is crucial in this analysis is that the perfectivizing prefix that is present in perfective-derived nominalizations (RNs) does not represent an additional aspectual layer. Under the analysis in (70b), the prefix is treated as an exponent of the ResP, which is simply missing from primary perfectives (72). Only secondary imperfectives contain an additional aspectual layer on top of the extended VP structure (70a). This assumption about the different status of secondary imperfectives can be understood on the basis of the inner/outer aspect distinction where outer aspect is attached outside the vP domain (Borer 2005; Travis 2005; Nossalik 2010). as illustrated in (71a) for secondary imperfective. What this means for my analysis is that if we follow Alexiadou et al. (2014), who argue that event instantiation takes place when v is embedded under a higher Aspectual (or T) head, then, primary imperfectives are simply not complex enough structures to ensure event instantiation. This means that like RNs nominalizations derived from primary imperfectives should also merely denote events without referring to them. This would further predict that they should show a similar restriction when it comes to *by*-phrase licensing that we saw with RNs. Namely, RNs and nominalizations derived from primary imperfectives should license weakly referential NPs as expressions introducing event participants. The data are not completely clear on this as native speakers' judgments tend to vary considerably. Nonetheless, I believe that (73) approximates a correct assessment of the relevant data.

- (73) a. hrabrenje učenika od strane vršnjaka / ??Jovana
 encouraging.IMPF student.GEN from side peers.GEN / Jovan.GEN
 ‘the encouraging of the student by (his) peers / Jovan’
- b. ohrabrenje učenika od strane vršnjaka / ?*Jovana
 PF.encouraging student.GEN from side peers.GEN Jovan.GEN
 ‘the encouragment of the student by (his) peers / Jovan’

c. ohrabrivanje učenika od strane vršnjaka / Jovana
 encouraging.SEC.IMPF students.GEN from side peers.GEN Jovan.GEN

The structures in (73) illustrate the distribution of *by*-phrases with the three types of *-nje* nominals in (71). While *-nje* nominals derived from secondary imperfectives allow both referential and non-referential NPs/DPs as complements of *by*-phrases. RNs and nominals derived from primary imperfectives show a strong preference for non-referential ones. Some speakers find referential NPs/DPs less degraded with *-nje* nominals derived from primary imperfectives than with perfective-derived ones (as indicated in 73). However, what is crucial for my purposes here is the fact that referential NPs/DPs are much better in the context of *-nje* nominals derived from secondary imperfectives. This contrast follows from the present analysis because *-nje* nominals derived from secondary imperfectives are assumed to have an extra aspectual layer, which instantiates the event introduced by *v* (gives it runtime) and so referential modification is licensed.

6.4. Semantic and prosodic properties of *-nje* nominals – regularities and exceptions

The analysis of the structure of different classes of *-nje* nominals in Serbian presented in the previous sections is capable of accounting for the complex set of facts regarding the semantic and prosodic properties of these items capturing the regularities and motivating the exceptions. The generalization that imperfective-derived nominalizations are productive, semantically transparent and prosodically faithful to the base while perfective-derived ones are only semi-productive, prone to semantic opacity and prosodically unfaithful to the base (Simonović and Arsenijević 2014) is essentially correct but not exceptionless. As Simonović and Arsenijević (2014) observe, there are examples of imperfective-derived nominalizations which are prosodically unfaithful to the base form and semantically opaque. Similarly, as I have shown in

this chapter, not all perfective-derived nominalizations are semantically opaque (some of them still imply events while others denote entities), but they are all prosodically unfaithful to the base.

Simonović and Arsenijević (2014) point to the examples in (74) to illustrate the fact that not all imperfective-derived *-nje* nominals are semantically compositional and prosodically faithful to the base.

- (74) a. pu'tovati ('travel') → pu'tovanje ('travelling') / puto'vanje ('trip')
 b. 'poštovati ('respect') → 'poštovanje ('respecting') / pošto'vanje ('respect')
 c. 'osećati ('feel') → 'osećanje ('feeling') / ose'ćanje ('emotion')

All the verbs in (74) produce two different *-nje* nominals: one that retains the prosody of the base and has predictable gerundive semantics and the other with altered prosody and somewhat altered semantics as well. The prosodically unfaithful and semantically opaque examples show no evidence of internal syntactic structure either (75).

- (75) a. njegovo 'poštovanje oca / *prema ocu
 his respecting father.GEN towards father.DAT
 'him respecting his father'
 b. njegovo pošto'vanje *oca / prema ocu
 his respect father.GEN towards father.DAT
 'his respect towards his father'

The two nominalizations in (75) are derived from the verb *'poštovati* ('respect') in (74b). As is apparent from (75), the nominalization that retains the prosodic shape of the stem licenses postnominal genitive and disallows a PP complement (75a), while the unfaithful one rejects a postnominal genitive and requires a PP complement. Assuming that postnominal genitive is

conditioned by the presence of higher verbal structure, the fact that it is rejected by the prosodically unfaithful nominalization is a sign that higher verbal structure is missing with such items.

Since their account predicts that imperfective-derived nominals are semantically compositional and prosodically faithful, Simonović and Arsenijević (2014) handle these exceptions by postulating a Forced Lexicalization rule, which deletes the internal syntactic structure and removes a nominal from the paradigm of the verb assigning it different prosody and semantics. The problem with this solution is that it appears to be completely unrestricted. Namely, if the number of such examples were a lot higher than it actually is, this rule could still save their account because it is stated so broadly as to make the analysis essentially unfalsifiable.

I do not think that the existence of such examples removes the core insight of Simonović and Arsenijević's (2014) analysis, but the way they deal with these exceptions appears to be *ad hoc*. Instead, I would opt for an account that explains why these exceptions occur without introducing such powerful new rules. I argue that the possibilities of prosodic unfaithfulness and semantic opacity are structurally determined in the sense that these irregularities can arise in structures that do not achieve event instantiation. More specifically, the assumption is that v that is not dominated by a higher aspectual projection does not count as a full phase preventing semantic and prosodic irregularities. Therefore, perfective-derived nominals and nominals derived from primary imperfectives, unlike nominals based on secondary imperfectives, are expected to show exceptional behavior. All imperfective-derived *-nje* nominalizations that exhibit prosodic unfaithfulness come from states and activities (primary imperfectives), which is what this analysis predicts.

In (76), I provide an additional set of examples of imperfective-derived nominalizations that produce two different types of *-nje* nominals. Since these examples are very rare, I do not restrict myself to the domain of Psych verbs.

- (76) a. bo'lovati → bo'lovanje (suffering from illness) / 'bolovanje (sick leave)
b. 'imati → 'imanje ('having') / i'manje ('property')
c. 'peći → 'pečenje ('baking/roasting') / pe'čenje ('roast')

All the examples in (76) are derived from states or activities (primary imperfectives), and I do not know of any similar examples derived from secondary imperfectives.

Once again, if the *v* that is not dominated by a higher aspectual head does not count as a full phase because its event variable does not get instantiated, we expect to see tendencies towards idiomatic semantics and unpredictable phonology with nominalizations derived from perfective verbs and primary imperfectives, which is what the data indicates. Recall that perfective-derived nominalizations are not all equally semantically opaque since there are those that still denote events and those that do not, and those that denote events also show evidence of internal verbal structure. However, all perfective-derived nominalizations are prosodically unfaithful to the base while with imperfective bases, only those that are semantically opaque alter the prosodic pattern.

All of this indicates that the correlation between semantic opacity, prosodic faithfulness and the presence of internal verbal structure is strong but not perfect. I have suggested an account that specifies the conditions in which unpredictable semantic and prosodic properties can arise and argued that syntactic structure ultimately restricts the possibilities of lexicalization relying on the standard mechanism of phasal spellout. Standard accounts of idioms or semantically opaque structures in DM employ the same logic. For instance, Marantz (1997) argues that Agent idioms (i.e. idioms that include the agent argument) are impossible because the projection that introduces

the external argument is a phasal boundary that induces predictable semantics and prosody. Of course, Marantz's (1997) account does not imply that all structures below the functional projection that introduces the external argument will be idiomatic. It just states that idiomatic meanings can arise only within the structures below this projection. Similarly, I did not argue that all perfective-derived *-nje* nominals and all *-nje* nominals derived from primary imperfectives would be prosodically unfaithful and semantically opaque while all nominals derived from secondary imperfectives would be semantically compositional and prosodically faithful. Instead, I argued that all *-nje* nominals derived from secondary imperfectives will be prosodically faithful and semantically compositional while opaque meanings and unfaithful semantics will potentially occur in nominalizations derived from smaller structures (i.e. perfectives and primary imperfectives).

7. Psych verbs and the issue of oblique case-marked bare NPs⁶⁵

This chapter sets out to solve the problem of classifying Psych verbs that require obligatory oblique case-marked bare NPs as expressions of one of the participants in the Psych eventuality. This problem was raised in the chapter on the classification of Psych verbs in Serbian [Chapter 2] where it was pointed out that certain Psych verbs in Serbian that require obligatory oblique case-marked bare NPs cannot be easily placed in the existing classifications of Psych verbs (Belletti and Rizzi 1988; Landau 2010). It was observed that there are verbs that appear with genitive, dative and instrumental case-marked bare NPs introducing the Stimulus participant as well as verbs that introduce the Experiencer participant by means of a dative case-marked bare NP. While those verbs with dative case-marked bare NPs can be identified with Class 3 verbs, which is how Landau (2010) treats them, the existing classification makes no room for the remaining types. In the chapter on the syntactic status of these oblique case-marked bare NPs [Chapter 4], it was argued that these expressions should not be analyzed as bare NP adverbials or adjuncts of any kind, nor can they be analyzed as PP complements with null Ps (with the exception of instrumental case-marked bare NPs, which can plausibly be treated as involving a null P). Moreover, it was observed that the cases that appear on these NPs do not merit an analysis in terms of lexical case. Instead, the argument was that the case marking of these NPs is related to their thematic roles, which calls for an approach based on inherent case (Woolford 2006).

The challenge taken up in this chapter is a demanding one as it tackles and relates a number of highly contentious issues and puzzling phenomena from the perspective of contemporary linguistic theory. There is an extensive literature on case and case assignment in generative

⁶⁵ The findings and conclusions reached in the initial stages of research on this topic have been published in (Kovačević 2019).

grammar. However, that literature is primarily dedicated to the so-called structural cases (nominative and accusative) and the literature on so-called “oblique cases” (genitive, dative, instrumental, locative, etc.) is disproportionately small. Since the problematic case forms that have been observed in Serbian data involve these oblique cases and our goal is to account for the reasons why these particular cases emerge in the given contexts, the task ahead is already sufficiently complex.

As it will be demonstrated, the emergence of particular cases is correlated with event structure and argument structure properties so ultimately the aim will be to account for the reasons why a given verb requires the case form on its argument/complement that it does. Therefore, the distribution of case forms with Psych verbs will be tied to argument and event structure. As I will show, these oblique case forms occur only in non-causative (stative or eventive) environments. Since it has become a standard assumption in generative syntax and semantics that Causers and Agents are introduced by separate functional projections on top of VP (Larson 1988; Kratzer 1994; Ramchand 2008), it can be said that this chapter will focus on the verb forms that do not involve these projections. In that sense, having dedicated the previous three chapters to the higher verbal projections tackling the issues of agentivity and causativity and the ways in which they relate to SE-anticausatives, passive participles and nominalizations, this final chapter will zoom in on the lower portion of the VP and look at the various kinds of internal arguments of Psych verbs. The core data that this chapter focuses on is given in (1).

- (1) a. Jovanu prija čaj.
 Jovan.DAT appeals tea.NOM
 ‘Tea appeals to John.’

- b. Jovan se boji mraka.
 Jovan.NOM SE scare.PRES dark.GEN
 ‘John is afraid of the dark.’
- c. Jovan se divi slici.
 Jovan.NOM SE admire painting.DAT
 ‘John admire the painting.’

The example in (1a) with a dative case-marked Experiencer can be treated as a Class 3 verb. As is apparent from the translation, in English, Class 3 verbs realize their Experiencer argument in the form of a *to*-PP, which is typically treated as a dative expression. (1b) illustrates the first challenging example because the Stimulus argument is realized in the form of a genitive case-marked bare NP. Strictly speaking, there are no such verbs in English; however, as was pointed out in Chapter 2, it should be observed that the translation of this example includes an adjectival construction with an *of*-PP, and *of*-PPs are usually treated as genitive expressions in English. Finally, the sentence in (1c) provides an example of a Psych verb with a dative case-marked Stimulus participant. Once again, it is interesting that the English equivalent of this verb involves an *at*-PP. Typical uses of these PPs involve directional semantics, which is also characteristic of Serbian dative. Another important observation with regard to the examples in (1), which was also made in Chapter 2, is that the verbs in (1b) and (1c) obligatorily include the SE morpheme.

Two main questions emerge from these data. First, the origins of dative case and genitive case and the semantic contributions that they carry need to be accounted for in some fashion. Secondly, given that there are Class 3 verbs with a dative case-marked Experiencer (1a) and Class

4 verbs with a dative case-marked Stimulus (1c), the difference between these two instances of datives should be explained as well. Put differently, the second question is why it is that both Experiencers and Stimuli can be expressed by means of a dative case-marked NP.

As I already indicated, the answers to these questions will revolve around the correlations of these case forms with particular event and argument structure properties. In that sense, one of the contributions of this chapter will be to show that these case forms do not represent instances of unpredictable/lexical case (Woolford 2006). The arguments made in this chapter will also have ramifications for the theories in the domain of argument structure and event structure.

7.1. Argument structure, event structure and case

Before engaging in the discussion about the data exemplified in (1), I will dedicate this subsection to outlining the most relevant theoretical issues and discussions pertaining to argument structure, event structure and case, which provide the background for the analysis that will be presented in this chapter. It will be shown that the most recent insights and discoveries regarding argument structure and event converge on the same crosslinguistic generalization (Ramchand, 2013). These observations have important implications when it comes to accounting for the distribution of different case forms (structural, inherent and lexical).

7.1.1. Lexicalist view of argument structure

The early generative approaches to argument structure and thematic roles relied on the notion that both of these phenomena are separate from Grammar in the narrow sense. Chomsky's (1965) Phrase Structure grammar was largely concerned with accounting for the properties of categorial selection. In other words, Chomsky (1965) aimed to explain the contrast in (2), which shows that a verb like *eat* takes an NP object and rejects a CP object whereas a verb like *know* requires a CP object while rejecting an NP object.

- (2) a. John ate an apple / *that the Earth is round.
b. John knows *an apple / that the Earth is round.

Of course, a verb like *know* can take some NP objects (3), usually those that denote things that have some propositional content.

- (3) John knows that joke / the truth / the story about Pete.

Chomsky's account of the data in (2) and (3) was based on the assumption that lexical entries for verbs contain specifications about phrase structure rules that they are compatible with such that a verb like *eat* is compatible with a rule that decomposes a VP into a slot for a verb and an NP in its complement position while the entry for *know* specifies a decomposition of the VP into a slot for the verb itself and a CP in its complement. The fact that *know* can also take some NPs meant that there had to be two separate entries for this verb, one requiring an NP complement and the other requiring a CP. Alternatively, the lexical entry for this verb could be underspecified for the category of the complement potentially allowing both NPs and CPs. In either case, the fact that only certain NPs are compatible with the verb like *know* was treated as an effect of general knowledge which would filter out all the sentences with improper NP objects of *know* as nonsensical.

The move towards X-bar Theory translated these phrase structure rules into the so-called Theta Grid and Theta Criterion (Chomsky 1986). The Theta Grid represents the verb's lexical information about the number and type of Theta Roles that the verb has to assign to its arguments. The Theta Criterion is, then, simply a requirement that the suitable number of NPs with the appropriate semantics have to be inserted into the slots made available by the VP structure where the given verb acts as a head, and this has to happen at D-Structure prior to the application of the Move- α operation.

A major problem with this line of reasoning was that there was no mechanism within the theory that would ensure (i) the upper-bound on the number of potential thematic roles and (ii) the criteria that would be used to discriminate between different thematic roles. This was an issue because the list of hypothesized thematic roles started to proliferate rather quickly, and it was difficult to maintain consistency in the use of the labels for thematic roles, which was an important setback in the theoretical discourse on these matters.

Concerning the theoretical status of Theta Roles, Dowty (1991) argued quite influentially that notions like Agent, Goal, Experiencer, Theme, etc. which were used extensively within the GB Model, were defined too loosely and used quite inconsistently. Moreover, there was no way to ground these notions within the general theoretical framework. Dowty's (1991) proposal was that there was a sufficient level of agreement on the differences between the internal and external arguments of the verb and he formulated a set of properties that decided which argument should be merged internally and which one should occupy the external argument slot. On his account, the NP that has a greater number of so-called proto-Agent properties such as animacy, volition, causation, etc. was to be merged externally and the other argument should assume the role of the internal argument. Crucially, the number and relative significance of these properties could vary from language to language.

An important theoretical upshot of Dowty's (1991) account is the elimination of the notions like Agent, Goal, Experiencer and the whole list of other labels that were used in the literature from the theoretical vocabulary. This is not to say that the labels themselves were no longer used or that there was any principled opposition to making use of them for descriptive purpose. However, crucially, Dowty's (1991) view was that the Grammar does not contain a list of thematic

roles, nor does it discriminate between them in a more detailed fashion outside of the basic division into the internal and external argument.

7.1.2. Syntactic approach to argument structure

The advent of the neo-constructionist approaches such as DM made it possible to revisit the issue of thematic roles armed with the theoretical tools that could amend the inadequacies of the GB-era discourse. Neo-constructionism re-implemented Baker's (1988) UTAH in a radically syntacto-centric manner. This school of thought postulates that the traditional notion of the Lexicon contains no information about thematic roles nor does it constrain the number and kind of thematic roles that the verb needs to combine with because the traditional notion of the Lexicon is replaced by the list of roots that do not contain even the grammatical category features, much less further specifications about the category and semantics of the expressions this root has to combine with [see Chapter 2]. The thematic roles, thus, become purely a matter of syntax and the role that a given participant plays in a situation denoted by a particular verb is interpreted based on its position in the syntactic structure. Similarly, the thematic roles that a verb 'assigns' to its arguments are dependent upon the syntactic structure which is built on top of it. Such an approach attributes the differences between (4a) and (4b) to the fact that the transitive version (4a) includes a projection hosting an external argument, say, VoiceP (Kratzer 1994), whereas the anticausative version (4b) does not. However, both structures in (4) are built on top of the same root.

- (4) a. Peter broke the window.
b. The window broke.

Such an approach has an obvious advantage in not treating the verbs in (4a) and (4b) as two separate lexical entries or assuming that the Lexicon can manipulate argument structure, which

would attribute the property of generativity to the Lexicon as well. For instance, Reinhart's (2003) Theta System assumes the existence of Arity Operations, which can alter the verb's argument structure. Thus, her system distributes generative properties of Language across both the Syntax and the Lexicon. DM, on the other hand, confines the generative operations to Narrow Syntax and derives different argument structure patterns with the same verb solely on the basis of syntactic configuration. The full spectrum of the advantages of this approach goes beyond anticausativization illustrated in (4) as there are verbs that show a much higher degree of variability when it comes to argument structure. The verb *siren* in (5) can be realized as an intransitive (5a-b) or a transitive verb taking different types of small clauses in its complement position (5c-e).

- (5) a. the fire stations sired throughout the raid
- b. the factory sired midday and everyone stopped for lunch
- c. the police sired the Porsche to a stop
- d. the police car sired up to the accident
- e. the police car sired the laylight out of me (Borer 2005)

The fact that the verb in (5) is zero-derived from a more frequently used nominal form *siren* strengthens the claim that argument structure is determined by syntax suggesting that categoriless roots can obtain different argument structure properties by being merged in different syntactic configurations.

