

# **Prepositions, Case and Verbal Prefixes: The Case of Slavic**

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## Abbreviations

A	adjectival suffix
ACC	accusative
COMP	completive aspect
DAT	dative
DEF	definite article
ERG	ergative
F	feminine
GEN	genitive
IMPF	imperfective aspect
INAN	inanimate
INESS	inessive
INF	infinitival suffix
INST	instrumental
LOC	locative
M	masculine
N	neuter
NEG	negation
NFUT	non-future
NMLZ	nominalising affix
NOM	nominative
PART	participial suffix
PF	perfective aspect
PL	plural
PRES	present
PRT	partitive case
PST	past
SBJ	subject
SG	singular
SI	secondary imperfective suffix
TH	thematic suffix
TOP	topic
BG	Bulgarian
CZ	Czech
OCS	Old Church Slavonic
P	Polish
R	Russian
SK	Slovak
SL	Slovenian
US	Upper Sorbian

# Chapter 1

## Introduction

This monograph is concerned with prepositional elements in Slavic languages, prepositions, verbal prefixes and functional elements of prepositional nature. It argues that verbal prefixes are incorporated prepositions projecting its argument structure in the complement position of the verbal root. The meaning of prefixes is based on the two-argument meaning of prepositions, which is enriched with the CAUSE operator, which conjoins the state denoted by the prepositional phrase and the event expressed by the verbal root. This proposal accounts for not only effects of prefixation like the telicising effect and the argument structure effects but also the fact that prefixes help unprefixes verbs to derive target state adjectival participles because the state variable introduced by the prefix/preposition licenses the presence of the stativising operator in the derivation.

This book investigates idiomaticity in the realm of prefixed verbs and proposes a novel analysis of non-compositional prefixed verbs. The non-compositional interpretation arises *inter alia* because of the fact that either the meaning of the verbal part or the meaning of the prepositional part is shifted by means of Nunberg's (1995) predicate transfer in the course of the derivation of the prefixed verb.

This study also offers a uniform analysis of cases; prepositional as well as non-prepositional cases are treated as a reflection of the operation Agree between Tense-features and  $\phi$ -features. Focusing on Russian, Polish and Czech prepositions, I present a new model of prepositional case assignment, in which the type of prepositional case is determined by semantic properties of particular heads of the decomposed preposition. Furthermore, I investigate prepositional movement from synchronic as well as diachronic perspective. It will be shown that prepositions can be grammaticalised as a functional element of the higher clausal structure.

The theoretical framework of this book is the Minimalist approach (Chomsky 2000, 2001 *et seq.*), specifically, its morphosyntactic variant, combined with the standard

assumptions of the Distributed Morphology approach (Halle & Marantz 1993, Harley & Noyer 1999).

The book is organised as follows. Chapter 2 provides the empirical and theoretical background for the following chapters. It discusses various types of Slavic prefixes and shows that verbal prefixation has various effects: it brings about perfectivity, telicity, definiteness and affects argument structure of the base verb, among other things. The chapter provides several arguments for the position that verbal prefixes are incorporated prepositions. To derive the prefixation effects, it is proposed that lexical prefixes and at least some superlexical prefixes project a prepositional phrase with its arguments in the complement position of the verbal root. This has the consequence that the prepositional arguments are in competition with arguments of the base verb. As to telicity and perfectivity, it is proposed that verbal prefixes introduce a causal relation between the state brought about by the prepositional phrase and the event denoted by the verbal root and that they have a perfective Tense-feature, which affects the aspectual head and indirectly also definiteness properties of the argument receiving objective case. The chapter analyses all cases as an unvalued Tense-feature and shows that the value of the Tense-feature plays an important role in case alternations and other syntactic processes.

Chapter 3 investigates prefixed verbs with respect to their (non-)compositional properties and argues that non-compositional prefixed verbs do not form a unified class. By means of a paraphrase diagnostic, non-compositional prefixed verbs are classified into three categories, depending on the sources of their idiomatic meanings. Given the morphosyntactic approach, non-compositional prefixed verbs are treated as idioms, which are either listed in the lexicon or derived by the operation of predicate transfer. The chapter shows how the particular classes of non-compositional verbs are syntactically and semantically derived, extending the analysis proposed in chapter 2.

Chapter 4 examines the role of lexical and superlexical prefixes in target state adjectival participles in Czech. Following the proposal of the preceding chapters that prefixes are incorporated prepositions that introduce a state variable, it is argued that the state variable licenses the presence of the stativiser in the adjectival head. Given that the stativising operator merges in such a high structural position, adjectival participles can contain both types of prefixes. It will be shown that both lexical and superlexical prefixes play an important role in the derivation of target state participles; they help verbs to derive adjectival participles because, in addition to introducing the state variable, they induce perfectivity and can add an unselected argument.

Chapter 5 focuses on the prefix *po-* ‘on’ and argues that in contrast to Russian and Polish, Czech has a genuine future *po-*, which introduces the future time reference when it is attached to a motion verb. It is shown that the future *po-* differs from other prefixes for instance in its inability to affect selectional, aspectual and argument structure properties of the host verb and in its inability to form verbal nouns, participles and certain verbal forms. The chapter provides a diachronic analysis, under which the particular properties of future *po-* are based on the fact that it is a prepositional element that became grammaticalised as a future marker. This analysis accounts for many of the differences between the future *po-* and other prefixes in terms of their different structural positions. It is argued that the grammaticalisation process took place in two reanalysis steps; while the first step is common to Russian, Polish and Czech, the second reanalysis step only happened in Czech.

Chapter 6 investigates Russian, Polish and Czech prepositions and provides an articulated analysis of their syntactic and semantic structure. It presents a new approach to prepositional cases, in which the type of prepositional case assigned is determined by semantic properties of heads of the decomposed prepositional structure. I assume that there is a correspondence between semantic properties of the particular heads and their syntactic features and propose that syntactic features of heads incorporated into the case-assigning tense head are copied on the prepositional complement by the operation Agree, in accordance with the proposal that prepositional cases are also a reflection of Agree between Tense-features and  $\phi$ -features. At PF, the syntactic features are spelled out as a case by means of a specific vocabulary insertion rule. It will be shown that this approach can derive case properties of simple and complex prepositions as well as adverbial prepositions.

Conclusions will be drawn in chapter 7.

Some terminological remarks are in order. I am not concerned with multiple prefixation; hence I use the term *prefixation* in the sense of prefixation of simplex verbs, unless otherwise stated. In accordance with the recent literature, I use the terms *lexical prefixes* and *superlexical prefixes* but I do not follow the widely-held analysis based on two different syntactic positions of these two types of prefixes, as we shall see in the following chapters. Finally, the term *prepositional element* is meant to cover prepositions, prefixes and functional elements of the clausal structure that have prepositional nature, such as the future prefix discussed in chapter 5.



## Chapter 2

### Verbal Prefixes

#### 2.1 Introduction

This chapter provides the empirical and theoretical background for the following chapters. It shows that verbal prefixation has various effects in Slavic languages. For instance, prefixation induces perfectivity and telicity, affects argument structure and case-assignment properties of the base predicate and can change the meaning of the base verb. For these phenomena I propose an analysis according to which verbal prefixes are incorporated prepositions projecting a phrase in the complement position of the verbal root that functions as a result state predicate. Verbal prefixes introduce a causal relation between the state brought about by the prepositional phrase and the event introduced by the verbal root and have a perfective property, which affects the aspectual head and so indirectly also definiteness properties of the argument receiving objective case. Since the prefix (preposition) projects its argument structure in the complement position of the verbal root, prepositional arguments are in competition with arguments of the base verb. It is also argued that prepositional and structural cases can be treated uniformly as an Agree relation between  $\phi$ -features and Tense-features of the probe and the goal.

The chapter is organised as follows. Section 2.2 shows various types of Slavic verbal prefixes, which were postulated in the literature. It is mainly concerned with the difference between lexical and superlexical prefixes. Section 2.3 discusses the telicising and perfectivising effect of verbal prefixation and examines morphosyntactic structure of prefixed verbs. In section 2.4, I show that prefixes can affect case assignment properties of verbs to which they attach and in section 2.5, I demonstrate that verbal prefixes can manipulate argument structure of the base verb in various ways. In section 2.6, we will see that verbal prefixes are indirectly responsible for definiteness and quantisation of the direct object because they value the aspectual head as perfective, which in turn assigns the direct object the perfective structural accusative. In section 2.7, I argue that lexical prefixes and at least some

superlexical prefixes are incorporated prepositions that project a prepositional phrase with the figure argument (*locatum*) and the ground argument (*relatum*) in the complement position of the verbal root. Section 2.8.1 provides a detailed analysis of the syntactic derivation of a sentence with a prefixed verb and discusses how the particular effects of prefixation are derived. A complete semantic derivation of the sentence is presented in section 2.8.2. Conclusions are drawn in section 2.9.

## 2.2 Types of prefixes

The difference between lexical prefixes (also referred to as qualifying, resultative, internal) and superlexical prefixes (modifying, external) has been extensively discussed in the literature (see e.g. Isačenko 1962; Petr 1986a; Babko-Malaya 1999; Dickey 2000; Ramchand 2004; Romanova 2004, 2006; Svenonius 2004; Di Sciullo & Slabakova 2005; Arsenijević 2006; Biskup 2007, 2012; Richardson 2007; Szucsich 2007, 2014; Gehrke 2008; Tatevosov 2008; Lehmann 2009; Žaucer 2009, 2012; Markova 2011; Gvozdanović 2012; Wiland 2012; Biskup & Zybatow 2015).

Explicit formulation of this distinction with some criteria goes back at least to Isačenko (1962), who replaces the traditional distinction between *lexical* and *grammatical/empty* prefixes (e.g. Trávníček 1923, Vinogradov 1947, Bogusławski 1960) with the distinction between *qualifying* (lexical) and *modifying* (superlexical) prefixes. The existence of empty prefixes – pure perfectivising prefixes – is also assumed by Pauliny (1950), Bogusławski (1960, 1963), Tichonov (1964), Švedova (1980), Grzegorzczkova, Laskowski & Wróbel (1984), Petr (1986a), Šmiech (1986), Babko-Malaya (1999), Zaliznjak & Šmelëv (2000); consider, however, also Maslov (1958), Van Schooneveld (1959), Filip (1999), Endresen *et al.* (2012) and Janda & Lyashevskaya (2012) for the opposite point of view.

Let us now briefly overview the differences between lexical and superlexical prefixes that are often hypothesised in the literature. For instance, it has been argued that in contrast to lexical prefixes, superlexical prefixes do not affect the argument structure of the verb to which they attach (e.g. Di Sciullo & Slabakova 2005, Gehrke 2008) and that they do not change its lexical aspect (Di Sciullo & Slabakova 2005, Richardson 2007, but see Romanova 2006). Furthermore, superlexical prefixes mostly do not derive secondary imperfectives in contrast to lexical prefixes (Isačenko 1962, Svenonius 2004, Gehrke 2008).

According to the literature, lexical prefixes have a spatial or idiosyncratic meaning and superlexical prefixes have an adverbial or quantising meaning (Babko-Malaya 1999, Ramchand 2004, Svenonius 2004, Richardson 2007). Thus, lexically prefixed verbs have a

compositional (spatial) or non-compositional meaning, whereas superlexically prefixed verbs can only have a compositional meaning (e.g. Romanova 2006, Gehrke 2008).

As an illustration of superlexical prefixes, consider the Russian inceptive *za-* in (1), the Polish repetitive *prze-* in (2) and the cumulative/saturative *na-* in the Russian (3a), the Slovenian (3b) and the Czech (3c).

- |   |  |                                      |
|---|--|--------------------------------------|
| (1) a. <i>za-bolet'</i><br>behind-be.ill<br>'become ill'                                    | b. <i>za-begat'</i><br>behind-run<br>'start running' |                                      |
| (2) a. <i>prze-robic'</i><br>over-do<br>'rework'  | b. <i>prze-pisac'</i><br>over-write<br>'rewrite'     |                                      |
| (3) a. <i>na-begat'sja</i><br>on-run.self<br>all mean: 'come to have one's fill of running' | b. <i>na-laufati se</i><br>on-run self               | c. <i>na-běhat se</i><br>on-run self |

Compositional (spatial) lexically prefixed verbs are cases like the Serbo-Croatian *nabàcati* in (4a), the Old Church Slavonic *naiti* in (4b) and the Polish *namalować* in (4c). Consider also the Russian *vpisat'* in (5a), the Czech *vnést* in (5b) and the Slovak *vliat'* in (5c).

- |   |   |  |
|---|---|--|
| (4) a. <i>na-bàcati</i><br>on-throw<br>'throw sth. on sth.' | b. <i>na-iti</i><br>on-walk<br>'walk on sth.'<br>( 'find' ) | c. <i>na-malować</i><br>on-paint<br>'paint sth. on sth.' |
| (5) a. <i>v-pisat'</i><br>in-write<br>'write sth. in sth.'  | b. <i>v-nést</i><br>in-carry<br>'carry sth. in sth.'        | c. <i>v-liat'</i><br>in-pour<br>'pour sth. into sth.'    |

The examples show that the superlexical prefixes in (1)-(3) and lexical prefixes in (4) and (5) behave consistently and that the meaning of the prefixed verbs is composed of the meaning of the verb and the meaning of the prefix/preposition. In contrast, the changes induced by lexical

prefixes in the non-compositional prefixed verbs in (6) are unpredictable; consider the Bulgarian *ugovorja* in (6a), the Slovak *užiť* in (6b) and the Russian *sžit'* in (6c) (more examples will be shown in chapter 3.1).

(6) a. u-govorja at-I.speak 'I arrange'	b. u-žiť at-live 'take'	c. s-žiť from-live 'hound sb. out of sth.' 'drive sb. to his death'
---	-------------------------------	--

It has also been argued that superlexical prefixes can stack (in contrast to lexical prefixes), and that the superlexical prefix must precede the lexical prefix if they co-occur (e.g. Svenonius 2004 and Di Sciullo & Slabakova 2005). Furthermore, superlexical prefixes rarely form idioms (Svenonius 2004) and do not occur in adjectival participles; see Romanova (2006) for Russian past passive participles and Gehrke (2008) for Russian and Czech past active and past passive participles. According to the most popular view in the recent literature, these differences are based on different base positions of the two types of prefixes (Svenonius 2004, Ramchand 2004, Romanova 2006, Richardson 2007, Gehrke 2008). Typically, lexical prefixes are merged in a vP/VP-internal position, whereas superlexical prefixes are merged in a vP/VP-external position.

There are also approaches questioning this distinction or arguing that such a distinction is too rough and that a more fine-grained analysis is necessary; see Biskup (2007, 2012), Tatevosov (2008), Žaucer (2009, 2012), Markova (2011) and Wiland (2012). For instance, Žaucer (2009), concentrating on Slavic superlexical prefixes, argues that the Russian and Slovenian cumulative/saturative *na-* 'on' and the Slovenian perdurative *pre-* 'through' and its Russian counterpart *pro-* 'through' behave like resultative prefixes, that is, like lexical prefixes. Tatevosov (2008) shows that the two-way distinction is not fine enough and that the Russian completive *do-* 'to' and the repetitive *pere-* 'over' belong to a third type, namely, to intermediate prefixes. Similarly, Markova (2011) distinguishes three types of prefixes in Bulgarian, lexical (idiosyncratic), inner (argument structure related) and outer (adverbial) and shows that they surface in a fixed order.

Wiland's (2012) analysis of superlexical prefixes is even more fine-grained. Using a nanosyntactic approach, he shows why only certain instances of multiple prefixation are found in Polish. Biskup (2007, 2012) demonstrates that many of the differences between lexical and superlexical prefixes discussed above are rather a tendency than a clear-cut

distinction and that superlexical prefixes behave like lexical prefixes in many respects and that prefixes do not behave consistently with respect to the diagnostics proposed in the literature. In this book, too, we will see that superlexical prefixes affect argument structure, case assignment properties and selectional restrictions of verbs to which they attach; that they affect the lexical aspect of the base verb and that they form passive participles. In the following sections, I show that verbal prefixation induces various effects. They concern perfectivity, telicity, case assignment, argument structure and definiteness.

### 2.3 Perfectivity, telicity and morphosyntactic structure

In this section, I discuss the morphological and the lexical aspect of prefixed verbs and examine their morphosyntactic structure.

The stem of Slavic verbs consists of the root and the thematic suffix (e.g. Isačenko 1962, Rubach 1984, Komárek 2006). The thematic suffix provides information about the syntactic category and the conjugation class of the word; compare the thematic vowels in the infinitives in the Russian example (7a) and the Polish example (8a) with the nominalising suffixes in the corresponding nouns in examples (7b) and (8b). Consider also the Czech example in (9), showing that the thematic vowel *-a-* derives an inchoative verb of the fifth conjugation class and the thematic vowel *-i-* a causative verb of the fourth conjugation class. From this, I conclude that thematic suffixes represent the head *v*, which verbalises the root (and other categories) in the Distributed Morphology approach (Harley & Noyer 1999) and fulfils the same function as lexical decomposition predicates in lexicalist theories (see Dowty 1979, Jackendoff 1990, Levin & Rappaport Hovav 1995, Wunderlich 2012).

- |  |  |
|--|--|
| (7) a. nos-i-t'<br>carry-TH-INF<br>'carry'       | b. nos-k-a<br>carry-NMLZ-NOM.SG.F<br>'carrying'          |
| (8) a. pis-a-ć<br>write-TH-INF<br>'write'        | b. pis-m-o<br>write-NMLZ-NOM.SG.N<br>'writing, magazine' |
| (9) a. běl-a-t<br>white-TH-INF<br>'become white' | b. běl-i-t<br>white-TH-INF<br>'make white'               |

Slavic simplex verbs are imperfective in the vast majority of cases (see e.g. Vinogradov 1952, Forsyth 1970, Švedova 1970, Sekaninová 1980, Grzegorzczkova, Laskowski & Wróbel 1984, Smith 1991, Karlík, Nekula & Rusínová 1995). Prefixation of simplex verbs brings about perfectivity.<sup>1</sup> The most common diagnostic for perfectivity is the test with the future form of the auxiliary ‘be’ (an analogous diagnostic uses phasal verbs like ‘begin’). Specifically, only imperfective verbs, but not perfective verbs, can combine with these forms. Given this, the contrast in the Russian example (10) shows that verbal prefixes indeed have a perfectivising effect.

