

Tel Aviv University
The Lester & Sally Entin Faculty of Humanities
The Shirley & Leslie Porter School of Cultural Studies

**Arity Operations: Domain of application
A comparative study of Slavic Languages**

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by

David Hron

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Prof. Julia Horvath

Prof. Tali Siloni

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Abstract

It is widely known that there is often more than one verbal realization (transitive, reflexive, unaccusative, etc.) of one and the same concept, and it is also widely accepted that these realizations are derivationally linked by means of different valence-changing operations. Another well-known fact is that many verbal realizations have counterparts in the domain of nouns and adjectives, the traditional analysis of these nouns and adjectives being that they are derived directly from their verbal counterparts through the process of nominalization and adjectivization, respectively.

The present study examines the possibility that valence-changing operations are available not only in the domain of verbs, but also in the domain of nouns and adjectives. In other words, the present study sets out to explore the possibility that nouns and adjectives are not necessarily derived directly from their verbal counterparts, the alternative derivational scenario being that their derivation is in a sense independent of - but crucially parallel to - derivational processes that apply in the verbal domain.

Specifically, while focusing mainly on Czech and other Slavic languages, I argue that reflexive and reciprocal nouns in West Slavic languages (Czech, Polish, and Slovak) are not derived directly from their reflexive and reciprocal verbal counterparts, but rather from transitive nouns, via exactly the same valence-changing operation as is responsible for the derivation of reflexive and reciprocal verbs from transitive verbs. As far as the adjectival domain is concerned, the dissertation establishes that valence-changing operations can also operate here. I begin by examining Slavic adjectival passives from the perspective of a split observed recently by Meltzer (2006, 2009, 2011) within the set of adjectival passives in Hebrew, namely, the split between *true adjectival passives* and *adjectival decausatives*; I show that this split is relevant for all ten Slavic languages in our sample, providing robust empirical support for the assumption that Meltzer's discovery is valid beyond the case of Hebrew, as well as for its much more general nature. Subsequently, focusing mainly on Czech adjectival decausatives, I argue that these adjectives are derived via the same valence-changing operation as the one involved in the derivation of unaccusative and subject-experiencer verbs.

The empirical findings presented lead to several particular generalizations and theoretical conclusions. The most important of these claims, which arises from the survey of Slavic reflexive, reciprocals and middle verbs, is that these verbal formations represent robust empirical support for the existence of the Lex-syn parameter (Reinhart & Siloni 2004, 2005). Since the parameter enables certain arity operations to apply in the lexicon, the support for the parameter also constitutes support for a model of grammar in which the lexicon is an active module (Siloni 2002), contrary to recently popular theories (e.g. Marantz 1997, 2000, Borer 2005), which degrade the role of the lexicon to a mere storehouse of minimal building blocks (roots) and transfer the whole derivational burden to the syntax.

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Chapter 1

Introduction

1.1 The field of the study and its main goals

It is widely known fact that across languages there is often more than one verbal realization of the same abstract concept. The following series of randomly chosen examples illustrates this phenomenon briefly; for the sake of clarity the examples are taken from Hebrew, since this language usually has distinct morphological forms for distinct verbal realizations (unlike English, for instance).

(1) Different verbal realizations of the same concept I

- | | |
|--|--|
| (ai) Dani ikem et ha-mot.
Dani bent et _{Acc-marker} the-rod
'Dani bent the rod.' | (aii) Ha-mot hitakem.
the-rod became-bent
'The rod became bent.' |
| (bi) Ha-jeled serek et Dani.
the-boy combed et _{Acc-marker} Dani
'The boy combed Dani.' | (bii) Dani histarek.
Dani combed _{Ref}
'Dani combed himself.' |

The concept of *bending* is realized as the transitive verb *ikem* in (1ai) and as the unaccusative verb *hitakem* in (1aii). Both of these verbs represent realizations of the same concept as both of them denote the event of *bending*. They differ, however, with respect to how this common concept (event) is denoted. The transitive verb in (1ai) selects two arguments, namely, the subject *Dani* and the object *ha-mot* ('the rod'), and its interpretation is that it was *Dani* who caused *the rod* to be bent. The unaccusative verb in (1aii), on the other hand, selects only one argument, namely the subject *the rod*, and its interpretation is that *the rod* underwent the event of becoming bent by itself, the cause of this event being missing in the syntax as well as in the semantics. Another example of two different verbal realizations of the same concept is presented in (1b), this time for the concept of *combing*, which is realized

as the transitive verb *serek* in (1bi) and as the reflexive verb *histarek* in (1bii). Like (1ai), the transitive verb in (1bi) selects two arguments, namely the subject *ha-jeled* ('the boy') and the object *Dani*, its interpretation being that *the boy* caused *Dani* to be combed. The reflexive verb in (1bii) selects only one argument, namely the subject *Dani*. Unlike the single argument in (1aii), however, the subject in (1bii) is not interpreted as having undergone the event of becoming combed by itself, i.e. that *Dani* became combed without something or somebody causing it. Rather, the subject is understood as being both the entity that caused the event and the entity that underwent the event, i.e., that *Dani* combed himself.

The number of different realizations of the same concept is not necessarily limited to two as could be perhaps concluded from the examples in (1)¹. The following examples manifest that the concept of *destroying*, for instance, can have seven different realizations in Czech – transitive (i), passive (ii), unaccusative (iii), reflexive (iv), reciprocal (v), middle (vi), and impersonal passive (vii).

(2) Different verbal realizations of the same concept II

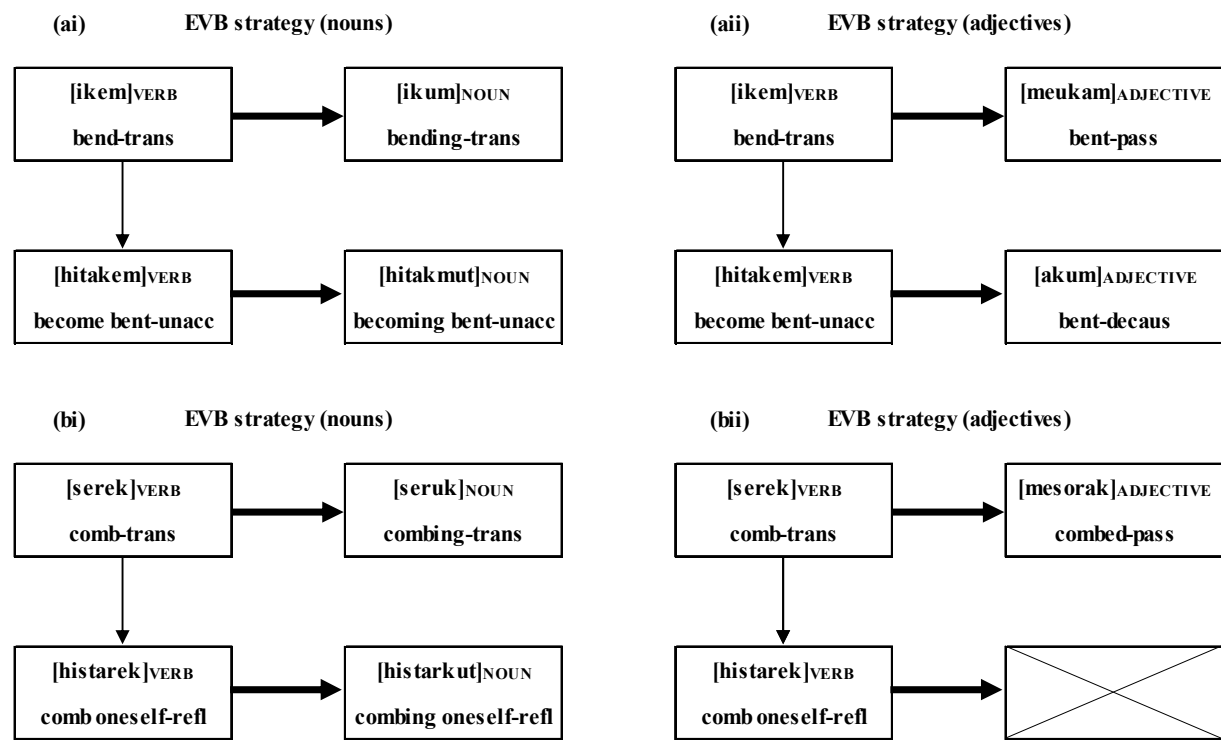
- (i) Petr zničil všechny hračky.
Petr destroyed all toys
'Petr destroyed all the toys.'
- (ii) Všechny hračky byly zničeny.
all toys were destroyed_{-pass}
'All the toys were destroyed.'
- (iii) Všechny hračky se zničily.
All toys SE destroyed
'All the toys became destroyed.'
- (iv) Petr se zničil.
Petr SE destroyed
'Petr destroyed himself.'
- (v) Petr a Pavel se zničili.
Petr and Pavel SE destroyed
'Petr and Pavel destroyed each other.'
- (vi) Pneumatiky se na špatných silnicích rychle ničí.
tires SE on bad roads quickly destroy
'Tires quickly become destroyed on bad roads.'
- (vii) Na vrakovišti se ničí stará auta.
on junkyard SE destroy old cars
'Old cars are destroyed in junkyard'

¹ In fact, the concepts of *bending* and *combing* in (1) also have a passive realization in Hebrew.

It is commonly agreed that these (and some other) verbal alternations are derivationally linked, although particular proposals can differ with respect to the locus of the derivation and its direction². The existence of the following *arity operations* (i.e., valence changing processes) will be assumed in the present study: reflexivization (Reinhart 2002, Reinhart&Siloni 2004, 2005), reciprocalization (Siloni 2012), saturation (Chierchia 2004, Reinhart 2002, Reinhart&Siloni 2004) and decausativization (Reinhart 2002, Reinhart&Siloni 2004 and Horvath&Siloni 2011), the common denominator being that they all took a transitive verb as their input.

Another widely known fact is that event nouns and adjectival passives share the same or closely related argument structure with their verbal counterparts (among others see e.g. Chomsky 1970, Grimshaw 1990, Szabolcsi 1994 for argument structure of nouns, and Cinque 1990, Baker 2003 and Meltzer 2011 for argument structure of adjectives). This similarity is traditionally considered to be a result of the application of the nominalization / adjectivization process to the corresponding verb. In the course of this study I will call this traditionally assumed, but actually never justified, derivational strategy *exclusively verb based derivation* (EVB). EVB of nominal and adjectival counterparts of Hebrew verbs in (1) can be graphically depicted as follows:

(3) Traditionally assumed exclusively verb based derivation of event nouns and adjectival passives



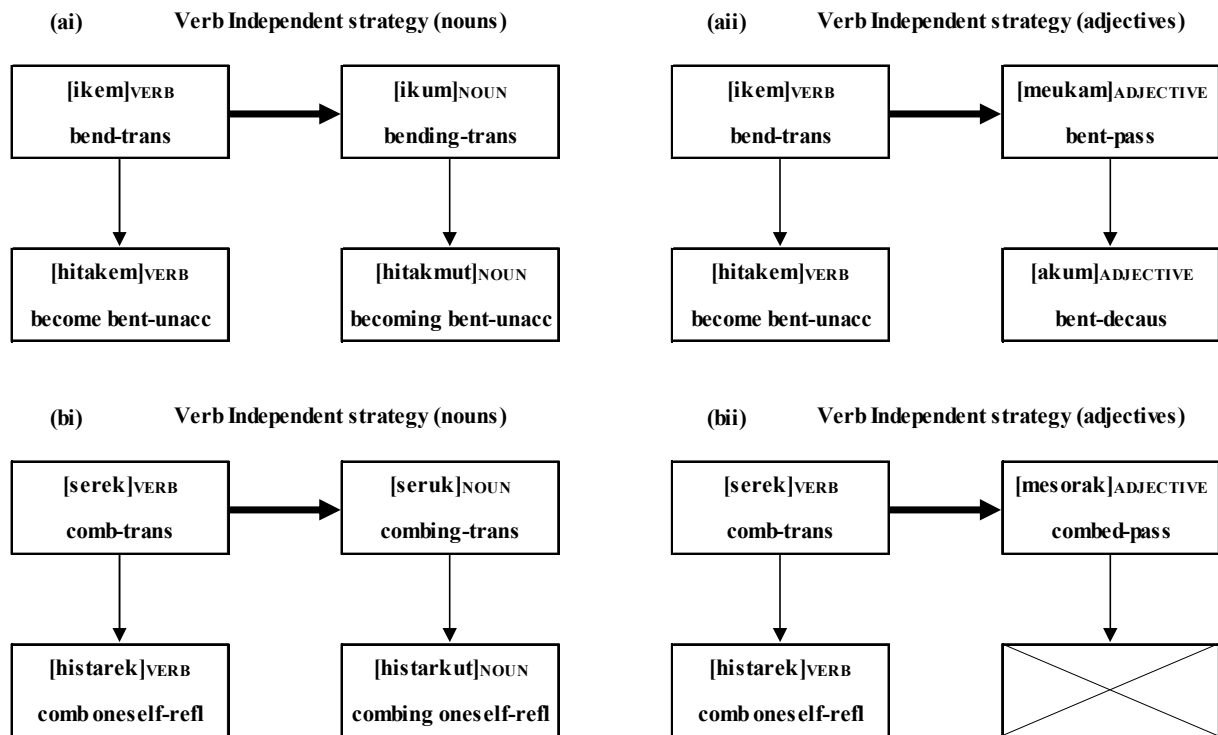
² For instance, Pylkkanen (2002, 2008) claims that transitive verbs are derived from their unaccusative alternates in the syntax, while Levin & Rappaport (1995) argue in favor of a lexical derivation of unaccusative verbs from their transitive alternates.

In (3a) we have the transitive verb *ikem* ('bend'), which can be targeted by an arity operation (thin vertical arrow), giving rise to the unaccusative alternate *hitakem* ('become bent'). Both these verbs, i.e., the transitive *ikem* and the unaccusative *hitakem*, can undergo the process of nominalization (bold horizontal arrow in (3ai)) resulting in the transitive noun *ikum* ('bending') or the unaccusative noun *hitakmut* ('becoming bent'), respectively. Furthermore, both of these verbs can also undergo the process of adjectivization (bold horizontal arrow in (3aii)), this time resulting in the true adjectival passive *meukam* ('bent') and the adjectival decausative *akum* ('bent'); for the preliminary distinction between these two adjectival classes see the following subsection. The figures in (3b) can be described in exactly the same way. That is, here we have the transitive verb *serek* ('comb'), which can be targeted by an arity operation (thin vertical arrow), giving rise to the reflexive alternate *histarek* ('comb oneself'). Both of these verbs, i.e., the transitive *serek* and the reflexive *histarek*, can undergo the process of nominalization (bold horizontal arrow in (3bi)), resulting in the transitive noun *seruk* ('combing') or the reflexive noun *histarkut* ('combing oneself'), respectively. Additionally, the process of adjectivization (bold horizontal arrow in (3bii)) can apply as well, albeit this time only the transitive verb *serek* can serve as the adjectivization input, giving rise to the true adjectival passive *mesorak* ('combed').

The field of the present study lies at the intersection of the two widely known facts mentioned above, i.e., (i) that often more than one verbal realization of the same abstract concept exists, and (ii) that event nouns and adjectival passives share the same argument structure with their verbal counterparts. Focusing on Czech and other Slavic languages, **the main goal** of this study is to examine an alternative derivational option for event nouns and adjectival passives. This derivational strategy crucially differs from the EVB in (3) in that it allows different arity operations to apply not only in the verbal domain, but also in the domain of event nouns and adjectival passives. I will call this derivational scenario *verb independent derivation*, and it is graphically depicted in (4). As can be seen clearly, the verb independent derivation gives rise to exactly the same nouns and adjectives as EVB in (3), but the derivational history of some of these nouns and adjectives is different. For instance, the immediate derivation base of the noun *hitakmut* ('becoming bent') in (4ai) is not its verbal unaccusative counterpart *hitakem* ('become bent') as in (3ai), but rather its transitive nominal alternate *ikum* ('bending'), which has been targeted by the same arity operation as the operation involved in the derivation of the verb *hitakem* from its transitive verbal alternate

ikem ('bend'). Similarly, in (4a_{ii}), the verb *hitakem* does not serve as a derivational base for the derivation of the adjectival decausative *akum* ('bent'), in contrast to (3a_{ii}); instead, this adjective is again derived via the same arity operation as the operation which applies in the verbal domain, its immediate derivational base (input) being its true adjectival passive counterpart *meukam* ('bent'). Note also that under the verb independent derivational scenario for the formation of the noun *hitakmut* (4a_i), the adjective *akum* (4a_{ii}), and the noun *histarkut* (4b_i), the actual process of nominalization / adjectivization constitutes only one of two derivational steps.

(4) Verb independent derivation of event nouns and adjectival passives



1.2 The layout of the study and its main claims

Chapter 2 is devoted to reflexive and reciprocal verbs in ten major Slavic languages. As we will see, the properties of these two classes of Slavic verbs are not uniform. Instead, it appears that Slavic reflexive and reciprocal verbs systematically display two different, contrasting sets of properties, depending on the morphological inventory of a given language. Specifically, we will observe that languages, which have the clitic SE at their disposal (West and South Slavic languages) (i) form reflexive and reciprocal verbs productively, (ii) their

dative reflexive and reciprocal verbs are able to license an accusative (direct) object, (iii) allow reflexive and reciprocal ECM structures, (iv) their reciprocal verbs do not necessarily express one symmetric reciprocal event, but are also able to denote a reciprocal sequence of two or more asymmetric sub-events, and (v) their reciprocal verbs in general do not license so-called discontinuous constructions. On the other hand, languages that do not have the clitic SE and their reflexive and reciprocal verbs involve the morpheme SJA (East Slavic Languages) display opposite properties, namely: (i) the formation of reflexive and reciprocal verbs in these languages is not productive, (ii) these languages have no dative reflexives and only sporadic cases of dative reciprocals, which are, however, unable to license an accusative (direct) object, (iii) they do not allow reflexive and reciprocal ECM structures, (iv) their reciprocal verbs necessarily express one symmetric reciprocal event, and (v) their reciprocal verbs do license discontinuous constructions.

After presenting the data I will argue that the above outlined robust divergence can be attributed to the non-uniform setting of the Lex-syn parameter (Reinhart & Siloni 2004, 2005) among Slavic languages. More specifically, following Reinhart & Siloni (2004, 2005) and Siloni (2002, 2008, 2012), I will show that the different behavior of reflexive and reciprocal verbs in West and South Slavic languages (as opposed to East Slavic languages) receives a straightforward and elegant account if one assumes that the former derive their reflexive and reciprocal verbs in the syntax, while in the latter reflexive and reciprocal verbs are formed pre-syntactically, i.e., in the lexicon.

Chapter 3 is closely related to Chapter 2 and it focuses on the existence of reflexive and reciprocal event nouns in the three West Slavic languages, Czech, Polish and Slovak. Building on the results of our discussion in Chapter 2, i.e., the conclusion that reflexive and reciprocal verbs are derived syntactically in these languages, I will argue that Czech, Polish, and Slovak reflexive and reciprocal event nouns are not derived "directly" from their verbal counterparts. Specifically, I will argue that their derivation is not exclusively verb based (3), but rather that they are formed from transitive nouns via the same arity operations as the operations that are involved in the derivation of reflexive and reciprocal verbs; their derivation thus matches verb independent derivational scenario (4). Moreover, we will see that these nouns display exactly the same properties as the properties that are typical for syntax type languages. This finding thus also constitutes further support for the existence of the Lex-syn parameter in the sense that the setting of the parameter seems to determine the

locus of the formation of reflexive and reciprocal formations not only in the verbal domain, but also in the domain of nouns.

In **Chapter 4** we will turn to Slavic adjectival passives, which will be examined from the perspective of a split observed recently by Meltzer (2006, 2009, 2011) within the set of adjectival passives in Hebrew. Specifically, Meltzer discovered that some Hebrew adjectival passives must involve an external theta role of their derivational base, a fact that has not been detected in the field of inquiry of adjectival passives so far. Although the external theta role of this sub-class of adjectival passives is not realized syntactically, it is nonetheless present in the semantics - where it is assigned to an existentially closed variable, since these adjectives are able to license agent testing elements, such as agent oriented modifiers, instruments and by-phrases. Based on this observation, Meltzer proposes that there are in fact two classes of adjectival passives in Hebrew, which she labels *true adjectival passives* and *adjectival decausatives*, the licensing of agent-testing elements being available for the former, but not the latter class. Meltzer further proposes that this dichotomy arises from different derivational histories for these two adjectival classes. More precisely, she claims that the derivation of true adjectival passives involves the same arity operation as the operation participating in the derivation of verbal passives, namely the operation of saturation (Chierchia 2004, Reinhart & Siloni 2004), while the derivation of adjectival decausatives involves the same arity operations as the operation deriving verbal unaccusatives, namely the operation of decausativization (Reinhart 2002, Reinhart & Siloni 2004). Meltzer emphasizes this parallelism between the verbal and the adjectival domain, since she assumes that the derivational base for both true adjectival passives and adjectival decausatives is an appropriate root unspecified for its category, rather than an appropriate verbal counterpart; albeit there is actually no real justification for such a derivational scenario in her work. Put differently, Meltzer actually does not discuss the derivation of the true adjectival passives and adjectival decausatives, and her distinction between the two classes holds regardless of whether their derivation is exclusively verb based (3) or verb independent (4).

Looking at Slavic adjectival passives, we will first see that the split between the true adjectival passives and adjectival decausatives, observed by Meltzer for Hebrew, is relevant for all ten Slavic languages in our sample, providing robust empirical support for the assumption that Meltzer's discovery is valid beyond the case of Hebrew, and for its much more general nature. We will subsequently establish that certain Czech adjectival decausatives (and according to preliminary research, certain adjectival decausatives in several other Slavic languages, as well) display a very systematic morphological peculiarity, which

seems to indicate that in Czech (and perhaps other Slavic languages) the operation of decausativization is indeed available in the adjectival domain (as suggested by Meltzer's work on Hebrew).

Chapter 5 is a natural continuation of Chapter 4 in that the question of the derivational history of Czech true adjectival passives and adjectival decausatives is approached directly (unlike Chapters 2, 3, and 4, Chapter 5 addresses only Czech data). Our inquiry will take advantage of the relatively miscellaneous realization possibilities of Czech experiencer formations, with special focus on those formations whose external (Cause) role is "frozen" (i.e., inert) (Friedmann 2000, Reinhart 2002, Horvath & Siloni 2008). I will argue that the operation of decausativization is available in the adjectival domain in Czech, targeting the output of the previously applied process of adjectivization. As far as the operation of saturation is concerned, it appears that there is no real justification for assuming that it is available in the adjectival domain. I will therefore suggest that the work of saturation is achieved through the process of adjectivization itself, the output of this process being a true adjectival passive.

The chapter also formulates some specific working hypotheses, to be left for future investigation, regarding the availability of the operation of decausativization in the nominal domain and regarding the input of the actual processes of nominalization and adjectivization.

In sum, the present study aims to contribute modestly to linguistic research with the following **claim**:

Arity operations are not only relevant for the derivation of different verbal alternates, but are available in the domain of event nouns and adjectival passives as well. Specifically, we argue (i) that the operations of reflexivization and reciprocalization apply in the nominal domain in Czech, Polish and Slovak, and (ii) that the operation of decausativization applies in the adjectival domain in Czech.

Beyond that, the present study advances and motivates **several particular claims** in the course of the discussion. These claims are:

i) Slavic reflexive, reciprocal, and middle verbs represent robust empirical support for the existence of the Lex-syn parameter. Moreover, since the parameter enables certain arity operations to apply in the lexicon, the support for the parameter constitutes also a support for

a model of grammar in which the lexicon is an active module (Siloni 2002), contrary to recently popular theories (e.g. Marantz 1997, 2000, Borer 2005), which degrade the role of the lexicon to a mere storehouse of minimal building blocks (roots) and transfer the whole derivational burden to the syntax (Chapter 2).

ii) Non-realized external arguments of Czech event nouns are syntactically active. This state of affairs strongly suggests that in these cases the external theta role of Czech nominals is not assigned to the variable in the semantics (as argued, e.g., in Siloni & Preminger 2009 for Hebrew), but is discharged in the syntax to PRO (for a similar conclusion see, e.g., Szabolcsi's 1994 analysis of Hungarian nominals) (Chapter 3).

iii) True adjectival passives and adjectival decausatives in Slavic languages both entail a prior event; moreover, the event entailed by true adjectival passives is transitive/passive, while the event denoted by adjectival decausatives is unaccusative. Slavic languages thus differ in this respect from Hebrew, where, as reported by Meltzer (2006, 2009, 2011), the event entailment depends on the presence of an external argument in the semantics, and therefore only true adjectival passives entail a prior event (Chapter 4).

iv) The Subject-matter role in Czech displays properties that are very similar to the properties typical for Instruments, in contrast with the situation in Italian, English and Hebrew, as reported by Belletti & Rizzi (1988), Pesetsky (1995) and Reinhart (2002) (Chapter 5).

Before starting in earnest, two rather technical notes seem appropriate:

First, while exploring the possibility that valence-changing operations are available not only in the domain of verbs, but also in the domains of nouns and adjectives, one cannot avoid discussing a variety of miscellaneous linguistic phenomena. The abundance of details and particular analyses presented in the course of the discussion may render the study a little demanding to follow. For that reason there are short summary sections in the end of Chapters 2, 3, and 4. All of these sections summarize the main achievement of a given chapter, briefly recapitulate the argumentation, and last but not least, remind the reader the main purpose of the dissertation as a whole. (The final section of Chapter 5 summarizes the main achievement of the chapter without repeating the whole argumentation path; instead, it formulates three working hypotheses for further research.)

Second, the title of the study promises a comparative study of Slavic languages. Upon review of the dissertation, a reader may, however, get the impression that this comparative approach is practically restricted to Chapter 2, while Czech dominates the rest, as only a brief outlook on other Slavic languages appears in the end of Chapters 3 and 4, and no cross-linguistic extension is at all offered in Chapter 5. Indeed, the manner in which the data from different languages are approached and presented is uneven over the course of the dissertation. There are two major reasons for this asymmetry: First, Chapter 2 utilizes the well-established Lex-syn parameter framework, and its main goal is to enlarge the sample of languages which have been tested for parameter-setting so far. The other chapters of the dissertation (including Chapter 5) try to make a modest step toward less explored fields of linguistic inquiry, so that the actual cross-linguistic research has been less dominant. The validity of the conclusions reached in Czech has been, nevertheless, checked for other Slavic languages as well (with the exception of Chapter 5), although the field work has not been as exhaustive³. Second, Chapter 2 shows a split among all Slavic languages, while the other Chapters (except Chapter 5) show phenomena which seem to be universally valid across the whole Slavic family⁴; this in turn allows a somewhat easier way of presentation – the picture is built up on the base of a single language, while data from other languages is relatively briefly demonstrated in the end. It is nonetheless possible, however, that a more thorough investigation of other Slavic languages can bring about further and finer insights into the phenomena discussed in Chapters 3, 4, and especially Chapter 5, which - as pointed out – is indeed restricted exclusively to Czech.

³ The phenomena discussed in Chapter 2 have been checked thoroughly for each one of the languages; I worked with 1 – 5 informants for each language, who were asked for judgments on approximately 200 different sentences. The work with (non-Czech) data in Chapters 3 and 4 was less thorough in the sense that I worked with fewer informants for each language (1-3) who were asked to evaluate only 25-30 sentences.

⁴ In fact, the picture arising from Chapter 3 is not homogenous either – there are reflexive and reciprocal nouns in the West Slavic languages but there are no such nominal formations in the South Slavic languages. I believe that this dichotomy can be explained on independent grounds and I leave it open for further research; for some speculative thoughts on the issue see summary section 3.6.

Chapter 2

About one divergence among Slavic languages

Slavic languages, spoken by more than 300 million people, mostly in central and eastern Europe, the Balkan and the Russian part of Asia, developed from a common Proto-Slavic language over the past 1500 years. During this period Slavic languages diverged from one another, so that today speakers of two different Slavic languages will either have difficulties communicating with each other, or this communication will be completely impossible, depending on the particular languages they speak. These differences can be observed in practically any linguistic domain. The Slavic languages differ in their vocabulary (partly due to internal language processes, partly as a result of interaction with different foreign languages as well as with miscellaneous cultural environments), phonetics and phonology (for instance, different phonemic inventories, different stress patterns), morphological apparatus (e.g., the well known case morphology displayed by Slavic nouns has been completely lost in Bulgarian and Macedonian), syntax (for example, South Slavic languages, except for Slovene, have preserved the original Proto-Slavic aorist tense), and perhaps syntax-phonology interface (different status and behavior of clitic elements); for a detailed survey of Slavic see e.g. Comrie and Corbett (1993) or Franks (1994a), among many others.

This chapter will focus on Slavic reflexive and reciprocal verbs and its purpose is to examine the validity of the Lexicon-Syntax parameter (Reinhart & Sioni 2004, 2005), that was suggested on the basis of systematically different clusters of properties displayed by reflexive and reciprocal verbs across a variety of languages, but so far has been never tested on a whole language family. As we will see, the two clusters of properties predicted by the parameter setting are indeed attested among Slavic languages, providing further robust evidence for the existence of the parameter, as well as showing that Slavic languages differ also in this respect, i.e. that despite their common historical origin, the setting of the parameter is not uniform across them. That is, we will observe that the Slavic family is divided into two groups as far as Slavic reflexive and reciprocal verbs are concerned.

Moreover, this division will appear to correlate with the morphological inventory of the given languages, namely, the East Slavic languages, which create their reflexive and reciprocal verbs via the morpheme SJA (see illustrative examples 1 and 2)¹, constitute one group, while the other Slavic languages, whose reflexive and reciprocal verbs are created via the clitic SE, constitute the second group (examples 3 and 4)².

- | | |
|--|--------------------|
| (1) SJA-reflexives | (Ukrainian) |
| a. vkolotysja "to stab oneself" | |
| b. otrujitysja "to poison oneself" | |
| c. Predstavytysja "to introduce oneself" | |
| (2) SJA-reciprocals | (Russian) |
| a. deržatsja "to hold each other" | |
| b. obnimatsja "to hug each other" | |
| c. podelovatsja "to kiss each other" | |
| (3) SE-reflexives | (Croatian) |
| a. prinuditi se "to force oneself" | |
| b. žrtvovati se "to sacrifice oneself" | |
| c. opisati se "to describe oneself" | |
| (4) SE-reciprocals | (Slovak) |
| a. podvádzať sa "to deceive each other" | |
| b. prehliadnuť sa "to check each other" | |
| c. sledovať sa "to follow each other" | |

The findings presented in this chapter are based on almost two hundred different sentences which were checked and evaluated in each of the ten major Slavic languages, i.e. Belarusian, Russian, and Ukrainian as representatives of the East Slavic group; Bulgarian, Macedonian, Serbo-Croatian and Slovenian as representatives of the South Slavic group; and Czech, Polish and Slovak as representatives of the West Slavic group. In the course of the chapter, each phenomenon relevant for the discussion will be demonstrated by different sentences from different languages in order to make the exposition as rich and multifaceted as possible. For the ease of referring to the examples in the text, if the same sentence is used for the exemplification of the same phenomenon in two or more different languages, then the examples are usually marked by the same number and are distinguished by apostrophes only; in such cases, the reference to e.g. (12a) denotes a parallel reference to (12'a) and (12''a).

¹ The shape of the morpheme can slightly vary depending on a language and a particular form of the verb to which it is attached.

² Slovak version of the clitic SE is SA, the Polish form of this clitic is SIE.

The chapter is organized as follows: In 2.1 we will first verify that the Slavic SE-reflexives/reciprocals and SJA-reflexives/reciprocals are indeed "true" verbal formations and not sentential constructions based on transitive verbs and reflexive/reciprocal anaphors. This will be done by applying three different tests suggested in the literature – the Comparative ellipsis test (2.1.1), the Depictive adjectives test (2.1.2), and the "I"-reading availability test (2.1.3). The core of the chapter is section 2.2, where we point out five features, in terms of which SE-reflexives/reciprocals systematically differ from SJA-reflexives/reciprocals. Namely, we will see that the set of reflexives/reciprocals in SE-languages is very large, while the set of these verbal voices in the SJA-languages is quite limited (2.2.1); that there are no dative SJA-reflexives and that the dative SJA-reciprocals are unable to license an accusative (direct) object, both contrasting with dative reflexives/reciprocals attested in SE-languages (2.2.2); that the SE-reflexives/reciprocals can appear in ECM structures, as opposed to the SJA-reflexives/reciprocals (2.2.3); that the SE-reciprocals can denote either collective or distributive reading, while for the SJA-reciprocals only the former is available (2.2.4); and finally, that the SJA-reciprocals can license so-called discontinuous constructions, while for SE-reciprocals these constructions are mostly unavailable (2.2.5). Section 2.3 will then present the Lex(icon)-Syn(tax) parameter (Reinhart & Siloni 2004, 2005), which offers a simple and unified explanation for the systematic differences among Slavic SE and SJA-reflexives/reciprocals. Section 2.4 will be devoted to a short excursus to Slavic middles, which will complete the picture arising from the previously adopted Lex-Syn parameter. Section 2.5 summarizes the chapter.

2.1 Setting the stage - reflexive/reciprocal verbs vs. reflexive/reciprocal sentences

Before approaching the actual examination of the properties of Slavic reflexive/reciprocal verbs it is necessary to verify that we are indeed dealing with "true" reflexive/reciprocal verbs rather than with sentential constructions based on a transitive verb and a reflexive/reciprocal anaphor. That is, we have to be sure to examine verbs like those in (5a) and (6a) and not anaphoric structures like those in (5b) and (6b):

- (5) **Reflexive verbs vs. reflexive sentences** **(English)**
- a. John washed.
 - b. John washed himself.

(6) Reciprocal verbs vs. reciprocal sentences (English)

- a. John and Steven hugged.
- b. John and Steven hugged each other.

Perhaps even more illustrative in this sense can be examples from languages, in which "true" reflexive/reciprocal verbs are marked with a particular morphology, e.g. Hebrew:

(7) Reflexive verbs vs. reflexive sentences (Hebrew)

- a. **Josi hitraxec.**
Josi washed-reflexive
"Josi washed."
- b. **Josi raxac et acmo.**
Josi washed Acc-marker himself
"Josi washed himself."

(8) Reciprocal verbs vs. reciprocal sentences (Hebrew)

- a. **Josi ve-Dani hitxabku.**
Josi and Dani hugged-reciprocal
"Josi and Dani hugged."
- b. **Josi ve-Dani xibku exad et ha-sheini.**
Josi and Dani hugged one Acc-marker the-second
"Josi and Dani hugged each other."

As noted, Slavic languages create their reflexive/reciprocal verbs either via the use of the clitic SE or by means of the special SJA morpheme attached to the verb. This section will thus be devoted to these formations precisely. That is, we will aim to verify that the Slavic SE/SJA-formations are indeed "true" reflexive and reciprocal verbs by applying three different tests suggested in the literature for distinguishing reflexive/reciprocal verbs from their sentential alternates involving an anaphor. As will become clear, this verification is especially important for the SE-reflexives/reciprocals. More specifically, we will see (section 2.2) that SE and SJA reflexives/reciprocals differ with respect to certain type of properties; while SJA reflexives/reciprocals will appear to be quite unique, and to a large extent limited from the perspective of this comparison, the SE-reflexives/reciprocals will actually display the same kind of behavior as anaphoric constructions do, although as will be shown immediately, the clitic SE is not an anaphoric expression.

2.1.1 Comparative ellipsis test (Zec 1985, Dimitriadis 2004)

If reflexivity/reciprocity is achieved via a transitive verb and an anaphor, the remnant of the elided phrase of comparative ellipsis can function either as a subject ((9a), (10a)) or as an object ((9b), (10b)), as reflected also by the case-affix of the remnant. On the other hand, if the matrix contains a SE-reflexive/reciprocal verb, the remnant of the elided phrase can function only as a subject ((9c), (10c)), since there is no object in the matrix, and thus no object comparison is possible (see (9c) and (10c) vs. (9d) and (10d)). Note that this dichotomy cannot be ascribed to the clitic nature of SE, as witnessed by the two additional examples in (9e) and (9f) for Slovenian and (10e) and (10f) for Polish. Namely, these examples involve the pronominal clitic *ga/go* ('him-Acc'), instead of the clitic SE. Yet the clitic nature of the pronoun does not prevent the remnant of the elided phrase from acting either as a subject ((9e), (10e)) or as an object ((9f), (10f)), contrary to the sentences involving the clitic SE, which – as just mentioned - allow only a subject-oriented remnant.

(9) Comparative ellipsis - Accusative Reciprocals (Slovenian)

- a. Peter in Pavel sta obtoževala en drugega bolj kot Ana in Mojca.**
Peter and Pavel aux._{3pl} accused each other._{Acc} more than Ana._{Nom} and Mojca._{Nom}
"Peter and Pavel accused each other more than Ana and Mojca accused each other."
- b. Peter in Pavel sta obtoževala en drugega bolj kot Ano in Mojco.**
Peter and Pavel aux._{3pl} accused each other._{Acc} more than Ana._{Acc} and Mojca._{Acc}
"Peter and Pavel accused each other more than they accused Ana and Mojca."
- c. Peter in Pavel sta se obtoževala bolj kot Ana in Mojca.**
Peter and Pavel aux._{3pl} SE accused more than Ana._{Nom} and Mojca._{Nom}
"Peter and Pavel accused each other more than Ana and Mojca accused each other."
- d. * Peter in Pavel sta se obtoževala bolj kot Ano in Mojco.**
Peter and Pavel aux._{3pl} SE accused more than Ana._{Acc} and Mojca._{Acc}
"Peter and Pavel accused each other more than they accused Ana and Mojca."
- e. Peter ga je obtoževal bolj kot Ana.**
Peter him._{Acc} aux._{3sg} accused more than Ana._{Nom}
"Peter accused him more than Ana accused him."
- f. Peter ga je obtoževal bolj kot Ano.**
Peter him._{Acc} aux._{3sg} accused more than Ana._{Acc}
"Peter accused him more than he accused Ana."

(10) Comparative ellipsis - Accusative Reflexives

(Polish)

- a. **Piotr scharakteryzował samego siebie dokładniej niż Anna.**
Piotr characterized himself_{Acc} more accurately than Anna_{Nom}
"Piotr characterized himself more accurately than Anna characterized herself."
- b. **Piotr scharakteryzował samego siebie dokładniej niż Annę.**
Piotr characterized himself_{Acc} more accurately than Anna_{Acc}
"Piotr characterized himself more accurately than he characterized Anna."
- c. **Piotr scharakteryzował się dokładniej niż Anna.**
Piotr characterized SE more accurately than Anna_{Nom}
"Piotr characterized himself more accurately than Anna characterized herself."
- d. **?? Piotr scharakteryzował się dokładniej niż Annę.**
Petr characterized SE more accurately than Anna_{Acc}
"Piotr characterized himself more accurately than he characterized Anna."
- e. **Piotr scharakteryzował go dokładniej niż Anna.**
Piotr characterized him_{Acc} more accurately than Anna_{Nom}
"Piotr characterized him more accurately than Anna characterized him."
- f. **Piotr scharakteryzował go dokładniej niż Anne.**
Piotr characterized him_{Acc} more accurately than Anna_{Acc}
"Piotr characterized him more accurately than he characterized Anna."

As we will see in the next section (subsection 2.2.2), one of the properties with regard to which SE-reflexives/reciprocals are at variance with SJA- reflexives/reciprocals is the ability of the former to give rise to dative reflexives/reciprocals, i.e. verbs denoting a reflexive/reciprocal relation between a subject and a dative object of their transitive counterparts, while for the latter such formations are impossible (perhaps with the exception of a few isolated cases of dative reciprocals³). The following three sets of examples demonstrate that dative SE-formations are also "true" reflexive/reciprocal verbs, the dative variant of the clitic SE being the clitic SI⁴. That is, like the accusative SE-reflexives/reciprocals exemplified above, the dative SI-reflexives/reciprocals are always subject-oriented. Namely, if the matrix contains a SI-reflexive/reciprocal verb, the remnant of the elided phrase can function only as a subject ((11c), (12c)), since there is no object in the matrix and thus no object comparison is possible (see (11c) and (12c) vs. (11d) and (12d)). On the other hand, no such limitation exists if the reflexivity/reciprocality is achieved via a transitive verb and a dative anaphor; in this case the remnant of the elided phrase of comparative ellipsis can function either as a subject

³ It already can be noted at this point that the few cases of SJA-dative reciprocals are limited in yet another way: They do not license an Accusative object. For concrete examples see subsection 2.2.2.

⁴ The dative variant of the clitic SE is SI in all SE-languages in the sample. The only exception is Polish, which does not have this dative variant; this language also lacks dative reflexives/reciprocals.

((11a), (12a)) or as an object ((11b), (12b)). The additional examples in (11e/f) and (12e/f) demonstrate again that the ungrammatical status of the object-oriented remnants in (11d) and (12d) cannot be due to the clitic nature of SI, since once the clitic SI is replaced by the pronominal clitic *mu* ('him-Dat'), both the subject ((11e), (12e)) as well as the object ((11f), (12f)) comparison is possible.

(11) Comparative ellipsis - Dative Reciprocals

(Slovak)

a. Janko a Milan rozumeli jeden druhému lepšie ako Margita a Ľubka.

Janko and Milan understood each other_{-Dat} better than Margita_{-Nom} and Ľubka_{-Nom}

"Janko and Milan understood each other better than Margita and Ľubka understood each other."

b. Janko a Milan rozumeli jeden druhému lepšie ako Margite a Ľubke.

Janko and Milan understood each other_{-Dat} better than Margita_{-Dat} and Ľubka_{-Dat}

"Janko and Milan understood each other better than they understood Margita and Ľubka."

c. Janko a Milan si rozumeli lepšie ako Margita a Ľubka.

Janko and Milan SI understood better than Margita_{-Nom} and Ľubka_{-Nom}

"Janko and Milan understood each other better than Margita and Ľubka understood each other."

d. * Janko a Milan si rozumeli lepšie ako Margite a Ľubke.

Janko and Milan SI understood better than Margita_{-Dat} and Ľubka_{-Dat}

"Janko and Milan understood each other better than they understood Margita and Ľubka."

e. Janko mu rozumel lepšie ako Margita.

Janko him_{-Dat} understood better than Margita_{-Nom}

"Janko understood him better than Margita understood him."

f. Janko mu rozumel lepšie ako Margite.

Janko him_{-Dat} understood better than Margita_{-Dat}

"Janko understood him better than he understood Margita."

(12') Comparative ellipsis - Dative Reflexives

(Croatian)

a. Petar je sam sebi napravio bolju kavu nego Ana.

Petar aux_{-3sg} himself_{-Dat} made better coffee than Ana_{-Nom}

"Petar made himself better coffee than Ana made herself."

b. Petar je sam sebi napravio bolju kavu nego Ani.

Petar aux_{-3sg} himself_{-Dat} made better coffee than Ana_{-Dat}

"Petar made himself better coffee than he made Ana."

c. Petar si je napravio bolju kavu nego Ana.

Petar SI aux_{-3sg} made better coffee than Ana_{-Nom}

"Petar made himself better coffee than Ana made herself."

d. ?? Petar si je napravio bolju kavu nego Ani.

Petar SI aux_{-3sg} made better coffee than Ana_{-Dat}

"Petar made himself better coffee than he made Ana."

- e. **Petar mu je napravio bolju kavu nego Ana.**
Petar him_{-Dat} aux_{-3sg} made better coffee than Ana_{-Nom}
"Petar made him better coffee than Ana made him."
- f. **Petar mu je napravio bolju kavu nego Ani.**
Petar him_{-Dat} aux_{-3sg} made better coffee than Ana_{-Dat}
"Petar made him better coffee than he made Ana."

(12'') **Comparative ellipsis - Dative Reflexives⁵**

(Macedonian)

- a. **Petar napravi sam sebesi podbro kafe odošto Ana.**
Petar made himself_{-Dat} better coffee than Ana
"Petar made himself better coffee than Ana made herself."
- b. **Petar napravi sam sebesi podbro kafe odošto na Ana.**
Petar made himself_{-Dat} better coffee than to Ana
"Petar made himself better coffee than he made Ana."
- c. **Petar si napravi podbro kafe odošto Ana.**
Petar SI made better coffee than Ana
"Petar made himself better coffee than Ana made herself."
- d. ***Petar si napravi podbro kafe odošto na Ana.**
Petar SI made better coffee than to Ana
"Petar made himself better coffee than he made Ana."
- e. **Petar mu napravi podbro kafe odošto Ana.**
Petar him_{-Dat} made better coffee than Ana
"Petar made him better coffee than Ana made him."
- f. **Petar mu napravi podbro kafe odošto na Ana.**
Petar him_{-Dat} made better coffee than to Ana
" Petar made him better coffee than he made Ana."

It should be noted that speakers' judgments regarding the acceptability of sentences (d) in examples (9-12) above are sometimes equivocal. However, with the exception of Polish, where this phenomenon seems to be more general, in all other tested languages these cases are rather sporadic, as in the Croatian example in (12'd).

It is worth noting that in languages that do not have the case morphology (Bulgarian, Macedonian), Comparative ellipsis constructions with accusative reflexive/reciprocal anaphors are ambiguous, so that both the subject and the object-comparison are possible ((13a), (14a)). On the other hand, Comparative ellipsis constructions with accusative SE-

⁵ As noted, Macedonian and Bulgarian have lost their case morphology; the dative case in examples (b) and (d) is thus marked by the preposition *na* ('to'), and not via a case-affix.

reflexives/reciprocals always have only one reading, namely the subject-comparing one (13b, 14b)⁶:

(13) Comparative ellipsis - Accusative Reciprocals (without case morphology) (Bulgarian)

- a. Petar i Pavel rugaecha edin drug poveče otkolkoto Ana i Jana.**
 Petar and Pavel cursed each other_{-Acc} more than Ana_{-Nom/Acc} and Jana_{-Nom/Acc}
- i. "Petar and Pavel cursed each other more than Ana and Jana cursed each other."
 ii. "Petar and Pavel cursed each other more than they cursed Ana and Jana."
- b. Petar i Pavel se rugaecha poveče otkolkoto Ana i Jana.**
 Petar and Pavel SE cursed more than Ana_{-Nom/#Acc} and Jana_{-Nom/#Acc}
- i. "Petar and Pavel cursed each other more than Ana and Jana cursed each other."
 ii. # "Petar and Pavel cursed each other more than they cursed Ana and Jana."

(14) Comparative ellipsis - Accusative Reflexives (without case morphology) (Bulgarian)

- a. Petar izpraska sam sebe si po-malko otkolkoto Ana.**
 Petar sprinkled himself_{-Acc} less than Ana_{-Nom/Acc}
- i. "Petar sprinkled himself less than Ana sprinkled herself."
 ii. "Petar sprinkled himself less than he sprinkled Ana."
- b. Petar se izpraska po-malko otkolkoto Ana.**
 Petar SE sprinkled less than Ana_{-Nom/#Acc}
- i. "Petar sprinkled himself less than Ana sprinkled herself."
 ii. # "Petar sprinkled himself less than he sprinkled Ana."

Finally, and for the sake of completeness, observe the Ukrainian examples in (15) and (16), which show that the Comparative ellipsis test works for (accusative) SJA-reflexives/reciprocals as well⁷. Namely, if reflexivity/reciprocity is achieved via a transitive verb and an anaphor, the remnant of the elided phrase of comparative ellipsis can function either as a subject ((15a), (16a)) or as an object ((15b), (16b)), as also reflected in the case-affix of the remnant. On the other hand, if the matrix contains a SJA-reflexive/reciprocal verb the remnant of the elided phrase can function only as a subject ((15c), (16c)), since there is no object in the matrix, and thus no object comparison is possible ((15d), (16d)).

(15) Comparative ellipsis - Accusative Reciprocals (SJA-languages) (Ukrainian)

- a. Mykola i Bohdan minjajut odyń odnoho častiše niž Halyna i Natalka.**
 Mykola and Bohdan replace each other_{-Acc} more often than Halyna_{-Nom} and Natalka_{-Nom}
 "Mykola and Bohdan replace each other more often than Halyna and Natalka replace each other."

⁶ Comparative ellipsis constructions with dative SE-reflexives/reciprocals do not allow dative object comparison in both Bulgarian and Macedonian like in other currently tested languages, since both Bulgarian and Macedonian use the preposition *na* ('to') for dative object marking; see the Macedonian examples in (12").

⁷ As noted above, SJA-languages do not have dative reflexives and the set of their dative reciprocals is very limited.

- b. Mykola i Bohdan minjajut odyň odnoho častiše niž Halynu i Nataľku.**
Mykola and Bohdan replace each other_{-Acc} more often than Halyna_{-Acc} and Nataľka_{-Acc}
"Mykola and Bohdan replace each other more often than they replace Halyna and Nataľka."
- c. Mykola i Bohdan minjajutsja častiše niz Halyna i Nataľka.**
Mykola and Bohdan replace_{-REC} more often than Halyna_{-Nom} and Nataľka_{-Nom}
"Mykola and Bohdan replace each other more often than Halyna and Nataľka replace each other."
- d. * Mykola i Bohdan minjajutsja častiše niž Halynu i Nataľku.**
Mykola and Bohdan replace_{-REC} more often than Halyna_{-Acc} and Nataľka_{-Acc}
"Mykola and Bohdan replace each other more often than they replace Halyna and Nataľka."

(16) Comparative ellipsis - Accusative Reflexives (SJA-languages)

(Ukrainian)

- a. Halyna česala sama sebe turbotlyviše niž Mykola**
Halyna combed herself_{-Acc} more conscientiously than Mykola_{-Nom}
"Halyna_i combed her_i hair more conscientiously than Mykola_j combed his_j hair."
- b. Halyna česala sama sebe turbotlyviše niž Mykolu.**
Halyna combed herself_{-Acc} more conscientiously than Mykola_{-Acc}
"Halyna_i combed her_i hair more conscientiously than she_i combed Mykola's hair."
- c. Halyna česalasja turbotlyviše niž Mykola.**
Halyna combed_{-REFL} more conscientiously than Mykola_{-Nom}
"Halyna_i combed her_i hair more conscientiously than Mykola_j combed his_j hair."
- d. * Halyna česalasja turbotlyviše niž Mykolu.**
Halyna combed_{-REFL} more conscientiously than Mykola_{-Acc}
"Halyna_i combed her_i hair more conscientiously than she_i combed Mykola's hair."

2.1.2 Depictive adjectives test (Siloni 2008, 2012)

The logic behind the Depictive adjectives test is very similar to that of the Comparative ellipsis test in 2.1.1 above. Let us begin with reflexives. If a sentence contains a reflexive anaphor, a depictive adjective can bear either a nominative case ((17a), (18a)) or an accusative case ((17b), (18b)), modifying either a subject or an (anaphoric) object respectively. However, when a sentence contains a SE-reflexive, a depictive adjective can bear only a nominative case ((17c), (18c)), modifying the subject, as there is no object in the sentence (compare (17c) and (18c) with (17d) and (18d)). As in the previous subsection, sentences ((17e), (18e)) and ((17f), (18f)) come to demonstrate that this dichotomy cannot be ascribed to the clitic nature of SE, since once the clitic SE is replaced by the pronominal clitic *ho/ga* ('him-Acc'), a depictive adjective can bear either a nominative case ((17e), (18e)) or an accusative case ((17f), (18f)), modifying either the subject or the (pronominal) object respectively.

(17) Depictive adjectives – Reflexives**(Czech)**

- a. Petr zastřelil sám sebe oblečený v obleku.**
Petr shot-to-death himself_{-Acc} dressed_{-Nom} in suit
"Petr_i was wearing a suit, when he_i shot himself to death."
- b. Petr zastřelil sám sebe oblečeného v obleku.**
Petr shot-to-death himself_{-Acc} dressed_{-Acc} in suit
"Petr_i was wearing a suit, when he_i was shot to death by himself."
- c. Petr se zastřelil oblečený v obleku.**
Petr SE shot-to-death dressed_{-Nom} in suit
- i. "Petr_i was wearing a suit, when he_i shot himself to death."
 - ii. "Petr_i was wearing a suit, when he_i was shot to death by himself."
- d. * Petr se zastřelil oblečeného v obleku.**
Petr SE shot-to-death dressed_{-Acc} in suit
"Petr_i was wearing a suit, when he_i was shot to death by himself."
- e. Petr ho zastřelil oblečený v obleku.**
Petr him_{-Acc} shot-to-death dressed_{-Nom} in suit
"Petr_i was wearing a suit, when he_i shot him to death."
- f. Petr ho zastřelil oblečeného v obleku.**
Petr him_{-Acc} shot-to-death dressed_{-Acc} in suit
"He_i was wearing a suit, when Peter shot him_i to death."

(18) Depictive adjectives – Reflexives**(Slovenian)**

- a. Peter je posnel sebe pijan.**
Peter aux_{-3sg} recorded himself_{-Acc} drunk_{-Nom}.
"Peter_i was drunk, when he_i recorded himself."
- b. Peter je posnel sebe pijanega.**
Peter aux_{-3sg} recorded himself_{-Acc} drunk_{-Acc}.
"Peter_i was drunk, when he_i was recorded by himself."
- c. Peter se je posnel pijan.**
Peter SE aux_{-3sg} recorded drunk_{-Nom}.
- i. "Peter_i was drunk, when he_i recorded himself."
 - ii. "Peter_i was drunk, when he_i was recorded by himself."
- d. ?? Peter se je posnel pijanega.**
Peter SE aux_{-3sg} recorded drunk_{-Acc}.
"Peter_i was drunk, when he_i was recorded by himself."
- e. Peter ga je posnel pijan.**
Peter him_{-Acc} aux_{-3sg} recorded drunk_{-Nom}.
"Peter_i was drunk, when he_i recorded him."
- f. Peter ga je posnel pijanega.**
Peter him_{-Acc} aux_{-3sg} recorded drunk_{-Acc}.
"He_i was drunk, when Peter recorded him_i."

It is of course crucial for our purpose here to contrast between the grammatical status of sentences (17b), (18b) and the ungrammatical status of sentences (17d), (18d), which, as aforementioned, means that there is no (Accusative) object present in the latter. However, the examples in (17) and (18) contain yet another contrast, namely the unambiguous, single-reading interpretations of the sentences in (a) and (b) versus the two-reading interpretations of the sentences in (c). The fact that the sentences in (17) and (18) necessarily denote one reflexive event ("*Petr shot himself to death wearing a suit*" and "*Peter recorded himself drunk,*" respectively), makes this interpretive contrast hard to achieve, but it exists linguistically and it is also what one may expect if the subjects of SE-reflexives are assigned both the agent and the theme role. The following reciprocal examples will make this point clearer.

(19) Depictive adjectives – Reciprocals

(Croatian)

a. Petar i Pavao našli jedan drugoga nagi.

Petar and Pavao found each other_{-Acc} naked_{-Nom/Pl}.

"Petar was naked when he found Pavao and Pavao was naked when he found Petar."

b. Petar i Pavao našli jedan drugoga nagog.

Petar and Pavao found each other_{-Acc} naked_{-Acc/Sg}.

"Pavao was naked when Petar found him and Petar was naked when Pavao found him."

c. Petar i Pavao se našli nagi.

Petar and Pavao SE found naked_{-Nom/Pl}.

- i. "Petar was naked when he found Pavao and Pavao was naked when he found Petar."
- ii. "Pavao was naked when Petar found him and Petar was naked when Pavao found him."

d. * Petar i Pavao se našli nage.

Petar and Pavao SE found naked_{-Acc/Pl}.

"Pavao was naked when Petar found him and Petar was naked when Pavao found him."

(20) Depictive adjectives – Reciprocals

(Polish)

a. Piotr i Paweł sfotografowali jeden drugiego nieuczesani.

Piotr and Paweł photographed each other_{-Acc} unkempt_{-Nom/Pl}.

"Piotr was unkempt when he photographed Paweł and Paweł was unkempt when he photographed Piotr."

b. Piotr i Paweł sfotografowali jeden drugiego nieuczesaniego.

Piotr and Paweł photographed each other_{-Acc} unkempt_{-Acc/Sg}.

"Paweł was unkempt when Piotr photographed him and Piotr was unkempt when Paweł photographed him."

c. Piotr i Paweł sfotografowali się nieuczesani.

Piotr and Paweł photographed SE unkempt_{-Nom/Pl}.

- i. "Piotr was unkempt when he photographed Paweł and Paweł was unkempt when he photographed Piotr."
- ii. "Paweł was unkempt when Piotr photographed him and Piotr was unkempt when Paweł photographed him."

d. *Piotr i Paweł sfotografowali się nieuczesanych.

Piotr and Paweł photographed SE unkempt_{-Acc/Pl}.

"Paweł was unkempt when Piotr photographed him and Piotr was unkempt when Paweł photographed him."

The sentences in (19d) and (20d) are once more ungrammatical (like (17d), (18d) above). Furthermore, the contrast between the subject-oriented reading of the sentences in (19a/20a) and the object-oriented reading of the sentences in (19b/20b) is now much more obvious. The contrast between the single-reading interpretations of the sentences in (19a), (19b), (20a), (20b) versus the two-reading interpretations of the sentences in (19c), (20c) is now much clearer too. As we will see more explicitly in subsection 2.2.4, this state of affairs follows from the fact that SE-reciprocals can express reciprocity not only via the symmetry of the event they denote, but also via the symmetric sequence of two or more asymmetric sub-events (a dichotomy revealed and formulated by Siloni, 2012, in her discussion of "I"-reading vs. "we"-reading ambiguity, which we will address immediately in the following subsection). That is, it can be that sentences (a), (b) and (c) in (19), (20) above denote a single reciprocal event, in which case the difference in readings of sentences (a) and (b) as well as the two possible readings of sentences (c) will be obscure in exactly the same way as in the two sets of reflexive examples (17) and (18). However, as the glosses hint, sentences (a), (b), and (c) do not necessarily denote a single event. For example, sentence (19a) can describe a sequence of two different situations, one in which Petar was naked when he found Pavao (who was dressed), and one in which Pavao was naked when he found Petar (who was dressed). On the other hand, sentence (19b) can describe a sequence of opposite situations, one in which Pavao was naked when Petar (who was dressed) found him, and one in which Petar was naked when Pavao (who was dressed) found him. Similarly, sentence (20a) is true if one day Piotr, who was unkempt, photographed Paweł (who was kempt), while the following day Paweł, who was unkempt, photographed Piotr (who was kempt). And on the contrary, sentence (20b) is true if one day Paweł, who was unkempt, was photographed by Piotr (who was kempt), while the following day Piotr, who was unkempt, was photographed by Paweł (who was kempt). These two different readings of sentences (19a), (19b) and (20a), (20b) are both present in sentences (19c) and (20c), respectively. As already mentioned, this state of affairs is however not surprising at all, since there is no object in the structure, and the subject of the SE-reciprocal is assigned both the agent and the theme role.

Again, just for the sake of completeness, the Belarusian examples in (21) and (22) show the application of the Depictive adjectives test to SJA-reflexives/reciprocals⁸:

(21) Depictive adjectives - Reflexives (SJA-languages) (Belarusian)

- a. Pjatro ahaliu sam siabe apranuty.**
Pjatro shaved himself_{-Acc} dressed_{-Nom}.
"Pjatro_i was dressed when he_i shaved himself."
- b. Pjatro ahaliu sam siabe apranutaha.**
Pjatro shaved himself_{-Acc} dressed_{-Acc}.
"Pjatro_i was dressed when he_i was shaved by himself."
- c. Pjatro ahaliusja apranuty.**
Pjatro shaved_{-Refl} dressed_{-Nom}.
- i. "Pjatro_i was dressed when he_i shaved himself."
ii. "Pjatro_i was dressed when he_i was shaving himself."
- d. * Pjatro ahaliusja apranutaha.**
Pjatro shaved_{-Refl} dressed_{-Acc}.
"Pjatro_i was dressed when he_i was shaved by himself."

(22) Depictive adjectives - Reciprocals (SJA-languages) (Belarusian)

- a. Pjatro i Paval sustreli adzin vodnaha stomlenyja.**
Pjatro and Paval encountered each other_{-Acc} tired_{-Nom/Pl}.
"Pjatro was tired when he encountered Paval and Paval was tired when he encountered Pjatro."
- b. Pjatro i Paval sustreli adzin vodnaha stomlenaha.**
Pjatro and Paval encountered each other_{-Acc} tired_{-Acc/Sg}.
"Paval was tired when Pjatro encountered him and Pjatro was tired when Paval encountered him."
- c. Pjatro i Paval sustrelisja stomlenyja.**
Pjatro and Paval encountered_{-REC} tired_{-Nom/Pl}.
- i. "Pjatro was tired when he encountered Paval and Paval was tired when he encountered Pjatro."
ii. "Paval was tired when Pjatro encountered him and Pjatro was tired when Paval encountered him."
- d. * Pjatro i Paval sustrelisja stomlenyjeh.**
Pjatro and Paval encountered_{-REC} tired_{-Acc/Pl}.
"Paval was tired when Pjatro encountered him and Pjatro was tired when Paval encountered him."

It must be noted here that unlike SE-reciprocals ((19), (20)), SJA-reciprocals always express reciprocity by means of the symmetry of the single event they denote (for relevant

⁸ The ambiguity of the sentences like those in (17c-20c), together with the fact, that depictive adjectives cannot be predicated of indirect (dative) objects (for some discussion see Rothstein, 2005), are the reasons why the Depictive adjectives test cannot be applied for languages that lack morphological case, i.e. Bulgarian and Macedonian in our sample.

data and a discussion see subsection 2.2.4). Similarly to the reflexive sentences in (17c), (18c), and (21c), the ambiguity of the reciprocal sentence in (22c) is thus "only theoretical", since it necessarily describes a single situation in which Pjatro and Pavai encountered, both being tired. Nevertheless, our main point here, the ungrammaticality of the sentences in (21d) and (22d) is once more evident, showing that the SJA-reflexives/reciprocals, like SE-reflexives/reciprocals, are indeed "true" reflexive/reciprocal verbs.

2.1.3 Availability of "I"-reading as another test (Siloni 2012)

As noted first by Higginbotham (1980), embedded sentences containing reciprocal anaphors display the following kind of ambiguity (see also Heim, Lasnik and May 1991a, Williams 1991, Heim, Lasnik, and May 1991b, and Carlson 1998).

(23) Ambiguity of reciprocal anaphors under embedding

John and Mary said they kissed each other.

- i. John and Mary said they (i.e. John and Mary) kissed each other.
- ii. John said he kissed Mary and Mary said she kissed John.

The two possible readings of (23), usually labeled the "we"-reading (23i) and the "I"-reading (23ii), following Heim, Lasnik and May (1991a), stem from the two possible interpretations of the embedded pronominal subject. Under the "we"-reading (23i), the embedded subject *they* is co-referent with the plural matrix subject *John and Mary*. Under the "I"-reading (23ii), on the other hand, the embedded subject is bound by the distributive operator which ranges over the members of the matrix subject set. As mentioned in Williams (1991) this ambiguity, however, disappears once the reciprocity of the embedded sentence is achieved via an intransitive reciprocal verb and not via a reciprocal anaphor bound by the subject of a transitive verb. This is clearly demonstrated by the example in (24), which is a paraphrase of (23).

(24) Unambiguous interpretation of intransitive reciprocals under embedding

John and Mary said they kissed.

- i. John and Mary said they (i.e. John and Mary) kissed each other.
- ii. # John said he kissed Mary and Mary said she kissed John.

Here, it appears, the "I"-reading (24ii) is unavailable and the only possible interpretation of (24) is that both members of the matrix subject set, i.e. *John and Mary*, said the same thing,

i.e. that *they kissed*. Why is it so? Williams ascribes the unambiguous status of the sentences like (24) to the restriction intransitive reciprocal verbs impose on their subjects. Namely, these "predicates require *plural and (otherwise) non-distributed subjects*" (Williams1991:172). However, as argued by Siloni (2012) in her discussion of Romance and certain Slavic reciprocals, the generalization offered by Williams is not enough, since the availability of the "I"-reading is in fact subject to two necessary conditions. **First**, the embedded sentence must be able to express the reciprocity not only by denoting a single symmetric (reciprocal) event but also by denoting the symmetric relation between two or more asymmetric (transitive) sub-events; since the denoting of two or more sub-events is possible only if the verb allows its (plural) subject to be "distributed", this condition in principle does not differ from Williams's generalization above⁹ (see also Carlson, 1998, for similar reasoning). E.g., the sentence *They kissed each other* can denote either one symmetric event (*John and Mary kissed*) or two asymmetric sub-events (*John kissed Mary* and *Mary kissed John*), the "I"-reading being available only under the asymmetric sub-events scenario. **Second**, the embedded subject must be assigned a single theta role. Recall that under the "I"-reading the embedded subject is bound by the distributive operator which ranges over the members of the matrix subject set, each of these members being assigned a single role. In order to make this (distributive) binding possible, the bound element must bear a single theta role as well; otherwise the binding relation cannot be established. This requirement is met in sentences containing a transitive verb and a reciprocal anaphor, i.e. like our *They kissed each other*. Here the subject *they* bears the (single) Agent role, which enables it to be bound by the distributive operator, while the reciprocal anaphor *each other* is assigned the second theta role of the (transitive) verb *kiss*, namely the Theme role. On the other hand, embedded sentences involving intransitive reciprocal verbs, like *kiss* in (24), do not fulfill the second of Siloni's conditions, as their subjects are obviously not assigned a single theta role.¹⁰

With this in mind, let us now look on Slavic SE-reciprocals. As the following couples of Bulgarian and Polish examples show, Slavic SE-reciprocals (25b) seem to behave on a par with intransitive reciprocal verbs, like *kiss* in (24). That is, SE-reciprocals under embedding have only the "we"-reading (25bi), while the "I"-reading (25bii) is unavailable. This contrasts with the sentences in (25a), where the embedded clause contains a transitive verb and a

⁹ For details see Siloni (2008:21-24).

¹⁰ Intransitive reciprocals, of course, do not fulfill the first condition either, as argued already by Williams (1991). Recall also, that the first of Siloni's conditions does not hold for SJA-reciprocals as well, a fact we have mentioned in connection with Belarusian example (22) in the previous subsection; the issue will be demonstrated in more detail in subsection 2.2.4.

reciprocal anaphor, giving rise to the expected ambiguity between the "we"-reading (25ai) and the "I"-reading (25aii), like in (23)¹¹.

(25') I – reading (SE-languages)

(Bulgarian)

Accusative reciprocal anaphor

a. Petar i Jana priznacha, če nenaviždat edin drug.

Petar and Jana confessed_{-3pl}, that hate_{-3pl} each other_{-Acc}.

- i. "Petar and Jana confessed that they (i.e. Petar and Jana) hate each other."
- ii. "Petar confessed that he hates Jana and Jana confessed that she hates Petar."

SE-reciprocal

b. Petar i Jana priznacha, če se nenenaviždat.

Petar and Jana confessed_{-3pl}, that SE hate_{-3pl}.

- i. "Petar and Jana confessed that they (i.e. Petar and Jana) hate each other."
- ii. # "Petar confessed that he hates Jana and Jana confessed that she hates Petar."

(25'') I – reading (SE-languages)

(Polish)

Accusative reciprocal anaphor

a. Piotr i Joanna przyznali, że nienawidzą jedno drugie.

Piotr and Jana confessed_{-3pl}, that hate_{-3pl} each other_{-Acc}.

- i. "Piotr and Joanna confessed that they (i.e. Piotr and Joanna) hate each other."
- ii. "Piotr confessed that he hates Joanna and Joanna confessed that she hates Piotr."

SE-reciprocal

b. Piotr i Joanna przyznali, że się nienawidzą.

Piotr and Jana confessed_{-3pl}, that SE hate_{-3pl}.

- i. "Piotr and Joanna confessed that they (i.e. Piotr and Joanna) hate each other."
- ii. # "Piotr confessed that he hates Joanna and Joanna confessed that she hates Piotr."

¹¹ It is worth noting that Heim, Lasnik and May (1991a) report the same state of affairs for Italian. Italian (and other Romance languages) forms its reflexive and reciprocal verbs, like Slavic SE-languages, by means of the clitic SE/SI. As the following couple of examples demonstrate, once the embedded clause involves this clitic, the "I"-reading is not available. (The example is taken from Heim, Lasnik and May 1991a:88).

- i. I due pensano [di avere prevalso L' UNO SULL' ALTRO]. (no contradiction)
the two thought have prevailed *the one over the other*
- ii. I due pensano [di esser-SI battuti]. (contradiction)
the two thought be-SI beaten
"Those two thought they had defeated each other."

The sentence in (i) is not a contradiction, since the "I"-reading, which is available here exactly as in (23) and (25a), can rescue it – it can be that each one of the two members of the matrix subject set thought that he prevailed the other (although – objectively speaking – at least one of them is, of course, wrong). The sentence in (ii), on the other hand, is necessarily a contradiction, as the embedded SI-reciprocal does not permit the "I"-reading.

What makes the sentences in (25b) unambiguous (only the "we"-reading is available)? Is it because SE-reciprocals are not able to express the reciprocity via denoting the symmetric relation between two or more asymmetric (transitive) sub-events (Siloni's first condition mentioned above)? Is it because the subject of these verbs is not assigned a single theta role (Siloni's second condition)? Or perhaps both of these conditions are not fulfilled? As already mentioned in the previous subsection (see the discussion of examples (19) and (20)), Slavic SE-reciprocals fulfill the former of these two conditions, i.e. they are able to denote two or more (transitive) sub-events (the phenomenon is further discussed in subsection 2.2.4). But if so, then the only explanation for the fact that SE-reciprocals under embedding do not have the "I"-reading is that their subjects are not assigned a single theta role. Rather, it seems, they bear two theta roles – a canonically assigned external (Agent) role and a non-canonically assigned internal (Theme) role. The clitic SE thus cannot be a verbal argument, since if it were, we would expect it to be assigned the internal theta role, exactly as the reciprocal anaphors. The unavailability of "I"-reading with SE-reciprocals therefore presents another piece of evidence that these reciprocals are true reciprocal verbs – a finding which fits our previous conclusions based on the comparative ellipsis test (2.1.1) and the depictive adjective test (2.1.2). The following series of examples demonstrates the application of "I"-reading test in other Slavic languages. Namely, the phenomenon exemplified above for Bulgarian (25') and Polish (25''), is demonstrated in (26), (27), and (28) for Croatian, Macedonian and Slovak, respectively. I.e., in these languages too, the SE-reciprocals are able to denote the "we"-reading only (26b/27b/28b), contra the ambiguous status of structures denoting reciprocity via a transitive verb and a reciprocal anaphor (26a/27a/28a).

(26) I-reading (SE-languages)

(Croatian)

Accusative reciprocal anaphor

a. Petar i Jana su rekli da su zagrlili jedno drugog.

Petar and Jana aux._{3pl} said._{3pl}, that aux._{3pl} hugged._{3pl} each other._{Acc}.

- i. "Petar and Jana said that they (i.e. Petar and Jana) hugged each other."
- ii. "Petar said that he hugged Jana and Jana said that she hugged Petar."

SE-reciprocal

b. Petar i Jana su rekli da su se zagrlili.

Petar and Jana aux._{3pl} said._{3pl}, that aux._{3pl} SE hugged._{3pl}.

- i. "Petar and Jana said that they (i.e. Petar and Jana) hugged each other."
- ii. # "Petar said that he hugged Jana and Jana said that she hugged Petar."

(27) I-reading (SE-languages)**(Macedonian)****Accusative reciprocal anaphor****a. Petar i Pavel negirale , deka fatile eden drug pri delo.**Petar and Pavel denied_{3pl} that caught_{3pl} each other at deed.

- i. "Petar and Pavel denied that they (i.e. Petar and Pavel) caught each other red-handed."
- ii. "Petar denied that he caught Pavel red-handed and Pavel denied that he caught Petar red-handed."

SE-reciprocal**b. Petar i Pavel negirale , deka se fatile při delo.**Petar and Pavel denied_{3pl} that SE caught_{3pl} at deed.

- i. "Petar and Pavel denied that they (i.e. Petar and Pavel) caught each other red-handed."
- ii. #"Petar denied that he caught Pavel red-handed and Pavel denied that he caught Petar red-handed."

(28) I-reading (SE-languages)**(Slovak)****Accusative reciprocal anaphor****a. Janko a Ľubka prehlasujú, že porazili jeden druhého vo finále.**Janko and Ľubka declare_{3pl}, that defeated_{3pl} each other in final.

- i. #"Janko and Ľubka declare that they (i.e. Janko and Ľubka) defeated each other in the final."
- ii. "Janko declares that he defeated Ľubka in the final and Ľubka declares that she defeated Janko in the final."

SE-reciprocal**b. Janko a Ľubka prehlasujú, že sa porazili vo finále.**Janko and Ľubka declare_{3pl}, that SE defeated_{3pl} in final.

- i. #"Janko and Ľubka declare that they (i.e. Janko and Ľubka) defeated each other in the final."
- ii. #"Janko declares that he defeated Ľubka in the final and Ľubka declares that she defeated Janko in the final."

The following two pairs of dative examples from Czech and Slovenian further show that dative SI-reciprocals (29b) disallow the "I"-reading as well (recall that the dative variant of the clitic SE is SI). On the other hand, once the reciprocity is achieved via a transitive verb and a dative anaphoric expression (29a) both readings are available.

(29') I-reading (SE-languages)**(Czech)****Dative reciprocal anaphor****a. Petr a Pavel tvrdili, že jeden druhému vyhrožovali.**Petr and Pavel claimed_{3pl} that each other_{Dat} threaten_{3pl}.

- i. "Petr and Pavel claimed that they (i.e. Petr and Pavel) threaten each other."
- ii. "Petr claimed that he threatens Pavel and Pavel claimed that he threatens Petr."

SI-reciprocal**b. Petr a Pavel tvrdili, že si vyhrožovali.**Petr and Pavel claimed_{3pl} that SI threaten_{3pl}.

- i. "Petr and Pavel claimed that they (i.e. Petr and Pavel) threaten each other."
- ii. #"Petr claimed that he threatens Pavel and Pavel claimed that he threatens Petr."

(29'') I-reading (SE-languages)

(Slovenian)

Dative reciprocal anaphor

a. Peter in Mojca sta zatrjevala, da sta en drugemu grozila.

Peter and Mojca aux._{3pl} claim._{3pl}, that aux._{3pl} each other._{Dat} threaten._{dual}.

- i. "Peter and Mojca claimed that they (i.e. Peter and Mojca) threaten each other."
- ii. "Peter claimed that he threatens Mojca and Mojca claimed that she threatens Peter."

SI-reciprocal

b. Peter in Mojca sta zatrjevala, da sta si grozila.

Peter and Mojca aux._{3pl} claim._{3pl}, that aux._{3pl} SI threaten._{dual}.

- i. "Peter and Mojca claimed that they (i.e. Peter and Mojca) threaten each other."
- ii. # "Peter claimed that he threatens Mojca and Mojca claimed that she threatens Peter."

Finally, the Russian examples below demonstrate once more that like SE-reciprocals, SJA-reciprocals (30b) are "true" reciprocal verbs, as they disallow the "I"-reading.

(30) I-reading (SJA-languages)

(Russian)

Accusative reciprocal anaphor

a. Pjotr i Jana utverždali, čto videli drug druga.

Pjotr and Jana claimed._{3pl}, that saw._{3pl} each other._{Acc}.

- i. "Pjotr and Jana claimed that they (i.e., Pjotr and Jana) saw each other."
- ii. "Pjotr claimed that he saw Jana and Jana claimed that she saw Pjotr."

SJA-reciprocal

b. Pjotr i Jana utverždali, čto videlis.

Pjotr and Jana claimed._{3pl}, that saw._{3pl-REC}.

- i. "Pjotr and Jana claimed that they (i.e., Pjotr and Jana) saw each other."
- ii. # "Pjotr claimed that he saw Jana and Jana claimed that she saw Pjotr."

2.2 Reflexive and reciprocal verbs in Slavic

After having seen that Slavic SE-reflexives/reciprocals and SJA-reflexives/reciprocals are undoubtedly genuine reflexive and reciprocal verbs (as opposed to constructions based on transitive verbs and reflexive/reciprocal anaphors), we can approach the main topic of this chapter, i.e., the presentation of two different sets of properties that these two types of reflexive and reciprocal verbs display. In the course of this section five such properties will be pointed out, the last two relevant for reciprocal verbs only.

2.2.1 Few vs. many

The most striking distinction between SE-reflexives/reciprocals and SJA-reflexives/reciprocals is probably that SE-reflexives/reciprocals appear to be very numerous,

while the set of SJA-reflexives/reciprocals is quite limited. In languages that form their reflexive and reciprocal verbs via the clitic SE, it seems that actually any transitive verb has a reflexive/reciprocal counterpart, unless the semantics of that verb ban it. The following series of Croatian (31') and Slovak (31'') examples demonstrate this state of affairs for reflexives. Namely, the sentences in (31a) illustrate the productivity of SE-reflexives formations, while the examples in (31b), (31c), and (31d) come to specify in which respects the formations of these reflexive verbs is limited.