Another big crosslinguistic fact that speaks in favor of the neoconstructionist approach to argument structure comes from the strong correlation between argument structure and event structure (cf. Ramchand 2008, 2013, 2020). Ramchand (2020, p. 262) formulates this correlation in the following way:

The causing event, when it can be seen to be explicitly added, always adds morphology or participants that are hierarchically above the core dynamic event; result events are always added

below the core dynamic event. Thus, the Cause head when it is invoked in the syntax is always on top of the main V (Folli and Harley 2006; Pylkkänen 1999), and the result projection when added is always downstream of the main V (Hoekstra 1988).

Ramchand's statement, thus, relates the complexity of verbal morphology with event complexity and argument structure. Verbal lexemes that denote complex events (consisting of more than one subpart) are morphologically more complex across languages and they involve more participants. To illustrate this tendency that Ramchand (2020) argues to be crosslinguistically exceptionless, consider a simple example from the domain of Serbian Psych verbs (6).

- (6) a. Jovan besni.
 Jovan.NOM rage
 'Jovan is raging.'
- b. Marko je **raz**besneo Jovana.
 Marko.NOM AUX PF.rage Jovan.ACC
 'Marko enraged/angered Jovan.'

The addition of the prefix to the verbal base in (6b) makes the intransitive verb transitive and introduces an external argument. Therefore, morphological complexity correlates with argument structure and event complexity. What is crucial is that Ramchand (2020) brings syntax into the picture here as in the second part of her statement she cites Folli and Harley (2006) and Hoekstra (1988) who observed that causing subevents always come on top of the main verb when introduced syntactically and resulting subevents come below it, respectively.

To the extent that this complex interplay of linguistic facts truly represents a linguistic universal, one is tempted to attribute it to Universal Grammar. Again, languages in which event complexity is built syntactically and not morphologically compel us to postulate that this correlation between event complexity and argument structure complexity is at least sometimes

syntactically represented. If that is the case, then, deriving the correlation between morphological complexity and event and argument structure complexity in the Lexicon in languages like Serbian would essentially postulate the existence of the same set of linguistically universal rules in the Narrow Syntax and in the Lexicon. In that sense, the Lexicalist position amounts to saying that these two components of Grammar are in charge of the same task. The neoconstructionist approach has a conceptual advantage in assuming that this complex correlation between event structure, argument structure and morphology/syntax comes from the Narrow Syntax, the core generative component of Universal Grammar, which is responsible for all structure building in language, be it syntactic or morphological.

The neoconstructionist approach to argument structure does not come without its own drawbacks. The crucial weakness of this theoretical outlook is the difficulty it faces when it comes to constraining argument structure of a particular verb (Ramchand 2013). Given the idea that argument structure is determined based on the syntactic structure built on top of a root, the default hypothesis would be that combinatorial possibilities of verbs are essentially unrestricted, and any verb could in principle be used with any combination of arguments/thematic roles. The paradigms such as the one in (5) speak in favor of this loose treatment of argument structure, and Borer (2005) cites such examples in support of this position. Borer (2005), Harley (1995, 2014), Marantz (1997) and a number of other researchers subscribe to what Ramchand (2013) calls a ‘radical neoconstructionist position’, by which she means the view that there is no lexical or morphosyntactic information constraining the argument structure possibilities of individual roots. Instead, according to this view, the reason why certain roots reject certain argument structure options is attributed to pragmatics, general knowledge and other extra-linguistic factors. However, it is clear that some constraints on argument structure have to be imposed, and the question is

simply where (i.e. at which level of linguistic analysis) and how those constraints ought to be enforced.

In one of the foundational texts of DM, Marantz (1997) relies on the idea that certain roots are incompatible with certain argument structure configurations to turn Chomsky's (1968) analysis of English nominalizations from an argument for Lexicalism, which is how it is generally read, into an argument against this position. Chomsky (1968) argued that the paradigm in (7) demonstrates that nominalizations are not derived from clauses by transformation as, otherwise, it would be impossible to explain the ungrammaticality of (7c) given its perfectly grammatical clausal counterpart (7a).

- (7) a. that John grows tomatoes
- b. that tomatoes grow
- c. *John's growth of tomatoes
- d. the tomatoes' growth
- e. John's growing tomatoes (Marantz 1997, p. 215)

Marantz (1997) agrees with Chomsky (1968) that nominalizations cannot be derived from clauses, but he disagrees with the prevalent reading of Chomsky's (1968) account, according to which the paradigm in (7) is taken as an argument for lexicalism, since it does not follow that the nominalization has to be derived lexically if it is not derived directly from a clause. In fact, Marantz (1997) shows that Chomsky's (1968) observation is in no way an obstacle to deriving nominalizations such as the one in (7d) from smaller portions of clausal structure (e.g. VP or the categoriless root $\sqrt{\text{GROW}}$). Deriving the nominalization in (7d) from the same root ($\sqrt{\text{GROW}}$) that is found in the clausal counterpart (7a-b) syntactically enables Marantz (1997) to explain a similar gap in the paradigm in (8).

- (8) a. that John destroyed the city
 b. *that the city destroyed
 c. John's destruction of the city
 d. the city's destruction
 e. John's destroying the city (Marantz 1997, p. 213)

In (8), the nominalized form (8c-d) allows both a transitive and intransitive option but its clausal counterpart in (8a-b) only allows the transitive version. In short, the paradigm in (8) disallows an intransitive clausal use while (7) disallows a transitive nominalization.

Marantz (1997) accounts for this pattern by appealing to Levin and Rappaport Hovav's (1997) distinction between externally and internally-caused eventualities where GROW is treated as an internally-caused eventuality while DESTROY is an externally-caused one. He attributes this property to roots either as a real lexical feature or as a part of our general knowledge about these kinds of eventualities. In other words, we conceptualize growing as something that happens by itself whereas destroying is usually caused by something external to the object being destroyed. He further assumes that -'s genitive, which appears in nominalizations is not an argument position associated with a thematic role as evidenced by the fact that a DP in this position can be interpreted as an Agent (8c), Theme (8d) as well as a Possessor (9), of course. Next, he argues that derived nominals (unlike for example *-ing* nominals) contain no verbal structure, which means that they are derived directly from roots, and the interpretation of the genitive-marked DP that appears with these nominalizations is determined by the semantic properties of the root itself.

- (9) John's hat

The reason why GROW cannot allow a transitive nominalization (7c) is due to the fact that the root $\sqrt{\text{GROW}}$ is internally-caused so it is unable to license an agentive reading to the genitive-marked DP by itself. This does not mean that this root cannot combine with an Agent-introducing projection ($v\text{P}$ or VoiceP) licensing an external argument as shown by clauses and *-ing* nominals (7). It is just that derived nominals (e.g. *growth*, *destruction*, etc.) simply do not involve these verbal layers. On the other hand, the lack of an intransitive clausal option with DESTROY is explained by assuming that the root $\sqrt{\text{DESTROY}}$ being externally-caused is incompatible with an agentless (“defective”) v , which derives anticausative intransitive structures.

Summing up this brief review of the generative linguistic theorizing about argument structure and event structure, I want to emphasize two crucial points. First, the neoconstructionist view has a strong advantage in the ability to account for the crosslinguistic generalization between event structure and argument structure complexity and the complexity of syntactic/morphological structure (Ramchand 2013, 2020). Second, while this approach relegates argument structure to syntax, it has to invent some mechanism of constraining it as otherwise, it faces a danger of a massive overgeneration problem by predicting essentially any argument structure pattern with any root, which is not what we observe in any language.

7.1.3. The typology of case

For practical reasons, it is impossible to do justice to the immense literature on case both in the generative tradition and within other frameworks in this chapter (see Butt 2006). My goal, instead, will be to touch upon some of the questions regarding case that are relevant for the study at hand and place them against the backdrop of the discussion about argument structure and event structure in the previous subsection. One of the central problems in the literature on case revolves around the question whether and to what degree case correlates with thematic roles and how to

model the nature of this correlation. Empirically, the answers to this set of questions seem to vary from one case form to another, which is why most linguists make further subdivisions within the grammatical category of case and refrain from treating all case forms as simply being instances of one and the same general phenomenon (Butt 2006; Woolford 1997, 2006). I will outline one of the most influential categorizations of cases here in order to then link it to the discussions about event and argument structure in the previous subsection in order to lay the groundwork for the analysis of different case forms with Serbian Psych verbs in the remainder of this chapter.

Building on the extensive generative literature on case, Woolford (2006) distinguishes between three types of cases: (i) structural case, (ii) inherent case and (iii) lexical case listing a set of criteria to separate one from the other(s). Essentially, she expands upon Chomsky's (1986) influential distinction between structural and non-structural case adding that Chomsky's (1986) non-structural case has to be further sub-divided into inherent and lexical case.

According to Woolford (2006) structural case is a type of case that is determined solely based on the syntactic configuration in which the DP in question appears irrespective of its thematic role. This property is illustrated most clearly on the examples of nominative and accusative case, which can appear on DPs carrying all sorts of different thematic roles; however, to put it in the most general terms, nominative appears on syntactic subjects (10) while accusative appears on objects (11) regardless of the thematic role these constituents may carry.

- | | | |
|---------|---------------------------------------|--------------------|
| (10) a. | He broke the window. | <i>Agent</i> |
| | b. He likes ice-cream. | <i>Experiencer</i> |
| | c. He disappeared. | <i>Theme</i> |
| (11) a. | I expect him to write a good article. | <i>Agent</i> |
| | b. I expect him to like this movie. | <i>Experiencer</i> |

c. I expect him to arrive soon.

Theme

Regarding languages that do not allow structures like (11) (i.e. the so-called Exceptional Case Marking constructions), the structural properties of accusative case can be attested by the fact that it ‘disappears’ under A-movement (Woolford 2006). For instance, the pair of sentences in (12) shows that passivization, which is a type of A-movement, results in the nominative case-marking on the argument, which is accusative case-marked in the active sentence.

(12) a. Petar je pobedio Ivana u šahu.

Petar.NOM AUX defeat Ivan.ACC in chess

‘Peter defeated Ivan in chess.’

b. Ivan je pobeđen u šahu.

Ivan.NOM AUX defeated in chess

‘Ivan was defeated in chess.’

The pair of sentences in (12), thus, shows both that nominative case is unselective in terms of the thematic role of the NP/DP as long as it appears in the subject position as well as the fact that accusative case is not directly linked to the thematic role of Theme since the Theme argument carries nominative case in a passivized sentence (12b).

Chomsky’s (1986) category of non-structural case was conceived of as a catch-all term intended to denote all the other case forms that do not exhibit the structural properties of nominative and accusative case illustrated above. However, as Woolford (2006) points out, there are at least two different kinds of case forms within this broader category. According to her, dative case that appears on Recipients or Goals is special in that it is tightly linked to these thematic roles and shows clear signs of a degree of independence from syntactic structure, which is not observed

with nominative and accusative cases. This feature of dative case is illustrated on the pair of examples in (13) from Icelandic.

- (13) a. Peir skiluðu Mariu bókinni.
they returned Mary.DAT book.THE.DAT
'They returned the book to Mary.' (Jónsson 1996, p. 137)

- b. Mariu var skilað Þessari bók.
Mary.DAT was returned this book.DAT
Literally: 'Mary was returned a book (to).' (Jónsson 1996, p. 139)

The passivization of the sentence in (13a) targeting the dative case-marked Goal or Recipient produces the sentence in (13b) where the subject of the sentence remains dative case-marked. In that sense, unlike structural accusative case, which is 'lost' under A-movement (passivization), dative case 'survives' this operation. Woolford (2006) calls this type of case, which is tightly linked to a particular thematic role, inherent case.

Finally, there are certain case forms that exhibit behaviors that are not characteristic of the previous two categories. Consider the example in (14), again from Icelandic.

- (14) Bátnum hvolfdi.
boat.DAT capsized
'The boat capsized.' (Levin and Simpson 1981)

In (14), the subject of the intransitive, unaccusative verb, *capsize*, ends up carrying dative case. The appearance of this case on this DP is completely unpredicted both given the thematic role of the DP and its syntactic position. Since the verb in (14) is unaccusative, the thematic role of the subject DP is that of Theme, but dative case is associated with the thematic role of Goal or Recipient so the appearance of dative case on this DP cannot be explained based on its thematic

role. On the other hand, the subject position is associated with the nominative case, so again, the fact that the subject carries dative case is mysterious. Woolford (2006) argues that the idiosyncratic behavior of case forms such as the one illustrated in (14) makes them sufficiently different from both structural and inherent case to qualify as an independent subcategory called lexical case. Lexical case is, thus, a type of case assigned or licensed to DPs/NPs based on lexical properties of the verb that they combine with. Returning to the example in (14), the reason why the subject of this sentence carries dative case is linked to the lexical verb *hvolfdi* ('capsize') since the majority of other verbs have nominative case-marked subjects. Woolford (2006) also observes that lexical case can only be assigned/licensed locally to the DP/NP in the VP complement position. In that sense, one can expect to find lexical case on objects of transitive verbs and subjects of unaccusative, intransitive verbs because subjects of unaccusative verbs given that they have the thematic role of Theme are first merged in the VP complement position and subsequently moved to Spec TP to assume the role of the clausal subject.

It is important to stress that individual case forms do not always belong to the same case type. As was illustrated in (13) and (14), dative case is treated as inherent case when it appears on Goals/Recipients. On the other hand, dative case that is found on Theme arguments of certain verbs is classified as lexical case. In that sense, while nominative and accusative are always treated as structural case forms, dative case can, in principle, be either inherent or lexical, but never both at the same time.

A potential example of lexical case in Serbian would be instrumental case on objects of certain transitive verbs. In (15), the object carries instrumental case, which is surprising since the vast majority of objects carry accusative case. However, the instrumental case marking on the object seems to be the lexical property of the verb *upravljati* ('operate') as well as several other

verbs such as *vladati* ('rule'), *rukovati* ('handle'), *rukovoditi* ('manage'), etc., which seem to belong to a definable lexical-semantic class since they all name activities that are related to handling in the case of more concrete objects or management in the case of abstract, organizational objects.

- (15) Petar upravlja avionom.
 Petar.NOM operates airplane.INST
 'Peter is flying/operating the airplane.'

However, one should be careful here as it would be possible to analyze instrumental case on the objects of these verbs as inherent by assuming that the objects of these verbs are not actually Themes but instruments, which would make sense given the lexical-semantic properties of verbs that take these peculiar 'objects'. Bošković (2006, p. 523), for instance, refers to instrumental case forms on the objects in similar constructions in Russian as inherent case (16).

- (16) Ivan vladeet odnoj fabrikoj.
 Ivan.NOM owns one.INST factory.INST
 'Ivan owns one factory.'

Bošković (2006) does not provide specific arguments for his choice of label here, and it is possible that he uses the term 'inherent case' simply to mean 'non-structural' case because the point that he makes in this paper hinges more on the distinction between structural and non-structural case than on the difference between inherent and lexical case.

Summarizing this brief overview of the typology of case in generative grammar, it should be emphasized that all three types of case are in some way related to syntactic structure. Structural cases, nominative and accusative, are defined directly on the basis of structure since nominative is

reserved for subjects irrespective of their thematic role while objects carry accusative case. Inherent case (i.e. dative on Recipients/Goals) is defined on the basis of a thematic role; however, in so far as thematic roles are associated with clearly defined syntactic slots, the presence/absence of inherent case is also related to syntactic structure (Baker 1988). Finally, while it is primarily seen as a lexical property of certain verbs, lexical case is ultimately defined on the basis of syntactic structure, too, as it is restricted to DPs/NPs that are first merged as VP complements (Woolford 2006). Syntactic structure, thus, always plays a role in the typology of case forms, but the way it interacts with case is different for these three types.

7.1.4. Section summary

The purpose of this section was to motivate the hypothesis that argument structure, event structure and case forms are interrelated, and in order to understand one of these phenomena, one has to investigate the other two as well. Since the goal of this chapter is to provide an account of the different case forms that we see with Serbian Psych verbs, the only way to do that will be to relate these case forms to argument structure and event structure. To the extent that some correlations of that sort can be established, the empirical contribution of this section will be interesting and worthwhile in and of itself. The theoretical contribution will amount to showing that a derivational view of argument structure as correlated with event structure (cf. Ramchand 2013) combined with the most recent generative theorizing and typology of case (Woolford 2006) can shed light on this rather complex and puzzling set of facts.

7.2. Case patterns with Serbian Psych verbs

Building on the conclusions of the previous section, this part of the chapter aims to explain the extraordinary case distributions with Serbian Psych verbs linking them to argument structure and event structure. The investigation will focus on the patterns in (1) repeated here as (17).

Specifically, what is interesting about these patterns is the appearance of dative case on the Experiencer argument (17a) and the Stimulus (17c) as well as genitive case on the Stimulus.

- (17) a. Jovanu prija čaj.
 Jovan.DAT appeals tea.NOM
 ‘Tea appeals to John.’
- b. Jovan se boji mraka.
 Jovan.NOM SE scare.PRES dark.GEN
 John is afraid of the dark.’
- c. Jovan se divi slici.
 Jovan.NOM SE admire painting.DAT
 ‘John admires the painting.’

The main argument of this section will be that (i) these case forms are all instances of so-called inherent case or case linked to a specific thematic role; (ii) these case forms arise in both eventive and stative environments in the absence of causative semantics, which will be shown to be responsible for the presence of accusative case on the internal argument(s); (iii) dative case on Experiencers and Stimuli and genitive case on Stimuli arguments will be associated with two different types of Applicative heads (Appl^0) (Pylkkänen 2008; McGinnis 1998); (iv) while accusative case is blocked in non-causative environments, nominative case is not as evidenced by (17), which is explained by assuming that accusative case is assigned via AGREE by a causative v^0 whereas dative and genitive are assigned via MERGE by Appl^0 (in slight modification of Sigurdsson, 2017); and (v) nominative case is either assigned by T^0 via AGREE or a marker of the

lack of structural case marking (again following Sigurdsson 2017), which is why we see it in non-causative environments (17).

7.2.1. Accusative case in causative environments

This subsection will show that accusative case appears always and only in causative environments, which need not be eventive. To prove this, I will show that none of the environments in which accusative case is blocked are causative and all the environments in which it does appear are causative. This observation will be explained by assuming that accusative case is assigned by a causative v^0 (eventive or stative). In this sense, I will depart from Sigurdsson (2017) who argues that accusative case is assigned by Voice⁰ as I will show that this case can be found with verbs which are clearly non-agentive but should, nonetheless, be described as causative. The main elements of this argument have already been introduced in Chapter 5 on participle formation so this section will show that the analysis that was proposed in that chapter is capable of accounting for the patterns of case distribution.

Looking at the data from Serbian Psych verbs, we have observed that accusative case appears in several different environments (18).

- (18) a. Jovan voli Anu.
 Jovan.NOM loves Ana.ACC
 ‘Jovan loves Ana.’
- b. Jovan je iznervirao / razbesneo Anu.
 Jovan.NOM AUX annoyed / angered Ana.ACC
 ‘Jovan annoyed/angered Ana.’
- c. Anu boli stomak.
 Ana.ACC pain stomach.NOM

‘Ana has a stomachache.’