- (10) a. budet            plyt’  
           he/she/it.will swim  
           ‘he/she/it will swim’
- b.\* budet            v-plyt’ / vy-plyt’ / ot-plyt’ / do-plyt’ / pro-plyt’ / po-plyt’  
           he/she/it.will in-swim out-swim away-swim to-swim for-swim on-swim

This holds for both lexical prefixes – *v-* ‘in’, *vy-* ‘out’, *ot-* ‘away’ and *do-* ‘to’ – and superlexical prefixes like the perdurative *pro-* ‘for, through’ and the ingressive *po-* ‘on’ in (10b).<sup>2</sup> For discussion of other tests, see for instance Schoorlemmer (1995), Filip (1999), Borik (2002), Rozwadowska (2003), Gehrke (2008), De Swart (2012) and Zinova & Filip (2015). In chapter 5.3, I will discuss a diagnostic based on aspectual preferences of certain conjunctions and on aspectual-licensing properties of adverbial clauses with the Czech conjunction *když* ‘when, if’.

Prefixed verbs can be imperfectivised by the secondary imperfective suffix; consider *-va-* in (11). Therefore, these forms are compatible with the future auxiliary (the ingressive *po-* does not derive the secondary imperfective form).

- (11) budet            v-ply-va-t’ / vy-ply-va-t’ / ot-ply-va-t’ /  
           he/she/it.will in-swim-SI-INF out-swim-SI-INF away-swim-SI-INF  
           do-ply-va-t’ / pro-ply-va-t’  
           to-swim-SI-INF for-swim-SI-INF  
           ‘he/she/it will swim in sth. / swim out of sth. / swim away from sth. / swim to sth. /

<sup>1</sup> There is a small set of prefixed verbs that are imperfective, see e.g. the Russian *zaviset’* ‘depend’, the Polish *zależec’* ‘depend’ and the Czech *záviset* ‘depend’. They also behave exceptionally in other respects.

<sup>2</sup> As mentioned in the preceding section, not all researchers treat the perdurative *pro-* as a superlexical prefix; see Žaucer (2009).

swim by/through sth.’

Because of this, it has been proposed that the secondary imperfective suffix is an aspectual head; see Dimitrova-Vulchanova (1999), Pereltsvaig (2004), Ramchand (2004), Svenonius (2004), Gehrke (2008), Tatevosov (2008), among others. Given that the secondary imperfective morpheme is closer to the root than the tense/infinitival suffix, the tense projection is higher than the aspectual projection in the clausal structure.

As to the relation between the thematic vowel – that is, the verbalising head – and the secondary imperfective suffix, consider the Russian (12a), derived from *zabolet’* ‘become ill’, the Polish (12b), derived from *przerobić* ‘alter, redo’, and the Czech (12c), derived from *rozdělat* ‘disassemble’.

(12) a.	za-bol-e-va-t’	b.	prze-rab-i-a-ć	c.	roz-děl-á-va-t
	behind-pain-TH-SI-INF		over-do-TH-SI-INF		apart-do-TH-SI-INF
	‘become ill’		‘alter, redo’		‘disassemble’

The examples show that the morpheme representing the verbalising head *v* is closer to the root (henceforth labelled as  $\sqrt{\quad}$ ) than the secondary imperfective suffix. Given these facts, the morphosyntactic structure of Slavic verbs looks like (13), abstracting away from prefixes for a moment.<sup>3</sup> This structure derives the correct order of morphemes if we use the standard head movement to the left.<sup>4</sup>

(13)	[ <sub>TP</sub> T [ <sub>AspP</sub> Asp [ <sub>vP</sub> v [ <sub>vP</sub> $\sqrt{\quad}$ ]]]]
------	---

Verbs imperfectivised by the secondary imperfective suffix can be turned into perfective again by a superlexical prefix; consider example (14), containing verbs from (12) prefixed with distributive *po-*. These verbs are not compatible with the future form of the auxiliary ‘be’.

---

<sup>3</sup> For West Slavic languages, which in contrast to Russian combine the past participle with an agreement suffix (like the Polish *czytałem* ‘I read’) or with the auxiliary ‘be’ (like the Czech *četl jsem* ‘I read’), a participial projection between TP and AspP can be assumed; see also chapter 4. The structure can be even more complex if we take into consideration conditional forms.

<sup>4</sup> But see Griбанова (2013) for the claim that the Russian verb only moves to the aspectual head. Then, lowering of the head T at PF can be used.

- (14) a. po-za-bol-e-va-t  
on-behind-pain-TH-SI-INF  
'become ill one after another'
- b. po-prze-rab-i-a-ć  
on-over-do-TH-SI-INF  
'alter/redo one after another'
- c. po-roz-děl-á-va-t  
po-apart-do-TH-SI-INF  
'disassemble one after another'

The fact that superlexical prefixes have an adverbial meaning and can scope over the secondary imperfective suffix is the reason why some researchers propose that superlexical prefixes are generated in or above the aspectual phrase.<sup>5</sup> Note, however, that superlexical prefixes could, in fact, also merge lower in the verbal structure – being an overt reflection of some higher operator – and later move.

It is a well-known fact that it is necessary to distinguish between lexical aspect and morphological aspect; see Binnick (1991), Smith (1991), Filip (1999, 2003, 2012), Bertinetto (2001), Borik (2002), Dimitrova-Vulchanova (2012), Gvozdanović (2012), Oertle (2016). Given this, the question arises as to whether prefixes function as telicisers, in addition to their perfectivising function (for discussion of telicity see e.g. Dowty 1979, Krifka 1989, Parsons 1990, Pustejovsky 1995, Hay, Kennedy & Levin 1999, Borik 2002, Kennedy & Levin 2008, Filip 2012).

Looking at the examples in the preceding section, it seems that prefixes indeed induce telicity. Concretely, the lexical prefix *v-* 'in' in (5) specifies the location of the internal argument in the result state of the compositional verbs *vpisat* 'write sth. in sth.' *vnést* 'carry sth. in sth.' and *vliat* 'pour sth. into sth.'; the lexical prefix *s-* 'from' in the non-compositional *sžít* 'hound sb. out of sth., drive sb. to his death' in (6c) adds a result state to the atelic verb *žít* 'live'; the saturative/cumulative *na-* 'on' adds a result state of saturation to the activity verbs *begat*, *laufati* and *běhat*, all meaning 'run', in (3); and the inceptive superlexical *za-* 'behind' in (1) contributes an initial boundary to the atelic predicates *bolet* 'be ill' and *begat* 'run' (see e.g. Rozwadowska 2003 and Nossalik 2007 on the telicising effect of inceptive prefixes).

<sup>5</sup> Not all superlexicals scope over the secondary imperfective suffix; see the imperfective (ia) from Czech, in which the attenuative *při-* does not induce perfectivity. Compare also Žaucer (2009) for the Slovenian *pri-*. (ia) can be derived either from the imperfective (ib) or from the perfective (ic). This two-derivational-histories behaviour is typical for the attenuative *při-*.

- (i) a. při-po-jišť-ova-t  
at-on-secure-SI-INF  
'insure additionally'
- b. po-jišť-ova-t  
on-secure-SI-INF  
'insure'
- c. při-po-jist-i-t  
at-on-secure-TH-INF  
'insure additionally'



The most reliable diagnostic of telicity is probably the adverbial test, using *for*-adverbials and *in*-adverbials (for other tests, see e.g. Verkuyl 1972, Dowty 1979, Rozwadowska 2003, Gehrke 2008, Filip 2012). As to lexical prefixes, consider the Polish example (15), and with respect to superlexicals, consider the perdurative *pro*- ‘for, through’ in the Russian example (16) and the repetitive *pře*- ‘over’ in the Czech example in (17).<sup>6</sup> The examples show that prefixes bring about telicity because the sentences with prefixed predicates are compatible with *in*-adverbials and incompatible with *for*-adverbials, whereas the sentences with unprefixed predicates are compatible with *for*-adverbials and incompatible with *in*-adverbials (with respect to measuring the time of the event).<sup>7</sup>

- (15) a. Joanna pisała mail godzinę / \*w godzinę.  
 Joanna wrote email hour in hour  
 ‘Joanna was writing an email for an hour / \*in an hour.’
- b. Joanna napisała mail \*godzinę / w godzinę.  
 Joanna on-wrote email hour in hour  
 ‘Joanna wrote an email in an hour / \*for an hour.’
- (16) a. Artur čital gazetę pjat’ minut / \* za pjat’ minut.  
 Artur read newspaper five minutes behind five minutes  
 ‘Artur was reading the newspaper five minutes / \* in five minutes.’
- b. Artur pro-čital gazetę \* pjat’ minut / za pjat’ minut.  
 Artur for-read newspaper five minutes behind five minutes  
 ‘Artur read through the newspaper in five minutes / \*for five minutes.’
- (17) a. Formátoval to pět minut / \* za pět minut.  
 formatted.he it five minutes behind five minutes  
 ‘He was formatting it five minutes / \* in five minutes.’
- b. Pře-formátoval to \* pět minut / za pět minut.  
 over-formatted.he it five minutes behind five minutes  
 ‘He reformatted it in five minutes / \* for five minutes.’

<sup>6</sup> Some researchers would treat the *na-* in *napisac* as an empty prefix; see references in the preceding section.

<sup>7</sup> In the case of inceptive superlexical prefixes (see (1) again) the *in*-adverbial measures the time span between the speech time (or some reference time) and the boundary, i.e., the time of the initial point of the event.

Anticipating somewhat, in chapter 4 we will see that Czech adjectival participles support the view that prefixes – lexical as well as superlexical – function as telicisers. It has been argued that resultative (stative) adjectival participles are derived from telic predicates (see e.g. Kratzer 1994, 2000; Rapp 1996; Cetnarowska 2000; Anagnostopoulou 2003 and Giger 2009). Specifically, in Czech, telicity is necessary for the formation of stative *ny’-/ty’*-participles and *ly’*-participles. Thus, if prefixation induces telicity, then we should observe a difference between participles derived from prefixed predicates and participles derived from unprefixed (atelic) predicates. This is indeed the case, as demonstrated by the contrast between (18) and (19).

- |         |              |                 |                 |
|---------|--------------|-----------------|-----------------|
| (18) a. | * tekly      | b. * kvetly     | c. * bledly     |
|         | flowed       | blossomed       | became.pale     |
| (19) a. | o-tekly      | b. roz-kvetly   | c. vy-bledly    |
|         | about-flowed | apart-blossomed | out-became.pale |
|         | ‘swollen’    | ‘in blossom’    | ‘pale’          |

As to *ny’-/ty’*-participles, consider the contrast between (20a) and (20b), containing the verb ‘remained’, which is compatible with stative predicates but is not compatible with eventive predicates. Since the unprefixed adjectival participles in (20a) have an eventive interpretation, they cannot combine with *zůstal*. In contrast, the grammatical status of (20b) shows that prefixes introduce a state, that is, that they telicise the unprefixed predicates.

- |         |  |                    |   |                 |   |               |   |              |
|---------|--|--------------------|---|-----------------|---|---------------|---|--------------|
| (20) a. | * Zůstal   | čtený              | / | hlášený         | / | topený        | / | česaný.      |
|         | remained   | being.read         |   | being.announced |   | being.drowned |   | being.combed |
| b.      | Zůstal   | rozečtený          | / | přihlášený      | / | zatopený      | / | učesaný.     |
|         | remained   | unfinished.reading |   | registered      |   | flooded       |   | combed       |
|         | ‘He/it remained unfinished / registered / flooded / combed.’ |                    |   |                 |   |               |   |              |

There is still an ongoing discussion on the telicising function of prefixes in the literature. On one hand, Filip (1999) claims that verbal prefixation induces lexical aspect shift and Arsenijević (2006) argues that all Slavic prefixes are predicates of the result subevent, that is, that they are telic (see also Arsenijević 2007). In the same vein, Piñón (1994) and Van Hout (2008) argue that Polish and Russian prefixes make verbs telic. On the other hand, Filip

(2003), Romanova (2006) and Gehrke (2008) argue that prefixes do not function in all of their uses as telicity modifiers. In this respect, superlexical prefixes are more problematic than lexical prefixes. Specifically, the problematic cases, which are almost always cited in the literature, are the delimitative prefix *po-* ‘on’ and the perdurative prefix *pro-* ‘for, through’. These prefixes make verbs perfective but their telicising status is unclear (for discussion of these prefixes, see Gvozdanović 1992, Schoorlemmer 1995, Borik 2002, Paslawka & von Stechow 2003, Nossalik 2007, Gehrke 2008, Ramchand 2008, Žaucer 2009, 2012 and Biskup & Zybatow 2015).

In what follows, I take the position that prefixes (possibly with the exception of the delimitative *po-* and the perdurative *pro-*) contribute telicity, in addition to perfectivity. I analyse the connection between telicity and perfectivity in the way that the prefix (an incorporated preposition) introduces a causal relation between the verbal part and the prepositional part of the prefixed predicate and in addition has a perfective property, which affects the aspectual head. Technically, I propose that prepositions mostly introduce a state and the verbal root another eventuality and that the prefixal head of the prepositional phrase introduces a CAUSE operator, which relates these two subevents. The incorporated preposition bears a Tense-feature with the value [perfective] and values the Tense-feature of the aspectual head, which results in the interpretation that the event time is included in the reference time.

## 2.4 Prefixation and case

Prefixes also affect case assignment properties of the base verb. Specifically, it has been observed for Slavic that there is a relation between the form of objective case and aspectual properties of the verb; consider, for instance, Jakobson (1936), Wierzbicka (1967), Paducheva (1998), Pereltsvaig (2000), Rozwadowska & Willim (2004), Borer (2005), Błaszczak (2007) and Richardson (2007). In Russian and Polish, the partitive genitive is restricted to the perfective aspect, as shown in (21), taken from Paducheva (1998: 80).

- (21) a. \*Ja pju vod-y.  
           I drink.IMPF water-PRT  
       b. Ja vy-pil vod-y.  
           I out-drank.PF water-PRT  
           ‘I drank (some) water.’

While the unprefixd (imperfective) verb in (21a) cannot co-occur with the object marked with partitive, the prefixed verb in (21b) can. Partitive case – expressing the partitive meaning ‘part of, some’ – alternates with accusative, which expresses the total quantity of the referent of the noun. To a lesser extent, this phenomenon can be found in Czech; consider (22), where the partitive genitive is licensed by the delimitative *po-*.

- (22) a. \* Pili vínk-a (a šli domů).  
 they.drunk.IMPF wine-GEN and they.went home
- b. Po-pili vínk-a (a šli domů).  
 on-they.drunk.PF wine-GEN and they.went home  
 ‘They drank (some) wine and went home.’

Another superlexical prefix affecting case assignment properties of the base verb is shown in the following example from Polish.

- (23) a. Patrycja piekła bułk-i / \* bułek.  
 Patrycja baked.IMPF roll-ACC.PL roll.GEN.PL  
 ‘Patrycja was baking rolls.’
- b. Patrycja na-piekła bułek / \* bułk-i.  
 Patrycja on-baked.PF roll.GEN.PL roll-ACC.PL  
 ‘Patrycja baked a lot of rolls.’

The unprefixd verb is only compatible with the direct object marked with accusative, as shown in (23a), whereas when the verb is prefixed with the cumulative *na-* ‘on’, the object must be marked with partitive genitive, as demonstrated in (23b) (for discussion of the cumulative *na-*, mainly from the syntactic point of view, see Pereltsvaig 2006, Romanova 2006, Žaucer 2009, and for the semantic point of view, see Piñón 1994, Filip 2000, 2005 and Tatevosov 2007).

Interestingly, in some languages, the relation between case and aspectual properties of the verb is encoded in the way that case markers also occur on the verb, functioning as aspectual markers; consider (24), from Kala Lagaw Ya, taken from Kennedy (1984: 159). The suffix *-(a)n* functions as an accusative marker in the nominal domain and as a completive aspectual marker in the verbal domain.

- (24) Nuy-dh n-an im-an.  
 he-ERG she-ACC see/discover-COMP  
 ‘He spotted her.’

Returning to Slavic, case effects induced by prefixation do not concern only partitive genitive; for instance, the Czech example (25) shows that structural accusative also alternates with dative.

- (25) a. Náš král otročí davům.  
 our king is.slave crowds.DAT  
 ‘Our king is a slave to crowds. / Our king is weak.’  
 c. Náš král z-otročil celou populaci.  
 our king from-enslaved entire population.ACC  
 ‘Our king enslaved the entire population.’

The unprefixated, imperfective verb *otročit* assigns dative to its object, whereas the prefixed *zotročit* assigns structural accusative. In chapter 4, we will see that the opposition between structural accusative and lexical case correlates with the possibility versus impossibility of the predicate to form adjectival participles.

Thus, prefixes play an important role in determining case assignment properties of the verb and there is an indirect relation between them and the form of objective case. It is the aspectual projection that mediates between the prefix and the direct object. For this and other reasons, I will propose in section 2.8.1 that objective case is assigned by the aspectual head.

## 2.5 Prefixation and argument structure

It is known that with perfective verbs, the presence of the direct object is obligatory under normal circumstances. The following example from Dimitrova-Vulchanova (2012: 944) shows that Bulgarian imperfective transitive verbs do not need to have an overtly realised direct object; compare (26a) with (26b). However, when a prefix is attached to the verb, the object must be present overtly and in addition, the definite article on the direct object cannot be omitted, as demonstrated in (26c) (cf. also Filip 1999: 228). Dimitrova-Vulchanova (1999, 2012) analyses this fact in terms of a small clause relation between the prefix and the object.

- (26) a. Ivan pi.  
Ivan drank  
'Ivan drank.'
- b. Ivan pi vino.  
Ivan drank wine  
'Ivan drank/was drinking wine.'
- c. Ivan izpi vino \*(-to).  
Ivan drank wine -the  
'Ivan drank \*(the) wine.'

Prefixation can also add a prepositional phrase to argument structure of the base predicate, as shown in the Russian example (27a), in which the subject is the figure argument of the preposition *v* and *ajsberg* the ground argument. (27b) contrasts with (27a) in the fact that the unprefixated predicate cannot combine with the prepositional phrase.

- (27) a. On v-mërz \*(v ajsberg).  
he in-froze in iceberg  
'He froze in an iceberg.'
- b. On mërz (\*v ajsberg).  
he froze in iceberg  
'He was cold (\*in an iceberg).'