(31') Unlimited set of SE-reflexives and its qualifications**(Croatian)**

- | | |
|---|--|
| <p>ai. Petar je naslikao sliku / Janu.
 Petar aux painted picture_{-Acc} / Jana_{-Acc}.
 "Petar painted a picture / Jana."</p> | <p>Petar se naslikao.
 Petar SE painted.
 "Petar painted himself."</p> |
| <p>aii. Petar voli modernu glazbu / Janu.
 Petar likes modern_{-Acc} music_{-Acc} / Jana_{-Acc}.
 "Petar likes a modern music / Jana."</p> | <p>Petar se voli.
 Petar SE likes.
 "Petar likes himself."</p> |
| <p>aiii. Petar je ubio sliku / *modernu glazbu / Janu.
 P. aux killed picture_{-Acc}/modern music_{-Acc} / Jana_{-Acc}.
 "Petar killed *a picture / *a modern music / Jana."</p> | <p>Petar se ubio.
 Petar SE killed.
 "Petar killed himself".</p> |
| <p>bi. Petar je napisao pismo / * Janu.
 Petar aux wrote letter_{-Acc} / Jana_{-Acc}.
 "Petar wrote a letter / *Jana."</p> | <p>*Petar se napisao.
 Petar SE wrote.
 "Petar wrote himself."</p> |
| <p>bii. Petar je razbio čašu / * Janu.
 Petar aux broke glass_{-Acc} / Jana_{-Acc}.
 "Petar broke a glass / *Jana."</p> | <p>*Petar se razbio.
 Petar SE broke.
 "Petar broke himself."</p> |
| <p>ci. Petar je obilazio stol / Janu.
 Petar aux walked-around table_{-Acc} / Jana_{-Acc}.
 "Petar walked around a table / Jana."</p> | <p>*Petar se obilazio.
 Petar SE walked around.
 "Petar walked around himself."</p> |
| <p>cii. Petar je odbio tu ponudu / Janu.
 Petar aux denied that_{-Acc} offer_{-Acc} / Jana_{-Acc}.
 "Petar denied that offer / Jana."</p> | <p>*Petar se odbio.
 Petar SE denied.
 "Petar denied himself."</p> |
| <p>di. Petar je išao.
 Petar aux went
 "Petar went."</p> | <p>*Petar se išao.
 Petar SE went.
 "Petar went himself."</p> |
| <p>dii. Petar je porastao.
 "Petar aux grew-up."
 "Petar grew up."</p> | <p>*Petar se porastao.
 Petar SE grew up.
 "Petar grew up himself."</p> |

The Croatian examples in (31'a) above and the parallel Slovak examples in (31''a) below contain three ad hoc pairs of transitive and reflexive verbs. In (31b) we can see that transitive

verbs whose object cannot be [+human], do not have reflexive counterparts; compare with (31a) where the object of the transitive verb is restricted in an opposite way, namely it must be [+human] and the reflexive counterpart is thus still possible. The transitive verbs in (31c) license [+human] object, but they still do not have reflexive counterparts, in contrast to (31a); this is so since the semantics of these transitive verbs demands their subjects and objects to be two different entities, a condition which obviously cannot be fulfilled under the reflexive reading. For the sake of completeness, the examples in (31d) demonstrate that non-transitive verbs do not have reflexive counterparts.

(31'') **Unlimited set of SE-reflexives and its qualifications**

(Slovak)

<p>ai. Janko namaľoval obraz / Ľubku. Janko painted picture_{-Acc} / Ľubka_{-Acc}. "Janko painted a picture / Ľubka."</p>	<p>Janko sa namaľoval. Janko SE painted. "Janko painted himself."</p>
<p>aii. Janko má rád modernú hudbu / Ľubku. Janko have glad modern_{-Acc} music_{-Acc} / Ľubka_{-Acc}. "Janko likes a modern music / Ľubka."</p>	<p>Janko sa má rád. Janko SE have glad. "Janko likes himself."</p>
<p>aiii. Janko zabil *obraz / *modernú hudbu / Ľubku. J. killed picture_{-Acc} / mod_{-Acc} music_{-Acc} / Ľubka_{-Acc}. "J. killed *a picture / *a modern music / Ľubka."</p>	<p>Janko sa zabil. Janko SE killed. "Janko killed himself."</p>
<p>bi. Janko napísal list / * Ľubku. Janko wrote letter_{-Acc} / Ľubka_{-Acc}. "Janko wrote a letter / *Ľubka."</p>	<p>*Janko sa napísal. Janko SE wrote. "Janko wrote himself."</p>
<p>bii. Janko rozbil pohár / * Ľubku. Janko broke glass_{-Acc} / Ľubka_{-Acc}. "Janko broke a glass / *Ľubka."</p>	<p>*Janko sa rozbil. Janko SE broke. "Janko broke himself."</p>
<p>ci. Janko obchádzal stôl / Ľubku. Janko walked around table_{-Acc} / Ľubka_{-Acc}. "Janko walked around a table / Ľubka."</p>	<p>*Janko sa obchádzal. Janko SE walked around. "Janko walked around himself."</p>
<p>cii. Janko odmietol tú ponuku / Ľubku. Janko denied that_{-Acc} offer_{-Acc} / Ľubka_{-Acc}. "Janko denied that offer / Ľubka."</p>	<p>*Janko sa odmietol. Janko SE denied. "Janko denied himself."</p>
<p>di. Janko šiel. "Janko went."</p>	<p>*Janko sa šiel. Janko SE went. "Janko went himself."</p>
<p>dii. Janko vyrástol. "Janko grew up."</p>	<p>*Janko sa vyrástol. Janko SE grew up. "Janko grew up himself."</p>

The three randomly chosen reflexive verbs exemplified in (31a) for Croatian and Slovak are available in each of the SE-languages in our sample. However, this is not the case in the

SJA-languages. There are reflexive verbs for *kill* in Russian (32c'') and Ukrainian (32c'''), nevertheless in all other cases, in order to express reflexivity, the speakers of SJA-languages have to use constructions based on transitive verbs and reflexive anaphors¹²:

(32) Limited set of SJA-reflexives

a'. *Pjatro namaljavausja.
Pjatro drew_{-Refl}

Pjatro namaljavau sam sja**bj**e.
Pjatro drew himself

(Belarusian)

b'. * Pjatro ljubicca.
Pjatro loves_{-Refl}

Pjatro ljubic sam sja**bj**e.
Pjatro loves himself

c'. *Pjatro zabiusja.
Pjatro killed_{-Refl}

Pjatro zabi**u** sam sja**bj**e.
Pjatro killed himself

a''. *Pjotr narisovalsja.
Pjotr drew_{-Refl}

Pjotr narisoval sam se**bj**a.
Pjotr drew himself

(Russian)

b''. * Pjotr ljubitsja.
Pjotr loves_{-Refl}

Pjotr ljubit sam se**bj**a.
Pjotr loves himself

c''. Pjotr ubilsja.
Pjotr killed_{-Refl}

Pjotr ubil sam se**bj**a.
Pjotr killed himself

a'''. *Bohdan namaljuvavsja.
Bohdan drew_{-Refl}

Bohdan namaljuvav sam se**be**.
Bohdan drew himself

(Ukrainian)

b'''. *Bohdan ljubitsja.
Pjotr loves_{-Refl}

Bohdan ljubit se**be**.
Pjotr loves himself

c'''. Bohdan vbivsja.
Bohdan killed_{-Refl}

Bohdan vbiv sam se**be**.
Bohdan killed himself

As far as reciprocals are concerned the situation looks similar. For the sake of simplicity and clarity let us demonstrate it with the same series of Croatian and Slovak examples used in (31) above for reflexives. More precisely, the following Croatian (33') and Slovak (33'') transitive sentences are identical to the transitive sentences used in (31') and (31''), respectively, the only difference being that their SE-counterparts have plural subjects, making the reciprocal reading available.

(33') Unlimited set of SE-reciprocals and its qualifications

(Croatian)

ai. Petar je naslikao sliku / Janu.
Petar aux painted picture_{-Acc} / Jana_{-Acc}.
"Petar painted a picture / Jana."

Petar i Jana su se naslikali.
Petar and Jana SE painted.
"Petar and Jana painted each other."

¹² There is in fact also the reflexive-like form *narisovalsja* in Russian (32a'''); however, according to my informant it has a completely different and slangy meaning, which is not relevant here, namely, 'to appear somewhere'.

- | | |
|---|---|
| <p>aii. Petar voli modernu glazbu / Janu.
Petar likes modern_{-Acc} music_{-Acc} / Jana_{-Acc}.
"Petar likes a modern music / Jana."</p> | <p>Petar i Jana se vole.
Petar and Jana SE have glad.
"Petar and Jana like each other."</p> |
| <p>aiii. Petar je ubio sliku / *modernu glazbu / Janu.
P. aux killed picture_{-Acc}/modern music_{-Acc} / Jana_{-Acc}.
"Petar killed *a picture / *a modern music / Jana."</p> | <p>Petar i Jana su se ubili.
Petar and Jana SE killed.
"Petar and Jana killed each other".</p> |
| <p>bi. Petar je napisao pismo / * Janu.
Petar aux wrote letter_{-Acc} / Jana_{-Acc}.
"Petar wrote a letter / *Jana."</p> | <p>*Petar i Jana su se napisali.
Petar and Jana SE wrote.
"Petar and Jana wrote each other."</p> |
| <p>bii. Petar je razbio čašu / * Janu.
Petar aux broke glass_{-Acc} / Jana_{-Acc}.
"Petar broke a glass / *Jana."</p> | <p>*Petar i Jana su se razbili.
Petar and Jana SE broke.
"Petar and Jana broke each other."</p> |
| <p>ci. Petar je obilazio stol / Janu.
Petar aux walked-around table_{-Acc} / Jana_{-Acc}.
"Petar walked around a table / Jana."</p> | <p>Petar i Jana su se obilazili.
Petar and Jana SE walked around.
"Petar and Jana walked around each other."</p> |
| <p>cii. Petar je odbio tu ponudu / Janu.
Petar aux denied that_{-Acc} offer_{-Acc} / Jana_{-Acc}.
"Petar denied that offer / Jana."</p> | <p>Petar i Jana su se odbili.
Petar and Jana SE denied.
"Petar and Jana denied each other."</p> |
| <p>di. Petar je išao.
Petar aux went.
"Petar went."</p> | <p>*Petar i Jana su se išli.
Petar and Jana SE went.
"Petar and Jana went each other."</p> |
| <p>dii. Petar je porastao.
"Petar aux grew-up."
"Petar grew up."</p> | <p>*Petar i Jana su se porasli.
Petar and Jana SE grew up.
"Petar and Jana grew up each other."</p> |

The Croatian reciprocal examples in (33a') above, as well as the Slovak reciprocal examples in (33a'') below are perfectly grammatical, like their reflexive counterparts in (31a). The reciprocal sentences in (33b) are ruled out, like the reflexives in (31b), since their transitive counterparts do not license a [+human] object. However, the reciprocals in (33c), unlike the reflexives in (31c), are possible, since the semantic demand of their transitive counterpart that the subject and the object must be two different entities can be satisfied under the reciprocal relation that holds inside the set of two (or more) entities. Finally, the examples in (33d) show that non-transitive verbs do not have reciprocal counterparts, exactly as they do not have reflexive counterparts (31d).

(33'') Unlimited set of SE-reciprocals and its qualifications

(Slovak)

- | | |
|--|--|
| <p>ai. Janko namaľoval obraz / Ľubku.
Janko painted picture_{-Acc} / Ľubka_{-Acc}.
"Janko painted a picture / Ľubka."</p> | <p>Janko a Ľubka sa namaľovali.
Janko and Ľubka SE painted.
"Janko and Ľubka painted each other."</p> |
|--|--|

<p>aii. Janko má rád modernú hudbu / Ľubku. Janko have glad modern-Acc music-Acc / Ľubka-Acc. "Janko likes a modern music / Ľubka."</p>	<p>Janko a Ľubka sa majú rádi. Janko and Ľubka SE have glad. "Janko and Ľubka like each other."</p>
<p>aiii. Janko zabil *obraz / *modernú hudbu / Ľubku. J. killed picture-Acc / modern-Acc music-Acc / Ľubka. <small>Acc-</small> "Janko killed *a picture / *a modern music / Ľubka."</p>	<p>Janko a Ľubka sa zabili. Janko and Ľubka SE killed. "Janko and Ľubka killed each other."</p>
<p>bi. Janko napísal list / * Ľubku. Janko wrote letter-Acc / Ľubka-Acc. "Janko wrote a letter / *Ľubka."</p>	<p>*Janko a Ľubka sa napísali. Janko and Ľubka SE wrote. "Janko and Ľubka wrote each other."</p>
<p>bii. Janko rozbil pohár / * Ľubku. Janko broke glass-Acc / Ľubka-Acc. "Janko broke a glass / *Ľubka."</p>	<p>*Janko a Ľubka sa rozbili. Janko and Ľubka SE broke. "Janko and Ľubka broke each other."</p>
<p>ci. Janko obchádzal stôl / Ľubku. Janko walked around table-Acc / Ľubka-Acc. "Janko walked around a table / Ľubka."</p>	<p>Janko a Ľubka sa obchádzali. Janko and Ľubka SE walked around. "Janko and Ľubka walked around each other."</p>
<p>cii. Janko odmietol tú ponuku / Ľubku. Janko denied that-Acc offer-Acc / Ľubka-Acc. "Janko denied that offer / Ľubka."</p>	<p>Janko a Ľubka sa odmietli. Janko and Ľubka SE denied. "Janko and Ľubka denied each other."</p>
<p>di. Janko šiel. "Janko went."</p>	<p>*Janko a Ľubka sa šli. Janko and Ľubka SE went. "Janko and Ľubka went each other."</p>
<p>dii. Janko vyrástol. "Janko grew up."</p>	<p>*Janko a Ľubka sa vyrástli. Janko and Ľubka SE grew up. "Janko and Ľubka grew up each other."</p>

The explanation just given for the ungrammatical status of the reflexives in (31c) vs. the grammatical status of their reciprocal counterparts in (33c) leads us straightforwardly to yet another generalization regarding SE-reflexives/reciprocals as opposed to SJA-reflexives/reciprocals. Namely, if the semantics of their transitive counterparts does not require that the subject and object denote two distinct entities (i.e., a condition due to which the reflexives in (31c) are unacceptable), and their subject refers to a set of two (or more) entities, SE-reflexives/reciprocals are systematically ambiguous between the reflexive and the reciprocal reading, while among SJA-reflexives/reciprocals such ambiguity does not exist¹³. The ambiguity of SE-reflexives/reciprocals can be demonstrated via our three sentences (33a) (repeated below as (34)). Each one of them can be understood as denoting either a reciprocal

¹³ I did not delve deeply into this issue, but if there are any such ambiguous cases, they are sporadic and apparently accidental.

(34ii) or a reflexive (34i) event. Moreover, note that due to the plurality of their subjects, the reflexive reading of these sentences can be distributive (e.g. *Petar painted himself and Jana painted herself*), as well as collective (e.g. *Petar and Jana painted themselves together*).

(34') SE-reflexive/reciprocal ambiguity

(Croatian)

- a. Petar i Jana su se naslikali.**
Petar and Jana aux SE painted.
 - i. "Petar and Jana painted themselves."
 - ii. "Petar and Jana painted each other."
- b. Petar i Jana se vole.**
Petar and Jana SE like.
 - i. "Petar and Jana like themselves."
 - ii. "Petar and Jana like each other."
- c. Petar i Jana su se ubili.**
Petar and Jana aux SE killed.
 - i. "Petar and Jana killed themselves."
 - ii. "Petar and Jana killed each other".

(34'') SE-reflexive/reciprocal ambiguity

(Slovak)

- a. Janko a Ľubka sa namaľovali.**
Janko and Ľubka SE painted.
 - i. "Janko and Ľubka painted themselves."
 - ii. "Janko and Ľubka painted each other."
- b. Janko a Ľubka sa majú rádi.**
Janko and Ľubka SE have glad.
 - i. "Janko and Ľubka like themselves."
 - ii. "Janko and Ľubka like each other."
- c. Janko a Ľubka sa zabili.**
Janko and Ľubka SE killed.
 - i. "Janko and Ľubka killed themselves."
 - ii. "Janko and Ľubka killed each other."

As mentioned before, this type of ambiguity does not exist in SJA-languages. This follows from the fact that the set of SJA-reflexives (see 32 above) and the set of SJA-reciprocals (35 below) are limited (in fact, none of the three randomly chosen reciprocal verbs is attested in any of our three SJA-languages).

(35) Limited set of SJA-reciprocals

(Belarusian)

- a'. *Pjatro i Paval namaljavalisja.**
Pjatro and Paval draw_{Rec}

Pjatro i Paval namaljavali adzin vodnaha.
Pjatro and Paval draw each other

b'. *Pjatro i Paval kachajucca. Pjatro and Paval love _{-Rec}	Pjatro i Paval kachajuc adzin vodnaha. Pjatro and Paval love each other
c'. *Pjatro i Paval zabilisja. Pjatro and Paval killed _{-Rec}	Pjatro i Paval zabili adzin vodnaha. Pjatro and Paval killed each other
	(Russian)
a''. *Pjotr i Jana narisovalis. Pjotr and Jana draw _{-Rec}	Pjotr i Jana narisovali drug druga. Pjotr and Jana draw each other
b''. *Pjotr i Jana ljubitsja. Pjotr and Jana loves _{-Rec}	Pjotr i Jana ljubjat drug druga. Pjotr and Jana love each other
c''. *Pjotr i Jana ubilis. Pjotr and Jana killed _{-Rec}	Pjotr i Jana ubili drug druga. Pjotr and Jana killed each other
	(Ukrainian)
a'''. *Bohdan ta Mykola namaljuvalis. Bohdan and Mykola draw _{-Rec}	Bohdan ta Mykola namaljuvali odyn odnoho. Bohdan and Mykola draw each other
b'''. *Bohdan ta Mykola ljubljatsja. Bohdan and Mykola love _{-Rec}	Bohdan ta Mykola ljubljat odyn odnoho. Bohdan and Mykola love each other
c'''. *Bohdan ta Mykola vbilis. Bohdan and Mykola killed _{-Rec}	Bohdan ta Mykola vbili odyn odnoho. Bohdan and Mykola killed each other

The following table further illustrates the distinction between the free distribution of the clitic SE, which can combine with any transitive verb (except the cases we have just pointed out), giving rise to a reflexive or reciprocal verb and to the very limited distribution of the morpheme SJA. The table also contains formations based on the dative argument, in which case the distinction between the unlimited set of SE-reflexives/reciprocals and the restricted set of SJA-reflexives/reciprocals seems to be even sharper. Dative reflexives and reciprocals will be discussed in the following subsection.

Table 1 - numerous set of SE-reflexives/reciprocals vs. restricted set of SJA-reflexives/reciprocals

SE-reflexives/reciprocals										SJA-reflexives/reciprocals		
Bg	Mac	Cr	Sln	Cz	Pol	Slk	Bel	Rus	Ukr			
držat se	držati se	držati se	držati se	držet se	trzymać się	držat' sa	dzjaržacca	deržatsja	deržatsysja			to hold each other
pazjat se	čuvati se	čuvati se	paziti se	hlídat se	pilnować się	stražít' sa						to watch each other
podveždat se	se iznevernuvat	varati se	varati se	podvádět se	oszukiwać się	podvádžat' sa						to deceive each other
pregleždat se	pregledati se	pregledati se	spregledati se	prohlédnout se	przyjrzeć się	prehliadnuť sa	prasmatrecca					to check each other
nabljudavat se	se pratat	posmatrati se	opazovati se	sledovat se	obserwować się	sledovat' sa						to follow each other
vazpolzvat se	se iskoristnuvat	koristiti se	izkoriščati se	využívat se	wykorzystywać się	využívat' sa						to take advantage of each other
ubivat se	se ubivaat	ubiti se	ubiti se	zabit se	zabić się	zabit' sa	zabicca					to kill each other
poznavat se	se znaat	znati se	poznati se	znát se	znać się	poznat' sa						to know each other
predavat se	se izdavaat	izdati se	izdati se	zradit se	zdradzić się	zradit' sa						to betray each other
probodam se	se probode	ubosti se	pičiti se	bodnout se	ukłuć się	pichnúť sa						to stab oneself
citiram se	se prisili	citirati sebe	citirati se	citovat se	cytować się	citovat' sa	cytiravacca	zarezatsja	vkolotsysja			to cite oneself
primužadavam se	se prinudi	prinuditi se	prisiliti se	domnit se	zmusić się	domnúť sa		??citirovatsja	cytuvatsysja			to force oneself
kontroliram se	se kontrolira	kontrolirati se	kontrolirati se	kontrolovat se	kontrolować się	kontrolovat' sa	kantraliravacca		kontroljuvatsysja			to control oneself
žrtvuiram se	se žrtvuva	žrtvovati se	žrtvovati se	obětovat se	poświęcić się	obetovat' sa						to sacrifice oneself
otvrštavam se	se otruva	otrovati se	zastrupiti se	otravit se	otrueć się	otravit' sa	atruicca		otravitsja	otrujitsysja		to poison oneself
opisvam se	se opisuva	opisati se	opisati se	popsat se	opisać się	opisat' sa						to describe oneself
predstavjam se	se predstavuva	predstaviti se	predstaviti se	przedstawić się	przedstawić się	predstavít' sa	pradstavicca	predstavitsja	predstavvysysja			to introduce oneself
piadavam se	se idava	prijaviti se	javiti se	udat se	zadenuncjować się	udat' sa			sdatsja			to turn oneself in
podarijavat si	si podaruva	dati s(eb)j	podariti si	darovat si	darować się	darovat' si						to give each other a present
saobštavat si	si javuva	????	oznanjati si	oznamovat si	oznamować się	oznamovat' si						to inform each other
prečat si	si smeta	smetati s(eb)j	ovirati si	prekázat si	prekazać się	prekázat' si						to bother each other
zaklevat se	si obakava	????	objubljavati si	prisahat si	prисяhat się	prisahat' si		kljatsjsja				to swear to each other
zaemat si	si pozajmuva	posuditi s(eb)j	posoditi si	požičit si	pożycić się	požičat' si						to lend each other
vazdejstvat si	si pravi	izazivati s(eb)j	povzročati si	působit si	spůsobit się	spůsobit' si						to cause each other
obeštavat si	si obekava	obečati s(eb)j	objubiti si	slibit si	słubić się	s'ubit' si						to promise each other
opredeljat si	si odreduva	ustanoviti s(eb)j	določiti si	stanovit si	stanowić się	stanovit' si						to determine for each other
zaplašvat si	si preti	prijetiti s(eb)j	groziti si	vyhrožovat si	wygrożować się	vyhražat' si			??grozitsja			to threaten each other
dokazvam si	si dikazuva	????	dokazati si	dokázat si	dokazać się	dokázat' si						to prove to oneself
poročvam si	si naračuva	naručiti s(eb)j	naročiti si	objednat si	objednat się	objednat' si						to order for oneself
prodalžavam si	si prodolžuva	produžiti s(eb)j	podaljšati si	prodloužit si	prodloużyć się	predlžít' si						to prolong for oneself
dobavjam si	si dodava	dodati s(eb)j	dodati si	přidat si	pridać się	pridať si						to add for oneself
podgotvjam si	si priprema	pripřemiti s(eb)j	připraviti si	připraviti si	przygotować się	připravít' si						to prepare for oneself
kazvam si	si kažuva	reči s(eb)j	reči si	řect si	wyświetlić się	povedat' si						to tell oneself
objasnjavam si	si objasnuva	objasniti s(eb)j	razložiti si	vysvětlit si	wyświetlić się	vysvetlit' si						to explain to oneself
zabranjavam si	si zabranuva	zabraniti s(eb)j	prepovedati si	zakázat si	zakazać się	zakázat' si						to prohibit oneself
uništožavam si	si oništuvava	uništiti s(eb)j	uničiti si	zničit si	zničić się	zničit' si						to destroy for oneself

2.2.2 Dative reflexives and reciprocals

As already mentioned in subsection (2.1.1) and preliminarily illustrated in table 1, the languages that create their reflexive verbs by means of the morpheme SJA do not have dative reflexives, i.e., reflexives whose single argument is assigned the Agent role and the role of the suppressed dative argument (usually Benefactor). On the other hand, the languages that form their reflexives via the clitic SE do have dative reflexives, in which case the clitic appears in the dative form SI. Moreover, as the following series of examples demonstrates, the set of dative SI-reflexives is once more systematically free, i.e., any transitive verb licensing a dative (indirect) object (examples (a)), has a reflexive dative counterpart (examples (b))¹⁴.

(36) Unlimited set of dative SI-reflexives

a'. Petr lhal Marii.
Petr lied Marie-Dat
'Petr lied to Marie.'

b'. Petr si lhal.
Petr SI lied
'Petr lied to himself.'

(Czech)

a''. Peter je lagal Mojci.
Peter aux lied Mojca-Dat
'Peter lied to Mojca.'

b''. Peter si je lagal.
Petre SI aux lied
'Peter lied to himself.'

(Slovenian)

(37) Unlimited set of dative SI-reflexives

a'. Janko gratuloval Ľubke.
Janko congratulated Ľubka-Dat
'Janko congratulated Ľubka.'

b'. Janko si gratuloval.
Janko SI congratulated
'Janko congratulated himself.'

(Slovak)

a''. Petar čestital na Jana.
Petar congratulated to Jana
'Petar congratulated Jana.'

b''. Petar si čestital.
Petar SI congratulated
'Petar congratulated himself.'

(Macedonian)

(38) Unlimited set of dative SI-reflexives

a'. Petar vjarvaše na Jana.
Petar believed to Jana
'Petar believed Jana.'

b'. Petar si vjarvaše.
Petar SI believed
'Petar believed himself.'

(Bulgarian)

a''. Petar vjeruje Jani.
Petar believed Jana-Dat
'Petar believed Jana.'

b''. Petar si vjeruje.
Petar SI believed
'Petar believed himself.'

(Croatian)

¹⁴ It seems that dative (indirect) objects, unlike accusative (direct) objects, can always be [+human]. The only restriction on dative SI-reflexives thus is that the semantics of corresponding transitive verbs does not demand their subject and indirect object to be two distinct entities (see the discussion of the examples in 31). With respect to dative SI-reciprocals this means that these formations are always possible when the corresponding transitive verb licenses a dative (indirect) object (see the discussion of the examples in 33).

Speakers of SJA-languages can express the dative reflexivity, only by means of a dative reflexive anaphor, as illustrated by the following triplet of examples:

(39) The absence of dative reflexives in SJA-languages (Belarusian)

<p>* Pjatro pavinšavausja. Pjatro congratulated_{Ref}</p>	<p>Pjatro pavinšavau sam sjabe. Pjatro congratulated himself_{Dat}</p>
--	---

(40) The absence of dative reflexives in SJA-languages (Russian)

<p>* Pjotr verilsja. Pjotr believed_{Ref}</p>	<p>Pjotr veril sebe. Pjotr believed himself_{Dat}</p>
--	--

(41) The absence of dative reflexives in SJA-languages (Ukrainian)

<p>* Bogdan brechavsja. Bogdan lied_{Ref}</p>	<p>Bohdan brechav sobi. Bohdan lied himself_{Dat}</p>
--	--

As far as the dative reciprocals are concerned, the situation seems to be very similar, although as can be seen from table 1, there are some isolated cases of dative reciprocals in SJA-languages. Interestingly, however, if such a dative SJA-reciprocal exists, it cannot license an accusative (direct) object, as opposed to SI-reciprocals that do license these objects.

(42) Dative reciprocals and accusative objects

(Belarusian) vs. (Slovak)

<p>a'. Pjatro i Jana šaptali adzin vodnamu tajamnicy. Pjatro and Jana whispered each other_{Dat} secrets_{Acc}. "Pjatro and Jana whispered secrets to each other."</p>	<p>a''. Janko a Ľubka šepkali jeden druhému tajomstvá. Janko and Ľubka whispered each other_{Dat} secrets_{Acc}. "Janko and Ľubka whispered secrets to each other."</p>
<p>b'. Pjatro i Jana šaptalisja (*tajamnicy). Pjatro and Jana whispered_{REC} (*secrets_{Acc}). "Pjatro and Jana whispered (*secrets to each other)."</p>	<p>b''. Janko a Ľubka si šepkali tajomstvá. Janko and Ľubka SI whispered secrets_{Acc}. "Janko and Ľubka whispered secrets to each other."</p>

The Belarusian and Slovak sentences in (42a) involve a transitive verb and a dative reciprocal anaphor. As expected, the accusative (direct) object is licensed in both of these sentences. The sentences in (42b), however, differ in the following respect: While the SI-reciprocal can still license the accusative bearing element (the Slovak sentence in (42b'')), the addition of this element to the SJA-reciprocal leads to ungrammaticality (the Belarusian sentence in (42b')). The examples in (43) and (44) further show that exactly the same holds for other Slavic languages as well, comparing Russian with Macedonian and Ukrainian with Croatian, respectively.

(43) Dative reciprocals and accusative objects

- | | | |
|---|------------|--|
| (Russian) | vs. | (Macedonian) |
| a'. Pjotr i Jana šeptali drug drugu tajny.
Pjotr and Jana whispered each other _{Dat} secrets _{Acc} .
"Pjotr and Jana whispered secrets to each other." | | a''. Petar i Jana šepotat tajni eden na drug.
Janko and Ľubka whispered each other _{Dat} secrets _{Acc} .
"Janko and Ľubka whispered secrets to each other." |
| b'. Pjotr i Jana šeptalis (*tajny).
Pjotr and Jana whispered _{REC} (*secrets _{Acc}).
"Pjotr and Jana whispered (*secrets to each other)." | | b''. Petar i Jana si šepotat tajni.
Petar and Jana SI whispered secrets _{Acc} .
"Petar and Jana whispered secrets to each other." |

(44) Dative reciprocals and accusative objects

- | | | |
|---|------------|---|
| (Ukrainian) | vs. | (Croatian) |
| a'. Mykola i Natalka hladlyly odyń odnomu spynu.
Mykola and Natalka stroked each other _{Dat} back _{Acc} .
"Mykola and Natalka stroked each other's backs." | | a''. Petar i Jana su gladili leđa jedno drugom.
Petar and Jana aux. _{3pl} stroked back _{Acc} each other _{Dat} .
"Petar and Jana stroked each other's back." |
| b'. Mykola i Natalka hladlylysja (*spynu).
Mykola and Natalka stroked _{REC} (*back _{Acc}).
"Mykola and Natalka stroked (*back to each other)." | | b''. Petar i Jana su si gladili leđa.
Petar and Jana aux. _{3pl} SI stroked back _{Acc} .
"Petar and Jana stroked back to each other." |

Finally, it is worth noting that also the (dative) SI-formations display a systematic ambiguity between the reflexive and reciprocal reading, which we have already observed for the (accusative) SE-formations in (34) above, if their subject denotes a plural entity. This is illustrated in (45) – (47) below. As can be seen, all the sentences have both reflexive (i) and reciprocal (ii) readings.

(45') SI-reflexive/reciprocal ambiguity

- (Bulgarian)**
- Petar i Jana si kupuvat sigari.**
 Petar and Jana SI buy cigarettes.
- i. 'Petar and Jana buy cigarettes for themselves.'
 - ii. 'Petar and Jana buy cigarettes for each other.'

(45'') SI-reflexive/reciprocal ambiguity

- (Slovak)**
- Janko a Ľubka si kupujú cigarety.**
 Janko and Ľubka SI buy cigarettes.
- i. 'Janko and Ľubka buy cigarettes for themselves.'
 - ii. 'Janko and Ľubka buy cigarettes for each other.'

(46') SI-reflexive/reciprocal ambiguity

- (Croatian)**
- Petar i Jana si šalju pisma.**
 Petar and Jana SI send letters.
- i. 'Petar and Jana send letters to themselves.'
 - ii. 'Petar and Jana send letters to each other.'

(46'') SI-reflexive/reciprocal ambiguity

- (Macedonian)**
- Petar i Jana si isprakaat pisma.**
 Petar and Jana SI send letters.
- i. 'Petar and Jana send letters to themselves.'
 - ii. 'Petar and Jana send letters to each other.'

(47') SI-reflexive/reciprocal ambiguity

(Czech)

Petr a Marie si škodí.

Petr and Marie SI harm

- i. 'Petr and Marie harm themselves.'
- ii. 'Petr and Marie harm each other.'

(47'') SI-reflexive/reciprocal ambiguity

(Slovenian)

Peter in Mojca si škodita.

Peter and Mojca SI harm

- i. 'Peter and Mojca harm themselves.'
- ii. 'Peter and Mojca harm each other.'

Of course in SJA-languages this ambiguity does not exist, because these languages lack dative reflexives.

Before approaching the next distinction between the SE-reflexives/reciprocals and the SJA-reflexives/reciprocals a brief note on Polish and Croatian is required here. Namely, recall from table 1 that there are no dative SI-reflexives/reciprocals in Polish at all and that the availability of these formations in Croatian is not clear, i.e. some speakers do accept the dative clitic SI, while others do not accept them, using the dative anaphor *sebi* instead. This fact can be easily accounted for under the assumption that Polish do not have the clitic SI at its disposal, while in Croatian, or more precisely Serbo-Croatian, the availability of this element varies according to a particular geographical region (as pointed to me by Marijana Marelj, p.c.). However, more precise examination of Croatian data is needed, since it seems that those speakers, who accept the dative clitic SI, accept it mostly with dative reflexive verbs, while its use with dative reciprocals seems to be more restricted. I leave this issue open for further research.

2.2.3 ECM structures

The next distinction between the SE-reflexives/reciprocals and the SJA-reflexives/reciprocals is the fact that the former, but not the latter, can appear in ECM structures, i.e. structures in which the subject of the reflexive/reciprocal verb is assigned theta roles of two distinct predicates – the embedded and the matrix one. Since it is not obvious that "*za-constructions*" used in SE-reflexives/reciprocals examples in this subsection are true ECM (as pointed to me by an anonymous reviewer), a short verification is called for first.

One of the ways in which the ECM status of these constructions can be verified is to use an idiomatic expression as a complement of the ECM verb. If the idiomatic meaning is preserved in ECM, we have good reason to believe that a given verb is indeed an ECM verb, since it theta marks the idiomatic complement as a whole. On the other hand, if a verb marks the subject of the complement phrase only, the original idiomatic expression should be "broken". The following couple of examples from Croatian (48a) and Czech (48b) show that the former of these two scenarios holds; again, for the sake of completeness, I gave one example from a SJA-language as well, namely, from Russian (48c).

(48) Idioms as complements of ECM verbs

- | | |
|---|--------------------------|
| <p>(ai) izgubieno vrieme
lost time
'wasted time'</p> <p>(aii) Petar smatra to vrieme za izgubieno.
Petar considered that time for lost
'Petar thinks that it was a wasted time.'</p> | <p>(Croatian)</p> |
| <p>(bi) zabitý čas/den/...
killed time/day/...
'wasted time/day/...'</p> <p>(bii) Petr považuje celé odpoledne za zabité.
Petr considered whole afternoon for killed
'Petr thinks that the whole afternoon has been wasted.'</p> | <p>(Czech)</p> |
| <p>(ci) dni sačteny
days counted
'there is little time left'</p> <p>(cii) Mariaa sčitajet jeho dni sačteny.
Maria considered his days counted
'Maria thinks that he has little time to live/to stay in work (before being fired)/etc...'</p> | <p>(Russian)</p> |

Having verified that "*za-constructions*" are true ECM we are ready to look at the availability of Slavic reflexive/reciprocal verbs in ECM structures. As the following examples demonstrate, only the SE-reflexives/reciprocals, but not the SJA-reflexives/reciprocals, can participate in these structures. Let us look first at reflexives in (49).

(49) Reflexives in ECM - Ukrainian vs. Slovak / Slovenian

- (Ukrainian)**
- a'. Mykola pryznav Natalku vynnoju.**
Mykola found Natalka_{Acc} guilty_{Ins}
'Mykola found Natalka guilty.'
- b'. * Mykola pryznavsja vynnym.**
Mykola found_{REFL} guilty_{Ins}
'Mykola found himself guilty.'

<p>a". Janko uznal Ľubku za vinnú. Janko found Ľubka_{-Acc} for guilty_{-Ins} "Janko found Ľubka guilty."</p> <p>b". Janko sa uznal za vinného. Janko SE found for guilty_{-Acc} "Janko found himself guilty."</p>	<p>(Slovak)</p>	<p>a"". Peter je spoznal Mojco za krivo. Peter aux._{-3sg} found Mojca_{-Acc} for guilty_{-Acc} "Peter found Mojco guilty."</p> <p>b"". Peter se je spoznal za krivega. Petr SE aux._{-3sg} found for guilty_{-Acc} "Peter found himself guilty."</p>	<p>(Slovenian)</p>
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Sentences in (49a) above contain the transitive ECM verb 'find'. However, the reflexive counterpart of this ECM verb exists in SE-languages only, as illustrated by Slovak example (49b") and Slovenian example (49b""). SJA-languages, represented here by Ukrainian, do not allow their reflexives to appear in this type of structures as witnessed by the ungrammatical status of the sentence in (49b'). This divergence is attested in other Slavic languages as well, as illustrated in (50) for Belarusian vs. Bulgarian/Macedonian and (51) for Russian vs. Croatian/Polish.

(50) Reflexives in ECM - Belarusian vs. Bulgarian / Macedonian

<p>a'. Pjatro pryznau Janu durnoj. Pjatro considered Jana_{-Acc} stupid_{-Ins} "Pjatro considered Jana stupid."</p> <p>b'. * Pjatro pryznalsja durnym. Pjatro considered_{-REFL} stupid_{-Ins} "Pjatro considered himself stupid."</p>	<p>(Belarusian)</p>
<p>a". Petar smjata Jana za glupava. Petar considered Jana for stupid "Petar considered Jana stupid."</p> <p>b". Petar se smjata za glupav. Petar SE considered for stupid "Petar considered himself stupid."</p>	<p>(Bulgarian)</p>
<p>a"". Petar ja priznal na Jana kako glupava. Petar aux considered Jana as stupid "Petar considered Jana stupid."</p> <p>b"". Petar se priznal kako glup. Petar SE considered as stupid "Petar considered himself stupid."</p>	<p>(Macedonian)</p>

(51) Reflexives in ECM - Russian vs. Croatian / Polish

<p>a'. Pjotr sčitaet Janu razumnoj. Pjotr considers Jana_{-Acc} clever_{-Ins} "Pjotr considers Jana clever."</p>	<p>(Russian)¹⁵</p>
---	--------------------------------------

¹⁵ As discussed immediately below in the text, example (51b') is grammatical under the passive reading only.

- b'. Pjotr sčitaetsja razumnym.**
Pjotr considers_{PASS} clever_{Ins}
"Pjotr is considered clever."

(Croatian)

(Polish)

- a''. Petar smatra Janu za pametnu.**
Petar considers Jana_{Acc} for clever_{Acc}
"Petar considers Jana clever."

- a'''. Piotr uważa Joannę za mądrą.**
Piotr considers Joanna_{Acc} for clever_{Acc}
"Piotr considers Joana clever."

- b''. Petar se smatra za pametnog.**
Petar SE considers for clever_{Acc}
"Petar considers himself clever."

- b'''. Piotr uważa się za mądrego.**
Piotr considers SE for clever_{Acc}
"Piotr considers himself clever."

A note is in order here. Namely, recall that in subsection 2.2.1 we have observed that the set of (accusative) SJA-reflexives is very limited. Put differently, we have seen that not every transitive verb has a reflexive counterpart in SJA-languages. One can therefore wonder whether the unacceptability of SJA-reflexives in the examples above is not simply accidental. This is however unlikely, since across the board there is no (transitive) ECM verb in SJA-languages that has a reflexive counterpart. Moreover, note that as the example in (51b) shows, the Russian ECM verb *sčitat'* ('consider') is compatible with the morpheme SJA, yet nevertheless the resulting reflexive-like verb *sčitat'-sja* has only a passive interpretation.

Turning now to reciprocal verbs, the picture arising from the comparison of availability of SE and SJA-reciprocals in ECM structures is consistent with what has been just demonstrated for the reflexives. I.e., only SE-languages permit their reciprocal verbs to participate in ECM constructions, as shown in (52):

(52) Reciprocals in ECM - Ukrainian vs. Slovak / Slovenian
(Ukrainian)

- a'. Mykola i Natalka pryznaly odyń odnoho vynnym.**
Mykola and Natalka found each other_{Acc} guilty_{Ins}
"Mykola and Natalka found each other guilty."

- b'. *Mykola i Natalka pryznalysja vynnymy.**
Mykola and Natalka found_{REC} guilty_{Ins}
"Mykola and Natalka found each other guilty."

(Slovak)

(Slovenian)

- a''. Janko a Ľubka uznali jeden druhého za vinného.**
Janko and Ľubka found each other_{Acc} for guilty_{Acc}
"Janko and Ľubka found each other guilty."

- a'''. Peter in Mojca sta spoznala en drugega za krivo.**
P. and M. aux_{-3pl} found each other_{Acc} for guilty_{Acc}
"Peter and Mojca found each other guilty."

- b''. Janko a Ľubka sa uznali za vinných.**
Janko and Ľubka SE found for guilty_{Acc}
"Janko and Ľubka found each other guilty."

- b'''. Peter in Mojca sta se spoznala za krive.**
Petr and Mojca aux_{-3pl} SE found for guilty_{Acc}
"Peter and Mojca found each other guilty."

Once more, the sentences in (52a) contain the transitive ECM verb 'find'. The reciprocal ECM counterpart of this verb is possible only in Slovak (52b") and Slovenian (52b""), while for Ukrainian the reciprocal ECM structure is unavailable (52b')¹⁶. The following examples in (53) and (54), containing data from other Slavic languages, complete the picture (note that the Russian example in (54b') has only passive reading, similarly to the example in (51b') above).

(53) Reciprocals in ECM - Belarusian vs. Bulgarian / Macedonian

(Belarusian)

a'. Pjatro i Jana pryznali odzin vodnaha durnymi.

Pjatro and Jana considered each other_{-Acc} stupid_{-Ins}
"Pjatro and Jana considered each other stupid."

b'. * Pjatro i Jana pryznalisja durnymi.

Pjatro and Jana considered_{-REC} stupid_{-Ins}
"Pjatro and Jana considered each other stupid."

(Bulgarian)

a''. Petar i Jana smjata edin drug za glupavi.

Petar and Jana considered each other for stupid
"Petar and Jana considered each other stupid."

b''. Petar i Jana se smjatat za glupavi.

Petar and Jana SE considered for stupid
"Petar and Jana considered each other stupid."

(Macedonian)

a'''. Petar i Jana priznale eden na drug kako glupavi.

Petar and Jana considered each other as stupid
"Petar and Jana considered each other stupid."

b'''. Petar i Jana se priznale kako glupi.

Petar and Jana SE considered as stupid
"Petar and Jana considered each other stupid."

(54) Reciprocals in ECM - Russian vs. Croatian / Polish

(Russian)

a'. Pjotr i Jana sčitajut drug druga razumnyn.

Pjotr and Jana consider each other_{-Acc} clever_{-Ins}.
"Pjotr and Jana consider each other clever."

b'. Pjotr i Jana sčitajutsja razumnymi.

Pjotr and Jana consider_{-PASS} clever_{-Ins}.
"Pjotr and Jana are considered clever."

(Croatian)

a''. Petar i Jana smatraju jedan drugoga za pametnog.

Petar and Jana consider each other_{-Acc} for clever_{-Acc}.
"Petar and Jana consider each other clever."

(Polish)

a'''. Piotr i Joanna uważają jeden drugiego za mądrego.

P. and Joanna consider each other_{-Acc} for clever_{-Acc}.
"Piotr and Joanna consider each other clever."

¹⁶ As noted in subsection 2.2.1 SE-formations are often ambiguous between the reflexive and the reciprocal reading. This ambiguity, of course, exists also in ECM contexts. Thus, e.g. the Slovak and Slovenian sentences in (52b") and (52b""), presented here as having reciprocal meaning, can denote the reflexive meaning as well (i.e. Janko and Lubka /Peter and Mojca found guilty themselves).

b". Petar i Jana se smatraju pametnima.
 Petar and Jana SE consider clever-_{Ins}.
 "Petar and Jana consider each other clever."

b"". Piotr i Joanna uważają się za mądrych.
 Piotr and Joanna consider SE for clever-_{Acc}.
 "Piotr and Joanna consider each other clever."

2.2.4 Count adverbials

So far we have seen three distinctions between the SE-reflexives/reciprocals and the SJA-reflexives/reciprocals. Namely, we have observed that the former (unlike the latter) can be formed quite freely (2.2.1), can denote the reflexive/reciprocal relation between the subject argument and the argument which – if realized with the transitive verbal counterpart – bears dative case (2.2.2), and can appear in ECM structures (2.2.3). In the following two subsections I will present two further distinctions, which are relevant for reciprocal verbs only. We will start with count adverbials and the different effect this type of modifier has on the interpretation of SE-reciprocals as opposed to SJA-reciprocals. Then, in subsection 2.2.5, we will demonstrate how these two reciprocal formations differ with respect to their ability to license the co-called Discontinuous constructions.

As already mentioned in the course of the discussion of the Depictive adjectives test (subsection 2.1.2) and the "I"-reading availability test (subsection 2.1.3), SE-reciprocals can express reciprocity either via the symmetry of the event they denote or via the symmetric sequence of two or more asymmetric sub-events. Let us make this point more explicit. It is known that plural subjects can impose two readings on a sentence, a collective one (55i) and a distributive one (55ii).

(55) Plural subjects and collective vs. distributive reading

John and Mary bought a new car.

- i. John and Mary bought a new car together, i.e. one new car was bought.
- ii. John bought a new car and Mary bought a new car, i.e. two new cars were bought.

This ambiguity can be made even more obvious, if a sentence contains a count adverbial (e.g. *five times*), since these adverbs are able to "count" events denoted by the sentence, as observed by Siloni (2002) and Dimitriadis (2004). Under the collective reading the adverb simply multiplies the singular event denoted by the verb (56i). Under the distributive reading the adverb can either express the total number of events performed individually by any of the subject set members (56ii), or it can multiply the number of events performed individually by each one of the subject set members (56iii).

(56) Plural subjects, count adverbials and collective vs. distributive reading

John and Mary bought a new car five times.

- i. John and Mary bought a new car together five times, i.e. five new cars were bought.
- ii. John bought X cars (e.g. 2 cars) and Mary bought 5-X cars (e.g. 3 cars), i.e. five new cars were bought.
- iii. John bought five new cars and Mary bought five new cars, i.e. ten new cars were bought.

Now let us briefly revisit our discussion of the ambiguity between the "I"-reading and the "we"-reading (subsection 2.1.3). Namely, recall that intransitive reciprocal verbs under embedding disallow the "I"-reading (24), in contrast to embedded sentences whose reciprocity is achieved via a transitive verb and reciprocal anaphors (23); both examples are repeated below.

(23) Ambiguity of reciprocal anaphors under embedding

John and Mary said they kissed each other.

- i. John and Mary said they (i.e. John and Mary) kissed each other.
- ii. John said he kissed Mary and Mary said she kissed John.

(24) Unambiguous interpretation of intransitive reciprocals under embedding

John and Mary said they kissed.

- i. John and Mary said they (i.e. John and Mary) kissed each other.
- ii. # John said he kissed Mary and Mary said she kissed John.

Further, recall the two conditions, formulated in Siloni (2012), which must be fulfilled in order to make the "I"-reading possible, specifically (i) the embedded subject must be "distributable" (otherwise it cannot be bound by the distributive operator that ranges over the members of the matrix subject set) and (ii) the embedded subjects must bear a single theta role. It is obvious that both of these conditions are satisfied in (23); that it is indeed the case with respect to the former of these conditions is further confirmed by the Count-adverbials diagnostics. (Since it is not important for our point here, I will disregard the distributive reading denoting the total number of events performed individually by any of the subject set members (56ii), focusing only on the distributive reading multiplying the number of events performed individually by each one of the subject set members (56iii).)

(57) Reciprocal anaphors, count adverbials and collective vs. distributive reading

John and Mary kissed each other five times

- i. There were five symmetric events of kissing between John and Mary.
- ii. There were ten asymmetric events of kissing - John kissed Mary five times and Mary kissed John five times.

What about the sentence in (24)? In 2.1.3 we have attributed the impossibility of the "I"-reading to the theta roles associated with the embedded subject. While this is apparently

correct (the embedded subject in (24) does not bear a single/simple theta role), one can still wonder what the status of intransitive reciprocals like *kiss* is with respect to the "distributivity" condition. Recall that Williams (1991) claims that these reciprocals disallow the "I"-reading since their subjects must be non-distributed plurals. If so, we expect these verbs not to permit the distributive reading. As the Count-adverbial test shows this prediction is indeed borne out.

(58) Intransitive reciprocals, count adverbials and collective vs. distributive reading

John and Mary kissed five times

- i. There were five symmetric events of kissing between John and Mary.
- ii. # There were ten asymmetric events of kissing - John kissed Mary five times and Mary kissed John five times.

We are thus facing here two types of reciprocals, which differ in two respects. The periphrastic reciprocals (built upon a transitive verb and a reciprocal anaphor) enable "I"-reading under embedding (23) and allow a distributive reading (57ii). Intransitive reciprocals, on the other hand, lack both of these interpretations, as they permit neither "I"-reading (24), nor distributive reading (58ii). With this in mind let us now approach the Slavic reciprocal verbs. In 2.1.3 we have observed that neither of the two types of reciprocal verbs attested among Slavic languages, i.e. SE-reciprocals and SJA-reciprocals, allow the "I"-reading under embedding. One can thus expect that these reciprocals will disallow the distributive reading, exactly as the intransitive English reciprocals shown above do. This prediction is, however, borne out only with respect to SJA-reciprocals (59b'). SE-reciprocals, on the other hand, behave like periphrastic reciprocals, i.e. they do allow the distributive reading (59b'') and (59b''').

(59) Count adverbials (and accusative reciprocals)

(Russian)

a'. Pjotr i Jana pjat raz pocelovali drug druga.

Pjotr and Jana five times kissed each other_(Acc).

- i. "There were five symmetric events of kissing between Pjotr and Jana."
- ii. "There were ten asymmetric events of kissing - Pjotr kissed Jana five times and Jana kissed Pjotr five times."

b'. Pjotr i Jana pjat raz pocelovalis.

Pjotr and Jana five times kissed_{REC}.

- i. "There were five symmetric events of kissing between Pjotr and Jana."
- ii. # "There were ten asymmetric events of kissing - Pjotr kissed Jana five times and Jana kissed Pjotr five times."

(Polish)

a". Piotr i Joanna pięć razy pocałowali jedno drugie.

Piotr and Joanna five times kissed each other_{-(Acc)}.

- i. "There were five symmetric events of kissing between Piotr and Joanna."
- ii. "There were ten asymmetric events of kissing - Piotr kissed Joanna five times and Joanna kissed Piotr five times."

b". Piotr i Joanna pocałowali się pięć razy.

Piotr and Joanna kissed SE five times.

- i. "There were five symmetric events of kissing between Piotr and Joanna."
- ii. "There were ten asymmetric events of kissing - Piotr kissed Joanna five times and Joanna kissed Piotr five times."

(Bulgarian)

a"". Petar i Jana celunacha pet pati edin drug.

Petar and Jana kissed five times each other.

- i. "There were five symmetric events of kissing between Petar and Jana."
- ii. "There were ten asymmetric events of kissing - Petar kissed Jana five times and Jana kissed Petar five times."

b"". Petar i Jana se celunacha pet pati.

Petar and Jana SE kissed five times.

- i. "There were five symmetric events of kissing between Petar and Jana."
- ii. "There were ten asymmetric events of kissing - Petar kissed Jana five times and Jana kissed Petar five times."

The sentences in (59a) contain transitive verbs and reciprocal anaphors, and they are ambiguous both in Russian (SJA-language) and Polish/Bulgarian (SE-languages), exactly as we have observed for the parallel English sentence in (57). This ambiguity disappears in the Russian sentence (59b'), containing a SJA-reciprocal verb, exactly as the English sentence, which involves the intransitive reciprocal verb in (58). However, in Polish and Bulgarian sentences (59b") and (59b""), respectively, which contain SE-reciprocal verbs, the distributive reading (ii) is still present. As the following examples show, the same state of affairs holds for the other languages in the sample; moreover, it holds regardless of whether the reciprocal is an accusative one as in (60) or a dative one as in (61). Namely, the examples in (60) compare Belarusian (SJA-language) with Slovenian/Slovak (SE-languages), and the examples in (61) contrast Ukrainian (SJA-language) with Macedonian/Croatian (SE-languages). As in (59) above, transitive verbs accompanied by reciprocal anaphors enable collective (i) as well as distributive (ii) reading in all of these languages (see (60a) and (61a)). Both of these readings are available for SE-reciprocals (60b"/60b"") and SI-reciprocals (61b"/61b"") as well. SJA-reciprocals, on the other hand, allow the collective reading (60b'i/61b'i) only, the distributive reading (60b'ii/61b'ii) being unavailable.

(60) Count adverbials and accusative reciprocals

(Belarusian)

a'. Pjatro i Jana pjac razou abymuli adzin vodnaha.

Pjatro and Jana five times hugged each other_{-Acc}.

- i. "There were five symmetric events of hugging between Pjatro and Jana."
- ii. "There were ten asymmetric events of hugging - Pjatro hugged Jana five times and Jana hugged Pjatro five times."

b'. Pjatro i Jana pjac razou abymulisja.

Pjatro and Jana five times hugged_{REC}.

- i. "There were five symmetric events of hugging between Pjatro and Jana."
- ii. # "There were ten asymmetric events of hugging - Pjatro hugged Jana five times and Jana hugged Pjatro five times."

(Slovenian)**a''. Peter in Mojca sta petkrat objela en drugega.**Peter and Mojca aux._{3pl} five-times hugged each other_{-Acc}.

- i. "There were five symmetric hug events between Peter and Mojca."
- ii. "There were ten asymmetric hug events - Peter hugged Mojca five times and Mojca hugged Peter five times."

b''. Peter in Mojca sta se petkrat objela.Peter and Mojca aux._{3pl} SE five-times hugged.

- i. "There were five symmetric events of hugging between Peter and Mojca."
- ii. "There were ten asymmetric events of hugging - Peter hugged Mojca five times and Mojca hugged Peter five times."

(Slovak)**a'''. Janko a Ľubka päťkrát objali jeden druhého.**Janko and Ľubka five times hugged each other_{-Acc}.

- i. "There were five symmetric events of hugging between Janko and Ľubka."
- ii. "There were ten asymmetric events of hugging – J. hugged Ľubka five times and Ľ. hugged Janko five times."

b'''. Janko a Ľubka sa päťkrát objali.

Janko and Ľubka SE five time hugged.

- i. "There were five symmetric events of hugging between Janko and Ľubka."
- ii. "There were ten asymmetric events of hugging – J. hugged Ľubka five times and Ľ. hugged Janko five times."

(61) Count adverbials and dative reciprocals**(Ukrainian)****a'. Mykola i Bohdan pjat' raziv pasuvaly odyń odnomu (šajbu).**Mykola and Halyna five times passed each other_{-Dat} (puck)

- i. "There were five symmetric events of passing between Mykola and Bohdan."
- ii. "There were ten asymmetric events of passing - Mykola passed to Bohdan five times and Bohdan passed to Mykola five times."

b'. Mykola i Bohdan pasuvalysja (*šajbu).Mykola and Bohdan five times passed_{-REC} (*puck).

- i. "There were five symmetric events of passing between Mykola and Bohdan."
- ii. # "There were ten asymmetric events of passing - Mykola passed to Bohdan five times and Bohdan passed to Mykola five times."

(Macedonian)**a''. Petar i Jana petpati podadoa topkata eden na drug.**

Petar and Jana five-times passed ball each to other.

- i. "There were five symmetric events of ball passing between Petar and Jana."
- ii. "There were ten asymmetric events of ball passing - Petar passed five times to Jana and Jana passed five times to P.."

b''. Petar i Jana petpati si ja podadoa topkata.

Petar and Jana five-times SI aux passed ball.

- i. "There were five symmetric events of ball passing between Petar and Jana."
- ii. "There were ten asymmetric events of ball passing - Petar passed five times to Jana and Jana passed five times to P.."

(Croatian)**a'''. Petar i Jana su pet puta dodali pak jedan drugome.**Petar and Jana aux five times passed puck each other_{-Dat}.

- i. "There were five symmetric events of puck passing between Petar and Jana."
- ii. "There were ten asymmetric events of puck passing - Petar passed five times to Jana and Jana passed five times to P.."

b'''. Petar i Jana su si pet puta dodali pak.

Petar and Jana aux SI five times passed puck

- i. "There were five symmetric events of puck passing between Petar and Jana."
- ii. "There were ten asymmetric events of puck passing - Petar passed five times to Jana and Jana passed five times to P.."

It is interesting to note that there can be sentences denoting situations which do not enable the SE-reciprocals to be ambiguous between collective and distributive readings. Crucially, however, such situations do not allow this kind of ambiguity in sentences containing reciprocal anaphors either:

(62) Count adverbials

(Czech)

a. Petr a Jana v průběhu turnaje několikrát porazili jeden druhého.

Petr and Jana during tournament several times defeated each other.

- i. # "There were several symmetric defeats between Petr and Jana."
- ii. "There were several asymmetric defeats between Petr and Jana."

b. Petr a Jana se v průběhu turnaje několikrát porazili.

Petr and Jana SE during tournament several times defeated.

- i. # "There were several symmetric defeats between Petr and Jana."
- ii. "There were several asymmetric defeats between Petr and Jana."

The singular event denoted by the verb *porazit* ('defeat') cannot be symmetric. If Petr defeated Jana in a single game, then Jana could not defeat Peter in the same game, and vice versa. Nevertheless, the distributive reading, under which there were several events of asymmetric *defeat* in several separate games during the tournaments, is still available, so that the sentences in (62) do not result in contradiction.

2.2.5 Discontinuous constructions

It is known, that reciprocity can be expressed not only by means of intransitive reciprocal verbs (e.g. *kiss*, or the Slavic SE-reciprocals and SJA-reciprocals discussed here) or by means of transitive verbs accompanied by reciprocal anaphors, but also by means of the so-called discontinuous constructions. As observed e.g. by Frajzyngier (1999) and Dimitriadis (2004, 2008), if the latter option is utilized then the reciprocal relation holds between the members of the subject set and the members of the oblique set, which is usually introduced by the preposition *with*; there is no reciprocal relation "inside" the subject set, i.e. between the members of the subject set. The following couple of Polish examples illustrates this (taken from Frajzyngier 1999).

(63) Discontinuous constructions and the reciprocal relation between the subject and the oblique set

a. Spotkamy się na Nowym Swiecie.

meet_{-1st, pl, fut.} SE on Nowy Swiat (street name)

'We will meet on Nowy Swiat.'

b. Spotkamy się na Nowym Swiecie z Michalem.

meet_{-1st, pl, fut.} SE on Nowy Swiat (street name) with Michal_{-Instr}
 'We will meet Michal on Nowy Swiat.'

The sentence in (63a) contains the SE-reciprocal verb *spotkać się* ('meet') and it denotes a situation in which the members of the subject set *we*, e.g. *me* and *you*, are supposed to meet on Nowy Swiat street. This is, however, not what the sentence in (63b) says. Here the members of the subject set are supposed to meet somebody else, e.g. *me and you* will come together to Nowy Swiat street, where we will meet *Michal*.¹⁷

Our final distinction between SE-reciprocals and SJA-reciprocals is related to the availability of the discontinuous constructions just presented. Let us look at SJA-reciprocals first. As the following examples in (64) and (65) show, SJA-reciprocals license oblique phrases introduced by the preposition *with*. That is, they enable the establishment of the

¹⁷ It should be mentioned that it has sometimes been claimed that the discontinuous constructions like the one in (63b) do not always denote a true reciprocal relation between the subject and the oblique set. E.g., Dowty (1991) points out that the discontinuous construction in (i) cannot be paraphrased by the sentence in (ii), where both participants of the event are the members of the subject set:

- i. The truck collided with the lamppost.
- ii. * The truck and the lamppost collided.

Noting that the sentence in (ii) can be rescued only if the *lamppost* was in motion (like the *truck*), Dowty concludes that discontinuous constructions denote reciprocal events only if the involvement of the subject and the oblique set in an event is volitionally or motionally symmetric. A similar claim, i.e. a claim that the participation of the subject and the oblique set of discontinuous constructions is not necessarily symmetric, is made for instance in Rákosi (2003), who ascribes this state of affairs to the different theta roles born by the subject set and the oblique set, proposing a new theta role for the latter, which he labels Partner. However, Siloni (2008) argues that the cases, in which the discontinuous construction can have both a symmetric reciprocal reading and an asymmetric non-reciprocal reading, are in fact cases, which involve two distinct homophonous verbs. Namely, presenting data from Hebrew and Hungarian she shows that in these languages the preposition *with* is indeed reserved for denoting the reciprocal relation between the subject and the oblique sets only, while the non-reciprocal relation is denoted by another oblique preposition, as the Hebrew examples in (iii) and (iv) illustrate (taken from Siloni 2008):

- iii. Ha-mexonit hitnagša **im** ha-masa'it/*ha-gader.
the-car collided **with** the-truck/the-fence
- iv. Ha-mexonit hitnagša **ba**-gader.
the-car collided with **in**+the-fence
- v. Auto se **s**-razilo **s** náklad'ákem/*s plotem.
car SE **with**-collided **with** truck/fence
- vi. Auto **na**-razilo **do** plotu.
car **into**-collided **to** fence

The same phenomenon can be observed in Czech. The sentence in (v) contains the SE-reciprocal verb *srazit se* ('collide'), whose oblique argument, introduced by the preposition *s* ('with'), cannot be realized by the static *plot* ('fence'). In order to express that *the car collided with the fence*, sentence (vi) must be used, in which the oblique argument is introduced by the preposition *do* ('to'). Note also, that the Czech verbs in (v) and (vi) differ in their prefix (glossed freely as 'with' in (v) and 'into' in (vi)); the same difference in verbal morphology is reported by Siloni also for Hungarian. Moreover, note that the verb in (vi) lacks the reciprocal clitic SE, showing that the verbs in (v) and (vi) are indeed two distinct verbs.

reciprocal relation not only between the members of a subject set (64a) and (65a), but also between the members of a subject set and the members of an oblique set (64b) and (65b).

(64) Discontinuous constructions - Accusative SJA-reciprocals

(Russian)

a'. Pjotr i Jana obnimalis.
Pjotr and Jana hugged_{REC}.
"Pjotr and Jana hugged."

b'. Pjotr obnimalsja s Janoj.
Pjotr hugged_{REC} with Jana_{Ins}.
"Pjotr hugged with Jana."

(Ukrainian)

a''. Mykola i Halyna objimalysja.
Mykola and Halyna hugged_{REC}.
"Mykola and Halyna hugged."

b''. Mykola objimavsja z Halynoju.
Mykola hugged_{REC} with Halyna_{Ins}.
"Mykola hugged with Halyna."

(Belarusian)

a'''. Pjatro i Jana abymalisja.
Pjatro and Jana hugged_{REC}.
"Pjatro and Jana hugged."

b'''. Pjatro abymausja s Janaj.
Pjatro hugged_{REC} with Jana_{Ins}.
"Pjatro hugged with Jana."

(65) Discontinuous constructions - Accusative SJA-reciprocals

(Russian)

a'. Pjotr i Jana celovalis.
Pjotr and Jana kissed_{REC}.
"Pjotr and Jana kissed."

b'. Pjotr celovalsja s Janoj.
Pjotr kissed_{REC} with Jana_{Ins}.
"Pjotr kissed with Jana."

(Ukrainian)

a''. Mykola i Halyna ciluvalysja.
Mykola and Halyna kissed_{REC}.
"Mykola and Halyna kissed."

b''. Mykola ciluvasja z Halynoju.
Mykola kissed_{REC} with Halyna_{Ins}.
"Mykola kissed with Halyna."

(Belarusian)

a'''. Pjatro i Jana calavalisja.
Pjatro and Jana kissed_{REC}.
"Pjatro and Jana kissed."

b'''. Pjatro calavausja s Janaj.
Pjatro kissed_{REC} with Jana_{Ins}.
"Pjatro kissed with Jana."

Moreover, discontinuous constructions are not restricted to accusative SJA-reciprocals only. As the following examples demonstrate, dative SJA-reciprocals license the discontinuous constructions as well (66b):

(66) Discontinuous constructions - Dative SJA-reciprocals

(Russian)

a'. Pjotr i Jana ŝeptalis.
Pjotr and Jana whispered_{REC}.
"Pjotr and Jana whispered."

b'. Pjotr ŝeptalsja s Janoj.
Pjotr whispered_{REC} with Jana_{Ins}.
"Pjotr whispered with Jana."

(Ukrainian)

a''. Mykola i Halyna ŝeptalysja.
Mykola and Halyna whispered_{REC}.
"Mykola and Halyna whispered."

b''. Mykola ŝeptavsja z Halynoju.
Mykola whispered_{REC} with Halyna_{Ins}.
"Mykola whispered with Halyna."

(Belarusian)**a'''.** Pjatro i Jana šaptališja.Pjatro and Jana whispered_{REC}.
"Pjatro and Jana whispered."**b'''.** Pjatro šaptausja s Janaj.Pjatro whispered_{REC} with Jana_{Ins}.
"Pjatro whispered with Jana."

What about the SE-reciprocals? At first glance SE-reciprocals do not differ from the SJA-reciprocals. I.e., it seems that the former, like the latter, allow discontinuous constructions, as we have already seen in the Polish example (63) above (see also the Czech example in (v), footnote 17), and as is further illustrated by the examples in (67), (68) and (69):

(67) Discontinuous constructions - Accusative SE-reciprocals**(Macedonian)****a'.** Petar i Jana se pregrnale.Petar and Jana SE hugged_{pl}.
"Petar and Jana hugged."**b'.** Petar se pregrna so Jana.Petar SE hugged_{sg} with Jana
"Petar hugged with Jana."**(Polish)****a''.** Piotr i Joanna się obejmowali.Piotr and Joanna SE hugged.
"Piotr and Joanna hugged."**b''.** Piotr obejmował się z Joanną.Piotr hugged_{sg} SE with Joanna_{Ins}.
"Piotr hugged with Joanna."**(68) Discontinuous constructions - Accusative SE-reciprocals****(Slovak)****a'.** Janko a Ľubka sa bozkávali.Janko and Ľubka SE kissed.
"Janko and Ľubka kissed."**b'.** Janko sa bozkával s Ľubkou.Janko SE kissed_{sg} with Ľubka_{Ins}.
"Janko kissed with Ľubka."**(Croatian)****a''.** Petar i Jana su se ljubili.Petar and Jana aux_{3pl} SE kissed.
"Petar and Jana kissed."**b''.** Petar se ljubio s Janom.Petar SE kissed with Jana_{Ins}.
"Petar kissed with Jana."**(69) Discontinuous constructions - Dative SE-reciprocals****(Slovenian)****a'.** Peter in Mojca sta si šepetala.Peter and Mojca aux_{3pl} SI whispered.
"Peter and Mojca whispered."**b'.** Peter si je šepetal z Mojco.Peter SI aux_{3sg} whispered with Mojca_{Ins}.
"Peter whispered with Mojca."**(Bulgarian)****a''.** Petar i Jana si šepnecha.Petar and Jana SI whispered.
"Petar and Jana whispered."**b''.** Petar si šepneše s Jana.Petar SI whispered_{sg} with Jana.
"Petar whispered with Jana."

However, the actual fact is that the set of SE-reciprocals, which enable the reciprocal relation to be established between the subject set and the oblique set, is quite limited, and it roughly matches the set of SJA-reciprocals. In other words, the discontinuous constructions

are not available for SE-reciprocals generally, and as the following randomly chosen examples manifest, for the majority of SE-reciprocals these constructions are actually prohibited.

(70) Discontinuous constructions - Accusative SE-reciprocals

- | | | |
|--|---|-------------------|
| | | (Polish) |
| a'. Piotr i Joanna się słuchali. | b'. ?? Piotr słuchał się z Joanna. | |
| Piotr and Joanna SE heard. | Piotr heard _{sg} SE with Joanna _{ins} . | |
| "Piotr and Joanna heard each other." | "Piotr heard with Joanna." | |
| | | (Croatian) |
| a''. Petar i Jana su se slušali. | b''. *Petar se slušao s Janom. | |
| Petar and Jana aux. _{3pl} SE heard. | Petar SE heard with Jana _{ins} . | |
| "Petar and Jana heard each other." | "Petar heard with Jana." | |

(71) Discontinuous constructions - Accusative SE-reciprocals

- | | | |
|---|---|--------------------|
| | | (Bulgarian) |
| a'. Petar i Jana se podoziracha. | b'. *Petar se podoziraše s Jana. | |
| Petar and Jana SE suspected. | Petar SE suspected _{sg} with Jana. | |
| "Petar and Jana suspected each other." | "Petar suspected with Jana." | |
| | | (Slovenian) |
| a''. Peter in Mojca sta se sumničila. | b''. *Peter se je z Mojco sumničil. | |
| Peter and Mojca aux. _{3pl} SE suspected. | Peter SE aux. _{3sg} with Mojca _{ins} suspected. | |
| "Peter and Mojca suspected each other." | "Peter suspected with Mojca." | |

(72) Discontinuous constructions - Dative SE-reciprocals

- | | | |
|---------------------------------------|---|---------------------|
| | | (Slovak) |
| a'. Janko a Ľubka si pomáhali. | b'. *Janko si pomáhal s Ľubkou. | |
| Janko and Ľubka SI helped. | Janko SI helped _{sg} with Ľubka _{ins} . | |
| "Janko and Ľubka helped each other." | "Janko helped with Jana." | |
| | | (Macedonian) |
| a''. Petar i Jana si pomagale. | b''. *Petar si pomagal so Jana. | |
| Petar and Jana SI helped | Petar SI helped _{sg} with Jana | |
| "Petar and Jana helped each other." | "Petar helped with Jana." | |

Moreover, it appears that SE-reciprocal verbs, which license discontinuous constructions like those in (67), (68) and (69) above, display another two properties, which, as we have seen in the course of this section, are typical for SJA-reciprocals. Namely they are not allowed to appear in ECM structures (2.2.3) and they only permit the collective reading (2.2.4). The following Czech examples in (73) and (74) illustrate it briefly. In (73) we have the SE-reciprocal verb *vidět se* ('see'). This verb can denote "ordinary" reciprocity between the members of the subject set (73ai) as well as the reciprocity between the subject and the

oblique phrase (73aii); beyond that it can appear in ECM structure (73bi). The crucial condition for availability of ECM is, however, that the reciprocal relation holds between the members of the subject set only, as indicated by the ungrammatical status of the sentence in (73bii), where the reciprocal relation is supposed to hold between the subject and the oblique phrase.

(73) "Mixed" properties of certain SE-reciprocals I

- | | |
|--|--|
| <p>ai. Petr a Jana se viděli.
Petr and Jana SE saw_{-pl}
'Petr and Jana saw each other.'</p> | <p>aii. Petr se viděl s Janou.
Petr SE saw_{-sg-} with Jana_{-Instr}
'Petr and Jana saw each other.'</p> |
| <p>bi. Petr a Jana se viděli tančit.
Petr and Jana SE saw_{-pl} dance_{-inf}
'Petr and Jana saw each other dance'</p> | <p>bii. *Petr se viděl s Janou tančit.
Petr SE saw_{-sg-} with Jana_{-Instr} dance_{-Inst}
'Petr and Jana saw each other dance'</p> |

Similarly, the discontinuous constructions do not allow the distributive reading, as demonstrated in (74). Here we have the SE-reciprocal verb *obejmout se* ('hug'). This verb, like the verb *vidět se* ('see') above, license discontinuous structures (74aii). However, if the modifier *pětkrát* ('five times') is added, the resulting sentence in (74bii) has only a collective reading (i), contra the sentence in (74bi), where along the collective reading (i) the expected distributive reading (ii) is denoted as well.

(74) "Mixed" properties of certain SE-reciprocals II

- | | |
|--|--|
| <p>ai. Petr a Jana se objali.
Petr and Jana SE hugged_{-pl}
'Petr and Jana hugged.'</p> | <p>aii. Petr se objal s Janou.
Petr SE hugged_{-sg} with Jana_{-Inst}
'Petr hugged with Jana.'</p> |
| <p>bi. Petr a Jana se pětkrát objali.
Petr and Jana SE five-times hugged_{-pl}
i. There were five symmetric events of hugging.
ii. There were ten asymmetric events of hugging.</p> | <p>bii. Petr se pětkrát objal s Janou.
Petr SE five-times hugged_{-sg} with Jana_{-Inst}
i. There were five symmetric events of hugging.
ii.#There were ten asymmetric events of hugging.</p> |

The fact that certain SE-reciprocals are able to license discontinuous constructions but at the same are not able to participate in ECM structures and they cannot denote a distributive reading seems to signify that these sporadic appearances of SE-reciprocals may be instances of SJA-type reciprocals in SE-languages. The reader is referred to the end of subsection 2.3.2 where we will present an argument showing that this is indeed the case.

2.3 The Lex(icon)-Syn(tax) parameter

Let us briefly summarize our findings so far. After concluding that Slavic SE and SJA reflexives/reciprocals are indeed genuine intransitive reflexive/reciprocal verbs (section 2.1),

we observed that these two types of verbs systematically differ in a whole cluster of properties. Namely, we saw that the set of SE-reflexives/reciprocals is quite large and to a certain extent practically unlimited, while the set of SJA- reflexives/reciprocals seems to be restricted and finite (2.2.1). We saw that SJA-languages completely lack reflexive verbs based on a dative argument and that dative reciprocals are only very sporadic in these languages; moreover these dative reciprocals are not able to realize the accusative argument of their transitive counterparts. SE-languages, on the other hand, are limited in neither of these respects, i.e. once more they have a large set of dative reflexives/reciprocals, and these verbs are able to realize the accusative argument as well (2.2.2). We saw that SE-reflexives/reciprocals, as opposed to SJA-reflexives/reciprocals, can participate in ECM structures (2.2.3). We also found that SE-reciprocals can denote collective as well as distributive readings (as is the case if a verb selects a plural subject), while for the SJA-reciprocals only the former of these readings is available (2.2.4). And finally, we saw that SJA-reciprocals license the so-called discontinuous constructions, while for the SE-reciprocals these structures are mostly prohibited. Importantly, however, if a SE-reciprocal verb licenses discontinuous constructions, then it displays two of the properties which appear to be typical for SJA-reciprocals, namely it cannot participate in ECM structures and it denotes the collective reading only (2.2.5). How can this systematic split be explained?

2.3.1 The Lex – Syn parameter

In the past decade the two clusters of properties listed above have in fact already been observed for reflexive and reciprocal verbs in several other Indo-European languages. Specifically, Reinhart & Siloni (2004, 2005) and Siloni (2001, 2002, 2008, 2012) noticed that reflexive and reciprocal verbs in German, Greek (reference to Papangeli 2004) and Romance languages, and also some Slavic languages, namely Bulgarian, Croatian (based on Marelj 2004), and Czech, display the set of properties we have observed in detail for SE-languages; while Dutch, English, Hebrew, Hungarian, and Russian display the set of properties we have observed for SJA-languages. Following Grimshaw (1982), Marantz (1984), Wehrli (1986), Kayne (1988), Pesetsky (1995), Sportische (1998), Reinhart (2000, 2001, 2002) and Chierchia (2004), Reinhart and Siloni argue that reflexive and reciprocal verbs are derivationally linked to their transitive counterparts. More specifically (and contra some of the previous studies mentioned above), they show that the derivation of reflexive verbs (Reinhart & Siloni, 2004, 2005) and reciprocal verbs (Siloni, 2001, 2008, 2012) affect the

internal theta role of the basic transitive entry; the internal theta role is associated in the course of the derivation with the external one, giving rise to an unergative reflexive/reciprocal predicate. The crucial innovation in Reinhart and Siloni's analysis is, however, the suggestion that the operations of reflexivization and reciprocalization, i.e. the operations which are responsible for the formation of reflexive and reciprocal verbs, can apply either in the lexicon or in the syntax, depending on the particular language. The most compelling of Reinhart and Siloni's arguments behind this suggestion is based on the fact that only syntax type languages (i.e., languages which form their reflexive/reciprocal verbs in the syntax), but not lexicon type languages (i.e., languages which form their reflexive/reciprocal verbs in the lexicon), allow their reflexive and reciprocal verbs to participate in ECM structures. The following two pairs of reflexive examples from Hebrew (75i) and French (75ii) (taken from Reinhart & Siloni, 2005) illustrate this divergence:

(75) Lexical vs. syntactic reflexivization (Hebrew vs. French)

(Hebrew)	(French)
ai. Dan mitraxec. Dan washes.	a.ii. Jean se lave. Jean SE washes. 'Jean washes.'
bi. *Dan mitxašev inteligenti. Dan considers (refl.) intelligent.	b.ii. Jean se considère intelligent. Jean SE considers intelligent. 'Jean considers himself intelligent.'