(18a), of course, exemplifies the subject Experiencer verb (Class 1), which is a stative environment with the nominative case-marked Experiencer and accusative case-marked Stimulus. (18b) shows a typical object Experiencer verb (Class 2) where the Experiencer is accusative case-marked and the Stimulus carries nominative case. Typical Class 2 verbs are eventive as evidenced by the standard *in X time/for X time* test (19). Finally, we also find accusative case on Experiencer arguments of certain stative verbs such as *boleti* (‘pain’) (19c).

(19) a. Jovan voli Anu 5 godina / *za 5 godina.

Jovan.NOM loves Ana.ACC 5 years for 5 years

‘Jovan has been loving Ana for 5 years / *in 5 years.’

b. Jovan je iznervirao / razbesneo Anu *5 minuta /

Jovan.NOM AUX annoyed / angered Ana.ACC 5 minutes

za 5 minuta.

for 5 Minutes

‘Jovan annoyed/angered Ana *for 5 minutes / in five minutes.’

c. Anu boli stomak pola sata/ *za pola sata.

Ana.ACC pain stomach half hour for half hour

‘Ana has had a stomach ache for half an hour / *in half an hour.’

In Chapter 5, I argued that passive participles can only be derived from verbs that contain the VoiceP projection and involve some bland of agentive semantics. If this is true, then, it cannot be the case that accusative case is assigned by VoiceP as was also highlighted in Chapter 5. From

the set of verbs illustrated in (19), only Class 1 verbs (19a) and some Class 2 verbs (19b but not 19c) can derive passive participles (20).

- (20) a. Ana je voljena.
 Ana.NOM AUX love.PASS
 ‘Ana is loved.’
- b. Ana je iznervirana / *? razbešnjena.
 Ana.NOM AUX annoy.PASS anger.PASS
 ‘Ana is annoyed/angered.’
- c. *Ana je boljena.
 Ana.NOM AUX pain.PASS
 Intended: ‘Ana is pained.’

The examples in (20) show that eventive Class 2 verbs such as *razbesneti* (‘anger’) and stative Class 2 verbs such as *boleti* (‘pain’) fail to derive passive participles even though they assign accusative case. In Chapter 5, an argument was made to the effect that these verbs do not project VoiceP, while still involving causative semantics introduced by v^0 . In that sense, causative semantics was separated from eventivity following (Neeleman and Van de Koot 2014). I will repeat only the crucial parts of this argument here. Namely, non-agentive Class 2 verbs, which cannot derive passive participles can nonetheless produce anticausatives (21). Assuming that anticausatives can be derived only from those verbs that could potentially be realized as causatives (see Schäfer and Vivanco 2016), the grammaticality of (21) shows that *razbesneti* (‘anger’) involves causative semantics and hence v^0 despite not projecting VoiceP.

(21) Ana se razbesnela.

Ana.NOM SE angered

‘Ana got angry.’

Crucially, while the existence of a grammatical anticausative is evidence that a verb involves a causative v^0 , the reverse does not hold. In other words, it cannot be concluded that a verb is not causative if it does not produce an anticausative counterpart. This is because anticausatives are associated with causative change of state (eventive) verbs. So, if a verb is not a change of state verb, it could still be causative but, it would not have an anticausative counterpart. This is important because I am arguing that Class 1 and stative Class 2 verbs still include a causative v^0 despite their stativity. The theoretical background and implications of this positions were developed in detail in Chapter 5 building on Neeleman and Van de Koot (2014) so I will simply summarize the main point here.

Neeleman and Van de Koot (2014) argue that causativity has to be divorced from eventivity, thus contradicting Pylkkänen (2008) and numerous others who assume that caustive predicates always involve a causing event. Their evidence comes from passivizable stative verbs (22).

(22) a. The building was surrounded by police.

 b. The country was occupied by a foreign army.

While the sentences in (22) can clearly have eventive readings, they are perfectly grammatical on stative readings as well. Neeleman and Van de Koot (2014) label those verbs Maintenance Verbs because the subject of the sentence names the entity that maintains the state named by the verb,

and consequently keeps the entity named by the object DP in the given state. To put it concretely, in (22a), the building is in the state of being surrounded so long as the police are there.

I assume that Neeleman and Van de Koot (2014) are correct in their claim that the semantic inventory of natural language involves the category of caused or ‘maintained’ states, and I argue that Class 1 Experiencer verbs and stative Class 2 verbs belong to that category. In order to prove this, I will compare these two sets of verbs with Class 3 verbs, which are non-causative stative verbs on my analysis, which is why they do not assign accusative case. Consider the contrast between (23) and (24), which has already been brought up in Chapter 5.

(23) a. Jovana boli što ga ne puštaju napolje.
Jovan.ACC pain.PRES ŠTO him not let outside
‘That he is not allowed to go outside pains Jovan.’

b. *Jovana boli da ga ne puštaju napolje.
Jovan.ACC pain.PRES DA him not let outside
Intended: ‘That he is not allowed to go outside pains Jovan.’

(24) a. Jovanu prija što mu daju čokoladu.
Jovan.DAT appeal.PRES ŠTO him give chocolate
‘The fact that he is allowed to eat chocolate appeals to Jovan.’

b. Jovanu prija da mu daju čokoladu.
Jovan.DAT appeal.PRES DA him give chocolate
‘Being given chocolate appeals to Jovan.’

Both verbs in (23) and (24) are stative; however, the Experiencer participant is accusative case-marked in (23) while the same participant carries dative case in (24). Crucially, the Class 2 verb in (23) requires a factive clausal argument and blocks the subjunctive one whereas the Class 3 verb

in (24) makes no such distinction. I argue that the factivity requirement in (23) follows from the stative causative or maintenance semantics of the verb in question explaining why this stative verb groups with Class 2 verbs in terms of the distribution of cases (nominative-accusative) in contrast to other stative Psych verbs which do not assign accusative case.

It is impossible to apply the same test to Class 1 verbs because the nominative case-marked argument cannot be replaced by a clause simply because the nominative case-marked argument with these verbs is the Experiencer. However, the semantic argument, nonetheless, generalizes to this set of verbs rather straightforwardly. Namely, if the transitive maintenance relation is responsible for the nominative-accusative case frame with stative Class 1 and Class 2 verbs, then, with Class 1 verbs, the Experiencer itself should be responsible for the maintenance of this relation. In other words, the states named by Class 1 verbs should be maintained by the Experiencer. It is clear that this is, indeed, the case with all Class 1 verbs. Kratzer (1994) for example analyzes the external arguments of stative verbs such as *love* as having the thematic role of Holder which is simply the stative counterpart of Agent. To me, it seems uncontroversial to suggest that a state of *loving* cannot exist if the Experiencer (holder, maintainer) of that state does not exist. In this way, I propose to draw the demarcation line which separates those Psych verbs that assign accusative case from those that do not in terms of the presence/absence of causative semantics. Put differently, only those verbs that involve causative semantics will license accusative case and these verbs do not have to be agentive or eventive. I implement this generalization structurally by assuming that accusative case is assigned by a causative v^0 , which can be either stative or eventive, and this head is present with all Class 1 and Class 2 verbs, but crucially absent from Class 3 and Class 4 verbs.

7.2.2. Genitive and dative as inherent case forms assigned by Applicative

Having accounted for the origin of accusative case with Class 1 and Class 2 verbs, I should address the mechanisms behind the assignment of genitive case on the Stimuli arguments of certain Class 4 Psych verbs and dative case on Experiencer arguments of Class 3 verbs and Stimuli arguments of other Class 4 verbs. I will claim that these are all instances of inherent case assigned by Appl⁰ locally (upon Merge) following Sigurdsson (2017).

One of the ways to argue that dative and genitive cases on arguments of certain verbs represent instances of inherent case would be to show that they cannot be analyzed as instances of lexical case. Following Woolford's (2006) typology, dative, genitive, instrumental and other cases apart from nominative and accusative belong to the category of non-structural case, which consists of two subcategories: lexical and inherent case. In that sense, if it can be shown that these case forms are not instances of lexical case, it would follow that they should be treated as inherent cases.

From a methodological standpoint, I would suggest that the idea that cases like genitive or dative are instances of inherent case should be the null hypothesis, and these case forms should be labelled lexical case only as a last resort solution. The reason behind this position has to do with the fact that assigning a particular case form to the category of lexical case essentially amounts to giving up on explaining it because this category is non-explanatory by definition. If something is treated as lexical case, it means that it is interpreted as a random occurrence or an irreducible property of a verb in question and there is always the danger of missed generalizations with this type of assumption. In contrast, inherent case is associated with a particular thematic role (e.g. Recipient/Goal) and a particular syntactic position (e.g. ApplP) so knowing the information that a particular argument carries inherent case is meaningful in terms of making predictions about the semantic and syntactic properties of the verb it combines with. This is not to argue that the category

of lexical case should be eliminated because the reasons for maintaining it as an analytic tool seem empirically well-motivated (e.g. the data from Icelandic dative subjects with unaccusative verbs). Instead, I believe one should make an attempt to understand a particular case form in terms of its relationship to the syntactic structure and the semantics of the verb in question prior to assigning it to the category of lexical case, thereby abandoning an effort to provide an explanatory account. If it happens that there is nothing meaningful one can say about these relations, as is arguably the case with Icelandic examples such as (14), it is safe to conclude that one is dealing with an instance of lexical case.

Aside from this conceptual position, it is not always easy to make a distinction between inherent and lexical case in practice. In the most typical cases such as the ones illustrated by Woolford (2006), this distinction is fully clear: inherent dative case appears on Recipients/Goals of ditransitive verbs while lexical dative appears on Theme arguments of some unaccusatives and some transitives. In that sense, she argues that these two types of case find themselves in complementary distribution when it comes to thematic roles such that inherent case never appears on Themes while lexical case appears on Theme arguments only.

Applying Woolford's criterion (2006) to the data in (19) repeated here as (25), one way of proving that genitive and dative case forms that we find on these verbs are instances of inherent case would be to show that the arguments they show up on do not carry the Theme Θ -role. However, this would not be such a promising route since there are no clear-cut criteria separating Themes from other thematic roles. One of the most typical properties of Themes is that they undergo a change of state as a result of the culmination of the eventuality named by the given verb (Levin and Rappaport Hovav 1995). Since we are dealing with stative verbs in (25) and a change

of state qualifies as an event, it is clear that the arguments of these verbs do not exhibit this property.

(25) a. Jovanu prija čaj.

Jovan.DAT appeals tea.NOM

‘Tea appeals to John.’

b. Jovan se boji mraka.

Jovan.NOM SE scare.PRES dark.GEN

‘John is afraid of the dark.’

c. Jovan se divi slici.

Jovan.NOM SE admire painting.DAT

‘John admires the painting.’

Still, it is important to stress that not all Themes can be said to undergo a change of state so this would not be a definitive argument that we are not dealing with Themes in these examples.

Another way of approaching the issue is through purely syntactic criteria applying what we know about the differences between lexical and inherent case to the particular constructions in (25). If we take a closer look at these constructions, we realize that all these verbs include nominative case-marked arguments in addition to dative or genitive case-marked ones, which represent our point of interest. The presence of nominative case in these constructions is revealing because this case form can only be found on external arguments (Causers or Agents) of transitive verbs or internal arguments of intransitives or unaccusative verbs (Woolford 2006; Sigurdsson 2017). Put differently, nominative case can never be found on Applicatives because Appl⁰ assigns inherent case (dative) to the NP/DP in its Specifier position immediately upon Merge. Moreover, inherent case cannot be overridden by nominative, which means that an NP/DP marked for

inherent case keeps its original case form throughout the derivation. In that sense, we can conclude that the nominative case-marked NP/DPs in the constructions in (25) are not Applicatives. We also know that they cannot be external arguments (i.e. ν P or VoiceP Specifiers) because these constructions are neither causative nor agentive as was shown in the previous subsection. Thus, by elimination, we arrive at the conclusion that the nominative case-marked NPs/DPs in (25) can only be the internal arguments of V^0 or V^0 complements, and since the complement of V^0 is the only position in which lexical case can be licensed, it follows that these verbs do not license lexical case at all.

I would also like to point out that treating dative and genitive case forms with verbs such as those in (25) as instances of lexical case would amount to missing important generalizations when it comes to the correlations between these case forms and the meanings of the verbs they combine with. For instance, Serbian verbs of fearing systematically combine with genitive Stimuli in non-causative uses (Arsenijević 2015). The example in (25b) shows one verb which involves the non-causative SE morpheme and combines with a genitive case-marked Stimulus argument, but there are numerous others (26).

- (26) a. Marija je uplašila Jovana.
 Marija.NOM AUX scared Jovan.ACC
 ‘Marija scared Jovan.’
- a’. Jovan se uplašio Marije.
 Jovan.nom SE scared Marija.GEN
 ‘Jovan got scared of Marija.’
- b. Marija je prepala Jovana.
 Marija.NOM AUX frightened Jovan.ACC

‘Marija frightened Jovan.’

b'. Jovan se prepao Marije.

Jovan.NOM SE frightened Marija.GEN

‘Jovan got frightened of Marija.’

c. Marija je prestravila Jovana.

Marija.NOM AUX terrified Jovan.ACC

‘Marija terrified Jovan.’

c'. Jovan se prestravio Marije.

Jovan.NOM SE terrified Marija.GEN

‘Jovan got terrified of Marija.’

The examples in (26) speak strongly in favor of the conclusion that there is some deeper link between the way the concept of fear is expressed in non-causative verbal environments in Serbian and the genitive case-form on the Stimulus argument of these verbs. In that sense, assuming that genitive case on the Stimulus argument is simply a lexical property of all these verbs separately specified in the lexicon for each of the entries in question misses the generalization that all these verbs are related to the concept of fear and they all end up with genitive case on their Stimulus arguments in non-causative environments.

A very similar argument holds for the other verbs we saw in (25) which combine with dative case-marked NPs/DPs. The examples in (27) show a lexical cluster around the verb *prijati* (‘appeal’) with which the Experiencer argument takes dative case. The verbs in (27) combine with nominative case-marked Experiencers and dative case-marked Stimuli. What is common to all the verbs in (27) is that they specify the kind of effect that something or someone has on the

Experiencer. Crucially, these verbs name non-causative eventualities which is what separates them from Class 2 Psych verbs.

- (27) a. Jovanu prija čaj.
 Jovan.DAT appeal tea.NOM
 ‘The tea appeals to Jovan.’
- b. Jovanu godi topla čokolada.
 Jovan.DAT please hot.NOM chocolate.NOM
 ‘Hot chocolate please Jovan’
- c. Jovanu odgovara ova temperatura.
 Jovan.DAT suits this.NOM temperature.NOM
 ‘This temperature suits Jovan.’
- d. Jovanu smeta hladnoća.
 Jovan.DAT discomfort cold.nom
 ‘The cold discomforts Jovan.’
- e. Jovanu škodi masna hrana.
 Jovan.DAT harms greasy.NOM food.NOM
 ‘Greasy food harms Jovan.’

The examples in (28), on the other hand, illustrate a cluster of verbs which name a particular emotion (usually positive) that the Experiencer has in relation to the Stimulus. Once again, assuming that dative case that appears on Experiencers in (27) and on Stimuli in (27) is lexical would miss the generalization that the verbs in (27) and the verbs in (28) are interrelated on the basis of lexical semantics.

- (28) a. Jovan se divi slici.
 Jovan.NOM SE admire painting.DAT
 ‘Jovan admires the painting.’
- b. Jovan se oduševljava mauzoleju.
 Jovan.NOM SE amaze mausoleum.DAT
 ‘Jovan is amazed at the mausoleum.’
- c. Jovan se raduje susretu sa bratom.
 Jovan.NOM SE rejoice encounter with brother.INST
 ‘Jovan rejoices at the encounter with his brother.’

Having shown that we are in fact dealing with inherent case-marked NPs/DPs in (25), it is necessary to expand upon the nature of these case forms. As has already been suggested, the definition of inherent case is that it is the type of case that is directly linked to a specific thematic role (Woolford 2006; Sigurdsson 2017). In that sense, once a particular case form is characterized as inherent case, one has to make explicit the thematic role that this case form is associated with. Moreover, the label inherent case is most frequently used for dative case on Recipients/Benefactives/Goals and ergative case on Agents in ergative/absolute case-marking languages (Woolford 2006). In that sense, the idea that genitive case in examples such as (25b) should also be treated as inherent might be seen as potentially problematic. In what follows, I will attempt to address these issues. In essence, I will propose that genitive and dative case forms that we see in (25) are introduced by different versions of the Applicative head (Appl⁰).

The analysis of the mechanisms behind the assignment of genitive and dative with the verbs such as those in (25) in terms of applicativization should be prefaced by a brief discussion of the

syntactic approaches to Applicative structures. Pairs of sentences such as the one in (29) exist in virtually all languages and they raise important questions when it comes to the theories of argument structure.

(29) a. I baked a cake.

b. I baked him a cake. (Pykkänen 2000, p. 1)

The questions that arise with respect to the pairs of examples such as (29) concern the ways in which the italicized extra argument in (29b) gets introduced to the verb that normally takes only two arguments (the Agent and the Theme). The thematic role of the extra argument in (29b) can be characterized as that of a Benefactive (i.e. someone who benefits from the eventuality named by the verb). It is important to note that one cannot simply say that Benefactive arguments can be optionally introduced in any sentence as evidenced by the pair in (30). Namely, English does not seem to allow Benefactive or Applicative arguments with intransitive unergative verbs.

(30) a. I ran.

b. *I ran him. (Pykkänen 2000, p. 1)

What the contrast between (29) and (30) shows is that applicativization belongs to the set of phenomena that have to be dealt with within the theory of argument structure and argument selection given the fact that apparently some verbs allow Applicatives while others do not.

The lexicalist answer to the problem of Applicatives would be to suggest that certain verbs (e.g. *bake*) are lexically specified for allowing a potential/optional Applicative argument while others (e.g. *run*) lack such a specification. The other option would be to assume that there are two separate lexical entries for those verbs that allow Applicative arguments where the selectional features of one entry require two arguments (Agent and Theme) while the other entry requires three arguments (Agent, Theme, Benefactive/Applicative). Given the fact that there are languages

in which applicativization is accompanied by overt morphological marking on the verb (Pylkkänen 2000), the second solution in terms of having separate lexical entries (one allowing the Applicative argument and the other disallowing it) would seem like a preferred option. On this view, the generative lexicon would include applicativization as an argument structure changing operation, which would take verbs without Applicative arguments as its input and generate verbs with the same (or similar) semantics and an additional Applicative argument.

Within the neoconstructionist framework, Marantz (1993) addressed the issue of applicativization by treating it as a syntactic phenomenon whereby the introduction of the Applicative head (Appl^0) in syntax creates a position for an additional argument in its Specifier. On Marantz's (1993), the ApplP is projected on top of the $\text{VP}/\sqrt{\text{P}}$ and below the projection hosting the external argument ($\text{VoiceP}/\nu\text{P}$).

Another important fact about applicativization is that languages vary in terms of how readily they introduce Applicatives with different verbs. For instance, English allows Applicatives with transitive verbs of creation (29) while disallowing them with unergatives (30). However, as Pylkkänen (2000) observes, there are languages such as Chaga, a Bantu language spoken in the North of Tanzania, which allow Applicatives with virtually all verbs including unergative transitive verbs. Still, the majority of languages are not as permissive as Chaga when it comes to applicativization.

Pylkkänen (2000) proposes to treat these crosslinguistic differences from the neoconstructionist framework by allowing two different attachment sites for ApplP . Discussing the differences between English and Chaga Applicatives in particular, she assumes that one ApplP attaches to the object DP generating structures like (29b). This would be the so-called “Low Applicative”, which is available across languages and allows the introduction of Applicatives with

transitive verbs of creation. The argument that is introduced by the Low Applicative is the Possessor of the entity named by the DP in the object position. On the other hand, languages such as Chaga which allow Applicatives across the board would project another version of ApplP, which she calls “High Applicative”. High Applicative attaches to *v*P and introduces a DP which refers to the Benefactive or beneficiary of the event named by the verb.