The argument structure augmentation is also possible with superlexical prefixes, as demonstrated by the Polish example (28), with the excessive prefix *pere-* 'over'. The loudness of the referent of the subject (of the figure argument, which is not shown in the example) is higher than the loudness of the music, that is, of the ground argument of the prefix/preposition *prze(z)* 'over'.

- (28) a. krzyczeć (\*muzykę)  
shout music.ACC.SG  
'shout (\*music)'
- b. prze-krzyczeć \*(muzykę)  
over-shout music.ACC.SG  
'shout more loudly than \*(the music).'

Recall also from section 2.2, example (3) that cumulative/saturative *na-* 'on' introduces an unselected reflexive argument in the Russian *nabegat'sja*, in the Czech *naběhat se*, and in the Slovenian *nalaufati se*, all with the meaning 'come to have one's fill of running' (for an overview of the literature on the transitivity effect of Slavic prefixes, see Oertle 2016: 55-58).

In Czech, *ny'/ty'*-participles can only be derived from transitive verbs. In chapter 4, we will see that lexical as well as superlexical prefixes help unergative base verbs to derive a *ny'/ty'*-participle because they transitivity them. More concretely, in (29)-(31), the unprefixated

predicates from examples (a) cannot derive a *ny’-/ty’*-participle, as shown in examples (b), but they form the participle when they are prefixed, as shown in examples (c).

- |         |                |               |         |                             |         |
|---------|----------------|---------------|---------|-----------------------------|---------|
| (29) a. | pracovat       | b.* pracované | svaly   | c. vy-pracované             | svaly   |
|         | work           | being.worked  | muscles | out-being.worked            | muscles |
|         | ‘work’         |               |         | ‘worked-out muscles’        |         |
| (30) a. | pracovat       | b.* pracovaný | lékař   | c. pře-pracovaný            | lékař   |
|         | work           | being.worked  | doctor  | over-being.worked           | doctor  |
|         | ‘work’         |               |         | ‘an overworked doctor’      |         |
| (31) a. | hloubat        | b.* hloubaný  | student | c. za-hloubaný              | student |
|         | muse           | being.mused   | student | behind-being.mused          | student |
|         | ‘muse on sth.’ |               |         | ‘a student lost in thought’ |         |

Verbal prefixes also affect selectional properties of the predicate to which they attach. For instance, in the Polish example below, (32a) shows that the unprefixed verb can co-occur with the singular object. When the cumulative *na-* ‘na’ is attached to the verb, as in (32b), the sentence is ungrammatical since the cumulative prefix selects plural entities or a mass noun, as shown in (32c).

- |         |        |        |           |                                   |
|---------|--------|--------|-----------|-----------------------------------|
| (32) a. | Moja   | mama   | piekla    | bułkę.                            |
|         | my     | mother | baked     | roll.ACC.SG                       |
|         |        |        |           | ‘My mother was baking a roll.’    |
| b.      | * Moja | mama   | na-piekla | bułkę.                            |
|         | my     | mother | on-baked  | roll.ACC.SG                       |
| c.      | Moja   | mama   | na-piekla | bułek.                            |
|         | my     | mother | on-baked  | roll.GEN.PL                       |
|         |        |        |           | ‘My mother baked a lot of rolls.’ |

In the same vein, the Russian example in (33) demonstrates that the distributive prefix also cannot combine with a singular object.

- |         |         |        |   |
|---------|---------|--------|---|
| (33) a. | Gruša   | padala | (na zemlju).                            |
|         | pear.SG | fell   | on ground                               |
|         |         |        | ‘The pear was falling (to the ground).’ |

- b. \* Gruša po-padala.  
 pear.SG on-fell
- c. Gruši po-padali.  
 pear.PL on-fell  
 ‘Pears fell down one after another.’

We have seen that prefixes can manipulate argument structure of the base predicate in various ways. Argument structure is standardly determined in the verbal domain and selectional requirements are saturated under mutual c-command. Thus, given the fact that prefixes can introduce unselected arguments and prepositional phrases and that the arguments belong to the prepositional phrases and given that the majority of prefixes is homophonous with a preposition and has a meaning identical or similar to the preposition, the most straightforward analysis is that prefixes project a prepositional phrase in the verbal domain that introduces the appropriate arguments (in section 2.7, I will discuss argument structure in more detail and will present more arguments for the analysis of prefixes as incorporated prepositions).

## 2.6 Definiteness effects

It has been argued that in Slavic languages, the morphological aspect properties of the verb affect the interpretation of the object; see, for instance, Wierzbicka (1967), Krifka (1989, 1992), Piñón (1995), Filip (1999), Verkuyl (1999) and Borer (2005), who claim that the perfective aspect makes the verbal object definite or quantised. As an illustration, consider the Polish example below, taken from Wierzbicka (1967: 2237), in which the direct object of the prefixed verb in (34b) has the quantised interpretation ‘all the porridge’. This means that in contrast to the imperfective verb in (34a), in (34b) there is some contextually identified quantity of porridge.

- |  |   |
|--|---|
| (34) a. On jadł kaszę.<br>he ate porridge.ACC<br>‘He was eating porridge.’ | b. On z-jadł kaszę.<br>he from-ate porridge.ACC<br>‘He ate all the porridge.’ |
|--|---|

In Bulgarian, the presence of a prefix on a verb forces the presence of the definite article on nouns with the cumulative reference like mass nouns and plural expressions. Consider the example below, taken from Verkuyl (1999: 117), which shows that the unprefixes (imperfective) verb in (35a) can combine with an indefinite object. In contrast, when the verb



is prefixed, hence perfective, the object must be marked with the definite article (for the same point, see also the Bulgarian example (26c), with the mass noun ‘wine’).

- (35) a. Az jam jabulki.  
 I eat apples  
 ‘I am eating apples.’
- b. Az šte iz-jam jabulki-te.  
 I will out-eat apples-the  
 ‘I will eat the apples.’

Another similar effect of verbal prefixation can be found in the realm of extraction. The following Czech example with the completive and the iterative superlexical prefix shows that the structural accusative object of the unprefixed verb behaves differently from the accusative object of the prefixed verb with respect to extraction.

- (36) a. [O čem]<sub>1</sub> Jan psal [článek t<sub>1</sub>]?  
 about what Jan.NOM wrote article.ACC  
 ‘About what was Jan writing a/the article?’
- b. ?\* [O čem]<sub>1</sub> Jan pře-/do-psal [článek t<sub>1</sub>]?  
 about what Jan.NOM over-/to-wrote article.ACC
- c. Jan pře-/do-psal článek o opicích.  
 Jan.NOM over-/to-wrote article.ACC about monkeys  
 ‘Jan rewrote/finished a/the article about monkeys.’

While extraction of the prepositional phrase *o čem* ‘about what’ out of the accusative direct object is grammatical when the verb is unprefixed, as shown in (36a), extraction of the phrase is strongly degraded when it happens from the object of a prefixed verb, as demonstrated in (36b). The control sentence in (36c) shows that the ungrammaticality is indeed due to movement. To exclude the possibility that *o čem* is an adjunct of the verb, one can use a verb like *(z)recenzovat* ‘review’, which cannot have *o čem* as an adjunct. Although the sentence with the unprefixed verb is slightly marked, there is clear contrast between (37a) and (37b).

- (37) a. ? [O čem]<sub>1</sub> Jan recenzoval [článek t<sub>1</sub>]?  
 about what Jan.NOM reviewed article.ACC  
 ‘About what was Jan reviewing a/the article?’
- b. ?\* [O čem]<sub>1</sub> Jan z-recenzoval [článek t<sub>1</sub>]?  
 about what Jan.NOM from-reviewed article.ACC
- c. Jan z-recenzoval článek o opicích.  
 Jan.NOM from-reviewed article.ACC about monkeys  
 ‘Jan reviewed a/the article about monkeys.’

These data show that the ‘perfective structural accusative’ differs from the ‘imperfective structural accusative’ and accord with the claim that definite or specific noun phrases are more resistant to extraction than indefinite noun phrases (e.g. Starke 2001).<sup>8</sup> They also resemble the well-known Finnish accusative-partitive alternation, in which partitive case – in contrast to accusative – is assigned to quantitatively indeterminate noun phrases (Kiparsky 1998; cf. also Borer’s 2005: 175 proposal that in the case of Slavic perfective verbs, the object receives structural accusative in the specifier position of the aspectual projection, whereas with imperfective verbs it receives structural partitive in the functional projection F<sup>SP</sup>).

The East Slavic and West Slavic pattern can be taken to be parallel to the differential object marking in languages like Sakha. While in Sakha definiteness is marked by the presence of the case marker on the object, as shown by the contrast between the definite and the indefinite object in (38), in East Slavic and West Slavic definiteness/quantisation is marked by the presence of the prefix on the predicate, as in (34), which then assigns the perfective structural accusative (as to South Slavic, consider (35)).<sup>9</sup>

- (38) a. Masha salamaat-y turgennik sie-te.  
 Masha porridge-ACC quickly eat-PST.3SG.SBJ  
 ‘Masha ate the porridge quickly.’
- b. Masha turgennik salamaat sie-te.  
 Masha quickly porridge eat-PST.3SG.SBJ  
 ‘Masha ate porridge quickly.’ (Baker 2015: 4-5)

<sup>8</sup> But we can still modify the perfective accusative object by a modifier like *nějaký* ‘some’ in (36c) and (37c).

<sup>9</sup> The accusative marker can be present on ‘porridge’ in (38b) if the element is contrastively focused.

Another example of prefixation affecting the interpretation of the accusative object can be found in the across-the-board example (39) from Czech. The sentence with the imperfective verb in the second conjunct in (39a) has the identity reading (with the same book for both conjuncts) as well as the non-identity reading (two different books). However, when the unprefixated verb *recenzoval* is replaced with the prefixed *zrecenzoval*, the identity reading becomes strongly preferred.

- (39) a. Jakou knížku Jana dokončila a Jirka recenzoval?  
 what book.ACC Jana.NOM finished and Jirka.NOM reviewed  
 ‘What book did Jana finish and Jirka reviewed?’
- b. Jakou knížku Jana dokončila a Jirka z-recenzoval?  
 what book.ACC Jana.NOM finished and Jirka.NOM from-reviewed  
 ‘What book Marie finished and Jirka reviewed?’ (Biskup 2016a: 4)

The conclusion that we can now draw is that there is an indirect relation between prefixation and definiteness/quantisation. Prefixes bring about perfectivity and perfective verbs make the direct object definite or quantised by assigning it perfective structural accusative. Thus, prefixes – being incorporated prepositions – are responsible for telicity (by introducing the causal relation between the verbal and the prepositional subevent) and perfectivity (by valuing the Tense-feature of the aspectual head as perfective), hence also indirectly for definiteness or quantisation of the direct object because it is the aspectual head that assigns the perfective structural accusative.

## 2.7 Verbal prefixes are incorporated prepositions

In this section, I present several arguments for the view that verbal prefixes are incorporated prepositions. The first argument is based on argument structure effects of verbal prefixation. Schoorlemmer (1997) argues with respect to compositional telicity that Russian perfective paired verbs, that is, prefixed verbs deriving the secondary imperfective like *za-bolet’/za-bolevat’* ‘become ill’, *pere-měrnut’/pere-merzat’* ‘die of frost’, *pod-rasti/pod-rastat’* ‘grow up’ always have an internal argument. This means that intransitive paired verbs must be unaccusative. With respect to prefixed verbs derived from unergatives, Schoorlemmer argues that derivation of such paired verbs always involves transitivity; consider the following predicates: *raz-igrat’/raz-igrivat’* ‘raffle’, *o-plakat’/o-plakivat’* ‘bewail’, *na-guljat’/na-*

*gulivat* ‘walk a lot’. These facts can also be observed in Czech, as demonstrated by (40), which contains the perfective/secondary imperfective pairs.

- |         |                                   |           |                             |                           |                           |
|---------|-----------------------------------|-----------|-----------------------------|---------------------------|---------------------------|
| (40) a. | o-tekl / o-tékal                  | b.        | s-rostly / s-růstaly        | c.                        | roz-kvetl / roz-kvétal    |
|         | about-flowed                      |           | with-grew                   |                           | apart-blossomed           |
|         | ‘he/it swelled’                   |           | ‘they grew together’        |                           | ‘he/it came into blossom’ |
| d.      | za-hloubal se / za-hloubával se   | e.        | vy-pracoval / vy-pracovával | něco                      |                           |
|         | behind-mused self                 |           | out-worked                  |                           | sth.                      |
|         | ‘he mused on sth.’                |           | ‘he worked out sth.’        |                           |                           |
| f.      | pře-křičel / pře-křikoval         | někoho    | g.                          | při-dělal / při-dělával   | něco                      |
|         | over-shouted                      | somebody  |                             | at-did                    | something                 |
|         | ‘he shouted more loudly than sb.’ |           |                             | ‘he fixed sth.’           |                           |
| h.      | pode-psal / pode-pisoval          | něco      | i.                          | při-škrtil / při-škrcoval | někoho                    |
|         | under-wrote                       | something |                             | at-choked                 | somebody                  |
|         | ‘he signed sth.’                  |           |                             | ‘choked sb. a little’     |                           |

Given that the verbs *téci* ‘flow’, *růst* ‘grow’ and *kvést* ‘blossom’ are unaccusative, the examples in (40a-c) show that if a prefix is attached to an unaccusative verb, then the verb remains unaccusative.<sup>10</sup> Further, since the verbs *hloubat* ‘muse on sth.’, *pracovat* ‘work’ and *křičet* ‘shout’ are unergative, the examples in (40d-f) show that if a prefix is attached to an unergative verb, the verb is transitivised (reflexivised). Finally, since the verbs *dělat* ‘do’, *psát* ‘write’ and *škrtit* ‘choke’ are transitive, the examples in (40g-i) demonstrate that if a prefix is attached to a transitive verb, then the verb remains transitive. This holds for lexical prefixes, as in (40a-b), (40d-e) and (40g-h), as well as superlexical prefixes, for the inceptive *roz-* ‘apart’ in (40c), excessive *pře-* ‘over’ in (40f) and the attenuative *při-* ‘at’ in (40i) (the prefix *za-* ‘behind’ in (40d) could possibly be treated as an inceptive superlexical prefix).<sup>11</sup>

More generally, the data show that prefixes can add an internal argument (given the transitivisation effect in the case of unergative base verbs) and that the added argument competes with the complement of unaccusative and transitive base verbs.

If prefixes are generated in the complement position of the root as a preposition that projects a phrase competing for the complement position with the complement of the

<sup>10</sup> When the subject of the prefixed *srůst/srůstati* ‘grow together’ is singular, then, given the comitative meaning of the preposition *s* ‘with’, an *s*-PP is added; which is in line with the proposal below.

<sup>11</sup> In chapter 4.5, we will see that adjectival participles behave identically and that the completive superlexical prefix *do-* ‘to’ does not affect argument structure.

unprefixed verb, we can straightforwardly explain the argument structure generalisations just discussed. Specifically, in the case of unaccusative verbs, as in (40a-c), the root is selected by the unaccusative  $\nu$  and is merged with a prepositional phrase introducing the argument (for more details on the prepositional structure, see section 2.8). Since the prepositional phrase is in complementary distribution with the complement of the root of the base verb, the argument structure is not augmented and the verb remains unaccusative (maximally, a prepositional phrase can be added, as in the case of *srůst s něčím* ‘grow together with something’ in (40b), where the subject is the figure argument of the prepositional phrase and *něčím* ‘something’ is the ground argument; see footnote 10).

In the case of unergative verbs, as in (40d-f), the prefix again introduces an argument or arguments in the projected prepositional phrase. However, since the root is selected by the verbal head introducing an agent in this case, we observe an augmentation of argument structure of the base verb. As to transitive base verbs, as in (40g-i), the prepositional phrase with its argument(s) occupies the same position as the complement of the root of the base verb. Given that the root is selected by the agentive  $\nu$ , the base verb and the prefixed verb are transitive.

The data showing selectional properties of superlexical prefixes in section 2.5, in which the cumulative and the distributive prefix select a plural noun – see also the Russian (41) – fit into this picture. Recall that selectional relations are based on sisterhood. If the appropriate argument, like the ground *gruši* ‘pears’ in (41c), merges in the prepositional phrase projected by the prefix, as proposed above, then such a close selectional relation exists, regardless of whether the argument occurs in the specifier or in the complement position.

- (41) a. Gruš-a padala (na zemlju).  
 pear-SG fell on ground  
 ‘The pear was falling to the ground.’
- b. \*Gruš-a na-padala.  
 pear-SG on-fell
- c. Gruš-i na-padali.  
 pear-PL on-fell  
 ‘Pears fell down in a certain quantity.’

Third, Czech prefixed verbs like *o-chromit* ‘paralyse’ and *o-vdovět* ‘become a widow’ do not have an unprefixed verbal counterpart (from the descriptive grammar point of view they are

derived from the adjective *chromý* ‘lame’ and from the noun *vdova* ‘widow’). From the morphosyntactic perspective, this means that a verb can be derived from the root only if a prefix is present in the derivation – given that look-ahead is not allowed and we do not assume special filtering mechanisms at the interfaces for such cases –, which in turn means that the prefix must merge before the verbalising head *v* merges. Since *v* selects the root, it follows that the prefix must be lower than the root. To put it simply, if the verbalised structure always includes the prefix (the projected prepositional phrase) in the cases discussed, then it can never happen that we will derive a verb without the prefix, which is exactly what we need.

Fourth, if it is correct that prefixes are prepositions that incorporate into the verbal root, then we expect that this movement will be subject to movement constraints. Biskup (2012) demonstrates it with the following example from Russian (Inga Žirkova, p.c.), which shows that prepositional phrases projected by a preposition that does not fit the verbal prefix cannot intervene between the homophonous prefix and preposition.