The operation of reflexivization assures that a (single) external argument gets associated with two originally distinct theta roles. If a single theta grid (a single transitive predicate) is supposed to undergo the process, the operation is available in both Hebrew and French (75a), the external argument being associated with the external (agent) and the internal (theme) role of the input verb. However, when these theta roles originate in two different theta grids (two different predicates), as is the case in ECM structures, the operation is available in French only (75bii). Under the assumption that the operation of reflexivization is lexical in Hebrew and syntactic in French, this state of affairs is exactly what one would expect. In languages like Hebrew, the operation of reflexivization always applies to single lexical entries only, as the lexicon contains isolated entries, listed without any relations between them. In languages like French, on the other hand, the operation of reflexivization can bind together theta roles of two distinct predicates, as it applies after syntactic structure is available; a priori, then, there is no reason to expect the operation to only have access to a single predicate¹⁸ (for an extensive

¹⁸ The "valence changing" effect of the syntactic operation of reflexivization (alike the "valence changing" effect of the syntactic operation of reciprocalization discussed below) in the case of ECM reflexives (reciprocals) is

presentation of the reflexivization operation see subsection 2.3.2; for further discussion see Reinhart & Siloni, 2004, 2005).

Exactly the same split holds in the domain of reciprocal verbs, as discussed extensively in Siloni (2001, 2002, 2008, 2012) and illustrated briefly by the following two couples of reciprocal examples, this time from Hungarian (76i) and Italian (76ii) (taken from Siloni 2001).

(76) Lexical vs. syntactic reciprocalization (Hungarian vs. Italian)

(Hungarian)	(Italian)
<p>ai. János és Mari csókol-óz-t-ak. János and Mari kissed._{rec-past-3pl} 'János and Mari kissed'</p>	<p>aii. Giovanni e Maria si sono abbracciati. Giovanni and Maria SI are hugged 'Giovanni and Maria hugged.'</p>
<p>bi. *János és Mari okos-nak talál-koz-t-ak János and Mari smart-dat find._{rec-past-3pl} 'János and Mari considered each other smart'</p>	<p>bii. Giovanni e Maria si sono visti danzare. Giovanni and Maria SI are seen dance 'Giovanni and Maria saw each other dance'</p>

Once more, if the operation of reciprocalization associates a (single) external argument with two originally distinct theta roles, and if this operation applies lexically in Hungarian but only post-lexically, i.e. in the syntax, in Italian, the above exemplified difference between these two languages is straightforward (compare 76bi with 76bii). Namely, in order to create ECM reciprocal structures, the operation of reciprocalization must have an access to the theta grids of two distinct predicates which are involved in these constructions. Clearly, this is possible if the reciprocalization applies in the syntax, where the relation between the two relevant predicates can be established, but impossible if it applies in the lexicon where no relations between predicates exist (for an extensive presentation of the reciprocalization operation see subsection 2.3.2; for further discussion see Siloni 2012).

As noted above, along the availability of ECM reflexives/reciprocals in syntax type languages and the absence of these structures in lexicon type languages, Reinhart and Siloni reveal a series of other properties in which the two types of languages differ systematically. This in turn led them to ascribe the choice between the lexical vs. syntactic application of the operations of reflexivization and reciprocalization to the setting of a newly proposed parameter, called the Lexicon – Syntax parameter:

thus that the operation changes the thematic state of affairs in general: The subject of an ECM verb is associated with an additional theta role, although this ECM verb itself assigns exactly the same roles to the same arguments as in non-reflexive (non-reciprocal) constructions.

(77) Lex(icon) – Syn(tax) parameter

UG allows arity operations to apply in the lexicon or in the syntax.

In the following subsection we will briefly explain how the parameter setting is connected to each one of the properties that were detected by Reinhart and Siloni for their language sample and which we have observed for Slavic languages in section 2.2.

2.3.2 Slavic languages in light of the Lex-Syn parameter

First of all recall that in subsection 2.2.3 we have seen that SE-reflexives/reciprocals, unlike SJA-reflexives/reciprocals, can participate in ECM structures. Based on the discussion of the examples in (75) and (76) above, this state of affairs strongly suggest that the SJA-languages (Belarusian, Russian, and Ukrainian) set the Lex-Syn parameter to the lexicon, as is the case in Hebrew (75i) and Hungarian (76i), while in the SE-languages (Bulgarian, Croatian, Czech, Macedonian, Polish, Slovak and Slovenian) the parameter is set to the syntax, like in French (75ii) and Italian (76ii). What about the other properties that set apart SJA-languages from SE-languages, and lexicon from syntax type languages in general?

Productivity: The most straightforward and obvious consequence of the Lex-Syn parameter setting probably involves a contrast in the productivity of the operation of reflexivization/reciprocalization. If the operation applies in the syntax, it is expected to be very productive, as this module of the grammar is supposed to be "blind" to the actual (semantic) content of the elements that enter its computational machine. In other words, syntax type languages are expected to be able to derive reflexive/reciprocal verbs from any transitive verb which can enter the syntax, a state of affairs that we have indeed observed in the case of SE-languages (2.2.1)¹⁹. On the other hand, the productivity of lexical processes can be limited, which – as we saw – is indeed the case in SJA-languages²⁰.

Dative reflexives/reciprocals: In subsection (2.2.2) we have seen that SJA-languages do not have dative reflexive verbs and that the occurrence of dative reciprocals in these

¹⁹ Recall that in the discussion of the Croatian and Slovak examples in (31) and (33) we have pointed out that there are in fact some restrictions on the SE-reflexives/reciprocals formations. These restriction were however purely semantic, and therefore relevant at the stage of semantic interpretation only.

²⁰ It is also interesting to note here that the set of lexicon type reflexives and reciprocals (including SJA-reflexives/reciprocals) is more or less the same in any particular lexicon type language. The question, which has yet to be satisfactorily answered, is what defines this set.

languages is very sporadic, while in SE-languages both of these verbal formations exist and are derived as freely as their accusative counterparts. Beyond that, we have pointed out that dative SE-reflexives/reciprocals (or more precisely SI-reflexives/reciprocals) can realize an accusative argument (if their corresponding transitive alternate has such an argument), while no such option exists for SJA-reciprocals. Reinhart and Siloni ascribe this discrepancy to the intrinsic character of lexical reflexivization and reciprocalization. Namely, they assume that lexical reflexivization can establish a reflexive relation only between the Agent and Theme roles, explaining directly why there are no dative reflexives in lexicon type languages. Moreover, they suggest that any lexical valence reducing operation (*arity* operation in their terminology) deletes the accusative case of its input, regardless of what theta role has been actually targeted by that operation (following Reinhart (2002), they assume that the accusative Case feature is associated with the base transitive verb in the lexicon); this then explains why dative reciprocals in lexicon type languages cannot license an accusative bearing argument – as products of the lexical operation, i.e. reciprocalization, they do not have the accusative case to check the argument.

No such limitations are imposed on dative reflexives/reciprocals which are formed in the syntax. As already noted above, syntax should be "blind" to the lexical material it works with. It is thus not surprising that any of the internal theta roles can be associated with the external theta role in the syntax. Likewise, it is not surprising that the syntactic application of the operation of reflexivization/reciprocalization always suppresses the case of the targeted argument.

The assumption that the application of lexical reflexivization is limited to transitive verbs selecting the Agent and the Theme role, and the assumption that any lexical valence reducing operation deletes the accusative case, thus explain the difference with respect to dative reflexive/reciprocals in SE-languages and SJA-languages. In order to make the issue more explicit, let us briefly present how the operations of reflexivization/reciprocalization works. Moreover, the presentation will be useful for better understanding of the remaining two distinctions between the SE-languages and SJA-languages, observed in 2.2.4 and 2.2.5 and discussed below, namely the availability of collective and distributive reading and the licensing of discontinuous constructions.

The lexical operations of reflexivization and reciprocalization are presented below:

(78) Reflexivization in the Lexicon (Reinhart & Siloni 2005: 11-14)

- i. Reflexive Bundling of theta roles: [Agent] [Theme] \bar{a} [Agent – Theme]
- ii. Case reduction: The accusative Case feature of the verb is reduced.

(79) Reciprocalization in the Lexicon (Siloni 2012: 17-21)

- i. Reciprocal Bundling of theta roles: $V[\text{Agent}] [\theta] \rightarrow V_{\text{SYM}}[\text{Agent} - \theta]$
- ii. Case reduction: The accusative Case feature of the verb is reduced.

As just noted, the accusative Case reduction in Reinhart & Siloni's analysis is not a special property of the operations of reflexivization/reciprocalization (78ii/79ii), but is a general property of any valence reducing operation that applies in the lexicon (another lexical operation reducing accusative Case, namely the operation of decausativization, will be presented in subsection 4.3.1.1). As far as theta bundling is concerned, the operations of reflexivization/reciprocalization bundle the two originally distinct theta roles of a transitive input into a new complex theta role (78i/79i). The operations, however, impose a different interpretation on these complex roles. While the output of the reflexive bundling (78i) is "interpreted as a distributive conjunction of theta roles" (Reinhart & Siloni 2005:13), i.e., a single argument functions as it were assigned both the Agent and the Theme roles, the output of reciprocal bundling (79i) is a little more complex. First, note that the reciprocal bundling is not limited to (Agent and) Theme roles only, as there are dative reciprocals in lexicon languages. (Another possibility is to say that the operation of reciprocalization, unlike the operation of reflexivization, is able to reduce not only the accusative case, but also the dative case). Moreover, the application of reciprocal bundling imposes on its input a SYM(metric) interpretation, assuring an inevitably symmetric event reading of lexical reciprocals (see below the discussion on the impossibility of distributive reading with SJA reciprocals, which we have observed in 2.2.4). Finally, and once more unlike reflexive bundling, the argument which is assigned a complex theta role resulting from the reciprocal bundling is not simply interpreted as being both, i.e. the Agent and the Theme (or other internally mapped theta role). Rather, the individuals of the set denoted by this argument (the subject of reciprocal verbs must always be plural) are (symmetrically) distributed over underlying and linguistically undetectable events of the same type, being interpreted as Agents of some of these events and Themes (or other internally mapped theta roles) of others.

The examples of the effect of the application of the operations of reflexivization/reciprocalization in the lexicon are given in (80/81). Both operations take a transitive verb, whose external theta role is the Agent (80i/81i), as their input. Both operations reduce the accusative case and bundle the originally distinct theta roles to a complex

(bundled) role (80ii/81ii)²¹; moreover, the operation of reciprocalization imposes a symmetric event reading on the verb. Outputs of both of these operation are realized syntactically as one-place predicates (their single arguments being mapped externally) (80iii/81iii), their semantic representation being as in ((80iv/81iv). Finally, the interpretation of reflexives/reciprocals is given in ((80v/81v). While the single argument of reflexives is interpreted as being both the Agent and the Theme of the same event (80v), the single argument of reciprocals is interpreted as participating in two (or more) underlying and linguistically undetectable events, functioning as the Agent in one (or more) of these events and as the Theme in the other(s) of these events. (Siloni adopts Landman's (2000) mechanism for mapping atomic individuals "up" (\uparrow) and "down" (\downarrow), including his notation; $\lfloor _ \rfloor$ stands for sum.)

(80) Reflexivization in the Lexicon – an example of its application (Reinhart & Siloni 2005, their (26), (27))

- i. Verb entry: wash_{ACC} [Agent] [Theme]
- ii. Reflexivization output: wash [Agent-Theme]
- iii. Syntactic representation: Max_[Agent-Theme] washed
- iv. Semantic representation: $\exists e[\text{wash}(e) \& [\text{Agent-Theme}](e, \text{Max})]$
- v. Interpretation: $\exists e[\text{wash}(e) \& \text{Agent}(e, \text{Max}) \& \text{Theme}(e, \text{Max})]$

(81) Reciprocalization in the Lexicon – an example of its application (Siloni 2012, her (37), (38),)

- i. Verb entry: kiss_{ACC} [Agent] [Theme]
- ii. Reciprocalization output: kiss_{SYM} [Agent-Theme]
- iii. Syntactic representation: John and Mary_[Agent-Theme] kissed_{SYM}
- iv. Semantic representation: $\exists e[\text{kiss}_{\text{SYM}}(e) \& [\text{Agent-Theme}](e, \text{John and Mary})]$
- v. Interpretation: $\exists e \exists e_1 \exists e_2 [\downarrow (e) = (e_1 \lfloor _ \rfloor e_2) \& [\text{kiss}(e_1) \& \text{Agent}(e_1, \text{John}) \& \text{Theme}(e_1, \text{Mary}) \& \text{kiss}(e_2) \& \text{Agent}(e_2, \text{Mary}) \& \text{Theme}(e_2, \text{John})]$

Now let us briefly turn to the syntactic operations of reflexivization and reciprocalization. Both of these operations are presented below:

²¹ Reinhart&Siloni (2005) and Siloni (2012) argue that lexical arity operations apply to the verb itself and not to an abstract event semantic representation.

(82) Reflexivization in the Syntax (Reinhart & Siloni 2005: 14-19)

- i. Reflexive Bundling of theta roles: external and internal theta roles are assigned to the same argument upon the merge of the former.
- ii. Case reduction: Case is reduced by the appropriate morphology (such as the clitic SE).

(83) Reciprocalization in the Syntax (Siloni 2012:21-24)

- i. Reciprocal Bundling of theta roles: external and internal theta roles are assigned to the same argument upon the merge of the former.
- ii. Case reduction: Case is reduced by the appropriate morphology (such as the clitic SE).

As in the case of lexical reflexivization/reciprocalization, the output of syntactic reflexivization/reciprocalization is one place predicates (whose external argument is mapped externally). The input of these two operations, however, enters the syntax as a two place (transitive) predicate. The availability of syntactic reflexivization/reciprocalization thus crucially depends on the availability of an appropriate case reducing device, such as the Slavic SE/SI (82ii/83ii). What about the theta roles bundling? Lexical bundling presented in (78i) and (79i) above creates in fact a new complex theta role. No such procedure is, however, possible in the syntax as it would be in conflict with the Theta criterion, nor can there be any restrictions on which theta roles can or cannot be bundled (since the syntax is blind to the actual semantic content of the material it works with). The syntactic operations of reflexivization/reciprocalization thus simply assign two distinct theta roles to a single argument. The difference between the two consists in a different interpretation of the argument assigned these two theta roles. This is illustrated in (84) and (85), exemplifying the derivation of a reflexive (84i) and a reciprocal (85i) sentence in French:

(84) Reflexivization in the Syntax – an example of application (Reinhart & Siloni 2005, their (31))

- i. Jean se lave.
Jean SE washes
'Jean washes.'
- ii. VP: [se lave _{[Agent], [Theme]}]
- iii. IP: [Jean_{<[Agent], [Theme]>} [se lave_j [VP t_j]]]
- iv. Semantic representation/interpretation: $\exists e[\text{wash}(e) \& \text{Agent}(e, \text{Jean}) \& \text{Theme}(e, \text{Jean})]$

The operations of reflexivization/reciprocalization take as their input a transitive verb (84ii/85ii). Because of the presence of the case reducer (the clitic SE), the internal theta role cannot be assigned canonically to an internal argument. It thus remains on the verb until the external theta role is discharged. Once the external role is assigned to an argument, the internal theta role is parasitically assigned to the same argument as well (84iii/85iii). The interpretation of the output of the syntactic reflexivization is the same as the interpretation of lexical reflexives (compare (84iv) with (80v)), i.e., the subject argument of syntactic reflexives functions as both the Agent and the Theme of the same event. The interpretation of syntactic reciprocals is reminiscent of the interpretation of lexical reciprocals as well, but it is not completely identical. Namely, the individuals of the set denoted by the subject argument of syntactic reciprocals are distributed over two (or more) events of the same type, being interpreted as Agents of some of these events and Themes of other(s), giving rise to a distributive interpretation of syntactic reciprocals (85iv). That is, the reciprocity denoted by the syntactic reciprocals is not necessarily symmetric. In fact the reciprocity denoted by the syntactic reciprocals is never achieved via a (single) symmetric event (as opposed to lexical reciprocals) but rather by the sequence of two or more asymmetric sub-events (e_1, e_2, \dots). Nevertheless, these atomic asymmetric sub-events can be mapped "up" (\uparrow), assuring that the collective reading (85v) is available for syntactic reciprocals as well.

(85) Reciprocalization in the Syntax – an example of application (Siloni 2012, her (44), (46), (47))

- i. Jean et Marie se voient.
 Jean and Marie SE see
 'Jean and Marie see(rec).'
- ii. VP: [se voient _{[Agent], [Theme]}]
- iii. IP: [Jean and Marie _{<[Agent], [Theme]>} [se voient_j [VP t_j]]]
- iv. **Semantic representation/distributive interpretation:** $\exists e \exists e_1 \exists e_2 [(e)=(e_1 \sqcup e_2) \ \& \ [see(e_1) \ \& \ Agent(e_1, Jean) \ \& \ Theme(e_1, Marie) \ \& \ see(e_2) \ \& \ Agent(e_2, Marie) \ \& \ Theme(e_2, Jean)]$
- v. **Collective interpretation:** $\exists e \exists e_1 \exists e_2 [\uparrow (e)=(e_1 \sqcup e_2) \ \& \ [see(e_1) \ \& \ Agent(e_1, Jean) \ \& \ Theme(e_1, Marie) \ \& \ see(e_2) \ \& \ Agent(e_2, Marie) \ \& \ Theme(e_2, Jean)]$

The difference in the interpretation of lexical (81iv) and syntactic reciprocals ((85iv) and (85v)) leads us directly to the explanation of the next distinction between the SE-languages and SJA-languages, namely the availability of collective and distributive reading for their reciprocal verbs.

Collective and distributive reading: This distinction is relevant for reciprocal verbs only and it is connected to the insight argued for by Carlson (1998), namely, that verbs in themselves are able to denote singular events only, while the plurality of events can be denoted by the plurality denoted by (one or more of) its arguments. Having adopted this basic idea, Siloni (2008, 2012) argues that reciprocal verbs in the lexicon type languages cannot denote a plurality of events, since they are formed at a stage, where no verbal arguments are involved (namely in the lexicon); the reciprocal event denoted by these verbs is thus necessarily symmetric (see (79i) above) and as such has the collective reading only, since for the reciprocal relation to be established "a collective" of at least two entities is needed. The syntactic formation of reciprocals, on the other hand, is crucially dependent on the merging of an external argument in the syntax; these verbs, therefore, do not necessarily denote a single symmetric reciprocal event, but are able to denote a sequence of several asymmetric "sub-events" as well, opening the door for distributive reading (see (85iv) and (85v) above).²² (Recall from our previous discussion that syntactic reciprocals actually denote a sequence of two or more asymmetric sub-events only, the collective/symmetric reading being in fact built "upon" this distributive reading at the level of semantic interpretation by mapping "up" (↑) the atomic asymmetric sub-events into a single (complex) symmetric event.) Now, recall the picture we saw in subsection 2.2.4. Using the count adverbials diagnostics (Siloni 2002, Dimitriadis 2004) in order to make the distinction between the collective and the distributive reading sharper, we observed that the SJA-reciprocals systematically fail to denote the distributive reading, while for the SE-reciprocals this reading is available. Under the account just outlined, this state of affairs follows if the SJA-reciprocals are derived in the lexicon, while the SE-reciprocals are outputs of syntactic reciprocalization.

Discontinuous constructions: Finally, in subsection 2.2.5, we have observed that the SJA-reciprocals can license discontinuous constructions, i.e., can denote reciprocity not only

²² The crucial distinction between the lexical and syntactic reciprocalization is that in the former case the operation creates a new complex theta role [Agent - Theme], which is subsequently assigned to a plural subject set, the distribution inside this set being undetectable linguistically, while in the latter case a plural subject set is assigned two "ordinary" simplex roles, the distribution inside this set thus being possible.

between the members of their subject set but also between the members of the subject set and the members of the oblique set, usually introduced by the preposition *with*. For the overwhelming majority of the SE-reciprocals, on the other hand, these constructions are unavailable. As argued in detail in Siloni (2008, 2012), this property is once more connected to the locus of application of the operation of reciprocalization, the cornerstone of her analysis being the observation that (i) the oblique element is a true verbal argument and that (ii) discontinuous constructions are possible with any verb denoting a symmetric event. She suggests that the lexical reciprocal (and symmetric verbs in general, e.g. the verb *play* in the sentence *John played with Marry*) are equipped with a thematically empty role, which is assigned to the oblique phrase (if such a phrase is realized) and which during the derivation is associated with the content of the external role assigned to the verbal subject. The crucial condition for this to be possible is, however, that the verb denotes a singular symmetric event. As syntactic reciprocals denote a priori a sequence of two or more asymmetric sub-events (the symmetric relation being a result of the sum of these sub-events), the association of the empty role with the content of the external role is impossible, and in turn the discontinuous constructions are not licensed by these verbs.

One more note is needed here. Namely, recall that we have observed that some of the SE-reciprocals do license discontinuous constructions. Two possible explanations come to mind. The first one (advanced by Dimitriadis 2004) consists of the weakening of the Lex-syn parameter (77) by the stipulation that the lexical reciprocalization (and perhaps lexical reflexivization too) is available generally in any language, and in addition some languages employ syntactic reciprocalization (and reflexivization) as well. However, as pointed out by Siloni, this option is not likely, since the dative SE-reciprocals which do license the discontinuous construction can simultaneously license an accusative object, as illustrated in (86) below.

(86) SE-reciprocals, discontinuous constructions and accusative objects licensing (Czech)

Petr si šeptal tajnosti s Janou.

Petr SI whispered secrets_{-Acc} with Jana_{-Inst}

Peter and Jana whispered secrets to each other.

If verbs like the Czech *šeptat* ('whisper') above were the outputs of lexical reciprocalization then their ability to assign the accusative case would be rather surprising, as in all other cases lexical arity operations seem to delete the accusative case. I thus adopt the second possible explanation for this particular discrepancy in the otherwise systematic split between SE and

SJA languages. Namely, following Siloni I believe that these rather isolated instances of lexical-like SE reciprocals are in fact instances of verbs that became lexicalized.

2.4 A short excursion to Slavic Middles

In this chapter we have seen that Slavic reflexive and reciprocal verbs display different sets of properties depending on the language, or perhaps more precisely, depending on morphologically disposals of a given language. Specifically, we have observed that reflexive and reciprocal verbs which involve the clitic SE (or its dative variant SI) systematically display one set of properties, while reflexive and reciprocal verbs involving the morpheme SJA display another set of properties. Subsequently, following Reinhart & Siloni (2004, 2005) and Siloni (2008, 2012), I have ascribed the difference between the SE-languages and the SJA-languages to different setting of Lex-Syn parameter that allows certain arity operations, i.e. the operation of reflexivization and the operation of reciprocalization, to apply either in the syntax or in the lexicon, claiming that in SE-languages the parameter is set to the syntax while in SJA-languages it is set to the lexicon. The extensive range of Slavic data that have been presented here thus constitute robust empirical support for the existence of the parameter, and in turn also support a model of grammar in which the lexicon is an active module (Siloni 2002), contrary to recently popular theories (e.g., Marantz 1997, 2000, Borer 2005), which degrade the role of the lexicon to a mere storehouse of minimal building blocks (roots) and transfer the whole derivational burden to the syntax. Note, however, that there is yet another fact, which strongly supports the correctness of Reinhart and Siloni's proposal. Namely, note that there is no language in our Slavic sample in which reflexive and reciprocal verbs do not display the same type of properties; e.g., if reflexive verbs display lexical type properties in a given language then reciprocal verbs display the same lexical type properties and vice versa. It thus seems that the parameter setting is uniform for both reflexivization and reciprocalization. In what follows we will very briefly present yet another set of Slavic data, which will further strengthen exactly this point, i.e., that the parameter setting is uniform for all arity operations that can either apply in the lexicon or in the syntax.

It has been argued by Marelj (2004) that along the operation of reflexivization and reciprocalization there is yet another arity operation that is cross-linguistically available either in the lexicon or in the syntax, namely, the operation that is responsible for derivation of middle formations. Observing that middle formations (like reflexives/reciprocals)

systematically display two sets of distinct properties, depending on the language, Marelj suggests that this operation is also subject to the setting of the Lex-syn parameter. Abstracting from the details of her analysis, in what follows I will briefly survey in a simplified manner four different properties in which lexical and syntactic middle formations differ, exemplifying each of these distinctions with one pair of lexical vs. syntactic middle examples; the sole purpose of this presentation is to further illustrate the explanatory power of the Lex-syn parameter: as demonstrated below, middle formations in SJA-languages display lexicon type properties, while middle formations in SE-languages display syntax-type properties.

As noted, Marelj (2004) offers four distinctions between the middle verbs derived in the Lexicon and the middle verbs derived in the Syntax. **First**, middle verbs can realize all of their internal arguments only if they are derived in the Syntax, while in Lexicon-type languages middles cannot realize dative arguments. As the contrast between the Belarusian example in (87) and Slovenian example in (88) shows, middles in SJA-languages cannot realize dative arguments, while nothing prevents these arguments to be realized with SE-middles (note that middles utilize the same morphology as the morphology observed for reflexives and reciprocals, i.e., the clitic SE in SE-languages and the morpheme SJA in SJA-languages).

(87) Realization of dative arguments

(Belarusian)

***Vybarščykam cjažka abjasnjacca nepapuljarnzja mery.**

electors-dat hardly explained unpopular moves
'It is hard to explain unpopular moves to electors.'

(88) Realization of dative arguments

(Slovenian)

Otrokom se zelo sporočajo žalostne novice.

children_{Dat} SE hardly say sad news
'It is hard to say sad news to children.'

Second, in Lexicon type languages only verbs whose external theta role is Cause or Agent can undergo the middle-forming process, while no such limitation holds in syntactic type languages. This is demonstrated in the couple of examples (89), which involve the verb 'recognize', i.e., verbs whose external argument is assigned neither Cause nor Agent. As is evident, SJA-languages fail to create middle verbs in these cases, illustrated once more by an example from Belarusian (89'). In SE-languages, on the other, this type of middle is available, as witnessed by the Bulgarian example in (89'').

(89') Limitation on external theta role**(Belarusian)*****Turystau usjudy lješka uznajuc**

Tourists_{Nom} on everywhere easily SE recognize_{e-3.pl}.
 'It is easy to recognize tourists everywhere.'

(89'') Limitation on external theta role**(Bulgarian)****Turistice na vsjakade lesno se poznavat.**

Tourists_{Nom} on everywhere easily SE recognize_{e-3.pl}.
 'It is easy to recognize tourists everywhere.'

Third, as in the case of reflexives and reciprocals, only middles derived in the Syntax can appear in ECM structures. That this distinction holds in Slavic languages is demonstrated by the contrast between the Russian ECM structure in (90'), which is ungrammatical, and the perfectly acceptable Macedonian ECM structure in (90'').

(90') ECM middles**(Russian)*****Kandidaty sčitajutsja dostoinymi funkcii na osnovanii kvalifikacionnogo otbora.**

candidates SE accepted suitable for appointment in recruitment
 'Candidates are accepted the function/job on the basis of recruitment.'

(90'') ECM middles**(Macedonian)****Kandidatite se priznavat pogodni za funkcija so iyborna postapka.**

candidates SE accepted suitable for appointment in recruitment
 'Candidates are accepted for the function/job on the basis of recruitment.'

And finally **fourth**, in Syntax type languages the middle formations are ambiguously situated between the middle and the impersonal passive readings, while in the Lexicon type languages this ambiguity does not exist. This is illustrated in (91), in which examples from Ukrainian (91') and Czech (91'') are given. While in Czech both middle (91''i) as well as impersonal passive (91''ii) readings are available, in Ukrainian only the former is accessible.

(91') Ambiguity between middle and impersonal passive reading**(Ukrainian)****(Middles)**

- (i) Cja kniga citajetsja lehko.**
 That book SE reads easily.
 'That book reads easily.'

(Impersonal passives)

- (ii) *Cja kniga citajetsja zaraz.**
 That book SE reads just now.
 'That book is being read just now.'

(91'') Ambiguity between middle and impersonal passive reading

(Czech)

(Middles)	(Impersonal passives)
(i) Ta kniha se čte snadno. That book SE reads easily. 'That book reads easily.'	(ii) Ta kniha se čte právě teď. That book SE reads just now. 'That book is being read just now.'

2.5 Summary

This chapter focused on Slavic reflexive and reciprocal verbs, and its purpose was to examine the validity of the Lexicon-Syntax parameter (Reinhart & Siloni 2004, 2005), which was suggested on the basis of systematically different clusters of properties displayed by reflexive and reciprocal verbs across a variety of languages, but so far has been never tested on a whole language family. We demonstrated that the two clusters of properties predicted by the parameter setting are indeed attested among Slavic languages, which in turn provides further robust evidence for the existence of the parameter; moreover, this division appears to correlate with the morphological inventory of the given languages, namely, in the East Slavic languages (Belarusian, Russian, and Ukrainian), which create their reflexive and reciprocal verbs via the morpheme SJA, the process of reflexivization/reciprocalization applies in the lexicon, while in the South Slavic languages (Bulgarian, Croatian, Macedonian, and Slovenian) and the West Slavic languages (Czech, Polish, and Slovak), whose reflexive and reciprocal verbs are created via the clitic SE, the process of reflexivization/reciprocalization applies only post-lexically, i.e. in the syntax.

The conclusion that in SJA-languages the Lex-Syn parameter is set to the lexicon, while in SE-languages it is set to the syntax, has been arrived at in three steps. First we verified that Slavic SJA-reflexives/reciprocals, and especially Slavic SE-reflexives reciprocals, are indeed true reflexive/reciprocal verbs rather than sentential constructions based on a transitive verb and a reflexive/reciprocal anaphor (2.1). Then we presented five properties in which Slavic SJA-reflexives/reciprocals and Slavic SE-reflexives/reciprocals differ (2.2). Finally, we showed how these two different clusters of properties can be ascribed to a different setting of the Lex-Syn parameter (2.3). To be more specific:

We used three tests in order to verify that the morpheme SJA, and especially the clitic SE, do not function as reflexive/reciprocal anaphoric elements in Slavic (2.1).

- Comparative ellipsis test (2.1.1)

If reflexivity/reciprocity is achieved via a transitive verb and a reflexive/reciprocal anaphor, the remnant of the elided phrase of comparative ellipsis can function either as a subject or as an object. On the other hand, if the reflexive/reciprocal formations involve the clitic SE/SI or the morpheme SJA, the remnant of the elided phrase can function only as a subject, since there is no object in the matrix, and thus no object comparison is possible.

- Depictive adjectives test (2.1.2)

If a sentence contains a reflexive/reciprocal anaphor, a depictive adjective can modify either a subject or an (anaphoric) object. However, when a sentence contains reflexive/reciprocal formations involving the clitic SE or the morpheme SJA a depictive adjective can modify only the subject, as there is no object in the sentence.

- Availability of "I"-reading (2.1.3)

Reciprocal formations involving the clitic SE or the morpheme SJA do not allow "I"-reading under embedding, while for embedded sentences containing a transitive verb and a reciprocal anaphor the "I"-reading is available. The explanation for this state of affairs and its relevance for the question regarding the nature of Slavic reciprocal formation involving the morpheme SJA, and especially the clitic SE, is a bit more complex, since the availability of "I"-reading is subject to two conditions: (i) an embedded reciprocal formation must allow a distributive reading, and (ii) an embedded subject must be assigned a single theta role. It is quite obvious that the SJA-reciprocals do not fulfill the second condition (in fact, SJA-reciprocals do not fulfill the first condition either, as shown in subsection 2.2.4); the discussion of SJA-reciprocals, as well as SJA-reflexives, in section 2.1 as a whole is actually solely for the sake of completeness. However, as far as the SE-reciprocals are concerned, the situation is less clear. Is it indeed the case that the subject of SE-reciprocals is not assigned a single (agent) theta role, which is crucial for concluding that these verbs are indeed genuine reciprocals? That it is indeed the case is shown only in subsection 2.2.4, where the possibility that the SE-reciprocals do not fulfill the first of the two conditions formulated above is excluded. It is thus only in subsection 2.2.4 that the examination of the nature of Slavic SE-reciprocals via the availability of "I"-reading test is completed.

Having verified that Slavic SE-reflexives/reciprocals and SJA-reflexives/reciprocals are indeed true reflexive/reciprocal verbs, we presented five properties in which these two types of verbs are distinct (2.2). Subsequently we attributed this discrepancy to the different setting of the Lex-Syn parameter: in SJA-languages the operations of reflexivization and reciprocalization apply in the lexicon, while in SE-languages these two operations apply in the syntax (2.3).

- Productivity (2.2.1/2.3.2)

SE-reflexives/reciprocals appear to be very numerous (and in some measure unrestricted), while the set of SJA-reflexives/reciprocals is quite limited. Under the assumption that the former are derived in the syntax, while the latter are derived in the lexicon, this state of affairs is to be expected. If the operation applies in the syntax, it is expected to be very productive, as this module of the grammar is supposed to be "blind" to the actual (semantic) content of the elements that enter its computational machine; on the other hand, the productivity of lexical processes can be limited.

- Dative reflexives and reciprocals (2.2.2/2.3.2)

SJA-languages do not have dative reflexive verbs and the occurrence of dative reciprocals in these languages is very sporadic, while in SE-languages both of these verbal formations exist and are derived as freely as their accusative counterparts. Moreover, dative SE-reflexives/reciprocals (or more precisely SI-reflexives/reciprocals) can realize an accusative argument, while no such option exists for SJA-reciprocals. Under the assumption that (i) the lexical reflexivization is limited to transitive verbs selecting the Agent and the Theme role (while no such limitation exists in "semantically blind" syntax), and that (ii) any lexical valence reducing operation deletes the accusative case (while syntactic reflexivization/reciprocalization suppresses the case of a de facto targeted argument), the difference with respect to dative reflexive/reciprocals in SE-languages and SJA-languages is explained.

- Availability of ECM reflexives and reciprocals (2.2.3/2.3.1)

SE-reflexives/reciprocals can appear in ECM structures, as opposed to SJA-reflexives/reciprocals. Under the assumption that the operation of reflexivization/reciprocalization is lexical in SJA-languages and syntactic in SE-languages, this state of affairs is exactly what one would expect. A lexical operation always applies only to single lexical entries, as the lexicon contains isolated entries that are listed without any relations between them. A syntactic operation, on the other hand, applies after syntactic structure is available; if so, there is a priori no reason to expect such an operation to only have access to a single predicate.

- Count adverbials – availability of distributive reading (2.2.4/2.3.2)

SE-reciprocals can denote collective as well as distributive readings, while for SJA-reciprocals only the former of these readings is available. This divergence follows from Carlson's insight, that verbs in themselves are able to denote singular events only, while the plurality of events can be denoted by the plurality denoted by (one or more of) its arguments. Since no verbal arguments can be involved in the derivation of lexical reciprocals, these reciprocals are necessarily symmetric, and as such have the collective reading only (for the reciprocal relation to be established "a collective" of at least two entities is needed). The syntactic formation of reciprocals, on the other hand, is crucially dependent on the merging of an external argument in the syntax; these verbs, therefore, do not necessarily denote a single symmetric reciprocal event, but are able to denote a sequence of several asymmetric "sub-events" as well, opening the door to distributive reading (in fact, syntactic reciprocals denote a sequence of two or more asymmetric sub-events only, the collective/symmetric reading being built "upon" this distributive reading at the level of semantic interpretation).

- Discontinuous constructions (2.2.5/2.3.2)

SJA-reciprocals license the so-called discontinuous constructions, while for the SE-reciprocals these structures are mostly prohibited. Since the discontinuous constructions are available for any verb which denotes a symmetric event, and since only lexical - but not syntactic - reciprocals are symmetric (see above), this state of affairs is not surprising.

The extensive range of Slavic data presented in this chapter thus constitutes robust empirical evidence for the existence of the Lexicon-Syntax parameter. Recall also that reflexive, reciprocal, and middle verbs (the latter presented just very briefly in section 4.3) always display the same type of properties (either lexical or syntactic) in a given language. It thus appears that that the parameter setting is uniform for all arity operations that can apply either in the lexicon or in the syntax, which in turn constitutes further support for the existence of the parameter. In the next chapter we will build upon these findings when approaching the derivation of Slavic reflexive and reciprocal event nouns, i.e. when

approaching the main purpose of the present study – the availability of arity operations in non-verbal domains. Yet before doing so two short notes can be of some interest here.

First, as already pointed out, since the Lex-Syn parameter enables certain arity operations to apply in the lexicon, the support for the parameter constitutes also support for a model of grammar in which the lexicon is an active module (Siloni 2002), contrary to recently popular theories (e.g. Marantz 1997, 2000, Borer 2005), which reduce the role of the lexicon to a mere storehouse of minimal building blocks (roots) and transfer the whole derivational burden to the syntax. It is not clear at all, how the systematic split between reflexive, reciprocal and middle verbs across languages can be explained via purely syntactic devices.

Second, it has been observed recently by Boskovic (2008, 2012) that languages with and without definite articles tend to differ in a whole array of properties. Boskovic argues that these discrepancies can be explained under the suggestion that article-less languages, as opposed to languages with articles, do not have a DP in the syntactic structure of their nouns, and suggests that the presence vs. absence of a DP in a language depends on the setting of a newly proposed NP/DP parameter.

There are two languages in our current sample that do have definite articles, namely Bulgarian and Macedonian, while the remaining languages are all article-less. Thus, under Boskovic's analysis only Bulgarian and Macedonian have DPs, i.e., only in these two languages the NP/DP parameter is set to DP, while in the other Slavic languages the parameter is set to NP. Now, recall that we have seen that reflexive and reciprocal verbs in both Bulgarian and Macedonian display exactly the same type of properties as in other syntax type languages in our sample. It thus seems that there is no interaction between the setting of the Lex-Syn parameter and the NP/DP parameter. Nevertheless, in section 3.6 I will speculate that as far as the availability of reflexive/reciprocal nouns in syntax type languages is concerned, there in fact might possibly be some kind of interaction between the two.

Chapter 3

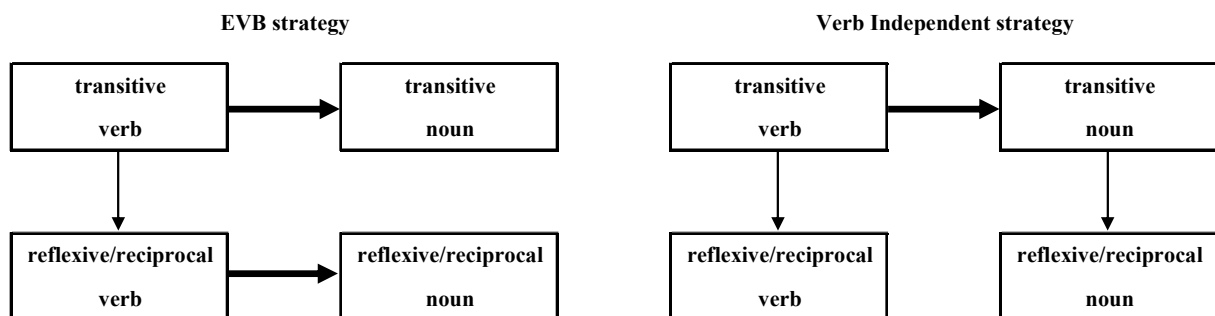
On the derivation of Slavic event nouns: The case of reflexives and reciprocals

From its beginning in the '60s, and particularly after the appearance of Chomsky's (1970) "*Remarks on nominalization*", the guideline of the generative linguistic investigation of different aspects of nominal phrases has been the assumption that there exists a similarity between nouns and verbs. This assumption has reflected the basic intuition that nouns have much in common with their verbal counterparts, and has led to lines of research aimed at strengthening this insight, as well as deriving the attested differences between the two domains. In the late '70s and during the '80s works on the topic concentrated mainly on the application of various grammatical principles and theories regarding Case, government, binding, ECP and Theta roles, developed originally in the verbal and sentential context, to nominals (e.g. Anderson 1979, Cinque 1980, Safir 1984, Williams 1985, Zubizarreta 1987, Giorgi and Longobardi 1991). From the late '80s, with the introduction of functional heads into the X-bar schema (Chomsky 1986) and the DP-Hypothesis, which incorporated the functional head D(eterminer) into nominal projections (Abney 1987), the analogy between nouns and verbs has been further tightened by a variety of works on DP internal structure and DP-internal functional heads composition; these studies have further advanced the parallel analysis of verbal and nominal projections (e.g. Ritter 1991, Siloni 1991, 1995, Szabolcsi 1994, Bosque and Picallo 1996, Mallen 1997, Siloni 1997, Leko 1999, Willim 2000).

The above parallel treatment has been initially motivated by the obvious morphological relatedness of verbs and the so called derived or deverbal nouns, such as, e.g., *examine* – *examination*, *express* – *expression* in English. As shown in Grimshaw's (1990) comprehensive study of argument structure and nominalization, deverbal nouns are usually ambiguous between what she labels *complex event* vs. *simple event* reading. Complex event nouns have an associated event structure in their representation. As such they express events and must obligatorily realize their (internal) arguments, exactly like verbs. Simple event nouns, on the other hand, lack an event structure. Rather than expressing events, they name processes or outputs of processes; they do not involve arguments but adjuncts, exactly like nouns denoting entities, either concrete (e.g. 'book') or abstract (e.g. 'love').

In this chapter I will focus on deverbal nouns in the narrow, "complex event sense" (henceforth *event nouns* or simply *nouns*), specifically Slavic reflexives and reciprocals, and I will make an attempt to draw another possible analogy between the nominal and the verbal domain. In earlier literature it is implicitly assumed that the various nominal voices are derived directly from their corresponding verbal voices by nominalization, e.g. that unaccusative nouns are derived from unaccusative verbs, reflexive nouns from reflexive verbs, etc. (e.g. Grimshaw 1990, Szabolcsi 1994, Siloni 1997, Cornilescu 1999, Reinhart and Siloni 2005, Siloni and Preminger 2009). In what follows I will show that this derivational strategy is not the only one available. Namely, I will argue that Czech, Slovak and Polish reflexive and reciprocal nouns cannot be derived from their reflexive and reciprocal verbal counterparts. Instead it appears that their derivation proceeds via some other derivational path, which is to a certain extent independent of the derivation of their verbal counterparts (i.e., reflexive and reciprocal verbs) but parallel to derivational processes that apply in the verbal domain¹. I will call the former (standardly assumed) derivational strategy an *Exclusively Verb Based* derivation (EVB), while I will label the latter derivational strategy (suggested here) a *Verb Independent* derivation. Both strategies are graphically depicted in figure 1:

Figure 1: Exclusively Verb Based vs. Verb Independent derivation of reflexive/reciprocal nouns



The graphs contain two kinds of arrows. The thick horizontal arrows indicate what is usually called the process of nominalization, i.e., the process creating nouns from verbs. As can be seen, under the EVB strategy the formation of reflexive/reciprocal nouns consists of only this type of process. Under the Verb Independent strategy, on the other hand, the actual process of nominalization is only one component of the derivational machinery involved in

¹ As noted in subsection 2.3.1, it is widely assumed that reflexive/reciprocal verbs are derivationally linked with related transitive verbs. Following Marantz (1984), Pesetsky (1995), Chierchia (2004), Reinhart & Siloni (2005), and Siloni (2008, 2012), I assume that reflexive/reciprocal verbs are derived from transitive verbs (and not vice versa). Moreover, based on the split among Slavic languages with respect to their reflexive/reciprocal verbs observed in chapter 2, I adopt Reinhart & Siloni's (2005) and Siloni's (2008, 2012) innovative suggestion that the operation of reflexivization/reciprocalization can apply either in the lexicon or in the syntax, depending on the language; for details see subsection 2.3.2.

the creation of reflexive/reciprocal nouns; the other derivational component is a valence changing operation indicated by the thin vertical arrows, which is available in the nominal domain in a manner parallel to the verbal domain.

Before starting it is important to note that the Verb Independent derivational strategy, which will be advanced here, is in certain respects actually very reminiscent of approaches arguing in favor of syntactic decomposition (e.g., Halle and Marantz (1993), Marantz (1997), Borer (2005), among many others). According to these proposals, and contrary to the more traditional view, the process of nominalization does not form a noun from a corresponding verb but rather from a category neutral root via its syntactic merge with an appropriate functional head. This process of (syntactic) nominalization can be schematized, for instance, as follows:

Figure 2: Nominalization from a root



In figure 2 what undergoes the process of nominalization is not a verb but rather a category neutral root. This root is merged either with the functional head "n" (a), giving rise to a nominal, or with the functional head "v" (b), giving rise to a verb. From this perspective, the claim to be made in this chapter is actually very trivial, since there is no direct derivation relation between nouns and verbs under this type of approaches anyway. What is, however, less trivial is the justification for the syntactic decomposition theory as a whole. Namely, recall the split among Slavic reflexive/reciprocal verbs that we have observed in chapter 2. The cluster of properties in which SE-reflexives/reciprocals systematically differ from SJA-reflexives/reciprocals can be easily and naturally explained under the Lex-Syn parameter analysis (Reinhart & Siloni (2004, 2005)) (see section 2.3). This analysis, however, presupposes that the Lexicon is an active component of the grammar where (among other things) reflexive and reciprocal verbs can be formed in a certain type of languages (e.g., Slavic SJA-languages). This in turn means that the Lexicon must contain verbs and do not map roots into the Syntax, contrary to syntactic decomposition approaches that move the whole burden of the computation to the syntax, and for which the split among Slavic reflexives/reciprocals (as well as the same systematic differences between reflexives/reciprocals across a variety of other languages, see subsection 2.3.1) seems to pose

a serious problem. This is the reason why in the course of the present chapter I will speak primarily about the more traditional conception of nominalization, i.e., the conception according to which the process of nominalization targets verbs rather than roots. Nevertheless, as stated above and as will be pointed out in the course of the following exposition, the Verb Independent derivation advanced here is in fact orthogonal to the question whether nominalization applies to the verbs or to the roots.

In the course of the chapter I will first focus on Czech. Namely, I will present some further data which show that Czech is indeed a Syntax type language, as defined in chapter 2 (3.1). Then I will show that Czech has reflexive and reciprocal event nouns, a fact that is incongruous with one of Reinhart's and Siloni's predictions regarding Syntax type languages (3.2.1); subsequently, the essence of the problem will be formulated, and three possible ways to resolve the puzzle will be outlined (3.2.2). As a next step I will argue in favor of one of these three solutions (3.3), and will suggest that Czech reflexive and reciprocal nouns are derived from related transitive nouns, exactly as reflexive and reciprocal verbs are derived from related transitive verbs (3.4). Section 3.5 will demonstrate that Czech is not the only Syntax type language among Slavic languages, which has reflexive and reciprocal nouns; specifically, we will show that the same state of affairs holds in Slovak and Polish. Section 3.6 summarizes the chapter.

3.1 Czech is a syntax type language

In section 2.2 I have presented a relatively wide array of data that demonstrate a very systematic split among Slavic languages, specifically among SE and SJA languages. Following Reinhart & Siloni (2004, 2005), we have subsequently ascribed this split to the different setting of the Lex-Syn parameter (section 2.3). Since not every phenomenon could be demonstrated for every particular language due to space considerations, and since the Czech data in particular were not presented in an exhaustive manner, let us briefly and without going into detail address some more data that will show that Czech reflexive and reciprocal verbs indeed do have all five typical Syntax-type languages features (as defined in Reinhart and Siloni (2005) for reflexives and Siloni (2012) for reciprocals, which the discussion here and in chapter 2 is based on). I.e., let us show that the operation creating these verbs is productive in Czech (as already seen for other Slavic SE-languages in 2.2.1); that

Czech dative reflexives and reciprocals are both able to license an accusative (direct) object (2.2.2); that there are reflexive and reciprocal ECM structures in Czech (2.2.3); that Czech reciprocal verbs do not necessarily express one symmetric reciprocal event, but are also able to denote a reciprocal sequence of two or more asymmetric sub-event (2.2.4); and that Czech reciprocal verbs do not license discontinuous constructions (2.2.5).

Productivity: That the formation of Czech reflexive and reciprocal verbs is very productive has already been demonstrated in Table 1 (subsection 2.2.1); likewise, in the course of chapter 2 we have seen several more Czech examples signifying that the set of SE-reflexive and SE-reciprocal verbs in Czech is indeed very large and in fact unlimited, barring the restrictions outlined in section 2.2.1², unlike SJA-languages, where the operation is limited. Several additional randomly chosen examples follow, starting with the accusative reflexives (1) and accusative reciprocals (2), i.e., verbs whose external argument is assigned the Agent role and the role of the suppressed accusative argument (mainly Theme or Experiencer):

(1) Syntax-type properties of Czech – productivity (Accusative reflexives)

- | | |
|--------------------------|--------------------------|
| i. <i>klamat se</i> | ('to deceive oneself') |
| ii. <i>polít se</i> | ('to spill oneself') |
| iii. <i>obviňovat se</i> | ('to impute oneself') |
| iv. <i>pozorovat se</i> | ('to observe oneself') |
| v. <i>říznout se</i> | ('to cut oneself'), etc. |

(2) Syntax-type properties of Czech – productivity (Accusative reciprocals)

- | | |
|--------------------------|-------------------------------------|
| i. <i>napodobovat se</i> | ('to ape each other') |
| ii. <i>nesnášet se</i> | ('to hate each other') |
| iii. <i>navštívit se</i> | ('to visit each other') |
| iv. <i>obdarovat se</i> | ('to give a present to each other') |
| v. <i>podvádět se</i> | ('to cheat each other'), etc. |

Following our discussion of the examples in (33), subsection 2.2.1, it is worth noting that all of the reflexive verbs in (1) can denote reciprocity as well if they have a plural subject. The same ambiguity between the reflexive and reciprocal readings is available for the reciprocal verbs as well in (2ii) and (2iv); the rest of the examples in (2) can only be

² Specifically, we have observed that reflexive and reciprocal verbs cannot be formed from transitive verbs that do not license [+human] objects; moreover, transitive verbs that require the subject and object to denote two distinct entities can only give rise to reciprocal verbs (see the discussion of the Croatian and the Slovak examples in (31) and (33), subsection 2.2.1).

reciprocal, as the subject and the object of their transitive counterparts must refer to two different entities (see the discussion of the examples in (31) and (33), subsection 2.2.1). The following examples demonstrate that the formation of dative reflexives (3) and dative reciprocals (4) – i.e., verbs whose external argument is assigned the Agent role and the role of the suppressed dative argument (by and large Benefactor) – displays the same degree of productivity (recall that if the dative argument is suppressed in Slavic, the clitic wears the shape SI rather than SE). Furthermore, the verbs in (3) and (4) are once more ambiguous between the reflexive and the reciprocal reading (except for (4ii) and (4iv), which can only denote a reciprocal event).

(3) Syntax-type properties of Czech – productivity (Dative reflexives)

- | | |
|-------------------------|--------------------------------------|
| i. <i>koupit si</i> | (‘to buy for oneself’) |
| ii. <i>nadávat si</i> | (‘to scold oneself’) |
| iii. <i>vyčítat si</i> | (‘to blame oneself’) |
| iv. <i>vysvětlit si</i> | (‘to explain to oneself’) |
| v. <i>zabalit si</i> | (‘to pack for oneself’), etc. |

(4) Syntax-type properties of Czech – productivity (Dative reciprocals)

- | | |
|-------------------------|---|
| i. <i>dát si</i> | (‘to give to each other’) |
| ii. <i>krást si</i> | (‘to steal from each other’) |
| iii. <i>objasnit si</i> | (‘to clarify to each other’) |
| iv. <i>vyhovovat si</i> | (‘to suit each other’) |
| v. <i>vyprávět si</i> | (‘to narrate to each other’), etc. |

Dative reflexives/reciprocals with accusative objects: In subsection 2.2.2 we have observed that dative SI-reflexives/reciprocals are able to license an accusative object if their underlying transitive verbs have some. SJA-languages, on the other hand, do not have dative reflexives at all, and the limited number of their dative reciprocal verbs cannot realize an accusative argument. As pointed in subsection 2.3.2 this state of affairs follows under the assumption that (i) lexical reflexivization can only establish the reflexive relation between the Agent and Theme roles, while no such restriction holds if the reflexivization applies in the syntax, and that (ii) any lexical valence changing operation deletes the accusative case of its input regardless of what theta role has been actually targeted by that operation; while if the operation takes place in the syntax, only the case of the actually manipulated argument is "neutralized". One reflexive (5) and two reciprocal examples (6) below indicate that Czech patterns with syntax rather than lexicon-type languages, as the dative reflexive/reciprocal verbs in this language do not lose their ability to assign the accusative case:

(5) Syntax-type properties of Czech - dative reflexives and accusative objects

Petr si postavil dům.
Petr SI built house_{-Acc.}
"Petr built himself a house."

(6) Syntax-type properties of Czech - dative reciprocals and accusative objects

- a. Petr a Jana si házeli míč.
Petr and Jana SI threw ball_{-Acc.}
"Petr and Jana threw each other a ball."
- b. Petr a Jana si vyprávěli příběhy.
Petr and Jana SI told stories_{-Acc.}
"Petr and Jana told each other stories."

ECM: As noted in subsection 2.3.1, probably the most straightforward argument in favor of the claim that some languages derive their reflexive/reciprocal verbs in the lexicon while others do this in the syntax is based on the availability of reflexive/reciprocal ECM structures, i.e., structures where the reflexive/reciprocal relation is established between the arguments of two distinct predicates. Provided that the lexicon contains a list of non-related entries, it follows directly that any lexical valence changing process can only operate on a single entry; the bundling of two distinct entries' theta roles is thus impossible. On the other hand, if the reflexivization/reciprocalization applies in the syntax, where distinct lexical entries are related by means of the syntactic structure, there is a priori no restriction preventing an operation from targeting two distinct predicates (for lexical bundling vs. parasitic theta assignment in the syntax see subsection 2.3.2). The following two pairs of reflexive (7) and reciprocal (8) ECM examples demonstrate that in Czech the operation of reflexivization/reciprocalization cannot be lexical and must apply in the syntax; the examples come in transitive (i) vs. reflexive/reciprocal (ii) pairs:

(7) Syntax-type properties of Czech - ECM reflexives

- | | |
|--|--|
| (ai) Marie viděla Petra tančit.
Mary saw Peter _{-Acc} dance _{-Inf} .
'Mary saw Peter dance.' | (aii) Marie se viděla tančit (v zrcadle).
Mary SE saw dance _{-Inf} (in mirror).
'Mary saw herself dance (in a mirror).' |
| (bi) Soudce shledal Petra vinným.
Judge found Peter _{-Acc} guilty _{-Ins} .
'The judge found Peter guilty.' | (bii) Soudce se shledal vinným.
Judge SE found guilty _{-Ins} .
'The judge found himself guilty.' |

(8) Syntax-type properties of Czech - ECM reciprocals

- | | |
|--|--|
| <p>(ai) Marie slyšela Petra mluvit.
Mary heard Peter_{-Acc} speak_{-Inf}.
'Mary heard Peter speaking.'</p> | <p>(aii) Marie a Petr se slyšeli mluvit (v rádiu).
M. and P. SE heard speak_{-Inf} (in radio).
'M. and P. heard each other speaking (in a radio).'</p> |
| <p>(bi) Petr uznal Marii hodnou funkce.
P found Marie_{-Acc} qualified_{-Ins} job_{-Gen}.
'P. found M. qualified for the job.'</p> | <p>(bii) Petr a Marie se uznali hodnými funkce.
P and M. SE found qualified_{-Ins} job_{-Gen}.
'P. and M. found each other qualified for the job.'</p> |

Reciprocity via the symmetric sequence of asymmetric events: Yet another distinction between syntax and lexicon-type languages, examined in more detail in subsection 2.2.4, is that reciprocal verbs which are formed in the syntax have either a symmetric-event reading or a sub-event reading (denoting a symmetric sequence of two or more asymmetric events), while for reciprocal verbs that are formed in the lexicon only the former of these options is available. As explained in subsection 2.3.2, this state of affairs is closely connected to Carlson's (1998) insight that verbs in themselves are only able to denote singular events, while the expression of a plurality of events stems from the presence of a verbal argument denoting plurality, or some other other plurality denoting element in the sentence, e.g., count adverbials (Siloni, 2002, Dimitriadis, 2004). Since these elements are available only in the syntax, this divergence also appears to be tightly connected to the component of the grammar in which reciprocal verbs are derived, as argued in Siloni (2008, 2012); for more details see subsection 2.3.2. The following couple of examples thus show once more that Czech is a syntax-type language (see also example (61) in subsection 2.2.4):

(9) Syntax-type properties of Czech – symmetric sequence of asymmetric events available

- a. Petr a Jana se pětkrát pozdravili.
Petr and Jana SE five times said hallo.
- i. "There were five symmetric events of saying hello between Petr and Jana."
 - ii. "There were ten asymmetric events of greetings – P greeted five times J and J greeted five times P"
- b. Petr a Jana si pětkrát podali ruku.
Petr and Jana SI five times handed hand_{-Acc}.
- i. "There were five symmetric events of shaking hands between Petr and Jana."
 - ii. "There were ten asymmetric events of shaking hands – P shook J's hand five times and J shook P's hand five times."

Discontinuous constructions: Finally, in subsection 2.2.5, we saw that syntax-type (SE) languages, as opposed to lexicon-type (SJA) languages, do not generally license so-called discontinuous constructions. This distinction, as argued in Siloni (2008, 2012) and explained

in more detail in subsection 2.3.2, results again from the fact that lexical reciprocals necessarily denote a single symmetric event, which enables the empty theta role of the oblique phrase argument to be associated with the content of the external theta role of the verbal subject. Syntactic reciprocals, on the other hand, express the symmetric relation via the sequence of asymmetric sub-events (the symmetric relation being a result of the sum of these sub-events), and the thematic association of the subject and the oblique argument is thus impossible. The three examples below show that Czech reciprocal verbs (in general) cannot license discontinuous constructions; this fact thus further corroborates that Czech is a syntax-type language (apparent exceptions being explainable according to lines outlined in the end of subsection 2.3.2).

(10) Syntax-type properties of Czech – discontinuous constructions

- | | | |
|----|--|--|
| a. | Petr a Jana se nenáviděli.
Petr and Jana SE hated.
"Petr and Jana hated each other." | ?? Petr se nenáviděl s Janou.
Petr SE hated with Jana. _{Ins.}
"Petr hated with Jana." |
| b. | Petr a Jana se poslouchali.
Petr and Jana SE listened.
"Petr and Jana listened to each other." | * Petr se poslouchal s Janou.
Petr SE listened with Jana. _{Ins.}
"Petr listened with Jana." |
| c. | Petr a Jana si lhali.
Petr and Jana SI lied.
"Petr and Jana lay each other." | * Petr si lhal s Janou.
Petr SI lied with Jana. _{Ins.}
"Petr lay with Jana." |

On the basis of the data just presented and following the discussion in chapter 2, we can thus conclude that Czech reflexive and reciprocal verbs are formed in the syntax. With this in mind we can approach the main topic of this chapter, i.e. Czech reflexive and reciprocal nouns.

3.2 "The problem" - Czech has reflexive and reciprocal nouns

In subsection 2.2 five distinctions were drawn between SE and SJA languages. Subsequently, I have shown how all of these diversities can be elegantly explained if one adopts the Lex-Syn parameter (subsection 2.3), suggested in Reinhart & Siloni (2004, 2005). Nevertheless, Siloni (2002) and Reinhart & Siloni (2005) ascribe to the setting of the parameter yet another consequence, namely, whether or not a given language has reflexive

and reciprocal nouns. In what follows we will see that this prediction does not hold for Czech, and we will outline three possible ways to resolve the puzzle.

3.2.1 The prediction that does not hold

Siloni (2002) and Reinhart & Siloni (2005) suggest that languages that create their reflexive and reciprocal verbs in the Syntax are expected to not have the corresponding reflexive and reciprocal nouns, in contrast to lexicon-type languages in which the existence of these two types of nominals is predicted. As we already know Czech is a language in which reflexive and reciprocal verbs clearly display syntax-type properties. However, contrary to Reinhart's and Siloni's prediction, Czech does have reflexive and reciprocal nouns, as illustrated in (11) and (12) respectively³ (note that reflexive and reciprocal nouns are accompanied by the clitic SE, like their verbal counterparts):

(11) Czech reflexive nouns (randomly chosen examples)

- | | | |
|-------|------------------------|-------------------------------------|
| i. | <i>namalování se</i> | (‘painting oneself’) |
| ii. | <i>obětování se</i> | (‘sacrificing oneself’) |
| iii. | <i>kontrolování se</i> | (‘controlling oneself’) |
| iv. | <i>popsání se</i> | (‘describing oneself’) |
| v. | <i>bodnutí se</i> | (‘stabbing oneself’) |
| vi. | <i>polití se</i> | (‘spilling something on oneself’) |
| vii. | <i>zabití se</i> | (‘killing oneself’) |
| viii. | <i>nahrání se</i> | (‘recording oneself’) |
| ix. | <i>vysvětlení se</i> | (‘explaining oneself’), etc. |

(12) Czech reciprocal nouns (randomly chosen examples)

- | | | |
|-------|------------------------|--------------------------------------|
| i. | <i>navštěvování se</i> | (‘visiting each other’) |
| ii. | <i>sledování se</i> | (‘trailing each other’) |
| iii. | <i>podezřívání se</i> | (‘suspecting each other’) |
| iv. | <i>focení se</i> | (‘photographing each other’) |
| v. | <i>libání se</i> | (‘kissing each other’) |
| vi. | <i>milování se</i> | (‘loving each other’) |
| vii. | <i>potkávání se</i> | (‘meeting each other’) |
| viii. | <i>podvádění se</i> | (‘cheating each other’) |
| ix. | <i>hlídání se</i> | (‘guarding each other’), etc. |

The following couple of examples briefly show that Czech reflexive/reciprocal nouns are indeed "complex event nouns" in Grimshaw's (1990) terms. This is achieved through

³ For the morphological derivation of the Czech event nouns see subsection 3.3.2.

Grimshaw's aspectual modifiers test⁴. Namely, in order for aspectual modifiers to be licensed the modified noun must have an aspectual, and therefore an event, structure. As the examples below demonstrate, reciprocal (a) and reflexive (b) nouns do have an aspectual structure, as they can be modified by this type of modifiers. Moreover, they are sensitive to the aspect imposed by such modifiers: The reciprocal noun *hádání se* ('quarreling') in (13ai) denotes an imperfective event; consequently, it can be modified by the imperfective event imposing adjective *nepřetržitě* ('constant'). On the other hand, if the same adjective modifies the perfective noun *pohádání se* ('quarreling'), as in (13a ii), the sentence is ungrammatical. Similar sensitivity to aspectual modifiers is displayed by reflexive nouns as well, as exemplified in (13b). This time the perfective event imposing prepositional phrase *za pět minut* ('in five minutes') is used. This prepositional phrase is licensed by the reflexive noun *umytí se* ('washing oneself') in (13bi), since the noun denotes a perfective event, however, it cannot modify the reflexive noun *mytí se* ('washing oneself') in (13bii), as this noun denotes an imperfective event.

(13) Czech reflexive/reciprocal nouns denote complex events

- (ai) *Nepřetržitě hádání se jejich dětí jim zkazilo celou dovolenou.*
Constant quarreling_{-imper} SE their children_{-Gen} them ruined whole vacation.
'Their children's constant quarreling ruined their whole vacation.'
- (a ii) **Nepřetržitě pohádání se jejich dětí jim zkazilo celou dovolenou.*
Constant quarreling_{-perf} SE their children_{-Gen} them ruined whole vacation.
'Their children's constant quarreling ruined their whole vacation.'
- (bi) *Petrovo umytí se za pět minut situaci nezachránilo.*
Peter's washing_{-perf} SE in five minutes situation not-rescued.
'Peter's washing in five minutes did not rescue the situation.'
- (bii) **Petrovo mytí se za pět minut situaci nezachránilo.*
Peter's washing_{-imperf} SE in five minutes situation not-rescued.
'Peter's washing in five minutes did not rescue the situation.'

The examples in (11), (12) and (13) thus clearly show that Czech has reflexive and reciprocal event nouns. The minimal consequence of this state of affairs is that Reinhart and Siloni's above mentioned distinction between lexicon and syntax-type languages, i.e.,

⁴ For other test distinguishing between event and result nouns see Grimshaw (1990). For additional language specific tests see e.g. Szabolcsi (1994) for Hungarian, Siloni (1997) for Hebrew, Dimitrova-Vulchanova and Giusti (1999) for Bulgarian and Cornilescu (2000) for Romanian.

existence vs. absence of reflexive and reciprocal nouns, is not universally valid, and naturally, the question of why this is so immediately arises.

3.2.2 The assumptions that must be revised

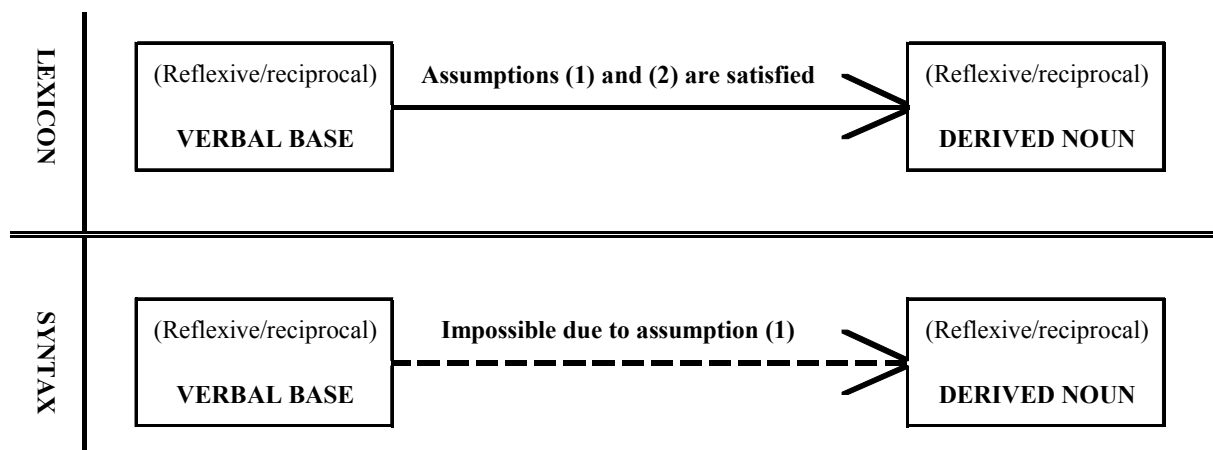
A closer look at the explanation that Reinhart and Siloni give for this allegedly universal feature of syntax-type languages reveals that their reasoning is based on two assumptions:

Assumption 1: The process of nominalization occurs universally in the Lexicon (as argued in Siloni 1997).

Assumption 2: The formation of deverbal/event nouns is universally Exclusively Verb Based, i.e. reflexive nouns are universally derived "directly" from the corresponding reflexive verbs, reciprocal nouns from reciprocal verbs, unaccusative nouns from unaccusative verbs, etc.

Assuming this, the absence of reflexive and reciprocal nouns in syntax-type languages follows straightforwardly: these languages create their reflexive and reciprocal verbs post-lexically, i.e., in the syntax, and they thus have no verbal reflexive and reciprocal input in the lexicon that could feed nominalization.

Figure 3: Reinhart and Siloni's explanation for the absence of reflexive and reciprocal nouns in syntax-type languages



The fact that there are reflexive and reciprocal nouns in Czech thus inevitably leads to the conclusion that (at least) one of the two assumptions above must be revised. That is, it is either not the case that the process of nominalization occurs universally in the Lexicon, or it is not the case that the derivation of reflexive and reciprocal nouns is universally Exclusively Verb Based.

Now, the exploration of the question of whether the nominalization occurs in the Syntax or in the Lexicon and whether reflexive/reciprocal nouns formation is Exclusively Verb Based or rather Verb Independent (see figure 1) permits the following four possibilities:

(14) Four possible derivations for reflexive and reciprocal nouns

- i. Lexical Nominalization - Exclusively Verb-Based Derivation
- ii. Syntactic Nominalization - Exclusively Verb-Based Derivation
- iii. Syntactic Nominalization - Verb Independent Derivation
- iv. Lexical Nominalization - Verb Independent Derivation

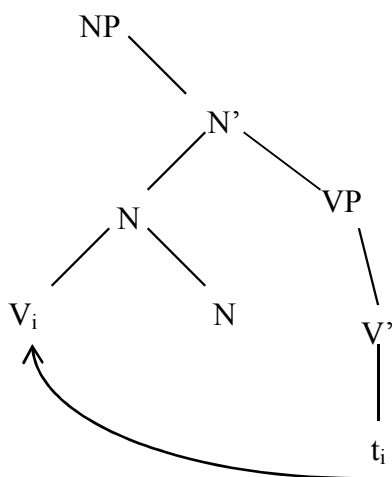
Option (i) is the option assumed by Reinhart and Siloni; this option cannot account for the existence of reflexive and reciprocal nouns in Czech. We thus remain with options (ii), (iii) and (iv). In what follows option (iv) will be advanced. This will be carried out by arguments against the syntactic nominalization of Czech verbs (not roots⁵), and especially against the Exclusively Verb Based derivation of Czech reflexive and reciprocal nouns, regardless of whether the process of nominalization is syntactic or lexical (and whether it targets verbs or roots).

3.3 Against the derivation of reflexive/reciprocal nouns from reflexive/reciprocal verbs

3.3.1 Against syntactic nominalization of Czech verbs

Different arguments were presented in the literature in favor of the hypothesis that event nouns are derived in the syntax from corresponding verbs (see, e.g., Hazout, 1995 and Fu, Roeper, and Borer, 2001). At the core of these analyses is the assumption that event nouns are derived by some kind of V to N incorporation.

Figure 4: Syntactic nominalization of verbs – V to N incorporation



⁵ See the discussion of figure 2 in the introductory part to this chapter.

Now, the presence of the V-head in the structure leads to the prediction that event nouns – like verbs - can be modified by adverbs, such as e.g. manner adverbs. This is, however, not the case in Czech, as can be seen in (15a) and (15b) for transitive and reflexive nouns, respectively. Instead, the only possible modifiers of Czech event nouns are adjectives and PPs, as expected for “true nouns”.

(15) Czech nouns cannot be modified by manner adverbs I

- ai. Matka převléká dítě pomalu.
 Mother changes-clothes child_{Acc} slowly.
 ‘The mother slowly changes her child’s clothes.’
- aii. *matčino převlékání dítěte pomalu
 mother’s changing-clothes_{Noun} child_{Gen} slowly
 (‘mother’s changing her child’s clothes slowly’)
- aiii. matčino pomalé převlékání dítěte
 mother’s slow changing-clothes_{Noun} child_{Gen}
 (‘mother’s slow changing of her clothes’)
- bi. Matka se převléká pomalu.
 Mother SE changes-clothes slowly.
 ‘The mother slowly changes her clothes.’
- bii. *matčino převlékání se pomalu
 mother’s changing-clothes_{Noun} SE slowly
 (‘mother’s changing her clothes slowly’)
- biii. matčino pomalé převlékání se
 mother’s slow changing-clothes_{Noun} SE
 (‘mother’s changing her clothes slowly’)

That manner adverbs cannot modify Czech nouns is further illustrated in (16a) and (16b), this time for transitive and reciprocal nouns, respectively:

(16) Czech nouns cannot be modified by manner adverbs II

- ai. Petr Pavla nepřetržitě obtěžuje.
 Petr Pavel_{Acc} constantly bothers.
 "Petr is bothering Pavel constantly."
- aii. *Petrovo obtěžování Pavla nepřetržitě
 Petr's botherin_{Noun} Pavel_{Gen} constantly
 "Petr's bothering Pavel constantly"

- aiii. Petrovo nepřetržité obtěžování Pavla
Petr's constant bothering_{-Noun} Pavel_{-Gen}
"Petr's constant bothering of Pavel"

- bi. Petr a Pavel se nepřetržitě obtěžují.
Petr and Pavel SE constantly bother.
"Petr and Pavel are bothering each other constantly."

- bii. *Petrovo a Pavlovo obtěžování se nepřetržitě
Petr's and Pavel's bothering_{-Noun} SE constantly
"Petr's and Pavel's bothering each other constantly"

- biii. Petrovo a Pavlovo nepřetržité obtěžování se
Petr's and Pavel's constant bothering_{-Noun} SE
"Petr's and Pavel's constant bothering each"

Moreover, as shown in (17), Czech event nouns cannot be modified even by time adverbs like *včera* ('yesterday') - unlike many other languages, including English or Hebrew, for instance, in which time adverbs can sometime modify nominal heads. Czech nouns do not allow even this kind of adverbial modifiers (ii); the modifier must once more have an adjectival form *včerejší* (iii), the adverb only being allowed in a verbal context (i).

(17) Czech nouns cannot be modified by time adverbs

- ai. Petr vysvětlil ten problém včera.
Peter explained that problem_{Acc} yesterday.
'Peter explained the problem yesterday.'

- aii. *Petrovo vysvětlení toho problému včera
Peter's explanation that problem_{Gen} yesterday_{Adv}
('Peter's explanation of the problem yesterday')

- aiii. Petrovo včerejší vysvětlení toho problému.
Peter's yesterday_{Adj} explanation that problem_{Gen}
('Peter's explanation of the problem yesterday.')

- bi. Petr se včera vysvětlil.
Peter se yesterday_{Adv} explained.
'Peter explained himself yesterday.'

- bii. *Petrovo vysvětlení se včera.
Peter's explanation SE yesterday_{Adv}.
('Peter's explanation of himself yesterday.')

- biii. Petrovo včerejší vysvětlení se.
Peter's yesterday_{Adj} explanation SE.
('Peter's explanation of himself yesterday.')

On the basis of the data in (15) - (17), we can infer that Czech event nouns are not derived in the syntax from corresponding verbs. This conclusion in turn disqualifies derivational options (14ii), and to a certain extent also (14iii) – namely, none of these options seems to be appropriate for Czech data under the traditional approach, which considers nominalization a process taking as its input a verb and deriving from it a corresponding noun. However, under the more recent development of the theory, advancing syntactic nominalization of roots (such as Marantz (1997) or Borer (2005)) and presented in figure 2, repeated below, the impossibility of adverbial modification of nouns can still easily and in a very elegant way be accounted for, thus opening the door for a derivation option (14iii).

Figure 2: Nominalization from a root



In figure 2 what enters the syntax is not a verb that subsequently undergoes movement to some higher nominal head (compare with figure 4 above), but rather a category neutral root. This root is merged either with the functional head "n" (a), giving rise to a nominal, or with the functional head "v" (b), giving rise to a verb. It is clear that in this state of affairs the impossibility of adverbs in the nominal domain follows straightforwardly from the absence of the functional head "v" in the structure. Nevertheless, note that even under the assumption that nominalization in Czech proceeds according to the schema (2a) (see, e.g., Veselovská 2001), we have to disqualify the Exclusively Verb Based derivation (14ii). Namely, what undergoes the process of nominalization in figure (2a) is supposed to be some basic form of the root (presumably a transitive root), while the process of reflexivization/reciprocalization applies only afterward. In other words, even the proponents of the derivational scenarios like the scenario graphically depicted in figure (2a), should still accept my claim advanced here according to which the derivation of Czech reflexive and reciprocal nouns is verb independent. In the following subsection we will nevertheless present some further direct arguments against deriving reflexive and reciprocal nouns from their corresponding reflexive and reciprocal verbs.

3.3.2 Against exclusively verb based derivation of reflexive and reciprocal nouns

In this subsection we will present two additional arguments that suggest that the derivation of Czech reflexive and reciprocal nouns is Verb Independent. Since we have concluded in

section 3.1 (and previously in Chapter 2) that Czech reflexive and reciprocal verbs are derived in the syntax, these arguments against the EVB derivation of Czech reflexive and reciprocal nouns are thus in fact also arguments against the syntactic nominalization of Czech reflexive and reciprocal verbs (see figure 1 and the four theoretically possible derivational options in 14). (In what follows I avoid the discussion of the possibility that what undergoes the process of reflexivization/reciprocalization is the root, which serves as a nominalization input after becoming a "reflexive/reciprocal root". For one thing, the argumentation below goes against the syntactic nominalization of both reflexive/reciprocal verbs and reflexive/ reciprocal roots. For other thing, under the scenario that the process of nominalization targets reflexive/ reciprocal roots, the derivation of reflexive/reciprocal nouns is a priori Verb Independent.)