The two broader types of Applicatives can be further subdivided to capture more sophisticated differences between individual languages. For instance, Pylkkänen (2000, p. 4) observes that Finnish is more permissive when it comes to applicativization than English allowing examples such as (31) while at the same time disallowing Applicatives with unergative verbs.

- (31) a. Liisa kirjoitti Mati-*lle* kirjee-*n*.
 Liisa.NOM wrote Matti-ALL letter-ACC
 Liisa wrote Matti a letterí.
- b. Liisa myi Mati-*lta* talo-*n*.
 Liisa.NOM sold Matti-ABL house-ACC
 Liisa sold a house from Mattií.

The English counterpart of (31b) would be ungrammatical (32) on the reading where the Applicative argument denotes the former owner of the house. According to Pylkkänen (2000), this additional option that is available in Finnish is due to the presence of two different case forms that can be introduced by ApplP, ablative and allative case. In Finnish ablative case introduces sources while allative case introduces Goals. Consequently, the semantic possibilities of these two case forms combined with the Low Applicative, which is available in Finnish, give rise to two a bi-directional Applicative semantics. The ablative case-marked Applicatives are, thus, associated with the semantics of the source of possession whereas allative Applicatives denote Goals of

possession. In contrast to Finnish, English would allow only the semantics of the Goal of possession but not the semantics of the source of possession as evidenced by (32).

(32) *He sold him a house.⁶⁶

The extensive literature on the crosslinguistic behavior of Applicatives suggests that the bipartite division of Applicative phrase introduced by Pylkkänen (2000) is too restricted to account for the variation that different languages exhibit in this regard (Harley 2020). Building on the work of Cuervo (2003), McGinnis (1998) and others, Harley (2020) establishes a crosslinguistic hierarchy of applicativization depending on the lexico-semantic classes of verbs which allow Applicatives in a given language. According to her, the following four classes of verbs mark the relevant levels of the crosslinguistic variation with Applicatives (33).

- | | | |
|---------|---------------------------------|----------------------------------|
| (33) a. | Pat baked (Tracy) a cake. | creation verbs |
| b. | Pat broke (*Tracy) the radio. | change-of-state transitive verbs |
| c. | Pat held (*Tracy) the suitcase. | stative transitive verbs |
| d. | Pat danced (*Tracy). | unergative verbs |

As can be seen from the examples in (33), English allows Applicatives with creation verbs while disallowing them with transitive change-of-state verbs, stative transitives and unergatives. However, languages like Spanish allow Applicative arguments with creation verbs, change-of state transitive verbs and stative transitive verbs but unergative verbs block applicativization in these languages (34).

⁶⁶ The sentence is ungrammatical on the reading in which the pronoun him refers to the original possessor (the source) of the house which has been sold to someone else. Of course, the sentence is grammatical on the reading where the pronoun refers to the new possessor (goal) of the house.

- (34) a. Valeria le diseño una pollera a Adreina. *creation verbs*
 Valeria CL.DAT.SG designed a skirt to Adreina
 ‘Valeria designed Adreina a skirt.’
- b. Pablo le rompió la radio de la vecina
 Pablo cl.DAT.SG broke the radio of the neighbor
 a Valeria. *C-O-S transitive verbs*
 to Valeria
 ‘Pablo broke the neighbor’s radio on Valeria.’
- c. Pablo le sostuvo la valija a Adreina. *stat. trans. verbs*
 Pablo cl.DAT.SG held the suitcase to Adreina
 ‘Pablo held the bag for Adreina.’
- d. *Pablo les balló a los invitados. *unergative verbs*
 Pablo cl.DAT.PL danced for the guests
 ‘Pablo danced for the guests.’ (Harley 2020)

Finally, there are languages like Chaga, which allow Applicatives with all verbs, including unergatives. Harley (2020) illustrates this option with examples from an Uto-Aztekan language, Hiaki (35).

- (35) a. Maria Jose-ta panim ho’o-ria-k. *creation verbs*
 Maria Jose-ACC bread make-APPL-PFV
 ‘Maria made bread for Jose.’
- b. Simo Maria-ta maso-ta mea-ria-k. *C-O-S transitive verbs*
 Simon Maria-ACC deer.ACC kill-SG-APPL-PFV
 ‘Simon killed a deer on/for Maria.’

- c. Ulme pascolam ume uusim yi'i-ria-n. *unergative verbs*
 The pascolas the children dance-APPL-P-IMPF
 'The pascolas were dancing for the children.'

In sum, some languages (e.g. English) are quite restrictive when it comes to allowing Applicatives generating applicative structures only with creation verbs; others (e.g. Spanish) are more liberal in that they allow Applicatives not only with creation verbs but also with simple change-of-state transitives and stative transitives; finally, there are languages like Chaga or Hiaki where Applicative structures can be generated with all verbs including unergative intransitives.

Harley (2020) captures this crosslinguistic typology of Applicatives by expanding Pylkkänen's (2000) original bipartite division into High and Low Applicatives and suggesting that the ApplP can be inserted in three different positions following the so-called 'exploded VP structure' (Ramchand 2008). In addition to Pylkkänen's (2000) Low Applicative, which attaches to the object DP, Harley (2020) postulates an Applicative projection that attaches to the lowest segment of the exploded VP, which is ResP or \sqrt{P} depending on the account. This Applicative projection is needed to capture the possibilities of applicativization in languages like Spanish where Applicatives can be used with regular change-of-state transitives and stative transitive verbs (34b-c). Assuming that the ResP or \sqrt{P} is responsible for the (result) state semantics, adding the ApplP on top of this projection would introduce an argument that benefits from or is negatively affected by the (resulting) state of the eventuality denoted by the verb. Finally, Pylkkänen's (2000) High Applicative is still necessary in this system in order to account for languages like Chaga and Hiaki where even unergative verbs accept applicativization. The semantics generated by this configuration involves an argument that benefits from or is negatively affected by the

event/activity named by the verb. The structural possibilities that Halrey (2020) proposes are summarized in (36).

- (36) a. [VoiceP [vP [ResP/√P [**ApplP** [DP]]]]] *English-type*
 b. [VoiceP [vP [**ApplP** [ResP/√P [DP]]]]] *Spanish-type*
 c. [VoiceP [**ApplP** [vP [ResP/√P [DP]]]]] *Hiaki-type*

An important advantage of Harley’s (2020) proposal is that it accounts for the crosslinguistically-established hierarchy of applicativization by relying on the possibilities generated by the event structure hierarchy, which is also based on a stable crosslinguistic generalization (Ramchand 2008, 2013). In other words, Harley (2020) shows that the data on Applicatives from different world languages demonstrate that the possibilities of applicativization are all and only those that are predicted by the already established theory of the syntactic decomposition of VP, which mirrors the decomposition of event structure.

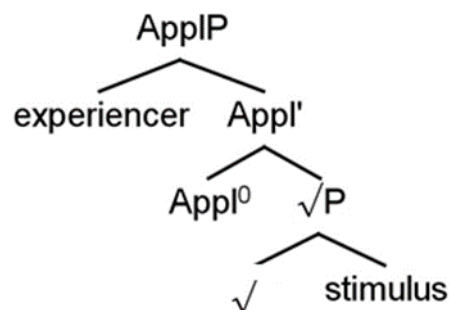
Serbian patterns with Spanish-type languages when it comes to applicativization although it seems that High Applicatives are not completely excluded (37).

- (37) a. Jovan je napravio Mariji tortu. *creation verbs*
 Jovan.NOM AUX made Marija.DAT cake.ACC
 ‘Jovan made Marija a cake.’
 b. Jovan je pokvario Mariji radio. *stative transitive verbs*
 Jovan.NOM AUX broke Marija.DAT radio.ACC
 ‘Jovan broke Marija’s radio.’
 c. Jovan drži Mariji torbu. *stative transitive verbs*
 Jovan.NOM holds Marija.DAT bag.ACC
 ‘Jovan is holding a bag for Mary.’

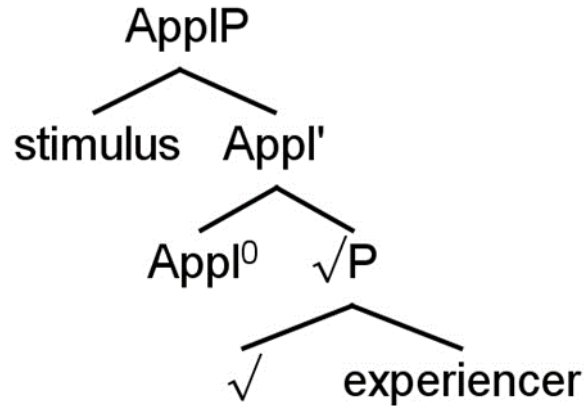
While she analyzes Finnish Applicatives in (38) as instances of Low Applicative she argues that the different case forms in (38a) and (39b) are due to two different semantic specifications of this Low Applicative head where one has the semantics of Goal and assigns allative case and the other has the semantics of source and assigns ablative case. I would argue that the dative/genitive distinction in Serbian is a manifestation of the same phenomenon where dative is a signal of the semantics of Goal and genitive is a signal of the semantics of source applied to a stative predicate.

The tree structures in (39) and (40) illustrate the analyses of Class 3 and Class 4 Psych verbs, respectively. Class 3 verbs such as *prijati* ('appeal') or *škoditi* ('harm') with dative case-Experiencers and nominative case-marked Stimuli (25a) are derived by first merging the Stimulus argument in the complement position of the \sqrt{P} (alternatively VP) while the Experiencer is merged in the Spec ApplP position where it is assigned inherent dative case. The structure in (39) produces an emotional state defined by the combination of the root and the Stimulus, which is then applied to the Experiencer in Spec ApplP as the Goal or Benefactive.

(39) Class 3



(40) Class 4



The structure of Class 4 verbs is represented in (40). These are verbs with nominative case-marked Experiencers and dative or genitive case-marked Stimuli. The Experiencer argument is merged as the complement of the \sqrt{P} (or VP) and the Stimulus argument is merged in the Spec ApplP position where it is assigned inherent case. Verbs such as *bojati se* ('fear'), which take genitive case-marked Stimuli combine with a version of Appl^0 , call it Source Applicative (Appl_S), of the kind that Pylkkänen's (2000) proposes for ablative case-marked Applicatives in Finnish. This version of Appl^0 assigns inherent genitive case. On the other hand, verbs such as *diviti se* ('admire') and *radovati se* ('look forward to') combine with the more typical Appl^0 , call it Goal Applicative (Appl_G), and this head assigns inherent dative case to the Stimulus argument.

A potential objection to the analysis of the oblique case-marking Psych verbs in terms of applicativization proposed here would be that the selectional properties of these verbs seem to be less restricted than those of typical Applicatives. It is known that Applicative arguments are by and large restricted to animate or corporate entities explaining restrictions of the kind exemplified in (41). The example in (b) with a DP referring to an inanimate entity in the position of the Applicative argument is ungrammatical unless the DP is interpreted as a corporate entity (e.g. an organization or office in Chicago).

- (41) a. Mary sent Peter a letter.
 b. ??Mary sent Chicago a letter.

The observation that Applicative case-marked NPs/DPs are restricted to animate entities does not raise any issues with respect to the analysis of Class 3 verbs (39) where the Experiencer argument is introduced as the Applicative argument since Experiencers are, by definition, animate. However, the analysis in (40) faces this potential problem because the Stimulus participant is located in the position of the Applicative argument, and the Stimulus participants can be both animate and inanimate. The examples in (25b-c) repeated here as (42a-b) illustrate inanimate entities as Stimulus participants.

- (42) a. Jovan se boji mraka.
 Jovan.NOM SE scare.PRES dark.GEN
 ‘John is afraid of the dark.’
- b. Jovan se divi slici.
 Jovan.NOM SE admire painting.DAT
 ‘John admires the painting.’

The availability of inanimate entities with these verbs could, thus, be the basis of an objection for the present analysis since one could argue that Applicatives can only be animate and since we are dealing with the possibility of inanimate Stimuli with Class 4 verbs, these should not be analyzed as Applicatives.

In response to this criticism, I would point out that the restriction that blocks inanimate entities in the position of the Applicative argument is not absolute nor grammatically encoded. I assume that the restriction in question is a matter of world knowledge whereby in the majority of cases there is no plausible way in which an inanimate entity could be construed as a Recipient or

Benefactive of a particular eventuality. However, in cases when such a construal becomes available, inanimates can assume the role of Applicatives as shown by (42b). The fact that such a restriction does not arise to the same degree with Experiencer verbs is merely a consequence of the fact that emotional states can be applied to inanimate entities more easily than other kinds of eventualities. Note that the apparent ban on inanimates in the position of the Applicative argument still holds with Class 4 Experiencer verbs for the most typical inanimates such as man-made objects (43).

- (43) a. ??Jovan se boji stola.
 Jovan.NOM SE scare table.GEN
 ‘Jovan is scared of the table.’
- b. ?Jovan se divi stolu.
 Jovan.NOM se admire table.DAT
 ‘Jovan admires the table.’

The examples in (43) make no sense on the default interpretations of the NPs/DPs in the position of the Stimulus participant. It is hard to see why anyone would be afraid of or admire a table, but as soon as we ‘suspend disbelief’ and allow for such interpretations (e.g. in the context of a fairy tale for 43a or an artistic/high artisanship product for 43b), the sentences become fully acceptable. On the other hand, NPs/DPs that refer to entities with more ‘active’ properties or entities that can interact with human emotions more easily (natural phenomena, works of art, etc.) are far more natural as applied arguments of Psych verbs. Therefore, inanimates are not strictly or grammatically banned in Applicative positions but their distribution is restricted by world knowledge.

7.3 Serbian Psych verbs, word order and selectional issues

Before closing this chapter, I want to address two facts related to Class 3 and Class 4 verbs, which have not been properly addressed so far. One set of facts concerns word order puzzles and the other one deals with questions regarding the properties of roots which determine the way in which they combine with higher structures (ApplP, *v*P, VoiceP, etc.). I will argue that the analysis presented so far in this chapter has desirable implications when it comes to accounting for these phenomena.

7.3.1. Word order issues

I will start with the issue of word order with Class 3 and Class 4 verbs. This issue is apparent from the basic examples in (25) repeated here as (44) for convenience. With Class 3 Psych verbs (44a), the dative case-marked Experiencer argument typically appears in the sentence initial position in informational-structurally unmarked sentences while the Stimulus argument is sentence final. This word order is predicted given the structure in (39) where the dative case-marked Experiencer argument, which is located in the Spec ApplP position is structurally higher than the Stimulus argument. With Class 4 Psych verbs, however, the nominative case-marked Experiencer argument is also located in the sentence initial position while the Stimulus argument is sentence final, but this configuration is not predicted based on the structure in (40) where the Stimulus participants are structurally higher than Experiencers since they are located in the Spec ApplP where they receive inherent case.

- (44) a. Jovanu prija čaj.
 Jovan.DAT appeals tea.NOM
 ‘Tea appeals to John.’

Such an analysis would work for these constructions; however, it would run the risk of overgenerating massively as it would predict that an NP/DP that denotes an animate entity should always end up as the subject of the sentence when the other argument denotes an inanimate entity irrespective of their structural configuration. Since this is clearly not the case in the majority of situations, the analysis would have to be enriched with further stipulations that would filter out all the incorrect predictions. However, even if one succeeded in restricting this type of analysis to predict the desired word order based on animacy only with Class 3 and Class 4 verbs, it would still be falsified by the fact that we observe the same word order with these verbs even when both arguments are animate (47).

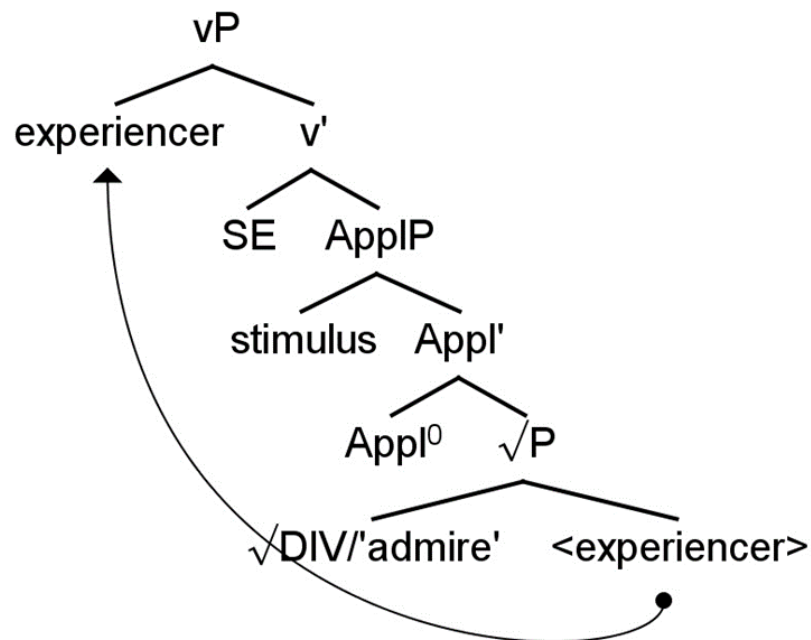
- (47) a. Petar se divi Mariji.
 Petar.NOM SE admire Marija.DAT
 ‘Peter admires Marija.’
- b. Petar se boji svog oca.
 Petar.NOM SE scare his.GEN father.GEN
 ‘Petar is afraid of his father.’

Given that both the Experiencer and Stimulus participants are animate in the examples in (47) and assuming the analysis in (40), the Stimulus participants are structurally higher than Experiencers (i.e. hierarchically closer to T^0), it is hard to see why the Experiencer still ends up as the subject of the sentence.

I take the examples in (47) as direct falsifications of the animacy-based hypothesis and propose to analyze these word order phenomena not on the basis of lexico-semantic or morphosyntactic properties of individual DP but relying on the standard approaches to these matters involving the Economy Principle and hierarchical distance. Namely, I want to argue that

the structure in (40) is not a complete representation of Class 4 verbs and that they involve an additional layer of structure, which triggers the movement of the Experiencer argument from the position of the \sqrt{P}/VP complement to a position higher than ApplP where the Experiencer is actually closer to T^0 and gets attracted to Spec TP to satisfy the EPP feature of T^0 as a result of Economy considerations. I propose the structure in (48) as the correct representation of the extended VP domain of Class 4 verbs illustrated on the example of the verb *diviti se* ('admire') (47a).

(48)



Essentially, the proposal shown in (50) amounts to assuming that a stative non-causative [-eventive; -causative] v^0 is projected on top of Class 4 verbs and it attracts the Experiencer argument from its original position in the complement of \sqrt{P}/VP to the SpecVP position⁶⁷. The

⁶⁷ Regarding the potential objection that this movement violates the ban on movement into theta-positions, the reader is referred to Section 3.4. were this concern is addressed.

existence of this stative non-causative v^0 with these verbs would account for the presence of the obligatory SE morpheme that we observe with the vast majority of these verbs as well as the fact that many of them have transitive Class 2 (object Experiencer) counterparts. For instance, the verb *diviti se* ('admire') has a causative counterpart with an additional prefix *za-* (of course, without the anticausative SE morpheme) (49).

- (49) Marija je za-divila Jovana.
 Marija.NOM AUX ZA-admire Jovan.ACC
 'Marija amazed Jovan.'