- (42) a. Popugaj v-letel v komnat-u.  
 parrot.NOM in-flew in room-ACC  
 ‘The parrot flew into the room.’
- b. Popugaj v-letel na stol.  
 parrot.NOM in-flew on table.ACC  
 ‘The parrot flew onto the table.’
- c. Popugaj v-letel v komnat-u na stol.  
 parrot.NOM in-flew in room-ACC on table.ACC  
 ‘The parrot flew into the room, onto the table.’
- d. \* Popugaj v-letel na stol v komnat-u.  
 parrot.NOM in-flew on table.ACC in room-ACC

Sentence (42a) demonstrates that the verb *vletel* can combine with the prepositional phrase headed by the preposition *v* ‘in’ and (42b) shows the same for the prepositional phrase projected by *na* ‘on’. Further, *vletel* can co-occur with both prepositional phrases if the prepositional phrase projected by *na* follows the prepositional phrase projected by *v*; see (42c). In contrast, (42d) is ungrammatical because *na* intervenes between the incorporated preposition *v* in *vletel* and its copy in *v komnatu*.

This argument, however, is not conclusive because one can argue that the reason why (42d) is bad is that the prepositional phrase introducing a location that is part of the more general prepositional phrase precedes the more general prepositional phrase (cf. Arsenijević 2006: chap. 5 and Biskup 2011: chap. 5). In fact, Arsenijević argues that both factors are relevant: the prepositional phrase with the homophonous preposition must precede the prepositional phrase with a non-homophonous preposition and the prepositional phrase with the homophonous preposition must be more general than (must include) the prepositional phrase with the non-homophonous preposition.

There is a stronger movement argument for the incorporation analysis. Van Riemsdijk & Huijbregts (2002) show that German prepositional phrases in which both a location and a direction are expressed obey locality with respect to incorporation; only the higher (directional) preposition can incorporate. Let us test the Russian complex preposition *iz-za* ‘from behind’. As we shall see in chapter 6, the left preposition, which encodes the direction, is the higher one. This predicts that incorporation of *iz* ‘from, out’ into the verb will be grammatical, whereas incorporation of *za* ‘behind’ will not. This prediction is borne out, as shown by the contrast between (43a) and (43b).<sup>12</sup> The control example in (43c) demonstrates that the prefixed verb *zavlëk* ‘pull sb.’ is grammatical (Natalja Börner, p.c.).

- (43) a. On *iz-vlëk* eë *iz-za* škafa.  
 he out-pulled her out-behind wardrobe  
 ‘He pulled her from behind the wardrobe.’
- b. \* On *za-vlëk* eë *iz-za* škafa.  
 he behind-pulled her out-behind wardrobe
- c. On *za-vlëk* eë v besedku.  
 he behind-pulled her in pavilion  
 ‘He pulled her in a pavilion.’

The fifth argument for the proposal that verbal prefixes are incorporated prepositions is based on the parallelism between extraction from the direct object marked with the perfective structural accusative and extraction from prepositional phrases. In the preceding section, we saw that extraction out of the object marked with the perfective structural accusative assigned by the prefixed verb is strongly degraded in contrast to extraction from the object with the

<sup>12</sup> Since the verbs (*iz/za-*)*vlëk* require a directional prepositional argument, the ungrammaticality of (43b) cannot be explained by appealing to an adjunct status of the prepositional phrase. The fact that there are two copies of the incorporated preposition in the derivation will be discussed below in this section and in chapter 3.

imperfective structural accusative, which was assigned by the unprefixing verb. With this in mind, consider the Russian example (44).

- (44) a. Popugaj v-letel v komnat-u.  
 parrot.NOM in-flew in room-ACC  
 ‘The parrot flew into the room.’
- b. \* Čto<sub>1</sub> popugaj v-letel vo t<sub>1</sub>?  
 what parrot.NOM in-flew in
- c. Popugaj v-letel v komnat-u so stolom.  
 parrot.NOM in-flew in room-ACC with table  
 ‘The parrot flew into the room with the table.’
- d. \* [S čem]<sub>1</sub> popugaj v-letel v komnat-u t<sub>1</sub>?  
 with what parrot.NOM in-flew in room-ACC

Examples (44a) and (44c) do not contain *wh*-movement and are grammatical. In contrast, sentence (44b) shows that extraction of the prepositional complement is ungrammatical and example (44d) demonstrates the same for the prepositional subconstituent. The generalisation drawn from these examples is that prepositions block extraction. The comparison of these data with the extraction data from section 2.6 shows that verbal prefixes and prepositions behave in an analogous way with respect to extraction, which again supports the view that they are identical elements.

If verbal prefixes are just a copy of the incorporated preposition, then we expect all prefixes to have a prepositional counterpart. This is not problematic from the diachronic point of view because prefixes are historically derived from prepositions or both categories have a common ancestor (see Smyth 1920/1974, Němec 1954, Kopečný 1973, Wunderlich 1987, Lehmann 1993, Stiebels 1996, Blake 2001, Van Gelderen 2011, among others). From the synchronic point of view, many authors investigating verbal prefixes (and particles) in various languages have argued that these elements belong to the category *preposition*; see Jackendoff (1973), Emonds (1976, 1985), Van Riemsdijk (1978), Den Dikken (1995), Zeller (2001a) and McIntyre (2007, 2015a).

Consider for instance German prepositional elements. It has been argued that most German verbal prefixes are historically derived from prepositions and have cognates with particles contained in particle-verb constructions; see Wunderlich (1987), Stiebels & Wunderlich (1994) and Stiebels (1996, 1998), among others. Moreover, it has been argued



that German particles and prepositions are derivationally related (Van Riemsdijk & Huijbregts 2002; Asbury, Gehrke & Hegedűs 2007) and the same has been proposed for the relation between German prefixes, particles and prepositions (e.g. Biskup & Putnam 2012).

Now consider Russian and Czech; they have approximately twenty verbal prefixes and only three of them do not have a prepositional counterpart, the prefixes *vz-* ‘up’, *vy-* ‘out’ and *raz/roz-* ‘apart’. This is the modern state of affairs; in Old Czech and Old Russian, *vz* was used as a preposition. *Vz* is also present in today’s Serbo-Croatian (as *uz/uza*) and in certain Macedonian dialects (as *voz*), as argued by Kopečný (1973). *Vz* and *vy* are related because they are derived from the Indo-European *uds* ‘up, out’ and *ud* ‘up, out’, respectively; see Kopečný (1973) and Vasmer (1976). As to *raz/roz*, it is derived from the Proto-Slavic form *orz* and the preposition *raz* can be found for instance in Slovenian (Kopečný 1973, Rejzek 2001).

A synchronic analysis of these phenomena can be based on the necessity of prepositional incorporation in particular cases. For instance, the preposition *vz* needs to incorporate into the verb in modern Russian and modern Czech, whereas in Old Russian, Old Czech, Serbo-Croatian and certain Macedonian dialects, the preposition did not have to incorporate. This proposal is supported by the fact that there are historical changes that concern copying of prepositional elements. Specifically, in Old Church Slavonic, certain spatial meanings were expressed by a case-marked noun without preposition in connection with a verb prefixed with a spatial prefix, as shown in (45a), with the prefix *do-* ‘to’, which is homophonous with the preposition *do* ‘to’ assigning genitive. Later, such constructions lost the ability to further fulfil this function; hence an overt preposition appeared, as demonstrated by the example from Modern Czech in (45b) (see Večerka 2006: 47).

- |         |                  |             |    |                  |                |
|---------|------------------|-------------|----|------------------|----------------|
| (45) a. | do-iti           | měst-a      | b. | do-jít           | do měst-a      |
|         | to-walk          | town-GEN.SG |    | to-walk          | to town-GEN.SG |
|         | ‘reach the town’ |             |    | ‘reach the town’ |                |

Another possibility is to assume that the problematic prefixes have a non-homophonous prepositional counterpart; for instance, for *vy-* it could be the Russian preposition *iz* ‘out’ and the Czech *z* ‘out, from’, which typically co-occur with verbs prefixed with *vy-*. Note that copies do not have to be of the same form in derivations; see discussion of prepositional incorporation in Baker (1988) and the analysis of the German verbal prefix *ent-* ‘out’ in

Biskup & Putnam (2012), who argue that the *ent-* is a spell-out of the incorporated preposition *aus* ‘out’.

If the incorporation analysis is correct and the verbal prefix is just another copy of the preposition, then, given economy considerations, the question arises as to whether both copies are licensed in derivations in which the preposition and the prefix are overt. This seems to be the case, as shown by the following example from Czech, taken from Biskup (2012: 276).

- (46) a. Pavel do-šel do Albert-a.  
Pavel to-went to Albert-GEN  
‘Pavel went to/into the supermarket Albert.’
- b. Pavel šel do Alberta.  
Pavel went to Albert-GEN  
‘Pavel was going to the supermarket Albert.’
- c. Pavel do-šel Albert-a.  
Pavel to-went Albert-ACC  
‘Pavel caught up Albert.’

The prefix copy is necessary for marking the morphological aspect and functions connected to it, as discussed in the previous sections. This is obvious from the comparison of the imperfective example (46b), whose interpretation is progressive, with (46a), with the prefix copy on the verb, which has the interpretation that Pavel reached the supermarket. The comparison of (46a) and the prepositionless example (46c), in which *Albert* must denote a person, then shows that the spell-out of the prepositional copy is necessary because of the semantics of the preposition connected to the assigned case (see Nunes 2004 for the claim that spell-out can render more than one copy of the chain overt). Consider also the following example from colloquial Russian, taken from Yadroff & Franks (2001: 73), which shows that even prepositions themselves can be multiplied.<sup>13</sup>

- (47) Vo-šel on v dom v tot v zakoldovannyj.  
in-walked he in house in that in haunted  
‘He entered that haunted house.’

---

<sup>13</sup> In chapter 6, I will decompose prepositional phrases into more projections and will propose that prepositions themselves undergo head movement in the decomposed structure. From this perspective, cases like (47) are not problematic.

As to phonological properties of verbal prefixes and prepositions, Matushansky (2002) argues for Russian that prefixes and prepositions show identical phonological behaviour and that they belong to the prepositional category; compare also Caha & Ziková (2016) for Czech. It has been shown that there are also certain differences in phonological behaviour of prefixes and prepositions; see Gribanova (2009). The fact that two elements behave differently in some respects, however, does not mean that they are not related; their different behaviour can be induced by the different morphosyntactic contexts in which the two elements occur and which define them. For instance, Biskup, Putnam & Smith (2011) argue that the different phonological properties of German verbal prefixes and particles/prepositions can be derived from the fact whether or not the appropriate preposition incorporates into the verb and occurs in the same phonological domain as the verbal stem (recall also from the discussion above that the prefixal copy can even surface as a phonologically distinct element). The identity between verbal prefixes and prepositions is also supported by the fact that prepositions, too, can form one word with other elements; as demonstrated in the Polish example (48).

- |         |           |               |    |            |              |
|---------|-----------|---------------|----|------------|--------------|
| (48) a. | dla-ń     | (= dla niego) | b. | ze-ń       | (= z niego)  |
|         | for-him   |               |    | from-him   |              |
|         | ‘for him’ |               |    | ‘from him’ |              |
| c.      | do-ń      | (= do niego)  | d. | za-ń       | (= za niego) |
|         | to-him    |               |    | behind-him |              |
|         | ‘to him’  |               |    | ‘for him’  |              |

The final argument for treating verbal prefixes as incorporated prepositions is based on semantic properties of these two elements. A comparison of the prefixed verbs with the prepositional phrases in example (49) shows that the lexicosemantic import of prefixes and prepositions is often identical. This is demonstrated by the Russian lexical prefix *s-* and the preposition *s* in (49a-b), by the Polish lexical prefix *do-* and the preposition *do* in (49c-d), and by the Czech lexical prefix *na-* and the preposition *na* in (49e-f).

- |         |             |    |                 |       |
|---------|-------------|----|-----------------|-------|
| (49) a. | s-prygnut’  | b. | s               | kryši |
|         | from-jump   |    | from            | roof  |
|         | ‘jump down’ |    | ‘from the roof’ |       |

- |  |   |
|--|---|
| <p>c. do-jechać<br/>to-go<br/>'arrive at'</p> <p>e. na-lepit<br/>on-glue<br/>'glue sth. on sth.'</p> | <p>d. do domu<br/>to house<br/>'to the house'</p> <p>f. na stół<br/>onto table<br/>'onto the table'</p> |
|--|---|

The examples show that the meaning of prefixes is based on the two-argument meaning of prepositions, in which the preposition localises the external argument (figure) with respect to the internal argument (ground). As we will see in section 2.8.2, I enrich this meaning with the state argument and the CAUSE operator, which derives the telicity effect of prefixation.

Moreover, I will show in chapter 3 that in many cases the prefixed verb can be paraphrased with the unprefixed verb and a prepositional phrase headed by the preposition homophonous to the prefix of the prefixed verb. In that chapter, I will also show how non-compositional prefixed verbs are derived.

The two-argument meaning is also visible in the case of superlexical prefixes, as demonstrated by the Polish example (50a), partially repeated from (28), in which the loudness of the referent of the subject is higher than the loudness of the referent of the object.

- |   |  |
|---|--|
| <p>(50) a. prze-krzyczeć<br/>over-shout<br/>'shout more loudly than sb./sth.'</p> | <p>b. przez most<br/>over bridge<br/>'over the bridge'</p> |
|---|--|

In certain cases, the arguments (or one of them) are not visible and the superlexical prefix is a certain abstraction of the meaning of the preposition – and of the homophonous lexical prefix – as in the Slovak example in (51), in which the terminative meaning of the superlexical *od-* 'away' is related to the spatial (and temporal) meaning of the preposition *od* 'away'.

- |  |  |
|--|--|
| <p>(51) a. od-drmoliť<br/>away-gabble<br/>'gabble sth. to the end'</p> | <p>b. od okna<br/>away window<br/>'away from the window'</p> |
|--|--|

To conclude this section, I have argued that lexical prefixes and at least some superlexical prefixes are incorporated prepositions that project a prepositional phrase with the figure and

the ground argument in the complement position of the verbal root. This analysis is in accordance with head-movement approaches to Slavic prefixes like that of Fowler (1996), Babko-Malaya (2003), Svenonius (2004), Romanova (2006), Biskup (2007, 2009a), Biskup & Zybatow (2015), and with incorporation analyses of non-Slavic prefixes proposed, for instance, by Walinska De Hackbeil (1986: chap. 4), Baker (1988: chap. 5), Mulder (1992: chap. 9), Miller (1993: chap. 5), Pitz (1994) and Biskup & Putnam (2012).

## 2.8 Deriving prefixed verbs

The previous sections provide data and background information for the main proposal, which I present in the rest of this chapter. We have seen that prefixes have various effects on the verb. Below, I provide a complete syntactic and semantic derivation of the Russian sentence (52), which contains the lexical prefix *v* ‘in’. In connection with this example, I will show how the various effects of prefixation are derived.

- (52) Artur            *v*-nēs        čemodan        *v* komnat-u.  
 Artur.NOM    in-carried suitcase.ACC    in    room-ACC  
 ‘Artur carried the suitcase in the room.’

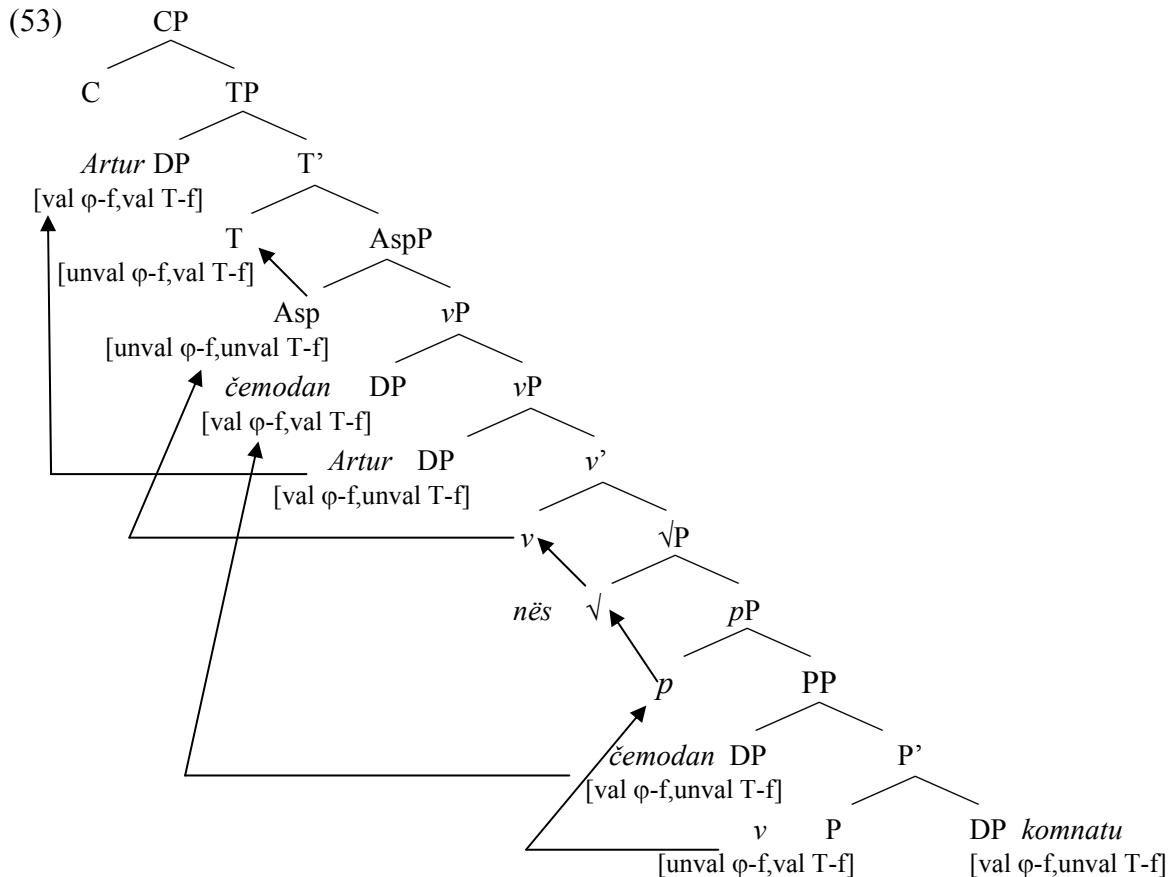
Let us begin with the syntactic derivation; it proceeds as shown in (53).