3.3.2.1 Nominal morphology

The first one of these arguments is of a morphological nature, and its validity depends crucially on the validity of Baker's (1988) Mirror principle. Namely, Czech event nouns are derived by the addition of the passive morpheme *-n/-t* followed by adding the nominalization suffix *-í* to the nominalization base, i.e., either a verb (under the more traditional view) or root (under the syntactic decomposition view)⁶; the ending of the productively derived Czech event nouns is therefore always either *-ní* or *-tí*. The morphological rule for derivation of Czech event nouns is represented in (18):

(18) Morphological rule for derivation of event nouns in Czech

[VERB] / [ROOT] \Rightarrow VERB/ROOT + pass. morp. (-N/-T) + suffix (-Í) \Rightarrow EVENT NOUN

If reflexive and reciprocal nouns were formed from reflexive and reciprocal verbs, then the input for the rule in (18) would be as in (19):

(19) Putative verbal input for nominalization of reflexives and reciprocals

[VERB SE]

Interestingly, however, the morphological shape of Czech reflexive and reciprocal nouns is like in (20a) and not (20b):

(20) Morphological shape of Czech reflexive nouns

a. [VERB] \Rightarrow VERB + -N/-T + -Í SE \Rightarrow NOUN-N/T-Í SE

b. * [VERB SE] \Rightarrow VERB SE + -N/-T + -Í \Rightarrow NOUN SE-N/T-Í

⁶Additionally, the process of nominalization can sometime entail some further (usually predictable) phonological changes "inside" the derivational base.

That is, the rule seems to target the verb itself (20a), excluding the clitic. Put differently, it appears that what actually undergoes nominalization is the (transitive) VERB and not the VERB-SE (reflexive/reciprocal) complex, SE being an independent clitic element whose presence is forced by the process of reflexivization/reciprocalization (either verbal or nominal). This state of affairs thus constitutes a piece of independent evidence against the Exclusively Verb Based derivation of reflexive and reciprocal nouns in Czech^{7,8}.

3.3.2.2 *Clitics distribution in the verbal and the nominal domain*

The second argument against the possibility that Czech reflexive and reciprocal nouns are derived from the corresponding reflexive and reciprocal verbs is more articulate and relies on the following three sets of data.

First, in verbal contexts the clitic SE must obligatorily surface in “the second syntactic position” of the sentence, while in nominal contexts it obligatorily follows the noun. In other words, in a verbal/sentential environment the clitic SE behaves like a typical “second position clitic”, while in the nominal environment it encliticizes to the related nominal head. The relevant data are presented in (21):

⁷ It can be of some interest to note here that Hungarian seems to display an exactly reverse situation (although the case of Hungarian is perhaps less relevant for our discussion here, since it is a lexicon-type language, as reported by Reinhart and Siloni (2005) and Siloni (2008, 2012). Namely, as noted in Siloni and Preminger (2009) and Siloni (2008, 2012), the order of morphemes in Hungarian suggests that valence changing operations indeed precede nominalization, as demonstrated in the reflexive (i) and unaccusative (ii) examples below (taken from Siloni and Preminger); this state of affairs can be considered a piece of evidence that Hungarian, unlike Czech, indeed utilizes EVB:

i. János (rendszeres) borotvál-koz-ás-a
(the) János (regular) shave-REFL-NOMINAL-AGR
 ‘János’ (regular) self-shaving’

ii. az ing össze-gyűr-őd-és-e
the shirt PRT(together)-wrinkle-UNACC-NOMINAL-AGR
 ‘The shirt’s wrinkling’

⁸ For the sake of completeness, a few more words are necessary here. Namely, the question is what one wants to consider a reflexive/reciprocal verb, or more precisely, in which stage of the syntactic derivation the original transitive verb ceases to be a transitive verb and becomes a reflexive/reciprocal verb. As noted in subsection 2.3.2, syntactic reflexivization/reciprocalization involves the non-canonical co-assignment of the internal and the external theta role under the merger of the external argument, the clitic SE being the marker that such non-canonical co-assignment has occurred and at the same time an “eliminator” of the superfluous accusative case. If so, there are actually two steps in the syntactic derivation that can be seen as “moments” when a new reflexive/reciprocal verb was born. Under the first and less rigid view a reflexive/reciprocal verb is created as soon as both theta roles of the original transitive verb have been assigned to the subject, i.e. yet before the subsequent merger of the clitic SE. Under the second and more rigid view a reflexive/reciprocal verb is created only when the whole process was properly completed, i.e. only after the merger of the clitic took a place. It is obvious that the morphological argument depicted in (20) is valid only under the second, more rigid, view. However, as will be clarified immediately, the EVB derivation of Czech reflexive and reciprocal nouns is not tenable even under the first, less rigid view.

(21) Verbal vs. nominal clitic *se*

(a) Verbal context

- i. Petr **se** každý den myje studenou vodou.
Peter SE every day washes cold-Inst water-Inst.
'Peter washes himself every day with cold water.'
- ii. Každý den **se** Petr myje studenou vodou.
every day SE Peter washes cold water
'Each day Peter washes himself with cold water.'
- iii. Myje **se** Petr studenou vodou každý den?
washes SE Peter cold water every day
'Does Petr wash himself each day with cold water?'
- iv. Studenou vodou **se** Petr myje každý den
cold water SE Peter washes every day
'Peter washes with cold water every day.'
- v. *Petr každý den myje **se** studenou vodou.
Peter every day washes SE cold water
'Peter washes himself every day with cold water.'

(b) Nominal context

- i. Petrovo každodenní mytí **se** studenou vodou.
Peter's everyday-Adj washing SE cold-Ins water-Ins.
'Peter's everyday washing of himself with cold water'
- ii. Každodenní mytí **se** Petra studenou vodou.
everyday washing SE Peter-Gen cold water
'Peter's everyday washing of himself with cold water'
- iii. *Petrovo **se** každodenní mytí studenou vodou.
'Peter's SE everyday washing cold water
'Peter's everyday washing of himself with cold water'
- iv. * Každodenní **se** mytí Petra studenou vodou.
everyday SE washing Peter-Gen cold water
'Peter's everyday washing of himself with cold water'

The examples in (21a) show different word order possibilities for a simple Czech sentence which involves SE-reflexive verb. The basic (unfocused) word order is demonstrated in (i), while the sentences in (ii), (iii), and (iv) exemplify its various grammatical word order alternations, the common denominator being that the clitic SE occupies the second syntactic position of the sentence. Once this condition is violated (v), the sentence is ungrammatical.

Now, let us see where the clitic SE surfaces in the nominal context (21b). The examples in (i) and (ii) exemplify expressions that can roughly be considered nominal equivalents of the sentences in (21ai) and (21aii). As can be seen, the clitic SE appears in the first post-nominal position, while its occurrence in the second position of the nominal phrase is unacceptable (21biii) and (21biv)⁹.

Can the facts presented in (21) serve as another piece of evidence against the EVB derivation of Czech reflexive and reciprocal nouns? Or, on contrary, do they signify that the EVB derivation should, after all, be preferred?

The properties and distribution of Czech clitics, and Slavic clitics in general, are very intricate and they invoke a series of quite complicated questions regarding the Syntax – Phonology Interface. Various approaches to the topic were proposed in the literature. Some of these approaches rely on syntactic computation only. Others utilize both syntactic and phonological/prosodic devices, and they differ in the way the labor between these two modules is divided.¹⁰ Since our task here is not to give an account for the behavior of Czech clitics at hand, but rather to examine whether their behavior suits Exclusively Verb Based, or rather Verb Independent derivation, of Czech reflexive and reciprocal verbs, in what follows I will ignore these differences between various approaches to Slavic clitics. More specifically, I will assume that their distribution is controlled by purely syntactic tools, ignoring the possible role of the phonology. The reader should be aware, however, that this simplification is for the sake of the current exposition only, since - as will hopefully become clear shortly - the data at hand pose a problem for any current approach to the Slavic clitic phenomenon, unless it will assume that there are in fact two clitics SE in Czech, a verbal one and a nominal one. This assumption in turn necessarily leads to the conclusion that the derivation of Czech reflexive and reciprocal nouns cannot be Exclusively Verb Based, since in such a case it should involve the verbal clitic SE. With this in mind, let us return to the data presented in (21).

It is usually assumed in the literature that the Slavic reflexive clitics move to or are base generated inside a functional projection RefIP above VP (e.g. Toman 1999, Boskovic 2001)

⁹There are no nominal equivalents for sentences (21aiii) and (21aiv). These sentential word orders cannot be transformed into a nominal context as it would impose a noun–adjective sequence, which is impossible in Czech (the adjective *každodenní* ‘everyday’) cannot follow the nominal head). Moreover, the word order in (21aiv) is impossible in the nominal domain for yet another reason, namely, it would have to involve some kind of raising of the Instrument-like complement *studenou vodou* (‘cold water’). However, such raising, as well as a raising of any other nominal complement, is – I believe – prohibited due to the lack of an appropriate landing site for such movement inside the nominal phrase.

¹⁰ For a detailed survey of a different account of Slavic clitics phenomena and their advantages and shortcomings, see Boskovic (2001) and especially Franks and King (2000).

and that they either remain in RefIP or move to some higher functional projection (presumably AGR_SP/TP) depending on the language (see Boskovic 2002)¹¹. With respect to the data in (21) it seems, therefore, that Czech nominal phrases (unlike some other Slavic languages) contain RefIP, which leaves the EVB approach to the derivation of Czech reflexive/reciprocal nouns and therefore also to the syntactic approach to their nominalization (recall that these two are identical here), facing in principle two possibilities: Either the nominal head N can select both the VP (for verbs that are not accompanied with the clitic SE) and some bigger syntactic unit, presumably headed by the clitic SE (for reflexive/reciprocal verbs), or the clitic SE is a “free element” which is base generated in some higher position above the nominal head N. These two prospective syntactic structures are shown in (22):

(22) **Syntactic nominalization (=EVB) of Czech reflexive/reciprocal nouns - prospective structures I**

- a. [NP [N' N [RefIP [Ref' SE ... [VP]]]]]
- b. [RefIP [Ref' SE ... [NP [N' N [VP]]]]]

Can at least one of these two structures be maintained? Regarding the data presented in (21) the answer is positive (perhaps with preference for (22b), since (22a) implies a broadening of selecting possibilities of the nominal head, which is certainly an undesirable complication), although some further explanation of why the clitic SE does not move to the second sentential position is needed. Such an explanation could supply, e.g., the suggestion that Czech nouns – unlike verbs – move overtly to some higher functional head (for argumentation in favor of such movement in Polish nominal phrases see Willim 2000), which in turn blocks the raising of the clitic outside the nominal phrase.

Now let us see the **second** set of data. As the following series of examples show, Czech event nouns cannot take pronominal clitics as their complements; compare the use of a pronominal clitic in the verbal domain (ii) with the impossibility of these elements in the parallel nominal expressions (i).

¹¹The actual position of the clitic SE inside the RefIP is irrelevant for the discussion here. Following Boškovic (2001), (2002) and Franks and King (2000), it is nevertheless reasonable to assume that the clitic SE, as well as other Czech sentential clitics, enjoy an ambiguous status of being simultaneously heads and phrases, which enables them to occupy both head as well as a specifier position inside the structure.

(23) Unacceptability of pronominal clitics in a nominal context

- | | |
|--|--|
| (ai) *Petrovo koupení ho
Peter's buying him/it. _{Gen.} | (aii) Petr ho kupuje.
Peter him/it. _{Gen} buys. |
| (bi) *Petrovo pomáhání jim
Peter's helping them. _{Dat.} | (bii) Petr jim pomáhá.
Peter them. _{Dat} helps. |
| (ci) *Petrovo svěření jí ho
Peter's entrusting her. _{Dat} him. _{Gen.} | (cii) Petr jí ho svěřuje.
Peter her. _{Dat} him. _{Gen} entrusts. |

The data illustrated in (23) can once more be easily explained under the syntactic approach to the process of nominalization. Namely, it is widely assumed that the Slavic pronominal clitics related to verbs are base generated or move to the AgrP projections above the verbal head. Franks and King (2000) argue convincingly that the former option is utilized in languages like Bulgarian and Macedonian, whose clitics are always adjacent to the verb. On the other hand, in language in which the clitics surface in the second syntactic position like in Czech, the pronominal clitics seem to be base generated in the ordinary argument position inside the VP, and consequently rise to AgrP. The unacceptability of pronominal clitics in a nominal context can be thus simply assigned to the absence of an appropriate AgrP projection inside a nominal phrase. Note also that this explanation is in no conflict with the two possible syntactic structures given in (22). In other words, the data presented so far in (21) and (23) can be explained quite easily under the syntactic approach to the process of nominalization, and therefore do not raise any challenge to the EVB derivation of Czech reflexive and reciprocal nouns.

However, there is yet a **third** set of data: Once the reflexive clitic is present then the pronominal clitic is acceptable as well. This is manifested in (24a) and (24b), which paraphrase the expressions in (23ai) and (23ci), respectively, the only difference being that the expressions in (24) contain the clitic SE/SI. The acceptability of these expressions can vary slightly among speakers, but they are doubtlessly admissible, unlike the parallel expressions in (23) above.

(24) Acceptability of pronominal clitics in the presence of SE/SI

- a. Petrovo koupení **si** ho.
Peter's buying SI him/it._{Gen.}
'Peter's buying him/it for himself.'

- b. Petrovo svěření **se** jí.
 Peter's entrusting SE her._{Dat.}
 'Peter's entrusting himself to her.'

Can the fact that once the reflexive clitic is present the pronominal clitic is acceptable as well be explained under the EVB, i.e., under the syntactic nominalization of reflexive and reciprocal verbs? Turning back to the syntactic structures sketched in (22), an incorporation of AgrP projection into them will give us the following possibilities (PC stands for pronominal clitic)¹²:

(25) Syntactic nominalization (=EVB) of Czech reflexive/reciprocal nouns - prospective structures II

- a. [NP [N' N [RefIP [Ref]' SE [AgrOP [AgrO' PC [VP]]]]]]]]
- b. [NP [N' N [AgrOP [AgrO' PC [RefIP [Ref]' SE [VP]]]]]]]]
- c. [AgrOP [AgrO' PC [NP [N' N [RefIP [Ref]' SE [VP]]]]]]]]
- d. [RefIP [Ref]' SE [NP [N' N [AgrOP [AgrO' PC [VP]]]]]]]]
- e. [RefIP [Ref]' SE [AgrOP [AgrO' PC [NP [N' N [VP]]]]]]]]
- f. [AgrOP [AgrO' PC [RefIP [Ref]' SE [NP [N' N [VP]]]]]]]]

The structures in (25a), (25b) and (25c) show three possible incorporations of the AgrP projection into the structure in (22a). The structures in (25d), (25e) and (25f) show three possible incorporations of the same AgrP projection into the structure in (22b). The structures in (25a), (25b) and (25d) must be excluded “automatically” as the AgrP projection is located below the nominal head. That is, these structures contain an AgrP which serves for feature

¹² The ordering of the “SE-pronominal clitic” cluster can differ among the Slavic languages but is always very rigid in a given language. (For a detailed overview of Slavic clitics inventory see Franks and King (2000).) In Czech the clitic SE must always precede a pronominal clitic, which strongly supports the suggestion made by Toman (1999) that the RefIP is situated above the prospective AgrP projection in the structure. Bošković (2001) (pg. 60, fn. 59) notes, nevertheless, that this suggestion does not need to be the only conceivable one, as it is possible to assume that the clitic SE undergoes an overt LF movement from a position lower than AgrP. Since it does not matter which one of these two suggestions should be preferred, as for the proposal to be made here the actual location of the clitic SE with respect to the location of a pronominal clitic is irrelevant, let us leave both possibilities open.

checking of “ordinary verbal” objects. Consequently, we would expect the pronominal clitics, as well as other nominal complements of the nominal head, to be assigned the Accusative rather than the Genitive case, which is simply not correct (see examples (23) and (24) above).

What about the remaining structures, namely (25c), (25e) and (25f)? In these structures the AgrP projection is located above the nominal head and therefore it guarantees an appropriate Genitive case checking of the pronominal or nominal complements of the nominal head. The problem is however that none of these structures can truly account for the data presented in (24). In structures (25c) and (25e) the presence of the pronominal clitic is obviously indifferent to the presence of the clitic SE, as it takes as its complement the NP rather than the ReflP. As far as structure (25f) is concerned, it seems that here the presence of the pronominal clitic does depend on the presence of the clitic SE, because the AgrP directly selects the the ReflP. That is, it can be claimed that the AgrP strictly subcategorizes for ReflP. This is, however, not likely, since then we would expect that exactly the same holds in the verbal domain (specifically in the structure 25b), contrary to the facts: Verbs can take pronominal clitics as their complements regardless of the presence of the clitic SE.

That is, none of these structures can explain why, on the one hand nominal heads can host the clitic SE (21b) but cannot host pronominal clitics (23i), and on the other hand why if the clitic SE is present pronominal clitics are allowed to appear as well (24).¹³ Put differently, as far as I can see this phenomenon cannot be elucidated by means of purely syntactic tools without assuming that there are in fact two types of the clitic SE in Czech: A verbal clitic, which is involved in the formation of verbal reflexives/reciprocals, and a nominal clitic, which is involved in the formation of nominal reflexives/reciprocals. This in turn means that reflexivization/reciprocalization follows nominalization, and therefore the derivation of Czech reflexive and reciprocal verbs is not Exclusively Verb Based. Importantly, to the best of my knowledge, without the assumption that there are two types of the clitic SE in Czech, the EVB strategy cannot be rescued even under approaches which only partially ascribe the behavior of Slavic clitics to syntax, the rest of the work being done in PF. Generally speaking these approaches either use PF as a device that filters out prosodically defective outputs of a syntactic computation, or allow PF to do part of the syntactic work via different types of prosodical movement. Since PF should be blind to the purely syntactic information (such as syntactic categories), I do not see how these approaches can account for the fact that the

¹³The fact that in the verbal domain the clitic SE behaves as a second position clitic (21a), while in the nominal domain it encliticizes to a nominal head, is less relevant here. The reader is referred to the appendix where a possible solution of the puzzle presented here is outlined; the proposed solution takes the different distribution of the clitic SE in the verbal and the nominal domains into account, and is actually based on it.

appearance of some clitics depends on the appearance of another clitic in the nominal domain, while no such dependency exists in the verbal domain.

I thus conclude that the data illustrated in (21), (23), and (24) cannot be accounted for under the Exclusively Verb Based derivation strategy and I suggest that the most natural explanation of the puzzle seems to be that there are in fact two types of clitic in Czech - a verbal one and a nominal one. Put differently, it seems hardly possible to explain the set of data at hand under the EVB strategy: If the reflexive clitic were the same, why cannot the pronominal clitic appear in both domains like its reflexive counterpart? And what would render the pronominal clitic possible only in the presence of the reflexive clitic? On the other hand, once we assume that there are two clitics SE in Czech, the way is open for ascribing their different distribution in the verbal and the nominal domain to their intrinsic (lexically specified) properties; similarly, the mysterious dependency of the pronominal clitics on the presence of the clitic SE in the nominal domain can be ascribed to some interaction between these (in principle verbal) clitics and the nominal clitic SE. A rough outline of one possible analysis along these lines is briefly presented in the appendix; it must be stressed, however, that the analysis in the appendix is indeed very preliminary and may need reconsideration and further work.

To summarize: In this subsection we have argued that Czech reflexive/reciprocal nouns cannot be derived via the process of nominalization from their verbal counterparts in the syntax (3.3.1), since Czech event nouns cannot be modified by adverbs. Given that (i) Czech reflexive and reciprocal verbs are not present in the lexicon but are derived post-lexically in the syntax, and that (ii) the possibility of syntactic nominalization from roots (rather than from verbs) is a priori Verb Independent, this finding in itself is sufficient to conclude that the derivation of Czech reflexive and reciprocal nouns cannot be considered Exclusively Verb Based. Furthermore, we have presented two additional arguments that disqualify the EVB option regardless of whether the process of nominalization occurs in the lexicon or in the syntax (3.3.2), namely, the morphological shape of Czech reflexive and reciprocal nouns, and especially the different behavior of clitics in the verbal and the nominal domain.

3.4 Reflexivization and reciprocalization in the nominal domain

Once we have discarded the possibility that reflexive and reciprocal nouns are derived from reflexive and reciprocal verbs in Czech, a straightforward question arises: What is the immediate derivational base of Czech reflexive and reciprocal event nouns?

A most natural option seems to be that Czech reflexive and reciprocal event nouns are derived from the related transitive event nouns, exactly like reflexive and reciprocal verbs are derived from transitive verbs. That is, it seems that the operation of reflexivization and reciprocalization can apply not only to transitive verbs but also to transitive nouns in Czech. However, recall from section 2.3 that there are in fact two types of reflexivization/reciprocalization available across languages, namely, the lexical reflexivization/reciprocalization and the syntactic reflexivization/reciprocalization. If so, the question is which of these is utilized in the Czech nominal domain.

As the Lexicon-Syntax parameter is set to Syntax in Czech, one can expect that the Czech reflexive and reciprocal nouns will display the same syntactic properties as reflexive and reciprocal verbs do. Namely, we expect (i) these nouns to be created productively; (ii) that there are nominal dative reflexives and reciprocals, and that moreover both are able to license a direct-object argument if the underlying transitive noun has some; (iii) that these nominals can appear in ECM structures¹⁴; (iv) that Czech reciprocal nouns have either a symmetric event reading or a sub-event reading describing a symmetric sequence of two or more asymmetric events; and finally, (v) that Czech reciprocal nouns will not allow the discontinuous constructions, where the reciprocal relation is established between the member(s) of a subject set and the member(s) of an oblique set introduced by the preposition *with*. The examples in the following subsection demonstrate that all of these predictions are borne out.

3.4.1 Syntactic properties of Czech reflexive and reciprocal nouns

That **the formation of Czech reflexive and reciprocal nouns is productive** was already exemplified in (11) and (12), repeated below¹⁵.

(11) Syntax-type properties of Czech reflexive nouns - productivity (randomly chosen examples)

- | | | |
|-------|------------------------|-----------------------------------|
| i. | <i>namalování se</i> | (‘painting oneself’) |
| ii. | <i>obětování se</i> | (‘sacrificing oneself’) |
| iii. | <i>kontrolování se</i> | (‘controlling oneself’) |
| iv. | <i>popsání se</i> | (‘describing oneself’) |
| v. | <i>bodnutí se</i> | (‘stabbing oneself’) |
| vi. | <i>polití se</i> | (‘spilling something on oneself’) |
| vii. | <i>zabití se</i> | (‘killing oneself’) |
| viii. | <i>nahrání se</i> | (‘recording oneself’) |
| ix. | <i>vysvětlení se</i> | (‘explaining oneself’), etc. |

¹⁴ In Czech Exceptional Case Marking is not limited to the verbal domain, as will become clear shortly.

¹⁵ Like the formation of their verbal counterparts, the formation of Czech reflexive and reciprocal nouns is nevertheless subject to the two semantic conditions we have formulated in the discussion of examples (31) and (33), subsection 2.2.1. I.e., reflexive and reciprocal nouns cannot be formed from transitive nouns that do not license a [+human] object; moreover, transitive nouns which impose on their subject and object to denote two distinct entities, can give rise to reciprocal verbs only.

(12) Syntax-type properties of Czech reciprocal nouns - productivity (randomly chosen examples)

- | | | |
|-------|------------------------|----------------------------------|
| i. | <i>navštěvování se</i> | (‘visiting each other’) |
| ii. | <i>sledování se</i> | (‘trailing/watching each other’) |
| iii. | <i>podezřívání se</i> | (‘suspecting each other’) |
| iv. | <i>focení se</i> | (‘photographing each other’) |
| v. | <i>líbání se</i> | (‘kissing each other’) |
| vi. | <i>milování se</i> | (‘loving each other’) |
| vii. | <i>potkávání se</i> | (‘meeting each other’) |
| viii. | <i>podvádění se</i> | (‘cheating each other’) |
| ix. | <i>hlídání se</i> | (‘guarding each other’), etc. |

It is worth noting that like their verbal counterparts, the SE-nominals in (11) and (12) above can often be ambiguous between the reflexive and the reciprocal reading, subject to the condition that their transitive counterpart does not impose on its subject and its object to refer to two distinct entities. Thus, if their subject is plural, all the reflexive nouns in (11) can denote reciprocal relations as well; similarly, reciprocal examples (ii), (iii), (iv), and (ix) in (12) can all be interpreted as reflexive in an appropriate context. This ambiguity between the reflexive and reciprocal reading is illustrated in (26):

(26) Syntax-type properties of Czech reflexive/reciprocal nouns - reflexive/reciprocal ambiguity

Focení se těch dvou mužů všechny iritovalo.

Photographing SE those two man-Gen all-Acc irritated.

- i. Everybody was irritated because each one of these two men photographed himself.
- ii. Everybody was irritated because those two men photographed each other.

Alongside the accusative reflexive and reciprocal nouns **there are dative reflexive and reciprocal nouns in Czech** as well. Their formation is again very productive, and like their verbal counterparts they involve the clitic SI rather than SE. Moreover, as the majority of the reflexive (27) and reciprocal (28) examples below show, **Czech dative reflexive and reciprocal nominals can license a direct-object argument**, if the underlying transitive noun has some:

(27) Syntax-type properties of Czech reflexive nouns – dative reflexives (randomly chosen examples)

- | | | |
|-------|-----------------------------------|-------------------------------------|
| i. | <i>nadávání si</i> | (‘scolding oneself’) |
| ii. | <i>vysvětlování si problémů</i> | (‘explaining problems to oneself’) |
| iii. | <i>kupování si knih</i> | (‘buying books for oneself’) |
| iv. | <i>zničení si zdraví</i> | (‘harming one’s own health’) |
| v. | <i>připravování si přednášky</i> | (‘preparing a lecture for oneself’) |
| vi. | <i>dokazování si vlastní síly</i> | (‘proving one’s own strength’) |
| vii. | <i>prodloužení si dovolené</i> | (‘prolonging vacation to oneself’) |
| viii. | <i>ubližování si</i> | (‘hurting oneself’) |
| ix. | <i>pomáhání si</i> | (‘helping oneself’) |

(28) Syntax-type properties of Czech reflexive nouns – dative reciprocals (randomly chosen examples)

- | | | |
|-------|------------------------------|--|
| i. | objasňování si problémů | ('clarifying problems to each other') |
| ii. | ukazování si fotografií | ('showing photos to each other') |
| iii. | vyprávění si příběhů | ('telling stories to each other') |
| iv. | lhaní si | ('lying to each other') |
| v. | psaní si dopisů | ('writing each other letters') |
| vi. | posílání si balíčků | ('sending each other packages') |
| vii. | šeptání si medových slovíček | ('whispering sweet words to each other') |
| viii. | oznamování si novinek | ('announcing news to each other') |
| ix. | gratulování si | ('congratulating each other') |

Like accusative (SE) reflexive/reciprocal nouns, dative (SI) reflexive/reciprocal nouns too are ambiguous between the reflexive and the reciprocal reading modulo plurality of the subject and the ability of the subject and the object of their transitive counterpart to refer to two distinct entities, as explained above for accusative reflexives and reciprocals. The following example demonstrates this:

(29) Syntax-type properties of Czech reflexive/reciprocal nouns – dative reflexive/reciprocal ambiguity

Jejich kupování si drahých věcí je finančně zruinovalo.

Their buying SI expensive things them financially ruined.

- i. They were financially ruined because each of them was buying expensive things for himself.
- ii. They were financially ruined because they were buying expensive things for each other.

The additional property characterizing syntax-type languages is the ability of their reflexive/reciprocal verbs to participate in ECM structures. As mentioned in footnote (14), Czech nominals can in general exceptionally case mark subjects of embedded predicates. This is illustrated by the examples in (30ai) and (30bi), which contain transitive nominals. Crucially for our purpose, the reflexive (30aii) and reciprocal (30bii) paraphrases of these ECM expressions are grammatical as well:

(30) Syntax-type properties of Czech reflexive and reciprocal nouns – ECM

- ai. Petrovo shledání toho muže zajímavým.
Peter's finding that man_{Gen} interesting.
'Peter's finding that man interesting.'
- aii. Petrovo shledání se zajímavým.
Peter's finding SE interesting.
'Peter's finding himself interesting.'
- bi. Jejich uznání Petra hodným funkce.
Their considering Peter_{Gen} qualified job.
'Their considering Peter qualified for the job.'

- bii. Jejich uznání se hodným funkce.
Their considering SE qualified job.
'Their considering each other qualified for the job.'

The last two properties that we have observed for Syntax-type languages were only relevant for reciprocal verbs. Namely, we saw that syntactic reciprocals are ambiguous between a symmetric event reading and a sub-event reading describing a symmetric sequence of two or more asymmetric events and that, in general, syntactic reciprocals do not license so-called discontinuous constructions. Let us therefore check whether Czech reciprocal nominals also pattern with their verbal counterparts in these two aspects, starting with **the ambiguity between the symmetric and asymmetric reading**.

In order to make the ambiguity between the two readings sharper, recall that following Siloni, 2002, and Dimitriadis, 2004, in subsection 2.2.4 we used the count adverbials like *five times*, getting either five symmetric event readings or ten asymmetric sub-event readings. However, as the following couple of examples show, count adverbials are not licensed in the nominal context in Czech:

(31) Czech nouns cannot be modified by count adverbs

- a. * Postavení stanu pětkrát...
building tent_{Gen} five times...
- b. * Okradení Petra pětkrát...
dispossessing Petr_{Gen} five times...

Note, that the ungrammatical status of the expressions in (31) is actually unsurprising, as it is in full harmony with the observation we have made in subsection 3.3.1, where we saw that Czech nominals cannot be modified by adverbs in general, which in turn serves us as an argument against the possibility that the process of nominalization occurs in the syntax in Czech. If so, can we nevertheless detect the ambiguity notified above? More precisely, can we still detect the sub-event reading describing a symmetric sequence of two or more asymmetric sub-events, which – recall – is typical for syntactic reciprocals only, i.e. it is not available for lexical reciprocals? In fact, we can do so quite easily by creating a context in which the symmetric event reading is simply impossible, as noted already in Siloni (2012). Specifically, Siloni used the adverbial phrase *on the forehead* to show that the lexical reciprocal *kiss*, contra its counterparts in syntax-type languages, cannot license the addition of this phrase since it necessarily imposes the asymmetric sub-events reading (it is physically impossible for

two or more people to kiss each other simultaneously on the forehead). As the example in (32a) shows, the Czech reciprocal noun *libání se* ('kissing each other') does license this adverbial phrase.

(32) Syntax-type properties of Czech SE-reciprocal nouns – asymmetric sub-events reading

- a. *Líbání se dětí na čelo všechny rozesmálo.*
kissing SE children_{Gen} on forehead all_{Acc} made-laugh
'The children's mutual kissing on the forehead made everybody laugh.'
- b. *Jejich porážení se v průběhu sezóny pomohlo slabším týmům.*
their defeating SE in course season helped weaker teams
'The fact that they defeated each other during the season helped weaker teams.'

Moreover, in syntax-type languages there are reciprocal verbs denoting events which are intrinsically asymmetric. Siloni exemplifies this through the verb *defeat*. Two or more people cannot defeat each other simultaneously (a side in a struggle can be either a winner or a loser, but never both), yet this verb can undergo the process of reciprocalization in syntax-type languages. The example in (32b) above demonstrates that the nominal counterpart of the Czech reciprocal verb *porazit se* ('defeat each other') is fully grammatical, indicating once more that Czech reciprocal nouns, like reciprocal verbs, are able to denote a symmetric sequence of asymmetric sub-events. It may be worth noting that the set of reciprocal verbs denoting intrinsically asymmetric events is actually quite large, many of these verbs being dative reciprocals that were derived from double object transitive verbs. Two examples containing nominal counterparts of such reciprocal verbs follow.

(33) Syntax-type properties of Czech SI-reciprocal nouns – asymmetric sub-events reading

- a. *Neustálé vyměňování si zbytečných informací je pro dnešní dobu velmi typické.*
constant interchanging SI needless information_{pl} is for present-day period very typical
'A constant interchange of needless pieces of information is very typical nowadays.'
- b. *Neustálé nabízení si zbytečných služeb je pro dnešní dobu velmi typické.*
constant offering SI needless services is for present-day period very typical
'The constant offering of needless services is very typical nowadays.'

The dative reciprocal noun *vyměňování si* ('interchanging between each other') in (33a) cannot denote a symmetric event, as there is some piece of information that goes from A to B (e.g., Dana is saying to Beata that she is in a drugstore in a shopping mall, as there are incredible discounts) and some other piece of information that goes from B to A (e.g., Beata

is saying to Dana that she is actually in the same shopping mall, just 20 meters from her in a clothes shop, as there are incredible discounts as well). The denoting power of the reciprocal noun in (33a) is of course not limited to a single exchange of two pieces of information, so that Dana and Beata can also tell each other, for example, what they are buying and that they will be glad to meet each other one day and that they will be in touch... The sentence in (33b) contains the dative reciprocal noun *nabízení si* ('offering each other'), which like *vyměňování si* ('interchanging between each other') in (33a) cannot denote a symmetric event. It can be that two men offer each other the same service (e.g., mediation in buying a car), but these are still two different services, as no one of the two men can be both the Agent and the Benefactor of the same (single) event of offering. Moreover, and crucially, the reciprocal noun in (33b) can also denote the situation in which apparently two different services are offered, e.g., that Josi offers Zvi a new and very special massage of the upper part of the back, while Zvi offers to Josi a new and very special massage of the lower part of the back.

Finally, let us see whether Czech reciprocal nouns can license so-called **discontinuous constructions**. Based on the accusative (34a) and dative (34b) examples below, it seems that it is indeed so.

(34) Syntax-type properties of Czech reciprocal nouns - Discontinuous constructions

- a. Petrovo neustálé objímání se s Danou uvádělo všechny přítomné do rozpaků.
Petr's constant hugging SE with Dana-_{Inst} introduces all-_{Acc} present to embarrassment
'The fact that Petr and Dana hugged all the time embarrassed all of the people present.'
- b. Petrovo neustálé šeptání si s Danou všechny přítomné rušilo.
Petr's constant whispering SI with Dana-_{Inst} all-_{Acc} present disturbed
'The fact that P. and D. whispered to one another all the time disturbed all of the people present.'

However, the matter of fact is that similarly to the situation in the verbal domain (see subsection 2.2.5), in the majority of cases Discontinuous constructions are not available for Czech reciprocal nouns, regardless of whether we deal with accusative (35a/b) or dative (35c/d) reciprocals.

(35) Syntax-type properties of Czech reciprocal nouns - Discontinuous constructions

- a. * Petrovo představení se s Danou...
Petr's introducing SE with Dana-_{Inst} ...

- b. * Petrovo podvádění se s Danou...
Petr's cheating SE with Dana-Inst ...
- c. * Petrovo pomáhání si s Danou...
Petr's helping SI with Dana-Inst ...
- d. * Petrovo lhaní si s Danou...
Petr's lying SI with Dana-Inst ...

Now, recall that in subsection 2.3.2 we mentioned that in principle one can think about two possible explanations for the mixed behavior of some reciprocal verbs in syntax-type languages with respect to the availability of discontinuous constructions. Either lexical reciprocalization (and reflexivization) is generally available in any language, and in addition some languages also employ the syntactic reciprocalization (and reflexivization) (Dimitriadis, 2004), or these rather isolated instances of SE reciprocals are in fact instances of verbs that have become lexicalized (Siloni 2008, 2012). Based on examples like (85), subsection 2.3.2, repeated below as (36), we have adopted Siloni's suggestion, since under Dimitriadis' approach it would be hard to explain why these verbs do not lose their ability to assign the accusative case (recall that the lexical valence-changing operations delete the accusative case of their input). On the other hand, if these reciprocals are instances of reciprocals that became lexicalized, their ability to assign the accusative case is unsurprising.

(36) SE-reciprocals, discontinuous constructions and accusative objects licensing

Petr si šeptal tajnosti s Janou.
Petr SI whispered secrets_{-Acc} with Jana-Inst
Peter and Jana whispered secrets to each other.

If these isolated instances of reciprocal verbs that allow the discontinuous construction are instances of reciprocal verbs that became lexicalized, it is reasonable to expect to find some discrepancies between the verbal and the nominal domain. In other words, if the operation of reciprocalization (and reflexivization) applies independently in the verbal and the nominal domain giving rise to reciprocal (and reflexive) verbs and nominals, respectively, and if these independent - and to a certain extent non-related - verbs and nominals can subsequently become lexicalized, then one can expect to find reciprocal verbs that license discontinuous constructions, while their nominal counterparts do not, and vice versa. As the following two couples of examples demonstrate, there are such cases.

(37) Discrepancies in the licensing of discontinuous constructions – verbs vs. nouns

- | | |
|---|---|
| a. √ Petr si vyprávěl příběhy s Janou.
Petr SI told stories _{-Acc} with Jana _{-Inst}
'Petr and Jana told each other stories.' | * Petrovo vyprávění si příběhů s Janou...
Petr's telling SI stories _{-Gen} with Jana _{-Inst} ... |
| b. * Petr se sledoval s Janou.
Petr SE spied with Jana _{-Inst}
'Petr and Jana spied on each other.' | √ Petrovo sledování se s Janou...
Petr's spying SE with Jana _{-Inst} ... |

The (dative) reciprocal verb *vyprávět si* ('tell each other') licenses the oblique phrase *s Janou* ('with Jana'), while its nominal counterpart cannot be accompanied by this phrase (37a). On the other hand, the discontinuous construction with the verb *sledovat se* ('spy') sounds very strange, while its nominal counterpart sounds much better (37b). These discrepancies thus offer further support for Siloni's claim that there can be lexicalized instances of reciprocal (and reflexive) verbs in syntax-type languages, and for our present claim that the derivation of Czech reflexive and reciprocal nouns is not (exclusively) verb-based.

On the basis of the data presented in this subsection, I conclude that the derivation of Czech reflexive and reciprocal nouns is parallel to the derivation of their verbal counterparts to the extent that both reflexive/reciprocal formations seem to be derived by the same valence changing operation, which targets a related transitive base, either nominal (resulting in a reflexive/reciprocal noun) or verbal (resulting in a reflexive/reciprocal verb). Before turning to another two syntax-type languages, namely Slovak and Polish, which contrary to Reinhart's and Siloni's prediction have reflexive and reciprocal nouns, it can be of some interest to briefly address the operation of reflexivization and reciprocalization in the nominal domain, and one consequence of such a suggestion.

3.4.2 Reflexivization and reciprocalization in the nominal domain

In subsection 2.3.2 we presented the operation of reflexivization and reciprocalization, suggested by Reinhart & Siloni (2005) and Siloni (2012), respectively, for the verbal domain. In the present chapter we have argued that the derivation of Czech reflexive and reciprocal nominals is parallel to the derivation of their verbal counterparts in the sense that these nominals are derived in the syntax from their transitive nominal alternates, exactly as reflexive and reciprocal verbs derive in the syntax from their transitive verbal alternates. It is

thus more than natural to suggest that Reinhart's and Siloni's syntactic version of the operation of reflexivization and reciprocalization is available not only in the verbal domain, but also in the nominal domain in Czech. Both of these operations, including the example of their application on nominals, are presented in (38) and (39). As can be seen, the operations themselves are exactly the same as the operations defined by Reinhart and Siloni for the verbal domain (compare (38a) and (39a) with (82) and (84), subsection 2.3.2). Similarly, both operations serve the exact same function in the verbal and the nominal domain. That is, the operations of reflexivization/reciprocalization take as their input a transitive noun (38bii/39bii). Because of the presence of the case reducer (the clitic SE), the internal theta role cannot be assigned canonically to an internal argument. It thus remains on the noun, until the external theta role is discharged. Once the external role is assigned to an argument, the internal theta role is parasitically assigned to the same argument as well (38biii/39biii). The interpretation of the resulting reflexive nominal is demonstrated in (38biv), i.e., the subject argument of the noun functions as both the Agent and the Theme of the same event. The interpretation of a reciprocal nominal is demonstrated in (39biv) and (39bv). Namely, individuals in the set denoted by the subject argument of the resulting noun are distributed over two (or more) events of the same type, being interpreted as Agents of some of these events and Themes of other(s), giving rise to a distributive interpretation (39biv). That is, the reciprocity denoted by Czech reciprocal nouns is not necessarily symmetric, as indeed observed in subsection 3.4.1. Nevertheless, the collective reading (39v) is available for these nouns as well, due to the mapping atomic asymmetric sub-events "up" (\uparrow).

(38) The operation of syntactic reflexivization and its application in the Czech nominal domain

(a) The operation of reflexivization

- i. Parasitic theta assignment: external and internal theta roles are assigned to the same argument upon the merge of the former.
- ii. Case reduction: Case is reduced by the appropriate morphology (such as the clitic SE).

(b) The application of the operation of reflexivization in the Czech nominal domain

- i. Petrovo mytí se.
Peter's washing SE
'Peter's washing himself.'
- ii. NP: [se mytí_{[Agent], [Theme]}]
- iii. DP: [Peter_{<[Agent], [Theme]>} [mytí_j se_[NP t_j]]]
- iv. Semantic representation/interpretation: $\exists e[\text{mytí}(e) \& \text{Agent}(e, \text{Peter}) \& \text{Theme}(e, \text{Peter})]$

(39) The operation of syntactic reciprocalization and its application in the Czech nominal domain

(a) The operation of reciprocalization

i. Parasitic theta assignment: external and internal theta roles are assigned to the same argument upon the merge of the former.

ii. Case reduction: Case is reduced by the appropriate morphology (such as the clitic SE).

(b) The application of the operation of reciprocalization in Czech nominal domain

i. navštěvování se Petra a Pavla
 visiting se Petr and Pavel
 'Peter and Pavel's visiting each other'

ii. NP: [se navštěvování _{[Agent], [Theme]}]

iii. DP: [Petr and Pavel _{<[Agent], [Theme]>} [navštěvování_j se _[NP t_j]]]

iv. **Semantic representation/distributive interpretation:** $\exists e \exists e_1 \exists e_2 [(e)=(e_1 \sqcup e_2) \ \& \ [navštěvování(e_1) \ \& \ Agent(e_1, Petr) \ \& \ Theme(e_1, Pavel) \ \& \ navštěvování(e_2) \ \& \ Agent(e_2, Pavel) \ \& \ Theme(e_2, Petr)]]$

v. **Collective interpretation:** $\exists e \exists e_1 \exists e_2 [\uparrow (e)=(e_1 \sqcup e_2) \ \& \ [navštěvování(e_1) \ \& \ Agent(e_1, Pavel) \ \& \ Theme(e_1, Petr) \ \& \ navštěvování(e_2) \ \& \ Agent(e_2, Petr) \ \& \ Theme(e_2, Pavel)]]$

While the presentation of the application of the operations of reflexivization and reciprocalization in the nominal domain is rather technical, since it does not differ from the application of these two operations in the verbal domain (compare the presentation above with the presentation in subsection 2.3.2), note that this proposal has one non-trivial consequence. Namely, assuming that the internal theta role of a noun is assigned upon the merge of the external role means that the external argument of Czech event nouns must be syntactically active, even if it is not realized overtly, as in the reflexive (a) and reciprocal (b) examples below:

(40) The subject of Czech reflexive and reciprocal event nouns can remain unexpressed

(a) Neustále opíjení se škodí zdraví.
 constant toping SE harms health
 'Constant toping is harmful for health.'

(b) Neustále obviňování se narušuje mezilidské vztahy.
 constant imputing SE harms interpersonal relations
 'Constant accusation is harmful for interpersonal relation.'

If the suggestion that the operations of reflexivization and reciprocalization apply in the nominal domain exactly as they apply in the verbal domain is on the right track, we are expecting that non-overt subjects of Czech event nouns will be syntactically active in general. The following two subsections are devoted to exactly this issue. As we will see, the prediction just articulated indeed holds.

3.4.2.1 *Subjects of Czech nominals are true arguments*

It is widely agreed that in general the process of nominalization affects the external argument of its input, making the realization of that argument optional. As illustrated in (41) below, the subject-like arguments may or may not be realized:

(41) **Optional realization of external argument of event nouns**

- (a) Záměrné budování osad (izraelskou vládou) pokračuje v plné síle.
Intentional building settlements_{-Gen} (Israeli government_{-Ins}) continues in full intensity
"The intentional building of settlements (by the Israeli govern.) continues with full intensity."
- (b) zničení všech knih (inkvizicí) za jediný rok
destruction all books_{-Gen} (inquisition_{-Ins}) in single year
'the destruction of all of the books (by the Inquisition) in a single year'

There is, however, a dispute in the literature regarding the question of what the syntactic status of the external argument in a nominal context is – is it a real argument (e.g., Szabolcsi (1994), Siloni (1997), Siloni&Preminger (2009)), or rather some kind of argument-like adjunct (Grimshaw (1990))? And if it is an argument, what is its status once it is not overtly realized? Is it saturated and assigned to a variable in the semantics (Siloni & Preminger (2009)) or rather realized as a PRO (Szabolcsi (1994))?

It is widely known that non-realized nominal subjects are interpreted as [+human]. This is illustrated by the examples in (42). The Hebrew noun *hakaša* ('biting'), as well as its verbal counterpart *lehakiš* ('to bite') cannot license a [+human] subject; perhaps only snakes or scorpions can function as subjects of this Hebrew noun / verb. The omission of the subject in (42a) is thus prohibited, as the non-realized nominal subject cannot have a non-human reading. Similarly, in (42b) the nominal subject cannot be omitted since only cats can meow (at least in Czech), although in this case the sentence can be rescued if one can think about an imaginary situation, in which the inhabitants of Kiriati Mockin, a small town in the north of Israel, are used to meow on the streets.

(42) Non-realized external argument of event nominals must be [+human]

- (a) hakašat ha-yeled *(al yedey ha-naxaš) (Hebrew, Siloni&Preminger 2009)
biting the boy (by the-snake)
"The biting of the boy by the snake."
- (b) V Kiriát Mockin je neustálé mňoukání *(koček) na ulici běžné. (Czech)
In Kiriát Mockin is constant meowing (cats-Gen) on the street common.
"The constant meowing of cats on the street is common in Kiriát Mockin."

Note that the ungrammatical status of the nominal phrases in (42) shows clearly that the external arguments of event nouns cannot be considered adjuncts of any kind (contrary to Grimshaw, 1990), but are indeed considered genuine arguments, since if they were adjuncts it would be very surprising to find their appearance to be obligatory (see also Siloni, 1997 for the same reasoning). Based on examples like (42b) I thus conclude that the subjects of Czech event nouns are true arguments.

3.4.2.2 Non-overt subjects of Czech nominals are realized as PRO

If the subject of Czech event nouns is not overtly realized, what happens with its theta role? Is it assigned to PRO as suggested, e.g., by Szabolcsi (1994) for Hungarian, or is it saturated and assigned to the variable only in the semantics (Siloni & Preminger, 2009)? Recall that our suggestion that the operation of reflexivization/reciprocalization is available in the nominal domain in Czech predicts that the former of these two options holds. As the following set of data demonstrates clearly, this prediction is indeed borne out. Namely, these data show that the non-overt subject position of Czech derived nouns is syntactically active by utilizing elements whose licensing depends on the presence of a properly related argument in the structure. Three such tests are given:

I. Reflexive anaphor binding:

Reflexive and reciprocal anaphors must be bound by a co-referential argument, otherwise binding condition A is violated. The fact that the following nominal expressions are grammatical thus attests that the reflexive anaphors involved are properly bound, and therefore there is a non-overt binder in the structure, i.e. PRO in nominal subject position¹⁶:

43) Neustálé PRO_i vychvalování sama sebe_i...
continual PRO_i extolling oneself_{i-Gen}...

¹⁶ Reciprocal anaphors are somehow less acceptable as nominal complements; I believe this can be explained on independent grounds.

44) Neustálé PRO_i mluvení o sobě_i...
 continual PRO_i speaking about oneself_i...

II. Secondary predication by depictive adjectives:

A secondary predication by depictive adjectives can serve as another test for the presence of a non-overt argument in the structure. The secondary predication effect is achieved via the modification of (one of) the argument(s) of the primary predicate. If such predication is possible for nominal expressions via modification of a non-overt nominal subject argument, then this subject must be syntactically present.¹⁷ Let us illustrate this step by step:

- 45a) Běhání té dívky nahé...** **45b) Běhání toho chlapce nahého...**
 running that girl-GenFemSg naked-GenFemSg running that boy-GenMasSg naked-GenMasSg

In (45a) and (45b) the subjects of the noun *běhání* ('running') are realized by the nouns *dívka* ('girl') and *chlapec* ('boy'), respectively; these nominal subjects are placed after the head noun, they bear the Genitive case and they are modified by the depictive adjective *nahé*, as witnessed by the case and gender/number agreement that holds between them and the adjective.

- 46a) Dívčino běhání nahá...** **46b) Chlapcovo běhání nahý...**
 girl'S-GenFem(NomNeuter) running naked-Fem... boy'S-GenMas(NomNeuter) running naked-Mas...

The expressions in (46) differ minimally from those in (45). Specifically, the subjects of the noun *běhání* are now placed before the head noun. This in turn leads to a change in their inflectional suffixes, which appear in (46) to be sensitive not only to the phi-features of these subjects themselves, but also to the agreement with the phi-features of the head noun; e.g., the suffix, which is attached to the nominal subject *dívka* in (46a), expresses that this noun is a (singular) Feminine, bears the Genitive case and agrees with the phi-features of the nominal head *běhání*, which is a (singular) Neuter noun bearing the Nominative case.¹⁸ Crucially for

¹⁷ Recall that in subsection 2.1.2 we used the secondary predication by depictive adjectives as a test for the syntactic status of the reflexive/reciprocal clitic SE. Specifically, we have observed that once the clitic is attached to a verb the secondary predication is possible by the sole modification of its subject, as there is no verbal object present in the structure, thus distinguishing the SE-reflexive/reciprocals from their anaphoric counterparts.

¹⁸ Perhaps it is this phi-feature agreement with the head-noun due to which these pre-nominal subjects are traditionally classified as (possessive) adjectives. There is, however, no justification for this descriptive label. The anaphor binding patterns demonstrated below for Czech (i) and Croatian (ii) clearly show that these nouns are indeed nouns; the Croatian example is from Despic (2011:96).

i. Pavlovo zničení sebe (sama)...

our purpose here, however, the nominal subjects in (46) can once more be modified by the depictive adjective *naked*, although this time the depictive adjective seems to display only gender (and number) agreement with the modified noun, i.e., it bears a Feminine (singular) ending in (46a) and a Masculine (singular) ending in (46b), while the case agreement seems to

Pavel's destroying himself (alone)...
'Pavel's destroying himself ...'

- ii. Jovani_i je primetio Marijinuj_j lošu brigu o sebi_i*_{ij}.
John is noticed Mary's bad care about self
a. 'John noticed Mary's poor care for herself.'
b. * 'John noticed Mary's poor care for himself.'

Although not directly relevant for our current discussion, it can be of some interest that Despic reports that in Croatian the binding relations exemplified above hold only if the modified noun is an event noun, like the noun *briga* ('care') in (ii), while no such binding can be established if the modified noun is a result noun, like the noun *clanak* ('article') in (iii). In Czech, on the other hand, the binding relation holds, regardless of whether the modified noun is an event noun (i) or a result noun (iv):

- iii. * Marijin_i clanak o sebi_i je veoma popularan.
Mary's article about self is very popular
'Mary's article about herself is very popular.'
- iv. Pavlův_i dopis sobě_i...
Pavel's letter himself...
'Pavel's letter to himself...'

Another argument in favor of a genuine nominal nature of (Czech) possessors is based on Grimshaw's (1990) distinction between simple event nouns and complex event nouns; only the latter syntactically realize the argument structure of their corresponding verbs, the argument-like elements of the latter being thematic adjuncts (or Lcs-complements, in Grimshaw's terminology). In their discussion of post-nominal adjectives in Spanish, Bosque and Picallo (1996) point out that adjectives that enter to some theta-like relation with the nominal heads they modify ("thematic adjectives" in their terminology, which is a subset of a well-known class of relational adjectives) can do so without any restriction if the modified head is a non-(complex) event noun. On the other hand, if these adjectives modify a (complex) event noun they can only absorb an external theta role. Although in Czech "thematic adjectives" cannot "absorb" an external theta role either, let us examine two nominal alternates of the unaccusative verb *vstoupit* ('enter'), whose subject is merged internally:

- v. a. Ruský vstup na území Československa...
Russian entrance_{-simple event} to (the) territory (of) Czechoslovakia...
- b. Petrův vstup na území Československa...
Peter's entrance_{-simple event} to (the) territory (of) Czechoslovakia...
- vi. a. * Ruské vstoupení na území Československa...
Russian entrance_{-complex event} to (the) territory (of) Czechoslovakia...
- b. Petrovo vstoupení na území Československa...
Peter's entrance_{-complex event} to (the) territory (of) Czechoslovakia...

The two pairs of examples in (v) and (vi) contain simple event and complex event unaccusative nominal heads, respectively. In (va) the subject-like element of the simple event nominal head *vstup* ('entrance') is realized by the adjective *ruský* ('Russian'), while in (vb) the same subject-like element is expressed by the possessive noun *Petrův* ('Peter's'). On the other hand, the subject of complex event noun head *vstoupení* ('entrance') can only be realized by a possessive noun (vib), while the use of an adjective in (via) is ungrammatical.

be vacuous, as the adjective has a default Nominative-like form.¹⁹ Now, let us turn to the example in (47).

47) PRO běhání nahý pobuřuje veřejnost.

PRO_{ARB} running naked incites public.

The noun *běhání* in (47) has no overt subject, yet the depictive adjective is licensed. Note also that the shape of the adjective is the same as in (46b), where it modifies the pre-nominal Masculine subject. Assuming that the feature composition of PRO in Czech is [+Masculine, + Singular], this is the expected state of affairs.²⁰ Two more examples of the secondary predication by depictive adjectives in a nominal context are given in (48) and (49):

48) PRO řízení auta opilý je nebezpečné.

PRO_{ARB} driving car_{-Gen} drunk_{-Def} is dangerous.

49) PRO dělání propagace neupravený není efektivní.

PRO_{ARB} doing publicity_{-Gen} untidy_{-Def} is-not effective

For the sake of completeness, it can be useful to show that the presence of a syntactically active element is indeed a necessary condition for depictive adjectives. Look at the two transitive sentences in (50) and compare them with their passive alternate in (51):

50a) Petr vyfotil Pavla oblečený.

Petr_{-NomMas} photographed Pavel_{-AccMas}
AccMas dressed_{-AccMas}

50b) Petr vyfotil Pavla oblečeného.

dressed_{-NomMas} Petr photographed Pavel.

The sentences in (50) involve the depictive adjective *oblečený* ('dressed'). The adjective can modify either the subject argument *Petr* (50a) or the object argument *Pavel* (50b), as the agreement features on its suffix demonstrate. These two options are, however, not available for the passive sentence in (51), where the only possible interpretation of the depictive adjective is as it modifies the sentential subject *Pavel*, while the reading under which it modifies the semantically present "photographer" does not exist. This is so because this

¹⁹ This is surprising under the standard assumption that nominal arguments are assigned the Genitive case. I believe that the absence of case agreement on the depictive adjectives in (46) follows from the complexity of the nominal subjects ending. Another possibility is to say that case agreement is actually not missing and to propose that nominal subjects in the pre-nominal position are assigned the Nominative case in Czech. As the issue is not important for our purpose here, I leave it open for future research.

²⁰ That this is indeed the case can be shown easily by the non-finite copular sentences like (i) in which the adjective modifies PRO and bears exactly these agreement features, i.e. [+Masculine] and [+Singular].

- i. Není jednoduché PRO být u všech oblíbený.
is-not easy PRO be_{-Inf} with all popular_{-NomMasSg}
'It is not easy to be popular with everybody.'

argument, i.e. the "photographer", is not syntactically active; it is present only at the level of interpretation as the relevant theta role is assigned in the semantic representation to a variable bound by an existential quantifier.

51) Pavel byl vyfocen oblečený.

Pavel was photographed._{Pas} dressed._{NomMas}

- i. Pavel was dressed when he was photographed.
- ii. * Pavel was photographed by a dressed person.

III. Control relations

Based on our findings so far, it appears that non-overt subjects of Czech nominals are syntactically active, which strongly suggests that these subjects are realized as PRO. Let us corroborate this conclusion through the examination of different control relations, which should be available for these PRO-elements. I.e., if the non-overt subject of Czech nominals is indeed realized as PRO, then we expect it to be able to control another (non-overt) argument (i.e., another PRO) as well as to be controlled by another argument (either overt or non-overt). The following series of examples briefly shows that this prediction is borne out.

The sentence in (52a) contains the subject control verb *chtít* ('want'), whose subject (Petr) must control the PRO subject of the non-finite embedded clause. The sentence in (52b) involves the nominal counterpart of this verb, i.e. *chtění* ('wanting'). As expected, the nominal subject must control the PRO subject of the embedded clause. Finally, exactly the same control relation must be established in (52c), i.e. the arbitrary PRO subject of the noun *chtění* must be co-referential with the arbitrary PRO subject of the embedded clause, otherwise the sentence will be ungrammatical.

Nominal PRO-subject can control the PRO-subject of a non-finite clause:

52a) Petr_i chce PRO_{i/*k} psát romány, aby byl slavný.

Petr wants PRO_{i/*k} write-_{Inf} novels, in-order-to was famous.

'Petr wants to write novels in order to be famous.'

52b) Petrovo_i chtění PRO_{i/*k} psát romány je výrazem jeho touhy po slávě.

Petr's_i wanting PRO_{i/*k} write-_{Inf} novels is manifestation his desire-_{Gen} for fame.

'That Petr wants to write novels is a manifestation of his desire for fame.'

52c) PRO_{ARBi} chtění PRO_{ARBi/*k} psát romány je výrazem touhy po slávě.

PRO_{ARBi} wanting PRO_{ARBi/*k} write-_{Inf} novels is manifestation desire-_{Gen} for fame.

'To want to write novels is a manifestation of the desire for fame.'

The examples in (53) offer further illustration of the same phenomenon; this time the embedded PRO functions as a subject of a non-finite purpose clause. The overt matrix subject *vrah* ('killer') in (53a) must control the PRO subject of the non-finite purpose clause. The

expression in (53b) exemplifies the nominal paraphrase of sentence (53a). As expected, the nominal subject must again control the PRO subject of the purpose clause. Finally, exactly the same control relation must be established in (53c), i.e., the arbitrary PRO subject of the noun *zničení* ('destroying') must be co-referential with the arbitrary PRO subject of the purpose clause, otherwise the sentence will be ungrammatical.

53a) Vrah_i zničil všechny předměty na místě činu ve snaze PRO_{i/*k} zmást policii.

killer_i destroyed all things in place crime in attempt PRO_{i/*k} confuse-Inf police

'The killer destroyed all of the things in the crime site in order to confuse the police.'

53b) Vrahovo_i zničení všech předmětů na místě činu ve snaze PRO_{i/*k} zmást policii...

killer's_i destroying all things in place crime in attempt PRO_{i/*k} confuse-Inf police...

'The killer's destroying all of the things in the crime site in order to confuse the police...'

53c) PRO_{ARBi} zničení všech předmětů na místě činu ve snaze PRO_{ARBi/*k} zmást policii...

PRO_{ARBi} destroying all things in place crime in attempt PRO_{i/*k} confuse-Inf police...

'Destroying all of the things in the crime site in order to confuse the police...'

Nominal PRO-subjects can be controlled by control verbs:

Finally, the following examples contain one subject and two object control verbs that can take verbal (a) as well as nominal (b) complements. As can be seen clearly, the control relation that holds between the matrix subject *architekt* ('architect') and the PRO subject of the embedded clause in (54a) is preserved in (54b), where it is established between *architekt* and the nominal PRO subject. The same is true with respect to the two pairs of examples in (55) and (56), the only difference being that in this case the controller is the matrix object rather than the subject.

Subject control verbs:

54a) Architekt_i odmítl PRO_{i/*k} projektovat nové nákupní centrum.

architect_i refused PRO_{i/*k} design-Inf new shopping center-Acc

'The architect refused to design the new shopping mall.'

54b) Architekt_i odmítl PRO_{i/*k} projektování nového nákupního centra.

architect_i refused PRO_{i/*k} designing new shopping center-Gen

'The architect refused the designing of the new shopping mall.'

Object control verbs:

55a) Lékař mu_i doporučil PRO_{i/*k} pravidelně pít pilsenské pivo.

doctor him_{i-Dat} recommended PRO_{i/*k} regularly drink-Inf Pilsner beer-Acc

'The doctor recommended him to drink Pilsner beer regularly.'

55b) Lékař mu_i doporučil PRO_{i/*k} pravidelné pití pilsněského piva.
doctor him_{i-Dat} recommended PRO_{i/*k} regular drinking pilsner beer-Gen
'The doctor recommended him regular drinking of Pilsner beer.'

56a) Velitel vojákům_i zakázal PRO_{i/*k} ničit civilní majetek.
commander soldiers_{i-Dat} forbade PRO_{i/*k} destroy civil property-Acc
'The commander forbade the soldiers to destroy the civil property.'

56b) Velitel vojákům_i zakázal PRO_{i/*k} ničení civilního majetku.
commander soldiers_{i-Dat} forbade PRO_{i/*k} destroying civil property-Gen
'The commander forbade the soldiers the destroying of the civil property.'

3.5 The case of Slovak and Polish

In section 3.3 I argued in favor of the verb independent derivation of Czech reflexive and reciprocal nouns. Specifically, I have shown that Czech reflexives and reciprocal nouns cannot be derived via the process of syntactic nominalization of their verbal counterparts, since if they were it would be possible for them to be modified by adverbs, contrary to the facts (recall that Czech reflexive and reciprocal verbs are formed only in the syntax, so that they cannot serve as an input for nominalization in the lexicon). Since the possibility that the process of nominalization targets roots rather than verbs (e.g., Borer 2005) is a priori in harmony with the verb independent derivation of reflexive/reciprocal nouns (and of nouns in general), this finding by itself is sufficient to conclude that the derivation of Czech reflexive and reciprocal nouns is not exclusively verb based (subsection 3.3.2 nevertheless supplied two additional arguments against the EVB option). In fact, however, this newly revealed derivational strategy is not unique for Czech. Specifically, there are another two languages among the seven syntax-type languages in our sample that have reflexive and reciprocal nouns, contrary to Siloni's (2002) and Reinhart & Siloni's (2005) prediction, namely Slovak and Polish. This section will present the relevant data briefly and without repeating all of the details. Namely, we will see that Slovak and Polish nouns cannot be modified by adverbs; since both of these languages are syntax-type languages like Czech (as argued in chapter 2), this finding witnesses that in these two languages the derivation of reflexive and reciprocal nouns must be verb independent too. Consequently, we will demonstrate that Slovak and Polish reflexive/reciprocal nouns display the same syntax-type properties as their verbal counterparts, like the Czech situation, indicating that the derivation of these nominal formations involves the syntactic version of the operation of reflexivization/reciprocalization.

The Slovak and Polish examples in (57'a) and (57''a), respectively, contain a transitive verb that is modified by an adverb. This adverbial modification is, however, completely impossible for nominals (57b); instead, modification by adjectives must be used (57c).

(57') Slovak nouns cannot be modified by manner adverbs I - transitives

- a. Otokár kruto bičoval otrokov. **(Slovak)**
 Slaveholder cruelly whipped slaves._{Acc.}
 'The slaveholder whipped slaves cruelly.'
- b. *otokárovo bičovanie otrokov kruto
 slaveholder's whipping._{Noun} slaves._{Gen} cruelly
 'The slaveholder's whipping of slaves cruelly'
- c. otokárovo kruté bičovanie otrokov
 slaveholder's cruel whipping._{Noun} slaves._{Gen}
 'The slaveholder's cruel whipping of slaves'

(57'') Polish nouns cannot be modified by manner adverbs I - transitives

- a. Handlarz niewolnikami okrutnie chłostał niewolników. **(Polish)**
 Slaveholder cruelly whipped slaves._{Acc.}
 'The slaveholder whipped slaves cruelly.'
- b. *chłostanie niewolników przez handlarza niewolnikami okrutnie
 whipping._{Noun} slaves._{Gen} by slaveholder's cruelly
 'The slaveholder's whipping of slaves cruelly'
- c. okrutne chłostanie niewolników przez handlarza niewolnikami
 cruel whipping._{Noun} slaves._{Gen} by slaveholder's
 'The slaveholder's cruel whipping of slaves'

The examples in (58) involve reflexive paraphrases of the transitive examples in (57), the situation with respect to availability of adverbial modification of nouns being exactly the same. I.e., the reflexive verb in (58a) can be modified by an adverb or PP. For nouns, however, only the PP-modification is possible (58c), while the modification by adverbs (58b) results in ungrammaticality.

(58') Slovak nouns cannot be modified by manner adverbs - reflexives

- a. Blázni sa bičovali s (veľkou) radosťou /radostne. **(Slovak)**
 Madmen SE whipped with (great) pleasure/joyfully.
 'Madmen whipped themselves with (great) pleasure/joyfully.'

- b. *Bičovanie sa bláznov radostne.
Whipping_{-Noun} SE madmen_{-Gen} joyfully.
'Madmen's whipping themselves joyfully.'
- c. Bičovanie sa bláznov s (veľkou) radosťou.
Whipping_{-Noun} SE madmen_{-Gen} with (great) pleasure.
'Madmen's whipping themselves with (great) pleasure.'

(58'') Polish nouns cannot be modified by manner adverbs - reflexives

- a. Szaleńcy chłostali się z wielką radością/radośnie **(Polish)**
Madmen whipped SE with great pleasure/joyfully.
'Madmen whipped themselves with (great) pleasure/joyfully.'
- b. * Chłostanie się szaleńców radośnie
Whipping_{-Noun} SE madmen_{-Gen} joyfully.
'Madmen's whipping themselves joyfully.'
- c. Chłostanie się szaleńców z wielką radością
Whipping_{-Noun} SE madmen_{-Gen} with (great) pleasure.
'Madmen's whipping themselves with (great) pleasure.'

For the sake of completeness, the following series of transitive examples in (59) and their reciprocal alternates in (60) further show that Slovak and Polish reciprocal nouns cannot be modified by adverbs either.

(59') Slovak nouns cannot be modified by manner adverbs II - transitives

- a. Peter Pavla nepretržite navštevuje. **(Slovak)**
Petr Pavel_{-Acc} constantly visits.
'Petr is visiting Pavel constantly.'
- b. *Petrovo navštevovanie Pavla nepretržite
Petr's visiting_{-Noun} Pavel_{-Gen} constantly
'Petr's visiting Pavel constantly.'
- c. Petrovo nepretržité navštevovanie Pavla
Petr's constant visiting_{-Noun} Pavel_{-Gen}
'Petr's constant visiting of Pavel.'

(59'') Polish nouns cannot be modified by manner adverbs II - transitives

- a. Piotr Pawła nieustannie odwiedza. **(Polish)**
Petr Pavel_{-Acc} constantly visits.
'Petr is visiting Pavel constantly.'
- b. * Piotra odwiedzanie Pawła nieustannie
Petr's visiting_{-Noun} Pavel_{-Gen} constantly
'Petr's visiting Pavel constantly.'

- c. Piotra nieustanne odwiedzanie Pawła.
Petr's constant visiting_{-Noun} Pavel_{-Gen}
'Petr's constant visiting of Pavel.'

(60') Slovak nouns cannot be modified by manner adverbs - reciprocals

- a. Peter a Pavol sa nepretržite navštevujú **(Slovak)**
Petr and Pavel SE constantly visit.
'Petr and Pavel are visiting each other constantly.'
- b. * Petrovo a Pavlovo navštevovanie sa nepretržite
Petr's and Pavel's visiting_{-Noun} SE constantly
'Petr's and Pavel's visiting each other constantly.'
- c. Petrovo a Pavlovo nepretržité navštevovanie sa
Petr's and Pavel's constant visiting_{-Noun} SE
'Petr's and Pavel's constant visiting each other.'

(60'') Polish nouns cannot be modified by manner adverbs - reciprocals

- a. Piotr i Paweł nieustannie się odwiedzają. **(Polish)**
Petr and Pavel SE constantly visit.
'Petr and Pavel are visiting each other constantly.'
- b. * Piotra i Pawła odwiedzanie się nieustannie
Petr's and Pavel's visiting_{-Noun} SE constantly
'Petr's and Pavel's visiting each other constantly.'
- c. Piotra i Pawła nieustanne odwiedzanie się
Petr's and Pavel's constant visiting_{-Noun} SE
'Petr's and Pavel's constant visiting each other.'

On the basis of the examples like (57) – (60) we can thus draw the same conclusion as we have made in section 3.3 with respect to Czech, namely, that the derivation of Slovak and Polish reflexive and reciprocal nouns cannot be exclusively verb based but rather verb independent. The examples below further show that there are good reasons to assume that the derivation of these nominal formations in Slovak and Polish involves syntactic reflexivization/reciprocalization, as these nouns display syntax-type properties exactly like their verbal counterparts. Namely, the formation of nominal accusative reflexives (61) and nominal accusative reciprocals (62) is in both of these languages productive. There are dative reflexive (63) and reciprocal (64) nouns in Slovak, which can license a direct (genitive) object if one exists. (Recall that Polish does not have dative reflexive and reciprocal verbs. The same appears to be the case with respect to dative reflexive and reciprocal nominals. As noted in subsection 2.2.2, I believe that this state of affairs results from the absence of an appropriate morpheme for dative case absorption in this language). Slovak and Polish reflexives (65aii) and reciprocals (65bii) can participate in ECM structures (due to space considerations I have omitted here the presentation of the ability of Slovak and Polish nouns to denote asymmetric sub-event readings, as well as their incompatibility with discontinuous constructions).

(61) Syntax-type properties of Slovak and Polish reflexive nouns - productivity

<u>Slovak</u>	<u>Polish</u>
Namaľovanie sa	pomalowanie się ('painting oneself')
Obetovanie sa	poświęcenie się ('sacrificing oneself')
Kontrolovanie sa	kontrolowanie się ('controlling oneself')
Popísanie sa	opisanie się ('describing oneself')
Bodnutie sa	ukłucie się ('stabbing oneself')
Poliatie sa	polanie się ('spilling something on oneself')
Zabitie sa	zabicie się ('killing oneself')
Nahrávanie sa	nagrywanie się ('recording oneself')
Vysvetlenie sa	wyjaśnienie się ('explaining oneself'), etc.

(62) Syntax-type properties of Slovak and Polish reciprocal nouns - productivity

<u>Slovak</u>	<u>Polish</u>
Navštevovanie sa	odwiedzanie się ('visiting each other')
Sledovanie sa	śledzenie się ('trailing each other')
Podozrievanie sa	podejrzewanie się ('suspecting each other')
Fotenie sa	fotografowanie się ('photographing each other')
Bozkávanie sa	całowanie się ('kissing each other')
Milovanie sa	kochanie się ('loving each other')
Stretávanie sa	spotykanie się ('meeting each other')
Podvádžanie sa	zdradzanie się ('cheating each other')
Stráženie sa	pilnowanie się ('guarding each other'), etc.

(63) Syntax-type properties of Slovak reflexive nouns – dative reflexives

Nadávanie si	('scolding oneself')
Vysvetľovanie si (problémov)	('explaining problems to oneself')
Kupovanie si (kníh)	('buying books for oneself')
Zničenie si (zdravia)	('harming one's own health')
Pripravovanie si (prednášky)	('preparing a lecture for oneself')
Dokazovanie si (vlastnej sily)	('proving one's own strength')
Predĺženie si (dovolenky)	('prolonging vacation to oneself')
Ublížovanie si	('hurting oneself')
Pomáhanie si	('helping oneself')

(64) Syntax-type properties of Slovak reciprocal nouns – dative reciprocals

Objasňovanie si (problémov)	('clarifying problems to each other')
Ukazovanie si (fotografií)	('showing photos to each other')
Rozprávanie si (príbehov)	('telling stories to each other')
Klamanie si	('lying to each other')
Písanie si (listov)	('writing each other letters')
Posielanie si (balíčkov)	('sending each other packages')
Šepkanie si (medových slovíčok)	('whispering sweet words to each other')
Oznamovanie si noviniek	('announcing news to each other')
Gratulovanie si	('congratulating each other')

(65') Syntax-type properties of Slovak reflexive and reciprocal nouns – ECM

- ai. Petrovo považovanie toho muža za zaujímavého
Peter's finding that man._{Gen} for interesting.
'Peter's finding that man interesting.'
- aii. Petrovo považovanie sa za zaujímavého
Peter's finding SE for interesting.
'Peter's finding himself interesting.'
- bi. Ich uznanie Petra vhodným funkcie
Their considering Peter._{Gen} qualified job.
'Their considering Peter qualified for the job.'
- bii. Ich uznanie sa vhodnými funkcie
Their considering SE qualified job.
'Their considering each other qualified for the job.'

(65'') Syntax-type properties of Polish reflexive and reciprocal nouns – ECM

- ai. Uznanie przez Piotra tego mężczyzny za interesującego
finding by Piotr that man._{Gen} for interesting.
'Peter's finding that man interesting.'
- aii. Uznanie się Piotra za interesującego
finding SE Piotr for interesting.
'Peter's finding himself interesting.'
- bi. Ich uznanie Piotra godnym stanowiska
Their considering Peter._{Gen} qualified job.
'Their considering Peter qualified for the job.'
- bii. Ich uznanie się godnymi stanowiska.
Their considering SE qualified job.
'Their considering each other qualified for the job.'

3.6 Summary

This chapter focused on the existence of reflexive and reciprocal event nouns in the three West Slavic languages: Czech, Polish and Slovak. Building on the results of our discussion in Chapter 2, that is, the conclusion that reflexive and reciprocal verbs are derived syntactically in these languages, we argued that Czech, Polish, and Slovak reflexive and reciprocal event nouns are not derived "directly" from their verbal counterparts. In other words, we argued that the derivation of these nouns is not Exclusively Verb Based, but rather Verb Independent. Specifically, we argued that these nouns are formed from transitive nouns via exactly the

same arity operations as the operations that are involved in the derivation of reflexive and reciprocal verbs, as witnessed by the fact that these nouns display exactly the same properties as the properties that are typical for syntax type languages. This in turn constitutes further support for the existence of the Lex-Syn parameter in the sense that the setting of the parameter seems to determine the locus of the formation of reflexive and reciprocal formations not only in the verbal domain, but also in the domain of nouns.

The finding that in Czech, Polish, and Slovak the operations of syntactic reflexivization and reciprocalization must be available not only in the verbal but also in the nominal domain has been achieved in four steps. First, we pointed out that there are reflexive/reciprocal nouns in Czech, deducing that in Czech either the process of nominalization applies in the syntax, or that the derivation of Czech reflexive/reciprocal nouns cannot be Exclusively Verb Based (3.2). In formulating this we brought forth one strong argument against the possibility that in Czech the process of nominalization occurs in syntax, which by itself disqualifies the EVB strategy (3.3.1); this conclusion was further corroborated by two additional arguments against the EVB itself (3.3.2). Subsequently, we suggested that Czech reflexive and reciprocal nouns are derived from the related transitive nouns, exactly like reflexive and reciprocal verbs are derived from transitive verbs, and we justified this suggestion by demonstrating that they display exactly the same set of syntax type properties as their verbal counterparts (3.4.1). Finally, we briefly examined Polish and Slovak reflexive/reciprocal nouns, concluding that the derivation of these nominal formations cannot be Exclusively Verb Based either (3.5). To be more specific:

After bringing some more data, which attests that Czech is a syntax type language (3.1), we pointed out that there are reflexive and reciprocal event nouns in Czech and we formulated four possible scenarios for such nouns to be derived in principle (3.2).

- The prediction that does not hold – Czech has reflexive and reciprocal nouns (3.2.1)

We demonstrated that there are reflexive and reciprocal nouns in Czech and that the set of these nouns seems to be quite large, as is the case with the set of their verbal counterparts. Likewise, we have shown that these nouns license aspectual modifiers, thus proving that they are indeed event nouns.

- The assumption that must be revised – four possible derivational scenarios (3.2.2)

The process of nominalization can – in principle – take places either in the lexicon or in the syntax, both of these options having been proposed in the literature. The exploration of the question whether the derivation of event nouns is Exclusively Verb Based or rather Verb Independent,

together with these two nominalization options (either lexicon or syntax), permits the following four possibilities:

(14) Four possible derivations for reflexive and reciprocal nouns

- i. Lexical Nominalization - Exclusively Verb-Based Derivation
- ii. Syntactic Nominalization - Exclusively Verb-Based Derivation
- iii. Syntactic Nominalization - Verb Independent Derivation
- iv. Lexical Nominalization - Verb Independent Derivation

With respect to the derivational history of Czech reflexive and reciprocal event nouns, we automatically disqualified option (14i), since we know from Chapter 2 and section 3.1 that Czech reflexive and reciprocal verbs are derived in the syntax, i.e. post-lexically; there are no reflexive and reciprocal verbs in the lexicon that could feed lexical nominalization and as such serve as the immediate derivation base for EVB of reflexive and reciprocal nouns (recall that under EVB the process of nominalization is the only derivational process involved). With this in mind we proceeded to examine the remaining three derivational options.

First of all, we have excluded the possibility that in Czech the process of nominalization applies in the syntax by showing that Czech reflexive and reciprocal nouns (and Czech nouns in general) strictly disallow adverbial modification. Doing this, the Verb Independent derivation of Czech reflexive and reciprocal nouns has actually been proven, since the only derivational scenario left is the one in (14iv). Nevertheless, we have brought up yet another two arguments against the EVB itself – the morphological shape of Czech reflexive and reciprocal nouns, and the different behavior of clitics in the verbal and the nominal domain (3.3).