The verb *bojati se* ('fear'), which takes a genitive case-marked Stimulus, also involves the obligatory SE morpheme but it does not have a causative counterpart. Still, as was shown in (26) repeated here as (50) virtually all the other verbs of fearing participate in an alternation between a transitive causative frame (non-primed examples) and a Class 4-type of construction with a genitive case-marked Stimulus argument (primed examples).

- (50) a. Marija je uplašila Jovana.
 Marija.NOM AUX scared Jovan.ACC
 'Marija scared Jovan.'
- a'. Jovan se uplašio Marije.
 Jovan.NOM SE scared Marija.GEN
 'Jovan got scared of Marija.'
- b. Marija je prepala Jovana.
 Marija.NOM AUX rightened Jovan.ACC
 'Marija frightened Jovan.'

- b'. Jovan se prepao Marije.
 Jovan.NOM SE frightened Marija.GEN
 'Jovan got frightened of Marija.'
- c. Marija je prestravila Jovana.
 Marija.NOM AUX terrified Jovan.ACC
 'Marija frightened Jovan.'
- c'. Jovan se prestravio Marije.
 Jovan.NOM SE terrified Marija.ACC
 'Jovan got terrified of Marija.'

I assume that the alternations in (50) stem from the availability of two different constructions with the roots in question. The causative transitive versions (non-primed examples) are built by projecting an eventive causative v^0 on top of the $\sqrt{P/VP}$. On the other hand, the Class 4-type constructions (primed examples) are built by introducing an anticausative v^0 on top of the ApplP as in (48). However, since the examples in (50) are all eventive, it means that this anticausative v^0 can be either stative, with *bojati se* ('fear'), or eventive as with these verbs, which is all expected given the typology of v^0 assumed in this dissertation (Chapter 5) as well as elsewhere in the literature (cf. Folli and Harley 2005)

The fact that *bojati se* ('fear') does not have a transitive counterpart could be taken as the basis for an objection to this analysis⁶⁸. However, given the productive alternation illustrated on (52) with all the other verbs of fearing, I assume that the non-existence of the transitive form **bojati* ('scare') is simply an accidental paradigm gap and there is no grammatical obstacle for this

⁶⁸ This problem was also addressed in Section 3.4. on the so-called 'frozen entries' or verbs that require the obligatory presence of SE.

formation as it would be derived simply by adding a causative stative v^0 on top of the $\sqrt{P/VP}$ ⁶⁹. In fact, the transitive form of this verb has been attested in the history of Serbian, but with somewhat different semantic specifications (Grković-Major 2013). Regardless of the absence of such a form in the contemporary variety of Serbian, the obligatoriness of SE with this verb requires an explanation, and I do not see any other option within the neoconstructionist framework but to treat it as an expression of some functional projection in the extended VP domain. This conclusion is strengthened by the fact that Marelj (2003), who approaches these matters from a Lexicalist perspective, still treats such ‘frozen entries’ in languages like Serbian as syntactically derived as explained in Chapter 5 of this thesis.

In summary, the analysis of Class 3 and Class 4 verbs in terms of applicativization give the desired results when it comes to accounting for word order phenomena with these two classes of verbs. Assuming that Class 4 verbs involve a stative anticausative v^0 on top of ApplP, which triggers the movement of the Experiencer argument to SpecvP motivated by the obligatory presence of SE with most of these verbs, explains why the Experiencer argument surfaces in the sentence initial position without any further stipulations and relying only on the Economy Principle – Experiencer moves to Spec TP because it is hierarchically closer to T^0 . Meanwhile, the proposed structure for Class 3 verbs base generates the Experiencer argument in Spec ApplP, which immediately makes it closer to T^0 explaining Experiencer’s movement to the subject position (Spec TP).

This analysis also gives desirable results when it comes to case assignment mechanisms. The pattern that we observe with all Class 3 and Class 4 verbs is that the argument that appears in

⁶⁹ One should not immediately rule out the possibility that the lack of this verb form is the result of a simple blocking effect due to the existence of a transitive verb *bojati/bojiti* derived from the noun *boja* ‘color’ with the meaning ‘to color’. However, it is also difficult to see how one could convincingly argue either in favor of or against this hypothesis so I will not consider it in greater detail here.

Spec ApplP is assigned inherent case (dative or genitive, depending on the type of Appl⁰). If, as Wooldofrd (2006) argues, inherent case cannot be overridden by structural case, it follows that T⁰ cannot assign nominative case, which is a type of structural case, to the NPs in Spec ApplP. Consequently, nominative case is assigned to the NP without inherent case. With Class 4 verbs, the stimulus is assigned inherent case (dative or genitive) by Appl⁰, which is why the experiencer receives nominative case, and it moves to Spec TP to satisfy EPP features on T⁰ because it is structurally higher (i.e. closer to T⁰) than the stimulus argument. Meanwhile, with Class 3 verbs, the experiencer receives dative case from Appl⁰ and remains structural closer to T⁰, which is why it ultimately ends up as the subject (in Spec TP); however, T⁰ cannot override its inherent case to also assign structural nominative case to it. Instead, the only option that is left is for the stimulus argument to receive nominative case from T⁰ non-locally (via Agree).

7.3.2. Constraining argument selection with Psych verbs and beyond

The final point to be addressed in this chapter is the problem of selectional requirements in neoconstructionist approaches as it pertains to Psych verbs. I will try to implement a mechanism of constraining argument structure inspired by Ramchand's (2008, 2013) suggestion that the compatibility of roots with higher elements of VP structure is determined by the mechanisms of general cognition conceptualized through *force dynamics* (Talmy 1988, 2000; Croft 1993, 2015; Wolff 2003, *inter alia*). I will start by explaining the reasons for the existence of two types of Class 4 Psych verbs based on the two types of Appl⁰ they combine with (Section 7.2.2). Using Croft's (1993) decomposition of mental states couched in Talmy's (1988) force dynamics, I will argue that roots that build the two sub-classes of Class 4 verbs lexicalize two different components of mental states. More precisely, Class 4 verbs with dative case-marked Stimuli (call them Class 4A verbs) are built on top of roots that lexicalize the component of directed attention which makes

them compatible with Appl_G, which assigns dative case, and incompatible with Appl_s, which assigns genitive. The Class 4 verbs that combine with genitive case-marked Stimuli (call them Class 4B verbs) exhibit the opposite pattern. They lexicalize the relation that Croft calls ‘caused mental state’ with a caveat that the type of causation that is involved is not direct causation encoded by the causative v^0 , which is why they are incompatible with Appl_G assigning dative case while being compatible with Appl_s, which assigns genitive case.

As was elaborated upon in Section 7.1.2, one of the most significant problems that the neoconstructionist approaches to argument structure encounter deals with the mechanism of constraining argument structure. By insisting that there is no Lexicon that would store verbal entries together with their argument structure requirements, the neoconstructionist approach is left without a clear set of criteria that would rule out some of the unattested argument structure patterns. For instance, a purely syntactic approach to argument structure has no problem explaining why (51) is ungrammatical on the reading where the building was actually the Theme of the destroying event initiated by the construction company because it assumes that Agents are merged in a projection that is syntactically higher than the one that hosts Themes, which is why Agents have to precede Themes. However, the same approach cannot immediately explain why (52a) is grammatical but (52b) is not. The grammaticality of (52a) demonstrates that an anticausative v^0 has to be part of the inventory of functional projections in English (and crosslinguistically), but then, it is not clear why the same head cannot be combined with the root $\sqrt{\text{DESTROY}}$ to generate (52b).

(51) *The building destroyed the construction company.

(52) a. The chair broke.

b. *The chair destroyed.

Section 7.1.2 outlined Marantz’s (1997) solution to this problem based on a categorization of roots into externally caused ones (e.g. $\sqrt{\text{DESTROY}}$), internally-caused ones (e.g. $\sqrt{\text{GROW}}$) and resultative ones (e.g. $\sqrt{\text{BREAK}}$). Marantz’s (1997) explanation for the ungrammaticality of (52b) is that the root in question (i.e. $\sqrt{\text{DESTROY}}$) is semantically incompatible with an anticausative v^0 since this root implies an external cause.

I want to argue that these kinds of explanations based on the ‘deep’ lexical semantics at the root level are necessary in order to constrain argument structure possibilities within the neoconstructionist framework, and my intent is to show that the same approach can account for the argument structure patterns with Serbian Psych verbs. The paradigm that I want to derive in this way is given in (53).

- (53) a. Jovan se divi slici.
 Jova.NOM SE admire painting.DAT
 ‘Jovan admires the painting.’
- a’. *Jovan se divi slike.
 Jova.NOM SE admire painting.GEN
- b. Jovan se boji mraka.
 Jovan.NOM SE scare dark.GEN
- b’. *Jovan se boji mraku.
 Jovan.NOM SE scare dark.DAT

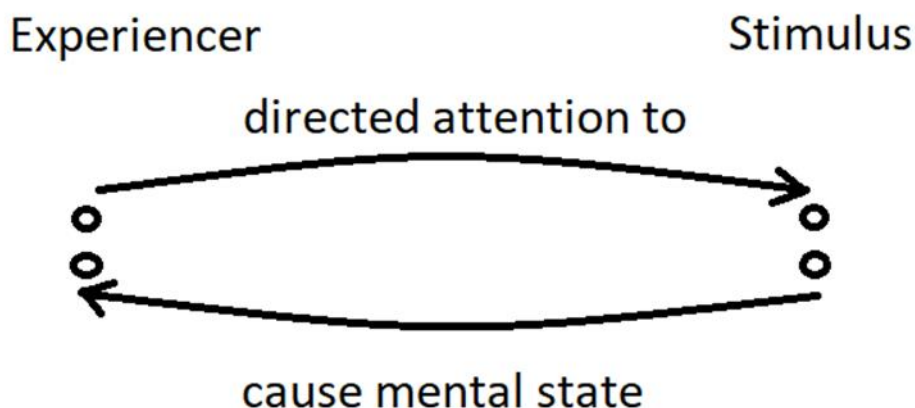
In other words, the question is why the roots such as $\sqrt{\text{DIV}}$ (‘admire’) combine with dative case-marked Stimuli while rejecting genitive case-marked ones while roots such as $\sqrt{\text{BOJ}}$ (‘fear’) exhibit exactly the opposite behavior. Given the analysis of the grammatical examples in (53) developed in this chapter, the question becomes why the root such as $\sqrt{\text{DIV}}$ (‘admire’) combines

with Appl_G while rejecting Appl_S whereas the root √BOJ ('fear') combines with Appl_S but rejects Appl_G.

The way I think this question ought to be answered is by assuming that there is something about the conceptualization of admiration (√DIV) in Serbian (but maybe more broadly) which implies some kind of Goal making the root that expresses this emotion compatible with Appl_G and incompatible with Appl_S. By the same token, the conceptualization of fear (√BOJ) is such that it implies a source, which is why this root can combine with Appl_S but not with Appl_G.

In order to make this statement more schematic, I will divide roots that are used to build Psych verbs into two basic classes following Croft (1993). Croft (1993, p. 64) proposes the diagram in (54) as a schematic representation of Psych verbs (he calls them 'mental verbs').

(54)

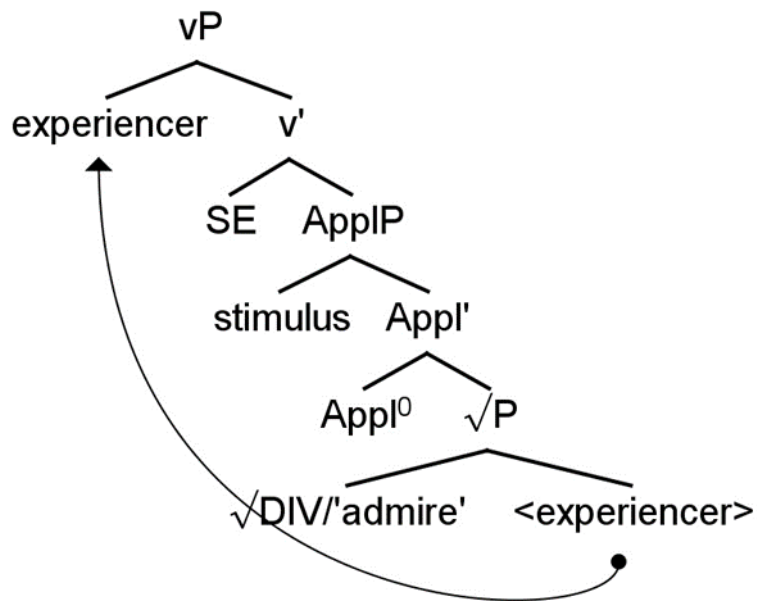


According to this representation, mental states are essentially two-way interactions between Experiencers and Stimuli. One way of interaction flows from the Experiencer towards the Stimulus by means of directed attention. The other way flows from the Stimulus to the Experiencer as the Stimulus causes the given mental state in the Experiencer. Zooming in on the portion of the diagram which shows the Experiencer, one can conclude that mental states can either originate

inside the Experiencer and be outwardly-directed, or they can originate outside of the Experiencer and be inwardly-oriented. This pattern is virtually the same one that Marantz (1997) proposed for non-Psych roots following Levin and Rappaport Hovav (1995). In sum, like other eventualities, emotional and psychological states can be internally or externally-caused.

Recall now the structure of Class 4 verbs represented in (48) repeated here as (55). For both sub-types of Class 4 verbs, the Experiencer starts off in the complement of \sqrt{P}/VP so it is possible to state the distinction between the two types in terms of the directionality of force. In other words, with Class 4 verbs with dative Stimuli, call them Class 4A verbs, force originates in the Experiencer and flows outward while with Class 4 verbs with genitive Stimuli, call them Class 4B verbs, force originates outside the Experiencer and flows inward.

(55)

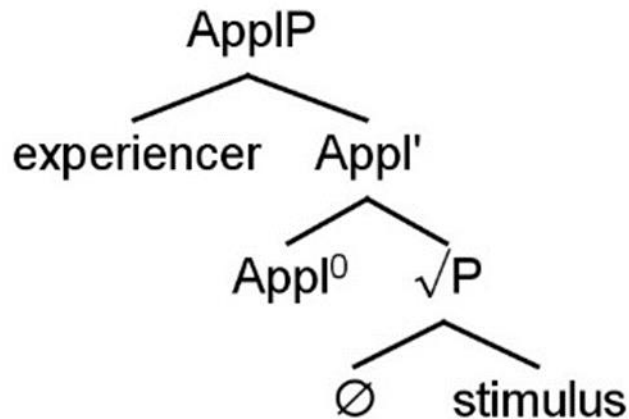


The directionality of force with these two types of Class 4 verbs further determines the combinability of these verbs with the two different types of Appl⁰s. The outwardly-directed Class 4A roots can only be combined with the Goal semantics of Appl_G while the inwardly-directed Class 4B roots can only be combined with Appl_S. It is important to stress that in line with the

approach to constraining argument structure that I am following here, these patterns are not syntactically encoded. Instead, they are enforced post-syntactically at the Conceptual-Intentional (C-I) interface where linguistic structures interact with general world knowledge and cognitive representations. These cognitive representations of mental states require that admiration ($\sqrt{\text{DIV}}$) is compatible with Appl_G (but not Appl_S) while fear ($\sqrt{\text{BOJ}}$) is compatible with Appl_S (but not Appl_G). In other words, there is nothing in syntax that blocks the combination of, for instance, $\sqrt{\text{DIV}}$ and Appl_S but such combinations will be uninterpretable at the C-I interface because the cognitive representation of admiration (the mental state encoded by the root) requires a Goal and not a Source.

Turning to the question of Class 3 verbs, which can only be combined with Appl_G , the analysis is rather straightforward. Recall that the proposed structure of Class 3 verbs involves the Experiencer in the Spec of ApplP and Stimulus in the complement of the root (56). As a result, the directionality of the state named by this root can only be defined with respect to the Stimulus since the Stimulus is closer to the root (i.e. they are generated as part of the same structure).

(56) Class 3 verbs



It, thus, follows that the emotional state named by this root can only be directed *towards* the Experiencer and *away* from the Stimulus given the fact that a Stimulus cannot be the carrier of an emotional state. This explains why roots that belong to Class 3 never combine with Appl_SPs which would introduce a genitive case-marked Experiencer. Put differently, since a Stimulus cannot be the carrier of a mental state, and the directionality of an emotional state named by a particular root is defined with respect to the NP/DP in the complement of \sqrt{P} , it is predicted that roots which have Stimulus participants in their complements will never combine with Applicatives with the semantics of source. This way, we explain why there are no genitive case-marked Experiencers or genitive case-marked Class 3 verbs in Serbian.

As a final point in this section, I would like to point out that the idea that Psych roots ultimately have to be mapped onto cognitive representations involving directional semantics is not necessary only in order to explain the way they combine with different kinds of Applicatives since these roots also appear in nominal environments where they combine with directional PP complements (57).

- (57) a. strah od poraza
 fear from defeat.GEN
 ‘the fear of defeat’
- a’. *strah prema porazu
 fear towards defeat.DAT
- b. divljenje prema profesorima
 admiration towards professors.DAT
 ‘the admiration towards the professors’

- b'. *divljenje od profesora
 admiration from professors.GEN

Assuming that the noun *strah* ('fear') in (57a-a') involves one of the roots that we see with the verbs of fearing, which is indeed the case (58), the fact that it combines with a PP denoting a source is predicted since the verb derived from this root combines with a genitive case-marked Stimulus (or ApplsP on the present analysis) and rejects a dative case-marked one (58).

- (58) a. Petar je zastrašio Jovanu.
 Petar.NOM AUX frighten Jovana.ACC
 'Peter frightened Jovana.'
- b. Jovana se zastrašila ?Petra / *Petru.
 Jovana.NOM se frightened Petar.GEN Petar.DAT
 'Jovana got frightened of Peter / *to Peter.'

Similarly, the noun *divljenje* ('admiration') derived from the root $\sqrt{\text{DIV}}$ ('admire') combines with a Goal PP (57b) and rejects a source PP (57b') just like the Psych verb derived from the same root accepts a dative case-marked Stimulus and rejects a genitive case-marked one (59).

- (59) Jovana se divi profesoru / *profesora.
 Jovana.NOM SE admire professor.DAT professor.GEN
 'Jovana admires (her) Professor.'

Again, the combinability of these roots with directional PPs in the nominal domain would be mysterious if the roots were not associated with some kind of directional semantics that would allow some combinations and disallow others. The fact that the directionality patterns in the nominal and the verbal domains are identical while the formal realizations vary (PPs vs. oblique

case-marked bare NPs) suggest that these properties should be captured at the deepest level of root semantics instead of being stated separately for each verb and each noun individually.