### 2.8.1 Verbal prefixes in the syntactic derivation

First, the preposition *v* ‘in’ merges with the ground argument *komnatu* ‘room’. I treat prepositional cases as an unvalued Tense-feature on the determiner head of the prepositional complement; see Biskup (2007, 2009a), who extends Pesetsky & Torrego’s (2004, 2006) approach to structural cases and proposes that prepositions bear unvalued  $\phi$ -features and a valued Tense-feature. Determiner phrases have the opposite type of features; they have valued  $\phi$ -features because of their inherent properties and in addition, the unvalued Tense-feature.

This means that all cases are treated uniformly as a result of the operation Agree between  $\phi$ -features and Tense-features of the probe and the goal. In this respect, I depart from the traditional approach, which assumes that the prepositional case assignment differs from the structural case assignment and claims that prepositional cases are of semantic nature and that they are assigned in connection with  $\theta$ -roles. Note that structural cases also bring about semantic effects, as shown by the alternation between accusative and partitive genitive,

discussed in section 2.4, and by the difference between the perfective and imperfective structural accusative in section 2.6. As to the problematic connection between prepositional cases and  $\theta$ -roles, consider for instance Chomsky’s proposal (2008) that the verbal head  $V$  inherits  $\phi$ -features of the little verbal head  $v$  and assigns structural accusative to its object. Since the head  $V$  usually also assigns a  $\theta$ -role to its object, in this case structural accusative is also licensed in connection with a  $\theta$ -role.



Continuing with the derivation of sentence (52), the unvalued  $\phi$ -features of the preposition  $v$  are valued by the valued  $\phi$ -features of the noun *komnatu* ‘room’ and the unvalued Tense-feature of *komnatu* is valued by the valued Tense-feature of the preposition. This results in accusative case on the noun *komnatu* (in chapter 6, I will present a more elaborated analysis of prepositional cases, showing that they reflect semantic properties of heads of the complex prepositional structure). Although there is no visible agreement morphology on prepositions in Slavic languages, there are languages with overt prepositional agreement (see Asbury, Gehrke & Hegedűs 2007, Baker 2008, Brennan 2008, Hagège 2010) and with tensed prepositions (Hamel 1993, Bower & Aygen-Tosun 2000, Harlow 2007). Agreement morphology on prepositions can be found, for instance, in Abaza, Abkhaz, Arabic, Finnish,

Hungarian, Irish, Iwaidjan languages, Jacaltec, Tsakhur, Welsh and tensed prepositions can be found in Oceanic languages like Maori, Titan and Loniu (Baker 2008: 194 found 108 languages that have some form of agreement on prepositions).<sup>14</sup>

As an illustration of prepositional (adpositional) agreement, consider the Kiribati example in (54), taken from Hagège (2010: 139; originally Groves, Groves & Jacobs 1985: 65), and example (55), taken from Asbury, Gehrke & Hegedűs (2007: 7), which shows that in Hungarian postpositions can agree with the pronoun.

(54) nako-ia mooa  
 to-3PL chickens  
 ‘to the chickens’

(55) a. (én) benn-em	b. (én) mögött-em
(I) INESS-1SG	(I) behind-1SG
‘in me’	‘behind me’

As to tensed prepositions, consider example (56), from Bower & Aygen-Tosun (2000: 39; with the original glosses), which shows that Titan manifests non-future tense concord on prepositions (see chapter 6.3.2 for some other examples of the phenomena discussed).

(56) a. i=tawi	buangan i-ti	Manus.				
3SG.NFUT=place	yams NFUT-on	Manus.				
‘He put yams on the island of Manus.’						
b. Matamorai	i=tawi	Nauna	pe ala	lau	i-ti	wei.
sun	3SG.NFUT=create	Nauna.Island	and 3PL	people	NFUT-in	INAN.3SG
‘The sun created Nauna Island and the people on it.’						

In the next step of our derivation in (53), P’ merges with the figure argument *čemodan* ‘suitcase’. Since *čemodan* is marked with structural accusative, it is obvious that its unvalued Tense-feature is not valued by the Tense-feature of the prepositional head P. I assume that case assignment (valuation of the Tense-feature of a determiner phrase) is dependent on  $\phi$ -features Agree, which is in accord with the standard point of view that agreement and case are

<sup>14</sup> Between 20 and 30 of them show prepositional agreement only with pronouns, hence it has been proposed for some of them that the agreement marker is a pronoun cliticised to the preposition (see the discussion in Baker 2008: 194).

two sides of the same coin (e.g. Chomsky 2001). Specifically, since  $\varphi$ -features of the prepositional head  $P$  are already valued when the figure argument merges, it cannot agree with  $P$  in  $\varphi$ -features, which has the consequence that the unvalued Tense-feature of *čemodan* cannot be valued by the Tense-feature of the head  $P$ . Therefore, *čemodan* must receive case somewhere higher in the derivation.

The prepositional phrase  $PP$  merges with the head  $p$  (see e.g. Van Riemsdijk 1990, Svenonius 2007) and the prepositional head  $v$  ‘in’ incorporates into it, analogously to the verbal  $V$ -to- $v$  movement. Given that verbs generally can merge with a prepositional phrase whose head does not incorporate, I assume that there are two types of the head  $p$ , the prepositional  $p$ , which does not incorporate into the verbal root and does not have the CAUSE operator in its meaning, and the prefixal  $p$ , which incorporates into the root (because of a certain greedy feature) and has the telicising function. In our example the head  $p$  is of the prefixal type and the complex head  $p$  incorporates into the root, in accordance with the argumentation about prepositional incorporation in section 2.7. The head adjunction happens to the left, which derives the correct order of morphemes *v-nēs* ‘in-carried’.

In contrast to approaches like that of Svenonius (2003), Romanova (2006), Biskup & Putnam (2012), I do not place the figure argument in the specifier of  $p$ . As will be shown in the next section, the head  $p$  has a different meaning in my approach; it works as glue between the verbal event and the state expressed by the prepositional phrase and in the case of prefixed verbs, it relates these two parts by means of the CAUSE relation. Moreover, having the external argument in the specifier of  $p$  would not fit in the proposal about defectivity of prepositional phrases in chapter 3.

The presence of the prepositional phrase  $pP$  in the complement position of the root – in fact, the presence of the prepositional arguments – can bring about the argument structure augmentation, as discussed in sections 2.5 and 2.7. In the case of our sentence in (52), repeated as (57a), there is no effect visible because the unprefixal verb *nēs* ‘carried’ can also merge with the prepositional phrase, as shown in (57b). The difference between the two sentences is that in (57a) the preposition  $v$  incorporates into the verb; hence the result state is reached in contrast to (57b), which has the ongoing interpretation.

- (57) a. Artur            v-nēs        čemodan        v komnat-u.  
           Artur.NOM in-carried suitcase.ACC in room-ACC  
           ‘Artur carried the suitcase in the room.’



- b. Artur nēs čemodan v komnat-u.  
 Artur.NOM carried suitcase.ACC in room-ACC  
 ‘Artur was carrying the suitcase in the room.’

The root phrase is selected by the verbal head *v*, which has agentive properties and is phonologically empty in *vnēs*, and the complex head  $\sqrt{\quad}$  incorporates into it. The DP *Artur* is merged in the specifier position of *vP*, with the consequence that it is interpreted as the agent of the verb.

I make the standard assumption that CPs and *vPs* are phases, hence the figure argument *čemodan*, located in the phase complement, must move to the edge of *vP* to escape the consequences of the strict Phase Impenetrability Condition (Chomsky 2000). Recall that *čemodan* still does not have case, which will lead to a derivational crash if *čemodan* stays in the prepositional phrase. Thus, *čemodan* moves to the outer specifier of *vP* because of an Edge-feature, observing the Extension Condition, as demonstrated in the tree in (53).

Since prefixation brings about perfectivity, as discussed in section 2.3, there must be a relation between verbal prefixes and the aspectual head. Recall that prefixes, that is, incorporated prepositions bear a valued Tense-feature. The aspectual head is usually taken to express a relation between the event time and the reference time (e.g. Klein 1994, Paslawska & von Stechow 2003). From this, one concludes that the relation between prefixes and the aspectual head can be based on the Tense-feature. This is the second function of the prepositional Tense-feature.

I assume that the aspectual head bears an unvalued Tense-feature and when it merges with the verbal phrase, its unvalued Tense-feature is valued by the valued Tense-feature of the preposition incorporated into the verbal head *v*. According to Biskup (2009a), the Tense-feature on prepositions has the value [bounded]. However, as shown by Zwarts (2005), not every preposition is bounded; therefore, I take the value of the prepositional Tense-feature to be [perfective] (in chapter 6 we will see that the prepositional Tense-feature has more values, which determine the assigned case).<sup>15</sup> Given this [perfective] value, the aspectual head of prefixed verbs like that one in (57a) is valued as perfective and receives the perfective aspectual interpretation. Since there is not a secondary imperfective suffix on the verb in (57a), the aspectual head is phonologically empty.

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<sup>15</sup> The telic property of prepositions is not based on the [perfective] value but rather on lexico-semantic properties of prepositions.

The perfectivising effect of movement of a prepositional element is not restricted to Slavic, as shown by the Hungarian example (58), taken from Csirmaz (2006: 123). Analogously to Slavic prefixes, Hungarian particles have perfectivising and telicising effects. As to (im)perfectivity, when the particle moves to the preverbal position, as in (58a), the predicate is perfective, whereas when it stays behind the verb, as in (58b), the event description is imperfective, having the ongoing interpretation.

- (58) a. János        le        ment a lépcsőn  
           János.NOM down went the stair.on  
           ‘János went down the stairs.’
- b. János        ment le        a lépcsőn  
           János.NOM went down the stair.on  
           ‘János was going down the stairs.’

The connection between prepositions and perfectivity is also known from aspect-split languages like Hindi, in which ergative – which can be treated as a preposition that, depending on the language, either incorporates or does not incorporate into a verbal element; see Mahajan (1997) – is restricted to the perfective aspect.

Germanic prepositional elements are known for their telicising function but they can affect the viewpoint aspect, as well. As discussed by Blake (2001: 180), the Old/Middle English preposition *a* occurring on the verb marks an ongoing activity; see (59) (according to some authors, the progressive in modern English is a prepositional phrase with a deleted preposition; cf. Bolinger 1971).

- (59) The times, they are a-changing.

In this case, the preposition marks the imperfective (progressive) aspect, in contrast to Slavic and similarly to other Germanic languages, like German and Dutch, which use certain prepositions for marking progressivity, as illustrated by the German examples in (60).

- (60) Ich bin (gerade) beim / am Lesen.  
       I am just.now at.DEF on.DEF read  
       ‘I am reading (just now).’

Concerning our derivation, in cases where the preposition does not incorporate into the verb, staying in the phase complement of the head *v*, as in (57b), its Tense-feature is not accessible for the aspectual head because of the Phase Impenetrability Condition. In this case, the aspectual head receives the imperfective interpretation. Since simplex verbs are imperfective in Slavic, I assume that verbal roots bear a Tense-feature with the value [imperfective] (with the exception of a few perfective simplex verbs, see e.g. Isačenko 1962: 352-353 for Russian, that have the value [perfective]), which values the Tense-feature of the aspectual head in the case of unprefixated verbs. Given that [imperfective] is the default value in Slavic, when the aspectual head merges with *v*P containing a complex verbal head with an incorporated preposition with the [perfective] value, the Tense-feature of the aspectual head receives the marked value [perfective], as already discussed above.<sup>16</sup> Having derived the perfectivising effect of prefixation, let us move to the relation between prefixation and case.

The aspectual head also has unvalued  $\phi$ -features, which are responsible – together with the Tense-feature – for assigning objective case. Given that cases are an unvalued Tense-feature and that the aspectual head expresses a relation between times, it is natural that it is the aspectual head that assigns objective case. In section 2.4 we saw that there is a relation between the form of objective case and aspectual properties of the verb; for instance, the Russian, Polish and Czech partitive genitive is restricted to the perfective aspect. Furthermore, in Russian and Polish, verbs with prefixes like the cumulative *na-* ‘on’ mark the direct object with genitive. Since we already know that there is a relation between prefixes and the aspectual head, this suggests that the aspectual head mediates between the prefix and the form of objective case.

Recall also the accusative-partitive alternation in Finnish, with respect to which Kiparsky (1998) draws a parallelism between perfectivity versus imperfectivity in Russian and accusative case versus partitive case in Finnish. We also saw in section 2.4 that in Kala Lagaw Ya, aspectual markers on verbs are related to case markers in the nominal domain. It is probably no coincidence that the completive aspectual marker on the verb is homophonous with accusative case, as shown in example (24), repeated below as (61).

- (61) Nuy-dh n-an im-an.  
 he-ERG she-ACC see/discover-COMP  
 ‘He spotted her.’

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<sup>16</sup> The aspectual head cannot receive the default, i.e. imperfective, interpretation at the interface because the Tense-feature is relevant for assigning the imperfective structural accusative, as discussed below.

Going back to our derivation in (53),  $\varphi$ -features on the aspectual head probe and find the figure *čemodan*, which is closer to them than the agent *Artur*, occurring in the inner specifier of  $\nu$ P. Consequently,  $\varphi$ -features of the aspectual head are valued by the valued  $\varphi$ -features of *čemodan* and the unvalued Tense-feature on *čemodan* is valued by the valued Tense-feature of the aspectual head. This results in the perfective structural accusative on *čemodan*.

The  $\varphi$ -features probing of the aspectual head should happen after the valuation of its Tense-feature by the complex verbal head with the incorporated preposition. If heads project their features to the phrase and dominance is relevant to locality, then the valued Tense-feature on  $\nu$ P is closer to the aspectual head than the valued  $\varphi$ -features on the specifier *čemodan*. The question is whether or not the valuation of the unvalued Tense-feature on *čemodan* must happen immediately after the  $\varphi$ -features of the aspectual head are valued by *čemodan* (or simultaneously with this valuation). If not, then the  $\varphi$ -features probing of the aspectual head could also take place before the valuation of its Tense-feature, with the following order of operations: valuation of  $\varphi$ -features of the aspectual head by *čemodan*, valuation of the Tense-feature of the aspectual head by the Tense-feature of the complex verbal head, and valuation of the Tense-feature of *čemodan* by the aspectual head.

How does case assignment work with case alternations, for instance, in the case of the cumulative prefix *na-* ‘on’ or the delimitative prefix *po-* ‘on’, where the perfective aspectual head assigns partitive genitive, as discussed in section 2.4? If the partitive marker is specified as [perfective], then, given the Subset Principle, it can only be inserted into a feature context that contains such a value. Since prefixes value the Tense-feature of the aspectual head as [perfective] in contrast to unprefixed verbs and the aspectual head in turn values the Tense-feature of the appropriate argument as [perfective], we correctly derive the fact that partitive can only occur on objects of perfective (prefixed) verbs.

Case alternations are also found in cases where a prepositional phrase whose head P assigns case to its complement alternates in the complement position with a prepositional phrase whose P cannot assign case, as with the pair *otročít* ‘be slave’ - *zotročít* ‘enslave’, discussed in section 2.4. In the case of *zotročít*, the prepositional head P does not assign case because it is defective in certain respects (the topic of defectivity will be discussed in more detail in chapter 3.3.3) and the appropriate argument receives structural accusative from the aspectual head, whereas in the case of *otročít*, the covert P assigns dative in the way discussed above in this section. Such a covert preposition is typical for verbs that Richardson (2007, chap. 3) calls *atelic two-place predicates assigning lexical case*.

The fact that intransitive and passive verbs do not assign objective case is derived by selectional properties of the aspectual head. Since the aspectual head selects the verbal phrase projected by the complex verbal head  $v$ , the necessary information about the verbal argument structure is visible for it. Since every verb is either perfective or imperfective, every aspectual head has an unvalued Tense-feature. Further, since case assignment – the valuation of the Tense-feature on an argument – depends on  $\phi$ -features Agree, the aspectual head that does not assign objective case does not bear  $\phi$ -features. Taken together, the aspectual head having only the unvalued Tense-feature can only merge with intransitive or passive  $v$ Ps. Having shown how case assignment by the aspectual head works, let us now turn to definiteness effects.

Recall from section 2.6 that structural accusative assigned by a perfective verb differs from the structural accusative assigned by an imperfective verb with respect to the possibility of extraction and with respect to the identity reading in across-the-board constructions, and that in Bulgarian the presence of a prefix on the verb brings about the presence of the definite suffix on the object.

Beginning with the Bulgarian definite suffix, it can be treated as a spell-out of the perfective value of the Tense-feature of the object, which was valued by the perfective Tense-feature of the aspectual head. This means that with respect to PF, the definite suffix behaves like the partitive-case marker discussed above, however, with respect to the meaning, the suffix (the perfective Tense-feature) brings about a quantised interpretation of the plural or mass-noun object. Thus, the closest relative of the Bulgarian definite suffix is the Sakha case marker, which also brings about the quantised interpretation of the mass-noun object and which also works as a privative marker.

With respect to across-the-board constructions, we saw that the prefixed verb in the second conjunct – in contrast to the unprefixed verb – strongly prefers the identity reading of the moved object; consider (62), repeated from (39).

- (62) a. Jakou knížku Jana dokončila a Jirka recenzoval?  
 what book.ACC Jana.NOM finished and Jirka.NOM reviewed  
 ‘What book did Jana finish and Jirka reviewed?’
- b. Jakou knížku Jana dokončila a Jirka z-recenzoval?  
 what book.ACC Jana.NOM finished and Jirka.NOM from-reviewed  
 ‘What book Marie finished and Jirka reviewed?’

If the analysis of across-the-board constructions by Biskup (2016a: to appear) is correct and there are, in fact, two *wh*-movement chains in cases like (62), and the perfective type of structural accusative brings about definiteness, then we can account for the contrast in (62) in the following way. Since definiteness is also used for referring to backgrounded (known) entities and the book from the first conjunct is introduced into the common ground before the book from the second conjunct is interpreted, the book from the second conjunct wants to refer to the same referent as the book in the first conjunct.

As to the question of why the perfective structural accusative on the direct object of a prefixed verb blocks extraction in contrast to the imperfective structural accusative on the object of an unprefixated verb, Biskup & Zybatow (2015) propose an analysis based on Chomsky's (1964) A-over-A principle applied to bounded Tense-features (in present terms, Tense-features with the value [perfective]). In (63a), repeated from (36a), the prepositional phrase *o čem* 'about what', which bears the perfective Tense-feature, is extracted from the more inclusive category *článek* 'paper', whose Tense-feature has the value [imperfective] because it was valued by the imperfective aspectual head. Therefore, the A-over-A principle is not violated and the extraction is licit.