- Against syntactic nominalization of Czech verbs (3.3.1)

At the core of more traditional syntactic approaches to the process of nominalization lies the assumption that event nouns are derived by some kind of V to N incorporation. If so, the presence of the V-head in the structure leads to the prediction that event nouns – like verbs – can be modified by adverbs. We showed that in Czech the adverbial modification of nouns is strictly prohibited, which in turn makes any "V to N incorporation" analysis of the process of nominalization in Czech unsuitable. As far as more recent syntactic approaches to the process of nominalization are concerned, we admitted that the unacceptability of adverbial modification in the nominal domain cannot constitute a sufficient argument, since under these approaches what enters the syntax are category neutral roots, which are subsequently merged with a functional head "n"; the impossibility of adverbs in the nominal domain thus follows straightforwardly from the absence of the functional head "v" in the structure. Nevertheless, we pointed out that any "root with n merge" account is a priori incompatible with EVB of Czech reflexive and reciprocal nouns (and in fact with EVB of any kind of nouns in any language), since what undergoes the process of nominalization is supposed to be a root (not a verb), while the process of reflexivization/reciprocalization applies only afterward, targeting a (basic/transitive) noun.

- Against EVB of Czech reflexive and reciprocal nouns - nominal morphology (3.3.2.1)

We have shown that the Czech nominalization suffix *-ní/tí* is always attached to the nominalization base, i.e. the transitive verb, excluding the clitic SE. Put differently, it appears that what actually undergoes the process of nominalization is the (transitive) VERB and not the VERB-SE (reflexive/reciprocal) complex, SE being an independent element whose presence is forced by the process of reflexivization/reciprocalization (either verbal or nominal).

- Against EVB of Czech reflexive and reciprocal nouns – clitics distribution (3.3.2.2)

We saw that the presence of pronominal clitics crucially depends on the presence of the clitic SE in the nominal domain. Namely, nominal heads can freely host the clitic SE, but pronominal clitics can be hosted only in the presence of SE. We have argued that this state of affairs can hardly be explained by means of purely syntactic or phonological tools, without assuming that there are in fact two types of the clitic SE in Czech: A verbal clitic, which is involved in the formation of verbal reflexives/reciprocals, and a nominal clitic, which is involved in the formation of nominal reflexives/reciprocals. This in turn means that reflexivization/reciprocalization follows nominalization and therefore the derivation of Czech reflexive and reciprocal verbs is not Exclusively Verb Based.

Once we excluded the Exclusively Verb Based derivation of Czech reflexive and reciprocal nouns, we suggested that these nouns are derived from the related transitive nouns, exactly like reflexive and reciprocal verbs are derived from transitive verbs, i.e., via exactly the same operations of reflexivization and reciprocalization as the operations originally suggested by Reinhart and Siloni for the verbal domain. A justification for this suggestion came immediately, when we demonstrated that Czech reflexive and reciprocal nouns display exactly the same set of syntax type properties as their verbal counterparts (subsequently we explicitly presented how the operations of reflexivization and reciprocalization work in the nominal domain and we discussed one non-trivial consequence of the proposed analysis, namely that non-overt subjects of Czech event nouns are realized as a PRO) (3.4). As a last step, we briefly demonstrated that EVB derivation of reflexive and reciprocal nouns is inadequate not only for Czech, but also for Slovak and Polish (3.5).

- Syntax type properties of Czech reflexive and reciprocal nouns (3.4.1)

We have seen that, similarly to their verbal counterparts, (i) Czech reflexive and reciprocal nouns are created productively; (ii) there are nominal dative reflexives and reciprocals, both these formations being able to license a direct-object argument if the underlying transitive noun has some; (iii) these nominals can appear in ECM structures; (iv) Czech reciprocal nouns have either a symmetric event reading or a sub-event reading describing a symmetric sequence of two or more asymmetric events; and finally, that (v) Czech reciprocal nouns do not allow the discontinuous constructions, where the reciprocal relation is established between the member(s) of a subject set and the member(s) of an oblique set. The above listed properties thus, among other things, also constitute further evidence for the existence of the Lex-Syn parameter, in the sense that the parameter setting appears to be responsible not only for the nature of reflexives and reciprocals in the verbal domain, but also in the domain of nouns.

- The case of Slovak and Polish (3.5)

As noted in the introduction, since the current chapter aims demonstrate a unity rather than any kind of diversity (as opposed to Chapter 2), the relevant Slovak and Polish data have intentionally been presented in a minimalist way. That is, (i) being aware that Slovak and Polish are syntax type languages like Czech, we pointed out that there are reflexive and reciprocal nouns in these two languages; (ii) we demonstrated that neither Slovak nor Polish allow adverbial modification of their nouns, thus proving that the derivation of Slovak and Polish reflexive and reciprocal nouns cannot be Exclusively Verb based; (iii) we observed that Slovak and Polish reflexive and reciprocal nouns, display syntax type properties, alike their verbal counterparts.

In this chapter we thus saw that arity operations are available not only in the verbal domain, but also in the domain of nouns. Specifically, we argued that in Czech, Polish and Slovak the input of the operations of reflexivization and reciprocalization can be a transitive verb and a transitive noun alike. There is, however, one more question, which cannot be ignored. Namely, what about other syntax type languages in our sample and in general? Why are there no reflexive and reciprocal nouns in Bulgarian, Croatian, Macedonian, and Slovenian, and why are there no reflexive and reciprocal nouns in the other syntax type languages explored by Reinhart and Siloni (like Romance languages or German)?²¹ Two hypotheses come to mind:

First, it is possible that the other languages simply lack an appropriate morphological apparatus. Namely, recall from subsection 3.3.2.2 that we have suggested that there are in fact two clitics SE in Czech – one compatible with verbs and one compatible with nouns. This compatibility can consist, for instance, of the case absorbing abilities of these clitics (recall that the clitic SE is supposed to reduce the surplus case of the targeted argument). The verbal one absorbs the accusative case, while the nominal one absorbs the genitive case; another scenario can be that in languages like Czech the clitic is able to absorb the accusative as well as the genitive cases, while in the other languages the clitic absorbs the accusative case only.²² The hypothesis is, therefore, that the Verb Independent strategy for the derivation of reflexive and reciprocal nouns is in potential available in every syntax type language, but only those syntax type languages that have an appropriate nominal clitic SE (are able to) utilize it.

Second, it is possible that there is some crucial difference between the internal syntactic structure of nouns in languages like Czech, Polish, and Slovak and this structure in the other languages. Recall in this respect that we mentioned in section 2.5 that the Lex-Syn parameter seems to be in no interaction with NP/DP-parameter proposed by Boskovic (2008, 2012). It can be, however, that as far as the availability of reflexive/reciprocal nouns is concerned there is in fact some kind of interaction; for example, that reflexive/reciprocal nouns are available only in these syntax type languages whose nominal structure contains a DP²³. Such

²¹ Yet another question is, of course, what is the derivational history of reflexive and reciprocal nouns in lexicon type languages? Assuming that the parameter setting is uniform for the verbal and nominal domains, the derivational option (14iii) is excluded for these nouns. Nothing, however, a priori disqualifies the remaining three derivational paths. I leave this question open for further research.

²² Note, however, that this particular working hypothesis will have to explain why dative reflexive/reciprocal nouns are not present in these "other languages" as well. This question does not seem to be a trivial one, since the derivation of these formations involves the reduction of the dative cases, which is "the same" in the nominal and the verbal domain. In other words, if these languages have a clitic which is able to absorb the dative case in the verbal domain, then the same clitic should be able to also absorb the dative case in the nominal domain.

²³ The basic insight behind Boskovic's (2008, 2012) NP/DP parameter proposal is that languages that lack an overt definite article do not have a DP. If so, the hypothesis that there is some correlation between Lex-Syn

"parameter clash" can be illustrated, e.g., via the following analysis of the process of nominalization, suggested in Despic (2011) for Croatian. On the basis of different binding phenomena, Despic argues in favor of DP-less analysis of Croatian nouns. Among other things, he proposes that Croatian event nouns contain a verbal projection (vP). Specifically, he suggests that what enters the syntax is a category neutral root, which is however not merged immediately with a nominal head (contrary to the proposals discussed and illustrated in figure 2, subsection 3.3.1), but rather with a verbal head, which subsequently merges with vP²⁴, because the crucial part of his analysis is that the external argument is merged into SpecvP position before the process of nominalization occurs. Leaving aside its potential problems²⁵, this proposal thus a priori excludes Verb Independent derivational scenario (either 14iii or 14iv), since the merge of an external argument is also the point when the syntactic operation of reflexivization/reciprocalization applies (see 38ai/39ai). The only derivational scenario left is thus scenario (14ii), i.e., the scenario in which the derivation of Croatian reflexive/reciprocal nouns is syntactic and Exclusively Verb Based, and the question is, of course, why this scenario is not realized. If the operation of reflexivization/reciprocalization applies in the verbal domain, why its output cannot subsequently undergo the process of nominalization (unlike other vPs)? Note that the above outlined hypothesis, namely that languages like Croatian lack a nominal clitic SE, is less tempting here, since under Despic's analysis the process of reflexivization/reciprocalization will always be purely verbal in Croatian, so that the verbal SE should in principle be available for it. The only explanation for the absence of reflexive/reciprocal nouns in languages which suit the picture drawn by Despic for Croatian that I can think of is that there is some crucial difference in the internal syntactic structure of nouns in these languages and languages like Czech, for instance that the latter, but not the former, have a DP.

Leaving these issues open for further research we will now turn to the domain of adjectives, exploring the question whether arity operations are also available here.

parameter setting and NP/DP parameter setting seems to be less tempting, since both Czech and e.g. Croatian are article-less languages, yet unlike the latter, the former has reflexive/reciprocal nouns. Nevertheless, Boskovic (2012) does not exclude a somewhat weaker formulation of the NP/DP parameter, namely that "some languages without overt articles do not have DP" (Boskovic 2012, footnote 1).

²⁴ In this respect, Despic's proposal is thus closer to the more traditional ("V to N incorporation") approaches to the process of nominalization (see figure 4, subsection 3.3.1).

²⁵ The major problem is that Croatian nominals strictly disallow adverbial modification, alike Czech, Polish, and Slovak (see our discussion in subsection 3.3.1).

Appendix – There are two clitics SE in Czech (preliminary suggestion)

In what follows I will briefly outline one possible analysis of the data presented in subsection 3.3.2.2. As already noted the analysis proposed below is preliminary and may require reconsideration and revisions.

I will adopt Franks and King's (2000) version of the so called PF-filtering account²⁶. It should be stressed, however, that the proposal to be advanced here can in principle be compatible with many other approaches to Slavic clitics as well, since, as already indicated in subsection 3.3.2.2, I will suggest that there are two lexically different clitics SE in Czech – a verbal one and a nominal one. That is, I will suggest that the puzzle should (and probably must) be resolved lexically, and not by means of syntactic or phonological tools.

Franks and King's PF-filtering analysis is based on the following three assumptions:

I. Clitics are items that are lexically specified (i) for being clitics (i.e., items that need a prosodic support), and (ii) for the direction of the cliticization (i.e. whether they are proclitic, enclitic, or neutral in this respect).

II. The syntactic component of the grammar is blind to specific prosodic properties of the clitics, and it manipulates them as purely syntactic constituents. That is, no kind of look-ahead into the PF is needed in the Syntax.

III. Assuming the Copy theory of Movement (Chomsky, 1995), the output of the Syntax is mapped into the PF by means of prosodic constraints, which are responsible for the creation of an appropriate phonological representation by filtering out these copies of the clitics that do not fit adequate prosodic requirements.

The prosodic constraints responsible for filtering out non-fitting copies and their ranking are presented in (25) (Franks and King's account is a typically OT account):

(66) PF filtering constraints and their ranking (Franks and King, 2000)

(a) The constraints

i. LEFT EQUALS HIGHEST (LEH):

Everything else being equal, the syntactically higher head is pronounced to the left, and the syntactically lower head is pronounced to the right. (Comes to assure the proper ordering of the clitics in the cluster.)

²⁶ For a slightly different version of PF-filtering account, see Boskovic (2001).

ii. PROSODIC SUPPORT (PS):

Clitics must receive prosodic support.

iii. PRONOUNCE HIGHEST COPY (PHC):

Pronounce as high a copy as possible.

iv. NON-FINAL:

Clitics cannot immediately precede an intonational phrase boundary. (Comes to resolve some otherwise problematic cases presented, e.g., by utterances containing parenthetical expressions. **As far as I can see this is irrelevant for Czech.**)

(b) The ranking

PS >> LEH >> PHC, NON-FINAL

How Franks and King's proposals work is demonstrated by the following trivial example:

(67) "Second position" effect – PF filtering approach

- | | |
|---------------------------------|------------------------------------|
| i. Včera se <i>myl</i> . | [Včera se [myl [se [myt]]]] |
| Yesterday SE wahed.3Sg. | |
| 'He washed himself yesterday.' | |
| ii. * Se <i>myl</i> . | * [Se [myl [se [myt]]]] |
| iii. <i>Myl</i> se . | [Se [myl [se [myt]]]] |

Both the verb *myl* ('wash') and the reflexive clitic *se* move in the syntax (for purely syntactic reasons), leaving their copies behind. In (67i) both the Prosodic Support constraint, as well as the Pronounce Highest Copy constraint, are satisfied, as the highest copy of the clitic can be hosted by the adverb *včera* ('yesterday') to its left. This is, however, not the case in (67ii). Here the Pronounce Highest Copy constraint is satisfied, but at the expense of violating the higher ranked Prosodic Support constraint. (67iii) is the optimal variation of (67ii) since it satisfies the higher ranked Prosodic Support constraint at the expense of violating the lower ranked Pronounce Highest Copy constraint. (Czech clitics are neutral as to the direction of their cliticization. Therefore the Prosodic Support constraint can do its work properly if and only if the clitics are lexically specified as prohibited from being adjacent to the intonational phrase boundary.)

With this in mind, let us turn back to our puzzle.

Let us first recapitulate what the problem to be solved is. Our task is to explain simultaneously

(i) why the clitic SE/SI behaves as a “second position” clitic if related to a verb, while if related to a noun it must encliticize to that noun;

(ii) why nominal heads can host the clitic SE, but cannot host a pronominal clitic;

(iii) why if the clitic SE is present pronominal clitics are allowed to appear as well.

As pointed out in subsection 3.3.2.2, the syntactic/phonological approach to the process of nominalization can in principal manage with the first two facts. Namely, it can be claimed

i. that Czech nouns – unlike verbs – move, for whatever reason, to some higher functional head, which in turn blocks the raising of the clitics SE/SI (presumably base generated inside ReflP) into some higher "second" position (either inside the DP or inside the clause),

ii. and that the unacceptability of pronominal clitics in the nominal context can be ascribed to the absence of AgrP in the nominal domain.

The fact that the presence of the reflexive clitic allows the otherwise prohibited presence of pronominal clitics as well seems, however, to be beyond the domain of purely syntactic or phonological devices.

Now, note that the PF-filtering mechanism proposed by Franks and King encounters exactly the same difficulty, since under this approach the position of clitics is in principal determined in the Syntax, while the filtering constraints only decide which of the copies of a given clitic will enter the Phonology.

In what follows I will sketch a possible solution of this puzzle. **The basic point of the current proposal will dwell in a shift in the conception of the cliticization domain.** The cliticization domain, as it was proposed in the literature so far, was usually defined either explicitly (e.g., Boskovic 2001) or implicitly (e.g., Franks and King 2000), in terms of intonational phrase boundaries. That is, the cliticization domain always potentially exists regardless of the actual presence of a clitic/clitics, as there is always an intonational phrase in

the (prosodic) structure. On the other hand, in the proposal to be advanced here the existence of a cliticization domain will be tied to the existence of a properly licensed clitic, i.e., if there is no such clitic in the structure, there is no cliticization domain.

First, let us make the following set of assumptions:

(68) Clitic specification

Each clitic is lexically specified as

- a. being a clitic,
- b. being an enclitic, a proclitic, or directionally neutral,
- c. being univocally syntactical head or ambivalent between a head and phrasal status.

The three lexical specifications above are the same as presupposed in Franks and King (2000). That is each clitic is lexically marked as an item that needs a prosodic support (i), with respect to the direction of this support (ii) and regarding its syntactical status (iii). The third of these specifications comes to distinguish between the verb adjacent clitics, which are univocally heads, and the second position clitics, which are ambivalent between a head and phrasal status (for details see Franks and King 2000: 311-348). Following this distinction, **I suggest that there are two reflexive clitics in Czech** – a verbal one, specified as ambivalent between a head and phrasal status (and therefore surfacing in the second sentential position), and a nominal one, specified as a head (and therefore adjacent to the noun).

Second, let us define the cliticization domain as follows:

(69) Cliticization domain (CD)

- a. The left edge of the CD is determined by the position of the head of that CD (**if there is no such head, there is no CD**).
- b. The right edge of the CD is “left opened”.
- c. The left edge of the CD is not adjacent to the left edge of the IP.
- d. There is no IP boundary inside the CD.

(70) The head of the CD

The head of the CD is

- a. a clitic which is the first (i.e. the left-most) clitic in the clitic cluster,
- b. a clitic whose syntactic requirements were fully satisfied.

And finally, let us stipulate the condition for clitic licensing:

(71) Prosodic licensing of clitics

A clitic is prosodically licensed if it is positioned inside a CD, either as a head of that CD or (left?) adjacent to another licensed clitic.

Note that the proposal sketched above is actually built upon the PF-filtering analysis, which remains untouched. That is, nothing was changed, only several purely prosodic refinements were added. The only *prima facie* “weaker” point could be the stipulation in (70b), because of its “vagueness”. I nevertheless believe that more detailed elaboration of the syntactic features of the clitics could supply a satisfactory answer here, since the interaction of the stipulation in (70) and (71) actually reflects the basic intuition behind the analysis proposed here. Namely, that **the prosody can under certain circumstances license a clitic in spite of its syntactic deficiency** in the sense of (71), i.e. once such “syntactically deficient” clitic finds itself inside CD (which has been established independently thanks to the presence of a CD-head) and it is adjacent to other licensed clitic, it is prosodically licensed despite its syntactic deficiency.

Now, let us see, whether the proposal outlined above, can give us desirable results.

First, the lexical specification (68) of the nominal clitic SE as being univocally syntactic heads explains directly, why the clitic is attached to the nominal head instead of rising to some higher position in the sentence.

Second, assuming that pronominal clitics are – unlike the reflexive clitic – ambivalent between head and phrasal status, and assuming that they need, for whatever reason, to end up in a phrasal (i.e. non-head) position, we get an explanation for why they cannot appear alone attached to their head noun. Namely, they need to rise to some higher (second) syntactic position in the sentential phrase/nominal phrase. This rising is, however, not possible out of the nominal domain, presumably because the head noun – unlike the verb – rises overtly to some higher functional head inside the DP. Such a pronominal clitic thus does not fill all its syntactic requirements, and therefore cannot serve as a head of a CD (70b). Since it is not adjacent to any other clitic either (71), it is not prosodically licensed and cannot appear on the surface.

Third, if the reflexive clitic is present in the nominal domain, it serves as a head of a CD. In such case, the pronominal clitic is prosodically licensed, as it is adjoined to the reflexive clitic.

Finally, let us present one more example that seems to constitute a further and independent support for the analysis offered here. The sentence in (72) illustrates the phenomenon known

as clitic climbing. Namely, the clitic which is related to the embedded infinitival verb climbs to the second position in the matrix clause.

(72) SE climbing I

Petr **se** na večírku chtěl rychle seznámit s novými lidmi.

Peter SE at party wanted quickly meet with new people.

‘Peter wanted to meet new people at the party quickly.’

The sentence in (73a) shows that the climbing can be blocked if there is an intonational break between the matrix and the embedded clause.

(73) SE climbing II

a. Petr na večírku chtěl # rychle **se** seznámit s novými lidmi.

b. * Petr **se** na večírku chtěl # rychle seznámit s novými lidmi.

This state of affairs is, however, not predicted under the PF-filtering account as suggested by Franks and King. Namely, assuming that clitics move in the Syntax regardless of the prosody considerations - (73a) should be always filtered out in favor of (73b):

(74) SE climbing – derivational history

{Petr **se** na večírku chtěl} {rychle **se** seznámit s novými lidmi}.

As sketched in (74), both the highest SE as well as its copy in the embedded clause fit the prosodic requirements, since both appear in the second spot inside its intonational phrase. The Pronounce Highest Copy constraint should therefore delete the lower copy inside the embedded clause.

Now, let us see whether the current proposal gives us desirable results. (75) schematically demonstrates the relevant syntactic and prosodic structures.

(75) IP vs. CD interaction

Syntax:		Petr	se	chtěl	rychle	se	seznámit	s	novými	lidmi.		
PF:	IP	#	-----				#	-----				#
	CD	*	/ se	-----								
		√						/ se	-----			

The PF-filtering account as proposed by Franks and King wrongly predicts that the sentence in (73a) is ungrammatical, as both copies of the reflexive clitic SE satisfy the prosodic requirements, since both appear in the second spot inside its intonational phrase. The Pronounce Highest Copy constraint should therefore delete the lower copy inside the embedded clause. Under the current approach, however, the correct result is achieved. Namely, the higher of the two copies is not prosodically licensed, as it is heading a non-existing CD, more specifically a CD whose existence is prohibited by (69a), as it is interrupted by the IP boundary.

Examples like (73) can thus serve as an independent support for the preliminary analysis outlined here.

Chapter 4

An Excursus to Czech and Other Slavic Adjectival Passives

In the previous chapter we argued that arity operations are available not only in the verbal domain but also in the domain of nouns. This new and non-traditional conclusion has been based on the properties of West Slavic reflexive and reciprocal nouns. Specifically, we have shown that these nominal formations cannot be derived from their reflexive and reciprocal verbal counterparts via the process of nominalizations, but rather from their transitive nominal alternates via the operation of reflexivization and reciprocalization. In the current and next chapters we will turn to Slavic adjectival passives, elaborating on the idea that arity operations, specifically the operation of decausativization, are available also in the domain of adjectives.

From the early years of generative linguistics it has been known that passive participles like those in (1) exhibit both verbal and adjectival behavior (e.g. Chomsky 1957, Freidin 1975).

(1) Passive participles – English and Hebrew

- | | |
|----------------------------------|--|
| (a) The glass is broken . | (b) Ha-bait mešupac .
the house renovated
"The house is renovated." |
|----------------------------------|--|

An empirically and theoretically comprehensive study by Wasow (1977) shed new light on this ambiguity of passive participles, and from that point on the distinction between verbal and adjectival passives has been widely accepted. Subsequent research gave rise to various proposals as to the mechanism responsible for the derivation of adjectival passives (Levin & Rappaport 1986, Dubinsky & Simango 1996, Embick 2004, Horvath and Siloni 2008 among others). Likewise, it has been observed that adjectival passives do not form a uniform class and can be ambiguous regarding whether or not they entail a prior event (e.g. Kratzer 2000 for German, Anagnostopoulou 2003 for Greek, Embick 2004 for English). According to Embick

(2004), for instance, there are two types of adjectival passives in English based on whether they entail a prior event or not – the *stative* and the *resultative*. While the former does not entail an event, as demonstrated by the non-contradictory status of the sentence in (2a), the latter denotes states which are the result of the previous event, as illustrated by the contradictory sentence in (2b).

(2) Stative vs. resultative adjectival passives (Embick, 2004, his (6))

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

As further illustrated in (3) these two types of adjectives may be morphologically non-distinct. For instance, the English adjectival passive *closed* is licensed in contexts which do not allow a previous event entailment (3a) (compare with 2a), as well as in contexts in which the previous event seems to be inevitable (3b) (compare with 2b).

(3) Stative - resultative ambiguity of adjectival passives (Embick, 2004, his (8) and (9))

- (a) This door was built **closed**. (b) The package remained carefully **closed**.

Recently it has been suggested (Meltzer, 2006, 2009, 2011) that the split in the domain of Hebrew adjectival passives matches the difference between passive and unaccusative verbs (see also Horvath and Siloni, 2008, for the same conclusion for Hungarian). The cornerstone of Meltzer's proposal is the previously undetected fact that some of these adjectives must have an external (Agent) role present in their semantics, as they license agent-oriented modifiers, instruments and by-phrases (see, e.g., Grimshaw, 1990, Dubinsky & Simango, 1996 and Reinhart & Siloni, 2005 for these diagnostics). The distribution of these elements in the verbal domain is illustrated in (4).

(4) Agent diagnosing elements and verbal passives vs. unaccusative verbs

- (ai) The water was intentionally frozen. (bi) The water (*intentionally) froze.
 (aii) The ice was melted with a candle. (bii) The ice melted (*with a candle).
 (aiii) The glass was broken by John. (biii) The glass broke (*by John).

The passive sentences in (4a) all permit the (underlined) agent-diagnosing elements. This is so because the external (Agent) arguments of the verbs, which underwent passivization, are still present in the semantics, although not syntactically realized. On the other hand, the unaccusative verbs in (4b) cannot be accompanied by these elements, as these verbal voices,

unlike their passive counterparts, lack the external (Agent) role altogether, i.e., not only it is not realized syntactically, but it is not present in the semantics either. Now look at the following pair of Hebrew sentences; both sentences are glossed identically, but they differ with respect to the adjectival passive they involve, and consequently also in their grammaticality. The adjectival passive *mefuzar* (5a) licenses the agent-dependent element *be-nedivut* ('generously'), and therefore its external (Agent) role must be present in the semantics, in similar fashion to the suppressed external theta role of verbal passives (4a). For the adjectival passive *pazur* (5b), on the other hand, this element is illicit, exactly as it is in the case of unaccusative verbs (4b).

(5) Adjectival passives vs. adjectival decausatives (Meltzer 2009, her (43a))

- | | | | |
|-----|--|-----|--|
| (a) | Ha-sukar yihiye mefuzar <u>be-nedivut</u> .
the-sugar will+be scattered in-generosity
'The sugar will be scattered generously.' | (b) | * Ha-sukar yihiye pazur <u>be-nedivut</u> .
the-sugar will+be scattered in-generosity
'The sugar will be scattered generously.' |
|-----|--|-----|--|

Relying on this kind of observations Meltzer proposes that the derivation of *mefuzar*-type adjectives (5a) and the derivation of *pazur*-type adjectives (5b) are not exactly the same. Specifically, she suggests that – apart from the process of adjectivization itself – the derivation of adjectival passives like *mefuzar* in (5a) involves exactly the same operation as the operation involved in the derivation of verbal passives, while the derivation of adjectival passives like *pazur* in (5b) involves exactly the same operation as the operation involved in the derivation of verbal unaccusatives. Following Levin and Rappaport (1995), Reinhart (2002), Chierchia (2004), and Reinhart and Siloni (2005), she assumes these operations to be *saturation* (6) for the former and *decausativization* (7) for the latter; both of these operations, as well as the process of adjectivization suggested by Meltzer, will be presented in some more detail in subsection 4.3.1:

(6) Saturation (basic insight)

- (i) Affects the external theta role of its (transitive) input.
- (ii) This external theta role is saturated, i.e., not realized syntactically but still present in the semantics.

(7) Decausativization (basic insight)

- (i) Affects the external theta role of its (transitive) input.
- (ii) This external theta role is eliminated altogether, i.e., not realized syntactically and not present in the semantics.

Furthermore, Meltzer argues that Hebrew adjectival passives like *mefuzar* in (5a), or "true adjectival passives" in her terminology (to be adopted here), and adjectival passives like *pazur* in (5b), labeled by Meltzer "adjectival decausatives", differ in yet another aspect, namely that the former, unlike the latter, entail a prior event. This is illustrated in (8) and (9) below:

(8) Adjectival passives vs. adjectival decausatives – event entailment (Meltzer 2011:79)

- (a) Ha-xulca tihie **mekuceret**, aval af exad / šum davar lo yekacer ota. (contradiction)
 the-shirt will+be shortened but no one / nothing not will+shorten her
 'The shirt will be shortened, but no one / nothing will shorten it.'
- (b) Ha-xulca tihie **kcara**, aval af exad / šum davar lo yekacer ota. (no contradiction)
 the-shirt will+be short but no one / nothing not will+shorten her
 'The shirt will be short, but no one / nothing will shorten it.'

According to Meltzer the event entailment of Hebrew adjectives is tightly connected to the presence of an external argument in their semantics. Since only the true adjectival passive fulfill this requirement, only this class of adjectives entails a prior event. Therefore, the sentence in (8a), which contains the true adjectival passive *mekuceret* ('shortened'), entails a prior (transitive) event as signified by its contradictory status if that event is negated. The adjective *kcara* ('short'), on the other hand, is according to Meltzer an adjectival decausative that does not impose any event entailment, as witnessed by the non-contradictory status of the sentences in (8b) and (9), where transitive and unaccusative events are negated, respectively.

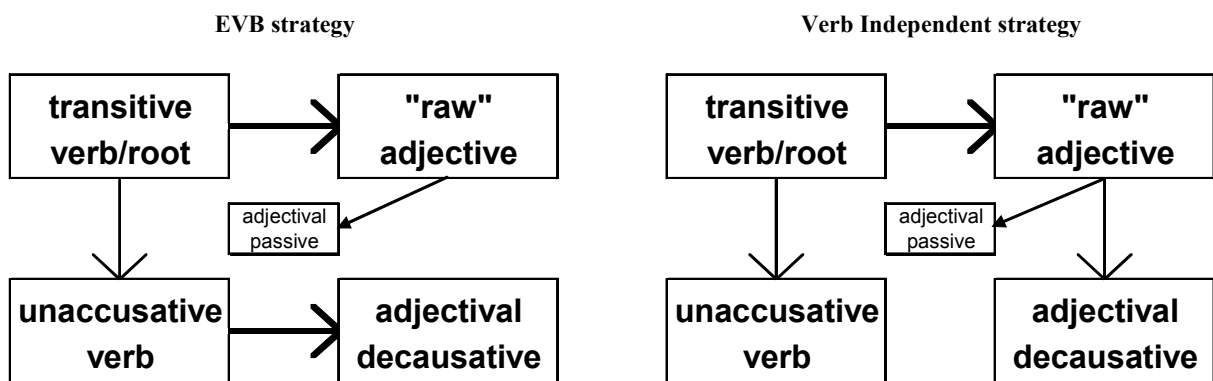
(9) Adjectival decausatives – event entailment

- Ha-xulca tihie **kcara**, bli she-hi titkacer. (no contradiction)
 the-shirt will+be short, without he will-become shorten
 'The shirt will be short, without shortening.'

In the present chapter I will adopt Meltzer's insight and show that her distinction between true adjectival passives and adjectival decausatives is relevant for Czech and other Slavic languages as well in the sense that the former, unlike the latter, have an external argument present in their semantics. However, contrary to Meltzer's observation, it appears that the presence or absence of an external argument in the adjectival domain does not correlate with the prior event entailment. More specifically, it seems to be the case that both Slavic true adjectival passives and Slavic adjectival decausatives entail an event. Moreover, events entailed by true adjectival passives are "transitive / passive" (i.e., involve an external and an internal role), while events entailed by adjectival decausatives are "unaccusative" (i.e., involve no external role). We will also see that Czech and – according to a preliminary

research – some other Slavic languages provide a very interesting piece of morphological evidence giving some clue that the derivation of adjectival decausatives indeed involves the operations of decausativization mentioned above, which is in fact not so obvious based on Meltzer's work. I.e., Meltzer's suggestion that this type of adjectives is derived via the operations of decausativization is actually not directly justified in her analysis. This, however, in no way means that Meltzer's distinction between the class of true adjectival passives and the class of adjectival decausatives in Hebrew is not valid, since this distinction appears to be an empirical fact that holds regardless of the question whether the latter class (the class of adjectival decausatives) is derived via the "combination" of adjectivization and decausativization from corresponding (transitive) verbs (or *roots unspecified for their category* in Meltzer's proposal) or whether their derivation includes the process of adjectivization only, the derivational base being a corresponding unaccusative verb. Put differently (in terms of the previous chapter), Meltzer's innovative distinction holds regardless of whether the derivation of adjectival decausatives is indeed Verb Independent or Exclusively Verb Based. These two options are graphically depicted in Figure 2, and as can be seen, under both derivational scenarios there are adjectival passives and adjectival decausatives, thus providing the distinction between these two classes (the bold horizontal arrows stand for the process of adjectivization, while the thin vertical arrows stand for the operation of decausativization)¹:

Figure 2: Exclusively Verb Based (EVB) vs. Verb Independent derivation of adjectival decausatives



The chapter is organized as follows: We will begin with a short note on Slavic aspect (4.1) in order to clarify that only adjectives that correspond to perfective (telic) forms of Slavic verbs are relevant for our discussion here. As already noted, it is widely known that passive participles often display mixed properties of both verbs and adjectives. Therefore, before

¹ Meltzer is not explicit regarding the "ordering" of these two processes, i.e., it is unclear whether she assumes that both of them apply simultaneously or whether the process of adjectivization precedes the application of decausativization. For the sake of clarity, the schema in figure 2 presupposes that the process of adjectivization applies first and only then the operation of decausativization occurs, the output of the process of adjectivization being labeled *"raw" adjective*.

actually approaching the adjectival passives in Czech and other Slavic languages, we must verify first that what we are dealing with are indeed true adjectives and not adjective-like verbs. This will be done in section 4.2 where two typically adjectival contexts will be presented, namely Czech and other Slavic copular structures (4.2.1) and the complement position of certain Czech verbs (4.2.2); the section focuses mainly on Czech data; however, I will argue that adjectival elements following the present tense form of the verb "be" are always true adjectives in Slavic. The core of this chapter is section 4.3, where the split among Czech adjectival passives and adjectival decausatives is demonstrated; moreover, a novel kind of morphological evidence, which potentially supports the Verb Independent derivational strategy of adjectival decausatives over the Exclusively Verb based derivation, will be presented² (4.3.4). In section 4.4 we will briefly survey adjectival passives in other Slavic languages and will see that the distinction between adjectival passives and adjectival decausatives holds in each one of these languages as well. Section 4.5 summarizes the chapter.

4.1 Background: Aspect of the Slavic verbs

Almost every Slavic verb has two morphologically distinct forms that differ in their aspect. Roughly speaking, imperfective forms express that the event denoted by a given verb endured / endures / will endure for a certain period of time (or that it has repeated / repeats / will repeat), without being explicit about whether that event was accomplished or otherwise finished. Perfective forms, on the other hand, express that the event was / will be completed, and they refer to a single point of time in which that accomplishment occurred /will occur; this reference to a single point of time prevents perfective forms from pointing to the present, so that perfective verbs can only refer to the past or to the future. The series of the Czech examples in (10) demonstrates the phenomenon:

(10) Aspect and tense of Czech verbs

- | | | | |
|-------|---|-------|---|
| (ai) | Petr psal dopis (tři hodiny).
Petr wrote _{-impf} letter (three hours)
'Petr was writing a letter (for three hours).' | (bi) | Petr napsal dopis (*tři hodiny).
Petr wrote _{-pf} letter (three hours)
'P. has written a letter (*for three hours).' |
| (aai) | Petr píše dopis (tři hodiny).
Petr write _{-impf} letter (three hours)
'Petr is writing a letter (for three hours).' | (bii) | ----- |

² Further and more decisive evidence pointing to this direction will be presented in chapter 5, subsection 5.3.3.

- | | |
|--|---|
| (aiii) Petr bude psát dopis (tři hodiny).
Petr will write _{-impf} letter (three hours)
'Petr will be writing a letter (for three hours).' | (biii) Petr napíše dopis (*tři hodiny).
Petr write _{-pf} letter (three hours)
'P. will write a letter (*for three hours).' |
|--|---|

The past (i), present (ii), and future (iii) tense sentences in (10a) contain the imperfective verb *psát* ('write'). That these verbal forms indeed refer to a period of time in which the (writing) event goes on is witnessed by the time adverbial *tři hodiny* ('for three hours'), which modifies this time interval. The perfective sentences in (10b), on the other hand, do not refer to a period of time, but rather to a single point in time in which the (writing) event was completed, and the addition of time adverbials like *tři hodiny* thus results in ungrammaticality; moreover, as noted above, the perfective verbal forms can denote only past (10bi) or future (10biii) events, the reference to the present being impossible both perceptually and grammatically (10bii).

Exactly the same holds for all other Slavic languages as the randomly chosen examples from Croatian (11), Polish (12) and Ukrainian (13) show:

(11) Aspect and tense of Croatian verbs

- | | |
|---|---|
| (ai) Petar je slikao sliku (tri sata).
Petar aux _{-3sg} drew _{-impf} picture (three hours)
'Petar was drawing a picture (for three hours).' | (bi) Petar je naslikao sliku (*tri sata).
P. aux _{-3sg} drew _{-pf} picture (three hours)
'P. has drawn a picture (*for three hours).' |
| (aii) Petar slika sliku (tri sata).
Petar draw _{-impf} picture (three hours)
'Petar is drawing a picture (for three hours).' | (bii) ----- |
| (aiii) Petar će slikati sliku (tri sata).
Petar will draw _{-impf} picture (three hours)
'P. will be drawing a picture (for three hours).' | (biii) Petar će naslikati sliku (*tri sata).
P. will draw _{-pf} picture (three hours)
'P. will draw a picture (*for three hours).' |

The Croatian examples in (11a) above and the Polish (12a) and Russian (13a) examples below demonstrate once more that the event denoted by Slavic imperfective verbs endured (i), endures (ii), or will endure (iii) for a period of time as indicated by the fact that these verbal forms license different adverbs, which modify a time interval. In contrast, perfective alternates in (b) do not license these adverbials, as they refer to a single moment, and as such they can only express a past (bi) or a future (biii) event. (For a detailed discussion of aspect in Slavic languages see, e.g., Chatterjee (1988), Bubenik (1997), or Filip (2008); for discussion of aspect in general see, e.g., Comrie (1976), Hewson (1997), or Rappaport-Hovav (2008)):

(12) Aspect and tense of Polish verbs

- | | |
|---|--|
| (ai) Czeresnie dojrzewaly (trzy dni).
cherries ripened _{-impf} (three days)
'Cherries were ripening (for three days).' | (bi) Czeresnie dojrzaly (*trzy dni).
cherries ripened _{-pf} (three days)
'Cherries have ripened (*for three days).' |
| (aii) Czeresnie dojrzewaja (trzy dni).
cherries ripen _{-impf} (three days)
'Cherries are ripening (for three days).' | (bii) ----- |
| (aiii) Czeresnie beda dojrzewac (trzy dni).
cherries will ripen _{-impf} (three days)
'Cherries will be ripening (for three days).' | (biii) Czeresnie dojrzeja (*trzy dni).
cherries ripen _{-pf} (three days)
'Cherries will ripen (*for three days).' |

(13) Aspect and tense of Ukrainian verbs

- | | |
|--|---|
| (ai) Vjet'er uništožal urožaj (celij d'eň).
wind destroyed _{-impf} harvest (whole day)
'The wind was destroying the harvest (for a whole day).' | (bi) Vjet'er uništožil urožaj (*celij d'eň).
wind destroyed _{-pf} harvest (whole day)
'The wind has destroyed the harvest (*for a whole day).' |
| (aii) Vjet'er uništožacet urožaj (celij d'eň).
wind destroy _{-impf} harvest (whole day)
'The wind is destroying the harvest (for a whole day).' | (bii) ----- |
| (aiii) Vjet'er budet uništožat' urožaj (celij d'eň).
wind will destroy _{-impf} harvest (whole day)
'The wind will be destroying the harvest (for a whole day).' | (biii) Vjet'er uništožit urožaj (*celij d'eň).
wind destroy _{-pf} harvest (whole day)
'The wind will destroy the harvest (*for a whole day).' |

For the current discussion, only adjectives which correspond to perfective (telic) verbal forms are relevant, since only these forms have a result state as a part of their meaning (see also Bresnan 1996, Doron 2000, Kratzer 2000 for similar claim). Adjective-like forms, which correspond to imperfective (atelic) verbal forms, are in fact not adjectives but verbs, and will be not discussed here. That such seemingly adjectival forms corresponding to atelic verbs are indeed not true adjectives is demonstrated for instance by the pair of sentences in (14):

(14) 'Telic' and 'atelic' adjectival passives in Czech

- (a) ?? Ten obraz byl malovaný krásným / tenkým štětcem.
that picture was painted_{-imperfective} beautiful_{-Inst} / thin_{-Inst} paintbrush_{-Inst}
'That picture was painted with a beautiful / thin paintbrush.'
- (b) Ten obraz byl namalovaný *krásným / tenkým štětcem.
that picture was painted_{-perfective} beautiful_{-Inst} / thin_{-Inst} paintbrush_{-Inst}
'That picture was painted with a *beautiful / thin paintbrush.'

The sentences in (14) differ in the aspect of the verbal forms to which the adjectival forms correspond. The adjectival form *malovaný* (14a) corresponds to the imperfective verbal form

malovat, while the adjectival form *namalovaný* (14b) corresponds to the perfective verbal form *namalovat* (both glossed as 'painted'). First of all, note that the grammatical status of the sentence in (14a) is problematic. As we will see more explicitly in the following section, this marginal acceptance follows from the fact that the verb *byl* ('was') can be analyzed either as the copular "be" (followed by an adjective) or as the auxiliary involved in the verbal passive formation. Speakers (including me) who have a difficulty with "reanalyzing" these adjective-like forms as verbal passive forms hardly accept this kind of structures. Namely, if they comprehend the verb *byl* ('was') as the auxiliary then they expect it to be followed by a "correct" verbal passive form, which in (14a) should be *malován* (and not *malovaný*). If, on the other hand, they comprehend the verb *byl* ('was') as the copular "be", they expect it to be followed by a genuine adjective, which seems not to be the case if the adjective-like form corresponds to an imperfective verb. However, even those speakers who accept the sentences like (14a) do so under the verbal passive reading only. Namely, note that both the imperfective (14a) and the perfective (14b) adjectival forms license the instrument *tenký štětec* ('thin paintbrush'), while the instrument *krásný štětec* ('beautiful paintbrush') is acceptable in (14a) only. This is so because genuine adjectives denote states rather than events, and therefore - as convincingly argued by Meltzer - instruments (as well as other agent-dependent elements) are acceptable only if their effect can be detected from these states. (For some of those speakers who are able to "reanalyze" the imperfective adjective-like form *malovaný* in (14a) as verbal passive, the instrument "beautiful paintbrush" will perhaps be marginally acceptable in (14b), since they will once more "reanalyze" the (perfective) adjective-like form (*namalovaný*) as a verbal-passive form). In (14b) it can be detected from the picture that it was painted with a thin paintbrush, but the fact that the paintbrush was beautiful (e.g., that it has a pearly handle) is not present in the picture itself. On the other hand, a beautiful paintbrush can be a part of a "painting event" and its acceptability with the adjectival form in (14a) thus witnesses that this form denotes an event and cannot be considered a real adjective.³

The same holds in other Slavic languages; this time examples from Macedonian (15'), Bulgarian (15''), and Belarusian (16) are presented for illustration. Nevertheless, note that the

³ It must be mentioned that some "imperfective adjectives" in fact can denote states, either generally or in an appropriate context. E.g., the adjectival form *malovaný* ('painted') used in (14a) does denote state if modifying the noun *vejce* ('egg'), in the context of Easter habits and tradition. Crucially, however, under this "state-reading", the adjective will license only such instruments that can be detected from the state denoted by it:

To vejce bylo malované *krásným / tenkým štětcem.
that egg was painted_{imperfective} beautiful_{-Inst} / thin_{-Inst} paintbrush_{-Inst}.
'That egg was painted with a *beautiful / thin paintbrush.'

Macedonian and Bulgarian "imperfective" examples in (15a) are fully acceptable, contra the Czech example in (14a) above. This is so because unlike Czech, there is no morphological distinction between the adjectival and the "correct" passive ending in these two languages, and therefore the speakers have no difficulty in comprehending the sentences in (15a) as normal passive structures; for the same reason speakers of Macedonian and Bulgarian, of course, fully accept the perfective forms in (15b) as well. On the other hand, and once more contra the Czech example in (14a), the parallel Belarusian example in (16a) is completely ungrammatical, which in turn further strengthens our claim that Slavic imperfective adjective-like forms are unequivocally verbs. Specifically, the ungrammatical status of the sentence in (16a) indicates that for some reason the speakers of Belarusian, unlike some speakers of Czech (see the discussion above), cannot interpret these adjective-like forms, perhaps in this particular kind of structure, as verbal passives. Therefore, in order to rescue the sentence, they must comprehend the verb *byu* ('was') as the copular "be". However, since the imperfective adjective-like forms are verbs, such comprehension inescapably leads to ungrammaticality as the copular structures are not available for verbs.

(15') "Telic" and "atelic" adjectival passives in Macedonian

- (a) Ova slika bila crtana so ubava / tenka četka.
that picture was drawn_{-imperfective} with beautiful / thin paintbrush
'The picture was drawn with a **beautiful** / thin paintbrush.'
- (b) Ova slika bila nacrtana so ubava / tenka četka.
that picture was drawn_{-perfective} with beautiful / thin paintbrush
'The picture was drawn with a **beautiful** / thin paintbrush.'

(15'') "Telic" and "atelic" adjectival passives in Bulgarian

- (a) Kartina-ta e risovana se **krasiva** / stenka četka.
picture-the was drawn_{-imperfective} with beautiful / thin paintbrush
'The picture was drawn with a **beautiful** / thin paintbrush.'
- (b) Kartina-ta e narisovana se **krasiva** / stenka četka.
picture-the was drawn_{-perfective} with beautiful / thin paintbrush
'The picture was drawn with a **beautiful** / thin paintbrush.'

(16) "Telic" and "atelic" adjectival passives in Belarusian

- (a) *Hetyj list byu pisanyj zamjačacelnym / blakitnym pjarom.
that letter was written_{-imperfective} beautiful_{-Inst} / blue_{-Inst} pen_{-Inst}
'That letter was written with a beautiful / blue pen.'
- (b) Hetyj list byu napisanyj ***zamjačacelnym** / blakitnym pjarom.
that letter was written_{-perfective} beautiful_{-Inst} / blue_{-Inst} pen_{-Inst}
'That letter was written with a ***beautiful** / blue pen.'

Based on the data and the discussion presented in this section we can thus conclude that Slavic imperfective seemingly adjectival forms are in fact not adjectives but verbs. In the remainder of this chapter I will therefore confine myself to the adjectives which correspond to the perfective verbs only.

4.2 The distinction between verbal and adjectival passives in Czech and other Slavic languages

It seems that unlike, e.g. English or Hebrew, there is a clear morphological distinction between the verbal and adjectival passives in Czech. Both word types include the passive morpheme $-(e)n / -t$, but they are attached different inflection suffixes responsible for the agreement with their subjects, as illustrated by the two pairs of examples in (17). Specifically, the passive forms in (17i) are attached a "short" verbal inflection, while their counterparts in (17ii) are attached a "long" adjectival inflection.

(17) Verbal vs. adjectival passives – an agreement inflection

- (ai) Dům / škola / město bude zcela znič-en-0 / - a / - o.
house_{-m} / school_{-f} / city_{-n} will-be_{-Aux} totally destroy-ed-mSg / - fSg / -nSg
'The house / school / city will be totally destroyed.'
- (aii) Dům / škola / město bude zcela znič-en-ý / - á / - é.
house_{-m} / school_{-f} / city_{-n} will-be_{-Cop} totally destroy-ed-mSgNom / - fSgNom / -nSgNom
'The house / school / city will be totally destroyed.'
- (bi) Domy / školy / města bude zcela zničen-y / - y / - a.
houses_{-m} / schools_{-f} / cities_{-n} will-be_{-Aux} totally destroy-ed-mPl / - fPl / -nPl
'The houses / schools / cities will be totally destroyed.'
- (bii) Domy / školy / města budou zcela zničen-é / - é / - á.
houses_{-m} / schools_{-f} / cities_{-n} will-be_{-Cop} totally destroy-ed-mPlNom / - fPlNom / -nPlNom
'The houses / schools / cities will be totally destroyed.'

The disparity between the verbal (17i) and adjectival (17ii) passive inflections above could indicate that each one of these two voices has its own shape in Czech, i.e., that some Czech passives are unequivocally verbs and some Czech passives are unequivocally adjectives. While this state of affairs would undoubtedly be tempting for its clarity and simplicity, it would be rash to draw such a conclusion based purely on inflectional morphology. Although the morphology is indeed helpful it usually provides no more than a hint for detecting lexical and syntactic phenomena. First, note that the inflectional suffixes encompass rather complex

information. Both verbal and adjectival inflection is sensitive to the gender and the number of the subject, but the adjectival inflection is sensitive also to its case. If so, it is possible that the difference between the two inflections simply follows from the phi-features it bears and not from the fact that each one is attached to a different voice.⁴ Second, recall from our discussion of example (14b) above that for some Czech speakers the verbal passive interpretation of the long adjective-like forms can be marginally possible. And finally, the two different agreement suffixes (exemplified in (17) for Czech) are not available in all Slavic languages. In fact, apart from Czech, only Belarusian and Russian display the same disparity (short vs. long inflection), while in the other languages only one of suffix is available⁵. Therefore we will now turn to other diagnostics in order to precisely identify verbal and adjectival passives in Slavic languages and their possible ambiguity.

Various tests for distinguishing verbal and adjectival passives have been suggested in the literature (Wasow, 1977, Doron, 2000, Horvath & Siloni, 2008, Meltzer, 2006, among others). All these diagnostics consist in identifying typically verbal or typically adjectival contexts and characteristics. In what follows I will utilize two such contexts – copular structures (4.2.1) and verbs whose complement must be an adjective (4.2.2). As noted in the introductory part to this chapter, we will use mainly Czech data; however, we will argue that there is, in fact, a very clear reason for seemingly adjectival counterparts of perfective verbs to indeed be true adjectives once they follow the verb "be" in all Slavic languages, as long as the verb "be" is in the preset tense.

4.2.1 Copular structures

Probably the most obvious diagnostics for the distinction between the verbal and the adjectival passives are copular structures, since a predicate in these structures cannot be verbal. The problem with applying this test in Czech and other Slavic languages is that (like English for example) passive constructions utilize the auxiliary "be" in all tenses (18a), so that one can still claim that the sentences in (18b) are ambiguous between the verbal (passive) and adjectival (copular) readings (the examples in (18) are from Czech).

⁴ Recall in this respect also our discussion of the ostensible adjectival counterparts of Slavic imperfective verbs in (14), (15) and (16). Although they were all attached typically adjectival suffixes, we have concluded that they are not genuine adjectives, but verbs.

⁵ Southern Slavic languages have at their disposal only "short" suffixes (exemplified in (17i)), as has already been pointed out in the discussion of Macedonian and Bulgarian examples (15) above. The remaining three languages, i.e., Polish, Slovak, and Ukrainian, on the other hand, have only "long" suffixes (exemplified in (17ii)).

(18) Verbal passives and adjectival predicates in copular structures

- | | |
|---|---|
| (ai) Stůl byl / je / bude rozbit.
table was / is / will be broken. _{mSg}
'The table was /is / will be broken.' | (bi) Stůl byl / je / bude rozbitý.
table was / is / will be broken. _{mSgNom}
'The table was /is / will be broken.' |
| (aai) Dopis byl / je / bude napsán.
letter was / is / will be written. _{mSg}
'The letter was /is / will be written.' | (bii) Dopis byl / je / bude napsaný.
letter was / is / will be written. _{mSgNom}
'The letter was /is / will be written.' |

While this doubt is indeed in order, there are several facts and considerations that signify that what are suspected to be adjectival forms, like those in (18b), are indeed genuine adjectives.

First of all, recall that perfective forms of Czech and other Slavic verbs can refer only to the past or to the future (4.1). This phenomenon, which is perceptual in principle, is reflected also in the fact that there is no grammatical present tense form for these verbs (see the examples in (10), (11), (12) and (13) above). It thus follows straightforwardly that the same holds if these perfective forms undergo passivization. A closer look at examples (18) reveals that this is indeed the case, as the contrasting data in (19) and (20) demonstrate. The sentences in (19) and (20) are similar to the sentences in (18i) and (18ii) respectively, the only difference being that they are attached the by-phrase *Petrem* ('by Petr'). As we can see, unlike the past and the future passive sentences in (19ai) and (19aaii), the present passive sentence in (19aaii) does not license the by-phrase, which means that this sentence does not denote an event, but rather a state. The same is true if we look at the sentences in (20a). The past (20ai) and future (20aaii) passive sentences can be attached the by-phrase, contra their present tense counterpart in (20aaii), for which the addition of the by-phrase results in ungrammaticality. Moreover, exactly the same holds for the adjectival forms in (19bii) and (20bii). We can thus conclude that in harmony with our prediction, perfective passive participles that follow the present form of the verb *být* ("to be") are always adjectival in Czech, since they do not denote events, but rather states.

(19) By-phrases with verbal passives and adjectival predicates in copular structures I

- | | |
|--|---|
| (ai) Stůl byl rozbit (Petrem).
table was broken. _{mSg} (Petr. _{Inst})
'The table was broken (by Petr).' | (bi) Stůl byl rozbitý (*Petrem).
table was broken. _{mSgNom} (Petr. _{Inst})
'The table was broken (by Petr).' |
| (aai) Stůl je rozbit (* Petrem).
table is broken. _{mSg} (Petr. _{Inst})
'The table is broken (by Petr).' | (bii) Stůl je rozbitý (*Petrem).
table is broken. _{mSgNom} (Petr. _{Inst})
'The table is broken (by Petr).' |

- | | |
|---|---|
| (aiii) Stůl bude rozbit (Petrem).
table will-be broken _{-mSg} (Petr _{-Inst})
'The table will be broken (by Petr).' | (biii) Stůl bude rozbitý (*Petrem).
table will-be broken _{-mSgNom} (Petr _{-Inst})
'The t. will be broken (by Petr).' |
|---|---|

(20) By-phrases with verbal passives and adjectival predicates in copular structures II

- | | |
|--|--|
| (ai) Dopis byl napsán (Petrem).
letter was written _{-mSg} (Petr _{-Inst})
'The letter was written (by Petr).' | (bi) Dopis byl napsaný (*Petrem).
letter was written _{-mSgNom} (Petr _{-Inst})
'The letter was written (by Petr).' |
| (aaii) Dopis je napsán (* Petrem).
letter is written _{-mSg} (Petr _{-Inst})
'The letter is written (by Petr).' | (bii) Dopis je napsaný (*Petrem).
letter is written _{-mSgNom} (Petr _{-Inst})
'The letter is written (by Petr).' |
| (aiii) Dopis bude napsán (Petrem).
letter will-be written _{-mSg} (Petr _{-Inst})
'The letter will be written (by Petr).' | (biii) Dopis bude napsaný (* Petrem).
letter will-be written _{-mSgNom} (Petr _{-Inst})
'The l. will be written (by Petr).' |

Note also that the by-phrase in the past tense (19bi/20bi) and future tense (19biii/20biii) adjectival examples are ungrammatical as well, unlike their verbal counterparts in (19ai/20ai) and (19aiii/20aiii), respectively. This further corroborates that Czech adjectival forms in structures like (19b) and (20b) are genuine adjectives even regardless of the tense of the verb *být*.^{6,7}

The sentences in (21), (22) and (23) manifest that the same holds for other Slavic languages; this time examples from Slovenian (21), Slovak (22) and Russian (23) are presented:

(21) By-phrases with verbal passives and adjectival predicates in copular structures (Slovenian)

- | |
|--|
| (i) Vrata bila odprta s ključem.
door were opened/open _{-NeuterPl} with key _{-Inst}
'The door was opened/(<i>*open</i>) with a key.' |
| (ii) *Vrata so odprta s ključem.
door are opened/open _{-NeuterPl} with key _{-Inst}
'The door is <i>*opened</i> / <i>*open</i> <i>*with</i> a key.' |
| (iii) Vrata bodo odprta s ključem.
door will-be opened/open _{-NeuterPl} with key _{-Inst}
'The door will be opened/(<i>*open</i>) with a key.' |

⁶ Recall that we have already seen exactly the same phenomenon in (14b), where we have observed that adjectives corresponding to perfective verbs, in contrast to adjective-like forms corresponding to imperfective verbs, can license only by-phrases (instruments) that are detectable from the states they denote. Indeed, if the fact that it was *Petr* who *destroyed the table* / *wrote the letter* in (19bii) / (20bii), would be detectable from, e.g., *table's condition* / *letter's style*, the by-phrase *Petrem* would be licensed.

⁷ For some speakers the by-phrase in the past tense (19bi/20bi) and the future tense (19biii/20biii) sentences are perhaps marginally acceptable, similarly to the marginal acceptability of the the instrument "beautiful paintbrush" in (14b) above.

First of all, as noted in footnote 5, in Slovenian and Slovak there is only one passive participle suffix. The past tense sentences in (21i) and (22i) therefore can license the instrument-phrase *s ključem* ('with key') and the by-phrase *Petrom* ('by Peter'), respectively, since they are ambiguous between the verbal passive and the (copular) adjectival reading; exactly the same holds with respect to the future tense sentences in (21iii) and (22iii). The present tense sentences in (21ii) and (22ii), however, license neither an instrument-phrase nor a by-phrase, signifying that the present tense of the verb "be" is positively a copula which is followed by true adjectives, similar to what we have observed in (19) and (20) for Czech and to what is presented in (23) below for Russian. These Russian examples are completely parallel to the Czech examples above, the only difference being that the adjectival forms in the past tense (23bi) and the future tense (23biii) sentences do license the by-phrase *Pjotrom* ('by-Peter'), at least for some speakers. Crucially, this by-phrase is (again) unacceptable in the present tense.

(22) By-phrases with verbal passives and adjectival predicates in copular structures (Slovak)

- (i) Stvol bol rozbitý Petrom.
 table was broken_{-mSg} Peter_{-Inst}
 'The table was broken by Peter.'
- (ii) *Stvol je rozbitý Petrom.
 table is broken_{-mSg} Peter_{-Inst}
 'The table is broken by Peter.'
- (iii) Stvol budú rozbitý Petrom.
 table will-be broken_{-mSg} Peter_{-Inst}
 'The table will be broken by Peter.'

(23) By-phrases with verbal passives and adjectival predicates in copular structures (Russian)

- | | |
|--|--|
| <ul style="list-style-type: none"> (ai) Stol byl razbit (Pjotrom).
 table was broken_{-mSg} (Pjotr_{-Inst})
 'The table was broken (by Pjotr).' (aai) Stol razbit (*Pjotrom).
 table broken_{-mSg} (Pjotr_{-Inst})
 'The table is broken (by Pjotr).' (aiii) Stol bud'et razbit (Pjotrom).
 table will-be broken_{-mSg} (Pjotr_{-Inst})
 'The table will be broken (by Pjotr).' | <ul style="list-style-type: none"> (bi) Stol byl razbitij (?? Pjotrom).
 table was broken_{-mSgNom} (Pjotr_{-Inst})
 'The table was broken (by Pjotr).' (bii) Stol razbitij (*Pjotrom).
 table broken_{-mSgNom} (Pjotr_{-Inst})
 'The table is broken (by Pjotr).' (biii) Stol bud'et razbitij (?? Pjotrom).
 table will-be broken_{-mSgNom} (Pjotr_{-Inst})
 'The t. will be broken (by Pjotr).' |
|--|--|

Based on the examples in (19) - (23) we can thus conclude that Slavic perfective passive participles following the present form of the verb "be" are clearly always true adjectives.

Recall that this state of affairs follows straightforwardly from the fact that Slavic perfective verbs cannot denote a present tense event. Concentrating from now on to the end of this section just on Czech data, two more facts point to the same direction.

First. The (short) verbal forms, but not the (long) adjectival forms, enable the following subject-verb inversion:

(24) Subject-verb inversion with verbal passives and adjectival predicates in copular structures I

- | | |
|---|--|
| (ai) Byl rozbit stůl.
was broken _{-mSg} table
'A table was broken.' | (bi) *Byl rozbitý stůl.
was broken _{-mSgNom} table
('Was a broken table.') |
| (aii) Včera byl rozbit stůl.
yesterday was broken _{-mSg} table
'A table was broken yesterday.' | (bii) *Včera byl rozbitý stůl.
yesterday was broken _{-mSgNom} table
('Yesterday was a broken table.') |
| (aiii) Pavlovi byl rozbit stůl.
Pavel-Dat was broken _{-mSg} table
'Pavel's table was broken.' | (biii) *Pavlovi byl rozbitý stůl.
Pavel-Dat was broken _{-mSgNom} table
('To Pavel was a broken table.') |

(25) Subject-verb inversion with verbal passives and adjectival predicates in copular structures II

- | | |
|--|---|
| (ai) Byl napsán dopis.
was written _{-mSg} letter
'A letter was written.' | (bi) *Byl napsaný dopis.
was written _{-mSgNom} letter
('Was a written letter.') |
| (aii) Včera byl napsán dopis.
yesterday was written _{-mSg} letter
'A letter was written yesterday.' | (bii) *Včera byl napsaný dopis.
yesterday was written _{-mSgNom} letter
('Yesterday was a written letter.') |
| (aiii) Pavlovi byl napsán dopis.
Pavel-Dat was written _{-mSg} letter
'Pavel's letter was written.' | (biii) *Pavlovi byl napsaný dopis.
Pavel-Dat was written _{-mSgNom} letter
('To Pavel was a written letter.') |

The sentences in (24a) and (25a) demonstrate that the auxiliary "be" and the passive form of the verb can precede the nominal subject. If the sentences in (18b) were ambiguous between the verbal (passive) and the adjectival (copular) reading, then there would be no obstacle for a similar subject-verb inversion. Such an inversion is, however, completely impossible as shown by the ungrammaticality of the sentences in (24b) and (25b).⁸ Thus,

⁸ One can perhaps think about the following paraphrases of the word order inversions demonstrated in (23/24):

- | | |
|---|--|
| (ai) V předsíni byl rozbit stůl.
in hall was broken _{-mSg} table
'A table was broken in the hall.' | (aii) V předsíni byl rozbitý stůl.
in hall was broken _{-mSgNom} table
'There was a broken table in the hall.' |
| (bi) V předsíni byl napsán dopis.
in hall was written _{-mSg} letter | (bii) V předsíni byl napsaný dopis.
in hall was written _{-mSgNom} letter |

these sentences cannot contain an auxiliary but rather a copula and consequently represent further evidence that the passive forms in (18b) are unequivocally adjectives that do not enable any ambiguity between the verbal (passive) and the adjectival (passive) reading.

Second. There is yet another - although less direct - piece of evidence, corroborating a positively adjectival nature of the Czech suspected adjectival passives, if these follow the verb *být*. The sentences in (26) exemplify participle forms that are usually used in reduced relatives (26i), although they can also appear pre-nominally (26ii):

(26) Participles in reduced relatives and in a pre-nominal position

- (ai) Mluvili o muži spadnuvším pod vlak.
spoke_{-3PI} about man_{-Loc} fallen_{-Loc} under train
- (aii) Mluvili o pod vlak spadnuvším muži.
spoke_{-3PI} about under train fallen_{-Loc} man_{-Loc}
'They spoke about the man who had fallen under the train.'
- (bi) Kolegové, pohádavší se na schůzi, se smířili.
colleagues, quarreled SE in meeting, SE conciliated
- (bii) Na schůzi se pohádavší kolegové se smířili.
in meeting SE quarreled colleagues SE conciliated
'The colleagues who quarreled in the meeting, conciliated.'
- (ci) Nad krajem se přehnala bouře ničící *(úrodu) na polích.
over region SE blew storm devastating harvest_{-Acc} on fields
'A storm, devastating the harvest on the fields, blew over the region.'
- (cii) Nad krajem se přehnala *(úrodu) na polích ničící bouře.
over region SE blew harvest_{-Acc} on fields devastating storm
'A harvest on the fields devastating storm blew over the region.'
- (di) Lidé, považující ho za hlupáka, se mu smáli.
people, considering him_{-Acc} for fool, SE him laughed
- (dii) Za hlupáka ho považující lidé se mu smáli.
for fool him_{-Acc} considering people SE him laughed
'People, considering him a fool, laughed at him.'

The participle forms like those above are derived without exception from their verbal counterparts via the addition of two suffixes which are sensitive to the aspect of a base verb,

'A letter was written in the hall.'

'There was a written letter in the hall.'

Note, however, that the grammatical sentences in (ii) do not present counter-examples to our point here, as in these sentences the adjectives serve as modifiers of their nominal heads, the copular relation being established between the place-adverb and the nominal phrase as a whole.

namely – *vší/ší* (26a,b) and – *cí* (26c,d), for the perfective and the imperfective, respectively. Like the adjectival passives, these participle forms display ordinary adjectival agreement with their nominal subjects, i.e., they agree with their subjects in number, gender and case⁹; moreover, they can appear in a pre-nominal position, which is a most natural position for adjectives (although it is not an exclusively adjectival position, as noted already by Meltzer, 2009, and as we will see immediately).

In spite of their adjective-like properties, there is no doubt that these participle forms are verbs. They are compatible with the clitic SE, which is otherwise impossible in the adjectival domain (26b); they obligatorily realize their internal argument if they are transitive (26c); and they assign an ordinary (verbal) structural accusative case as demonstrated by the ECM structure in (26d).

It is quite likely therefore that Czech participle forms are of mixed nature in the sense that they are derived syntactically via the incorporation of a verbal head to some higher adjectival head (as suggested e.g. by Siloni 1997 for Hebrew). Can such hybrid elements appear in copular structures? As the following comparison of their distribution with the distribution of their adjectival passives counterparts shows, the answer is clearly negative. While both adjectival passives and participle forms can occupy the pre-nominal position (27), only the former, but crucially not the latter, can appear in copular structures (28).

(27) Adjectival passives vs. present participles in a pre-nominal position

- | | | | |
|-------|---|--------|---|
| (ai) | vyprázdně-ná nádrž
emptied _{-AdjectivalPassive} reservoir
'an emptied reservoir' | | |
| (aii) | vyprázdní-vší se nádrž
emptying _{-PerfectivePresentPart} SE reservoir
'a reservoir which emptied' | (aiii) | vyprazdňují-cí se nádrž
emptying _{-ImperfectivePresentPart} SE reservoir
'a reservoir which is becoming emptied' |
| (bi) | posíle-ná ekonomika
reinforced _{-AdjectivalPassive} economy
'a reinforced economy' | | |
| (bii) | posílí-vší ekonomika
reinforcing _{-PerfectivePresentPart} economy
'an economy which became reinforced' | (biii) | posilují-cí ekonomika
reinforcing _{-ImperfectivePresentPart} economy
'a reinforcing economy' |

⁹ Present participle forms belong to the conjugation class of so-called "soft-adjectives", whose inflectional morphology is relatively poor; in (26) it is actually only example (26a) that overtly shows agreement among all three phi-features, i.e., number, gender, and case.

Both perfective (27ii) and imperfective (27iii) participle forms can occupy the pre-nominal position, similarly to adjectival passives (27i). However, contrary to adjectival passives, participle forms are completely unacceptable in copular structures; compare (28i) with (28ii) and (28iii):

(28) Adjectival passives vs. participles in copular structures

- | | | |
|--|--|--|
| <p>(ai) Nádrž je vyprázdně-ná.
reservoir is emptied_{AdjectivalPassive}
'The reservoir is emptied.'</p> | <p>(aai) * Nádrž je vyprázdni-vší se.
reservoir is emptying_{-PerfectivePresentPart} SE
'The reservoir is became-emptied.'</p> | <p>(aiii) * Nádrž je vyprazdňují-cí se.
reservoir is emptying_{-ImperfectivePresentPart} SE
'The reservoir is becoming-emptied.'</p> |
| <p>(bi) Ekonomika je posíle-ná.
economy is reinforced_{AdjectivalPassive}
'The economy is reinforced.'</p> | <p>(bii) * Ekonomika je posíli-vší.
economy is reinforcing_{-PerfectivePresentPart}
'The economy is became-reinforced.'</p> | <p>(biii) * Ekonomika je posilují-cí.
economy is reinforcing_{-ImperfectivePresentPart}
'The economy is becoming-reinforced.'</p> |

The phenomenon is further illustrated in (29), this time with two unergative participles. (As will be shown in subsection 4.3.4, unergative verbs do not have adjectival passive counterparts.) These participles can once more appear pre-nominally (29i), but they are excluded from copular structures (29ii).

(29) Participles in a pre-nominal position and copular structures – two more (unergative) examples

- | | |
|---|--|
| <p>(ai) stojící muž
"a standing man"</p> | <p>(aii) * Ten muž je stojící.
"That man is standing."</p> |
| <p>(bi) brečící dítě
"a crying child"</p> | <p>(bii) * To dítě je brečící.
"That child is crying."</p> |

The most natural way to explain the dichotomy between the participle forms and the adjectival passive forms is to propose that the two differ with respect to their verbal nature: participle forms are essentially verbs and therefore excluded from copular structures, while there is nothing verbal in adjectival passives and therefore nothing prevents their appearance in the same type of context.¹⁰ Note also that the data presented in this subsection indicates that

¹⁰ Recall from section 4.1 that adjective-like passives corresponding to imperfective verbal forms are excluded from copular structures too, unless they are interpreted as verbal passives. This state of affairs is, however, exactly what one is expecting, since these adjective-like elements, like participle forms discussed here, are in fact verbs rather than genuine adjectives.

the pre-nominal position is not a typically adjectival position, as it can host the hybrid participle forms.

The subject-verb inversion, which is possible with Czech verbal passives but not with Czech adjectival passives, and the comparison of Czech adjectival passives with Czech participle forms, which shows that only genuine adjectives are allowed to appear in copular structures, thus further corroborate our original claim regarding Slavic languages in general, namely that perfective passive participles are adjectives if they follow the (present tense of the) verb "be". Put differently, if Slavic perfective passive participles follow the verb "be" then we are dealing with copular structures and not with verbal passive constructions involving an auxiliary.

Just for the sake of interest, let us briefly show yet another typically adjectival context in Czech, which will once more demonstrate the different nature of (short) verbal passives and (long) adjectival passives in this language.

4.2.2 Complements of the verb *stát se* (become) and *jevit se* (appear, seem)

Another widely known test for distinguishing between the verbal and adjectival passives (suggested first by Wasow 1977 for English) uses verbs, whose complement can be only adjectival. I know of two such verbs in Czech:

(30) Obligatorily adjectival complements of the verbs *stát se* (become) and *jevit se* (appear, seem)¹¹

- | | |
|--|---|
| (ai) Stal se starý / starým.
Became _{-3Sg} SE old _{.Nom/Inst}
"He became old." | (aii) Stal se bohatý / bohatým.
Became _{-3Sg} SE rich _{.Nom/Inst}
"He became rich." |
| (aiii) Stal se unavený / unaveným.
Became _{-3Sg} SE tired _{.Nom/Inst}
"He became tired." | (aiv) * Stal se unaven.
Became _{-3Sg} SE tired _{.Pass}
"He became tired." |
| (bi) Jeví se zajímavý / zajímavým.
Appears SE interesting _{.Nom/Inst}
"He appears to be interesting." | (bii) Jeví se inteligentní / inteligentním.
Appears SE intelligent _{.Nom/Inst}
"He appears to be intelligent." |
| (biii) Jeví se vystrašený / vystrašeným.
Appears SE frightened _{.Nom/Inst}
"He appears to be frightened." | (biv) * Jeví se vystrašen.
Appears SE frightened _{.Pass}
"He appears to be frightened." |

¹¹ The verb *stát se* can take as its complement also NPs, which is, however, irrelevant here. The important fact for our purpose here is that this verb cannot take a verbal complement.

The examples in (30i) and (30ii) contain plain adjectives and are completely grammatical. The same holds for adjectival passives in (30iii). Crucially, however, the examples in (30iv) that involve verbal passive counterparts of the adjectival passives in (30iii) are unacceptable. The verbs like *stát se* and *jevit se* thus constitute another diagnostics, which distinguishes Czech adjectival passives (together with Czech adjectives in general) from Czech verbal passives (the difference being in harmony with the conclusion regarding the nature of adjectival passives in Czech and other Slavic languages we made in subsection 4.2.1).

After we have identified diagnostic contexts in which Czech passive participles must be adjectives, namely present tense copular structures and complements to verbs like *stát se* and *jevit se*, we are ready to approach the examination of these adjectives from the perspective of the split between true adjectival passive and adjectival decausatives, reported by Meltzer for Hebrew. Since in section 4.4 we will briefly present data from other Slavic languages as well, in the remainder of this chapter I will use, for the sake of clarity and simplicity, the present tense copular structures only, which we have identified as a typical adjectival context not only for Czech but for all Slavic languages in our sample.

4.3 True adjectival passives vs. adjectival decausatives in Czech

As noted in the beginning, Meltzer (2006, 2009, 2011) has discovered that some Hebrew adjectival passives have to have an external (Agent) role present in their semantics as they license agent-oriented modifiers, instruments and by-phrases. Based on this she concludes that there are in fact two types of adjectival passives in Hebrew: **true adjectival passives** and **adjectival decausatives**. In her subsequent analysis Meltzer suggests that this duality among Hebrew adjectival passives arises from their different derivational history. Specifically, she argues that the split between true adjectival passives and adjectival decausatives is completely parallel to the widely known split between passive and unaccusative verbs. This in turn leads her to propose that the derivation of true adjectival passives involves the same operation as the operation which is responsible for formation of verbal passives, while adjectival decausatives are derived via the operation which also forms verbal unaccusatives. She assumes these operations to be the operation of **saturation** (following Chierchia 2004 and Reinhart 2002) and the operation of **decausativization** (following Reinhart 2002, Reinhart&Siloni 2005), respectively. Since we will see that the distinction between the true

adjectival passives and the adjectival decausatives is relevant for Slavic languages as well (in the current and the next sections), and since we will consecutively examine the precision of Meltzer's analysis and its validity with respect to the Czech data in Chapter 5, it is necessary first of all to briefly present how these two operations work as well as how they apply in the adjectival domain, according to Meltzer. The following subsection is devoted to exactly this kind of preliminaries.

4.3.1 Background

4.3.1.1 *Saturation and decausativization*

The common denominator of both of these operations is that they take as their input a transitive verb and affect its external theta role¹². The two differ, however, in (i) what kinds of external theta role can be affected, (ii) how this external role is affected, and (iii) in which stage of derivation it is affected. Starting with the operation of **saturation** let us look at the series of examples in (31), (32), and (33) below. Sentences (a) contain different transitive verbs, which differ with respect to the interpretation of their external argument. The subject of the verbs in (31a) bears the Agent role, as witnessed by the fact that it cannot be [-human]. The same need for a [+human] subject display the verbs in (32a), although it is obvious that the subjects of these verbs are not assigned the Agent role (let us call this roll Sentient, following Reinhart, 2002). Finally, the sentences in (33a) involve transitive verbs whose subject is assigned the Cause role, which is compatible with both [+human] (agentive) and [-human] (non-agentive) interpretations. All of these transitive verbs have a passive alternate, as demonstrated by the sentences in (b). Moreover, notice that the theta role which has been assigned to the subject in transitive sentences (a) is still detectable in the semantics of passive sentences (b), as the by-phrases which are attached to them show. Note also that the sentences in (31b) can realize instruments, which cannot serve as subjects in (31a) (unlike the sentences

¹² While it is widely assumed that passives are derived from their transitive counterparts, as far as the unaccusative verbs are concerned one can find in the recent literature proposals according to which the opposite derivational linkage holds, i.e., that unaccusative verbs are non-derived entries, from which their transitive alternates are derived (see, e.g., Harley, 2006, Pykkänen, 2008). Such proposals are, however, problematic. First, they face difficulties in explaining why the members of the class of so-called Theme unergative verbs (e.g., shine, stink) systematically lack transitive alternates, contra unaccusative verbs. Second, they miss the generalization observed by Levin & Rappaport (1995) and Reinhart (2002) that the subject of transitive alternates of unaccusative verbs is always assigned the Cause theta role, while in many languages there is yet another set of causative vs. "non-causative" verbal alternates, the subject of the causative alternates being systematically assigned the Agent role; for a detailed discussion of the issue see Horvat & Siloni (2011), who argue that in the case of transitive vs. unaccusative alternates the operation of decausativization applies (targeting the transitive alternate), while in the case of causative vs. "non-causative" alternates the operation of causativization applies (targeting the "non-causative" alternate).

like (33a), whose subject is assigned the Cause role and can therefore always be realized as an Instrument). This is in harmony with what we have seen in (4), in the introductory part to this chapter, i.e., that instruments are licensed as long as the Agent role of a verb is present in the semantics; in this respect compare (31b) with (32b), i.e., note that in (32b) the instruments are not licensed because the external theta role that underwent the process of passivization is not an Agent, but rather a Sentient.