7.4. Chapter summary

The goal of this chapter was to shed some light on the phenomena at the deepest level of VP structure and the focus was on explaining the case patterns with Class 3 and Class 4 verbs. The chapter came after a series of sections in which the attention was on the higher layers of the extended VP structure and the majority of discussion revolved around Class 1 and Class 2 verbs as these verbs participate in the derivations of SE anticausatives and reflexives, passive participles and nominalizations derived from passive participles. The argument of this chapter consisted of several components. The first one was that oblique case forms that can be seen on Experiencers and Stimuli with Class 3 and Class 4 verbs, respectively, arise in non-causative environments setting these verbs apart from causative transitive verbs belonging to Class 1 and Class 2. Second, it was argued that oblique case forms that can be seen with Class 3 and Class 4 verbs are instances of inherent case assigned by ApplP. Third, dative case on Experiencers with Class 3 verbs and Stimuli participants with a subset of Class 4 verbs was attributed to a type of Appl⁰ labelled Appl_G with the semantics of Goal while the genitive case on the Stimuli of the other subset of Class 4 verbs was analyzed as stemming from Appl_S which has the semantics of source. Fourth, the fact that Experiencer arguments always assume the role of clausal subject was captured by assuming that the T⁰ always attracts the NP/DP that is structurally closest to it, and the Experiencer is base generated in a position higher than that of the Stimulus with Class 3 verbs while with Class 4 verbs, it moves from the \sqrt{P}/VP complement position to the Spec_vP position to assume the theta role of Cause and, therefore, ends up closer to T⁰. Fifth, the distribution of Appl_S and Appl_G with Class 3 and Class 4 verbs was explained using a simple model based on force dynamics whereby it was

assumed that certain roots name mental states which originate in the Experiencer while others name mental states that originate outside of it. Consequently, the former combine with expressions with the semantics of Goal and the latter combine with expressions that denote sources. Importantly, these restrictions are enforced by world knowledge or, more precisely, the differences in the conceptual representations of different mental states at the C-I interface meaning that syntax can, in principle, derive the ‘wrong’ combinations of roots and applicative heads, but they are simply fail to map onto cognitive representations that apply at C-I.

8. Concluding remarks

The aim of this dissertation was twofold. First, the goal was to provide a comprehensive formal description of the class of Psych verbs in Serbian relying on a comparison with the same class of verbs in English and what is generally known about them from the crosslinguistic perspective. The motivation for this part of the overall project stemmed from the observation that the existing descriptions of these verbs in Serbian were based primarily on the functionalist theoretical approach and the comparative, contrastive and crosslinguistic perspective was lacking. The language of presentation in these existing works was Serbian making these contributions less accessible to the international linguistic community.

The second part of the motivation behind this dissertation was to assess the applicability of the existing linguistic theories and explanations in this domain to the data from Serbian. The guiding theoretical assumption that was applied to this research was that even though Psych verbs may pose apparent challenges to some of the central theories in mainstream generativism, they are, in fact, one of the best empirical domains to test and improve these accounts. Psych verbs are, thus, seen as a source of data that can, in principle, be understood and accounted for using the existing conceptual inventory of generativism, primarily Minimalism (Chomsky 1995) and Distributed Morphology (Halle and Marantz 1993, *et seq.*).

The research questions of this dissertation were derived from an attempt to offer a classification of Serbian Psych verbs relying on the existing classifications that are used in formal/generative research (Belletti and Rizzi 1988) and adapted for English by Levin (1994). While there are clear examples of the basic subclasses of Psych verbs in Serbian, a significant portion of them do not fit straightforwardly into any of the categories. It was also observed that those verbs that exhibit unexpected patterns in terms of case-marking on the NPs naming the

participants in the eventuality tend to occur with the SE morpheme. The general questions that were raised deal with the role of this morpheme with Psych verbs as well as the syntactic status of oblique case-marked NPs (adjuncts/arguments/complements) introducing the participants (Experiencer/Stimulus) and the case assignment/licensing mechanisms responsible for the occurrence of these case forms. Both of these general questions, of course, converge on the issue regarding the argument structure of Psych verbs (in Serbian) and whether or not they conform to the existing generalizations regarding the relationship between the structure of the (extended) VP, argument structure and event structure (cf. Baker 1988; Ramchand 2008, *inter alia*).

Drawing on the theoretical tools of Minimalism and DM, these questions were investigated by looking at various morphosyntactic and semantic properties of these verbs in order to explain the puzzling characteristics observed in the first attempt at a formal classification. The correlation between the occurrence of the SE morpheme and ‘unexpected’ case forms on the NPs naming the participants propelled an extensive examination of the combinability of this morpheme and its different meanings (primarily reflexive and anticausative) with various types of Psych verbs. This investigation revealed that purely reflexive uses of SE are available only with those verbs that combine with an agentive external argument. This observation was modeled by assuming that purely reflexive readings are derived by combining SE with Voice⁰ (the head that introduces the Agent) to produce a complex head containing features [REFLEXIVE] and [AGENTIVE].

The availability of the anticausative reading of SE was tied to those verbs whose denotations involve the eventive, causative component (v [CAUSE, EVENT]). It was also noted that there are numerous Psych-verb anticausatives that license instrumental case-marked NPs introducing the cause/instrument participants which are blocked with typical anticausatives. This fact was captured by assuming that these Psych-verb anticausatives are structurally different from

typical anticausatives because they share certain properties with reflexives. The denotations of these anticausatives entail that the Experiencer is simultaneously the Theme of the resulting state as well its cause (i.e. the primary or direct cause of the eventuality resides within the Experiencer itself). What this analysis calls for is a (sub)category of reflexivity which is not tied to agentivity along the lines of Chierchia (2004). I referred to these verbs as ‘semi-reflexives’ meaning that they include reflexive semantics without the agentive component. The proposal was implemented by assuming that ‘semi-reflexive’ readings obtain when SE is merged with a *v* head that projects a Spec position, which is then occupied by the NP naming the Experiencer. Such a configuration results in a complex *v* head containing features [REFLEXIVE] and [CAUSE]. With typical anticausatives, on the other hand, SE is merged with a Spec-less *v* head where the absence of an NP in the Spec position prevents any kind of reflexive reading giving rise to a simple anticausative entailing that the cause of the eventuality is absent or generic (cf. Schäfer and Vivanco 2016). Finally, it was suggested that the availability of SE in Serbian and its ability to generate this sort of ‘semi-reflexive’ structure could explain the puzzling lack of Psych-verb anticausatives in languages without SE such as English.

Addressing the status of oblique (genitive/dative) case-marked bare NPs with certain Psych verbs in Serbian, it was observed that despite the atypical case forms that they carry, these NPs behave like arguments on a number of tests. These NPs name obligatory participants in the eventuality denoted by the Psych verb(s); they create no impediment for cliticization; and they present only weak barriers for left-branch extraction. Based on this evidence, it was established that these NPs should be treated as arguments.

Exploring the argument structure of Psych verbs further, I examined their ability to form passive participles, which correlates with argument structure properties (Aljović 2000; Embick

2004). It was observed that a verb's ability to derive a passive participle depends on agentivity. Specifically, passive participles are available only with agentive transitives and unergatives. This finding was implemented by assuming that the participial head (Pass) takes only VoicePs while smaller structures are blocked.

The description and analysis of passive participles fed directly into the issue of *-nje* nominals. Given the claim that deverbal *-nje* nominalizations are derived from passive participles (Bašić 2010; Simonović and Arsenijević 2014), it was hypothesized that the inability of a particular verb to derive a *-nje* nominal should correlate with the lack of a passive participle in its derivational paradigm. The hypothesis is borne out in the sense that verbs that do not derive *-nje* nominals do not derive passive participles either.

The dissertation also contributed a more detailed analysis of the patterns of phonological faithfulness and semantic transparency of *-nje* nouns. It was observed that Simonović and Arsenijević's (2014) generalization that *-nje* nominals derived from imperfective verbs retain the stress pattern of the base verb and exhibit semantic transparency while perfective derive ones do not is not completely accurate. Namely, there are some fully transparent *-nje* nominals derived from perfective verbs as well as phonologically unfaithful and semantically opaque *-nje* nominalizations derived from imperfective verbs. Syntactic tests diagnosing the presence of internal verbal structure via the licensing of various types of event modifiers (Gehrke 2013; Alexiadou et al. 2014) show that semantically opaque nominalizations do not license any modifiers of this type while perfective derived ones license them only if they are not strongly referential.

Following Marantz (1997), I assumed that lexicalizations (semantically opaque and/or phonologically unfaithful outputs) should be structurally constrained by means of a phase-based analysis. To that end, I proposed that semantically opaque and phonologically unfaithful

derivations are possible only in structures which do not involve a v head that acts as a phase. Moreover, v acts as a phase only when its event variable is assigned temporal reference by a higher aspectual/tense head (Gehrke 2013; Alexiadou et al. 2014). What this analysis predicts is that perfective derived *-nje* nominals will, in principle, license the processes of lexicalization (stress shift and/or semantic opacity) because there are no higher aspectual/tense heads (in the verbal domain) capable of assigning temporal reference to the event variable on v . As a consequence, v fails to act as a phase and block lexicalization. In the domain of imperfective nominalizations, lexicalization processes can occur in structures derived from primary imperfectives (states and activities), but not in structures derived from secondary imperfectives (iterative or incomplete events) because secondary imperfectives involve a higher aspectual head capable of assigning temporal reference to the event variable on v , thus making it a phase.

Finally, the dissertation tackled the mechanisms that are responsible for the licensing of oblique (genitive/dative) case forms on NPs denoting event participants with specific sets of Psych verbs. Having already established that these elements should be treated as arguments, it became necessary to provide reasons why they end up bearing these case forms which are not typical of arguments. It was shown that these case forms appear only in the absence of a causative transitive v capable of assigning accusative case to the internal argument. In particular, one finds these case forms with non-agentive stative verbs (*zavideti* ‘envy’, *prijati* ‘appeal’), eventive anticausatives (*uplašiti se* ‘get scared’) or verbs with the obligatory SE morpheme (so called ‘frozen entries’ – *bojati se* ‘fear’). The licensing of these case forms was attributed to two different types of ‘low Applicatives’ (McGinnis 1998; Cuervo 2003; Pylkkänen 2008; Harley 2020). The licensing of genitive case was tied to the low Applicative head introducing the source argument while the low

Applicative head that comes with the Goal/Benefactive argument was identified as the origin of dative case.

In terms of the overall picture and broader implications, this thesis shows that the neoconstructionist approach, particularly DM, is equipped with the right concepts to tackle the issues related to argument structure, argument structure alternations (anticausativization and reflexivization) as well as deverbal derivational morphology of psych verbs and enable at attempt to tie all these different phenomena together. What is more, I hope to have shown that an approach to verbal syntax that does not stop at the level of the word but carries the syntactic analysis over into the traditional domain of morphology is necessary to begin to connect such seemingly disparate phenomena as well as maintain the overarching intuition that argument structure is ultimately shaped by syntax (cf. Baker's 1988 UTAH). At the same time, as I tried to emphasize, particularly in Chapter 7 in the discussion of case assignment with Class 3 and Class 4 verbs, such an approach to argument structure needs to be properly constrained in order to capture all the grammatical argument structure patterns and filter out the ungrammatical ones. This is something that mainstream DM currently does not deliver with its insistence on the idea of roots as featureless, semantically empty grammatical objects (see also Harley 2020). Following Ramchand (2013), my attempt was to try to enforce those constraints at the level of cognitive mapping (Chomsky's 1995 C-I interface) with the idea that cognitive representations (i.e. Talmy's 1988, 2000 force dynamics model) ultimately decide which roots can combine with which functional heads (Folli and Harley's 2005 'flavors of v').

In many ways, this dissertation only scratches the surface of the complex issues in the syntax and semantics of psych verbs in Serbian and leaves open some important questions for further research. For instance, psych verbs such as *zaljubiti se* ('fall in love') and *ponositi se* ('take

pride in’) were left out from the discussion in the core chapters of the dissertation (Chapters 3-7). This decision was explained briefly in Chapter 4 where a distinction was made between oblique case marked bare NPs, which were analyzed as arguments of Class 3 and Class 4 verbs. Subsequently, the origin of these case forms was addressed in Chapter 7. Verbs like *zaljubiti se* (‘fall in love’) and *ponositi se* (‘take pride in’) express their stimuli participants in the form of obligatory PPs. Unfortunately, for reasons of space, but also partly due to the complexity of the issues that they raise (primarily, the interplay between aspect and syntax/semantics of prepositions), the dissertation has not made a significant contribution to our understanding of such structures. I leave those questions for further research. Moreover, the claims that were made about the syntactic and semantic status of SE as well as the formation of passive participles and nominalizations have implication for other languages where similar phenomena can be observed (Slavic languages, in particular). It remains to be seen to what extent the analyses that were offered in this dissertation can shed light on these data.

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Appendix 1

List of Psych verbs with translations and argument structure properties

	verb form	Translation	case frame	
			experiencer	stimulus
1.	bodriti	Cheer	acc	nom
2.	bojati se	Fear	nom	gen
3.	boleti	pain	acc	nom
4.	brinuti	worry	acc	nom
5.	buniti	confuse	acc	nom
6.	ceniti	appreciate	nom	acc
7.	čuditi	bewonder	acc	nom
8.	čuditi se	marvel	nom	dat
9.	deprimirati	depress	acc	nom
10.	destimulirati	instigate	acc	nom
11.	dezorijentirati	disorient	acc	nom
12.	diviti se	admire	nom	dat
13.	dodijati	bore	dat	nom
14.	dopadati se	like	dat	nom
15.	dosaditi	bother	dat	nom
16.	doticati	interest	acc	nom
17.	dražiti	irritate	acc	nom
18.	frapirati	stupefy	acc	nom
19.	gaditi se	abhor	dat	nom
20.	razgaliti	humor	acc	nom
21.	ganuti	touch (emotionally)	acc	nom
22.	razgneviti	Infuriate	acc	nom
23.	goditi	please	dat	nom
24.	hipnotisati	hypnotize	acc	nom
25.	hrabriti	encourage	acc	nom
26.	imponovati	flatter	dat	nom
27.	inspirirati	inspire	acc	nom
28.	izbezumiti	derange	acc	nom
29.	izludeti	madden	acc	nom
30.	iznenaditi	surprise	acc	nom
31.	izneveriti	betray	acc	nom
32.	izopačiti	unhinge	acc	nom
33.	jediti	upset	acc	nom
34.	kuražiti	embolden	acc	nom
35.	ljutiti	anger	acc	nom
36.	maltretirati	mistreat	acc	nom
37.	mamiti	lure	acc	nom

38.	motivisati	motivate	acc	nom
39.	mrzeti	hate	nom	acc
40.	nadahnuti	animate	acc	nom
41.	nadati se	hope	nom	dat
42.	nakostrešiti	raise one's hairs as a metaphor for 'to anger'	acc	nom
43.	napakostiti	spite	dat	nom
44.	napatiti	heckle	acc	nom
45.	narogušiti	exasperate	acc	nom
46.	naviči	get used to	acc	nom
47.	nedostajti	miss	dat	nom
48.	nervirati	annoy	acc	nom
49.	obeshrabriti	discourage	acc	nom
50.	obespokojiti	unsettle	acc	nom
51.	obožavati	adore	nom	acc
52.	obuzdati	pacify	acc	nom
53.	očarati	enchant	acc	nom
54.	odobrovoljiti	molify	acc	nom
55.	oduševiti	overawe	acc	nom
56.	odvići	break habit	acc	nom
57.	omiliti se	endear	dat	nom
58.	oneraspoložiti	dispirit	acc	nom
59.	onespokojiti	disrupt	acc	nom
60.	oneveseliti	dampen	acc	nom
61.	opčiniti	entice	acc	nom
62.	ošamutiti	dazzle	acc	nom
63.	osećati	feel	nom	acc
64.	ospokojiti	assuage	acc	nom
65.	ozlojediti	begrude	acc	nom
66.	ozlovoljiti	embitter	acc	nom
67.	ožućiti	hassle	acc	nom
68.	plašiti	scare	acc	nom
69.	plašiti se	fear	nom	gen
70.	podstreknuti	boost	acc	nom
71.	podsticati	spur	acc	nom
72.	ponositi se	pride	nom	inst
73.	posramiti	debase	acc	nom
74.	poštovati	respect	nom	acc
75.	potresti	shake up	acc	nom
76.	predosećati	foresee	nom	acc
77.	preneraziti	bewilder	acc	nom
78.	prepasti	frighten	acc	nom
79.	prepasti se	get frightened	nom	gen

80.	prezirati	despise	nom	acc
81.	prijati	appeal	dat	nom
82.	provocirati	provoke	acc	nom
83.	radovati	delight	acc	nom
84.	radovati se	rejoice	nom	dat
85.	raspomamiti	lose control/inhibition	acc	nom
86.	rastužiti	deject	acc	nom
87.	ražaliti	make sorrowful	acc	nom
88.	ražalostiti	sadden	acc	nom
89.	razbesneti	enrage	acc	nom
90.	ražestiti	outrage	acc	nom
91.	razgaliti	humor	acc	nom
92.	razgneviti	infuriate	acc	nom
93.	razgoropaditi	incense	acc	nom
94.	razjariti	inflame	acc	nom
95.	raznežiti	soften (emotionally)	acc	nom
96.	razočarati	disappoint	acc	nom
97.	razočarati se	get disappointed	nom	inst
98.	razuzdati	go wild	acc	nom
99.	razvedriti	gladden	acc	nom
100.	sablazniti	scandalize	acc	nom
101.	sablazniti se	get scandalized	nom	inst
102.	šarmirati	charm	acc	nom
103.	škoditi	harm	dat	nom
104.	šokirati	shock	acc	nom
105.	sekirati	afflict	acc	nom
106.	smetati	discomfort	dat	nom
107.	smiriti	soothe	acc	nom
108.	smoriti	smother	acc	nom
109.	smučiti	disgust	dat	nom
110.	sneveseliti	deject	acc	nom
111.	sokoliti	hearten	acc	nom
112.	sramiti se	be ashamed	nom	gen
113.	sramotiti	embarrass	acc	nom
114.	srditi	rile	acc	nom
115.	staložiti	appease	acc	nom
116.	stimulisati	stimulate	acc	nom
117.	štrechnuti	startle	acc	nom
118.	tangirati	concern	acc	nom
119.	tentati	harass	acc	nom
120.	tešiti	console	acc	nom
121.	tetošiti	pamper	acc	nom
122.	tištati	ail	acc	nom

123.	tolerisati	tolerate	nom	acc
124.	trezniti	sobber up	acc	nom
125.	trpeti	endure	nom	acc
126.	ucveliti	devastate	acc	nom
127.	udiviti	enchant	acc	nom
128.	unesrečiti	make unhappy	acc	nom
129.	uozbiljiti	make serious	acc	nom
130.	urazumiti	make reasonable	acc	nom
131.	ushitati	thrill	acc	nom
132.	usplahiriti	panic	acc	nom
133.	uspokojiti	placate	acc	nom
134.	usrečiti	make happy	acc	nom
135.	uveseliti	cheer up	acc	nom
136.	užasnuti	horrify	acc	nom
137.	užasnuti se	get horrified	nom	gen
138.	uzbuditi	excite	acc	nom
139.	uznemiriti	agitate	acc	nom
140.	uzrujati	disturb	acc	nom
141.	voleti	love	nom	acc
142.	žaliti	pity	nom	acc
143.	žigati	flinch	acc	nom
144.	žuljati	pinch	acc	nom
145.	zabaviti	entertain	acc	nom
146.	zabezeknuti	daze	acc	nom
147.	zablestiti se	fall in love (madly)	nom	PP
148.	zadiviti	fascinate	acc	nom
149.	zadovoljiti	satisfy	acc	nom
150.	zaljubiti se	fall in love	nom	PP
151.	zapanjiti	amaze	acc	nom
152.	zaseniti	captivate	acc	nom
153.	zastašiti	intimidate	acc	nom
154.	zavideti	envy	nom	dat
155.	zblanuti	astonish	acc	nom
156.	zgranuti	appall	acc	nom
157.	zgranuti se	get appalled	nom	inst

Appendix 2

Aspectual paradigms of Psych verbs in Serbian

NOTE: ‘?’ signifies slight degradedness while ‘??’ signifies marginal acceptability. The forms that are marked as slightly degraded (‘?’) sound slightly worse than the ones without this symbol, but they are, nonetheless, recorded in dictionaries or attested in the online corpus of Serbian (SrwaC) while those that are marked as marginally acceptable (‘??’) were only attested online (via Google search) with a low number of hits.