- (63) a. [O čem]<sub>1</sub> Jan psal [článek t<sub>1</sub>]?  
 about what Jan.NOM wrote article.ACC  
 'About what was Jan writing a/the article?'  
 b. ?\* [O čem]<sub>1</sub> Jan pře-/do-psal [článek t<sub>1</sub>]?  
 about what Jan.NOM over-/to-wrote article.ACC

In contrast, in example (63b), the prepositional phrase with the perfective Tense-feature is extracted from the object with the perfective Tense-feature, which was valued by the perfective aspectual head. This violates the A-over-A principle.

The fact that prepositional phrases are islands for extraction, as demonstrated in example (64), repeated from (44), can be analysed in a parallel fashion.

- (64) a. Popugaj v-letel v komnat-u.  
 parrot.NOM in-flew in room-ACC  
 'The parrot flew into the room.'  
 b. \* Čto<sub>1</sub> popugaj v-letel vo t<sub>1</sub>?  
 what parrot.NOM in-flew in

- c. Popugaj v-letel v komnat-u so stolom.  
 parrot.NOM in-flew in room-ACC with table  
 ‘The parrot flew into the room with the table.’
- d. \* [S čem]<sub>1</sub> popugaj v-letel v komnat-u t<sub>1</sub>?  
 with what parrot.NOM in-flew in room-ACC

The Tense-feature of the prepositional complement *komnatu/čto* is valued by the perfective Tense-feature of the preposition *v(o)*. For this reason, extraction of the complement from the dominating category with the perfective Tense-feature violates the A-over-A principle. The same also holds for extraction of the prepositional subconstituent from a prepositional phrase, as demonstrated in (64d) (in chapters 3 and 4, I will argue that defective prepositional phrases, whose prepositions do not assign case, i.e., do not value the Tense-feature of their complement, do not block extraction). For this analysis to work properly, however, one assumption is necessary. One needs to assume that projections in the clausal spine do not participate in blocking for some reason; otherwise we would expect that for instance the aspectual projection with the perfective Tense-feature blocks topicalisation movement of an embedded prepositional phrase. To conclude this discussion, Tense-features can be used not only for the uniform analysis of cases and deriving perfectivity but also for deriving various definiteness effects.<sup>17</sup>

In the next step of our derivation, the aspectual phrase merges with the tense head and the complex aspectual head adjoins to it. The masculine form of the tense head is null (*vněs*) in contrast to the singular feminine *vnesla*, the singular neuter *vneslo* and the plural *vnesli*, all with the meaning ‘carried sth. in sth.’. The tense head has unvalued  $\phi$ -features and the valued Tense-feature. The  $\phi$ -features of the tense head probe and agree with  $\phi$ -features of *Artur* and the valued Tense-feature of the tense head values the unvalued Tense-feature on *Artur*, which results in nominative. As to the question of why the  $\phi$ -features of the tense head are not valued by the aspectual phrase or by the object DP, I assume that the tense head must discharge its case, that is, that its Tense-feature must also participate in an Agree operation. This is not possible with the aspectual head or the object because they already have their Tense-feature valued.<sup>18</sup>

<sup>17</sup> The relation between prepositions and definiteness is well-attested; e.g. in Hebrew only definite direct objects are marked with the prepositional element *et* (Danon 2006).

<sup>18</sup> Note also that if the tense head agreed with the aspectual phrase or the object, the Tense-feature of the subject would remain unvalued, which would lead to a derivational crash. Since I do not assume the Activation Condition (recall that the incorporated preposition with its valued features values the Tense-feature of the

To derive the word order of our sentence in (57a), the subject must move. This can be achieved in two ways. Either  $\varphi$ -features of the tense head are of EPP nature or the subject is displaced by topicalisation movement to the tense phrase or to the complementiser phrase. Given that subjects in Russian can also stay *in situ*, the second option is the preferred one.

Finally, the tense phrase merges with the complementiser. Since it is of the declarative type, it has no overt syntactic effects on the derivation. The sentence shows two copies of the preposition *v* ‘in’. The upper copy is spelled out as the prefix in the complex tense head *vněs* and the lowest copy is spelled out as the preposition *v*, merged with the ground argument *komnatu* ‘room’. As discussed in section 2.7, the upper copy is necessary because of the morphological aspect and the lowest copy because of the semantics of the preposition and the assigned case.

### 2.8.2 Verbal prefixes in the semantic derivation

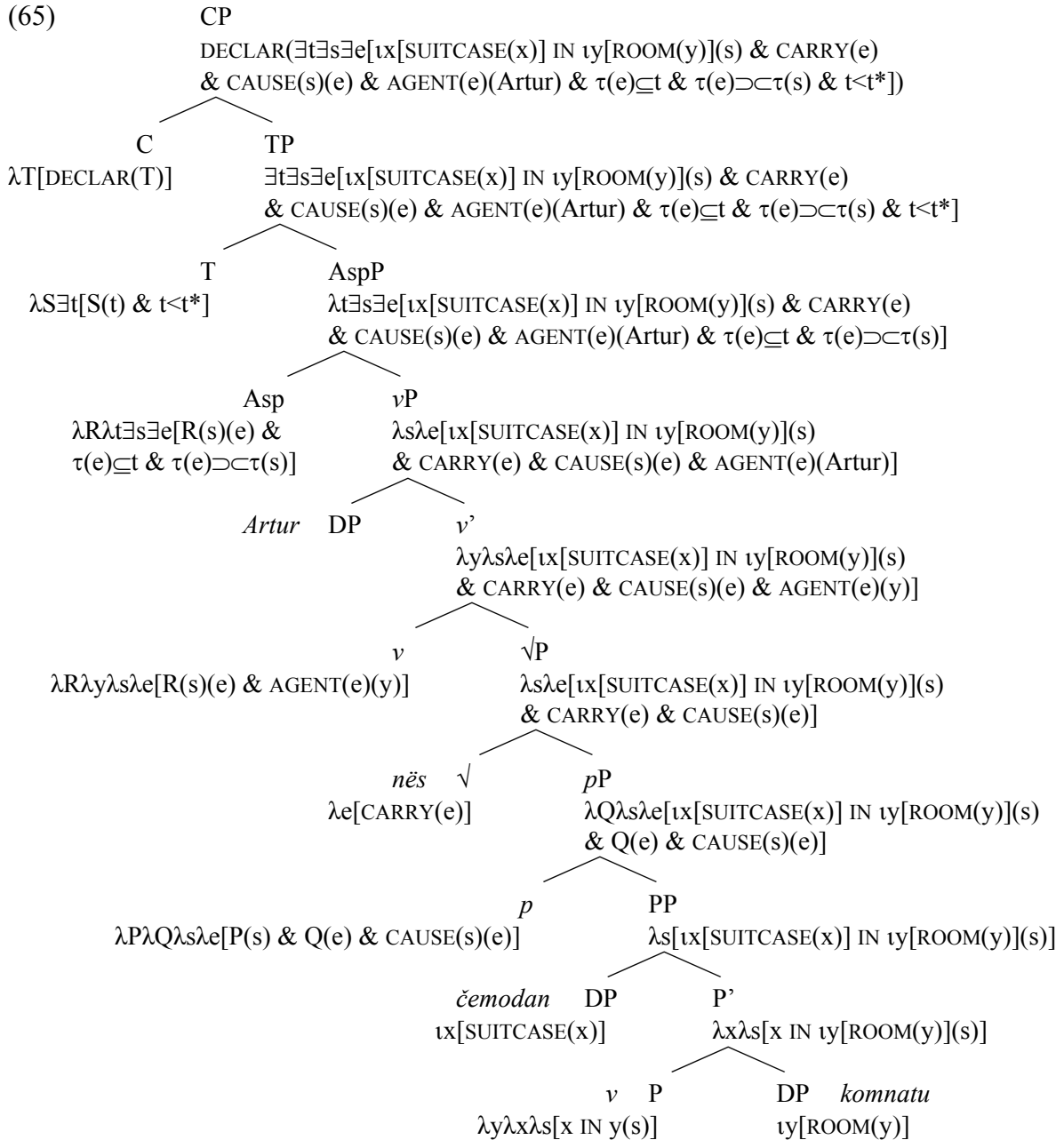
In this section, I present the semantic derivation of the sentence in (57a). It proceeds as shown in (65).<sup>19</sup>

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aspectual head), the condition cannot be used to block Agree between the probing tense head and the aspectual phrase or the object.

<sup>19</sup> For ease of exposition, I omit the world variable.





The determiner phrase *komnatu* ‘room’ is a definite expression of the type  $\langle e \rangle$  derived by the iota operator applied to the predicate noun phrase. The preposition has the usual spatial meaning and localises the external argument  $x$  with respect to the internal argument  $y$ . I assume that the preposition also introduces the state argument; this is important for deriving the telicity effect of prefixation and also for the derivation of stative adjectival participles, as we shall see in chapter 4. By means of functional application, we receive the meaning that the ground argument  $x$  is in the state of being in the room. This meaning applies to the definite expression *čemodan* ‘suitcase’ with the result that the suitcase is in the state of being in the room.

In the next step, the meaning of PP combines with the meaning of the little prepositional head  $p$ , which makes a prefix from the preposition. The first conjunct in the meaning of  $p$  stands for the meaning of the prepositional phrase PP, that is, for the result state brought about by prefixation. In this way, we derive the prepositional nature of prefixes. The second conjunct introduces an event with properties of the root. In other words, the head  $p$  conjoins the prepositional phrase with the verbal part of the prefixed verb. The third conjunct stands for the telic property of prefixes; recall from section 2.3 that prefixes bring about the causative relation between the result state and the other subevent. I assume that the variable  $e$  ranges over dynamic as well as stative eventualities; hence the meaning of  $p$  can express a change from a state to another state as well as a change from a process to a state.

Although there are also prefixes with other meanings, the proposed meaning covers most prefixes; hence I will concentrate on this meaning in what follows.<sup>20</sup> As discussed in the next chapter, this interpretation is present in both compositional and non-compositional prefixed verbs. The difference between these two types of verbs is that with non-compositional prefixed verbs a meaning shift happens or a listed meaning is inserted into the verbal root.

To anticipate somewhat, for the little prepositional head of the complement prepositional phrases whose preposition does not incorporate into the verb, I propose the semantics in (66). The details are discussed in chapter 6.3.3.

(66)  $\lambda P \lambda Q \lambda s \lambda e [P(s) \ \& \ Q(e)]$

This is the meaning of the little prepositional head shown above, just without the CAUSE operator because when the preposition does not incorporate into the verb, it does not induce telicity, as we saw in section 2.3.

Unprefixed transitive verbs I analyse in the way that the theme object is introduced by a covert head with meaning (67); see for instance Borer (2005) for severing the internal argument from its verb.

(67)  $\lambda x \lambda e [\text{THEME}(e)(x)]$

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<sup>20</sup> There are e.g. verbs prefixed with *u-* ‘at’ in Czech, which express an ability of the subject to carry out the action described by the predicate, like *unést* ‘be able to carry’ and *uřídít* ‘be able to drive’. These verbs do not have any inherent boundary or a change into a state.

For the sake of consistency, I assume that the head is a prepositional head *P*. This prepositional head is defective in the sense of the classification proposed in chapter 3; it is covert, it does not assign case, its complement (theme) moves and receives structural accusative from the aspectual head. In this analysis, all ‘verbal’ arguments other than the agent (merged in the specifier of *vP*) are in fact arguments of a preposition, which allows a uniform treatment of selectional properties of *n-/t*-participles, which can only be derived from transitive verbs, as we will see in chapter 4. The head *p* of the prepositional phrase introducing theme has the meaning shown in (68), without the CAUSE operator and the state variable because it shall derive unprefixated, that is, atelic, predicates without any visible prepositional phrase. This head *p* only glues the theme argument with the verbal root.

(68)  $\lambda P\lambda Q\lambda e[P(e) \ \& \ Q(e)]$

As to the difference between transitive and intransitive verbs, transitives always have the *pP* complement, whereas intransitives do not have to, specifically, when the single argument is agent and merges directly in the specifier of *vP*. Such predicates are often unprefixated given that prefixes usually augment argument structure of the base verb.

As far as superlexical prefixes are concerned, I refer to the arguments in Biskup (2012, 2016b) that at least some superlexical prefixes can be analysed in the same way as lexical prefixes; recall also from the preceding sections that superlexical prefixes, too, perfectivise, telicise and bring about definiteness effects, that they also affect case properties of the base predicate and its argument structure. This means in the current approach that superlexical prefixes can also merge in the complement position of the root, project a prepositional phrase with the causal head *p* there and then incorporate into the verb, as discussed with respect to the derivation of the lexically prefixed verb in (65). For instance, concerning the cumulative *na-* ‘on’ and the distributive *po-* ‘on’, discussed in section 2.5, the difference between these prefixes and lexical prefixes is that the superlexical prefixes have an uninterpretable feature that licenses the presence of a corresponding head with the interpretable feature and with the cumulative or distributive meaning in the clausal structure. In other words, the superlexical meaning can be dissociated from the base position of the prefix (preposition).

The particular argument structure effects and selectional properties imposed on the prepositional external argument by these prefixes can also be analysed by means of the optional Cumulative-feature or Distributive-feature. Specifically, the appropriate feature places additional selectional properties on the preposition so that, for instance, the cumulative

*na* ‘on’ requires its external argument to be a plural expression or a mass noun. Thus, the preposition brings about plurality or the mass property of the argument and the cumulative head then brings about the ‘a lot’ meaning; see for instance Ramchand (2004) for a presence of a cumulative phrase above the aspectual projection in Slavic.<sup>21</sup>

Besides this possibility and the option with the high Merger of the superlexical prefix (which I will use for the completive *do-* ‘to’ in chapter 4.5.2), one also has the option to analyse the adverbial meaning of superlexical prefixes like the cumulative *na-* as present directly in the preposition. For instance, Filip (2000, 2005) proposes to derive the cumulative meaning of the prefix *na-* by means of a vague measure function, which combines with the appropriate nominal argument.

Let us now return to the derivation in (65).<sup>22</sup> Functional application replaces the predicate variable P in *p* with the meaning of the prepositional phrase PP, which brings about the identical lexicosemantic properties of prepositions and verbal prefixes, as discussed in the end of section 2.7. Then the meaning of *pP* applies to the root *něs*, which results in the meaning that the suitcase is in the state of being in the room and this state is caused by the event of carrying. The root phrase combines with the verbal head *v*, which adds the agentive component to the meaning of the root phrase. The next functional application brings the result that the referent of *Artur* is the agent of the carrying event.

The meaning of the verbal phrase *vP* combines with the perfective meaning of the aspectual head because the Tense-feature of the aspectual head was valued as [perfective] by the Tense-feature of the incorporated preposition. As far as temporal entities are concerned, I use the standard three times, the event time, the reference time and the speech time, following Reichenbach (1947), Panevová, Benešová & Sgall (1971), Klein (1994, 1995), Demirdache & Uribe-Etxebarria (1997, 2000), Giorgi & Pianesi (1997), among others. The aspectual head relates the event time to the reference time and the tense head relates the reference time to the speech time. While in the case of the imperfective aspectual head the reference time is included in the event time, the perfective aspectual head is usually treated as an operator that localises the event time within the reference time; see for instance Klein (1994), Paslawska & von Stechow (2003). The reference time is represented by the variable *t* and the event time is obtained by means of the temporal trace function  $\tau$ , which maps the event *e* to its running time. The meaning of the aspectual head is slightly modified in (65); I add the existentially

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<sup>21</sup> One might ask whether the Cumulative-feature on the preposition is necessary for the semantic effect. Strictly speaking, it is not but if *na* did not have this feature and did not select a plural noun or a mass noun, the derivation could crash – and the derivational effort would be lost – because the cumulative head could also merge with a structure containing *na* that takes a singular argument.

<sup>22</sup> Non-compositional prefixed verbs will be discussed in the next chapter.

bound state variable and the trace function mapping the state  $s$  to its time. This is necessary because of the state variable introduced by the prepositional phrase. As to the temporal relation between the two verbal subevents, the time of the event  $e$  abuts the time of the state  $s$ .

The tense head has the standard past-tense semantics in our example; it existentially binds the reference time variable  $t$  and relates it to the speech time  $t^*$  by means of the ‘before’ relation. Applying the meaning of the tense head to the aspectual head, we receive the meaning that the suitcase is in the state of being in the room and this state is caused by the event of carrying, whose agent is Artur. The time of the event abuts the time of the state and is temporally included in the reference time (the time of the state cannot be included in the reference time because certain states can hold forever). The reference time in turn precedes the speech time.

In the final step, the meaning of the tense phrase combines with the complementiser head. Since the sentence under discussion has the declarative sentence mood, I assume that the complementiser head is represented by the declarative operator (see e.g. Zimmermann 2009).

## 2.9 Conclusion

In this chapter, I have argued that lexical prefixes and at least some superlexical prefixes are incorporated prepositions that project a prepositional phrase with the figure argument and the ground argument in the complement position of the verbal root. It is the syntactic and semantic properties of the prepositional phrase whose head incorporates into the verb that are responsible for the various prefixation effects.

As to the telicising effect of prefixation, I have proposed that prepositions introduce a state – with the exception of the prepositional phrase introducing the theme argument of unprefixated verbs – and the verbal root another eventuality and that the prepositional head  $p$  of the prefixal type contains the CAUSE operator, which relates these two subevents. As to the perfectivising function of prefixation, the prepositional head  $P$  has a Tense-feature with the value [perfective], which values the unvalued Tense-feature of the aspectual head. This results in the interpretation that the event time is included in the reference time.

We have also seen that the Tense-feature plays an important role in case assignment; all cases have been treated as a result of the operation Agree between  $\phi$ -features and Tense-features and certain case alternations are based on the difference between the perfective and the imperfective Tense-feature of the verbal object. Specifically, I have proposed that partitive

genitive on the verbal object is a spell-out of the perfective Tense-feature assigned by the aspectual head.

The perfective Tense-feature on the verbal object (and in certain cases also on other elements) is responsible for various definiteness effects; in the syntactic component, it blocks extraction of an element with the identical Tense-feature; at LF it triggers the quantised interpretation and at PF it can be realised as a definite marker, as in Bulgarian.