(31) The operation of saturation – Agent verbs

- | | |
|---|--|
| <p>(ai) Petr / *štětec namaloval obraz.
Petr / *paintbrush painted picture._{Acc}
'Petr / *A paintbrush painted a picture.'</p> | <p>(aia) Dítě / *pero napsalo dopis.
child / *pen wrote letter._{Acc}
A child / *a pen wrote a letter.'</p> |
| <p>(bi) Obraz byl namalován (Petrem / štětcem).
picture was painted._{Pas} Petr._{Inst} / paintbrush._{Inst}
'The picture was painted by Petr / with a paintbrush.'</p> | <p>(bia) Dopis byl napsán (dítětem / perem).
letter was written._{Pas} child._{Inst} / pen._{Inst}
'The letter was written by a child/with a pen.'</p> |

(32) The operation of saturation – Sentient verbs

- | | |
|---|--|
| <p>(ai) Dítě / *auto nenávidělo dlouhé výlety.
child / *car hated long trips._{Acc}
'The child / *the car hated long trips.'</p> | <p>(aia) Petr / *kámen miloval Marii.
Petr / *stone loved Marie._{Acc}
'Petr / *the stone loved Marie.'</p> |
| <p>(bi) Dlouhé výlety byly nenáviděny (dítětem / *autem).
long trips were hated._{Pas} child._{Inst} / *car._{Inst}
'Long trips were hated by the child / *by the car.'</p> | <p>(bia) Marie byla milována (Petrem/*kamenem).
Marie was loved._{Pas} by Petr._{Inst} / *stone._{Inst}
'Marie was loved by Petr / *by a stone.'</p> |

(33) The operation of saturation – Cause verbs

- | | |
|--|---|
| <p>(ai) Dítě / moře zničilo hrady z písku (na pláži).
child / sea destroyed castles._{Acc} from sand on beach
'The child / the sea destroyed the sand castles on the beach.'</p> | <p>(aia) Petr / klíč otevřel bránu.
Petr / key opened gate._{Acc}
'Petr / the key opened the gate.'</p> |
| <p>(bi) Hrady z písku byly zničeny (dítětem / mořem).
castles from sand were destroyed._{Pas} child._{Inst} / sea._{Inst}
'The sand castles were destroyed by the child / by the sea.'</p> | <p>(bia) Brána byla otevřena (Petrem / klíčem).
gate was opened._{Pas} Petr._{Inst} / key._{Inst}
'The gate was opened by P./by the key.'</p> |

If so, the operation of saturation can target any transitive verb; it affects an external theta role of this transitive input, which while not being realized syntactically is still present in the semantics where it is assigned to an existentially bound variable. The interpretation of, e.g., passive sentences (bi) above will thus formally look as follows:

(34) Event semantic representation of the sentences in (bi) above

- (a) (1bi) $\exists e \exists x [\text{NAMALOVAT}(e) \ \& \ \text{Agent}(e, x) \ \& \ \text{Theme}(e, \text{obraz})]$
- (b) (2bi) $\exists e \exists x [\text{NENÁVIDĚT}(e) \ \& \ \text{"Mental"}(e, x) \ \& \ \text{Theme}(e, \text{dlouhé výlety})]$
- (c) (3bi) $\exists e \exists x [\text{ZNIČIT}(e) \ \& \ \text{Cause}(e, x) \ \& \ \text{Theme}(e, \text{hrady z písku})]$

Now let us turn to the operation of **decausativization**. The relevant data are presented in (35) and (36). The sentences in (35) contain unaccusative alternates of the transitive verbs presented in (33a). A comparison between these unaccusatives with the passives in (33b) reveals two contrasts. First, while the passives in (33b) license by-phrases, the unaccusatives in (35) disallow them, once more in harmony with what we have already seen in (4). Second, while the passives are equipped with a normal passive morphology (see the examples in (17i), section 4.2), the unaccusatives are attached the same clitic SE we saw participating in reflexive, reciprocal, and middle formations (chapter 2). The appearance of the clitic is however unsurprising. Namely, recall that in principle this clitic has two functions – it marks that an arity operation has applied, and it absorbs the surplus Accusative case, which cannot be ordinarily assigned to an argument since the appropriate argument is missing¹³. Now, note that as far as reflexives, reciprocals, and middles are concerned, these two functions cannot actually be separated, since these three diatheses are derived syntactically in Czech (and other Slavic SE-languages), and therefore the surplus Accusative case must always be absorbed somehow, the by-product of this redundant case absorption being the "announcement" that an arity operation has taken place. What about the operation of decausativization, which – as will become clear immediately – applies (universally) in the lexicon, not in the syntax? As it is lexical the operation can in principle delete the surplus Accusative case "by itself", as indeed assumed in Reinhart (2002) and as witnessed by lexicon type language like English, where no arity operation is accompanied by any special morphology¹⁴. If so, the question arises what the actual function of the Czech clitic SE is if it is attached to unaccusative verbs like (35). Does it absorb the surplus Accusative case (as it does in the case of reflexives, reciprocals, etc.), or does it simply mark that the operation of decausativization has applied? The fact that, e.g., in French, which like Czech is a syntax type language, the unaccusative verbs are not always equipped with a special morphology (this morphology being also the clitic SE, like in Czech), seems to signify that the function of the clitic is not a (systematic) case absorption but rather a (non-systematic) sign that the operation of decausativization has applied, perhaps according to the specific language's internal pragmatic needs. Although in Czech the use of the clitic SE with unaccusative verbs appears to be obligatory (but see 4.3.4), in this work I assume that its function (once attached to unaccusative verbs) is similar to its function in French, i.e., to mark that the arity operation of decausativization has applied. Nevertheless, in

¹³ The output of the operation of reflexivization, reciprocalization as well as middle formation always realizes one argument less than the (transitive) input of these processes.

¹⁴ The exception is, of course, the operation of saturation. However, as will be clarified immediately, this operation applies universally in the syntax, regardless of the Lex-syn parameter setting.

section 5.4 I will raise the hypothesis that in Czech the function of the clitic SE is to absorb the redundant Accusative case, regardless of whether the relevant arity operation applies in the syntax (e.g., the operation of reflexivization) or in the lexicon (the operation of decausativization).

(35) The operation of decausativization – Cause verbs

- (i) Hradý z písku se zničily (*dítětem / *mořem). (ii) Brána se otevřela (*Petrem / *klíčem).
castles from sand SE destroyed (child_{-Inst} / sea_{-Inst}) gate SE opened (Petr_{-Inst} / key_{-Inst})
'The sand castles have been destroyed (by the child/by the sea.)' 'The gate has been opened (by P./by the key.)'

Coming back to the comparison between the operation of saturation and the operation of decausativization, there is yet another difference between the two. This difference appears if we look at the examples in (36a) and (36b). These examples contain supposedly unaccusative alternates of the transitive verbs in (31a) and (32a), respectively. The fact that they are all ungrammatical¹⁵ signifies that the transitives in (31a) and (32a) cannot serve as input for the operation of decausativization.

(36) The operation of decausativization – Agent and "Mental" verbs

- (ai) *Obraz se namaloval (Petrem / štětcem). (aii) *Dopis se napsal (dítětem / perem).
picture SE painted (Petr_{-Inst} / paintbrush_{-Inst}) letter SE wrote (child_{-Inst} / pen_{-Inst})
'The picture has painted (by Petr / with a paintbrush).' 'The letter has written (by a child/with a pen).'
- (bi) *Dlouhé výlety se nenáviděly (dítětem / autem). (bii) *Marie se milovala (Petrem / kamenem).
long trips SE hated (child_{-Inst} / car_{-Inst}) Marie SE loved (Petr_{-Inst} / stone_{-Inst})
'Long trips have been hated by the child / by the car.' 'Marie has been loved (by Petr / by a stone).'

It thus appears that the operation of decausativization, contrary to the operation of saturation, can target only those transitive verbs whose external theta role is Cause. Moreover, and once more unlike under saturation, this theta role is completely reduced by the operation; it is neither realized syntactically nor available in the semantics. The event semantic representation of the sentences in (35i) and (35ii), and their derivation, is given in (37a) and (37b), respectively:

¹⁵ With some difficulty, the sentences in (36) can all be rescued under the impersonal passive reading (see section 2.4); moreover, sentence (36bii) allows also a reflexive reading. This is, however, unsurprising, since, as just mentioned in the text, all these alternates are accompanied by the same morphological marker, i.e., the clitic SE.

(37) The operation of decausativization and event semantic representation of its output

(a) ZNIČIT_{Acc} (θ_{Cause} , θ_{Theme}) \hat{a} ZNIČIT SE (θ_{Theme}) $\exists e$ [ZNIČIT(e) & Theme(e , hrady z písku)]

(b) OTEVŘÍT_{Acc} (θ_{Cause} , θ_{Theme}) \hat{a} OTEVŘÍT SE (θ_{Theme}) $\exists e$ [OTEVŘÍT (e) & Theme(e , okno)]

Finally, let us briefly elaborate on the third distinction between the operation of saturation and the operation of decausativization noted above, namely the locus of their application. The issue is addressed directly, e.g., in Siloni (2002), Reinhart & Siloni (2005) and Horvath & Siloni (2008, 2010, 2012), who argue that the operation of (verbal) saturation applies universally in the syntax, while the operation of decausativization is universally a lexical process. All of these works base this claim on both theoretical and empirical grounds. For one thing, the modular nature of the UG model presupposes that each module has access to a specific type of information. Since it is widely agreed that the identity of theta-roles (i.e., the actual content of the theta-grid) of lexical entries is not accessible for the grammar 's syntactic module, no manipulation of a theta grid can occur in the syntax. This principle is formulated in Siloni (2002) as the Lexicon Interface Guideline:

(38) The Lexicon Interface Guideline (Siloni 2002)

The syntactic component cannot manipulate θ -grids: Elimination, modification or addition of a θ -role are illicit in syntax.

Given this, it follows straightforwardly that the operation of decausativization cannot occur in the syntax, since if it does, the syntax would have to manipulate the theta-grid of the derivation input by reducing its external theta role, contra the Lexicon Interface Guideline (38); moreover, the syntax would have to distinguish between different types of external theta roles in order to determine whether the external role of a given entry can or cannot be reduced (recall that the operation of decausativization reduces only Cause-roles)¹⁶. Beyond that there are two empirical considerations, discussed mainly in Horvath & Siloni (2008, 2010), which signify that the operation of decausativization applies in the lexicon, while the operation of

¹⁶ One can of course propose that syntax can manipulate a theta-grid and does have access to its content, and as such that it can, among other things, "recognize" whether a theta role is or is not a Cause. However, such a suggestion is unappealing. While in some cases it perhaps would mean nothing more than a conceptual change (what is in one theory labeled as lexical information would be in the other theory called syntactic information, the essence of this information remaining the same), in other cases it would lead to serious empirical problems. Recall in this respect, e.g., our discussion of the split between the Slavic reflexive and reciprocal verbs (chapter 2). The systematic differences between the SJA-reflexives/reciprocals and SE-reflexives/reciprocals can be hardly explained without assuming that the former are formed in the Lexicon, while the latter are derived in the syntax.

(verbal) saturation applies in the syntax. **First**, it appears that unaccusative verbs can have unique drifted meanings and can give rise to unique idioms, i.e., drifted meanings and idioms, which they do not share with their transitive counterparts. For passive verbs, on the other hand, these unique semantic drifts and idioms are not attested (see the corpus study of Hebrew idioms in Horvath & Siloni, 2010). Assuming that semantic drifts and idioms are stored in the lexicon, this systematic difference between unaccusative and passive verbs cannot be accidental. The most natural explanation for the phenomenon is that unaccusative verbs are formed lexically, i.e., they are present in the lexicon, and as such they can give rise to drifted and idiomatic meanings; passive verbs, on the other hand, are formed only post-lexically, i.e., in the syntax, and therefore the only drifted and idiomatic meanings available for them are those that they share with their transitive derivational base. **Second**, following Friedmann (2000), Reinhart (2002), and Reinhart & Siloni (2005), Horvath & Siloni (2008) argue in favor of the existence of so called frozen entries, or more precisely, entries whose external Cause role is frozen. These are entries whose external theta-role is available for different lexical processes, in particular the operation of decausativization and the process of adjectivization (see also Siloni & Preminger, 2009, for argumentation that frozen roles are relevant for the process of nominalization as well), but due to the inertness of their (external) theta-roles they are banned from entering the syntax. Horvath and Siloni formulate two arguments in favor of the existence of such frozen roles, which in turn supply further support for their claim regarding the lexical vs. syntactic application of the operation of decausativization and the operation of saturation, respectively: First, it is known that sporadically, in different languages, different unaccusative verbs lack a transitive alternate.¹⁷ Viewing these unaccusative verbs as basic non-derived entries is, however, problematic, since it would then be difficult to explain the fact that the Theme-subjects of these verbs are merged internally, while there is another group of one-place verbs selecting the Theme role (so-called theme-unergatives), whose (Theme) subjects are merged externally. This is illustrated by the two Hebrew examples in (39). As observed in Shlonsky (1987), Hebrew verbs whose subjects are merged internally, but not verbs whose subjects are merged externally, allow so called simple inversion (V-initial) structures. The examples in (39) contain one place predicates, whose argument is assigned the Theme role. Neither of the two verbs has a transitive alternate, yet they differ with respect to the simple inversion possibility. While the theme-unergative verb *lehasriax* ('stink') disallows it (39a), the verb *lehagia* ('arrive') allows it (39b).

¹⁷ Horvath and Siloni report that transitive verbs whose Cause role is frozen in one language very often exist in other languages, which further strengthens the validity of their insight.

Under the assumption that the former is a non-derived basic entry, while the latter is derived from a (frozen) transitive verb, this distinction is accounted for by decausativization like any other unaccusative verb.

(39) Theme-unergatives vs. unaccusatives whose transitive counterpart is frozen

- (a) *Hisrixu shlosa xazirim.
stunk three pigs
'Three pigs stunk.'
- (b) Higiū shalosh xavilot.
arrived three packages
'Three packages arrived.'

Second, as just stated, transitive verbs whose external Cause role is frozen can feed the operation of decausativization (they have unaccusative alternates); however, they cannot give rise to passive alternates. This deficiency follows if the operation of saturation applies (only) in the syntax, since these (frozen) entries cannot "survive" outside the lexicon - the reason being that the frozen (inert) role will not be interpretable (as a bound variable) in the semantics (but see below for more precise formulation of this implication). Let us illustrate this once more with two examples from Hebrew. The unaccusative verb *hitnapeax* ('inflated') (40aiii) has the transitive alternate *nipeax* (40ai) and, as expected, also the passive alternate *nupax* (40aai). The unaccusative verb *naval* ('wilt') in (40biii), on the other hand, has no transitive alternate (40bi); a passive alternate (40bii) is thus missing as well.¹⁸

(40) The correlation between the availability of transitive and passive verbal alternates

'inflate':	(ai)	<i>nipeax</i> _{Tran}	(aai)	<i>nupax</i> _{Pas}	(aiii)	<i>hitnapeax</i> _{Dec}
'wilt':	(bi)	* <i>hinbil</i> _{Tran}	(bii)	* <i>hunbal</i> _{Pas}	(biii)	<i>naval</i> _{Dec}

Following Horvath & Siloni's (2008, 2010) argumentation (which is based on the existence of unaccusative verbs with unique idioms and semantic drifts, while no such idioms and drifts are attested for verbal passives; and on the existence of unaccusative verbs whose transitive counterpart is frozen, while there are no passive verbs whose transitive counterpart is frozen) I adopt their claim that the operation of decausativization applies universally in the lexicon, while the operation of saturation applies universally in the syntax. Nevertheless, for the sake of providing a clear presentation of Meltzer's account of the two classes of adjectives in

¹⁸ In fact, there is yet another (third) asymmetry closely related to the existence of frozen theta roles, reported by Horvath & Siloni (2008). Namely, like ordinary non-frozen Cause verbs and unlike two-place unaccusative verbs (e.g. *escape*, *appeal*, etc.) that lack an external role altogether, entries whose external Cause role is frozen can give rise to adjectival decausatives. However, unlike ordinary non-frozen Cause verbs and like two-place unaccusative verbs, they do not have true adjectival passives counterparts. For the illustration of this third type of argument in favor of the existence of frozen theta roles the reader is referred to subsection 4.3.4.

Hebrew, to which we will return immediately, it must already be noted now that the operation of saturation appears to be a syntactic process in the verbal domain alone, while when it is involved in the derivation of adjectival passives it seems to already occur in the lexicon. This claim is advanced in Horvath & Siloni (2008, 2010), who show that true adjectival passives, in contrast to verbal passives, do have unique drifted and idiomatic meanings, and therefore must be present in the lexicon. From the technical point of view then, the lexical application of the operation of saturation means that it marks an appropriate theta role for subsequent existential closure in the semantics. It is obvious, however, that as far as frozen roles are concerned, this difference has no real effect – frozen roles, i.e., being inert outside the lexicon, cannot be assigned to an existentially closed variable in the semantics, regardless of whether they were marked for this assignment in the lexicon or in the syntax. Note that this **lexical** marking of the appropriate theta role for subsequent existential closure in the semantics cannot be a priori rejected as irrelevant for the verbal domain either, contrary to what we have stated in a simplified manner earlier in the text in the presentation of the second argument in favor of the existence of frozen theta roles, exemplified in (40). Recall, however, that verbal passives, unlike true adjectival passives, do not have unique drifted or idiomatic meanings. Given this, together with the fact that there are no passive alternates of transitive verbs whose external theta role is frozen, it follows that in the verbal domain the operation of saturation applies only in the syntax.

Having presented the operation of saturation and the operation of decausativization, (41) and (42) summarize the main points, which will be relevant for our discussion in the remainder of this work:

(41) The operation of saturation

- (i) Applies syntactically in the verbal domain and lexically when involved in the derivation of adjectival passives, and targets any external theta role of its transitive input (in the remainder of this work we will confine ourselves to the cases in which this external role is either an Agent or a Cause).
- (ii) This external theta role is saturated, i.e., not realized syntactically but still present in the semantics, unless it is frozen.
- (iii) Targeting frozen roles by saturation is possible only if the operation applies lexically, i.e., only if the operation is involved in the derivation of adjectival passives; in such case, however, the resulting adjective will never be a part of the active vocabulary of a given language, since the targeted theta role will be not able to undergo existential closure in the semantics.

(42) The operation of decausativization

- (i) Applies in the lexicon and targets a transitive derivational base whose external theta role is a Cause.
- (ii) This external theta role is eliminated altogether, i.e., not realized syntactically and not present in the semantics.
- (iii) A resulting unaccusative entry will be a part of the active vocabulary of a given language regardless of the question whether the targeted theta role is frozen or not.

4.3.1.2 True adjectival passives and adjectival decausatives

Now that we have presented the operation of saturation and the operation of decausativization, let us return briefly to Meltzer's analysis of the two classes of adjectival passives which she has discovered in Hebrew, i.e., the class of true adjectival passives and the class of adjectival decausatives. As already noted, she explains this dichotomy with the proposal that the derivation of the former of these two classes involves the operation of saturation, while in the derivation of the latter the operation of decausativization is utilized. That is, she suggests that the operation of saturation and the operation of decausativization are both available not only in the verbal domain but also in the adjectival domain, where they apply together with the actual process of "adjectivization" or after the process of "adjectivization" takes place (as already mentioned, Meltzer does not take a position on these alternatives, see footnote 1 in the introductory part to this chapter and the discussion below). The contribution of the process of "adjectivization" to the derivation as a whole is that (i) it changes an event argument of the derivational base¹⁹ to the state argument (as adjectives denote states, not events) and (ii) it marks its internal theta role for lambda-abstraction (for details see Meltzer 2011):

(43) Adjectivization – Meltzer 2011

VERB/ROOT (θ_{EXT} , θ_{INT} , e) \rightarrow ADJECTIVE (θ_{EXT} , $\theta_{INT \lambda-ABS}$, s)

The reader should be aware that the depiction of Meltzer's process of adjectivization in (43) is not precise, since according to (43) the output of this process is an adjective. This is, however, not in harmony with Meltzer, as she proposes that the formation of adjectives involves, apart of the process of adjectivization, also one of the two operations described in

¹⁹ Meltzer assumes that this derivation is based on a root unspecified for category. She justifies her suggestion by the fact that some Hebrew adjectival decausatives seem to be morphologically less complex than their verbal counterparts (Meltzer 2011:85-86).

(41) and (42). We will return to this point in subsection 4.3.4, where we will present an interesting piece of morphological evidence, which can be an indication that in Czech the operation of decausativization applies after (and not together with) the process of adjectivization, and therefore that the adjectivization output is indeed an adjective, specifically a true adjectival passive (further and more decisive evidence will be presented in chapter 5). Meanwhile, in the three schematic examples below, I will mark the unclear categorical status of the output of Melzer's process of adjectivization, as well as the unclear status of the output of the operations of saturation and decausativization by three question marks.²⁰

The combined effect of the process of adjectivization in (43) with each one of the two operations, i.e., saturation (41) and decausativization (42), is illustrated in (44), (45) and (46) by examples from Hebrew. The derivational input in (44) is the Agent root KATAV ('write'). This root can give rise to the true adjectival passive KATUV ('written') (44a) via the process of adjectivization and the operation of saturation²¹, but its adjectival decausative realization, shown in (44b) by the same form KATUV does not exist. This is expected, because the operation of decausativization cannot target a theta grid that does not contain the Cause role.

(44) The formation of adjectival passives and adjectival decausatives in Hebrew – Agent roots

(a) adjectival passive formation

adjectivization: KATAV_{???} (θ_{AGENT} , $\theta_{\text{THEME} \rightarrow \lambda\text{-ABS}}$, S)

KATAV_{ROOT} (θ_{AGENT} , θ_{THEME} , e)

KATUV_{ADJ} ($\theta_{\text{AGENT} \rightarrow \text{SAT}}$, $\theta_{\text{THEME} \rightarrow \lambda\text{-ABS}}$, S)

saturation: KATAV_{???} ($\theta_{\text{AGENT} \rightarrow \text{SAT}}$, θ_{THEME} , e)

(b) adjectival decausative formation

adjectivization: KATAV_{???} (θ_{AGENT} , $\theta_{\text{THEME} \rightarrow \lambda\text{-ABS}}$, S)

KATAV_{ROOT} (θ_{AGENT} , θ_{THEME} , e)

*** KATUV_{ADJ} ($\theta_{\text{THEME} \rightarrow \lambda\text{-ABS}}$, S)**

decausativization: * KATAV_{???} (θ_{THEME} , e)

The derivational input in (45) is the Cause root HIKPI ('freeze'). As expected, this root can give rise to the true adjectival passive MUKPA ('frozen') (45a) via the process of adjectivization and the operation of saturation, as well as to the adjectival decausative KAFU ('frozen') (45b) via the process of adjectivization and the operation of decausativization. The

²⁰ Note that exactly the same problem arises also as far as the input of these processes is concerned.

²¹ As mentioned above, Horvath & Siloni (2008, 2010) argue that the operation of saturation in the adjectival domain is a lexical process. Meltzer, who adopts their analysis, marks the lexical application of saturation by the index SAT.

fact that these two particular adjectives are morphologically distinct is not a general phenomenon. E.g., in the majority of cases in Czech, as we will see, there is only one form which is ambiguous between the two readings (see also the one English form used as a gloss for both of the two distinct adjectival shapes in Hebrew); moreover, even in Hebrew most adjectives are ambiguous between being true adjectival passives and adjectival decausatives (see Meltzer 2011:85-91).

(45) The formation of adjectival passives and adjectival decausatives in Hebrew – Cause roots

(a) adjectival passive formation

adjectivization: $HIKPI_{???} (\theta_{CAUSE}, \theta_{THEME \rightarrow \lambda-ABS}, s)$

$HIKPI_{ROOT} (\theta_{CAUSE}, \theta_{THEME}, e)$ $MUKPA_{ADJ} (\theta_{CAUSE \rightarrow SAT}, \theta_{THEME \rightarrow \lambda-ABS}, s)$

saturation: $HIKPI_{???} (\theta_{CAUSE \rightarrow SAT}, \theta_{THEME}, e)$

(b) adjectival decausative formation

adjectivization: $HIKPI_{???} (\theta_{CAUSE}, \theta_{THEME \rightarrow \lambda-ABS}, s)$

$HIKPI_{ROOT} (\theta_{CAUSE}, \theta_{THEME}, e)$ $KAFU_{ADJ} (\theta_{THEME \rightarrow \lambda-ABS}, s)$

decausativization: $HIKPI_{???} (\theta_{THEME}, e)$

Finally, the root HINBIL in (46) is a hypothetical root which never realizes as a transitive verb, since its Cause role is frozen (that the Cause role is frozen is marked by putting the role into brackets). This root gives rise to both true adjectival passives (46a) as well as adjectival decausatives (46b) like the Cause root HIKPI in (45). However, and contra HIKPI, only the adjectival decausative alternate can be realized, since only this alternate can enter the syntax.

(46) The formation of adjectival passives and adjectival decausatives in Hebrew - roots whose Cause is frozen (frozen role is marked by parenthesis)

(a) adjectival passive formation

adjectivization: $NAVUL_{???} ((\theta)_{CAUSE}, \theta_{THEME \rightarrow \lambda-ABS}, s)$

$HINBIL_{ROOT} ((\theta)_{CAUSE}, \theta_{THEME}, e)$ $\#NAVUL_{ADJ}((\theta)_{CAUSE \rightarrow SAT}, \theta_{THEME \rightarrow \lambda-ABS}, s)$

saturation: $NAVUL_{???} ((\theta)_{CAUSE \rightarrow SAT}, \theta_{THEME}, e)$

(b) adjectival decausative formation

adjectivization: $NAVUL_{???} ((\theta)_{CAUSE}, \theta_{THEME \rightarrow \lambda-ABS}, s)$

$HINBIL_{ROOT} ((\theta)_{CAUSE}, \theta_{THEME}, e)$ $NAVUL_{ADJ} (\theta_{THEME \rightarrow \lambda-ABS}, s)$

decausativization: $NAVUL_{???} (\theta_{THEME}, e)$

We are ready now to approach the Czech (and other Slavic) data. Three things are important to keep in mind for the following exposition:

(i) Entries²² whose external argument can be interpreted only as an Agent can undergo the operation of saturation only. Their adjectival forms are thus expected to be exclusively true adjectival passives.

(ii) Entries whose external argument can be interpreted as a Cause can undergo either the operation of saturation or the operation of decausativization. Their adjectival forms are thus expected to be either true adjectival passives or adjectival decausatives.

(iii) Adjectival counterparts of entries whose external Cause role is frozen are expected to be exclusively adjectival decausatives, as their true adjectival passive alternates are banned from entering the syntax (due to retaining the inert Cause role, which would be uninterpretable in the semantics).

In what follows we will see that all these predictions are borne out in Czech (4.3.2, 4.3.3 and 4.3.4) and other Slavic languages (4.4). Likewise, it will be shown that Czech and other Slavic adjectival passives entail a prior transitive/passive event, while Czech and other Slavic adjectival decausatives entail a prior unaccusative event; two phenomena will serve as testing tools – agent detecting elements and contradictory contexts. Moreover, as already mentioned in subsection 4.3.4 we will see that Czech supplies a very systematic morphological phenomenon that can serve as a clue that in Czech the process of adjectivization applies prior to and separately from the operation of decausativization. This point will be further elaborated in chapter 5.

4.3.2 Entries whose external role is an Agent

Let us start with (transitive) entries whose external role is an Agent, i.e., entries like *drink*, *program*, *dress*, *tidy*, etc., which, if realized as verbs, must have a [+human] (or "at least" an [+animate]) subject. The following present copula examples demonstrate that adjectival passive realizations of these entries display the properties of true adjectival passives. First of all, recall from the introduction to this chapter the generalization regarding the instruments, agent-oriented modifier and by-phrase. As illustrated in (4), these elements are licensed only

²² Contra Meltzer, who suggests that the derivational base for adjective formation is a root unspecified for its category, I am refraining here from adopting any position regarding the question of whether in Czech the input for the derivation is a (category-less) root or a verb; for some hypotheses on the issues see section 5.4.

in the presence of the Agent role in the semantics. Indeed, the underlined instruments (a/b), agent-oriented modifier (c), and by-phrase (d), indicate that the Agent role of the adjectives in (47) has not been completely deleted or otherwise "removed". Instead, it seems that it has been saturated in the syntax, and as such it is still present in the semantics, exactly as observed by Meltzer for Hebrew.

(47) Passive nature of agentive adjectival passives

- (a) Obraz je namalovaný pestrými barvami.
Picture is painted various colors-Ins.
"The picture is painted in various colors."
- (b) Pes je přivázaný provazem.
Dog is tied rope-Ins
"The dog is tied with a rope."
- (c) Dítě je pečlivě učesané.
Child is carefully combed
"The child's hair is carefully combed."
- (d) Sedadla jsou obsazena starými lidmi.
Seats are taken old people-Ins.
"The seats are taken by old people."

The following series of examples further shows that agentive adjectival passives entail a prior transitive / passive event, once more in harmony with Meltzer's findings in Hebrew. This is shown by putting the adjectives into contradictory contexts. E.g. it is impossible for a letter to be written if nobody wrote it, etc.

(48) (Transitive) event entailment of agentive adjectival passives

- (a) Dopis je napsaný, aniž byl napsán. (contradiction)
Letter is written, without was written-Pas.
"The letter is written without having been written."
- (b) Dům je postavený, aniž byl postaven. (contradiction)
House is built, without was built-Pas.
"The house is built without having been built."
- (c) Auto je opravené, aniž bylo opraveno. (contradiction)
Car is repaired, without was repaired-Pas.
"The car is repaired without having been repaired."
- (d) Bankovka je zfalšovaná, aniž byla zfalšována. (contradiction)
Banknote is forged, without was forged-Pas.
"The banknote is forged without having been forged."

The agentive adjectival passives in Czech thus display exactly the same properties as the properties reported by Meltzer for analogous Hebrew adjectival formations – their Agent role is present in the semantics and they entail a prior event. As we will see in section 4.4 exactly the same holds for agentive adjectival passives in all other Slavic languages, providing a robust empirical support for Meltzer's claim that the derivation of these adjectives involves the operation of saturation. However Czech and Slavic languages in general call into question the universal validity of Meltzer's (2009) suggestion that the event entailment of these adjectives is tightly connected to the presence of the Agent role in their argument structure. Although Meltzer (2011) adopts a somewhat "weaker" position, claiming that the event entailment of Hebrew adjectival passives follows from the presence of any external role (i.e., not just the Agent²³), the straightforward consequence of this generalization is that Hebrew adjectival decausatives, unlike Hebrew true adjectival passives, do not necessarily entail a previous event. As we will see immediately, adjectival decausatives in Czech (4.3.3 and 4.3.4) and other Slavic languages (4.4) do entail an event, and this entailment is inevitable.

4.3.3 Entries whose external role is a Cause

As noted, entries whose external theta role is a Cause are expected to be able to undergo either the operation of Saturation (41) or the operation of Decausativization (42), giving rise to verbal/true adjectival passives or verbal/adjectival decausatives respectively. While in the verbal domain these two voices are morphologically distinct in Czech (and perhaps cross-linguistically), there is no morphological difference between the Czech true adjectival passives and adjectival decausatives (but see 4.3.4). If so, we expect the adjectival passive realization of these entries to be ambiguous between the true adjectival passives and the adjectival decausatives reading. As exemplified in (49) this prediction is borne out:

(49) Ambiguity of adjectival passives derived from entries whose external role is a Cause

- (a) Železo je roztavené, aniž bylo roztaveno (no contradiction)
Iron is melted, without was melted-Pas.
"The iron is melted without having been melted."
- (b) Loď je potopená, aniž byla potopena. (no contradiction)
Ship is sunken, without was sunk-Pas.
"The ship is sunken without having been sunk."

²³ According to Meltzer, it depends on the speaker whether the implicit external role of the events entailed by Hebrew adjectival passives are perceived as Agent or Cause.

- (c) Okno je zamlžené, aniž bylo zamlženo. (no contradiction)
 Window is steamed up, without was steamed up-Pas.
 "The window is steamed up without having been steamed up."
- (d) Sklenice je rozbitá, aniž byla rozbita. (no contradiction)
 Glass is broken, without was broken._{pass}.
 "The glass is broken without having been broken."

The examples in (49) show that the context that was contradictory for agentive adjectival passives in (48) is not contradictory for adjectival passives derived from entries whose external role is a Cause. This is so because the contradiction imposing addition to the copular sentences above is too "weak", as it contradicts a possible transitive event only. E.g., the iron can be melted without something having melted it²⁴. Once the contradictory context is "strengthened" so that it contradicts a possible unaccusative event, the contradiction appears.

(50) (Transitive / unaccusative) event entailment of adjectival passives derived from entries whose external role is a Cause

- (a) Železo je roztavené, aniž se roztavilo. (contradiction)
 Iron is melted, without SE melted-Unac.
 "The iron is melted without melting."
- (b) Loď je potopená, aniž se potopila. (contradiction)
 Ship is sunken, without SE sunk-Unac.
 "The ship is sunken without sinking."
- (c) Okýnko je zamlžené, aniž se zamlžilo. (contradiction)
 Window is steamed up, without SE steamed up-Unac.
 "The window is steamed up without steaming up."
- (d) Sklenice je rozbitá, aniž se rozbila. (contradiction)
 Glass is broken, without SE broke-Unac.
 "The glass is broken without breaking."

It is worth noting, that like agentive adjectival passives, the adjectival passives derived from entries whose external role is a Cause can license agent-oriented elements. Since these elements impose an (implicit) Agent and therefore the passive reading, we can expect that even the "weak" contradictory context will be contradictory for these adjectives if accompanied by such elements. That this prediction holds is demonstrated by the sentences in

²⁴ The fact that things do not happen by themselves (including *iron melting*) is of course part of our world knowledge; however, it is in the domain of our language capacity whether we perceive these changes as caused by *something* or not.

(51a) and (51b), which differ minimally from the sentences in (49a) and (49c), respectively, by including an instrument-like element:

(51) Imposing the passive reading on adjectival passives derived from entries whose external role is a Cause

- (a) Železo je roztavené slabým žářem, aniž bylo roztaveno. (contradiction)
Iron is melted weak heat-Ins., without was melted-Pas.
"The iron is melted by weak heat without having been melted."
- (b) Okýnko je zamlžené párou, aniž bylo zamlženo. (contradiction)
Window is steamed up steam-Ins., without was steamed up-Pas.
The window is steamed up by steam without having been steamed up."

Based on the data presented so far we can conclude that the Czech adjectival passives derived from entries whose external role is a Cause are ambiguous between the passive and the decausative reading, as expected under Meltzer's analysis. However, contrary to Meltzer's observation for Hebrew, it appears that in Czech not only true adjectival passives but also adjectival decausatives necessarily entail a previous event. Before proceeding, a note on this divergence between Czech (and – as will be shown in 4.4 – other Slavic languages) and Hebrew is necessary here. In principle two possibilities come to mind. **Either** these two languages indeed differ in this respect, i.e., it can be that for some reason in Hebrew, contrary to Czech, the event entailment of true adjectival passives and adjectival decausatives is crucially dependent on the presence of the external argument in the semantics; **or** the difference is only apparent and in fact both languages only differ in the richness of their lexical inventory. Although further research is probably needed here, I tend to believe that the latter of these two options is more likely, given the following considerations.

Meltzer (2011) bases her claim regarding the absence of the event entailment of Hebrew adjectival decausatives on the following kind of examples (see also the examples in (8) and (9) in the introduction to this chapter):

(52) Hebrew adjectival decausatives and the absence of an event entailment (Meltzer 2011:63)

- ha-madaf **akum**, aval hu me'olam lo hit'akem; hu yucar kaxa. (no contradiction)
the-shelf crooked but it never not bent it was+made so
'The shelf is crooked, but it never got bent; it was made that way.'

The sentence in (52) contains the adjectival decausative *akum* ('crooked'). The adjective bears the typically passive morphology, namely the XaXuX template, and the sentence is not

contradictory, unlike the Czech sentences in (50). However, the matter of fact is that the Hebrew adjective *akum* has two equivalents in Czech:

(53) Two Czech equivalents of the Hebrew adjectival decausative *akum*

- (a) Polička je **křivá**, aniž se někdy zkřivila; byla tak vyrobena. (no contradiction)
 Shelf is crooked, without sometime having been bent; was so made
 'The shelf is crooked, but it never became bent; it was made that way.'
- (b) Polička je **zkřivená**, aniž se někdy zkřivila (# byla tak vyrobena). (contradiction)
 Shelf is crooked, without sometime having been bent; was so made
 'The shelf is crooked, but it never became bent; it was made that way.'

The sentence in (53a) contains the adjective *křivá* ('crooked'), which does not bear a passive morphology, and the sentence is not contradictory, exactly like the parallel Hebrew sentence in (52). This is, however, not the case if we look at (53b). Here the adjective is equipped with the passive morphology and the sentence is inevitably contradictory; moreover, the addition of *byla tak vyrobena* ('it was made that way') sounds very odd in (53b), as nothing can be made *zkřivená* (compare with (2) where the same observation made by Embick 2004 for English was presented). The comparison of the Hebrew sentence in (52) with the pair of the Czech sentences in (53) thus suggests that the real difference between the two languages can be due to the fact that Czech is lexically richer than Hebrew in a specific respect. Namely, it can be that Hebrew adjectival decausatives are actually very often (and according to Meltzer perhaps always) lexically ambiguous between the event entailing decausative reading and the simple "stative" reading (in Embick's 2004 terms), which lacks such entailment; recall also that the same ambiguity was reported by Embick (2004) for English (see (3)). A further illustration of this possible dichotomy is provided in (54) and (55).

(54) Hebrew adjectival decausatives and the absence of an event entailment (Meltzer p.c.)

- Ha-jam **kafu** aval hu me'olam lo kafa; hu nocar kaxa. (no contradiction)
 the-sea frozen but it never not froze; it was+created so
 'The sea is frozen, but it never froze; it was created that way.'

The Hebrew sentence in (54) contains the adjectival decausative *kafu* ('frozen') and it is not contradictory, similarly to (52). This Hebrew adjective has once more two, or perhaps even

three, equivalents in Czech; moreover, note that unlike in (53), this time these equivalents are not related morphologically:

(55) Two Czech equivalents of the Hebrew adjectival decausative *kafu*²⁵

- (a) Moře je **ledové/ledovité**, aniž někdy zmrzlo; vzniklo tak. (no contradiction)
sea is icy, without sometime froze; has-been-formed so
'The sea is icy, but it never froze; it was created that way.'
- (b) Moře je **zmrzlé**, aniž někdy zmrzlo (# vzniklo tak). (contradiction)
sea is frozen, without sometime froze; has-been-formed so
'The sea is frozen, but it never froze; it was created that way.'

The sentence in (55a) contains the adjectives *ledový* and *ledovitý* (both glossed as 'icy'). Neither of them bears a passive morphology nor entails an event as witnessed by the fact that the sentence is not contradictory, similarly to the Hebrew sentence in (54) – the sea can be both *ledové* (in Hebrew *kafu*), i.e., "very cold" or "cold like ice", and *ledovité* (in Hebrew *kafu*), i.e., "containing ice" or "covered by ice", without imposing any prior event which made the sea so. The sentence in (55b), on the other, demonstrates again, that once the adjective is equipped with the passive morphology, it entails a prior event, since the negation of that event brings about a contradiction.

Now, under this scenario, one can expect, among other things, that Czech adjectival decausatives may also display the above kind of ambiguity²⁶, although perhaps not as frequently as their Hebrew counterparts. That there indeed are such ambiguous cases is illustrated in the reminder of this subsection:

(56) Some Czech adjectival passives/decausatives do not necessarily entail a prior event

- (a) Místnost je **uklizená**, aniž byla uklizena. (no contradiction)
Room is organized, without was organized._{Pas}
'The room is organized, without having been organized.'
- (b) Dveře jsou **zavřené**, aniž se zavřely. (no contradiction)
door are closed, without SE closed._{Unac}
'The door is closed, without closing.'

²⁵ Note that the adjective *zmrzlé* ('frozen') in (33b) does not bear the usual –ný/tý adjectival morphology we have seen so far; similarly, the unaccusative verb *zmrzlo* ('froze') is not accompanied by the clitic SE. This particularity of Czech adjectival decausatives will be discussed in subsection 4.3.4.

²⁶ Another expectation is, of course, that after all (i.e. contra the picture reported by Meltzer) there can be (isolated) cases of Hebrew adjectival decausatives which do inevitably entail an event. As we are concerned here primarily with Czech and other Slavic languages, I will not explore this question here.

The sentences in (56a) and (56b) contain the adjective *uklizená* ('organized'), whose derivational base contains the Agent role, and the adjective *zavřené* ('closed'), whose derivational base contains the Cause role, respectively, but, unlike the parallel sentences in (48) and (50), they are not contradictory, showing that these adjectives do not (necessarily) entail an event. First of all note that the non-contradictory status of the sentences like (56a) seems to contradict Meltzer's generalization regarding Hebrew, where "all [agentive verbs] have 'true' adjectival passive alternates, which are interpreted as entailing an implicit argument (specifically an Agent, since the transitive base is agentive)" (Meltzer 2011:73), and therefore entail a previous event. Assuming that Meltzer's above generalization regarding Hebrew is correct, does it mean that Czech and Hebrew also differ in this respect? That is, while I believe that Meltzer's claim regarding the correlation between the presence of the external argument and a prior event entailment is in principle correct (just too strong, as will be suggested below), does it mean that adjectival realizations of Czech agentive verbs do not necessarily have the Agent role present in their interpretation, and thus do not necessarily entail an event, unlike adjectival realizations of Hebrew agentive verbs? Not necessarily, as will become clear as we will proceed.

Firstly, let us return to the sentences in (56). Once these sentences are equipped with an agent detecting element, the (transitive/passive) event entailment of the adjective *uklizená* ('organized') and the adjective *zavřené* ('closed') is isolated, as demonstrated by the contradictory status of the sentences in (57):

(57) Agent detecting elements impose a transitive event entailment on adjectival passives/decausatives

- (a) Místnost je pečlivě uklizená, aniž byla uklizena. (contradiction)
 room is carefully organized, without was organized._{pas}
 "The room is carefully organized, without having been organized."
- (b) Dveře jsou záměrně zavřené, aniž byly zavřeny. (contradiction)
 door are intentionally closed, without were closed._{pas}
 'The door is intentionally closed, without having been closed.'

It thus seems that adjectival realizations of some Czech agentive verbs are ambiguous between the event entailing reading (i.e., true adjectival passive reading) and the stative reading, similarly, e.g., to the English adjective *closed* (3), and perhaps the Hebrew adjectival decausatives like *akum* (52) or *kafu* (54)²⁷. What about the adjective *zavřené* ('closed') in

²⁷ This kind of ambiguity can in principle exist also for adjectival realizations of Hebrew agentive verbs. But, as already stated, we are concerned here primarily with Czech and other Slavic languages and so we will not

(57b)? The agent oriented modifier *záměrně* (intentionally) makes this adjective entail a transitive/passive event, like the modifier *pečlivě* ('carefully') does in (57a). Can the unaccusative event entailment of this adjective be isolated as well? As the sentence in (58) shows, the answer is positive:

(58) Unaccusative event entailment of Czech adjectival decausatives I

- (a) Ty dveře byly včera otevřené, ale dnes jsou **zavřené**, aniž byly zavřeny. (no contradiction)
that door were yesterday open, but today are closed, without were closed._{PAS}
'The door was open yesterday, but today it is closed without having been closed.'
- (b) Ty dveře byly včera otevřené, ale dnes jsou **zavřené**, aniž se zavřely. (contradiction)
that door were yesterday open, but today are closed, without SE closed._{Unac}
'The door was open yesterday, but today it is closed without having closed.'

The sentences in (58) describe a situation that is necessarily a result of the *closing door* event – if the door was open yesterday and it is closed today, then it follows that sometime between these two time-points the door underwent some closing event. The fact that the sentence in (58a) is not contradictory despite the supplement *aniž byly zavřeny* ('without having been closed'), which negates the transitive/passive event entailment, signifies that the adjectival decausative *zavřené* ('closed') can entail the unaccusative event without entailing the transitive/passive event. This is further corroborated by the sentence in (58b), which involves the supplement *aniž se zavřely* ('without closing'). Since this "stronger" contradictory context negates not only a transitive/passive event but also an unaccusative event, the contradiction appears (compare with (49) and (50) above).

Now, one can perhaps question the validity of the examples like (58) by saying that they in fact do not reflect speakers' linguistic capacities and judgments but rather our world knowledge and logical implication. Moreover, one can claim the same regarding the contradictory sentences in (50). E.g., it can be claimed that the contradictory reading of the sentence in (50c), repeated below, follows from the fact that it is hard to think about a window, which was created steamed; rather, it had been created and only than became steamed.

(50) Unaccusative event entailment of Czech adjectival decausatives II

- (c) Okýnko je zamlžené, aniž se zamlžilo. (contradiction)
window is steamed up, without SE steamed up._{Unac}
'The window is steamed up without having steamed up.'

explore this question here. It is necessary to note, however, that if there are such ambiguous cases of agentive adjectival passives in Hebrew, it is still in harmony with Meltzer's analysis, as will become clear in the end of this subsection.

This is, however, unlikely. Let us return to our two original sentences in (56), repeated below (with the addition of a hyphen to make the different prefixes attached to the adjectives and verbs involved clearer²⁸), and compare it with the two parallel sentences in (59).

(56) Some Czech adjectival passives/decausatives do not necessarily entail a prior event

- (a) Místnost je **u-klizená**, aniž byla u-klizena. (no contradiction)
 room is organized, without was organized._{pas}
 "The room is organized, without having been organized."
- (b) Dveře jsou **za-vřené**, aniž se za-vřely. (no contradiction)
 door are closed, without SE closed._{Unac}
 'The door is closed, without closing.'

(59) Event entailment does not follow from our world knowledge and logical implications

- (a) Místnost je **po-klizená**, aniž byla po-klizena. (contradiction)
 room is organized, without was organized._{pas}
 "The room is organized, without having been organized."
- (b) Dveře jsou **do-vřené**, aniž se do-vřely. (contradiction)
 door are closed, without SE closed._{Unac}
 'The door is closed, without closing.'

The adjectives in (56) are stative, denoting states and only states (they do not entail any prior event) – the room is "organized" (56a) and the door is "closed" (56b). Now, look at (59). The sentences in (59) differ minimally from those in (56), the only difference being the shape/prefix of the two adjectives – *uklizená* (56a) vs. *poklizená* (59a) and *zavřené* (56b) vs. *dovřené* (59b). The states that the two adjectives in (59) denote are exactly the same as the states denoted by their alternates in (56), i.e., the room is "organized" (59a) and the door is "closed" (59b). Crucially, however, the adjectives in (59) inevitably entail a prior event, contra (56)²⁹. If the states denoted in (56) and (59) are the same, yet the adjectives in (56) and (59) differ with respect to the prior event entailment, it follows straightforwardly that **this event entailment does not result from our world knowledge**.

One final note is in order here. Namely, one can perhaps claim, that the adjectival prefixes in (59) are in fact agentive elements exactly as agent oriented modifiers. While there could

²⁸ The English glosses of the examples remain the same, as there is no way for these particular prefixes to be glossed, exactly as there is no way to gloss the isolated adjectival stems *-klizená* and *-vřené* and the isolated verbal stems *-klizena* and *-vřely*, since these stems are meaningless unless they are attached an appropriate prefix. That is, although the adjectives and verbs in (56) and (59) are clearly morphologically linked (due to the shared stems), they should be considered lexically independent units.

²⁹ It will be suggested immediately that the adjectives in (56) and (59) differ in the sense that the former but not the latter are ambiguous between the event entailing reading, which is based on argument structure, and the drifted stative reading, which lacks an argument structure.

probably be a certain basis for such a claim with respect to the true adjectival passive *poklizená* (meaning *organized* with the nuance of *negligence*), there is no way that this claim could be defended with respect to the adjectival decausative *dovřené* (meaning *closed* with the nuance *to the end*). As the sentence in (60) shows, the weak contradictory context, which negates the transitive/passive event, is not enough to make the sentence contradictory.

(60) Verbal/adjectival prefixes cannot be considered agentive elements

Dveře jsou **do-vřené**, aniž byly dovřeny. (no contradiction)
door are closed, without were closed
'The door is closed, without having been closed.'

Let us thus summarize our findings. We have observed that Czech adjectival passives fall into two groups – true adjectival passives and adjectival decausatives – exactly as observed by Meltzer for Hebrew. However, the two languages seem to differ with respect to the event entailment of these adjectival classes. Namely, Meltzer reports that in Hebrew true adjectival passives always entail a prior event while adjectival decausatives never entail such an event. In Czech, on the other hand, both true adjectival passives and adjectival decausatives undoubtedly entail a prior event; moreover, the event entailed by true adjectival passives is transitive, while the event entailed by adjectival decausatives is unaccusative (a fact that further confirms the correctness of Meltzer's basic insight). Beyond that, we have pointed out that in Czech there are cases of true adjectival passives, as well as adjectival decausatives, that can but need not entail a prior event. How can these cases be explained?

As noted, I believe that Meltzer's claim regarding the correlation between the presence of the external argument and a prior event entailment is correct in principle, but apparently it is too strong, at least with respect to the Czech data. Let us, therefore, first propose a somewhat weaker generalization. Namely, let us propose that the event entailment of true adjectival passives as well as adjectival decausatives does not depend on the presence of an argument structure that contains an external theta role (either Agent or Cause), but on the presence of an argument structure in general³⁰. To be more explicit, let us examine, e.g., our passive sentence (31bi) and its event semantic representation (34a), repeated below as (61a), and our unaccusative sentence (35i) and its event semantic representation (37a), repeated below as (62a); the event semantic representation of the adjectival counterparts of the verbs in (61a) and (62a) is given in (61b) and (62b), respectively:

³⁰ Note that a very similar generalization has already been suggested by Grimshaw (1990) for the nominal domain.

(61) Event semantic representation of verbal and adjectival passives

- (ai) Obraz byl namalován (Petrem / štětcem).
 picture was painted._{pas} Petr-Inst / paintbrush._{Inst}
 'The picture was painted by Petr / with a paintbrush.'
- (a_{ii}) $\exists e \exists x[\text{NAMALOVAT}(e) \ \& \ \text{Agent}(e, x) \ \& \ \text{Theme}(e, \text{obraz})]$
- (b) namalovaný ('painted') : $\lambda x \lambda s \exists y[\text{namalovaný}(s) \ \& \ \text{Theme}(s, x) \ \& \ \mathbf{Agent}(s, y)]$

(62) Event semantic representation of verbal and adjectival decausatives

- (ai) Hrady z písku se zničily (*dítětem / *mořem).
 castles from sand were destroyed child._{Inst} / sea._{Inst}
 'The sand castles were destroyed by the child / by the sea.'
- (a_{ii}) $\exists e[\text{ZNIČIT}(e) \ \& \ \text{Theme}(e, \text{hrady z písku})]$
- (b) zničený ('destroyed') : $\lambda x \lambda s[\text{zničený}(s) \ \& \ \text{Theme}(s, x)]$

Meltzer, quoting Parsons (1990), ascribes the event entailment of true adjectival passives in Hebrew to an incompatibility of Agents and Causes with states. That is, Agents and Causes cannot participate in states, only in events. However, true adjectival passives denote states (as expected from adjectives) and simultaneously, the Agent or the Cause role are present in their semantics (see the bold expression **Agent (s,y)** in (61b)). This state of affair thus leads to a clash that forces the semantic component to "reconstruct the event in which the Agent or the Cause has taken part, and this event is interpreted as causing the state denoted by the adjective" (Meltzer 2011:89). Since the theta grid of true adjectival passives contains the Agent or the Cause role, these adjectives will always entail a prior event; the theta grid of adjectival decausatives, on the other hand, contains neither the Agent nor the Cause role, and will therefore never entail a prior event.

While this reasoning is indeed possible, note that there is in principle yet another potential reason for forcing the semantic component to reconstruct the event that caused the state denoted by an adjective, namely, the fact that the theta grid of both true adjectival passives and adjectival decausatives contains theta roles that - if realized as verbal arguments - participate in the event denoted by a verb (compare (61a_{ii}) with (61b) and (62a_{ii}) with (62b)). Put differently, it can be that in some languages, for instance in Czech, not only external theta roles (i.e. Agent and Cause) but also internal theta roles (e.g., Theme) are incompatible with states as far as states denoted by adjectival passives in the broad sense (i.e. both true adjectival passives and adjectival decausatives) are concerned.

Assuming this, we have a straightforward explanation of why in Czech both true adjectival passives and adjectival decausatives in general entail a prior event. Moreover, assuming this, the explanation for the cases of true adjectival passives and adjectival decausatives that do not necessarily entail a prior event is straightforward and uniform as well. These adjectives are ambiguous between the event-entailing and the stative reading, because they have two homophonous variants in a language: (i) an argument structure bearing variant that necessarily entails an event, and (ii) an argument structure lacking variant that does not entail an event³¹. The co-existence of these two variants is in principle the same as the widely known co-existence of homophonous events and result nominals. That this seems to be the case has been demonstrated in (56), (57) and (58), where we saw two examples of such adjectives, namely the adjective *uklizená* ('organized'), whose derivational base contains the Agent role, and the adjective *zavřené* ('closed'), whose derivational base contains the Cause role. Neither of them necessarily entails a prior event (56); however once their argument structure bearing variants have been isolated by agent detecting elements (57) or by an appropriate unaccusative event imposing context (58), the event entailment emerges.

Finally, let us briefly come back to the comparison between Czech and Hebrew. As far as true adjectival passives are concerned there seems to be no difference between the two languages – both in Czech and in Hebrew true adjectival passives inevitably entail a prior transitive event, as in both languages external theta roles are incompatible with states; moreover, in both languages we can expect sporadic cases of true adjectival passives, which are in fact ambiguous between an argument structure bearing variant that necessarily entails an event, and an argument structure lacking variant that does not entail an event (as is, e.g., the case of the Czech adjective *uklizená* ('organized')).

As far as Czech and Hebrew adjectival decausatives are concerned the situation is less clear. Czech adjectival decausatives inevitably entail a prior unaccusative event (unless they have variants that lack argument structure) since - as we have suggested – in this language not

³¹ These variants, which lack the argument structure, can be considered a special kind of semantic drift of the original argument structure bearing variants ("a special kind" in the sense that a semantically drifted meaning does not, of course, necessarily lose the argument structure of the original lexical entry). Assuming that (unique) drifted meanings are stored in the lexicon under the original (non-drifted) entries (Horvath & Siloni, 2010), the existence of such semantic drifts represents evidence that Czech true adjectival passives and adjectival decausatives are derived in the lexicon, in harmony with our preliminary general discussion in subsection 4.3.1. Note also that the existence of these particular semantic drifts (i.e., drifts based on the loss of the argument structure) supports the lexical derivation of true adjectival passives and adjectival decausatives even without the above mentioned assumption regarding storing semantic drifts under the original lexical entries. Namely, the lexical derivation of these adjectives follows in this particular case also from Siloni's (2002) Lexicon Interface Guideline (38) – if these adjectives were to be derived syntactically, they could not lose their theta grid in the syntax.

only external but also internal theta roles are incompatible with states denoted by this type of adjectives. According to Meltzer, Hebrew adjectival decausatives, on the other hand, do not entail a prior event. We have contemplated that it can be the case that the above outlined difference between Czech and Hebrew originates in fact in different levels of lexical richness in these two languages, namely that Czech is lexically richer within this domain of adjective-formation than Hebrew, and therefore that Czech adjectival decausatives tend to be less ambiguous than adjectival decausatives in Hebrew. We discussed this hypothesis when examining the Hebrew adjectival decausatives *akum* (52) and *kafu* (54), speculating that both of them are actually ambiguous between the event entailing reading (an argument structure bearing variant) and the stative reading (an argument structure lacking variant). However, if Meltzer is right in her generalization that Hebrew adjectival decausatives never entail a prior event, then, of course, this hypothesis loses much from its attractiveness. i.e., why should Hebrew adjectival decausatives always be ambiguous between the two readings? In such a case an alternative hypothesis comes to mind, namely that in Hebrew, unlike Czech, the external theta roles (both Agent and Cause) enjoy some kind of prominence over the internal roles (e.g., Theme) in the sense that only the former, but crucially not the latter, forces the semantic component to reconstruct the event that preceded/caused the state denoted by an adjective (see our discussion of (61) and (62) above). Leaving these questions for further research, let us now turn to one morphological peculiarity that seems to be systematically displayed by the class of Czech adjectival decausatives whose derivational base is frozen.

4.3.4 Frozen entries and *-lý* adjectives

All the examples discussed so far were examples of adjectives whose verbal counterparts had transitive alternates. E.g., the adjective *napsaný* ('written') (48a), repeated below as (63ai), has a verbal counterpart *napsat* ('write'), which can be realized as a transitive verb (63aii). Similarly, the adjective *roztavené* ('melted') (49a), repeated below as (63bi), has a verbal counterpart *roztavit* ('melt'), which can be realized as a transitive verb (63bii); since the external theta role of this verb is Cause, it has an unaccusative alternate as well (63biii), while the adjective itself is ambiguous between the true adjectival passive reading and the adjectival decausative reading. Moreover, all the adjectives we have seen so far had the "normal" adjectival morphology presented in (17ii), i.e., they were attached the passive morpheme *-n* (or its variant *-t*) and the agreement suffix, which in the two examples below is *-ý* (63ai) and *-é* (63bi).

(63) Adjectival passives whose verbal counterparts have transitive alternate

- | | | |
|--|--|---|
| (ai) Dopis je napsa- n-ý .
letter is written-adj-agr
'The letter is written.' | (aii) Petr napsal dopis.
Petr wrote letter
'Petr wrote a letter.' | |
| (bi) Železo je roztave- n-é .
iron is melted-adj-agr
'The iron is melted.' | (bii) Petr / žár roztavil železo.
Petr / heat melted iron
'Petr / the heat melted the iron.' | (biii) Železo se roztavilo.
iron SE melted
'The iron melted.' |

Now, as noted in subsection 4.3.1, it appears that some entries have their external Cause role frozen, i.e., banned from entering the syntax. Such entries can thus realize only as unaccusative verbs, or – in the adjectival domain – as adjectival decausatives, since they are freed from this frozen role only in this form, due to the (lexical) application of the operation of decausativization. An example of such an entry is given in (64):

(64) Verbal and adjectival realizations of entries whose Cause role is frozen

- (a) * Matka / příroda narodila dítě.
mother / nature bore child
'The mother / nature bore a child. '
- (b) Dítě se narodilo.
child SE bore
'The child was born.'
- (c) Dítě je narozené
child is born.
'The child is born.'

In (64a) we see that the entry *narodit* ('bear') cannot be realized as a transitive verb, the reason being its external Cause role, which is frozen. This is witnessed by the fact that the entry has both a verbal unaccusative realization (64b), accompanied with the clitic SE, and an adjectival decausative realization (64c), attached to the typical adjectival morpheme *-n*. That entries which have a verbal unaccusative alternate, but do not have a transitive verbal alternate, indeed contain a frozen Cause role, has been shown by the two Hebrew examples in (39), subsection 4.3.1.1; namely, we have pointed out that without assuming the existence of a frozen Cause role, it would be hard to explain why unaccusative verbs merge their Theme role internally, while the verbs from the class of so-called theme-unergative verbs merge the same Theme role externally. The examples in (65) and in (66) below further demonstrate that adjectival decausatives, whose verbal counterparts do not have a transitive alternate, constitute evidence in favor of the existence of a frozen Cause role as well. The examples in

(65ai) and (65bi) contain the theme-unergative verbs *zazvonit* ('ring') and *zavonět* ('smell good'). Neither of these verbs has an adjectival counterpart (65aii/65bii). On the other hand, the unaccusative verbs like *srazit se* ('shrink') in (65ci) or *narodit se* (64b) above, do have adjectival counterparts (65cii/64c), albeit they have no transitive alternate (65ciii/64a).

(65) Theme-unergative verbs do not have adjectival counterparts

(ai) Zvonek zazvonil. ring rang 'The ring rang.'	(aii) * Zvonek je zazvonělý. ring is rung _{.Adj} 'The ring is rung.'
(bi) Parfém zavoněl. perfume smelt good 'The perfume smelt good.'	(bii) * Parfém je zavonělý. perfume is smelt-good _{.Adj} 'The perfume is smelt good.'
(ci) Prádlo se srazilo. laundry SE shrunk 'The laundry shrunk.'	(cii) Prádlo je sražené. laundry is shrunk _{.Adj} 'The laundry is shrunken.'
	(ciii) *Pračka/Marie srazila prádlo. washing-machine/M. shrunk laundry 'The WM/Marie shrunk the laundry.'

Now, following Horvath and Siloni (2008), let us compare the verbs like those in (65ci) and (64b), i.e., unaccusative verbs that do not have a transitive alternate, with yet another voice, namely, so-called two-place unaccusative verbs like *patřit* ('belong') or *slušet* ('suit') in (66ai) and (66bi) respectively. Once again the theta grid of these verbs contains the Theme role (together with the Goal or the Benefactor role), which in the two examples below is assigned to the NPs *ten dům* ('that house') (66a) and *to sako* ('that jacket') (66b). Moreover, two-place unaccusatives, unlike theme-unergatives and like unaccusatives, merge this role internally. Yet these verbs do not have adjectival counterparts (66ii).

(66) Two-place unaccusative verbs do not have adjectival counterparts

(ai) Ten dům patří Petrovi. that house belongs Petr _{.Dat} 'That house belongs to Petr.'	(aii) *Ten dům je patřený (Petrovi). that house is belonged _{.Adj} (Petr _{.Dat}) 'That house is belonged (to Petr).'
(bi) To sako Petrovi sluší. that jacket Petr _{.Dat} suites 'That jacket suits Petr.'	(bii) * To sako je slušené (Petrovi). that jacket is suited _{.Adj} (Petr _{.Dat}) 'That jacket is suited (to Petr).'

Before proceeding, note that the comparison of unaccusative verbs (which do not have transitive alternates) with theme-unergative verbs (65) and two-place unaccusative verbs (66) constitutes in fact a very strong argument in favor of the Verb Independent derivation of adjectival decausatives. Namely, if adjectival decausatives were only derived directly from their verbal counterparts via the process of adjectivization, then one would expect theme-

unergatives and two-place unaccusatives to have adjectival counterparts as do unaccusative verbs. Although the purpose of their study is slightly different from our purpose here, Horvath & Siloni (2008) actually made this claim when arguing that adjectival decausatives are derived from transitive verbs via the operation of decausativization. However, let us return to Czech unaccusative verbs, which do not have transitive alternates, and to their adjectival counterparts, in search for further and "more direct" clues regarding the derivation history of the latter.

It appears that Czech entries whose external Cause role is frozen are not always realized as unaccusative verbs in (64b), i.e., with the clitic SE, and adjectival decausatives in (64c), i.e., with the typical adjectival morpheme *-n*. Recall in this respect the example in (55b), repeated below as (67). Comparing the unaccusative verb *zmrzlo* ('froze') in (67) with the unaccusative verbs in (64b) or (63biii) we see that in (67) the verb is not equipped with the clitic SE. Moreover, the adjectival decausative *zmrzlé* in (67) is formed via the morpheme *-l* (followed by an agreement suffix) rather than the usual adjectival morpheme *-n/-t* which we have seen so far, including the above examples in (64c) and (63bi).

(67) The adjectival decausative *zmrzlý* and the unaccusative verb *zmrznout*

Moře je **zmrz-l-é**, aniž někdy zmrzlo. (contradiction)
sea is frozen-adj-agr, without sometime froze; has-been-formed so
'The sea is frozen, but it never froze; it was created that way.'

Is the adjectival ending *-lý*³², which is attached to the adjectival decausative in (67), limited to this particular adjective and perhaps some other isolated cases? The answer is no, since upon closer examination the distribution of this suffix turns out to be very systematic and productive, the basic descriptive generalization being as follows:

(68) A descriptive generalization regarding the use of the suffix *-lý*

(i) Every Czech adjectival decausative whose verbal unaccusative counterpart is not accompanied by the clitic SE, receives the suffix *-lý*.

(ii) There is no true adjectival passive in Czech that receives the suffix *-lý*.

The distribution of *-lý* adjectives (statistical research): The above formulated generalization is based on the following research. I have checked a list of 2351 Czech

³² I will refer to this particular morpheme as *-lý*, although the morpheme itself is *-l*, the suffix attached to it is an agreement suffix.

adjectives whose ending is *-lý*. (The list was kindly provided by the Faculty of language computation in Masaryk University in Brno, Czech Republic, and was extracted from a corpus containing approximately 30 millions Czech words). Among these 773 adjectives were excluded as irrelevant, either because they are apparently not derived (e.g., *rychlý* – 'quick', *malý* – 'small'), or because they have been perceived as marginal, unnatural or unclear. From the remaining 1578 adjectives 1422 (90.1%) were derived from entries whose external Cause role is frozen, i.e., has no transitive realization in the verbal domain, and 156 (9.9%) were derived from non-frozen entries. Crucially, however, the adjectives which were derived from the non-frozen entries (156) co-exist with "ordinary" *-ný/tý* adjectives, the *-lý* adjectives being unequivocally adjectival decausatives and the *-ný/tý* adjectives being either unequivocally true adjectival passives or ambiguous between the two readings. On the other hand, no such systematic co-existence was observed for the adjectives that were derived from the frozen entries (1422). More specifically, from the total number of 1422 adjectives 1211 were derived from entries whose verbal unaccusative realization is not accompanied by the clitic SE, while the remaining 211 were derived from entries whose verbal unaccusative realization is accompanied by the clitic. I could accept a possible *-ný/tý* alternate in only 32 of the group of 1211 (2.6%), and only half of these alternates (16 = 1.3%) sounded better than the *-lý* version. As far as the group of 211 is concerned, the ratio of possible *-ný/tý* alternates was a bit higher - I could accept 22 *ný/tý* alternates (10.4%), 17 of them (8%) being better than the *-lý* version. The following table summarizes the findings just described, and (69) illustrates the data with two examples for each one of the three groups, i.e., "1211" (69a/b), "211" (69c/d) and "156" (69e/f):

Table 2 - The distribution of *-lý* adjectives (statistical research)

total number of <i>-lý</i> adjectives in the list			
1578			
number of <i>-lý</i> adjectives whose transitive verbal counterpart is frozen		number of <i>-lý</i> adjectives whose transitive verbal counterpart is not frozen	
1422 (90.1%)		156 (9.9%)	
unaccusative counterpart without SE	unaccusative counterpart with SE	unaccusative counterpart without SE	unaccusative counterpart with SE
1211	211	0	156
division of labour between <i>-ný/-tý</i> and <i>-lý</i>	division of labour between <i>-ný/-tý</i> and <i>-lý</i>	division of labour between <i>-ný/-tý</i> and <i>-lý</i>	
in 32 cases <i>-ný/-tý</i> forms exist (together with <i>-lý</i> forms)	in 22 cases <i>-ný/-tý</i> forms exist (together with <i>-lý</i> forms)	<i>-lý</i> adjectives are always decausatives; <i>-ný/-tý</i> adjectives are always passives and - in addition - sometime also decausatives	

(69) The distribution of <i>-lý</i> adjectives (illustration)				
transitive verb	unaccusative verb		<i>-ný/-tý</i> adjectives	<i>-lý</i> adjectives
(a) *zčervenat-trans	zčervenat-unacc	('redden')	*zčervenáný-dec	zčervenálý-dec
(b) *zhrubnout-trans	zhrubnout-unacc	('roughen')	*zhrubnutý-dec	zhrublý-dec
(c) *rozrůst-trans	rozrůst se-unacc	('spread out')	*rozrostnutý-dec	rozrostlý-dec
(d) *nadechnout-trans	nadechnout se-unacc	('breathe in')	nadechnutý-dec	nadechlý-dec
(e) zaseknout-trans	zaseknout se-unacc	('jam')	zaseknutý-pas/dec	zaseklý-dec
(f) zastříť-trans	zastříť se-unacc	('veil')	zastřfený-pass/dec	zastřelý-dec

What does this rather systematic phenomenon mean? The most natural interpretation seems to be that the process of adjectivization applies in such a state, where the frozen theta role is still present. Put differently, it would be hard to explain this systematic morphological peculiarity if the process of adjectivization would target unaccusative verbs (and not the transitive verbs), as these verbs lack an external theta role regardless of whether it is frozen or not. The systematic use of this special suffix in Czech thus constitutes a certain degree of evidence in favor of Meltzer's otherwise imprecisely justified suggestion that adjectival decausatives are indeed derived via the application of the operation of decausativization in the adjectival domain. Moreover, as far as I know the Czech suffix *-lý* is the only "direct" evidence reported to date for the existence of frozen entries. We will return to this morphological peculiarity in section 5.4, where we will formulate some hypotheses for further investigation of the phenomenon. For now, let us briefly verify that the *-lý* adjectives display properties, which are in harmony with our findings regarding agentive adjectives (4.3.2) and causative adjectives (4.3.3). Namely, we expect them not to permit agent dependent elements since they should be univocally adjectival decausatives which lack an external argument, and we expect them to entail a prior unaccusative event. As the examples in (70) show, both of these predictions are borne out:

(70) Decausative nature of *-lý* adjectives

- (a) Ovoce je (*pečlivě) shnilé, aniž shnilo. (contradiction)
fruit is (carefully) rotten, without rotted
'The fruit is (carefully) rotten without having rotted.'
- (b) Zahrada je (*úhledně) zarostlá, aniž zarostla. (contradiction)
garden is (neatly) overgrown, without overgrew
'The garden is (neatly) overgrown without having overgrown.'

- (c) Stěna je (*pečlivě) prasklá, aniž praskla. (contradiction)
 wall is (carefully) cracked, without cracked
 'The wall is (carefully) cracked without having cracked.'
- (d) Voda je (*úhledně) zmrzlá, aniž zmrzla. (contradiction)
 water is (neatly) frozen, without froze
 'The water is (neatly) frozen without having been frozen.'

On the base of the data presented in this section we can therefore conclude that:

1. Meltzer's distinction between true adjectival passives and adjectival decausatives is relevant for Czech adjectival passives as well.
2. Unlike the picture reported by Meltzer for Hebrew, it seems that in Czech both true adjectival passives and adjectival decausatives entail a prior event; the event denoted by the former is transitive, the event denoted by the latter is unaccusative.
3. Czech data supply a strong morphological evidence for Meltzer's suggestion that adjectival decausatives are derived via the application of the operation of decausativization in the adjectival domain.

4.4 Short survey of other Slavic languages

Finally we will briefly show, that the distinction between true adjectival passives and adjectival decausatives, observed in the previous section for Czech, exist in all other Slavic languages in our sample. Moreover, similarly to Czech, adjectival passives and adjectival decausatives in all other Slavic languages inevitably entail a prior event. (The following sets of examples are parallel to sets of Czech examples in subsections 4.3.2 and 4.3.3).

The following set of examples shows that Slavic true adjectival passive license agent oriented elements and entail a prior transitive event, as this event is inevitably negated by the weak contradictory context (compare with the Czech examples in (47) and (48)).

(71) Passive nature and (transitive) event entailment of Slavic agentive adjectival passives

- (a) List napisanij (červonoju ručkoju), ale nihto joho nepisav. (Ukrainian)
 letter written (red pen-Inst) but nobody it not-wrote (contradiction)
 "The letter is written (with a red pen) without having been written."
- (a") Pismo napisano (krasnoj ručkoj), no nikto jevo nenapisal. (Russian)
 letter written (red pen-Inst) but nobody it not-wrote (contradiction)
 "The letter is written (with a red pen) without having been written."

- | | | |
|--------|---|---------------------------------|
| (a''') | Pismo je napisano (z rdečim kulijem), čeprav ga nihče ni napisal.
letter is written (with red pen _{Inst}) although it nobody not wrote.
"The letter is written (with a red pen) without having been written." | (Slovenian)
(contradiction) |
| (b') | Dom pastroeny (njadbajna), chacja jaho nictjo ne pastrojju.
House built (carelessly), although it nobody not built.
"The house is (carelessly) built without having been built." | (Belarusian)
(contradiction) |
| (b'') | Ku'ata e (nemarlivo) izgradena, bez nekoj da ja izgradi.
House is (carelessly) built, without somebody that it built.
"The house is (carelessly) built without having been built." | (Macedonian)
(contradiction) |
| (c') | Auto je (profesionálne) opravené, hoci ho nikto neopravil.
Car is (professionally) repaired, although it nobody not-repaired
"The car is (professionally) repaired without having been repaired." | (Slovak)
(contradiction) |
| (c'') | Auto je (profesionalno) popravljeno, a da nije popravljeno.
Car is (professionally) repaired, although was-not repaired
"The car is (professionally) repaired without having been repaired." | (Croatian)
(contradiction) |
| (d') | Bankot jest (starannie) sfalszowany nizby by byl falszowany.
Banknote is (carefully) forged, without would was forged.
'The banknote is (carefully) forged without having been forged.' | (Polish)
(contradiction) |
| (d'') | Banknota-ta e (staratelno) falšificirana, vpreki če ne e byla falšificirana.
Banknote-the is (carefully) forged, although that not is was forged.
'The banknote is (carefully) forged without having been forged.' | (Bulgarian)
(contradiction) |

The following set of examples shows that Slavic decausatives do not necessarily entail a prior transitive event as the addition of the weak contradictory context does not result in contradiction (compare with the Czech examples in (49)).

(72) Ambiguity of Slavic adjectival passives derived from entries whose external role is a Cause

- | | | |
|------|--|------------------------------------|
| (a') | Železo je raztopljeno, čeprav ga nihče ni raztopil.
Iron is melted, although it nothing not melted
"The iron is melted without having been melted." | (Slovenian)
(no contradiction) |
| (a') | Želazo-to e raztopeno, vpreki če nikoj ne go e raztopil
Iron-the is melted, although nothing not it is melted
"The iron is melted without having been melted." | (Bulgarian)
(no contradiction) |
| (a') | železa razplaulena, chacja jaho nictjo nerazplaviu.
Iron melted, although it nothing not-melted
"The iron is melted without having been melted." | (Belarusian)
(no contradiction) |

- (b') Brod je potopljen a da nije potopljen.
Ship is sunken, although was not sunk.
"The ship is sunken without having been sunk."
(Croatian)
(no contradiction)
- (b'') Brodot e potonat, bez nekoj da go potopi.
Ship is sunken, without somebody that it sunk.
"The ship is sunken without having been sunk."
(Macedonian)
(no contradiction)
- (c') Okno je zahmlené, ačkoľvek ho nikto nezahmlil..
Window is steamed up, although it nobody not-steamed up.
"The window is steamed up without having been steamed up."
(Slovak)
(no contradiction)
- (c'') Okno jest zaparowane, nizby bylo zaparowane.
Window is steamed up, without was steamed up.
"The window is steamed up without having been steamed up."
(Polish)
(no contradiction)
- (d') Skljanka rozbita ale ničto jji nerozbiv.
Glass broken, but nobody it not-broke.
"The glass is broken without having been broken."
(Ukrainian)
(no contradiction)
- (d'') Stakan razbitij no nikto jevo nerazbil
Glass broken, but nobody it not-broke.
"The glass is broken without having been broken."
(Russian)
(no contradiction)

Finally, once the contradictory context is strengthened, the contradiction appears (compare with the Czech examples in (50)).

(73) (Transitive / unaccusative) event entailment of Slavic adjectival passives derived from entries whose external role is a Cause

- (a') Železo je raztopljeno, čeprav se ni roztopilo.
Iron is melted, although SE not melted-Unac.
"The iron is melted without melting."
(Slovenian)
(contradiction)
- (a'') Želazo-to e raztopeno, vpreki če ne se e roztopilo.
Iron-the is melted, although not SE is melted-Unac.
"The iron is melted without melting."
(Bulgarian)
(contradiction)
- (a''') Železa razplaulena, chacja ne razplavilasja..
Iron melted, although not melted-Unac.
"The iron is melted without melting."
(Belarusian)
(contradiction)
- (b') Brod je potopljen iako se nije potopio.
Ship is sunken, although SE not sunk-Unac.
"The ship is sunken without sinking."
(Croatian)
(contradiction)

- | | | |
|------|---|--|
| (b") | Brodot e potonat, bez da se potopi..
Ship is sunken, without SE sunk-Unac.
"The ship is sunken without sinking." | (Macedonian)
(contradiction) |
| (c') | Okno je zahmlené, hoci sa nezahmlilo
Window is steamed up, although SE not-steamed up-Unac.
"The window is steamed up without steaming up." | (Slovak)
(contradiction) |
| (c") | Okno jest zaparowane, nizby sie zaparowalo
Window is steamed up, without steamed up-Unac.
"The window is steamed up without steaming up." | (Polish)
(contradiction) |
| (d') | Skljanka rozbita ale nerazbilas.
Glass broken, but not-broke-Unac.
"The glass is broken without breaking." | (Ukrainian)
(contradiction) |
| (d") | Stakan razbitij no nerazbilsja.
Glass broken, but not-broke-Unac.
"The glass is broken without breaking." | (Ukrainian)
(contradiction) |

4.5 Summary

The main purpose of this chapter was to examine Slavic adjectival passives from the perspective of the split between true adjectival passives and adjectival decausatives within the set of adjectival passives in Hebrew, discovered recently by Meltzer (2006, 2009, 2011) - the dividing line between these two adjectival classes being that the semantics of true adjectival passives (but not of adjectival decausatives) involves an external theta role of their derivational base, since they license agent testing elements, such as agent oriented modifiers, instruments, and by-phrases (a fact that has not been detected in the field of inquiry of adjectival passives so far). We have observed that this split indeed exists in all ten Slavic languages in our sample, which in turn shows that what Meltzer revealed is not a peculiarity of Hebrew, but a phenomenon of much more general nature. Yet, at the same time we have noticed that the true adjectival passives and the adjectival decausatives in Slavic languages both entail a prior event, contrary to Hebrew, where, as reported by Meltzer, the event entailment depends on the presence of an external argument in the semantics, and therefore only true adjectival passives entail a prior event.