imperfective	perfective	secondary imperfective	translation	case frame	
				experiencer	stimulus
bodriti	obodriti	obodravati	cheer	acc	nom
bojati se	?pobožati	?pobožavati	fear	nom	gen
boleti	zaboleti	/	pain	acc	nom
brinuti	zabrinuti	zabrinjavati	worry	acc	nom
buniti	zbuniti	zbunjivati	confuse	acc	nom
ceniti	/	/	appreciate	nom	acc
čuditi se	začuditi se	začuđivati se	marvel	nom	dat
čuditi	začuditi	začuđivati	bewonder	acc	nom
deprimirati	deprimirati	/	depress	acc	nom
destimulisati	destimulisati	/	instill	acc	nom
dezorijentisati	dezorijentisati		disorient	acc	nom
diviti se	zadiviti se	?zadivljavati se	admire	nom	dat
/	dodijati	??dodijavati	bore	dat	nom
dopadati se	dopasti se	/	like	dat	nom
/	dosaditi	dosadivati	bother	dat	nom
doticati	dotaći	/	interest	acc	nom
dražiti	razdražiti	razdraživati	irritate	acc	nom
frapirati	frapirati	/	stupefy	acc	nom
gaditi se	zgaditi se	/	abhor	dat	nom
/	razgaliti	razgaljivati	humor	acc	nom
/	ganuti	?ganjavati	touch (emotionally)	acc	nom
??gneviti	razgneviti	/	infuriate	acc	nom
goditi	ugoditi	ugađati	please	dat	nom
hipnotisati	hipnotisati		hypnotize	acc	nom
hrabriti	ohrabriti	ohrabrivati	encourage	acc	nom
imponovati	imponovati		flatter	dat	nom

inspirisati	inspirisati		inspire	acc	nom
/	izbezumiti	izbezumljivati	derange	acc	nom
??ludeti	izludeti	izluđivati	madden	acc	nom
/	iznenaditi	iznenadživati	surprise	acc	nom
/	izneveriti	izneveravati	betray	acc	nom
/	izopačiti	izopačavati	unhinge	acc	nom
jediti	najediti	??najeđivati	upset	acc	nom
/	nakostrešiti	??nakostrešivati	exasperate	acc	nom
kuražiti	okuražiti	okuraživati	embolden	acc	nom
ljutiti	razljutiti	razljućivati	anger	acc	nom
maltretirati	izmaltretirati	/	mistreat	acc	nom
mamiti	namamiti	namamljivati	lure	acc	nom
motivisati	motivisati	/	motivate	acc	nom
mrzeti	zamrzeti	/	hate	nom	acc
/	nadahnuti	nadahnjivati	animate	acc	nom
nadati se	ponadati se	/	hope	nom	dat
?pakostiti	napakostiti	/	spite	dat	nom
??patiti	napatiti	/	heckle	acc	nom
??rogušiti	narogušiti		exasperate	acc	nom
	navići	navikavati	get used to	acc	nom
nedostajti	/	/	miss	dat	nom
nervirati	iznervirati	??iznerviravati	annoy	acc	nom
/	obeshrabriti	obeshrabrivati	discourage	acc	nom
/	obespokojiti	?obespokojavati	unsettle	acc	nom
obožavati	/	/	adore	nom	acc
/	obuzdati	obuzdavati	pacify	acc	nom
/	očarati	očaravati	enchant	acc	nom
/	odobrovoljiti	?odobrovoljavati	molify	acc	nom
/	oduševiti	oduševljavati	overawe	acc	nom
/	odvići	odvikavati	break habit	acc	nom
militi se	omiliti se	/	endear	dat	nom
/	oneraspoložiti	?oneraspoloživati	dispirit	acc	nom
/	onespokojiti	?onespokojavati	disrupt	acc	nom
/	oneveseliti	?oneveseljavati	dampen	acc	nom
/	opčiniti	opčinjavati	entice	acc	nom
	ošamutiti	ošamućivati	dazzle	acc	nom
osećati	osetiti	/	feel	nom	acc
/	ospokojiti	??ospokojavati	assuage	acc	nom
/	ozlojediti	ozlojeđivati	begrude	acc	nom
/	ozlovoljiti	ozlovoljavati	embitter	acc	nom

/	ožučiti	??ožučavati	hassle	acc	nom
plašiti	uplašiti	/	scare	acc	nom
plašiti se	uplašiti se	/	fear	nom	gen
podsticati	podstaknuti	??podstaknjivati	spur	acc	nom
/	podstreknuti	podstreknjivati	boost	acc	nom
ponositi se	/	/	pride	nom	inst
??sramiti	posramiti	posramljivati	debase	acc	nom
poštovati	ispoštovati	/	respect	nom	acc
/	potresti	/	shake up	acc	nom
predosećati	predosetiti	/	foresee	nom	acc
/	preneraziti	preneražavati	bewilder	acc	nom
	prepasti	prepadati	dismay	acc	nom
	prepasti se	prepadati se	get dismayed	nom	gen
prezirati	prezreti	/	despise	nom	acc
prijati	/	/	appeal	dat	nom
provocirati	isprovocirati	?isprovociravati	provoke	acc	nom
radovati	obradovati	/	delight	acc	nom
radovati se	obradovati se	/	rejoice	nom	dat
	raspomamiti	??raspomamljivati	lose control	acc	nom
/	rastužiti	rastuživati	deject	acc	nom
/	ražaliti	/	make sorrowful	acc	nom
žalostiti	ražalostiti	/	sadden	acc	nom
žestiti	ražestiti	/	outrage	acc	nom
/	razbesneti	/	enrage	acc	nom
/	razgoropaditi	??razgoropađivati	incense	acc	nom
/	razjariti	??razjarivati	inflame	acc	nom
/	raznežiti	?razneživati	soften (emotionally)	acc	nom
/	razočarati	razočaravati	disappoint	acc	nom
/	razočarati se	razočaravati se	get disappointed	nom	inst
/	razuzdati	razuzdavati	cause to go wild	acc	nom
vedriti	razvedriti	/	gladden	acc	nom
/	sablazniti	sablažnjavati	scandalize	acc	nom
/	sablazniti se	sablažnjavati se	get scandalized	nom	inst
šarmirati	šarmirati	/	charm	acc	nom
škoditi	naškoditi	/	harm	dat	nom
šokirati	šokirati	/	shock	acc	nom
sekirati	nasekirati	??nasekiravati	afflict	acc	nom
smetati	zasmetati	/	discomfort	dat	nom
/	smiriti	smirivati	soothe	acc	nom
smarati	smoriti	/	smother	acc	nom

/	smučiti se	/	disgust	dat	nom
/	sneveseliti	??sneveseljivati	deject	acc	nom
sokoliti	osokoliti	osokoljavati	hearten	acc	nom
sramiti se	posramiti se	/	get ashamed	nom	gen
sramotiti	osramotiti	osramočivati	embarrass	acc	nom
srditi	rasrditi	rasrđivati	rile	acc	nom
/	staložiti	/	appease	acc	nom
stimulisati	stimulisati	/	stimulate	acc	nom
štrecati	štrecnuti	/	startle	acc	nom
tangirati	istangirati	/	concern	acc	nom
tentati	natentati	/	harass	acc	nom
tešiti	utešiti	/	comfort	acc	nom
tetošiti	potetošiti	/	pamper	acc	nom
doticati	dotaći	/	interest	acc	nom
tištati	potištati	??potištavati	ail	acc	nom
tolerisati	istolerisati	/	tolerate	nom	acc
trezniti	otrezniti	?otrežnjivati	sobber up	acc	nom
trpeti	istrpeti	??istrpljivati	endure	nom	acc
/	ucveliti	/	devastate	acc	nom
/	udiviti	?udivljavati	enchant	acc	nom
/	unesrećiti	unesrećivati	make unhappy	acc	nom
/	uozbiljiti	?uozbiljavati	make serious	acc	nom
/	urazumiti	urazumljivati	make reasonable	acc	nom
/	ushititi	??ushićivati	thrill	acc	nom
/	usplahiriti	?usplahirivati	panic	acc	nom
/	uspokojiti	?uspokojavati	placate	acc	nom
/	usrećiti	usrećivati	make happy	acc	nom
veseliti	uveseliti	uveseljivati	cheer up	acc	nom
/	užasnuti	užasavati	horrify	acc	nom
/	užasnuti se	užasavati se	get horrified	nom	gen
/	uzbuditi	uzbuđivati	excite	acc	nom
/	uznemiriti	uznemiravati	agitate	acc	nom
/	uzrujati	uzrujavati	disturb	acc	nom
voleti	zavoleti	/	love	nom	acc
žaliti	ožaliti	/	pity/mourn	nom	acc
žigati	žignuti	/	flinch	acc	nom
žuljati	nažuljati	nažuljavati	pinch	acc	nom
zabavljati	zabaviti	/	entertain	acc	nom
/	zabezeknuti	/	daze	acc	nom
/	zablestiti se	/	fall in love (madly)	nom	PP

/	zadiviti	?zadivljavati	fascinate	acc	nom
/	zadovoljiti	zadovoljavati	satisfy	acc	nom
/	zaljubiti se	zaljubljevati	fall in love	nom	PP
/	zapanjiti	?zapanjivati	amaze	acc	nom
/	zaseniti	?zasenjivati	captivate	acc	nom
	zastrašiti	zastrašivati	intimidate	acc	nom
zavideti	pozavideti	/	envy	nom	dat
/	zblanuti	zblanjavati	astonish	acc	nom
žestiti	ražestiti	??ražeščivati	outrage	acc	nom
/	zgranuti	zgranjavati	appall	acc	nom
/	zgranuti se	zgranjavati se	get appalled	nom	inst

Appendix 3

Classification of Psych verbs

Class 1			
imperfective	perfective	secondary imperfective	translation
ceniti	/	/	appreciate
mrzeti	zamrzeti	/	hate
obožavati	/	/	adore
osećati	osetiti	/	feel
poštovati	ispoštovati	/	respect
predosećati	predosetiti	/	foresee
prezirati	prezreti	/	despise
voleti	zavoleti	/	love
žaliti	ožaliti	/	pity/mourn
tolerisati	istolerisati	/	tolerate
trpeti	istrpeti	??istrpljivati	endure

Class 2			
imperfective	perfective	secondary imperfective	translation
bodriti	obodriti	obodravati	cheer
boleti	zaboleti	/	pain
brinuti	zabrinuti	zabrinjavati	worry
buniti	zbuniti	zbunjivati	confuse
čuditi	začuditi	začuđivati	bewonder
deprimirati	deprimirati	/	depress
destimulisati	destimulisati	/	instill
dezorijentisati	dezorijentisati		disorient
doticati	dotaći	/	interest
dražiti	razdražiti	razdražavati	irritate
frapirati	frapirati	/	stupefy
/	razgaliti	razgaljivati	humor
/	ganuti	??ganjavati	touch (emotionally)
??gneviti	razgneviti	/	enrage
hipnotisati	hipnotisati		hypnotize
hrabriti	ohrabriti	ohrabrivati	encourage

inspirisati	inspirisati		inspire
/	izbezumiti	izbezumljivati	derange
??ludeti	izludeti	izludivati	madden
/	iznenaditi	iznenadivati	surprise
/	izneveriti	izneveravati	betray
/	izopačiti	izopačavati	unhinge
jediti	najediti	??najeđivati	upset
/	nakostrešiti	??nakostrešivati	infuriate
kuražiti	okuražiti	okuraživati	embolden
ljutiti	razljutiti	razljućivati	anger
maltretirati	izmaltretirati	/	mistreat
mamiti	namamiti	namamljivati	lure
motivisati	motivisati	/	motivate
/	nadahnuti	nadahnjivati	animate
??patiti	napatiti	/	heckle
??rogušiti	narogušiti		exasperate
	navići	navikavati	get used to
nervirati	iznervirati	??iznerviravati	annoy
/	obeshrabriti	obeshrabrivati	discourage
/	obespokojiti	?obespokojavati	unsettle
/	obuzdati	obuzdavati	pacify
/	očarati	očaravati	enchant
/	odobrovoljiti	?odobrovoljavati	molify
/	oduševiti	oduševljavati	overawe
/	odvići	odvikavati	break habit
/	oneraspoložiti	?oneraspoloživati	dispirit
/	onespokojiti	?onespokojavati	disrupt
/	oneveseliti	?oneveseljavati	dampen
/	općiniti	općinjavati	entice
	ošamutiti	ošamućivati	dazzle
/	ospokojiti	??ospokojavati	assuage
/	ozlojediti	ozlojeđivati	begrude
/	ozlovoljiti	ozlovoljavati	embitter
/	ožučiti	??ožućivati	hassle
plašiti	uplašiti	/	scare
podsticati	podstaknuti	??podstaknjivati	spur
/	podstreknuti	podstreknjivati	boost
??sramiti	posramiti	posramljivati	debase
/	potresti	/	shake up
/	preneraziti	preneražavati	bewilder
	prepasti	prepadati	dismay

provocirati	isprovocirati	?isprovociravati	provoke
radovati	obradovati	/	delight
	raspomamiti	??raspomamljivati	lose control
/	rastužiti	rastuživati	deject
/	ražaliti	/	make sorrowful
žalostiti	ražalostiti	/	sadden
žestiti	ražestiti	/	outrage
/	razbesneti	/	enrage
/	razgoropaditi	??razgoropađivati	incense
/	razjariti	??razjarivati	inflammate
/	raznežiti	?razneživati	soften (emotionally)
/	razočarati	razočaravati	disappoint
/	razuzdati	razuzdavati	cause to go wild
vedriti	razvedriti	/	gladden
/	sablazniti	sablaznjavati	scandalize
šarmirati	šarmirati	/	charm
šokirati	šokirati	/	shock
sekirati	nasekirati	??nasekiravati	afflict
/	smiriti	smirivati	soothe
smarati	smoriti	/	smother
/	sneveseliti	??sneveseljivati	deject
sokoliti	osokoliti	osokoljavati	hearten
sramotiti	osramotiti	osramočivati	embarrass
srditi	rasrditi	rasrđivati	rile
/	staložiti	/	appease
stimulisati	stimulisati	/	stimulate
štrecati	štrecnuti	/	startle
tangirati	tangirati	/	concern
tentati	natentati	/	harass
tešiti	utešiti	/	comfort
tetošiti	potetošiti	/	pamper
doticati	dotaći	/	interest
tištati	potištati	??potištavati	ail
trezniti	otrezniti	?otrežnjivati	sobber up
/	ucveliti	/	devastate
/	udiviti	?udivljavati	enchant
/	unesrećiti	unesrećivati	make unhappy
/	uozbiljiti	?uozbiljavati	make serious
/	urazumiti	urazumljavati	make reasonable
/	ushitati	??ushićivati	thrill
/	usplahiriti	?usplahirivati	panic

/	uspokojiti	?uspokojavati	placate
/	usrećiti	?usrećivati	make happy
veseliti	uveseliti	uveseljavati	cheer up
/	užasnuti	užasavati	horrify
/	uzbuditi	uzbuđivati	excite
/	uznemiriti	uznemiravati	agitate
/	uzrujati	uzrujavati	disturb
žigati	žignuti	/	flinch
žuljati	nažuljati	nažuljavati	pinch
zabavljati	zabaviti	/	entertain
/	zabezeknuti	/	daze
/	zadiviti	?zadivljavati	fascinate
/	zadovoljiti	zadovoljaavat	satisfy
/	zapanjiti	zapanjivati	amaze
/	zaseniti	?zasenjivati	captivate
	zastrašiti	zastrašivati	intimidate
/	zblanuti	zblanjavati	astonish
žestiti	ražestiti	??ražešćivati	outrage
/	zgranuti	zgranjavati	appall

class 3			
imperfective	perfective	secondary imperfective	translation
/	dodijati	??dodijavati	bore
dopadati se	dopasti se	/	like
/	dosaditi	dosadivati	bother
gaditi se	zgaditi se	/	abhor
goditi	ugoditi	ugađati	please
imponovati	imponovati		flatter
?pakostiti	napakostiti	/	spite
nedostajti	/	/	miss
militi se	omiliti se	/	endear
prijati	/	/	appeal
škoditi	naškoditi	/	harm
smetati	zasmetati	/	discomfort
/	smučiti se	/	disgust

class 4

imperfective	perfective	secondary imperfective	translation
bojati se	?pobožati	?pobožavati	fear
čuditi se	začuditi se	začuđivati se	marvel
diviti se	zadiviti se	?zadivljavati se	admire
nadati se	ponadati se	/	hope
plašiti se	uplašiti se	/	fear
/	prepasti se	prepadati se	get dismayed
radovati se	obradovati se	/	rejoice
sramiti se	posramiti se	/	get ashamed
/	užasnuti se	užasavati se	get horrified
zavideti	pozavideti	/	envy

Appendix 4

The appendix contains tables showing the possibilities of deriving passive participles from different aspectual versions of individual verbs in each class. Each form is coded for acceptability with the standard symbols (?/?/*) used throughout the dissertation. The (!) symbol that is found with some participial forms in the table dedicated to Class 4 verbs indicates that the given form is possible, but that the given verb is also found in Class 2, so the participial form is quite probably licensed by the Class 2 version of the same verb rather than the Class 4 one.