Since most of the verbal prefixes are prepositions that project a phrase with two individual arguments in the complement position of the base verb, they bring about changes in the argument structure of the verb. Therefore, they can, for instance, add an unselected argument to unergative verbs.

## Chapter 3

### Prefixed verbs and compositionality

#### 3.1 Introduction

This chapter investigates prefixed verbs with respect to their (non-)compositional properties. The difference between lexically and superlexically prefixed verbs has been extensively discussed in the literature (Isačenko 1962; Petr 1986a; Babko-Malaya 1999; Ramchand 2004; Romanova 2004, 2006; Svenonius 2004; Di Sciullo & Slabakova 2005; Arsenijević 2006; Biskup 2007, 2012; Szucsich 2007, 2014; Gehrke 2008; Tatevosov 2008; Lehmann 2009; Žaucer 2009, 2012; Markova 2011; Wiland 2012; Biskup & Zybatow 2015) but the difference between compositional and non-compositional prefixed verbs has so far received very little attention.

Using a paraphrase test, this chapter classifies prefixed verbs into four categories. In the course of this, it is shown that non-compositional prefixed verbs do not form a unified class. This chapter provides a syntactic and semantic analysis of their particular classes and argues that also prefixed verbs with an idiomatic meaning can receive a compositional analysis. Non-compositional prefixed verbs are incrementally derived but the meaning of their parts can be updated under appropriate circumstances.

As we already know from chapter 2, lexical prefixes have a spatial or idiosyncratic meaning, whereas superlexical prefixes have an adverbial meaning (Babko-Malaya 1999, Ramchand 2004, Svenonius 2004, Richardson 2007). It has also been argued that lexically prefixed verbs can have both a compositional and non-compositional meaning, whereas superlexically prefixed verbs can only have a compositional meaning (e.g. Romanova 2006, Gehrke 2008). As an illustration, consider examples of compositional lexically prefixed verbs in (1). It is obvious, for instance, that the meaning of *vnesti* is composed of the meaning of *nesti* and *v-*, that the meaning of *vpisat'* is composed of the meaning of *pisat'* and *v-* and that the meaning of *oderwać* is composed of the meaning of *rwać* and *od-*.<sup>1</sup>

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<sup>1</sup> Some verbs can have more meanings. In the translations I use only the meaning(s) relevant to our discussion.

- |        |                      |       |    |                      |      |    |                     |      |
|--------|----------------------|-------|----|----------------------|------|----|---------------------|------|
| (1) a. | v-nesti              | (R)   | b. | v-pisat'             | (R)  | c. | ode-rwać            | (P)  |
|        | in-carry             |       |    | in-write             |      |    | away-tear           |      |
|        | 'carry sth. in sth.' |       |    | 'write sth. in sth.' |      |    | 'tear away'         |      |
| d.     | na-iti               | (OCS) | e. | od-teči              | (SL) | f. | na-sypać            | (US) |
|        | on-go                |       |    | away-flow            |      |    | on-pour             |      |
|        | 'go on sth.'         |       |    | 'flow off, run away' |      |    | 'pour sth. on sth.' |      |

As to compositional superlexically prefixed verbs, consider example (2). The meaning of *peregret'* is composed of the meanings of its parts, that is, of the meaning of *gret'* and the excessive meaning of *pere-*; the meaning of *naplakat'(sja)* is composed of the meaning of *plakat'* and the cumulative/saturative meaning of *na-*; the meaning of *przepisać* is composed of the meaning of *pisać* and the iterative meaning of *prze-* etc.<sup>2</sup>

- |        |                    |       |    |                 |      |    |                |      |
|--------|--------------------|-------|----|-----------------|------|----|----------------|------|
| (2) a. | pere-gret'         | (R)   | b. | na-plakat'(sja) | (R)  | c. | prze-pisać     | (P)  |
|        | over-heat          |       |    | on-cry(self)    |      |    | over-write     |      |
|        | 'overheat'         |       |    | 'cry a lot'     |      |    | 'rewrite'      |      |
| d.     | za-paliti          | (OCS) | e. | do-pracovat'    | (SK) | f. | po-lyžovat si  | (CZ) |
|        | behind-burn        |       |    | to-work         |      |    | on-ski self    |      |
|        | 'set sth. on fire' |       |    | 'stop working'  |      |    | 'ski a little' |      |

Non-compositional lexically prefixed verbs are shown in example (3). For instance, Tatevosov (2008) and Młynarczyk (2004) argue that the Russian *podpisać* 'sign' and the Polish *podpisać* 'sign', respectively, are non-compositional and Kratzer (2000) proposes the same for the German *aufpumpen* 'pump'.

- |        |             |      |    |             |      |    |                |      |
|--------|-------------|------|----|-------------|------|----|----------------|------|
| (3) a. | pod-pisat'  | (R)  | b. | na-pompować | (P)  | c. | za-vid'a       | (BG) |
|        | under-write |      |    | on-pump     |      |    | behind-I.see   |      |
|        | 'sign'      |      |    | 'pump'      |      |    | 'I envy'       |      |
| d.     | od-dělat    | (CZ) | e. | u-žit'      | (SK) | f. | na-być         | (P)  |
|        | away-do     |      |    | at-live     |      |    | on-be          |      |
|        | 'take away' |      |    | 'take'      |      |    | 'buy, acquire' |      |

<sup>2</sup> To see that the prefixes behave consistently, compare e.g. (2a) with the Russian *pereplatit'* 'overpay'; (2b) with the Russian *nabegat'sja*, Slovenian *nalauftati se* and the Czech *naběhat se*, all meaning 'come to have one's fill of running', from example (3) in chapter 2; (2c) with the Polish *przerobić* 'rework'; and (2d) with the Russian *zabolet'* 'become ill' and *zabegat'* 'start running', from example (1) in chapter 2.



g. ob-delat'-sja (R)	h. s-žit' (R)	i. za-pít (CZ)
around-do-self	from-live	behind-drink
‘shit one’s pants’	‘hound sb. out of sth.’	‘celebrate sth. by drinking’
	‘drive sb. to his death’	‘drown one’s sorrows’

A closer look reveals that there are differences between the prefixed verbs in (3). For instance, the verbs *podpísať* ‘sign’ (and its Polish and Slovak counterparts *podpisać*, *podpísať*), *napompovať* ‘pump’ (and the Czech *napumpovat*) and *zapít* ‘celebrate sth. by drinking, drown one’s sorrows’ seem to be more transparent than *nabyč* ‘buy, acquire’ and *užiť* ‘take’. *Podpísať* (and *podpisać*, *podpísať*) also seems to be more transparent than the verb *zapít*. Furthermore, in *oddělat* ‘take away’, only the verb has an irregular meaning, whereas in *užiť* both elements have an irregular meaning. This calls for a more detailed analysis of (non-)compositionality of prefixed verbs.

This chapter is organised as follows. The next section categorises compositional and non-compositional prefixed verbs by means of a paraphrase diagnostic. The core of my proposal is presented in sections 3.3-3.6, where the particular classes of prefixed verbs are syntactically and semantically analysed. Conclusions are drawn in section 3.7.

### 3.2 Four classes of prefixed verbs

Given the two elements – the verb and the prefix – and their regular/irregular meaning property, there are four possible combinations. The first possibility is represented by prefixed verbs composed of a prefix with a regular meaning and a verb with a regular meaning. This class contains compositional prefixed verbs. The other three classes contain non-compositional prefixed verbs. More concretely, the second class is represented by prefixed verbs with a prefix which has a regular meaning and a verb which has an irregular meaning. The third class contains verbs having a prefix with an irregular meaning and a verb with a regular meaning. The fourth class is represented by prefixed verbs in which both elements have an irregular meaning.

In what follows, I will diagnose the particular classes by paraphrases. According to Bergsma *et al.* (2010), prefix-verb compositionality is a semantic equivalence between a prefixed verb and a paraphrase involving the verb’s stem used as a verb. This relates to the first class in my categorisation. I modify and extend the proposal by Bergsma *et al.* to all four classes. With respect to prefixed verbs of class 1 ( $P^{\text{reg}}V^{\text{reg}}$ ), I propose that a prefix and a verb have a regular meaning, that is, they produce a compositional meaning, if the prefixed verb

can be paraphrased with the unprefixated verb and the prefix/preposition. Since it is the unprefixated verb that is used, it is necessary to abstract away from perfectivity and telicity in the paraphrases.

Prefixes that do not have a prepositional counterpart, I will replace with the corresponding non-homophonous preposition in the paraphrase. Since in the case of superlexical prefixes it is not possible to use the prefix (preposition) itself in the paraphrase, it is allowed to use the meaning of the superlexical prefix instead. Since meanings of superlexical prefixes are mostly a certain abstraction of the meanings of their lexical counterparts and the meanings behave stably in various prefix-verb combinations (consider e.g. the superlexically prefixed *peregret'* 'overheat' and *pereest'* 'overeat' and the lexically prefixed *perenesti* 'carry sb./sth. over' and also footnote 2), I take superlexical prefixes to have a regular meaning and to form compositional prefixed verbs, which is in accordance with the general praxis. Note also that in contrast to irregular meanings, superlexical meanings are often listed in dictionaries.

For instance, the Russian lexically prefixed verbs *vnesti* 'carry sth. in sth.' and *vpisat'* 'write sth. in sth.' belong to class 1 – have a compositional meaning – because they can be paraphrased with the unprefixated verb and the prefix, as demonstrated below.

(4) a. v-nesti                    ~    b. nesti    vo (čto)  
in-carry                                carry    in something  
'carry sth. in sth.'

(5) a. v-pisat'                    ~    b. pisat'    vo (čto)  
in-write                                write    in something  
'write sth. in sth.'

Concerning superlexical prefixes, consider examples (6) and (7), which show that the Polish prefixed verb *przepisać* 'rewrite' and the Russian *naplakat'(sja)* 'cry a lot' can be paraphrased with the unprefixated verb and the meaning of the prefix.

(6) a. prze-pisać                    ~    b. pisać    znowu/na nowo  
over-write                                write    again  
'rewrite'

- (7) a. na-plakat'(sja) ~ b. plakat' mnogo  
 on-cry(self) cry a lot  
 'cry a lot'

With regard to class 2 (P<sup>reg</sup>V<sup>irreg</sup>), I assume that a prefix has a regular meaning and the verb an irregular meaning if only the prefix can be used in the paraphrase. The Russian example (8), with the lexical prefix *s-* 'from', shows that the verb *žit'* 'live' cannot be used in the paraphrase of *sžit'* 'hound sb. out of sth., drive sb. to his death'. It is replaced with the verb *sognat'*.

- (8) a. s-žit' ~ b. sognat' (kogo) s (čego)  
 from-live drive somebody from something  
 'hound sb. out of sth.' not: c. žit' (kogo) s (čego)  
 'drive sb. to his death' live somebody from something

Similarly, the Czech example in (9) shows that the verb *dělat* 'do' cannot be used in the paraphrase of the lexically prefixed verb *oddělat* 'take sth. away from sth.'; it needs to be replaced with *odstranit* 'remove'.

- (9) a. od-dělat ~ b. odstranit (co) od (čeho)  
 away-do remove something away something  
 'take sth. away from sth.' not: c. dělat (co) od (čeho)  
 do something away something

For a superlexical prefix, consider the Slovak prefixed verb *prehnat'* 'overdo' in example (10), where the excessive *pre-* 'over' is paraphrased as *nad určitú/únosnú mieru* 'more than a certain/acceptable rate' and where *hnat'* 'drive' must be replaced with the more general verb *robit'* 'do'.

- (10) a. pre-hnat' ~ b. robit' nad určitú/únosnú mieru  
 over-drive do more.than certain/acceptable rate  
 'overdo' not: c. hnat' nad určitú/únosnú mieru  
 drive more.than certain/acceptable rate

As to prefixed verbs of class 3 ( $P^{\text{irreg}}V^{\text{reg}}$ ), the prefix has an irregular meaning and the verb a regular meaning if only the verb can be used in the paraphrase. Consider the following Czech examples, where in the paraphrase of *zapít* ‘celebrate sth. by drinking, drown one’s sorrows’ in (11), *za* ‘behind’ must be replaced with *na* ‘on’ and where in the paraphrase of *připít (si)* ‘toast sth./sb.’ in (12), *při* ‘at’, too, must be replaced with *na* ‘on’. This class does not contain verbs with a superlexical prefix since superlexical prefixes only have a regular meaning.

- |         |                              |   |         |       |                  |
|---------|------------------------------|---|---------|-------|------------------|
| (11) a. | za-pít                       | ~ | b.      | pít   | na (co)          |
|         | behind-drink                 |   |         | drink | on something     |
|         | ‘celebrate sth. by drinking’ |   | not: c. | pít   | za (co/čím)      |
|         | ‘drown one’s sorrows’        |   |         | drink | behind something |
|         |                              |   |         |       |                  |
| (12) a. | při-pít (si)                 | ~ | b.      | pít   | na (co)          |
|         | at-drink self                |   |         | drink | on something     |
|         | ‘toast sth./sb.’             |   | not: c. | pít   | při (čem)        |
|         |                              |   |         | drink | at something     |

In addition to this diagnostic, it is also necessary to control in this class whether the prefix with the appropriate meaning does not occur regularly in other verbs. It is possible that certain prepositional elements form compositional prefixed verbs but since they are restricted to certain contexts, they do not satisfy the diagnostic discussed (for more on this topic, see section 3.5).

Finally, as to class 4 ( $P^{\text{irreg}}V^{\text{irreg}}$ ), both the verb and the prefix have an irregular meaning if there is no paraphrase that can use the prefix or the verb (or both). Some examples of such lexically prefixed verbs are shown in (13). Since superlexical prefixes always have a regular meaning in prefixed verbs, they do not occur in this class.

- |         |              |      |    |                |      |
|---------|--------------|------|----|----------------|------|
| (13) a. | u-govorit’   | (R)  | b. | na-być         | (P)  |
|         | at-speak     |      |    | on-be          |      |
|         | ‘persuade’   |      |    | ‘buy, acquire’ |      |
| c.      | za-vid’a     | (BG) | d. | u-žit’         | (SK) |
|         | behind-I.see |      |    | at-live        |      |
|         | ‘I envy’     |      |    | ‘take’         |      |

With respect to certain prefixed verbs, the proposed paraphrase test seems to be too restrictive because it classifies them as non-compositional although they can be paraphrased in a looser manner (cf. Sekaninová 1980, who substitutes prefixes with various adverbs and prepositional phrases in paraphrases of prefixed verbs). A disadvantage of more relaxed versions of the paraphrase test is that it is not clear where, and why exactly there, the boundary between licit and illicit paraphrases should be drawn. This problem does not arise in the paraphrase test proposed here because only meanings brought about by the prefix/preposition and the verb themselves are licit (with the exception of superlexical prefixes, as discussed above).

As already mentioned in the preceding chapter, according to some researchers, there are also pure perfectivising prefixes; see, for instance, Vinogradov (1947), Pauliny (1950), Kopečný (1962), Tichonov (1964), Skoumalová (1968), Švedova (1980), Grzegorzczkova, Laskowski & Wróbel (1984), Petr (1986a), Šmiech (1986), Babko-Malaya (1999) (but consider also Maslov 1958, Schooneveld 1959, Komárek 1984, Filip 1999, Endresen *et al.* 2012, who argue against empty prefixes). Since the issue of (non-)existence of empty prefixes is not immediately relevant to the questions addressed in this book, I will only add to the discussion that from the perspective of this chapter, with respect to the paraphrase test, pure perfectivising prefixes do not form a natural class. For instance, the Russian *napisat'* 'write' and its Polish and Czech cognates *napisac'/napsat* can be paraphrased as *pisat' na/ pisać na/ psát na* 'write on' but the Russian *postroit'* 'build' and the Czech *pochválit* 'praise' cannot be paraphrased as *stroit' po* 'build on' and *chválit po* 'praise on' (or with other meaning of *po*), respectively.

### 3.3 Class 1: regular-meaning prefix and regular-meaning verb

#### 3.3.1 Non-defective PP

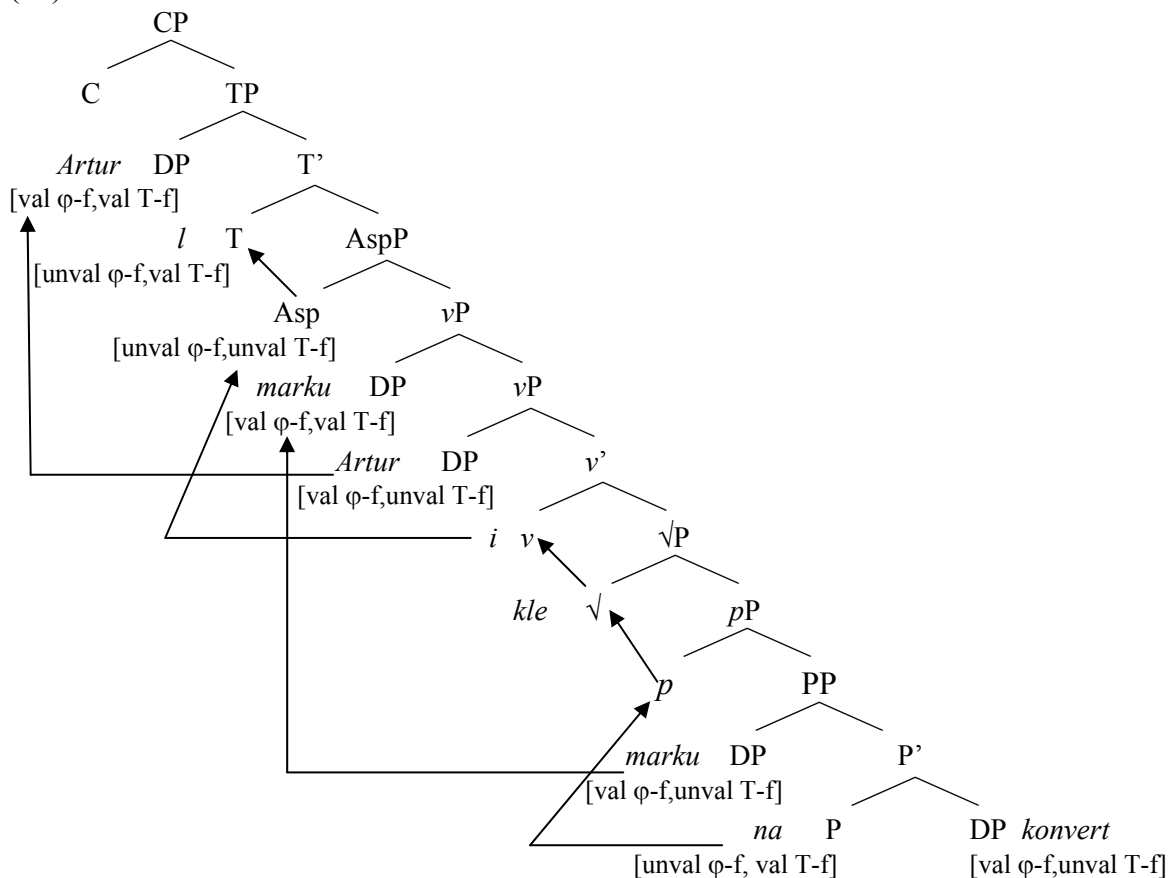
Let us first look at prefixed verbs with the compositional meaning, concretely, at the lexically prefixed verb *nakleit'* 'stick' in the Russian example (14). The paraphrase in (15) shows that the verb indeed belongs to class 1. Since we already saw a derivation of a compositional prefixed verb in the preceding chapter, I will here discuss only the relevant parts of the derivation. Prepositional phrases like the one in (14), I will call *non-defective* because both prepositional arguments can be syntactically present.