The conclusion that, despite many differences between Tel Aviv and Moscow, true adjectival passives and adjectival decausatives are involved in the discourse in both these cities (and perhaps many other cities around the world) has been reached in three steps. In the beginning we identified the forms and the context(s) in which adjective like elements are actually adjectives (4.1 and 4.2); this verification was necessary in order to verify that what we are dealing with are indeed true adjectives, and not adjective-like verbs. Then we approached the split between the true adjectival passives and adjectival decausatives itself, observing these two classes of adjectives in Czech (4.3). Finally, we briefly surveyed adjectival passives in other Slavic languages, demonstrating that the distinction between the true adjectival passives and the adjectival decausatives holds in each one of these languages as well (4.4). To be more specific:

We argued that Slavic adjectival passives forms, which correspond to perfective (telic) verbal forms, are univocally adjectives in present copula structures (4.1/4.2).

- Aspect of the Slavic verbs (4.1)

Two things have been demonstrated: (i) Slavic imperfective verbal forms can refer to past, present, or future, while their perfective counterparts can refer to past or future only, never to present. (ii) Only adjectival forms which correspond to perfective verbal forms are potential adjectives, since only these forms have a result state as a part of their meaning; adjectival forms that correspond to imperfective verbal forms, on the other hand, are basically verbs, as witnessed by the fact that they license by-phrases, which are apparently not a part of a result state, but rather a part of an event, the crucial point being that events cannot be denoted by adjectives.

- Copular structures (4.2.1)

We have observed that perfective passive participles that follow the present form of the verb *be* are always adjectival in Slavic languages, since they do not denote events, but rather states. Namely, we saw that following the present form of the verb *be* these participles do not license by-phrases which cannot be detected from the result state. This in turn bears witness to the fact that these forms do not denote events, and as such cannot be considered verbal passives but adjectives (and consequently the verb *be* cannot be considered an auxiliary involved in Slavic verbal passives constructions but a copula). We have noted that this state of affairs is in full harmony with the observation mentioned above that perfective forms of Slavic verbs can refer only to the past or to the future, never to the present. It thus follows straightforwardly that the same holds for their passive alternates – perfective verbal passive forms cannot refer to the present, and therefore if they follow the present form of the verb *be*, we are dealing with copular structures and not with verbal passives structures.

Once we identified which adjectival forms are potential adjectival passives and in which syntactic context these forms realize this potential (i.e. are indeed genuine adjectives) we turned to the examination of the question whether the split between true adjectival passives and adjectival decausatives attested to in Hebrew exists in Slavic languages as well. We started by the presenting a necessary theoretical background (the operation of saturation, the

operation of decausativization, and the notion frozen theta roles) and the core of Meltzer's analysis of the two classes of adjectival passives in Hebrew, namely that the derivation of true adjectival passives (alike verbal passives) involves the operation of saturation, while the derivation of adjectival decausatives (akin to verbal unaccusatives) involves the operation of decausativization (4.3.1). Subsequently, three groups of Czech adjectival passives were examined, using two testing tools - agent detecting elements and contradictory contexts:

- Adjectives derived from entries whose external role is an Agent (4.3.2)

Entries whose external argument can be interpreted only as an Agent can undergo the operation of saturation only. Their adjectival forms are thus expected to be exclusively true adjectival passives. This expectation was borne out. (Beyond this we observed that Czech true adjectival passives entail a prior transitive / passive event, in harmony with the situation in Hebrew.)

- Adjectives derived from entries whose external role is a Cause (4.3.3)

Entries whose external argument can be interpreted as a Cause can undergo either the operation of saturation or the operation of decausativization. Their adjectival forms are thus expected to be either true adjectival passives or adjectival decausatives. This expectation was borne out, i.e., adjectives derived from these entries display ambiguity between true adjectival passive reading and adjectival decausative reading. (Beyond that we observed that Czech adjectival decausatives inevitably entail a prior unaccusative event, contrary to the state of affairs reported by Meltzer for Hebrew; we have suggested two possible explanation for this disparity – **either** in Czech not only external theta roles, but also internal ones, are incompatible with states denoted by adjectives, while in Hebrew only external theta roles display this incompatibility, **or** Czech is lexically richer than Hebrew within the domain of adjectival passives formations, thus avoiding ambiguity between the event entailing reading and the simple stative reading.)

- Adjectives derived from entries whose external role is frozen (4.3.4)

Adjectival counterparts of entries whose external Cause role is frozen are expected to be exclusively adjectival decausatives, as their true adjectival passive alternates are banned from entering the syntax (due to retaining the inert Cause role, which would be uninterpretable in the semantics). Once again, this expectation was borne out.

Finally, we showed that the split between true adjectival passives and adjectival decausatives observed in Czech exists in all other Slavic languages as well (4.4).

- Short survey of other Slavic languages (4.4)

Like Chapter 3 (and as opposed to Chapter 2), the current chapter comes to demonstrate unity rather than any kind of diversity. The relevant data from other Slavic languages were thus minimally presented again: (i) we saw that adjectives, which are derived from entries whose external role is an Agent, license agent oriented elements and entail a prior transitive/passive event; (ii) we saw that adjectives, which are derived from entries whose external role is a Cause, are ambiguous between the true adjectival passive reading and the adjectival decausatives reading, exactly like in Hebrew (and Czech), but contrary to Hebrew (and alike Czech), they always entail a prior event – either transitive (under true adjectival passive reading) or unaccusative (under adjectival decausative reading).

In this chapter we thus established that there are two classes of adjectival passives across Slavic languages, a distinction which will serve us in the next chapter, where we will

approach their derivational history. As mentioned, Meltzer's suggestion that – apart from the process of adjectivization itself – the derivation of true adjectival passives involves the operation of saturation, while the derivation of adjectival decausatives involves the operation of decausativization, is actually not justified in her analysis. We have brought a novel piece of morphological evidence giving some clue that the derivation of adjectival decausatives indeed involves the operation of decausativization, and as such is Verb Independent; namely, we have observed that Czech adjectival decausatives whose derivational base is frozen are systematically attached a different adjectival suffix (4.3.4). In the next chapter we will bring additional and more decisive evidence for the Verb Independent derivation of Czech adjectival decausatives; as far as Czech true adjectival passives are concerned, we will suggest that there is actually no need to apply the operation of saturation in the adjectival domain, since the "work" of saturation can be achieved by the process of adjectivization itself.

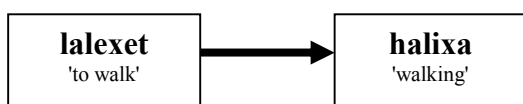
Chapter 5

On Czech Experiencer Formations

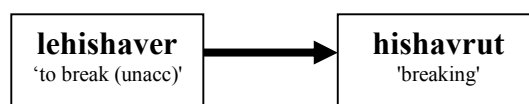
In chapter 3 we have challenged the traditional assumption that different nominal voices are derived directly from their verbal counterparts. Under this position, unergative nouns are derived from unergative verbs, transitive nouns from transitive verbs, unaccusative nouns from unaccusative verbs, reflexive nouns from reflexive verbs etc.

(1) Traditional exclusively verb based nominalization (examples from Hebrew)

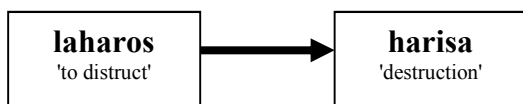
(a) unergatives



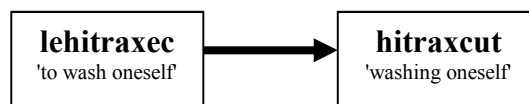
(c) unaccusatives



(b) transitives



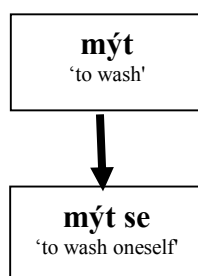
(d) reflexives



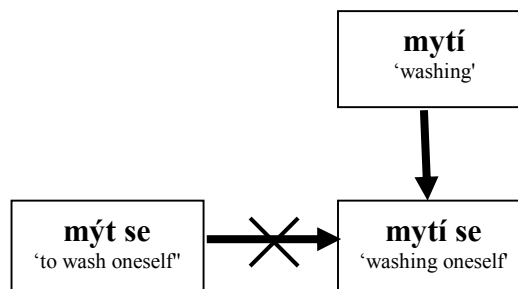
Specifically, we have seen that West-Slavic (Czech, Polish and Slovak) reflexive and reciprocal nominals pose a problem for this traditional view (schematized in (1)), since these nominal formations do not seem to be derived directly from their verbal counterparts but rather from the corresponding transitive nouns, exactly like reflexive and reciprocal verbs are derived from the corresponding transitive verbs.

(2) Verb-independent derivation of West-Slavic reflexive and reciprocal nouns (examples from Czech)

a) Verbal derivation (Reinhart and Siloni 2005, among others)

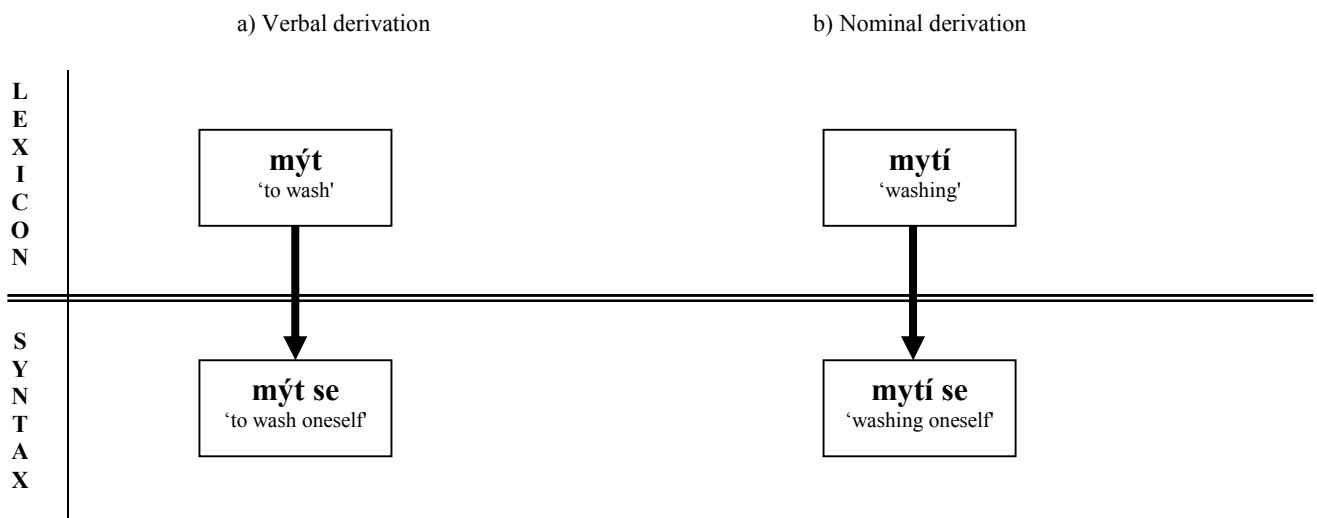


b) Nominal derivation



The schema in (2b) was motivated by two findings: **First**, the process of nominalization must apply in the Lexicon in Czech, Polish and Slovak (in chapter 3 I argued against syntactic nominalization of either verbs or roots). **Second**, Czech, Polish and Slovak reflexive and reciprocal verbs do not exist in the Lexicon; they are formed in the Syntax (this is why these languages manifest reflexive and reciprocal ECM-structures for instance). **Moreover** it has been argued that Czech, Polish and Slovak reflexive and reciprocal nominals, like their verb counterparts, are derived (only) in the Syntax.

(3) Syntactic derivation of West-Slavic reflexives and reciprocals (examples from Czech)



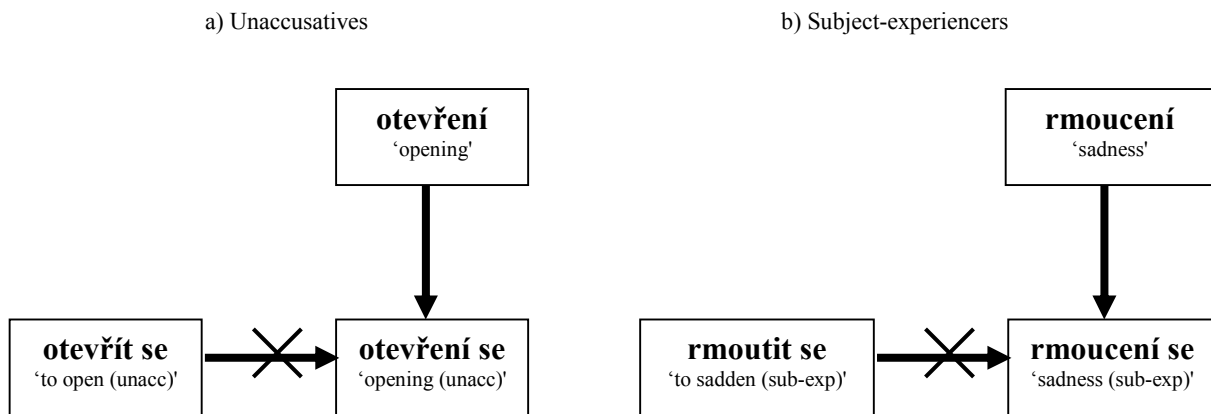
These findings immediately give rise to the following two questions¹:

(i) **Is the verb-independent derivational scenario relevant for other nominal voices as well**, namely unaccusatives and subject-experiencers²? This option is graphically depicted in (4); compare (4) with (2b), the verb-independent derivation of West-Slavic reflexives and reciprocals. (In the course of the present chapter I will sometimes label these two voices, i.e. unaccusatives and subject-experiencers, by a more general label *decausatives*, as I assume (following Reinhart 2002) that the derivation of both of them involves the same arity operation, namely decausativization, which was introduced in subsection 4.3.1.):

¹ Yet another question has been formulated in section 3.6. Namely, why are there no reflexive and reciprocal nouns in Bulgarian, Croatian, Macedonian, and Slovenian, and why are there no reflexive and reciprocal nouns in the other syntax type languages explored by Reinhart and Siloni (like Romance languages or German)? We have suggested two hypothesis for further research: (i) only those syntax type languages that have at their disposal the nominal clitic SE (are able to) utilize the Verb Independent derivational scenario for reflexive and reciprocal nouns; (ii) there is some crucial difference in the internal syntactic structure of nouns in syntax type languages that have and that do not have reflexive and reciprocal nouns, e.g., that the former, but not the latter, have a DP.

² Other derived voices do not exist in the nominal domain, either universally, namely middles and passives (for the argumentation that languages in general lack nominal passive formations see Siloni&Preminger 2009) or specifically in Czech, Slovak, Polish, namely causatives.

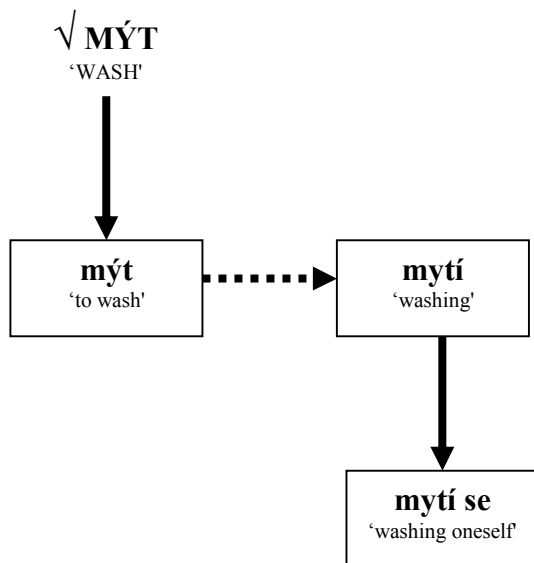
(4) Verb-independent derivational scenario for West-Slavic decausative nouns



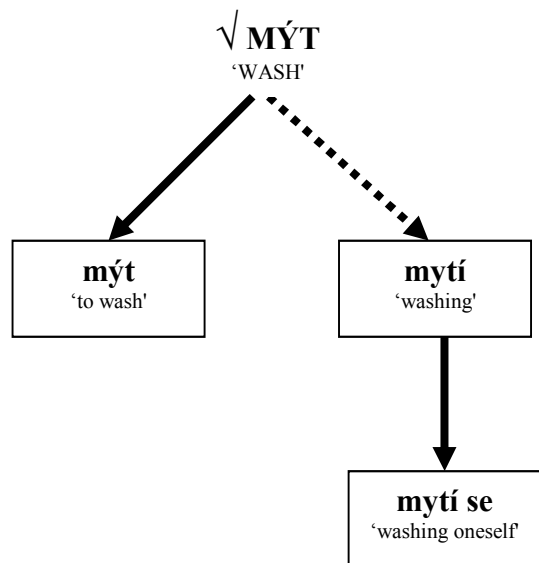
(ii) If Czech, Polish and Slovak reflexive and reciprocal (and presumably decausative) nouns are not derived from reflexive and reciprocal (and decausative) verbs, **what is it that undergoes the actual process of nominalization?** Is it a corresponding transitive verb or rather a (category neutral) root? The following scheme illustrates these two theoretically possible options. In (5a) there is a root, which is not specified for its category; this root becomes a verb, which serves as an input for the subsequent process of nominalization (broken line arrow). In (5b) the split between the verbal and the nominal derivations begins already at the root level, as the root becomes a noun directly without the verbal intermediate stage; in other words, what serves as an input for the process of nominalization is the root itself, the process of nominalization being parallel to the process of "verbalization", i.e. the process that takes the root and makes it a verb.

(5) Two possible nominalization inputs for the derivation of West-Slavic reflexive and reciprocal nouns

a) The process of nominalization applies on a transitive verb



b) The process of nominalization applies in the level of concepts



Now, note that both these questions formulated above for the nominal domain are in fact relevant for the domain of adjectival passives as well. Recall that in the previous chapter we have observed, following Meltzer's (2009, 2011) discussion of adjectival passives in Hebrew, that Slavic adjectival passives do not form a homogenous group. Some of these adjectives are (true) adjectival passives, some are adjectival decausatives and the majority are ambiguous between the two voices. Meltzer suggests that the application of two different operations is responsible for this division, namely the operation of saturation and the operation of decausativization, which are available in the adjectival domain in the same way as in the verbal domain. According to her, both these operations target a (category neutral) root along with the actual process of adjectivization or – perhaps – immediately after the process of adjectivization has taken place. Meltzer is not explicit on this point, nor does she actually offer justification for her choice regarding the input of the derivations, except for the morphological simplicity of some adjectival decausatives in comparison with their verbal counterparts. Put differently, the distinction between adjectival passives and adjectival decausatives is tenable also under the assumption that adjectival passives are derived directly from their transitive verbal counterparts, while the adjectival decausatives are derived directly from their unaccusative verbal counterparts. On such a scenario, the only thing needed is the process of adjectivization, which can target either a transitive verb (giving rise to an adjectival passive) or an unaccusative verb (giving rise to an adjectival decausative), while the operations of saturation and decausativization "do their job" in the verbal domain only.

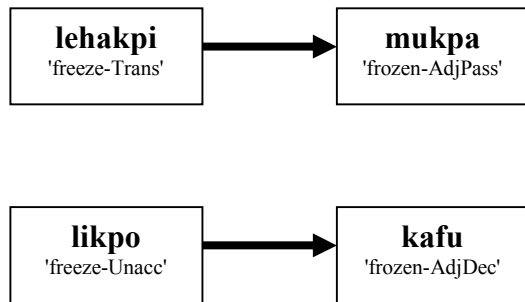
Recall in this context that we have already noted in subsection 4.3.4, based on the comparison of unaccusative verbs, whose transitive alternate is frozen, with two-place unaccusative verbs (following Horvath&Siloni 2008) and with theme-unergative verbs, that there is good reason to assume that adjectival decausatives are not derived directly from corresponding unaccusative verbs. Namely, if adjectival decausatives were derived from unaccusative verbs directly, why do two-place unaccusatives and theme-unergatives verbs not give rise to this type of adjectives as well, although all of these three verbal voices assign to their subjects the same (Theme) theta role? Moreover, recall that the quite systematic appearance of *-lʹ* suffix (rather than the ordinary *-nyʹ/-tyʹ* suffix) on Czech adjectival decausatives, when their unaccusative verbal counterparts are derived from frozen (transitive) entries (and are not accompanied with the clitic SE), seems to point to the same direction.

This chapter further investigates the derivational history of adjectival decausatives, searching mainly for additional and more direct evidence for a proper answer to the question: **Is the derivation of adjectival decausatives (indeed) Verb Independent (like the**

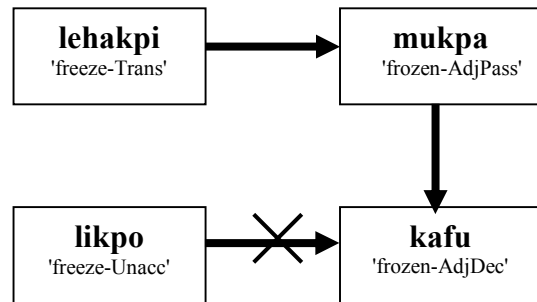
derivation of reflexive and reciprocal nominals in West Slavic) or (after all) rather exclusively verb based? The two derivational options are graphically depicted in (6); compare with (4) above.

(6) Two possible derivations of adjectival decausatives (examples from Hebrew)

(a) exclusively verb based derivation



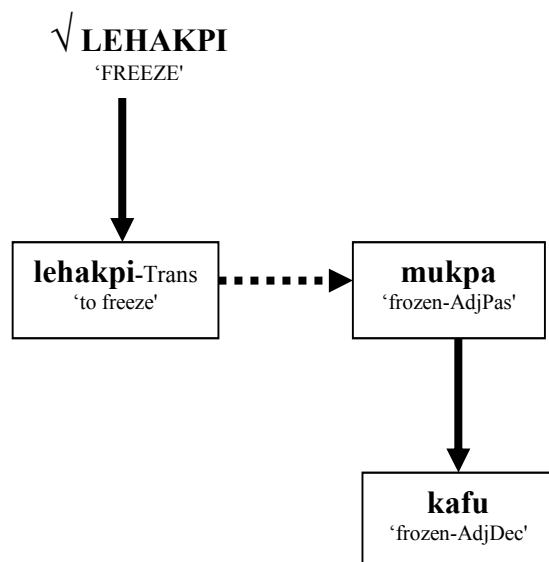
(b) verb independent derivation



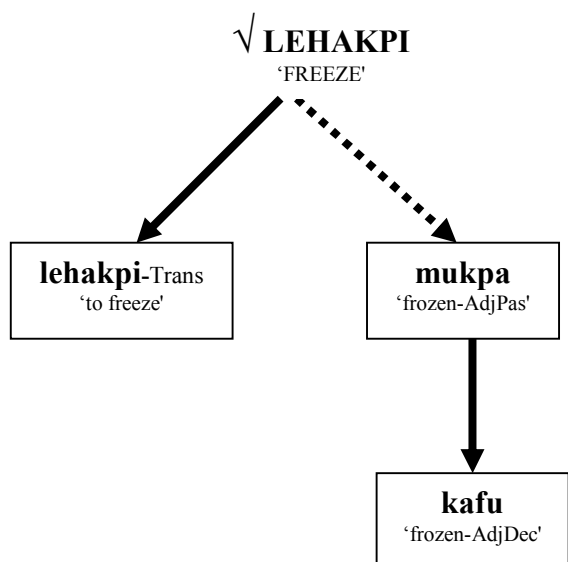
Now note, that if this is indeed so, i.e. if the derivation of adjectival decausatives is verb independent (6b) rather than exclusively verb based (6a), the second question formulated above with respect to nominals arises here as well: **What is it that undergoes the actual process of adjectivization?** Is it a corresponding transitive verb or rather a (category neutral) root? The two theoretically possible options are illustrated in (7); compare with (5) above.

(7) Two possible inputs for the process of adjectivization (examples from Hebrew)

a) The process of adjectivization applies on a transitive verb



b) The process of adjectivization applies in the level of concepts



In (7a) there is a concept, which is not specified for its category. This concept becomes a verb, which serves as an input for the subsequent process of adjectivization (broken line arrow). In (7b) there is the same category-neutral concept but this time the split between the

verbal and the adjectival domain begins already at this (concept) level, as this concept can become an adjective directly without any intermediate stage in the verbal domain; in other words, what serves as an input for the process of adjectivization is the concept itself, the process of adjectivization being parallel to the process of "verbalization", i.e. the process that takes the same concept and makes it a verb.

To recapitulate, we have formulated four questions regarding the derivation history of decausative nouns and adjectives. These questions are summarized in (8):

(8) A summary of four questions regarding the derivation of decausative nouns and adjectives

(ai) Is the derivation of decausative nouns verb independent or rather Exclusively Verb Based?

(aii) At which stage of derivation does the actual process of nominalization apply and what does it do exactly?

(bi) Is the derivation of adjectival decausatives verb independent or rather Exclusively Verb Based?

(bii) At which stage of the derivation does the actual process of adjectivization apply and what does it do exactly?

The purpose of this final chapter is to answer the question formulated in **(8bi)**, while the investigation of the remaining three questions is still ongoing and will be answered here mostly in a hypothetical manner. Namely, focusing on Czech experiencer formations I will try to show that the derivation of Czech adjectival decausatives is verb independent (6b). Moreover, I will partially touch on the question formulated in **(8bii)**, suggesting that the process of adjectivization intrinsically involves marking of appropriate Theta-candidates for saturation, the output of the process being a true adjectival passive; this suggestion thus in turn will lead to the conclusion that there is no need to assume that the operation of saturation as such is operative in the domain of adjectives.

Beyond that I will speculate that it is reasonable to assume that the process of adjectivization applies "already" in the level of category neutral concepts (7b). The derivation of event nouns, on the other hand, seems to be more closely tied to verbs. I will therefore hypothetically suggest that – unlike the process of adjectivization - the input for the process of nominalization is not a category neutral concept but rather a verb (5a). If so, one can expect that the process of nominalization can in principle target any verb present in the lexicon,

including decausatives verbs (1c). While this is indeed possible, it does not necessarily disqualify the option that the operation of decausativization is after all available in the nominal domain as well. In other words, it can be that both derivational paths are usable for the derivation of decausatives nouns – the exclusively verb based derivation (1c) as well as the verb independent derivation (4). I will however formulate a hypothesis that only the latter gives rise to true event decausative nouns, while the former is not fully productive and it results in nouns which lack an event structure³.

The chapter is organized as follows. We will start by the general presentation of three different realizations of experiencer verbs (5.1), adopting Reinhart's 2002 analysis of the phenomenon. Section 5.2 is devoted to Czech experiencer verbs. In the course of the discussion we will see that Czech experiencer verbs display certain properties which differ from their properties in English, as reported by Reinhart, and we will argue that this state of affairs follows from the different nature of Subject-matter role in these two languages. Section 5.3 focuses on two groups of experiencer verbs whose Cause role is frozen, and examines adjectival and nominal alternates of these verbs. Based on the comparison of adjectives from these two groups with adjectival counterparts of "standard" (non-frozen) experiencer verbs, we will argue that the derivation of Czech adjectival decausatives must be considered Verb Independent. Finally section 5.4 offers three working hypotheses for further investigation of derivational relations inside and between different lexical categories.

5.1 Three different realizations of experiencer verbs

It is known that verbs whose theta-grid contains the Experiencer-role enable the following two realizations:

(9) Two different realizations of experiencer-verbs I

- (a) The doctor worried Mary.
- (b) Mary worried about the doctor.

³ Grimshaw (1990) in her influential study of argument structure and nominalization calls these nouns simple event nouns; these nouns share with corresponding verbs the argument structure, however they do not preserve the event structure of their verbal counterparts.

At first glance it seems that the verb *worry* in both sentences above realize the same theta roles, the difference being the surface position of the arguments which are assigned these roles. Such an analysis has been proposed e.g. by Belletti and Rizzi (1988), who argued that in both sentences the noun *Mary* bears the Experiencer role while the noun *the doctor* is equipped with a Theme role. However, in addition to the problem that such a proposal poses for any theory of lexicon-syntax linking (why are the same theta roles merged differently?), it has been pointed out by Pesetsky (1995) that the theta material involved in (9a) differ from that in (9b). The crucial point in Pesetsky's observation was that the two sentences in (9) do not have the same truth conditions since they do not entail each other. In (9b) it is obvious that *the doctor* is the subject matter of Mary's worry, but the same does not necessarily hold in (9a), as this sentence can also be true if the doctor made Mary worry about something else (not about him). Pesetsky demonstrates this difference by the distinct contradiction patterns of sentences like (10) (his (161)):

(10) Two different realizations of experiencer-verbs II

- (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.

While the sentence in (10a) is inevitably contradictory, the same is not true for (10b). E.g., in this sentence "the subject matter of John's worry might be the possibility of an epidemic" (Pesetsky 1995:58). Based on this, Pesetsky concluded that the arguments of the verbs in (9a) and (9b) are not necessarily identical, proposing a "new" theta role for the *doctor* in (9b), which he called Subject Matter:

(11) Two different realizations of experiencer-verbs III

- (a) The doctor[Cause] worried Mary[Experiencer].
- (b) Mary[Experiencer] worried about the doctor[Subject-Matter].

Note, however, that sentences like the one in (10b) can result in contradiction if its subject *Mary's poor health* is forced to be understood as the subject matter of John's worry. It thus seems that there is yet another realization available for experiencer verbs, namely the realization in which the Subject Matter is realized as the subject and the Cause is left unrealized.

(12) The third realization of experiencer-verbs

Her health[Subject-Matter] worried Mary[Experiencer].

As observed by Pesetsky (1995) and Reinhart (2002), this brings us back to our starting point. On the one hand, it appears that the theta grid of experiencer verbs like *worry* contains three different theta roles, namely Cause, Experiencer and Subject Matter. But on the other hand, it seems, after all, that these verbs can map the same pair of theta roles, namely the Experiencer and the Subject Matter, in two different ways, leaving the Cause role unrealized: *The doctor* can be interpreted as the Subject Matter if surfacing in subject position (9a) and it must be interpreted as the Subject Matter if realized as an oblique phrase (9b), the noun *Mary* bearing the Experiencer role in both sentences, either in the direct object position (9a) or in subject position (9b).

Moreover, there is yet another perplexing issue related to experiencer verbs. As just mentioned, the theta grid of experiencer verbs contains three different theta roles. But if this is so, then why is (13) ungrammatical? That is, why cannot the verb assign all three theta roles together?

(13) Why can't the three arguments of experiencer-verbs co-realize?

* The doctor[Cause] worried Mary[Experiencer] about her health[Subject-Matter].

In what follows I will shortly sketch and adopt Reinhart's (2002) analysis of experiencer verbs, which supplies a plausible solution for both puzzles. Namely, after presenting the essence of her Theta System (5.1.1), we will introduce her Cluster distinctness condition, providing an explanation for the ungrammatical status of sentences like (13) as well as an account for the derivation of sentences like (11a) and (12) (5.1.2); then the derivation of sentences like (11b) will be discussed briefly, adopting Reinhart's proposal that their derivation involves the operation of decausativization, which has been already introduced in subsection 4.3.1.1.

5.1.1 The essence of Reinhart's Theta system

Reinhart's analysis of verbal alternations like those in (11) and (12) above is based mainly on her view of theta roles as entities with internal structure and is a part of a larger and more general approach to theta theory. Since I will adopt Reinhart's Theta System in the remainder

of this chapter, the following exposition will be a little bit broader than needed just for her analysis of object-experiencer verbs⁴.

Reinhart suggests that theta roles are not atomic entities but clusters of two features:

- (i) **(c)**ause – cause the event denoted by the verb
- (ii) **(m)**ental state – mental state involved in the event denoted by the verb

The value of these two features can be either (+) or (–). The theta cluster can be either fully specified, e.g. [+c,+m], [–c+m], or unary, i.e. specified for only one feature, e.g. [+c], [–m]. The correspondence of these clusters to the known θ -roles labels is not always one to one. Many of the feature clusters have varying contextual interpretations (see Dowty's (1991) for the claim that the meaning of θ -roles is often contextually determined). Nevertheless, it is convenient to have some labels for the clusters, so they are referred to by the role that they are most typically related to.

(14) Theta roles defined in terms of feature clusters (Reinhart 2000, 2002)⁵

- (i) [+c+m] - corresponds to what is called AGENT.
- (ii) [+c-m] - roughly corresponds to what is called INSTRUMENT.
- (iii) [-c+m] - corresponds to what is called EXPERIENCER.
- (iv) [-c-m] - corresponds to what is called THEME/PATIENT.
- (v) [+c] - corresponds to what is called CAUSE.
- (vi) [+m] - SENTIENT (subjects of verbs like love, know etc.);
- (vii) [-c] - roughly corresponds to what is called GOAL/BENEFACTOR.
- (viii) [-m] - corresponds to what is called SUBJECT MATTER/TARGET OF EMOTION.

Depending on the context, a unary cluster may be interpreted as a fully specified cluster. For example [+c] cluster (Cause) can be interpreted as [+c+m] (Agent) and as [+c-m] (Instrument) (but not as [-c+m] (Experiencer) or [-c-m] (Theme/Patient), as its "c" value is

⁴ Reinhart's Theta System will be adopted here since I am not aware of a better mechanism for lexicon-syntax linking of arguments. For criticism of Reinhart's Theta System see e.g. Alsina (2002), Everaert (2002), Vogel (2002); the reader is invited to read these works and judge by himself the argumentation they contain.

⁵ Marelj (2004) suggests yet another theta role in the Theta System framework, namely an empty [] cluster, which is involved in the derivation of middle formations in lexicon type languages (recall our survey of Slavic middles in section 2.4).

set). Similarly the [-c] cluster can be interpreted as [-c-m] (Theme/Patient) or [-c+m] (Experiencer) (but not as [+c+m] (Agent) and [+c-m] (Instrument)).⁶

The "non-atomic" character of theta roles (each theta role is defined as a cluster of features) enables Reinhart to formulate in a very precise and systematic way how verbs are realized in the syntax. More specifically, Reinhart introduces two mechanisms responsible for the mapping of verbs to the syntax: These mechanisms are:

The marking-mechanism that "prepares" verbs for insertion into the syntax; the marking procedure involves an indexation of theta roles and an eventual assignment of the ACC feature to the verb.

The merging-mechanism which is responsible for the appropriate merging of the arguments in the Syntax, i.e. it decides whether an argument is merged externally or internally. The mechanisms are presented in (15) and (16), respectively.

(15) Lexicon Marking (Reinhart 2000, 2002):⁷

Given an n-place verb-entry (verbal concept), $n > 1$.

- i. Mark [-] clusters with index 2.
- ii. Mark [+] clusters with index 1.
- iii. If the entry includes both a [+] cluster and a fully specified cluster $[\alpha, -c]$, mark the verb with the ACC feature.

(16) Merging Instructions (Reinhart 2000, 2002):

- i. When nothing rules this out, merge externally.
- ii. An argument realizing a cluster marked 2 merges internally; an argument realizing a cluster marked 1 merges externally.

Note, that the condition that Lexicon marking (15) applies only to n-place entries, where $n > 1$, together with Merging Instruction (16i), ensure that the external merge is preferred. This is motivated by economy considerations. Namely, since the subject position must always be

⁶ Marelj (2002) suggests that "at the level of interpretation, all thematic roles must be fully specified". This requirement is, according to her, achieved via a Full Interpretation principle which applies on clusters of verbal arguments once these are inserted into the numeration.

⁷ [-] cluster means clusters all of whose features have the value "-", i.e. the clusters [-c], [-m] and [-c-m]. [+] cluster means clusters all of whose features have the value "+", i.e. the clusters [+c], [+m] and [+c+m]. $[\alpha, -c]$ cluster means clusters whose one feature is $-c$ and second feature is either $-m$ or $+m$, i.e. the clusters [-c-m] and [-c+m].

filled eventually (on EPP grounds), it is less economical to fill it in two steps (first merge internally and then move to the subject position), when one step derivation is possible. Recall in this respect also the external merge of Theme-subjects of theme-unergatives verbs and the internal merge of Theme-subjects of unaccusative verbs, shown in (39), subsection 4.3.1.1. The former are basic one-place verbs and therefore not subject to the Lexicon Marking procedure, as the number of arguments they take is not bigger than 1; their Theme role thus remains unmarked and according to Merging Instruction (16i) it merges externally. The latter, on the other hand, are not basic lexical entries but rather products of the operation of decausativization (see 4.3.1.1 and 5.1.3 below) which reduces an external theta role of a previously marked (basic) transitive verb. The remaining Theme role of an originally transitive verb is thus equipped with index 2 and therefore merges internally according to Merging Instruction (16ii).

With this in mind we are ready to return to the two above mentioned puzzling properties displayed by the experiencer verbs.

5.1.2 Cluster distinctness and two object-experiencer realizations of experiencer verbs

Let us start with the ungrammatical status of sentences like (13), repeated below:

(13) Why there is not yet another realization of experiencer-verbs?

* The doctor[Cause] worried Mary[Experiencer] about her health[Subject-Matter].

Following Pesetsky's (1995) work, Reinhart assumes the basic lexical representation of experiencer verbs is as follows:

(17) Basic lexical representation of experiencer verbs I

WORRY (Cause, Experiencer, Subject-Matter)

In terms of her Theta System this entry can be rewritten as follows:

(18) Basic lexical representation of experiencer verbs II

- | | | |
|-----|----------------------------|---|
| (a) | prior to lexicon marking: | WORRY ([+c], [-c+m], [-m]) |
| (b) | following Lexicon marking: | WORRY _{ACC} ([+c] ₁ , [-c+m], [-m] ₂) |

Worry involves three theta roles – [+c] (Cause), [-c+m] (Experiencer) and [-m] (Subject matter) – and as such it undergoes Lexicon marking (15): [+c] is marked with index 1 (according to 15ii), and therefore it is expected to merge externally (according to 16ii); [-m] is marked with index 2 (according to 15i), and therefore it is expected to merge internally (according to 16ii); the "mixed" cluster (a cluster whose feature values are not uniformly – or +), i.e., the [-c+m] cluster, is left unmarked (as it is neither a [-] nor a [+] cluster), and therefore it is expected to merge externally, unless something rules its external merge out (according to 16i). In addition, the verb is "equipped" with Accusative case (according to 15iii). Now, while sentences like (13) above, with all three theta clusters realized, are ungrammatical, object experiencer sentences like (11a) and (12), with either [+c] cluster or [-m] cluster in subject position, repeated below as (19), are perfectly acceptable. (We will return immediately to the fact that in (19b) the Subject matter is realized as a subject while the Experiencer is in the object position, which at first glance contradicts merging instruction (16)).

(19) Two object-experiencer realizations of experiencer verbs

- (a) The doctor[+c] worried Mary[-c+m].
- (b) Her health[-m] worried Mary[-c+m].

The generalization thus is that for some reason entries like 'worry' cannot co-realize their [+c] and [-m] clusters. Based on this observation, Reinhart formulates the Cluster distinctness condition, which accounts directly for the ungrammatical status of the sentence in (13):

(20) Cluster distinctness (Reinhart 2002)

- (i) Two indistinct theta-clusters cannot be both realized on the same predicate.
- (ii) Two theta-clusters are distinct iff (a) they share at least one feature, and (b) there is at least one feature or value which they don't share.

According to clause (20ii) the clusters [+c] and [-m] are indistinct as they share neither of the two features "c" and "m"; clause (20i) thus bans them from appearing together on the same predicate⁸. If the [+c] cluster is chosen at the expense of [-m], we get the object-

⁸ Note that indistinct clusters, as defined in (27), can be only unary clusters; fully specified clusters will always share some feature with other clusters and at the same time will differ from them in at least one feature or value

experiencer derivation in (19a); if the [-m] cluster is chosen at the expense of [+c], we get the object-experiencer derivation in (19b). It is worth noting here that, unlike e.g. the operation of decausativization (see subsection 4.3.1.1 (Chapter 4) and subsection 5.1.3 below), the Cluster distinctness condition is not a valence changing operation, but rather a kind of "filter" which applies in the Lexicon-Syntax interface upon the merger of arguments. That is, what exists in the lexicon is only the (basic) non-derived entry containing three different theta roles together; the two specific object-experiencer realizations of this entry are not present in the lexicon but only in the syntax.

The remaining question is why in sentence (19b) the Subject-matter role surfaces in the subject position. It is expected that the Cause role is merged externally in (19a), as it bears the index 1 according to (15ii) and is therefore assigned to an externally merged argument according to (16ii). But the [-m] cluster, i.e. the Subject-matter role, is assigned the index 2 according to (15i), while the [-c+m] cluster, i.e. the Experiencer role, is not indexed. One then expects that the Subject-matter role in (19b) would merge internally (in concert with 16ii) while the Experiencer role will merge externally (in concert with 16i). However, Reinhart argues that in fact the external merger of the Experiencer is impossible by merging instruction (16i): it blocks the external merger of the Experiencer because the latter has to check the accusative Case of the verb, as only fully specified [α ,/-c] clusters, i.e. [-c+m] (Experiencer) or [-c-m] (Theme) can check accusative. In other words, Reinhart proposes that in the course of the derivation of the sentences like (19b) both verbal arguments are merged internally and subsequently the Subject matter argument moves to the subject position in order to satisfy the EPP. Support for this movement analysis comes from the following anaphora patterns:

(21) Object-experiencer verbs derived by movement (Reinhart 2002)

- (a) [His_i health]_j worries every patient_i e_j.
- (b) * [His_i doctor]_j visits every patient_i.

The sentence in (21b) contains the transitive verb *visit* whose subject is merged externally. The fact that the possessive pronoun *his* is not c-commanded by the internally merged argument *every patient* in any stage of the derivation, results in ungrammaticality. On the

(of course with the exception of two identical clusters). Another pairs of indistinct clusters according to Cluster distinctness thus are ([+c], [+m]), ([-c], [-m]), ([-c], [+m]). While the clusters [+c] and [+m] will never realize together also for independent reason, namely both these clusters are marked by index 1 which enforces their external merging but only one argument can merge externally, it is not clear whether the Distinctness condition is relevant for the remaining two pairs, i.e. ([-c], [-m]), ([-c], [+m]).

other hand, the subject of our experiencer verb *worry* in (21a) is merged in an internal position. In this position the possessive pronoun *his* is properly c-commanded by *every patient*, and therefore the latter can bind it, resulting in a grammatical sentence.

5.1.3 Decausativization and the subject-experiencer realization of experiencer verbs

Finally, let us turn to sentences like (11b), repeated below as (22).

(22) The subject-experiencer derivation of experiencer verbs

Mary[Experiencer] worried about the doctor[Subject Matter].

As far as the realization in (22) is concerned, Reinhart argues that it is an output of the valence changing operation of decausativization, which has already been introduced in section 4.3.1.1 in the course of our discussion of adjectival passives. Recall that we have pointed out there that the operation of decausativization is responsible for the derivation of unaccusative verbs and it is supposed to be available for any lexical entry whose theta grid contains the Cause, i.e. [+c], role. If so, it should be available for experiencer entries as well, although its effect will be slightly different. Namely, as in the case of the unaccusative derivation, the operation of decausativization deletes the [+c] (Cause) role from the theta-grid of the (basic) experiencer entry, creating a new (subject-experiencer) lexical entry. However, while in the unaccusative derivation, the remaining role is [-c-m] (Theme), (as illustrated in (23)), the remaining role in the experiencer derivation is [-c+m] (Experiencer). This difference straightforwardly accounts for their different syntactic realization, as follows. The [-c-m] (Theme) role is assigned the index 2 according to (15i), and as such it is merged internally according to (16ii). The [-c+m] (Experiencer) role, in contrast, has no index (as "mixed" roles are not subject to the marking) and therefore is merged externally, according to (16i). Note that the external merging of the [-c+m] role, unlike its internal merger in sentences like (19b), follows from the fact that the operation of decausativization reduces, together with the [+c] role, also the Accusative case. This is why nothing rules out the external merger of the [-c+m] (Experiencer) role in (22), unlike in the object-experiencer derivation (19b).

(23) Unaccusative derivation

- (a) Decausativization: $\text{BREAK}_{\text{ACC}} ([+c]_1, [-c-m]_2) \rightarrow \text{BREAK} ([-c-m]_2)$
- (b) The glass_i[-c-m] broke e_i.

(24) Subject-experiencer derivation

- (a) Decausativization: WORRY_{ACC} ([+c]₁, [-c+m], [-m]₂) \rightarrow WORRY ([-c+m], [-m]₂)
- (b) Mary[-c+m] worried about the doctor[-m].

To recapitulate: Basic forms of experiencer verbs contain three theta roles: [+c], [-c+m], [-m] (25). These basic forms can enter the Syntax in three different shapes. If the experiencer is realized as a verbal object, the subject is assigned either the Cause role (26i) or the Subject matter role (26ii), due to the Cluster distinctness condition (20). Beyond that, the basic entry can be targeted by the operation of decausativization (as any entry equipped with the [+c] (Cause) role), resulting in the subject-experiencer realization (26iii).

(25) Non-derived forms of experiencer verbs

- (a) prior to lexicon marking: VERB ([+c], [-c+m], [-m])
- (b) following Lexicon marking: VERB_{ACC} ([+c]₁, [-c+m], [-m]₂)

(26) Three different realizations of experiencer verbs

- (i) [+c], [-c+m]_{Acc} [-m] is not realized due to Cluster distinctness
- (ii) [-m], [-c+m]_{Acc} [+c] is not realized due to Cluster distinctness; [-m] moves to subject position
- (iii) [-c+m], ([-m])[+c] is not realized due to Decausativization (the realization of [-m] is optional)

With this in mind we are ready to approach Czech experiencer formations.⁹

⁹ Glushan (in preparation) discusses unaccusative verbs in Russian, where she observes that (in a normal/natural context) animate subjects of these verbs are in fact Experiencers. She shows that unaccusative verbs with animate subjects do not pass traditional unaccusative tests in Russian, and subsequently she suggests that these subjects are in fact assigned two theta roles – a Theme role in a VP internal position and an Experiencer role in a position outside the VP, to which these animate subjects move; this movement analysis thus enables her to still consider these verbs unaccusatives. Note, however, that this analysis introduces the extra, previously unmotivated, assumption that theta roles can be assigned also in derived positions (rather than only in base positions).

One (but not only) possible account of the phenomenon in terms of Theta System assumed here can be that the theta grid of verbs discussed by Glushan in fact contains both the Theme role and the Experiencer role, only one of which is chosen for a particular syntactic derivation (because of the case considerations/limitations) – either Theme is chosen and merged internally, or Experiencer is chosen and merged externally.

In order to avoid any misunderstanding, the reader should be aware that I use the term "experiencer verbs" in its traditional sense here, i.e., only experiencer verbs which do not allow any Theme – Experiencer variations are discussed here.

5.2 Czech experiencer verbs

Relying on the following series of examples it seems that Czech experiencer verbs display all the three realizations which have been described in the previous section for worry-type verbs in English.

(27) Three different realizations of Czech experiencer verbs

- (a) Ten klaun Pavla vyděsil/rozveselil/rozčílil (a Pavel se tím klaunem vyděsil/rozveselil/rozčílil natolik, že začal křičet).
that clown Pavel_{Acc} terrified/jollified/upset (and Pavel_{Nom} SE that clown_{Inst} terrified/jollified/upset so that started cry)
'That clown terrified/jollified/upset Pavel (and P. was so terrified/jollified/upset regarding the clown that he started to cry).'
- (b) Ten článek Pavla vyděsil/rozveselil/rozčílil, (ale Pavel se nevydělil/nerozveselil/nerozčílil tím článkem).
That article Pavel_{Acc} terrified/jollified/upset (but Pavel_{Nom} SE not-terrified/not-jollified/not-upset that article_{Inst})
'That article terrified/jollified/upset Pavel (but Pavel was not terrified/jollified/upset from the article).'
- (c) Pavel se vydělil/rozveselil/rozčílil tou zprávou, (# ale ta zpráva Pavla nevydělila/nerozveselila/nerozčílila).
Pavel_{Nom} SE terrified/jollified/upset that report_{Inst} (but that report Pavel_{Acc} not-terrified/not-jollified/not-upset).
'Pavel was terrified/jollified/upset from that report (# but that report did not terrify/jollify/upset Pavel).'

The sentences in (27a), (27b) and (27c) seem to be instances of the three experiencer verb realizations in (26i), (26ii) and (26iii) respectively. That is, the most natural reading of the sentences in (27a) is the reading in which the subject *klaun* ('clown') is interpreted as the Cause of Pavel's, i.e. experiencer's, state of mind (although the reading in which the subject is interpreted as the Subject-matter is available as well, as the supplement in the parenthesis shows); the most natural reading of the sentences in (27b) is the reading in which the subject *článek* ('article') is interpreted as the Subject-matter of Pavel's, i.e. experiencer's, state of mind (although the reading in which the subject is interpreted as the Cause is available as well, compare with (10b)); and finally the sentences in (27c) represent the subject experiencer realization (compare with (10a)), as witnessed also by the presence of the SE morphology typical of reduction operations.

However, as we will see in this section, the properties of Czech experiencer verbs are not exactly the same as the properties of worry-type verbs in English. Specifically, we will show that Czech experiencer verbs do not allow the anaphora pattern which has been exemplified in (21a) for English; moreover they do allow all their three theta roles to be realized together. Based on this I will hypothesize that the future composition of the Subject-matter role is [+c-m] rather than [-m] in Czech (5.2.1). This hypothesis will get crucial support in subsection

(5.2.2), where we will show that if the external Cause role of Czech experiencer verbs is frozen (i.e. cannot be inserted in the syntax), these verbs can still passivize.

5.2.1 Anaphora binding and the co-occurrence of Cause and Subject matter

In languages like English, in which the anaphora pattern presented in (21a), repeated below, holds (at least for some speakers), the movement analysis of the object-experiencer in sentences such as (19b) seems to be the only plausible explanation for the fact that the Subject matter in these sentences surfaces in the subject position.

(21) Object-experiencer verbs derived by movement (Reinhart 2002)

- (a) [His_i health]_j worries every patient_i e_j.
- (b) * [His_i doctor]_j visits every patient_i.

But it appears that the same anaphora binding cannot be established in Czech. As the Czech example in (28a), which is parallel to the English sentence in (21a), shows, the binding of the possessive pronoun in the subject position by the quantified noun phrase in the object position is impossible, exactly as in the sentences in (28b) and (21b), which involve the transitive verb 'visit'.

(28) Impossibility of the backward anaphora binding with Czech object-experiencer verbs - I

- (a) * [Jeho_i zdraví]_j znepokojovalo každého pacienta_i e_j.
his health worried every patient_{Acc}
'[His_i health]_j worried every patient.'
- (b) * [Jeho_i doktor]_j navštívil každého pacienta_i.
his doctor visited every patient_{Acc}
'[His_i doctor]_j visits every patient.'

The same is true for other Czech experiencer verbs, as witnessed by three more randomly chosen verbs in (29).

(29) Impossibility of the backward anaphora binding with Czech object-experiencer verbs - II

- * [Jeho_i manželka]_j nadchla / nudila / uspokojila každého manžela_i e_j.
his wife charmed / bored / satisfied every husband_{Acc}
'[His_i wife]_j charmed / bored / satisfied every husband.'

The ungrammatical status of the examples in (28a) and (29) thus suggests that the movement analysis is not suitable for this kind of sentences in Czech. However, it would be hasty to conclude that the subject argument has been merged externally, i.e. directly to its surface position, based on this single piece of evidence. Look at the sentences in (30). These sentences contain all the so-called two-place unaccusative verbs, i.e. verbs whose arguments are both merged internally¹⁰, one of them being subsequently moved to the subject position (see e.g. Pesetsky 1995, Levin & Rappaport 1995, Reinhart 2002). Yet, the (i) sentences in (30) do not allow the anaphora pattern exemplified in (21a) for English (for the sake of completeness the (ii) examples in (30) demonstrate that once the binding relation is released the sentences are perfectly grammatical). So, there must be some other reason banning binding in such contexts.¹¹

(30) Impossibility of the backward anaphora binding with Czech two-place unaccusative verbs

- (ai) * [Jeho_i nové krycí jméno]_j uniklo e_j každému špionovi_i.
(aii) √ [Jeho_i nové krycí jméno]_j uniklo e_j každému špionovi_k.
his new cover name escaped every spy-Dat
'His new code name escaped every spy.'
- (bi) * [Její_i šaty]_j slušely e_j každé modelce_i.
(bii) √ [Její_i šaty]_j slušely e_j každé modelce_k.
her clothes suited every model-Dat
"Her clothes suited every model."
- (ci) * [Jeho_i jídlo]_j chutnalo e_j každému kuchaři_i.
(cii) √ [Jeho_i jídlo]_j chutnalo e_j každému kuchaři_k.
his food tasted every cook-Dat
"His food tasted good to every cook."

It thus seems that these binding phenomena cannot be taken as a conclusive indication for the internal or the external merging of arguments in languages like Czech. However, as we will see immediately there are additional good reasons to assume that if a subject of Czech object-experiencer verbs is assigned the Subject matter role, it is not merged internally, unlike in English, but externally, i.e. directly to the subject position.

¹⁰ Arguments in favor of an unaccusative analysis of verbs like 'escape', 'lack' or 'lie' are that these verbs (i) do not assign the Accusative case and (ii) cannot passivize (Belletti&Rizzi 1988, Pesetsky 1995, Horvath&Siloni 2008).

¹¹ Perhaps the most natural explanation for the ungrammatical status of the sentences in (30i) is that the subject-anaphora binding relation is established in the S-structure only in Czech.

Let us examine first the restriction on the co-occurrence of the Cause [+c] and Subject matter [-m] roles. Reinhart (2002), following Pesetsky (1995), reports that such a co-occurrence results in ungrammaticality in English. We have illustrated this state of affairs by (13), repeated below, and we have presented Reinhart's Distinctness condition (20), which comes to elucidate this phenomenon.

(13) In English the co-occurrence of the Cause and Subject matter role is impossible (Pesetsky, Reinhart)

* The doctor[Cause] worried Mary[Experiencer] about her health[Subject-Matter].

The fact is, however, that no such restriction seems to hold in Czech. Look at (31a), which contains the translation of English sentence (13); the sentence is perfectly grammatical in Czech:

(31) The Cause and the Subject-matter can co-occur in Czech I

- (a) Doktor zneklidnil Marii ohledně stavu jejího zdraví.
 doctor worried Marie_{-Acc} about state_{-Gen} her health_{-Gen}
 'The doctor worried Mary about her health condition.'
- (b) Marie se zneklidnila ohledně stavu svého zdraví.
 Mary_{-Nom} SE worried about state_{-Gen} her health_{-Gen}
 'Mary worried about her health condition.'

The only possible interpretation of the sentence in (31a) is that the doctor (Cause) made Mary (Experiencer) worry about her health condition (Subject matter), the Subject matter being realized as a genitive complement of the preposition *ohledně* (roughly 'about' or 'as to'), which introduces the subject-matter argument also in subject-experiencer formation (31b). In the huge majority of the cases, however, the Subject-matter role is realized as an instrumental bearing noun (33)¹², which is in Czech a typical form for Instruments.

(32) A typical use of Czech instrumental NPs – Instruments

- (a) Petr zamknul dveře **klíčem**.
 Petr locked door_{-Acc} key_{-Inst}
 'Petr locked the door with a key.'
- (b) Petr stříhá papír **nůžkama**.
 Petr cut paper_{-Acc} scissors_{-Inst}
 'Petr cuts a paper with scissors.'

¹² The reader may have noticed that these Instrumental bearing Subject-matter arguments were already involved in the examples in (27).

The instrumental form *klíčem* ('with a key') in (32a) and the instrumental form *nůžkama* ('with scissors') in (32b) denote an Instrument-role bearing argument of the "manner-verb" *zamknout* ('lock') and *stříhat* ('cut'), respectively. As illustrated below, if the Subject matter argument is realized in a non-subject position with object-experiencer verbs (33i) or subject-experiencer verbs (33ii), it is equipped with the same instrumental morphology.

(33) The Cause and the Subject matter can co-occur in Czech II

- (ai) Ten klaun_i Pavla vyděsil / rozveselil / rozčílil (**svým_i vystoupením**, nikoliv **svým_i vzezřením**).
That clown Pavel_{Acc} terrified / jollified / upset (his performance_{Inst}, not his appearance_{Inst})
'That clown terrified / jollified / upset Pavel (with his performance, not with his appearance).'
- (aii) Pavel se vyděsil / rozveselil / rozčílil (**vystoupením toho klauna**).
Pavel SE terrified / jollified / upset (performance_{Inst} that clown)
'Pavel was terrified / jollified / upset (from the performance of that clown).'
- (bi) Ten článek_i Pavla vyděsil / rozveselil / rozčílil (**svou_i upravou**, nikoliv **svým_i obsahem**).
That article Pavel_{Acc} terrified / jollified / upset (its arrangement_{Inst}, not its content_{Inst})
'The article terrified / jollified / upset Pavel (with its arrangement, not with its content).'
- (bii) Pavel se vyděsil / rozveselil / rozčílil (**úpravou toho článku**).
Pavel SE terrified / jollified / upset (arrangement_{Inst} that article)
'Pavel was terrified / jollified / upset (from the arrangement of that article).'

The interpretation of the sentences in (33ai) is similar to the interpretation of the sentence in (31a), i.e. that the clown (Cause) made Pavel (Experiencer) terrified / jollified / upset regarding his performance (Subject matter); the "division of labor between the Cause argument *clown* and the Subject-matter argument *his performance* is further illustrated by the addition of the phrase *not with his appearance*, i.e. it was not the clown which became the Subject-matter of Pavel's feeling but a specific action/property (out of many actions/properties) of the clown. Exactly the same holds for the sentence in (33bi). Now, if the object-experiencer verbs in (33i) realize the Subject-matter role, one can expect that the negation of the sentences in (33i) by the sentences in (33ii), which contain the subject-experiencer alternates of the object-experiencer verbs in (33i) and the same Subject-matter arguments, will result in contradiction. The examples in (34) show that this prediction is borne out. (The reader is kindly asked to compare the contradictory status of the sentences below, with the non-contradictory status of the sentence in (27b) above.)

(34) The Cause and the Subject matter can co-occur in Czech II

- (a) Ten klaun_i Pavla vyděsil /.../... **svým_i vystoupením** (# ale Pavel se vystoupením toho klauna nevydělil / .../...).
That clown Pavel_{Acc} terrified /.../...his performance_{Inst}, (but P. SE performance_{Inst} that clown not-terrified /.../...)
'That clown terrified /.../... Pavel with his performance (# but P. was not terrified from the performance of that clown).'

- (b) Ten článek_i Pavla vyděsil /.../... **svou_i úpravou** (# ale Pavel se úpravou toho článku nevyděsil / .../...).
- That article Pavel_{.Acc} terrified/.../...his arrangement_{-Inst}, (but P. SE arrangement_{-Inst} that article not-terrified/.../...)
- 'That article terrified/.../... Pavel with his arrangement (# but P. was not terrified from the arrangement of that article).'

Before proceeding, let us return for a moment to our original sentences in (31), repeated below as (35a):

(35) The Cause and the Subject matter can co-occur in Czech IV

- (ai) Doktor zneklidnil Marii **ohledně stavu jejího zdraví**.
 doctor worried Marie_{.Acc} about state_{.Gen} her health
 'The doctor worried Marie about her health condition.'
- (a ii) Marie se zneklidnila **ohledně stavu svého zdraví**.
 Marie_{.Nom} SE worried about state_{.Gen} her health
 'Marie worried about her health condition.'
- (bi) Doktor_i zneklidnil Marii **stavem svého_i zdraví**.
 doctor worried Marie_{.Acc} state_{-Inst} his health
 'The doctor worried Marie about his health condition.'
- (bii) Marie se zneklidnila stavem **doktorova zdraví**.
 Marie_{.Nom} SE worried state_{-Inst} doctor's health
 'Marie worried about the doctor's health condition.'
- (ci) ? Doktor zneklidnil Marii **stavem jejího zdraví**.
 doctor worried Marie_{.Acc} state_{-Inst} her health
 The doctor worried Marie about her health condition.
- (cii) Marie se zneklidnila **stavem svého zdraví**.
 Marie_{.Nom} SE worried state_{-Inst} her health
 'Marie worried about her health condition.'

Why is the Subject matter argument in (35a) realized as the complement of a preposition, while in all the other cases presented here we have seen the Subject matter bears the Instrumental case? I believe it is simply because of the special relation between the Cause in the subject position and the Subject matter in the oblique position that hold in (35a), not a special property of the verb. This is witnessed by the sentences in (35b), which involves the same verbs but a (minimally) different Subject matter argument (instead of *Mary's health*, the Subject-matter role is assigned to *doctor's health*). Moreover, it appears that the Instrumental realization of the Subject matter argument of (35a) is not completely ungrammatical in (35ci), although many Czech speakers (including me) will find the sentence imperfect; note also that this slight inconvenience disappears in (35cii), where the Instrumental Subject-matter is realized by the Subject-experiencer alternate.

Based on the data presented in this subsection we can thus conclude that the Czech data do not fully fit in with Reinhart's observations for English. Namely, we saw that the anaphora pattern reported by Reinhart for English (21) cannot be established in Czech, albeit this fact seems to follow from quite independent reasons (see the discussion of the examples in 30). Crucially, however, it appears that in Czech, unlike English, the Cause and the Subject-matter role can co-occur with a single verb. **Let us thus propose the following hypothesis: The feature composition of the Subject-matter role is not [-m] but rather [+c-m] in Czech.** This proposal will explain straightforwardly the co-occurrence of the Subject-matter role with the [+c] Cause role, as these two roles will now be distinct according to the Cluster distinctness condition in (20). Moreover, it will still allow either the [+c] Cause role or the [+c-m] Subject matter role to be realized as a sentential subject, one at the expense of the other, giving rise to the two object-experiencer derivations depicted in (26i) and (26ii). Specifically, following the basic observation made by Levin and Rappaport (1995), Reinhart (2002) in her discussion of manner verbs argues that if a verb's theta grid contains more than one [+c] role, only one of them can merge externally¹³. This is illustrated in (36) (Reinhart's (6)).

(36) Two different realizations of manner verbs

- (a) Max[+c+m] peeled the apple[-c-m] (with the knife[+c-m]).
- (b) The knife[+c-m] peeled the apple[-c-m].

In terms of Reinhart's Theta System, the two realizations of the manner verb *peel* in (36a) and (36b) are in principle very similar to the two object-experiencer realizations in (26i) and (26ii), respectively. In (36a) it is the [+c+m] Agent role which is chosen to merge externally leaving for the [+c-m] Instrument role the internal merge option only; in (36b) the [+c-m] Instrument is chosen for the external merge, in which case the [+c+m] Agent role remains

¹³ Manner verbs are transitive verbs selecting an Agentive subject. What distinguishes these verbs from other agentive verbs is a reference to a specific instrument without which the event denoted by a verb cannot take place. Based on this Reinhart (2002) argues that while any transitive verb whose subject can be interpreted as an Agent, licenses instruments optionally, manner verbs select Instruments as a part of their theta grid. Thus, while manner verbs can realize instruments in a subject position (see (36b) in the text), "ordinary" agentive verbs cannot do so, as illustrated in (ii), Reinhart's (5a):

- (i) The baby ate the soup with the spoon.
- (ii) *The spoon ate the soup.

unrealized. (Recall that the [+c+m] role is assigned the index 1 by Lexicon Marking rule (15ii), and therefore cannot merge internally, according to Merging Instruction (16ii); the [+c-m], on the other hand, is not indexed, since it is a mixed cluster, and thus both the external and the internal merge are in principle possible for it.) Our hypothesis that the feature composition of the Subject-matter role is [+c-m] in Czech can thus still account for the two realizations in (26i) and (26ii), the only difference between the analysis of the Czech data advanced here and Reinhart's analysis of the English data being that realization (26ii) involves movement in English, but not in Czech.

Furthermore, under the above suggested hypothesis the anaphora facts presented in (28) and (29) are not surprising, as the [+c-m] subjects are expected to merge externally, i.e. directly to the subject position, and therefore there is no stage in the derivation in which it is bound by the verbal object. Last but not least, recall from (32) that we have pointed out that Subject matter arguments in Czech are very reminiscent to Instruments in that sense that both are equipped with an instrumental case¹⁴; assuming with Reinhart that the feature composition of the Instrument theta role is [+c-m], our present hypothesis seems even more natural. Note also, that in Reinhart's Theta system the difference between the unary [-m] cluster and the fully specified [+c-m] cluster is semantically minimal; the latter is simply a special instance of the former.

The next section provides further and crucial support for the hypothesis just put forth.

5.2.2 Passivization of object-experiencer verbs whose Cause role is frozen

Siloni and Preminger (2009) in their discussion of nominal voices across languages report that, in Hebrew, there is a subset of object-experiencer verbs which do not have (event) nominal counterparts.

¹⁴ In fact there is yet another typical use of instrumental phrases in Czech, namely by-phrase adjuncts to passive verbs (i) and Instrument-like adjuncts to transitive verbs (ii):

- (i) Dveře byly zamčeny **Petrem / klíčem**.
 door_{Nom} were locked_{Pass} Petr_{Inst} / key_{Inst}
 'The door was locked by Petr / by the key.'
- (ii) Moře zničilo ten most **silou svých vln**.
 sea destroyed that bridge-Acc power-Inst its waves
 'The sea destroyed the bridge with the power of its waves.'

The adjunctive (Instrument-like) interpretation of instrumental phrases realized with Czech object-experiencer verbs is, however, not relevant for our discussion here. The reader should just note that it exists. Moreover, there seems to be a correlation between the interpretation of the external [+c] argument of experiencer verbs and the possibility of adjunctive (Instrument-like) interpretation of instrumental phrases. Specifically, it seems that the adjunctive (Instrument-like) interpretation of instrumental phrases is possible only if the external [+c] argument is interpreted as [+human]. Thus our examples in (34a), presented in the text as contradictory, can in fact be rescued under the adjunctive (Instrument-like) interpretation of the instrumental phrase, since their external argument allows [+human] interpretation; the examples in (34b), on the other hand, are inevitably contradictory as their subject cannot be interpreted as [+human]. I leave the proper understanding of this correlation for further research.

(37) Non-existing object-experiencer nominals in Hebrew

(Siloni&Preminger 2009)

hiršim ('impress')	*haršama	('making impression')
ce'er ('sadden')	*ce'ur	('saddening')
hitmiha ('astound')	*hatmaha	('astounding')
hidhim ('astonish')	*hadhama	('astonishing')
hamam ('shock')	*himum	('shocking')
simeax ('delight')	*simuax	('delighting')

Interestingly, these verbs display yet another two properties. Namely they do not have passive alternates (Siloni&Preminger, following Landau 2002) and they do not license agent-oriented modifiers (Siloni&Preminger, following Meltzer 2005):

(38) Non-existing passive forms of certain object-experiencer verbs in Hebrew

(Siloni&Preminger 2009)

*huršam	('impress.PASS')
*cu'ar	('sadden.PASS')
*hutma	('puzzle.PASS')
*hudham	('amaze.PASS')
*humam	('shock.PASS')
*sumax	('delight.PASS')
*sumax	('please.PASS')
*yu'aš	('despair.PASS')

(39) Impossibility of agent-oriented modifiers with certain object-experiencer verbs in Hebrew

(Siloni&Preminger 2009)

- (a) Dan hiršim/ce'er/hidhim... et Dina (*be-xavana).
Dan impressed/saddened/astonished... ACC Dina in-purpose
- (b) Dan hitmi'a/ye'eš/sime'ax/... et Dina (*kedey še-hi ta'azov oto).
Dan astounded/despaired/delighted/... ACC Dina in.order that-she leave.FUT him

Based on this quite systematic pieces of evidence, Siloni&Preminger argue that the [+c] Cause role of the verbs in (37-39) is frozen, i.e. banned from being realized in the syntax and consequently from being anyway active or accessible in the semantics (see our presentation of the notion *frozen role* in subsection 4.3.1.1). Suggesting this the explanation of the three "shortcomings" of the verbs in (37-39) is straightforward: First, Siloni&Preminger assume that in Hebrew the process of nominalization involves marking of appropriate theta-candidates for an arbitrary saturation (AS); a role which has been marked as an AS-candidate must be either syntactically realized or undergo saturation (and subsequent existential closure in the semantics). Since [+c] Cause role belongs to the set of AS-candidates in Hebrew (and perhaps universally), it is marked as an AS-candidate in the course of the process of nominalization. However, once it is frozen it can be neither realized syntactically nor saturated and assigned to a variable in the semantics. Verbs like those in (37-39) thus cannot

have nominal counterparts. Second, for exactly the same reason, i.e. due to the inability of their [+c] Cause role to enter the syntax and to be subsequently assigned to a variable in the semantics, these verbs cannot passivize (see our discussion of examples (40) in subsection 4.3.1.1). Finally, the licensing of agent-oriented modifiers crucially depends on the presence of [+c+m] Agent or [+c] Cause role in the semantics (recall that the unary [+c] Cause role can be interpreted as the fully specified [+c+m] Agent role). Since the [+c] Cause role of the verbs in (37-39) is frozen and therefore cannot be present in the semantics, the modification of these verbs with agent oriented modifiers results in ungrammaticality. Note, however, that the sentences in (39) are still grammatical once the agent-oriented expression is omitted. This is so, because the subjects in (39) are assigned the [-m] Subject matter role (rather than [+c] Cause role). In light of Reinhart's analysis outlined above (5.1), Hebrew verbs like those in (37-39) are thus able to be realized as object-experiencers, whose subject bears [-m] Subject-matter role (26ii), and subject-experiencers (26iii), whose [+c] Cause role has been deleted via the operation of decausativization (recall from subsection 4.3.1.1 that the operation of decausativization occurs pre-syntactically in the lexicon, where the frozen [+c] role is still available), but not as object-experiencers, whose subject bears [+c] Cause role (26i), repeated below as (40ii), (40iii) and (40i), respectively ($\{[+c]\}$ in braces (40i) means that this role is frozen).

(40) Two different realizations of Hebrew experiencer verbs whose Cause role is frozen

- (i) * $\{[+c]\}$, [-c+m]

[-m] is not realized due to Cluster distinctness; [+c] is not realized since it is frozen.

- (ii) [-m], [-c+m]

[+c] is not realized due to Cluster distinctness; [-m] moves to subject position.

- (iii) [-c+m], ([-m])

[+c] is not realized due to Decausativization (the realization of [-m] is optional).

With this background let us look at Czech experiencer verbs whose [+c] Cause role is frozen. That is, let us see whether these verbs display the same properties as in Hebrew, namely (i) whether they disallow agent-oriented modifiers and (ii) whether they lack passive alternates (I postpone the discussion of their nominal realizations to section 5.3, nevertheless

it can be said already now that Czech verbal equivalents of Hebrew verbs like those in (37-39) do have nominal counterparts. This state of affairs is, however, not surprising, since, as we have argued in subsection 3.4.2.2, subjects of Czech nominals are always syntactically realized, either overtly or as a PRO, and therefore no previous AS-candidate marking is necessary). Note that if our hypothesis that the feature composition of the Subject matter role is [+c-m] rather than [-m] is correct, then we expect them to manifest only the former of these two properties. They are expected not to allow Agent oriented modifiers as these are licensed only in the presence of an Agentive subject. If the [+c] Cause, which is interpretable as the [+c+m] Agent role, is missing in the syntax and subsequently in the semantics, the addition of these modifiers must result in ungrammaticality, exactly as in the case of Hebrew examples in (39) above. Contrary to Hebrew, however, Czech experiencer verbs whose [+c] Cause role is frozen are expected to have passive alternates. Namely, if we propose that the feature composition of the Subject matter role is [+c-m], then - in object-experiencer realization (40ii) - this role must be merged externally and therefore nothing should prevent these verbs from passivizing, since in Czech, like in many other languages, two (or more)-place verbs with an external argument can normally undergo the process of passivization; moreover, and crucially for our purpose here, the process of passivization is available in Czech, like in many other languages, for two (or more)-place verbs with an external argument **only**, as is briefly illustrated by the couple of two-place unaccusative examples in (41a) and (41b). The internally merged theta roles assigned to subjects *Pavel* and *ta kniha* ('that book') in (41ai) and (41bi) respectively, cannot be assigned to existentially closed variable in the semantics. This is demonstrated by the ungrammatical status of the sentences in (41aii) and (41bii), where the originally dative argument (*Petrovi*) surfaces as the nominative-case bearing subject (Petr), and (41aiii) and (41bi iii), where this argument preserves its dative case and the sentences remains without subject, leaving the verb without agreement features in the default (3rd person, singular, neuter) form. Note also that the ungrammaticality of the passive sentence in (42aii/iii) and (42bii/biii) cannot be due to the fact that the verbs *utéct* ('escape') and *patřit* ('belong'), respectively, assign the dative case to their complement, but indeed due to the fact that both arguments of these two verbs are merged internally. This is shown by the "control" sentences in (41c). Namely, the transitive verb *pomocť* ('help') in (41ci) selects a dative complement (*Petrovi*), exactly as the verbs *utéct* (41ai) and *patřit* (41bi). The dative case is inherent, and therefore the passivization option in (41cii), where the originally dative argument surfaces as the nominative-case bearing subject, is ungrammatical, similarly to (41aii) and (41bii). However, there is no obstacle for assigning the external theta role to the

variable in the semantics together with preserving the inherent dative case on the complement (Petrovi) and leaving the verb in the default verbal form, as manifested by the sentence in (41ciii), which is grammatical, in contrast to (41aiii) and (41biii).

(41) Only externally merged argument can be saturated in Czech

- | | |
|--|---|
| (ai) Pavel utekl Petrovi.
Pavel escaped Petr _{-Dat}
'Pavel escaped Petr.' | (aii) *Petr byl utečen (Pavlem).
Petr _{-Nom} was escaped _{-Pass} (Pavlem _{-Instr})
'Petr was escaped (by Pavel).' |
| | (aiii) *Petrovi bylo utečeno (Pavlem).
Petr _{-Dat} was escaped _{-Pass} (Pavlem _{-Instr})
'It was escaped to Petr (by Pavel).' |
| (bi) Ta kniha patří Petrovi.
That book belongs Petr _{-Dat}
'The book belongs to Petr' | (bii) *Petr byl patřen (tou knihou).
Petr _{-Nom} was belonged _{-Pass} (that book _{-Instr})
'Petr was belonged (by the book).' |
| | (biii) *Petrovi bylo patřeno (tou knihou).
Petr _{-Dat} was belonged _{-Pass} (that book _{-Instr})
'It was belonged to Petr (by the book).' |
| (ci) Pavel pomohl Petrovi.
Pavel helped Petr _{-Dat}
'Pavel helped Petr.' | (cii) *Petr byl pomůžen (Pavlem).
Petr _{-Nom} was helped _{-Pass} (Pavlem _{-Instr})
'Petr was helped (by Pavel).' |
| | (ciii) Petrovi bylo pomůženo (Pavlem).
Petr _{-Dat} was helped _{-Pass} (Pavlem _{-Instr})
'It was helped to Petr (by Pavel).' |

Turning back to our two predictions, the following examples clearly show that both of them are indeed borne out, i.e. Czech experiencer verbs whose [+c] Cause role is frozen do not license Agent oriented modifiers (42), but do passivize (43).

(42) Agent oriented modifiers and Czech object-experiencer verbs

- (a) Ten učitel (*ta výchovná metoda) Pavla **záměrně** ukážíuje.
that teacher / that pedagogical method Pavel_{-Acc} on purpose disciplining
'That teacher / that pedagogical method is disciplining Pavel on purpose.'
- (b) Ten učitel / ta výchovná metoda Pavla (***pečlivě**) pobuříuje.
that teacher / that pedagogical method Pavel_{-Acc} (carefully) outraging
'That teacher / that pedagogical method is outraging Pavel carefully.'
- (c) Ta dívka / ta zkušenost Pavla (***záměrně**) osmělovala.
that girl / that experience Pavel_{-Acc} (on purpose) made-courageous
'That girl / that experiencer was making Pavel courageous on purpose.'
- (d) Manželka / ta událost Pavla (***pečlivě**) rozhořčovala.
wife / that event Pavel_{-Acc} (carefully) embittered
'His wife / That event carefully has been embittering Pavel.'