Class 1			
imperfective	perfective	secondary imperfective	translation
cenjen	/	/	appreciate
*mržen	*zamržen (but omražen)	/	hate
obožavan	/	/	adore
?osećan	*osećan	/	feel
poštovan	ispoštovan	/	respect
??predosećan	??predosećen	/	foresee
preziran	prezren	/	despise
voljen	zavoljen	/	love
žaljen	ožaljen	/	pity/mourn
tolerisan	istolerisan	/	tolerate
?trpljen	istrpljen	??istrpljivati	endure

Class 2			
imperfective	perfective	secondary imperfective	translation
bodren	obodren	obodran	cheer
*boljen	*zaboljen	/	pain
*brinut	*zabrinut	??zabrinjavan	worry
*bunjen	zbunjen	zbunjivan	confuse
*čuđen	začuđen	začuđivan	bewonder

deprimiran	deprimiran	/	depress
destimulisan	destimulisan	/	instimulate
dezorijentisan	dezorijentisan		disorient
dotican	dotaknut	/	interest
*dražen	razdražen	razdraživan	irritate
frapiran	frapiran	/	stupefy
/	razgaljen	razgaljivan	humor
/	ganut	??ganjavan	touch (emotionally)
*gnevljen	??razgnevljen	/	infuriate
hipnotisan	hipnotisan		hyponotize
?hrabren	ohrabren	ohrabrivan	encourage
inspirisan	inspirisan		inspire
/	izbeumljen	??izbeumljivan	derange
*luđen	?izluđen	izluđivan	madden
/	iznenađen	iznenađivan	surprise
/	izneveren	izneveravan	betray
/	izopačen	??izopačavan	unhinge
*jedeđ	?najeđeđ	*najeđeđivan	upset
/	nakostrešeđ	??nakostrešeđavan	exasperate
?kuražeđ	okuražeđ	??okuražeđavan	embolden
??ljučeđ	??razljučeđ	??razljučeđivan	anger
maltretiran	izmaltretiran	/	mistreat
??mamljen	namamljen	??namamljivan	lure
motivisan	motivisan	/	motivate
/	nadahnut	?nadahnjivan	animate
*pačeđ	napačeđ	/	heckle
*rogušeđ	narogušeđ		exasperate
	naviknut	navikavan	get used to
?nerviran	iznerviran	*iznerviravan	annoy
/	obeshrabren	obeshrabrivan	discourage
/	obespokojen	?obespokojavan	unsettle
/	obuzdan	obuzdavan	pacify
/	očaran	očaravan	enchant
/	odobrovoljen	?odobrovoljavan	molify
/	odušeđljen	odušeđljivan	overawe
/	odviknut	odvikavan	break habit
/	oneraspoložeđ	??oneraspoložeđavan	dispirit
/	onespokojen	??onespokojavan	disrupt
/	??oneveseljen	??oneveseljavan	dampen
/	opčeđinjen	?opčeđinjavan	entice
	ošamučeđ	?ošamučeđivan	dazzle

/	ospokojen	??ospokojavan	assuage
/	ozlojeđen	??ozlojeđivan	begrude
/	ozlovoljen	??ozlovoljavan	embitter
/	ožučen	??ožučavan	hassle
plašen	uplašen	/	scare
podstican	podstaknut	*podstaknjivan	spur
/	podstreknut	*podstreknjivan	boost
*sramljen	posramljen	?posramljivan	debase
/	potrešen	/	shake up
/	preneražen	preneražavan	bewilder
	prepadnut	prepadan	dismay
provociran	isprovociran	*isprovociravan	provoke
??radovan	obradovan	/	delight
	raspomamljen	??raspomamljivan	lose control
/	rastužen	?rastuživan	deject
/	ražalljen	/	make sorrowful
??žalošćen	ražalošćen	/	sadden
??žešćen	ražešćen	/	outrage
/	razbešnjjen	/	enrage
/	razgoropađen	??razgoropađivan	incense
/	razjaren	??razjarivan	inflamm
/	raznežen	??razneživan	soften (emotionally)
/	razočaran	?razočaravan	disappoint
/	razuzdan	razuzdavan	cause to go wild
??vedren	?razvedren	/	gladden
/	sablažnjen	?sablažnjavan	scandalize
šarmiran	šarmiran	/	charm
šokiran	šokiran	/	shock
?sekiran	nasekiran	??nasekiravan	afflict
/	smiren	smirivan	soothe
?smaran	smoren	/	smother
/	sneveseljen	??sneveseljivan	deject
?sokoljen	osokoljen	osokoljavan	hearten
sramoćen	osramoćen	??osramoćivan	embarrass
*srđen	rasrđen	?rasrđivan	rile
/	staložen	/	appease
stimulisan	stimulisan	/	stimulate
??štrecan	štrecnut	/	startle
tangiran	istangiran	/	concern
tentan	natentan	/	harass
??tešen	utešen	/	comfort

tetošen	potetošen	/	pamper
??dotican	dotaknut	/	interest
*tištan	potišten	*potišťavan	ail
trežnjen	otrežnjen	*otrežnjavan	sobber up
/	ucveljen	/	devastate
/	udivljen	??udivljavan	enchant
/	unesrećen	?unesrećivan	make unhappy
/	uozbiljen	?uozbiljavan	make serious
/	urazumljen	?urazumljivan	make reasonable
/	ushićen	??ushićivan	thrill
/	usplahiren	??usplahiravan	panic
/	uspokojen	??uspokojavan	placate
/	usrećen	?usrećivan	make happy
??veseljen	uveseljen	uveseljavan	cheer up
/	užasnut	užasavan	horrify
/	uzbuđen	uzbuđivan	excite
/	uznemiren	uznemiravan	agitate
/	uzrujan	uzrujavan	disturb
*žigan	*žignut	/	flinch
*žuljan	nažuljan	*nažuljavati	pinch
?zabavljan	zabavljen	/	entertain
/	zabezeknut	/	daze
/	zadivljen	??zadivljavan	fascinate
/	zadovoljen	?zadovoljavan	satisfy
/	zapanjen	??zapanjivan	amaze
/	zasenjen	?zasenjivan	captivate
/	zastrašen	zastrašivan	intimidate
/	zblanut	zblanjavan	astonish
*žešćen	ražešćen	??ražešćivan	outrage
/	zgranut	?zgranjavan	appall

class 3			
imperfective	perfective	secondary imperfective	translation
/	*dodijan	*dodijavan	bore
??dopadan	*dopadnut	/	like
/	*dosaden	??dosadivan	bother
*gađen	zgađen	/	abhor
*gođen	??ugođen	??ugađan	please

*imponovan	*imponovan		flatter
*pakošćen	??napakošćen	/	spite
*nedostajan	/	/	miss
*miljen	omiljen	/	endear
*prijan	/	/	appeal
*škoden	??naškoden	/	harm
*smetan	*zasmetan	/	discomfort
/	*smučen	/	disgust

class 4			
imperfective	perfective	secondary imperfective	translation
*bojan	*pobojan	*pobojava	fear
čuđen	začuđen !	*začuđivan	marvel
*divljen	zadivljen !	*zadiviljavan	admire
*nadan	*ponadan	/	hope
plašen !	uplašen !	/	fear
/	prepadnut !	prepadan !	get dismayed
??radovan	obradovan !	/	rejoice
*sramljen	posramljen !	/	get ashamed
/	užasnut !	užasavan !	get horrified
*zaviđen	*pozaviđen	/	envy

Appendix 5

The appendix contains tables showing the possibilities of deriving *-nje* nominals from different aspectual versions of individual verbs in each class. Cells in each table contain *-nje* nominalizations derived from relevant verb forms along with the corresponding passive participle form. Each form, both nominal and participial, is coded for acceptability with the standard symbols (?/??/*) used throughout the dissertation. The (!) symbol that is found with some participial forms in the table dedicated to Class 4 verbs indicates that the given form is possible, but that the given verb is also found in Class 2, so the participial form is quite probably licensed by the Class 2 version of the same verb rather than the Class 4 one.

Class 1			
imperfective --> CENs	perfective --> RNs	secondary imperfective --> CENS	translation
cenjen --> cenjenje	/	/	appreciate
*mržen --> *mrženje	*zamržen (but omražen) -> *zamrženje	/	hate
obožavan --> obožavanje	/	/	adore
?osećan --> ?osećanje	*osećan --> *osećanje (possible only with the meaning 'emotion' without event implications)	/	feel
poštovan --> poštovanje	ispoštovan --> *ispoštovanje	/	respect
?predosećan --> predosećanje	??predosećen --> *predosećenje	/	foresee
preziran --> ?preziranje	prezren --> ??prezrenje	/	despise
voljen --> voljenje	zavoljen --> *zavoljenje	/	love
žaljen --> žaljenje	ožaljen --> *ožaljenje	/	pity/mourn
tolerisan --> tolerisanje	istolerisan --> *istolerisanje	/	tolerate
?trpljen --> trpljenje	istrpljen --> *istrpljenje	??istrpljivati	endure

Class 2			
imperfective --> CENS	perfective --> RNs	secondary imperfective -- > CENS	translation
bodren --> bordenje	obodren --> *obodrenje	obodran --> obodranje	cheer
*boljen --> boljenje	*zaboljen --> *zaboljenje	/	pain
*brinut --> *brinjenje	*zabrinut --> *zabrinuće	??zabrinjavan --> zabrinjavanje	worry
*bunjen --> bunjenje	zbunjen --> *zbunjenje	zbunjivan --> zbunjivanje	confuse
*čuđen --> čuđenje	začuđen --> začuđenje	začuđivan --> začuđivanje	bewonder
deprimiran --> deprimiranje	deprimiran --> *deprimiranje	/	depress
destimulisan --> destimulisanje	destimulisan --> *destimulisanje	/	instimulate
dezorijentisan --> dezorijentisanje	dezorijentisan --> *dezorijentisanje		disorient
dotican --> doticanje	dotaknut --> ??dotaknuće	/	interest
??dražen --> draženje	razdražen --> ??razdraženje	razdraživan --> razdraživanje	irritate
frapiran --> frapiranje	frapiran -->*frapiranje	/	stupefy
/	razgaljen --> *razgaljenje	razgaljivan --> razgaljivanje	humor
/	ganut --> ?ganuće	??ganjavan --> ?ganjavanje	touch (emotionally)
*gnevljen --> *gnevljenje	??razgnevljen --> *razgnevljenje	/	infuriate
hipnotisan --> hipnotisanje	hipnotisan --> *hipnotisanje		hyponotize
?hrabren --> hrabrenje	ohrabren --> ohrabrenje	ohrabrivan --> ohrabrivanje	encourage
inspirisan --> inspirisan	inspirisan --> *inspirisanje		inspire
/	izbeumljen --> izbeumljenje	??izbeumljivan --> izbeumljivanje	derange
*luđen --> *luđenje	?izluđen --> *izluđenje	izluđivan --> izluđivanje	madden
/	iznenađen --> iznenađenje	iznenađivan --> iznenađivanje	surprise
/	izneveren --> ??izneverenje	izneveravan --> izneveravanje	betray

/	izopačen --> izopačenje	??izopačavan --> izopačavanje	unhinge
*jedeń --> *jedeńje	?najeđen --> *najeđenje	*najeđivan --> najeđivanje	upset
/	nakostrešen --> *nakostrešenje	??nakostrešavan --> ?nakostrešavanje	exasperate
?kuražen --> kuraženje	okuražen --> *okuraženje	??okuražavan --> ?okuražavanje	embolden
??ljućen --> ?ljućenje	??razljućen --> *razljućenje	??razljućivan --> ?razljućivanje	anger
maltretiran --> maltretiranje	izmaltretiran --> *izmaltretiranje	/	mistreat
??mamljen --> mamljenje	namamljen --> *namamljenje	??namamljivan --> ?namamljivanje	lure
motivisan --> motivisanje	motivisan --> *motivisanje	/	motivate
/	nadahnut --> nadahnuće	?nadahnjivan --> nadahnjivanje	animate
*paćen --> paćenje	napaćen --> *napaćenje	/	heckle
*rogušen --> rogušenje	narogušen --> *narogušenje		exasperate
	naviknut --> ??naviknuće	navikavan --> navikavanje	get used to
?nerviran --> nerviranje	iznerviran --> *iznerviranje	*iznerviravan --> ??iznerviravanje	annoy
/	obeshrabren --> obeshrabrenje	obeshrabrivan --> obeshrabrivanje	discourage
/	obespokojen --> ?obespokojenje	?obespokojavan --> obespokojavanje	unsettle
/	obuzdan --> *obuzdanje	obuzdavan --> obuzdavanje	pacify
/	očaran --> očaranje	očaravan --> očaravanje	enchant
/	odobrovoljen --> =?odobrovoljenje	?odobrovoljavan --> odobrovoljavanje	molify
/	oduševljen --> oduševljenje	oduševljavan --> oduševljavanje	overawe
/	odviknut --> ??odviknuće	odvikavan --> odvikavanje	break habit
/	oneraspoložen --> *oneraspoloženje	??oneraspoložavan --> ?oneraspoložavanje	dispirit
/	onespokojen --> ??onespokojenje	??onespokojavan --> ?onespokojavanje	disrupt
/	??oneveseljen --> *oneveseljenje	??oneveseljavan --> ?oneveseljavanje	dampen
	općinjen --> općinjenje	?općinjavan --> općinjavanje	entice

	ošamućen --> ošamućenje	?ošamućivan --> ošamućivanje	dazzle
/	ospokojen --> ??ospokojenje	??ospokojavan --> ?ospokojavanje	assuage
/	ozlojeđen --> ??ozlojeđenje	??ozlojeđivan --> ??ozlojeđivanje	begrupe
/	ozlovoljen --> ??ozlovoljenje	??ozlovoljavan --> ?ozlovoljavanje	embitter
/	ožučen --> ?ožučenje	??ožučavan --> ožučavanje	hassle
plašen --> plašenje	uplašen -->*uplašenje	/	scare
podstican --> podsticanje	podstaknut --> ??podstaknuće	*podstaknjivan --> *podstaknjivanje	spur
/	podstreknut --> ??podstreknuće	*podstreknjivan --> *podstreknjivanje	boost
*sramljen --> *sramljenje	posramljen --> ??posramljenje	?posramljivan --> posramljivanje	debase
/	potrešen --> *potrešenje	/	shake up
/	preneražen --> preneraženje	preneražavan --> preneražavanje	bewilder
	prepadnut --> *prepadnuće	prepadan --> prepadanje	dismay
provociran --> provociranje	isprovociran --> ??isprovociranje	*isprovociravan --> ??iisprovociranje	provoke
??radovan --> radovanje	obradovan --> *obradovanje	/	delight
	raspomamljen --> ??raspomamljenje	??raspomamljivan --> ?raspomamljivanje	lose control
/	rastužen --> ??rastuženje	?rastuživan --> rastuživanje	deject
/	ražaljjen --> ??ražaljenje	/	make sorrowful
??žalošćen --> žalošćenje	ražalošćen --> *ražalošćenje	/	sadden
??žešćen --> žešćenje	ražešćen --> ??ražešćenje	/	outrage
/	??razbešnjjen --> *razbešnjjenje	/	enrage
/	razgoropađen --> ??razgoropađenje	??razgoropađivan --> ??razgoropađivanje	incense
/	razjaren --> ??razjarenje	??razjarivan --> ?razjarivanje	inflamm
/	raznežen --> razneženje	??razneživan --> ?razneživanje	soften (emotionally)
/	razočaran --> razočaranje	?razočaravan --> razočaravanje	disappoint

/	razuzdan --> ??razuzdanje	razuzdavan --> razuzdavanje	cause to go wild
??vedren --> ??vedrenje	?razvedren --> *razvedrenje (possible only with a non-psych meaning)	/	gladden
/	sablažnjen --> sablažnjenje	?sablažnjava --> sablažnjavanje	scandalize
šarmiran --> šarmiranje	šarmiran --> *šarmiranje	/	charm
šokiran --> šokiranje	šokiran --> *šokiranje	/	shock
?sekiran	nasekiran --> *nasekiranje	??nasekiravan --> ?nasekiravanje	afflict
/	smiren --> smirenje	smirivan --> smirivanje	soothe
?smaran --> smaranje	smoren --> *smorenje	/	smother
/	sneveseljen --> ??sneveseljenje	??sneveseljivan --> ?sneveseljavanje	deject
?sokoljen --> sokoljenje	osokoljen --> *osokoljenje	osokoljava --> osokoljavanje	hearten
sramoćen --> sramoćenje	osramoćen --> ?osramoćenje	??osramoćivan --> ?osramoćivanje	embarrass
*srđen --> *srđenje	rasrđen --> *rasrđenje	?rasrdivan --> rasrdivanje	rile
/	staložen --> *staloženje	/	appease
stimulisan --> stimulisanje	stimulisan --> *stimulisanje	/	stimulate
??štrecan --> štrećanje	štrećnut --> *štrećnuće	/	startle
tangiran --> tangiranje	istangiran --> *istangiranje	/	concern
tentan --> tentanje	natentan --> *natentanje	/	harass
??tešen --> tešenje	utešen --> *utešenje	/	comfort
tetošen --> tetošenje	potetošen --> *potetošenje	/	pamper
??dotican --> doticanje	dotaknut --> *dotaknuće	/	interest
*tištan --> ??tištanje	potišten --> *potištenje	*potištav --> ??potištavanje	ail
trežnjen --> trežnjenje	otrežnjen --> ptrežnjenje	*otrežnjava --> ?otrežnjivanje	sobber up
/	ucveljen --> ?ucveljenje	/	devastate
/	udivljen --> udivljenje	??udivljava --> ?udivljavanje	enchant
/	unesrećen --> *unesrećenje	?unesrećivan --> unesrećivanje	make unhappy

/	uozbiljen --> ??uozbiljenje	?uozbiljavan --> uozbiljavanje	make serious
/	urazumljen --> ?urazumljenje	?urazumljivan --> urazumljivanje	make reasonable
/	ushićen --> ushićenje	??ushićivan --> ?ushićivanje	thrill
/	usplahiren --> ??usplahirenje	??usplahiravan --> ?usplahiravanje	panic
/	uspokojen --> ??uspokojenje	??uspokojavan --> ?uspokojavanje	placate
/	usrećen --> *usrećenje	?usrećivan --> usrećivanje	make happy
??veseljen --> veseljenje	uveseljen --> ??uveseljenje	uveseljavan --> uveseljavanje	cheer up
/	užasnut --> ?užasnuće	užasavan --> užasavanje	horrify
/	uzbuđen --> uzbuđenje	uzbuđivan --> uzbuđivanje	excite
/	uznemiren --> uznemirenje	uznemiravan --> uznemiravanje	agitate
/	uzrujan --> uzrujanje	uzrujavan --> uzrujavanje	disturb
*žigan --> žiganje	*žignut --> *žignuće	/	flinch
*žuljan --> žuljanje	nažuljan --> ?nažuljanje	*nažuljavati --> ??nažuljavanje	pinch
?zabavljan --> zabavljanje	zabavljen --> *zabavljenje	/	entertain
/	zabezeknut --> ??zabezeknuće	/	daze
/	zadivljen --> ??zadivljenje	??zadivljava --> ?zadivljavanje	fascinate
/	zadovoljen --> zadovoljenje	?zadovoljavan --> zadovoljavanje	satisfy
/	zapanjen --> ??zapanjenje	??zapanjivan --> ?zapanjivanje	amaze
/	zasenjen --> *zasenjenje	?zasenjivan --> zasenjivanje	captivate
	zastašen --> zastašenje	zastašivan --> zastašivanje	intimidate
/	zblanut --> ??zblanuće	zblanjavan --> zblanjavanje	astonish
*žešćen --> ??žešćenje	ražešćen --> *ražešćenje	??ražešćivan --> ?ražešćivanje	outrage
/	zgranut --> *zgranuće	?zgranjavan --> zgranjavanje	appall

class 3

imperfective --> CENS	perfective --> RNs	secondary imperfective --> CENS	translation
/	*dodijan --> *dodijanje	*dodijavan --> *dodijavanje	bore
??dopadan --> dopadanje	*dopadnut --> *dopadnuće	/	like
/	*dosaden --> *dosadenje	??dosađivan --> dosađivanje	bother
*gađen --> gađenje	zgađen --> *zgađenje	/	abhor
*gođen --> *gođenje	??ugoden --> *ugodenje	??ugađan --> ugađanje	please
*imponovan --> ??imponovanje	*imponovan --> *imponovanje		flatter
*pakošćen --> *pakošćenje	??napakošćen --> napakošćenje	/	spite
*nedostajan --> nedostajanje	/	/	miss
*miljen --> *miljenje	omiljen --> *omiljenje	/	endear
*prijan --> *prijanje	/	/	appeal
*škođen --> *škođenje	??naškođen --> *naškođenje	/	harm
*smetan --> smetanje (with the meaning "disruption/interference")	*zasmetan --> *zasmetanje	/	discomfort
/	*smućen	/	disgust

class 4			
imperfective --> CENS	perfective --> RNs	secondary imperfective --> CENS	translation
*bojan --> *bojanje	*pobojan --> *pobojanje	*pobojavan --> *pobojavanje	fear
*čuđen --> čuđenje	začuđen ! --> *začuđenje	*začuđivan --> začuđivanje	marvel
*divljen --> divljenje	zadivljen ! --> *zadivljenje	*zadiviljavan --> ??zadiviljavanje	admire
*nadan --> nadanje	*ponadan --> *ponadanje	/	hope
plašen ! --> plašenje	uplašen ! --> *uplašenje	/	fear

/	prepadnut ! --> *prepadnuće	prepadan ! --> prepadanje	get dismayed
??radovan --> radovanje	obradovan ! --> *obradovanje	/	rejoice
*sramljen --> *sramljenje	posramljen ! --> *posramljenje	/	get ashamed
/	užasnut ! --> užasnuće	užasavan ! --> užasavanje	get horrified
*zaviden --> *zavidenje	*pozaviden --> *pozavidenje	/	envy