The sentence in (42a) allows the addition of an Agent oriented modifier, while the sentences in (42b-d) disallow these elements. This is so because the verbal subject in (42a), which serves us as a "control" sentence, is assigned the [+c] Cause role, which can be interpreted as the [+c+m] Agent and thus the Agent oriented adverb *záměrně* ('on purpose') is properly licensed.¹⁵ On the other hand, the subjects of the sentences in (42b-d) cannot be interpreted as Agents, which in turn means that these subjects bear neither the [+c+m] Agent role nor the [+c] Cause role. The subjects of the verbs in (42b-d) are thus assigned Subject-matter role, which cannot be interpreted as the [+c+m] Agent (regardless of whether the feature composition of the Subject-matter role is [-m] or [+c-m]), while their [+c] Cause roles are frozen¹⁶.

Now, let us look at the examples in (43). These examples show that all the verbs from (42) have a passive alternate. It should be emphasized here, that the verbs in (42/43) are all imperfective, and therefore do not denote accomplishment. It is therefore clear, that the passives in (43) are indeed verbal – and not adjectival – formations as has been argued in section 4.1. Note also that the by-phrases in (43b), (43c) and (43d), unlike the by-phrase in our "control" sentence (43a), cannot be Agent oriented but rather Subject-matter oriented.

(43) Czech object-experiencer verbs whose Cause role is frozen can passivize

- (a) Pavel byl ukáznován tím učitelem / to výchovnou metodou.
Pavel was disciplined._{PASS} that teacher._{INST} / that pedagogical method._{INST}
'Pavel was disciplined by that teacher / by that pedagogical method.'
- (b) Pavel byl pobuřován tím učitelem / tou výchovnou metodou.
Pavel was outraged._{PASS} that teacher._{INST} / that pedagogical method._{INST}
'Pavel was outraged from that teacher / from that pedagogical method.'
- (c) Pavel byl osmělován tou dívkou / tou zkušeností.
Pavel made-courageous._{PASS} that girl._{INST} / that experience._{INST}
'Pavel was made courageous from that girl / from that experiencer.'
- (d) Pavel byl rozhořčován manželkou / tou událostí.
Pavel was embittered._{PASS} wife._{INST} / that event._{INST}
'Pavel was embittered from his wife / from that event.'

¹⁵ Note that the Agent interpretation of the subject is necessarily contingent on its being [+human]; therefore if the subject is realized as *ta výchovná metoda* ('that pedagogical method'), which is obviously [-human], the sentence is ungrammatical.

¹⁶ Additional evidence that the theta grid of these verbs indeed contains a frozen role and that this role is [+c], will be shown in subsection 5.3.2, where we will see the subject-experiencer realizations of these verbs.

The existence of a passive alternate is not surprising for (43a), because we know from (42a) that the Czech verb *ukáznit* ('discipline') can realize its [+c] Cause role. But with respect to the remaining verbs we are facing data which pose a serious problem for the universal validity of Reinhart's movement analysis of object experiencer verbs whose subject is assigned Subject-matter role, since, as illustrated above, in Czech only externally merged arguments of (at least) two-place predicates can be saturated.

One more remark is in order here. It has been claimed by Landau (2002) and Meltzer (2005) that some Hebrew subject-experiencer verbs are equipped with a passive rather than decausative morphology. Based on this one can perhaps question the passive nature of the sentences in (43b), (43c) and (43d), i.e. one can wonder whether the verbs in these sentences are not subject-experiencers rather than passives. However, as the following contradiction patterns show, the verbs in (43) are indeed passives. Namely, the sentences in (44) contain subject-experiencer alternates of the verbs presented in (42/43). These subject-experiencer verbs are equipped with a "normal" decausative SE-morphology and the event they denote can be negated by the verbs from (43) (equipped with a "normal" passive morphology), without making the sentences contradictory. It thus follows that the event denoted by the verbs in (43) is not the same as the event denoted by their subject-experiencer alternates, i.e. it follows that the verbs in (43) are not subject-experiencers but indeed passives¹⁷.

(44) Passive forms of Czech object-experiencer verbs whose Cause role is frozen are indeed passive

- (a) Pavel se ukáznřoval, aniř byl ukáznřován. (no contradiction)
 Pavel SE disciplined_{Unac}, without was disciplined_{Pass}
 'Pavel became disciplined without having been disciplined.'
- (b) Pavel se pobuřoval, aniř byl pobuřován. (no contradiction)
 Pavel SE outraged_{Unac}, without was outraged_{Pass}
 'Pavel became outraged without having been outraged.'

¹⁷ The contradiction pattern presented in (44), of course, does not show, that the passive forms in (43) are unequivocally passives. In other words, one can still claim that the passive forms in (43) are in fact ambiguous between the passive and the subject-experiencer reading, as indeed claimed by Meltzer (2005) for Hebrew. Although for our purpose here the only thing which matters is that the passive forms in (43) **can** be passives, for the sake of completeness and especially for the sake of our argumentation in the following section, the following contradiction further shows that these forms are **unequivocally** passives. Namely, if these forms were ambiguous, it should be possible to "rescue" the sentence under the reading where the first verb is interpreted as a subject-experiencer while the second verb is a passive. However, this is clearly not the case.

Pavel byl pobuřován, aniř byl pobuřován. (contradiction)
 Pavel was outraged-Pass, without was outraged-Pass
 'Pavel has been outraged, without having been outraged.'

It can be also of some interest to mention that Hebrew verbs which are according to Landau (2002) and Meltzer (2005) subject-experiencer despite their passive morphology do not have alternates with a typically decausative morphology. In Czech, on the other hand, the passive forms like those in (43) have all decausative (subject-experiencer) SE-alternates.

- (c) Pavel se osměloval, aniž byl osmělován. (no contradiction)
Pavel SE became-courageous._{Unac} without was made-courageous._{Pass}
'Pavel became courageous without having been made courageous.'
- (d) Pavel se rozhořčoval, aniž byl rozhořčován. (no contradiction)
Pavel SE embittered._{Unac} without was embittered._{Pass}
'Pavel became embittered without having been embittered.'

We can thus positively conclude that our hypothesis that the feature composition of the Subject matter role is [+c-m] in Czech appears to be correct. I therefore suggest that the basic theta grid of Czech experiencer verbs looks like (45) (compare with 25) and enables three different realizations, which are illustrated in (46) (compare with 26):

(45) Non-derived forms of Czech experiencer verbs

- (a) prior to lexicon marking: VERB ([+c], [+c-m], [-c+m])
(b) following Lexicon marking: VERB_{ACC} ([+c]_i, [+c-m], [-c+m])

(46) Three different realizations of Czech experiencer verbs¹⁸

- (i) [+c], [-c+m]_{Acc} ([+c-m]) "full" realization (the realization of [+c-m] is optional)
(ii) [+c-m], [-c+m]_{Acc} external merger of [+c-m] at the expense of [+c]
(iii) [-c+m], ([+c-m]) [+c] is not realized due to Decausativization (the realization of [+c-m] is optional)

5.3 Czech experiencer verbs whose external role is frozen

After determining the basic theta grid of Czech experiencer verbs (45), we will turn now to two groups of verbs, whose theta grid deviates a bit from this "standard" form. The common denominator of verbs in both these groups is that their [+c] Cause role is frozen. The difference between the two dwells in the absence vs. presence of the [+c-m] Subject-matter

¹⁸ Facing the proposed feature composition of the Subject matter role in Czech, the question arises why the output of the operation of decausativization (derivational option (46iii)) always realizes the [-c+m] Experiencer role externally, while the (optional) realization of the [+c-m] Subject matter role is always internal. Given that both these theta-clusters are "mixed", they are not assigned an index (see Lexicon Marking (15)) and consequently both of them should be able to merge externally (see Merging Instruction (16i)), contrary to the facts. The explanation of this state of affairs needs more work; the most plausible hypothesis seems to be that the [-c+m] Experiencer role cannot for some reason check a case other than the Nominative or the Accusative.

role in their theta grid. I will label these groups *zatrpknout* ('(become) bitter') group and *rozhořčit* ('embitter') group, respectively; their theta grids are presented in (47) and (48), $\{[+c]\}$ in braces meaning that this role is frozen (note that *embitter* verbs are verbs, which we have seen just now in subsection 5.2.2):

(47) Non-derived forms of *bitter* group

- (a) prior to lexicon marking: VERB ($\{[+c]\}$, $[-c+m]$)
 (b) following Lexicon marking: VERB_{ACC} ($\{[+c]\}_1$, $[-c+m]$)

(48) Non-derived forms of *embitter* group

- (a) prior to lexicon marking: VERB ($\{[+c]\}$, $[+c-m]$, $[-c+m]$)
 (b) following Lexicon marking: VERB_{ACC} ($\{[+c]\}_1$, $[+c-m]$, $[-c+m]$)

The main purpose of the following presentation of these two groups of verbs is, however, not the examination of these verbs themselves but rather the examination of their nominal and especially adjectival counterparts. While the nominal data will unfortunately not supply any positive answer for the questions regarding the derivational history of nominal decausatives (8a), the adjectival data will supply strong evidence in favor of verb independent derivation of adjectival decausatives in Czech (the question formulated in (8bi)); moreover they will help us to understand better the process of adjectivization itself.

We will start with the examination of the *bitter* group (5.3.1) then the *embitter* group will be approached (5.3.2). Finally, in subsection 5.3.3, we will argue that the derivation of Czech adjectival decausatives is verb independent. Moreover we will suggest that the process of adjectivization intrinsically involves the marking of appropriate Theta-candidates for saturation, the output of the process being a true adjectival passive.

5.3.1 *Bitter* group

The most striking property of the experiencer verbs which belong to the *bitter* group is that these verbs do not have object-experiencer realization and can be realized as subject-experiencers only. Moreover, these subject-experiencer voices are not accompanied with the

clitic SE, similarly to unaccusative verbs presented in subsection 4.3.4. Some of these verbs are listed in (49), including their non-existing transitive, i.e. object-experiencer, alternates:

(49) Verbs from *zatrpknout* group do not have object-experiencer alternates

	* object-experiencer alternate	subject-experiencer
(a) dospět: 'mature'	* Ta zkušenost / *Maminka Pavla dospěla. that experience / mom Pavel _{Acc} matured 'That experience / Mom matured Pavel.'	Pavel dospěl. 'Pavel matured.'
(b) ohluchnout: 'become deaf'	* Ten hluk / *Petr Pavla ohluchl. that din / Petr Pavel _{Acc} became deaf 'That din / Petr made Pavel _{Acc} deaf.'	Pavel ohluchl. 'Pavel became deaf.'
(c) omdlít: 'faint'	* To vypětí / *To děvče Pavla omdlelo. that strain / that girl Pavel _{Acc} fainted 'That strain / That girl fainted Pavel.'	Pavel omdlel. 'Pavel fainted.'
(d) otupět: 'become apathetic'	* Alkohol / *Petr Pavla otupěl. spirits / Petr Pavel _{Acc} became apathetic 'Spirits / Petr became Pavel apathetic.'	Pavel otupěl. 'Pavel became apathetic.'
(e) vystřízlivět: 'sober up'	* Čerstvý vzduch / *Petr Pavla vystřízlivěl. fresh air / Petr Pavel _{Acc} sobered up 'Fresh air / Petr sobered Pavel up.'	Pavel vystřízlivěl. 'Pavel sobered up.'
(f) zatrpknout: 'become bitter'	* Ta událost / *Manželka Pavla zatrpkla. that event / wife Pavel _{Acc} became bitter 'That event / his wife became Pavel bitter.'	Pavel zatrpkl. 'Pavel became bitter.'
(g) zesmutnět: 'become sad'	* Ten film / *Petr Pavla zesmutněl. that movie / Petr Pavel _{Acc} became sad 'That movie / Petr became Pavel sad.'	Pavel zesmutněl. 'Pavel became sad.'
(h) zhloupnout: 'become stupid'	* Televize / *Kamarádka Pavla zhloupła. television / friend Pavel _{Acc} became stupid 'Television / The friend became Pavel stupid.'	Pavel zhloupnul. 'Pavel became stupid.'
(i) zmoudřet: 'become wiser'	* Život / *Učitel Pavla zmoudřel. life / teacher Pavel _{Acc} became wiser 'The life / The teacher became Pavel wiser.'	Pavel zmoudřel. 'Pavel became wiser.'

Based on (49) it seems that the verbs from *bitter* group do not have an external argument, which can be realized in the syntax. A priori two accounts for this state of affairs come to mind. **Either** these verbs are one-place predicates, whose theta grid contains the [-c+m] Experiencer role only. **Or** they are two-place predicates whose external [+c] Cause role is frozen¹⁹. Under both these scenarios we expect that these verbs cannot passivize. However, as

¹⁹ One cannot a priori exclude the possibility that the theta grid of verbs like those in (49) contain also [+c-m] Subject matter role, which is frozen, similarly to the [+c] Cause role. Since it does not really matter for our

noted in subsection 4.3.4, only the latter (two-place) scenario predicts that these verbs have adjectival counterparts. As the examples in (50) show, this scenario is indeed the right one, i.e. the verbs from (49) do not have passive alternates but do have adjectival counterparts. Note also that the adjectival forms in (50) are attached the suffix *-lý*, the "ordinary" ending – *ný/tý* being completely impossible. This state of affairs seems to be in full harmony with the observation we made in subsection 4.3.4 for adjectival counterparts of unaccusative verbs which are not accompanied with the clitic SE, i.e. similarly to adjectival counterparts of unaccusative verbs which lack the clitic SE, adjectival counterparts of subject-experiencer verbs which lack this clitic are systematically attached the suffix *-lý*. For the sake of completeness, the examples in (50) further demonstrate that these adjectives entail a prior event. Although, due to space considerations, the examples do not show that, this prior event is unequivocally decausative (similarly to the adjectives discussed in 4.3.4), i.e. does not involve an external role²⁰, since none of these adjectives are compatible with Agent detecting elements.

(50) No passives in *zatrpknout* group; *-lý* adjectives available (IM stands for "intended meaning")

* passives	√ <i>lý</i>-adjectives vs. * <i>ný/tý</i> adjectives
(a) * Pavel byl dospěn. Pavel was matured _{-PASS} IM: 'Pavel has been made mature.'	# Pavel je dospělý / *dospěný, aniž dospěl. Pavel is mature- <i>lý</i> / *mature- <i>ný</i> without matured 'Pavel is mature without maturing.'
(b) * Pavel byl ohluchnut. Pavel was become-deaf _{-PASS} IM: 'Pavel has been made deaf.'	# Pavel je ohluchlý / *ohluchnutý, aniž ohluchnul. Pavel is become-deaf- <i>lý</i> / *become-deaf- <i>ný</i> without became deaf 'Pavel is deaf without becoming deaf.'
(c) * Pavla byl omdlen. Pavel was fainted _{-PASS} IM: 'Pavel has been made fainted.'	# Pavel je omdlelý / *omdený, aniž omdlel. Pavel is fainted- <i>lý</i> / *fainted- <i>ný</i> without fainted 'Pavel is fainted without fainting.'
(d) * Pavel byl otupěn. Pavel was become-apathectic _{-PASS} IM: 'Pavel has been made apathetic.'	# Pavel je otupělý / *otupěný, aniž otupěl. Pavel is apathetic- <i>lý</i> / *apathectic- <i>ný</i> without became apathetic 'Pavel is apathetic without becoming apathetic.'
(e) * Pavel byl vystřízlivěn. Pavel was sobered _{-PASS} up 'Pavel has been sobered up.'	# Pavel je vystřízlivělý / *vystřízlivěný, aniž vystřízlivěl. Pavel is sobered-up- <i>lý</i> / *sobered-up- <i>ný</i> without sobered up 'Pavel is sobered up without sobering up.'
(f) * Pavel byl zatrpknut. Pavel was become-bitter _{-PASS} IM: 'Pavel has been made bitter.'	# Pavel je zatrpklý / *zatrpknutý, aniž zatrpkl. Pavel is become-bitter- <i>lý</i> / *become-bitter- <i>ný</i> without became bitter 'Pavel is bitter without becoming bitter.'

purpose here, whether the theta grid of these verbs indeed contains the (frozen) [+c-m] Subject-matter role or not, I will not elaborate on the issue here.

²⁰ In Chapter 4, where we focused on adjectival counterparts of unaccusative verbs I have used the term "prior unaccusative event". In order to avoid any misunderstanding, when speaking about adjectival counterparts of subject-experiencer verbs I use the term "prior decausative event", although from our point of view both types of prior events are the same, since unaccusative verbs (and their adjectival counterparts) as well as subject-experiencer verbs (and their adjectival counterparts) are derived via the same operation of decausativization.

- (g) * Pavel byl zesmutněn. # Pavel je **zesmutnělý** / *zesmutněný, aniž zesmutněl
Pavel was become-sad_{PASS} Pavel is become-sad-ly / *become-sad-ný without became sad
IM: 'Pavel has been made sad.' 'Pavel is sad without becoming sad.'
- (h) * Pavel byl zhloupnut. # Pavel je **zhlouplý** / *zhloupnutý, aniž zhloupl.
Pavel was become-stupid_{PASS} Pavel is become-stupid-ly / *become-stupid-ný without became stupid
IM: 'Pavel has been made stupid.' 'Pavel is stupid without becoming stupid.'
- (i) * Pavel byl zmoudřen. # Pavel je **zmoudřelý** / *zmoudřený, aniž zmoudřel.
Pavel was become-wiser_{PASS} Pavel is become-wiser-ly / *become-wiser-ný without became wiser
IM: 'Pavel has been made wiser.' 'Pavel is wiser without becoming wiser.'

Based on the data presented in (49) and (50) I thus conclude that the theta grid of verbs from *bitter* group contains the frozen {[+c]} Cause role and the [-c+m] Experiencer role:

(51) The theta grid of *bitter* group

{[+c]}_{frozen} [-c+m]

What about the nominal counterparts of the verbs from the *bitter* group? As exemplified in (52) it seems that only the subject-experiencer derivational option (46iii) is available for them, similarly to their verbal counterparts, as just shown in (49) above and repeated below.

(52) Subject-experiencer realization of *bitter* group

verbal domain	nominal domain	* Subject-matter realization
(a) Pavel dospěl 'Pavel matured'	Pavlovo dospění Pavel _{Gen} maturing 'Pavel's maturing'	(*tou zkušeností / *maminkou). (that experience _{Inst} / mother _{Inst}) (from that experience / from his mother).
(b) Pavel ohluchl 'Pavel became deaf'	Pavlovo ohluchnutí Pavel _{Gen} becoming-deaf 'Pavel's becoming deaf'	(*tím hlukem / *Petrem). (that noise _{Inst} / Petr _{Inst}) (from that noise / from Petr).
(c) Pavel omdlel 'Pavel fainted'	Pavlovo omdlení Pavel _{Gen} fainting 'Pavel's fainting'	(*tím vypětím / *tím děvčetem). (that strain _{Inst} / that girl _{Inst}) (from that strain / from that girl).
(d) Pavel otupěl 'Pavel became apathetic'	Pavlovo otupění Pavel _{Gen} becoming-apatetic 'Pavel's becoming apathetic'	(*alkoholem / *Petrem). (spirits _{Inst} / Petr _{Inst}) (from spirits / from Petr).
(e) Pavel vystřízlivěl 'Pavel sobered up'	Pavlovo vystřízlivění Pavel _{Gen} sobering up 'Pavel's sobering up'	(*čerstvým vzduchem / *Petrem). (fresh air _{Inst} / Petr _{Inst}) (from fresh air / from Petr).
(f) Pavel zatrpkl 'Pavel became bitter'	Pavlovo zatrpknutí Pavel _{Gen} becoming-bitter 'Pavel's becoming bitter'	(*tou událostí / *manželkou). (that event _{Inst} / wife _{Inst}) (from that event / from his wife).

- | | | | |
|-----|--|---|---|
| (g) | Pavel zesmutněl
'Pavel became sad' | Pavlovo zesmutnění
Pavel _{-Gen} becoming-sad
'Pavel's becoming sad' | (*tím filmem / *Petrem).
(that movie _{-Inst} / Petr _{-Inst})
(from that movie / from Petr). |
| (h) | Pavel zhloupł
Pavel 'became stupid' | Pavlovo zhloupnutí
Pavel _{-Gen} becoming-stupid
'Pavel's becoming stupid' | (*televizí / *kamarádkou).
(television _{-Inst} / friend _{-Inst, Fem})
(from television / from his friend). |
| (i) | Pavel zmoudřel
'Pavel became wiser' | Pavlovo zmoudření
Pavel _{-Gen} becoming-wiser
'Pavel's becoming wiser' | (*životem / *učitelem).
(life _{-Inst} / teacher _{-Inst})
(from the life / from the teacher). |

First of all, note that the unacceptability of the Instrumental elements in parenthesis with both verbs as well as nominals signifies that the theta grid of *bitter* verbs indeed does not contain the Subject matter role²¹; recall in this connection our discussion of the examples in (33)-(35), where we saw that subject-experiencer verbs normally can realize the Subject matter role and that this realization is achieved via the Instrumental case bearing phrases. Moreover, the unacceptability of the Instrumental elements in parenthesis witnesses that the nominals in (52) are not transitive but indeed subject-experiencer realizations (if they were transitive they should be able to realize their saturated subject as a by-phrase); note also that these nominals are not accompanied with the clitic SE, similarly to their verbal counterparts. Another clue that the nominals above are subject-experiencer formations comes from the word order. Namely note that the experiencer *Pavel* is always located before its event noun. Although the experiencer can be placed also after the event noun, the pre-nominal position is much more preferable here. Without entering into the details, the relevant generalization is that the pre-nominal position is preferable always when the event noun is a one-place predicate. On the other hand, if the event noun is a two (or more)-place predicate, the pre-nominal position is "reserved" for the subject argument only.²² The examples below demonstrate the phenomenon:

(53) Nominal subjects and the pre-nominal position I

- | | | | |
|------|---|-------|---|
| (ai) | * Pavlovo namalování.
Pavel _{-Gen, Agr} drawing
'Pavel's drawing.' | (aii) | Namalování Pavla.
drawing Pavel _{-Gen}
'Drawing of Pavel.' |
|------|---|-------|---|

²¹ In fact some of the examples do license the Instrumental elements however these are obviously simple adjuncts; i.e. they do not bear the Subject-matter theta role. Moreover, in some cases these adjuncts can be introduced to the structure via the preposition *z* ('from') rather than via the Instrumental phrase.

²² This pre-nominal position is limited for singular nouns denoting humans. In all other cases the post-nominal position is used, regardless whether the (event) nominal is one-place or two-place predicate.

- | | |
|---|---|
| (bi) Pavlovo namalování se.
Pavel _{-Gen,Agr} drawing SE
'Pavel's drawing himself.' | (bii) ?? Namalování se Pavla.
drawing SE Pavel _{-Gen}
'Pavel's drawing himself.' |
|---|---|

(54) Nominal subjects and the pre-nominal position II

- | | |
|---|---|
| (ai) * Pavlovo zabití.
Pavel _{-Gen,Agr} killing
'Pavel's killing.' | (aii) Zabití Pavla.
killing Pavel _{-Gen}
'Killing of Pavel.' |
| (bi) Pavlovo zabití se.
Pavel _{-Gen,Agr} killing SE
'Pavel's killing himself.' | (bii) ?? Zabití se Pavla.
killing SE Pavel _{-Gen}
'Pavel's killing himself.' |

Examples (ai) in (53-54) are ungrammatical, as they contain transitive nouns. The location of the noun *Pavel* in pre-nominal position imposes a subject-like interpretation on this argument, which leads to the ungrammaticality of the expression as a whole, since the internal Theme argument is not realized, contra the theta criterion. The expressions in (53a_{ii}) and (54a_{ii}) are, however, fully acceptable, since in this case the noun *Pavel* is interpreted as the Theme, while the subject like-element remained unexpressed, i.e. it is realized as a PRO (see our discussion in subsection 3.4.2.2)²³. On the other hand, the one-place reflexive alternates in (53b) and (54b) are all possible²⁴, examples (bi) being much better than (bii), since, as pointed above, once an event noun is a one-place predicate the pre-nominal realization of its subject is preferred. The issue is further illustrated in (55) and (56) for agent unergative and theme unergative nominal predicates respectively.

(55) Nominal subjects and the pre-nominal position III

- | | |
|---|--|
| (i) Pavlovo běhání.
Pavel _{-gen,Agr} running
'Pavel's running' | (ii) ?? Běhání Pavla.
running Pavel _{-Gen}
'Running of Pavel' |
|---|--|

(56) Nominal subjects and the pronominal position IV

- | | |
|---|--|
| (i) Pavlovo krvácení.
Pavel _{-gen,Agr} bleeding
'Pavel's bleeding' | (ii) ?? Krvácení Pavla.
bleeding Pavel _{-Gen}
'Bleeding of Pavel' |
|---|--|

²³ Subsection 3.4.2.2 also shortly discusses the different shape of Czech nominal subjects in the pre-nominal and the post-nominal position, like in (53i) – (56i) and (53ii) – (56ii), respectively. Specifically recall that nominal subjects in a pre-nominal position display (beyond their own phi-feature) also an adjectival-like agreement in the phi-features with the following head noun.

²⁴ The examples in (54b) can be interpreted as unaccusative as well, which is fully predicted as the external theta role here is the Cause and the operation of decausativization is thus expected to be applicable.

Before turning to the second (*embitter*) group of Czech experiencer verbs whose [+c] Cause role is frozen, let us briefly summarize our findings so far: **The theta grid of *bitter* entries contains a [+c] Cause role, which is frozen, and a [-c+m] Experiencer role. Verbs in this set cannot be realized as transitives (object-Experiencer) and cannot passivize. The only available realization for them is the subject-experiencer derivation (46iii), which appear without SE. These verbs have adjectival decausative counterparts which are attached the suffix *-lý*, rather than the regular *-ný/-tý* ending. Finally these verbs have nominal counterparts which are not transitive. Unlike the adjectival decausatives, we did not observe any peculiar ending on these nominals, i.e. they are derived via the ordinary nominalization suffix *-ní/-tí*.**

Table 3 – *bitter* class realizations

	<i>Bitter</i> group - experiencer formations whose basis theta grid is {[+c]} [-c+m]		
	transitive	passive	decausative
Verbal realizations	NO	NO	YES (without SE)
Adjectival realizations	NO	NO	YES (<i>-lý</i> ending only)
Nominal realizations	NO	NO	YES (without SE)

5.3.2 *Embitter* group

Let us now look at *embitter* verbs. Some of the verbs that belong to this group have been already exemplified in the course of our discussion in section 5.2.2, where we saw that these verbs can be realized as transitives (unlike *bitter* verbs), but their transitive realization does not license agent-oriented modifiers. Since at the same time the subject-experiencer realization is available for these verbs, it is reasonable to assume that their theta grid contains the [+c] Cause which is frozen. Randomly chosen examples of *embitter* verbs are given in (57). The examples come in pairs of transitive (46ii) and subject-experiencer (46iii) alternates. The ungrammatical status of the Agent-oriented modifier *záměrně* ('intentionally'), which is added to the transitive sentences, demonstrates that the [+c] Cause role of *embitter* verbs is frozen. Although the tests based on Agent-oriented elements are relevant only for cases in which the verbal subject is realized as a noun denoting a [+human] entity, the transitive examples below nevertheless involve both [+human] as well as [-human] subjects, in order to show that there is no [+human] restriction on the [+c-m] Subject matter realization; put differently, while it is obvious that the Agent-oriented modifier *záměrně* ('intentionally')

cannot be licensed by [-human] subjects, the fact that it is not licensed by [+human] subjects either, shows that the [+c] Cause role of the verbs below is indeed frozen. Finally, note that unlike the subject-experiencer alternates of *bitter* group (49), the subject-experiencer alternates of the *embitter* group are all attached to the clitic SE.

(57) Transitive (object-exp.) and decausative (subject-exp.) verbal realizations of *embitter* verbs

	transitive (object-experiencer)	decausative (subject-experiencer)
(a) nadchnout: 'enchant'	Ta dívka / Ta výstava Pavla (*záměrně) nadchla. that girl / that exhibition Pavel _{Acc} (intentionally) enchanted 'That girl / that exhibition (intentionally) enchanted P.'	Pavel se nadchnul. Pavel SE enchanted 'P. became enchanted.'
(b) osmělit: 'encourage'	Jeho kamarád / Úspěch Pavla (*záměrně) osmělil. his friend / success Pavel _{Acc} (intentionally) encouraged. 'His friend / The success (intentionally) encouraged P.'	Pavel se osmělil. Pavel SE encouraged 'P. became encouraged.'
(c) pobouřit: 'outrage'	Ten muž / Ten film Pavla (*záměrně) pobouřil. that man / that movie Pavel _{Acc} (intentionally) outraged 'That man / That movie (intentionally) outraged P.'	Pavel se pobouřil. Pavel SE outraged 'P. became outraged.'
(d) pohoršit: 'scandalize'	Ta žena / Ta malba Pavla (*záměrně) pohoršila. that woman/that painting P. _{Acc} (intentionally) scandalized 'That woman/that painting (intentionally) scandalized P.'	Pavel se pohoršil. Pavel SE scandalized 'P. became scandalized.'
(e) rozhněvat: 'anger'	To dítě / Jeho chování Pavla (*záměrně) rozhněvalo. that child / his behavior Pavel _{Acc} (intentionally) angered 'That child / his behavior intentionally) angered Pavel.'	Pavel se rozhněval. Pavel SE angered 'P. became angered.'
(f) rozhořčit: 'embitter'	Manželka / Ta událost Pavla (*záměrně) rozhořčila. wife / that event Pavel _{Acc} (intentionally) embittered 'His wife / That event (intentionally) embittered P..'	Pavel se rozhořčil. Pavel SE embittered 'P. became embittered.'
(g) usoužit: 'plague'	Petr / Ten problém Pavla (*záměrně) usoužil. Petr / that problem Pavel _{Acc} (intentionally) plagued 'Petr / That problem (intentionally) plagued Pavel.'	Pavel se usoužil. Pavel SE plagued 'P. became plagued.'
(h) uspokojit: 'satisfy'	Jeho student / Výsledek Pavla (*záměrně) uspokojil. his student / result Pavel _{Acc} (intentionally) satisfied 'His student / The result (intentionally) satisfied Pavel.'	Pavel se uspokojil. Pavel SE satisfied 'P. became satisfied.'
(i) znepokojit: 'unsettle'	Babička / Ta zpráva Pavla (*záměrně) znepokojila. granny / that report Pavel _{Acc} (intentionally) unsettled 'His granny / That report (intentionally) unsettled P..'	Pavel se znepokojil. Pavel SE unsettled 'P. became unsettled.'

Based on the examples in (57) it thus seems that the theta grid of *embitter* verbs looks like the one in (58):

(58) The theta grid of *embitter* group

([+c])_{frozen} [-c+m] [+c-m]

Another thing that has been already noted in subsection 5.2.2, where we saw some of *embitter* verbs, was that these verbs have passive alternates (we have used this fact as a decisive support for our hypothesis that the feature composition of the Subject-matter role in Czech is [+c-m] rather than [-m]). For the sake of completeness let us demonstrate it once more, i.e. let us show that all randomly chosen verbs in (57) indeed do have a passive alternate. As in the case of the examples in (43), note that the by-phrases in the examples below are Subject-matter oriented.²⁵

(59) Embitter verbs can passivize

- (a) **nadchnout:** Pavel byl (tou dívkou / výstavou) nadšen.
'enchant' Pavel was (that girl_{-Inst} / exhibition_{-Inst}) enchanted
'Pavel was enchanted (from that girl / from the exhibition).'
- (b) **osmělit:** Pavel byl osmělen (svým kamarádem / svým úspěchem).
'encourage' Pavel was encouraged (his friend_{-Inst} / his success_{-Inst})
'Pavel was encouraged (from his friend / from his success).'
- (c) **pobouřit:** Pavel byl (tím mužem / filmem) pobouřen.
'outrage' Pavel was (that man_{-Inst} / movie_{-Inst}) outraged
'Pavel was outraged (from that man / from the movie).'
- (d) **pohoršit:** Pavel byl (tou ženou / malbou) pohoršen.
'scandalize' Pavel was (that woman_{-Inst} / painting_{-Inst}) scandalized
'Pavel was scandalized (from that woman / from the painting).'
- (e) **rozhněvat:** Pavel byl (tím dítětem / jeho chováním) rozhněván.
'anger' Pavel was (that child_{-Inst} / his behavior_{-Inst}) scandalized
'Pavel was angered (from that child / from his behavior).'
- (f) **rozhořčit:** Pavel byl rozhořčen (manželkou / tou událostí).
'embitter' Pavel was embittered (his wife_{-Inst} / that event_{-Inst})
'Pavel was embittered (from his wife / from that event).'
- (g) **usoužit:** Pavel byl usoužen (Petrem / tím problémem).
'plague' Pavel was plagued (Petr_{-Inst} / that problem_{-Inst})
'Pavel was plagued (from Petr / from that problem).'
- (h) **uspokojit:** Pavel byl (svým studentem / výsledkem) uspokojen..
'satisfy' Pavel was (his student_{-Inst} / result_{-Inst}) satisfied
'Pavel was satisfied (from his student / from the result).'
- (i) **znepokojit:** Pavel byl (babičkou / tou zprávou) znepokojen.
'unsettle' Pavel was (granny_{-Inst} / that report_{-Inst}) unsettled
'Pavel was unsettled (from his granny / from that report).'

²⁵ For the sake of uniformity, the verbal examples in this subsection are all examples of perfective verbs (unlike the imperfective examples in (43)), since only perfective verbs can be used as an appropriate tool for creating contradictory contexts testing the nature of adjectival passives below; nevertheless all the perfective passive examples in (59) have imperfective variant, except for the verb *nadchnout* ('enchant') in (59a), which is apparently an accidental gap.

Now let us turn to adjectival counterparts of *embitter* verbs. First recall from (50), that *bitter* verbs have adjectival counterparts, which are all unequivocally adjectival decausatives. This is expected since their derivation base (51) contains the frozen {[+c]} Cause role, and therefore it cannot give rise to true adjectival passives. What about the *embitter* adjectives, whose derivational base (58) differs minimally from the derivational base of *bitter* adjectives in that sense that it contains one additional theta role, namely the [+c-m] Subject-matter role. We expect them to have adjectival decausatives reading, similarly to *bitter* adjectives and similarly to all other adjectives, whose derivational base contains the [+c] Cause role (see our discussion in subsections 4.3.3. and 4.3.4). But do they have also true adjectival passive reading? As manifested by the examples in (60), the answer to this question is positive - these adjectives do have true adjectival passive reading. Surprisingly, however, this true adjectival passive reading seems to be their only reading. That is, contrary to our expectation these adjectives are not adjectival decausatives, since they entail transitive events only, as witnessed by the fact that the sentences in (60) are all contradictory in the "weak" contradictory context, i.e. context which is negating a prior transitive event.²⁶ We will return to this puzzle in the next subsection.

(60) Adjectival counterparts of *embitter* verbs

- | | | | |
|-----|----------------------------------|--|-----------------|
| (a) | nadchnout:
'enchant' | Pavel je nadšený, aniž byl nadšen.
Pavel is enchanted _{-Adj} , without was enchanted _{-Pass}
'Pavel is enchanted without having been enchanted.' | (contradiction) |
| (b) | osmělit:
'encourage' | Pavel je osmělený, aniž byl osmělen.
Pavel is encouraged _{-Adj} , without was encouraged _{-Pass}
'Pavel is encouraged without having been encouraged.' | (contradiction) |
| (c) | pobouřit:
'outrage' | Pavel je pobouřený, aniž byl pobouřen.
Pavel is outraged _{-Adj} , without was outraged _{-Pass}
'Pavel is outraged without having been outraged.' | (contradiction) |
| (d) | pohoršit:
'scandalize' | Pavel je pohoršený, aniž byl pohoršen.
Pavel is scandalized _{-Adj} , without was scandalized _{-Pass}
'Pavel is scandalized without having been scandalized.' | (contradiction) |
| (e) | rozhněvat:
'anger' | Pavel je rozhněvaný, aniž byl rozhněván.
Pavel is angered _{-Adj} , without was angered _{-Pass}
'Pavel is angered without having been angered.' | (contradiction) |

²⁶ Speakers' judgments regarding the contradictory status of the examples in (60) can vary. Crucially, however, if a speaker accepts some of these examples as non-contradictory, then he will also accept agent-oriented modification of transitive verbal counterparts of these adjectives. This correlation will become clear in subsection 5.3.3.

- | | | |
|--------------------------------------|--|-----------------|
| (f) rozhořčit:
'embitter' | Pavel je rozhořčený, aniž byl rozhořčen.
Pavel is embittered _{-Adj} , without was embittered _{-Pass}
'Pavel is embittered without having been embittered.' | (contradiction) |
| (g) usoužit:
'plague' | Pavel je usoužený, aniž byl usoužen.
Pavel is plagued _{-Adj} , without was plagued _{-Pass}
'Pavel is plagued without having been plagued.' | (contradiction) |
| (h) uspokojit:
'satisfy' | Pavel je uspokojený, aniž byl uspokojen.
Pavel is satisfied _{-Adj} , without was satisfied _{-Pass}
'Pavel is satisfied without having been satisfied.' | (contradiction) |
| (i) znepokojit:
'unsettle' | Pavel je znepokojený, aniž byl znepokojen.
Pavel is unsettled _{-Adj} , without was unsettled _{-Pass}
'Pavel is unsettled without having been unsettled.' | (contradiction) |

Before proceeding, note yet another issue, namely that all *embitter* adjectives are systematically attached the suffix *-ný*, i.e. there is no *-lý* adjective in *embitter* group. Recall in this respect our generalization (68ii), made in subsection 4.3.4, namely that there is no true adjectival passive in Czech which is attached the suffix *-lý*. Since *embitter* adjectives are all true adjectival passives, their incompatibility with the suffix *-lý* is expected under this generalization.

Finally, let us turn to the nominal domain. First of all it can be useful to recall from subsection 5.2.2 that Hebrew object-experiencer verbs whose [+c] Cause role is frozen, do not have nominal counterparts (see the examples in (37) and (39)). Siloni&Preminger (2008), who noticed this gap, ascribe it to the nature of the process of nominalization in Hebrew. Specifically, they claim that subjects of Hebrew nominals are either overtly realized in the syntax or saturated and subsequently existentially closed in the semantics, the operation of saturation being arbitrary (Chierchie 2004, Marelj 2004)²⁷. Moreover, they assume that in Hebrew the process of nominalization involves marking of appropriate theta-candidates for an arbitrary saturation (AS); a role which has been marked as an AS-candidate must be either syntactically realized or undergo arbitrary saturation. Since [+c] Cause role belongs to the set of AS-candidates in Hebrew, it is marked as an AS-candidate in the course of the process of nominalization. However, once it is frozen it can be neither realized syntactically nor saturated and assigned to a variable in the semantics. Object-experiencer verbs whose [+c] Cause role is frozen, thus do not have nominal counterparts.

²⁷ Assuming that in the nominal domain the operation of saturation is arbitrary accounts directly for the widely known fact that non-overt nominal subjects are cross-linguistically interpreted as [+human].

Now, as far as the Czech nominals are concerned, we have argued in subsection 3.4.2.2, that their subjects are always syntactically realized, either overtly or as a PRO (we did not explore the question, why is it so, assuming simply that PRO is for whatever reason available in the domain of Czech nominals and leaving the issue for future research). Put differently, there seems to be no reason to assume any involvement of an arbitrary saturation in the formation of Czech nominals and consequently also any AS-candidate marking in the course of the process of nominalization itself. If so, we expect that in Czech, unlike in Hebrew, object-experiencer verbs whose [+c] Cause role is frozen, do have nominal counterparts. As the following series of examples shows, this prediction is borne out, that is all object-experiencer verbs from (57) have nominal counterparts. Note however, that the realization of the Subject matter argument (Instrumental case bearing noun phrases in the parenthesis) seems to be obligatory, which is quite surprising finding. Namely, the question is why the nominal subjects in (61), which are assigned the [+c-m] Subject-matter role, cannot be realized as a PRO, although they can all be [+human]²⁸. Leaving this question open for further research, note, for the sake of completeness, that the subject-experiencer derivational option (46iii) is available for the nominals from *embitter* group as well, similarly to the nominals from *bitter* group, and that these subject-experiencer nominals are accompanied with the clitic SE.

(61) Transitive (object-exp.) and decausative (subject-exp.) nominal realization of *embitter* group

	transitive (object-experiencer)	decausative (subject-experiencer)
(a) nadchnout: 'enchant'	nadchnutí Pavla *(tou dívkou/ tou výstavou) enchancing Pavel _{Gen} that girl _{Inst} / that exhibition _{Inst} 'Pavel's enchanting (from that girl / from that exhibition)'	Pavlovo nadchnutí se P. _{Gen} enchanting SE 'P.'s becoming enchanted'
(b) osmělit: 'encourage'	osmělení Pavla *(jeho kamarádem/úspěchem) encouraging Pavel _{Gen} his friend _{Inst} / success _{Inst} 'Pavel's encouraging (from his friend / from the success)'	Pavlovo osmělení se P. _{Gen} encouraging SE 'P.'s becoming encouraged'

²⁸ Another, apparently connected issue, is that the Subject-matter argument of *embitter* nominals cannot occupy the pre-nominal position. As noted in subsection 5.3.1, there are two limitations on the pre-nominal position: (i) only nouns which can be interpreted as [+human] can occupy it; (ii) if the noun is transitive, only the external argument can occupy it. The [+c-m] Subject-matter arguments fulfill both these requirements and yet it cannot be in this position as the following paraphrase of example (61a) demonstrates:

?? dívčino nadchnutí Pavla
 girl's enchanting Pavel-Gen
 'Pavel's enchanting from the girl'

The example sounds very odd, since the pre-nominal position seems to impose an agentive reading on the argument *dívčino* ('girl's'), which is, however, hard to get, since the [+c] Cause of the noun is not available, being frozen.

(c) pobouřit: 'outrage'	pobouření Pavla *(tím mužem / filmem) outraging Pavel _{Gen} that man _{Inst} / movie _{Inst} 'Pavel's outraging (from that man / from the movie)'	Pavlovo pobouření se Pavel _{Gen} outraging SE 'P.'s becoming outraged'
(d) pohoršit: 'scandalize'	pohoršení Pavla *(tou ženou / tou malbou) scandalizing Pavel _{Gen} that woman _{Inst} / that picture _{Inst} 'P.'s scandalizing (from that woman / from that picture)'	Pavlovo pohoršení se P _{Gen} scandalizing SE 'P.'s becoming scandalized'
(e) rozhněvat: 'anger'	rozhněvání Pavla *(tím dítětem / jeho chováním) angering Pavel _{Gen} that child _{Inst} / his behavior _{Inst} 'Pavel's angering (from that child / from his behavior)'	Pavlovo rozhněvání se Pavel _{Gen} angering SE 'P.'s becoming angered'
(f) rozhořčit: 'embitter'	rozhořčení Pavla *(manželkou / tou událostí) embittering Pavel _{Gen} wife _{Inst} / that event _{Inst} 'Pavel's embittering (from his wife / from that event)'	Pavlovo rozhořčení se P _{Gen} embittering SE 'P.'s becoming embittered'
(g) soužit: 'plague'	soužení Pavla *(Petrem / tím problémem) plaguing Pavel _{Gen} Petr _{Inst} / that problem _{Inst} 'Pavel's plaguing (from Petr / from that problem)'	Pavlovo soužení se. Pavel _{Gen} plaguing SE 'P.'s becoming plagued'
(h) uspokojit: 'satisfy'	uspokojení Pavla *(jeho studentem / výsledkem) satisfying Pavel _{Gen} his student _{Inst} / result _{Inst} 'Pavel's satisfying (from his student / from the result)'	Pavlovo uspokojení se Pavel _{Gen} satisfying SE 'P.'s becoming satisfied'
(i) znepokojit: 'unsettle'	znepokojení Pavla *(babičkou / tou zprávou) unsettling Pavel _{Gen} granny _{Inst} / that report _{Inst} 'Pavel's unsettling (from his granny / from that report)'	Pavlovo znepokojení se Pavel _{Gen} unsettling SE 'P.'s becoming unsettled'

We can thus summarize our observation with respect to different realizations of *embitter* group as follows: The theta grid of *embitter* entries contains the [+c] Cause role, which is frozen, the [+c-m] Subject-matter role and the [-c+m] Experiencer role. Verbs in this set have transitive object-experiencer realization (46ii), i.e. realization in which the [+c-m] Subject-matter role is assigned to the subject, and can passivize. Moreover, they have subject-experiencer realization (46iii), which is always accompanied with the clitic SE. These verbs have true adjectival passives counterparts, which are systematically and without any exception attached the suffix *-ný/-tý*. There are no adjectival decausatives in this group. Finally, *embitter* nominals can be either transitive (of the type (46ii)) or subject-experiencer (46iii), similarly to verbs.

Table 4 – embitter class realizations

	<i>Embitter</i> group - experiencer formations whose basis theta grid is {[+c]} [-c+m]		
		[+c-m]	
	transitive	passive	decausative
Verbal realizations	YES (46ii)	YES (46ii)	YES (withSE)
Adjectival realizations	YES (46ii)	YES (<i>-ný/-tý</i> ending only)	NO
Nominal realizations	YES (46ii)	YES (46ii)	YES (with SE)

5.3.3 The process of adjectivization and the decausativization in the adjectival domain

What can we learn from the data presented in the previous two subsections? Examining the three different voices (transitive (46i/46ii) and decausative (46/iii)), repeated below, in three different domains (verbal, adjectival and nominal) offers a comparative look at each one of the three voices, across the three domains. This method is to a certain extent similar to the comparison we have made in subsection 4.3.4 when we have compared unaccusative verbs, which lack a transitive alternate, with theme-unergative verbs and two-place unaccusative verbs. It differs, however, in that sense, that this time we can compare entities which have something "real" in common, namely they are all derived from the same basic lexical entry. We have seen two types of these basic entries, which differ as far as their theta grid is concerned. Namely *bitter* group (51), and *embitter* group (58), repeated below.

(46) Three different realizations of Czech experiencer verbs

- (i) [+c], [-c+m]_{Acc} ([+c-m]) "full" realization (the realization of [+c-m] is optional)
- (ii) [+c-m], [-c+m]_{Acc} external mapping of [+c-m] at the expense of [+c]
- (iii) [-c+m], ([+c-m]) [+c] is not realized due to Decausativization (the realization of [+c-m] is optional)

(51) The theta grid of *bitter* group

([+c])_{frozen} [-c+m]

(58) The theta grid of *embitter* group

([+c])_{frozen} [-c+m] [+c-m]

The availability of the three different voices across the three different categories of these two types of theta grids is summarized in table 5.

Table 5 – bitter and embitter class realizations across categories

(a)	bitter group: {[+c]} [-c+m]	verbs	nouns	adjectives
i.	transitive/adjectival passive realization (46i): [+c] [-c+m]	NO	NO	NO
ii.	transitive/adjectival passive realization (46ii): [+c-m] [-c+m]	NO	NO	NO
iii.	decausative realization (46iii): [-c+m]	YES	YES	YES
(b)	embitter group: {[+c]} [-c+m] [+c-m]	verbs	nouns	adjectives
i.	transitive/adjectival passive realization (46i): [+c] [-c+m]	NO	NO	NO
ii.	transitive/adjectival passive realization (46ii): [+c-m] [-c+m]	YES	YES	YES
iii.	decausative realization (46iii): [-c+m] ([+c-m])	YES	YES	NO

Transitive realization (46i), is not available in any of our three domains in either of the two groups (*bitter* and *embitter*), since the [+c] Cause role is frozen and therefore banned from entering the syntax (rows (ai) and (bi) in table 5). Moreover, the *bitter* group does not allow transitive realization (46ii) as well, since members of this group simply do not have the [+c-m] Subject-matter role on their theta grid (row (aii) in table 5).

Now, looking first at nominals, it appears that they realize exactly the same alternates as their verbal counterparts do (see rows (aiii), (bii) and (biii) in table 5). Unfortunately, this is not very helpful in our search for evidence which could shed light on their derivational history, as both the verb independent as well as exclusively verb based derivation can account for this state of affairs.

The situation with adjectives is however, much more promising. Namely, as has been noted in subsection 5.3.2, examples (60), and as depicted in table 5, there are no adjectival decausatives in *embitter* group (see row (biii) in table 5). In the course of the presentation of *bitter* group (5.3.1), we have, however, seen that nothing prevents the frozen [+c] Cause role of experiencer entries to be targeted by the operation of decausativization, giving rise to adjectival decausatives. Moreover, the similar observation has been made in subsection 4.3.4 with respect to the adjectival counterparts of unaccusative verbs which lack a transitive alternate; i.e. the derivational base of these adjectival decausatives has a frozen [+c] Cause as well and yet the operation of decausativization applies. The absence of adjectival decausatives in *embitter* group is thus very surprising and unexpected under Meltzer's analysis presented in subsection 4.3.1.2.

Recall, what the essence of her analysis was. Meltzer suggests that the derivation of adjectival decausatives involves two separate processes – the process of adjectivization itself and the operation of decausativization. The derivation of true adjectival passives, on the other hand, involves, along with the process of adjectivization, the operation of saturation rather than the operation of decausativization. The contribution of the process of "adjectivization" to the derivation as a whole is that (i) it changes an event argument of the derivational base to the state argument (as adjectives denote states, not events) and (ii) it marks its internal theta role for lambda-abstraction:

(62) Adjectivization – Meltzer 2011

VERB/ROOT (θ_{EXT} , θ_{INT} , e) $\dot{\rightarrow}$ ADJECTIVE (θ_{EXT} , $\theta_{INT \lambda-ABS}$, s)

The supposed combined effect of the process of adjectivization with each one of the two operations, i.e. saturation and decausativization, on *bitter* and *embitter* entries should be like in (63) and (64), respectively (compare with the schemas in (44) – (46), subsection 4.3.1.2).

(63) The application of Meltzer analysis on *bitter* group

(a) adjectival passive formation

adjectivization: ZATRPKNOUT_{???} ({[+c]}, [-c+m]_{→λ-ABS}, s)

ZATRPKNOUT_{ROOT} ({[+c]}, [-c+m], e) #ZATRPKNUTÝ_{ADJ} ({[+c]}_{→SAT}, [-c+m]_{→λ-ABS}, s)

saturation: ZATRPKNOUT_{???} ({[+c]}_{→SAT}, [-c+m], e)

(b) adjectival decausative formation

adjectivization: ZATRPKNOUT_{???} ({[+c]}, [-c+m]_{→λ-ABS}, s)

ZATRPKNOUT_{ROOT} ({[+c]}, [-c+m], e) ZATRPKLÝ_{ADJ} ([-c+m]_{→λ-ABS}, s)

decausativization: ZATRPKNOUT_{???} ([-c+m], e)

The derivational input in (63) above is the root ZATRPKNOUT (BITTER). This root undergoes the process of adjectivization (62), and simultaneously can be targeted either by the operation of saturation (63a) or by the operation of decausativization (63b). The operation of saturation marks the (external) [+c] Cause role as a candidate for a subsequent suppression of the role in the syntax and its assignment to a variable in the semantics (depicted by the index SAT). The operation of decausativization, on the other hand, deletes the (external) [+c] Cause role altogether. The status of the output of the process of adjectivization, as well as the status of the output of each one of the two arity operations is not clear (depicted by three question marks). The output of the joint application of adjectivization and saturation is a non-existing true adjectival passive ZATRPKNUTÝ (63a) (the (external) [+c] Cause role has been marked for saturation and assignment to a variable, but it is banned from entering the syntax, since it is frozen, i.e., inert outside the lexicon); the output of the joint application of adjectivization and decausativization is adjectival decausative ZATRPKLÝ (63b). We can thus conclude that as far as the *bitter* adjectives are concerned, Meltzer analysis can account for the data.

The derivational input in (64) below is the root ROZHORČIT (EMBITTER). This root undergoes the process of adjectivization (62), and simultaneously can be targeted either by the operation of saturation (64a) or by the operation of decausativization (64b). The operation of saturation marks the (external) [+c] Cause role as a candidate for a subsequent suppression of the role in the syntax and its assignment to a variable in the semantics. Meltzer does not discuss adjectival counterparts of verbs whose theta grid contains two theta roles which can be mapped externally (one at the expense of the other), like (Czech) experiencer verbs. Nevertheless, in harmony with the spirit of her analysis, the [+c-m] Subject-matter role in

(64a) should undergo the same SAT-marking as the [+c] Cause role does; it does not really matter now, whether in these cases both SAT-candidates are marked (as depicted in (64a)), or whether the operation (randomly) chooses one of them. The operation of decausativization, on the other hand, deletes the (external) [+c] Cause role altogether. The output of the joint application of adjectivization and saturation is the true adjectival passive ROZHORČENÝ (64a) (the frozen [+c] Cause role is banned from entering the syntax, but the [+c-m] Subject-matter role can do so). The output of the joint application of adjectivization and decausativization should be the adjectival decausative ROZHORČENÝ or perhaps ROZHORČELÝ (64b). This is, however, not the case.

(64) The application of Meltzer analysis on *embitter* group

(a) adjectival passive formation

adjectivization: ROZHORČIT_{???} ({[+c]}, [+c-m], [-c+m]_{→λ-ABS}, s)

ROZHORČIT_{ROOT} ({[+c]}, [+c-m], [-c+m], e) **#ROZHORČENÝ_{ADJ}** ({[+c]}_{→SAT}, [-c+m]_{→λ-ABS}, s)

ROZHORČENÝ_{ADJ} ([+c-m]_{→SAT}, [-c+m]_{→λ-ABS}, s)

saturation: ROZHORČIT_{???} ({[+c]}_{→SAT}, [+c-m]_{→SAT}, [-c+m], e)

(b) adjectival decausative formation

adjectivization: ROZHORČIT_{???} ({[+c]}, [+c-m], [-c+m]_{→λ-ABS}, s)

ROZHORČIT_{ROOT} ({[+c]}, [+c-m], [-c+m], e) **#ROZHORČE-NÝ/-LÝ_{ADJ}** ([-c+m]_{→λ-ABS}, ([+c-m]), s)

decausativization: ROZHORČIT_{???} ([+c-m], [-c+m], e)

One can perhaps try to defend Meltzer's proposal by saying that the adjectival decausatives of *embitter* group (64b) are excluded, since in the end of the derivation they still bear the [+c-m] Subject-matter role (not marked for saturation), which, for what ever reason, prevents them from entering the syntax. This reasoning is, however, not likely, as the following piece of data manifests. Namely, the examples in (65) contain adjectival counterparts of experiencer verbs, which have been presented in (27). The [+c] Cause role of these verbs, unlike the [+c] Cause role of *embitter* verb, is not frozen. As the contradictory patterns in (65a) and (65b) clearly show, these adjective are ambiguous between the true adjectival passive reading and the decausative reading. The addition of the weak contradictory context in (65a) does not result in contradiction, since it negates a transitive event only; only the strong contradictory context (65b) gives rise to a contradiction.

(65) Adjectival counterparts of *standard* experiencer- verbs

- (a) Pavel je vyděšený / rozveselený / rozčilený, aniž byl vyděšen / rozveselen / rozčilen.
Pavel is terrified_{-adj} / jollified_{-adj} / upset_{-adj} without was terrified_{-pass} / jollified_{-pass} / upset_{-pass}
'Pavel is terrified / jollified / upset, without having been terrified / jollified / upset.'
- (b) # Pavel je vyděšený / rozveselený / rozčilený, aniž se vyděsil / rozveselil / rozčilil.
Pavel is terrified_{-adj} / jollified_{-adj} / upset_{-adj} without SE terrified_{-dec} / jollified_{-dec} / upset_{-dec}
'Pavel is terrified / jollified / upset, without becoming terrified / jollified / upset.'

The application of Meltzer's analysis on *standard* experiencer verbs is given in (66). The derivational input in (66) below is the root VYDĚŠIT (TERRIFY). Without entering the details, the output of the joint application of adjectivization and saturation is the true adjectival passive VYDĚŠENÝ (66a) (either the [+c] Cause role is saturated or the [+c-m] Subject-matter role is saturated). The output of the joint application of adjectivization and decausativization is the adjectival decausative VYDĚŠENÝ (66b).

(66) The application of Meltzer analysis on *standard* experiencer- verbs

(a) adjectival passive formation

adjectivization: VYDĚŠIT_{???} ([+c], [+c-m], [-c+m]_{→λ-ABS}, s)
VYDĚŠIT_{ROOT} ([+c], [+c-m], [-c+m], e) VYDĚŠENÝ_{ADJ} ([+c]_{→SAT}, [-c+m]_{→λ-ABS,s})
VYDĚŠENÝ_{ADJ} ([+c-m]_{→SAT}, [-c+m]_{→λ-ABS,s})
saturation: VYDĚŠIT_{???} ([+c]_{→SAT}, [+c-m]_{→SAT}, [-c+m], e)

(b) adjectival decausative formation

adjectivization: VYDĚŠIT_{???} ([+c], [+c-m], [-c+m]_{→λ-ABS}, s)
VYDĚŠIT_{ROOT} ([+c], [+c-m], [-c+m], e) VYDĚŠENÝ_{ADJ} ([-c+m]_{→λ-ABS}, ([+c-m], s)
decausativization: VYDĚŠIT_{???} ([+c-m], [-c+m], e)

Meltzer's analysis thus can apply for *standard* experiencer data. What her analysis cannot account for is the distinction between the (64b) and (66b), repeated below as (67). Namely, everything else being equal, why does the embitter group not have adjectival decausatives, while the standard group does?

(67) The application of Meltzer analysis on Czech experiencer formations – a problem

(a) adjectival decausative formation (*embitter* group)

adjectivization: ROZHOŘČIT_{???} ({[+c]}, [+c-m], [-c+m]_{→λ-ABS}, s)
ROZHOŘČIT_{ROOT} ({[+c]}, [+c-m], [-c+m], e) #ROZHOŘČE-NÝ/-LÝ_{ADJ} ([-c+m]_{→λ-ABS}, ([+c-m], s)
decausativization: ROZHOŘČIT_{???} ([+c-m], [-c+m], e)

(b) adjectival decausative formation (*standard* group)

adjectivization: $\text{VYDĚSIT}_{???} ([+c], [+c-m], [-c+m]_{\rightarrow\lambda\text{-ABS}}, s)$

$\text{VYDĚSIT}_{\text{ROOT}} ([+c], [+c-m], [-c+m], e)$ $\text{VYDĚŠENÝ}_{\text{ADJ}} ([-c+m]_{\rightarrow\lambda\text{-ABS}}, ([+c-m]), s)$

decausativization: $\text{VYDĚSIT}_{???} ([+c-m], [-c+m], e)$

First, of all, note that the contrast between (67a) and (67b) supplies the answer to our question formulated in (8bi), i.e. is the derivation of adjectival decausatives Verb Independent or rather Exclusively Verb Based? More specifically, the contrast between (67a) and (67b) constitutes direct and clear evidence that the derivation of adjectival decausatives cannot be considered Exclusively Verb Based, since if it was we would expect both groups (*embitter* and *standard*) to either have or not to have adjectival decausatives. The fact that only the *standard* group has this adjectival voice, witnesses that adjectival decausatives cannot be derived directly from their verbal counterparts via the process of adjectivization only, because in such a case it would be impossible to explain why the same input (subject experiencer verb) sometimes can and sometimes cannot undergo the process adjectivization.

Now, let us make one final step. Namely, let us suggest a possible solution for a puzzle presented in (67). What can be the reason that there are no adjectival decausatives in the *embitter* group? Is there something that prevents these adjectives from being created, or do they in fact exist but cannot enter the syntax? I want to suggest that the latter of these two options is correct and that what bans these adjectives from entering the syntax is that their [+c-m] Subject-matter role has been previously marked as a candidate for saturation by the process of adjectivization. (Recall that we have mentioned in subsection 5.2.2 a very similar suggestion, which has been advanced by Siloni&Preminger(2009) as an explanation for the absence of certain experiencer nominals in Hebrew). I thus propose the following modification of Meltzer's adjectivization formula (68) and in addition two principles for SAT-marking (69):

(68) The process of adjectivization

$\text{VERB/ROOT} (\theta_{\text{EXT}}, \theta_{\text{INT}}, e) \rightarrow \text{ADJECTIVE} (\theta_{\text{EXT}} \rightarrow \text{SAT}, \theta_{\text{INT}} \lambda\text{-ABS}, s)$

(69) Principles for SAT-marking

(i) SAT(uration)-marking applies only once in the course of the process of adjectivization, i.e. only one SAT-candidate is marked.

(ii) Frozen theta roles are not marked as SAT-candidates (or are marked only as a last resort, i.e. if there is no other candidate for SAT-marking).

The process of adjectivization as depicted in (68) differs minimally from Meltzer's original proposal (62). Namely, (i) it changes an event argument of the derivational base to the state argument and (ii) it marks its internal theta role for lambda-abstraction. In addition, however, it marks an external argument of the derivational base as a candidate for saturation, making its output a true adjectival passive. I suggest that this marking can apply only once in the course of the process of adjectivization (69i) and that frozen theta roles are not marked (69ii), since their marking is a priori redundant, as they cannot be saturated anyway (in this respect the currently proposed process of adjectivization differs from the process of nominalization suggested by Siloni&Preminger (2009), as they argue that the process of nominalization does mark frozen roles as candidates for (arbitrary) saturation).

Two more notes are in order here. **First**, note that the modification of Meltzer's original proposal, which we are advancing here, is to a certain extent actually nothing more than a change of terminology. Namely, what Melzter considers to be two separate processes (i.e. adjectivization and saturation) that nevertheless apply together, is said here to be simply a single process. **Second**, Meltzer original proposal that the derivation of true adjectival passive involves the process of adjectivization and the operation of saturation, while the derivation of adjectival decausatives involves the process of adjectivization and the operation of decausativization, is a bit problematic from a theoretical point of view. Namely while in the verbal domain the saturation and the decausativization are typically valence changing operations, in adjectival domain they appear to have (according to Meltzer) two functions – they act as valence changing as well as category determining operations; this in turn also makes the parallelism, which according to Meltzer exists between the verbal and the adjectival domain, not perfect. Under the current suggestion, on the other hand, there is no need to assume that the operation of saturation applies in the adjectival domain, since its work is done by the process of adjectivization itself, while the operation of decausativization "remains" a typically valence changing operation, targeting the output of the process of adjectivization.

Finally, let us briefly illustrate that the process of adjectivization (68), principles for SAT-marking (69) and the operation of decausativization, which applies independently in the adjectival domain can account for the data we have seen. (Although not presented below, the present derivational mechanism can account for Hebrew data presented in Meltzer (2011) as well.).

Starting with *bitter* adjectives, the derivation base (70a) undergoes the process of adjectivization (I do not take here any position whether the input for the process of adjectivization is a verb or a root unspecified for the category), giving rise to a true adjectival passive (70b). According to (69ii) SAT-marking procedure does not apply (or it applies as a last resort only, as there is no other candidate for SAT-marking) since the [+c] Cause role is frozen, which is also the reason why the resulting adjectival passive will not enter the syntax. It can however serve as an input for a subsequent application of the operation of decausativization, which deletes the frozen [+c] Cause role and forms an adjectival decausative (70c).

(70) Derivation of *bitter* adjectives

- (a) **ZATRPKNOUT_{ROOT/VERB} ({[+c]}, [-c+m], e)**
 ↓ adjectivization ↓
 (b) **#ZATRPKNUTÝ_{AdjPass} ({[+c]}_(→SAT), [-c+m]_{→λ-ABS,s})**
 ↓ decausativization ↓
 (c) **ZATRPKLÝ_{AdjDec} ([-c+m]_{→λ-ABS, s})**

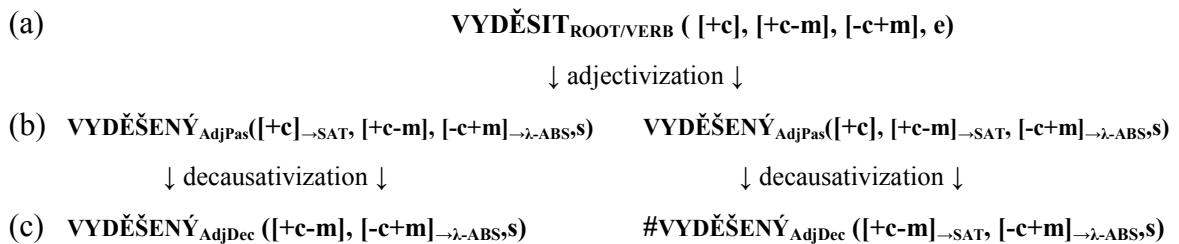
The situation with the adjectives from *embitter* group is slightly different. Here the derivational base (71a) contains, except for the frozen [+c] Cause role, the [+c-m] Subject-matter role. Since frozen roles are not SAT-marked if there is other candidate for SAT-marking (see principle (69ii) for SAT-marking), it is the [+c-m] Subject-matter which is marked, giving rise to a true adjectival passive (71b). This adjectival passive can be realized syntactically (leaving the second external theta role, i.e. the frozen [+c] Cause, in the lexicon). Moreover it can be targeted by the operation of decausativization. This operation deletes the frozen [+c] Cause role, however, the previously SAT-marked [+c-m] Subject-matter role remains (71c). Since SAT-marked roles must be saturated, the adjective in (71c) cannot be realized as adjectival decausative.

(71) Derivation of *embitter* adjectives

- (a) **ROZHOŘČIT_{ROOT/VERB} ({[+c]}, [+c-m], [-c+m], e)**
 ↓ adjectivization ↓
 (b) **ROZHOŘČENÝ ({[+c]}, [+c-m]_{→SAT}, [-c+m]_{→λ-ABS,s})**
 ↓ decausativization ↓
 (c) **#ROZHOŘČE-NÝ/-LÝ_{AdjDec} ([+c-m]_{→SAT}, [-c+m]_{→λ-ABS,s})**

Finally, let us see the derivational options for *standard* experiencer entries, i.e. entries whose theta grid is equipped with [+c] Cause role, [+c-m] Subject-matter role and [-c+m] Experiencer role, none of them being frozen. There are two possibilities how the process of adjectivization applies on the derivational base (72a). Either the [+c] Cause role is SAT-marked or the [+c-m] Subject-matter role is SAT-marked, giving rise to two true adjectival passives (72b). Both of these adjectival passives can enter the syntax (leaving the second – unmarked – external theta role in the lexicon), the difference between them being the interpretation of the saturated argument (either [+c] Cause or [+c-m] Subject-matter). Moreover, both of them can serve as an input for the operation of decausativization, resulting in adjectival decausative (72c), although this adjectival decausative can enter the syntax only if it has been derived from true adjectival passive whose [+c] Cause role was SAT-marked.

(72) Derivation of *standard* experiencer adjectives



5.4 Three hypotheses for future research (instead of summary)

Due to the delicate nature of the data, this chapter focused only on the Czech language. Hopefully, an exploration of other (Slavic) languages along similar lines can supply further and better insight into the derivational history of adjectival passives and decausative event nouns.

Based on our discussion here, we can conclude that in Czech the derivation of adjectival decausatives is Verb Independent, as the input for their derivation must be a true adjectival passive. Adjectival passives themselves are outputs of the process of adjectivization, and there is no need to assume that their derivation involves an arity operation of any kind; as far as the input for the process of adjectivization is concerned, in the present study we did not find any evidence pointing to whether it is a corresponding verb or a root unspecified for the category. With respect to decausative nouns, our current research was even less "fruitful" in the sense that no evidence has been found in favor of either Exclusively Verb Based or Verb

Independent derivation of these nominal formations. Nevertheless, we pointed out that these nouns seem to be somewhat more closely related to their verbal counterparts than adjectival passives. This in turn leads to a general hypothesis that the input for the process of nominalization is a corresponding verb, while the input for the process of adjectivization is a corresponding root. Three more specific hypotheses follow:

Fact I: If an entry whose external theta role is [+c] Cause, does not have a transitive realization, then its decausative realization can but may not be accompanied with the clitic SE; a preliminary check of the data hints that these decausatives are mostly without the clitic but for a more precise picture further research is needed. Crucially, however, if an entry whose external theta role is [+c] Cause, does have a transitive realization, then its decausative realization is always accompanied with the clitic. (Recall from our presentation of *embitter* group (5.3.2) that the ability of an entry to be realized as a transitive verb is not necessarily in correlation with the frozen or not frozen status of its [+c] Cause role. Namely we saw that the [+c] Cause role of *embitter* entries is frozen and yet these entries do have a transitive realization due to the presence of the [+c-m] Subject matter role on their theta grid; the decausative realizations of *embitter* entries are, in turn, always accompanied with the clitic.)

Working Hypothesis I: How can one interpret this state of affairs? The most natural hypothesis seems to be that **in Czech the clitic SE functions as an Accusative case reducer not only when a syntactic arity operation applies (e.g. reflexivization), but also when the lexical arity operation of decausativization applies.** More specifically, it can be that in Czech the operation of decausativization applies in the lexicon, where it reduces the external [+c] Cause role of its input, but not the Accusative case. The resulting decausative verb thus enters the syntax as a one-place predicate which still has the Accusative case; in order for such verbs to be released of this redundant case the clitic SE is utilized, exactly as in the case of reflexivization, reciprocalization or middle formation.

This suggestion is very tempting since it can supply a straightforward explanation for the correlation between the ability of an entry to be realized as a transitive verb (checking Accusative case) and the presence of SE if such an entry is realized as a decausative verb. The consequences of this scenario are, however, not so trivial. Namely, suggesting that the clitic SE functions as a case reducer even when the operation of decausativization applies, means that all decausative verbs which are not accompanied with the clitic (e.g. decausatives of the *bitter* group, see section 5.3.1) enter the syntax without the Accusative case. Why should it be so? Two possibilities come to mind: (i) Either these decausatives are derived not by the

operation of decausativization but via some other (lexical) derivational procedure which is capable (unlike decausativization) of deleting the Accusative case. (ii) Or the derivational base of these decausatives lacks the Accusative case from the outset. Regardless of which of these two options should be preferred, ascribing the fact that some decausatives are accompanied with the clitic SE while others are not, to the presence of the Accusative case on the former and its absence on the latter, means that there is a stage in the lexical derivation at which the two differ. Let us proceed a bit further. Namely, let us specify what this difference consists in and subsequently let us speculate at which derivational stage it is relevant. Assuming with Reinhart (2002) that (i) decausativization applies only to verbs with (at least) two arguments, one of which is marked with index 1 by marking rule (15ii), and that (ii) a verb is equipped with the Accusative case if it has a [+] role and a [α /-c] role (i.e. either the [-c-m] Theme role or the [-c+m] Experiencer role), see marking rule (15iii), it seems that the difference consists in the character of the [+c] Cause role. In other words, the [+c] Cause of the derivational base of unaccusative verbs which are not accompanied with the clitic SE seems to be in some way defective: either it cannot be targeted by the operation of decausativization, or it cannot ensure the Accusative case. What kind of defectiveness could it be? Speculatively speaking, one possibility is that these [+c] Cause roles are for some reason inert already in the lexicon, including the level of concepts, i.e. yet before the application of marking rules (15), unlike "ordinary" frozen roles, which are inert only in the syntax, i.e. after the application of marking rules. With this in mind let us shortly come back to *-l'ý* adjectives presented in 4.3.4.

Fact II: Adjectival counterparts of unaccusative/decausative verbs which are not accompanied with the clitic SE, are systematically attached the suffix *-l'ý* rather than the ordinary ending *-n'ý/-t'ý* (see our generalization (68i), subsection 4.3.4).

Working Hypothesis II: In light of Working Hypothesis I and especially in light of its speculative consequence that the [+c] Cause role of the derivational base of decausative verbs which are not accompanied with the clitic SE are defective/inert already at the level of concepts, the suffix *-l'ý* must be interpreted as a morphological manifestation of exactly this kind of defectiveness. This in turn means that **adjectival passives are derived at this level, i.e. at the level of concept**. It can be, for instance, that the defective status of [+c] Cause roles prevents them from being marked as SAT-candidates even as a last resort, i.e. even if there is no other candidate for SAT-marking; such suggestion also gets a certain morphological support from the fact that the ordinary *-n'ý/-t'ý* suffix is a typical passive morpheme, i.e. it can

be that this ordinary suffix appears once some theta role of an adjectivization input has been marked for SAT-marking, while if no SAT-candidate has been marked, the suffix *-l'ý* is utilized.

This is, however, not the end of the story, as there is yet another set of data, mentioned only marginally in the current study. Namely recall from subsection 4.3.4, table 2, that the correlation between the nonappearance of the clitic SE with a decausative verb and the appearance of the suffix *-l'ý* with its adjectival counterpart is not perfect. More precisely, if a decausative verb is not accompanied with the clitic, its adjectival counterpart is always attached the suffix *-l'ý*, but not vice versa, i.e. there are *l'ý*-adjectives, whose decausative counterparts are accompanied with the clitic; moreover transitive alternates of these decausatives can but may not be frozen. While the number of these *l'ý*-adjectives seems to be relatively small (but more precise statistical research is needed), so that one can consider their occurrence accidental, it may not be necessarily the case. Let us thus propose yet another speculative scenario. Namely, recall from subsection 4.3.3 that Czech (verbal) roots can be attached different prefixes, which change their original meaning (sometimes this prefixation is in fact necessary as the root cannot enter the syntax without a prefix). Assuming (i) that the process of adjectivization targets basic (non-prefixed) roots (along with the process of verbalization, see the derivation scenario in (7b)), and assuming (ii) that the subsequent prefixation of these roots can manipulate their theta grid, can offer an explanation for the sporadic occurrence of *l'ý*-adjectives, whose unaccusative verbal counterparts are accompanied with the clitic, as well as for the cases in which a single entry has both a *l'ý*-adjective and a *ny'/-ty'*-adjective. Namely, the process of adjectivization (as well as the process of verbalization) applies on a root whose [+c] Cause role is defective. Assuming with Reinhart (2002) that the "border crossing" between the level of roots and the level of specific realizations of these roots consists in the marking procedure (15), the output of the processes of adjectivization (as well as the output of the process of verbalization) is in fact still not a real adjective (and a real verb), but rather an **adjectival root** (and a **verbal root**). A subsequent prefixation of this adjectival (as well as verbal) root can release it from its defective role. Since we are still in the domain of roots, not in the domain of real adjectives (and real verbs), the process of adjectivization (as well as the process of verbalization) can optionally target these prefixed roots "again", resulting in the situation in which we have SE-decausative verbs, whose adjectival counterparts is attached the suffix *-l'ý*, if no repetitive adjectivization has applied, as well as a situation in which there are two adjectival forms, a *l'ý*-adjective and a *ny'/-ty'*-adjective, for one entry, if repetitive adjectivization did apply. (It does

not seem that the repetitive application of the process of verbalization at the level of roots has a real effect. A possible interpretation of this state of affairs is that the process of verbalization actually does not apply at all, i.e. it does not exist, and consequently that there are no category neutral roots (in Czech) but only verbal roots.)

Opening the possibility that the same process can apply freely on different inputs present at the same level of representation, regardless of whether these inputs are derivationally linked or not, leads us to the third and final working hypothesis.

Fact III: Czech nouns which are accompanied with the clitic SE are always complex event nouns, never simple event nouns (in Grimshaw's (1990) terms) or result nouns.

Working Hypothesis III: Arity operations are valence changing operations, i.e. they affect the theta grid of their input if they apply in the lexicon (e.g. the operation of decausativization) or they determine the assignment of theta roles of their input if they apply in the syntax (e.g. the operation of reflexivization/reciprocalization). The necessary condition for an arity operation to apply is that its input has a theta grid, i.e. has an argument and therefore also an event structure. In chapter 3 we have argued that Czech, Polish and Slovak reflexive and reciprocal nouns are derived in the syntax from their transitive nominal counterparts. These transitive nominals have to have an argument (and an event) structure, otherwise the operation of reflexivization/reciprocalization could not target them. Since the output of reflexivization/reciprocalization still has a surplus genitive case, it is not surprising that the clitic SE is always needed in order to neutralize it. Moreover, assuming that the "loss" of an argument (and an event) structure is possible only in the course of the process of nominalization (and perhaps adjectivization, see our discussion in section 4.3.3), never in the course of the application of an arity operation, it is not surprising that there are no reflexive/reciprocal nouns in Czech, Polish and Slovak, which are not complex event nouns. Namely, the process of nominalization applies in the lexicon, but there are no reflexive/reciprocal (verbal) inputs for it, as Czech, Polish and Slovak reflexive/reciprocal verbs are formed only in the syntax.

As far as Czech nominal decausatives are concerned the situation is different. Although not presented in the current study, there are decausative nouns which do not denote a complex event. These nouns are never attached the clitic SE and their appearance is not systematic. On the other hand, decausative nouns which are accompanied with the clitic are formed productively and they always denote a complex event. The final working hypothesis to be formulated thus is that **the derivation of simple event decausative nouns (which are not**

accompanied by the clitic) is exclusively verb based, i.e. they are derived via the process of nominalization only, directly from their decausative verbal counterparts; on the other hand the derivation of complex event decausative nouns (which are accompanied by the clitic) is verb independent, i.e. these nouns are derived from their transitive complex event nominal alternates via the operation of decausativization.

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