- (14) Artur na-kleil marku na konvert.  
 Artur on-stuck stamp on envelope  
 'Artur stuck the stamp on the envelope.'

- (15) a. *na-kleit'* ~ b. *kleit' na (čto)*  
 on-stick stick on something  
 'stick'

In the beginning of the derivation, the preposition *na* 'on' merges with the ground argument *konvert* 'envelope'. Since I treat all cases as a result of the operation Agree between  $\phi$ -features and Tense-features, the preposition has unvalued  $\phi$ -features and a valued Tense-feature and the ground argument has the unvalued Tense-feature and valued  $\phi$ -features, as demonstrated in (16). The operation Agree values the unvalued  $\phi$ -features of *na* and the unvalued Tense-feature (i.e., case) of *konvert*.

(16)



After that P' merges with the determiner phrase *marku*. Assuming that case assignment is dependent on the  $\phi$ -features Agree, as discussed in chapter 2.8.1, the unvalued Tense-feature on *marku* cannot be valued by the prepositional head P. After movement to the edge of the vP phase, *marku* receives structural accusative via Agree with unvalued  $\phi$ -features and the

valued Tense-feature of the aspectual head (see e.g. Jakobson 1936, Wierzbicka 1967, Paducheva 1998, Pereltsvaig 2000, Rozwadowska & Willim 2004, Borer 2005 and Richardson 2007 for the relation between case and aspectual properties of the predicate and recall from the preceding chapter that the aspectual head encodes the relation between the reference time and the event time).

The prepositional phrase PP is selected by the head *p* of the prefixal type and the preposition incorporates into it, analogously to V-to-*v* movement. Since I analyse verbal prefixes as incorporated prepositions, the complex head *p* incorporates into the root  $\sqrt{\text{ }}$  and higher heads, valuing the Tense-feature of the aspectual head on the way, which gives rise to perfectivity and enables the aspectual head to value the Tense-feature of the object.

In what follows, I discuss the relevant parts of the semantic derivation of sentence (14). The preposition *na* ‘on’ has the usual locative meaning, where the referent of the external argument *x* is in the state of being located ‘on’ the referent of the internal argument *y*, as demonstrated in (17). The meaning of *na* applies to the definite expression *konvert*, derived by the iota operator, with the result that the referent of *x* is in the state of being on the envelope. The meaning of P’ combines with the definite determiner phrase *marku* and via functional application we receive the meaning of PP. This combines with the meaning of the head *p*, which makes a prefix from the preposition.

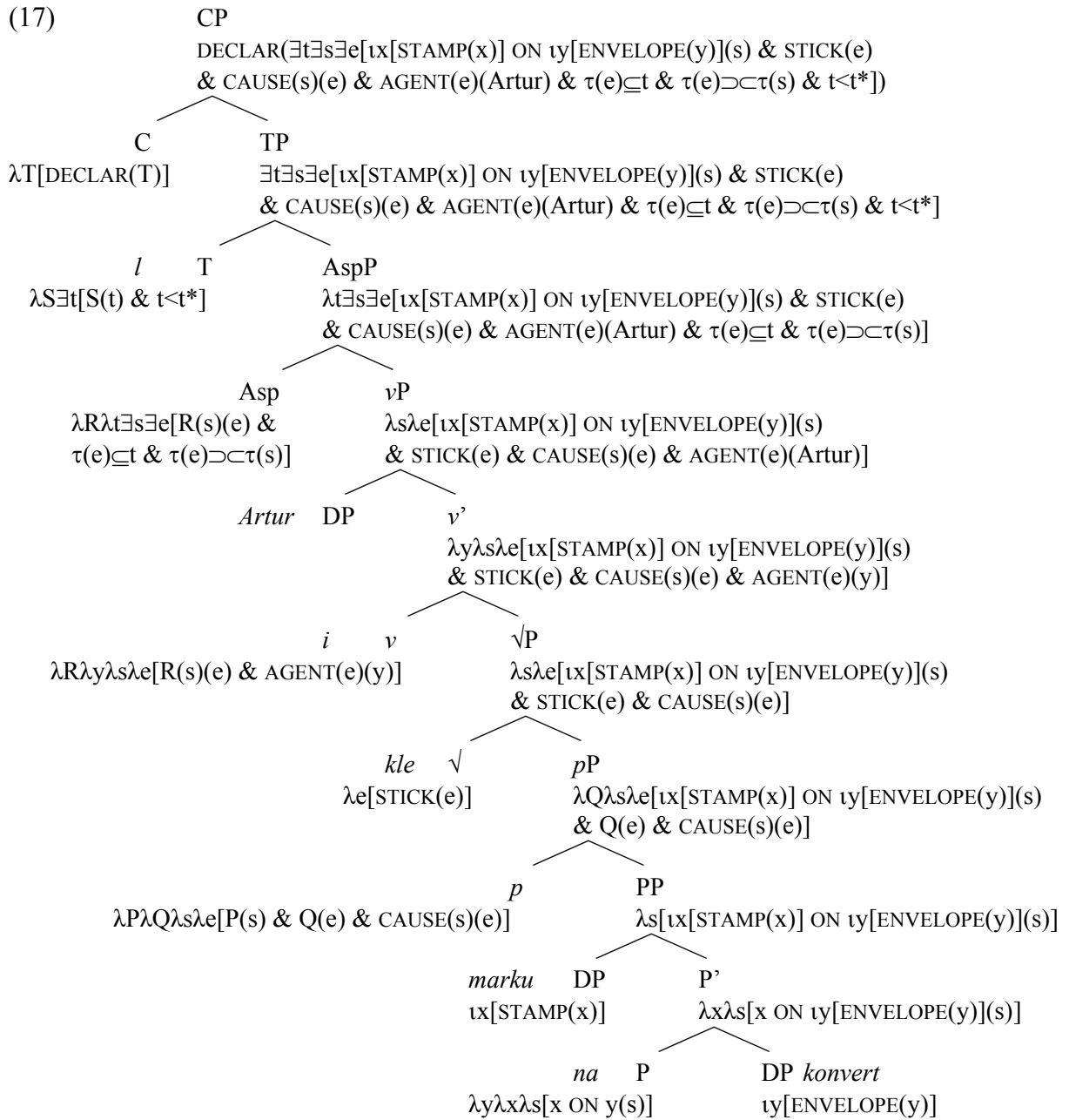
As suggested above, the meaning of the prefixal *p* is composed of three conjuncts. The first conjunct in *p* stands for the meaning of PP, which represents the result state brought about by prefixation, that is, that the stamp is in the state of being on the envelope. This derives the prepositional nature of the prefix *na-*. The second conjunct introduces an event that has properties of the root so that it allows *pP* to combine with the root. The third conjunct represents the telic property of prefixation, the fact that the prefix *na-* brings about the causative relation between the result state just discussed and the event denoted by the root.<sup>3</sup>

The meaning of the *na pP* applies to the meaning of the root *kle-* with the result that the stamp is in the state of being on the envelope and this is caused by the event of sticking. After that, the agent is added and later also aspectual, temporal and sentence mood properties are added.

As mentioned in the beginning of this section, the derivation under discussion contains a non-defective PP because both arguments of the preposition (*marku* and *konvert*) are present in the syntactic derivation. In addition, the preposition is overtly realised and assigns prepositional case to its complement.

---

<sup>3</sup> Recall that the variable *e* ranges over both processes and states.



We find two copies of the moved preposition *na* in the sentence in (14). As discussed in the preceding chapter, it is usually assumed that more copies of one chain can be spelled out only if they bring about a new output. This is the case in our example since the prefixal *na* licenses the perfective aspect (unprefixed *kleil* ‘was sticking’ is imperfective) and the prepositional copy of *na* licenses accusative case on the ground argument and brings about the prepositional semantics.



### 3.3.2 Non-defective PP with a covert argument

Arguments of the non-defective PP can also be covert, as illustrated in the Polish example (18a), where the ground argument is missing. Generally, however, both prepositional arguments can be overtly expressed, which makes this case different from the defective PP, in which both arguments cannot be overtly present at the same time. That both arguments can be overtly expressed is demonstrated by example (18b). Biskup (2015) analyses the prepositional phrase PP in *napompować* as defective but this is not a correct analysis if the defective status is characterised by lacking an argument and lacking the overt preposition.

- (18) a. Jakub na-pompował koło.  
Jakub on-pumped tyre  
'Jakub pumped up the tyre.'
- b. Jakub na-pompował koło na 2,2 bara / na miękko/ na twardo / na kamień.  
Jakub on-pumped tyre on 2,2 bar / on soft on hard / on stone  
'Jakub pumped up the tyre to 2,2 bar/soft/hard/to the full pressure.'

Kratzer (2000: 391) argues against syntactic decomposition of prefixed verbs like *aufpumpen* 'pump up'. According to her, the eventive component can be expressed by the verb *pumpen* 'pump' but the stative component cannot be contributed by the prefix *auf-* 'on' because 'In isolation, the prefix *auf-* doesn't have a denotation at all, hence couldn't possibly contribute a target state property.' The state component, however, can be taken to be contributed by the PP headed by *auf-*, along the lines suggested above. The figure argument, the tyre (more specifically, the tyre pressure, given the *totum pro parte* relationship between the tyre and the contained air), is in the state of being on a certain level of inflation. If not explicitly stated, the ground argument is interpreted as a contextually determined level of inflation and the default interpretation is 'fully pumped'. This seems to be a more general pattern of *fill* verbs with the preposition *na*; consider the following examples, which have the 'full result state'.

- (19) a. na-pełnić (P) / na-plnit (CZ) / na-plnit' (SK) / na-polniti (SL)  
on-fill on-fill on-fill on-fill  
'fill' 'fill' 'fill' 'fill'
- b. na-pchać (P) / na-cpat (CZ) / na-pchat' (SK) / na-tlačiti (SL)  
on-stuff on-stuff on-stuff on-stuff  
'stuff' 'stuff' 'stuff' 'stuff'

- c. na-karmić (P) / na-krmit (CZ) / na-křmit' (SK) / na-krmiti (SL)  
 on-feed on-feed on-feed on-feed  
 'feed' 'feed' 'feed' 'feed'
- d. na-jeść się (P) / na-jíst se (CZ) / na-jest' sa (SK) / na-jesti se (SL)  
 on-eat self on-eat self on-eat self on-eat self  
 'to eat one's fill' 'to eat one's fill' 'to eat one's fill' 'to eat one's fill'
- e. na-sycić (P) / na-sytit (CZ) / na-sýtít' (SK) / na-sititi (SL)  
 on-feed on-feed on-feed on-feed  
 for all: 'satisfy sb. with a meal'

The German *aufpumpen* and the Czech *napumpovat* show the same behaviour; see (20a) and (21a), with the covert ground argument, where the default interpretation is 'fully pumped' (when the context does not provide information on the level of inflation), and (20b) and (21b), where the overt *auf*PP and *na* PP, expressing the result state, specifies the level of inflation.

- (20) a. Er hat die Reifen auf-gepumpt.  
 he has the tyres on-pumped  
 'He pumped up the tyres.'
- b. Er hat die Reifen auf 3 bar/Maximaldruck/Betriebsdruck auf-gepumpt.  
 he has the tyres on 3 bar/maximum.pressure/operating.pressure on-pumped  
 'He pumped up the tyres to 3 bar/ the maximum pressure/the operating pressure.'
- (21) a. Pavel ty kola na-pumpoval.  
 Pavel the tyres on-pumped  
 'Pavel pumped up the tyres.'
- b. Pavel ty kola na-pumpoval na 3 bary / maximum / provozní tlak.  
 Pavel the tyres on-pumped on 3 bar / maximum / operating pressure  
 'Pavel pumped up the tyres to 3 bar/ the maximum pressure/the operating pressure.'

The fact that *napompować* and *napumpovat* can be paraphrased as *pompować na* ‘pump to’ (e.g. *2,2 bara* ‘to 2,2 bar’) and *pumpovat na* (e.g. *3 bary* ‘to 3 bar’) shows that the verbs belong to the compositional class 1.<sup>4</sup>

### 3.3.3 Defective PP

Let us move to defective prepositional phrases now. In defective PPs, the preposition lacks the second selectional feature. This corresponds to the lack of  $\phi$ -features on the head P. Again, given the assumption that case assignment – here the valuation of the Tense-feature of the prepositional argument – is dependent on  $\phi$ -features Agree (Chomsky 2001), the prepositional argument cannot receive its case from the head P. This relation between the missing argument and the missing case is in fact a prepositional version of Burzio’s generalisation (see e.g. Svenonius 2003, Biskup & Putnam 2012). In contrast to  $\phi$ -features, the Tense-feature must be present on the preposition because the incorporated P always perfectivises the verb.

The syntactic defectivity correlates with the semantic and phonological defectivity. Semantically, the syntactically unrealised prepositional argument is a free variable, which receives an interpretation at the semantic interface. Since the head P does not assign case and I take case assignment to be a constitutive property of Ps, the prepositional copy is not spelled out; only the prefixal copy can be spelled out (see e.g. Emonds 1976, McCawley 1988 and Caponigro & Pearl 2008 for arguments for a silent preposition). Given that there are also covert prepositions assigning lexical case, as discussed in chapter 2.8.1, there is only a one-way implication; covertness does not mean defectivity.

As an illustration consider the Russian example (22), in which the figure argument is missing, so the PP is of unaccusative nature (in section 3.6 we will see that the ground argument can also be missing).

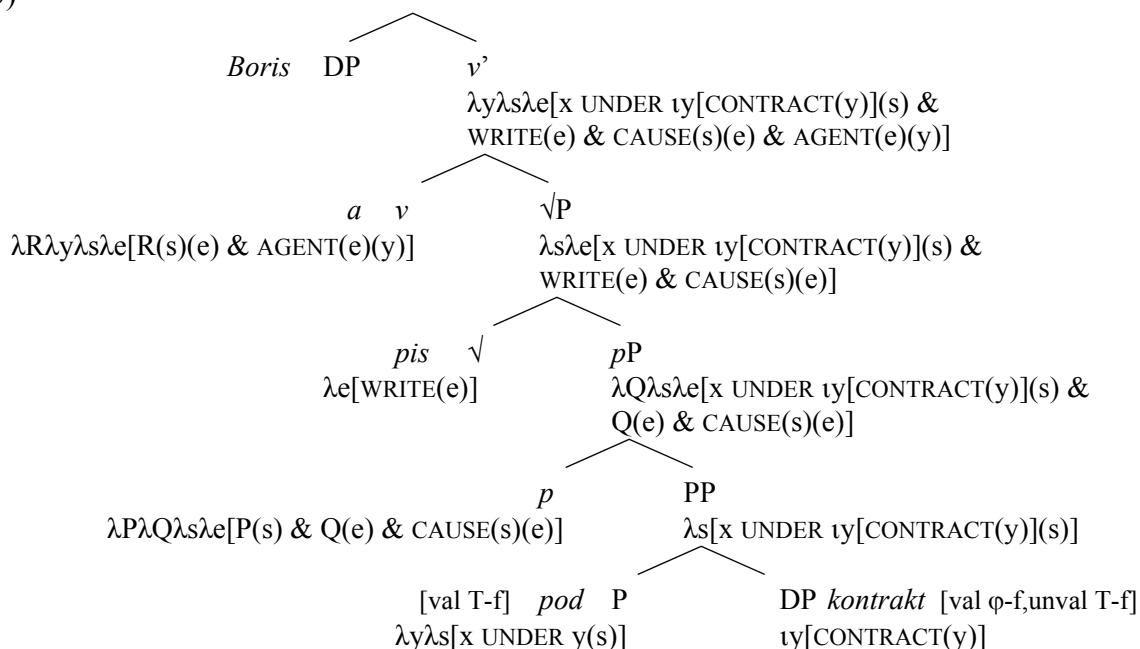
- (22) Boris pod-pisal kontrakt.  
Boris under-wrote contract  
‘Boris signed the contract.’

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<sup>4</sup> As pointed out to me by Andrew McIntyre, the compositional status of the German *aufpumpen* ‘pump up’ is also supported by the fact that the prefix has the same meaning in verbs like *aufblasen* ‘inflate’, *aufpusten* ‘inflate’, *auffüllen* ‘fill up’, *aufschwellen* ‘swell up’ etc. For discussion of (Kratzer’s) tests for compositionality and result states, see e.g. McIntyre (2002) and Irmer & Mueller-Reichau (2018).

As mentioned in section 3.1, it has been argued that the Russian *podpisat'* ‘sign’ and the Polish *podpisać* ‘sign’ are non-compositional verbs. In what follows, I show that a compositional analysis of these verbs is possible; consider the derivation in (23).<sup>5</sup>

(23)



The preposition *pod* is defective; it lacks  $\phi$ -features and the second selectional feature (due to lack of space, selectional features are not shown in trees). Therefore, it cannot enter into Agree with the ground argument *kontrakt* and *kontrakt* receives structural accusative from the aspectual head after its movement to the outer specifier of  $vP$ . As argued in chapter 2.8.1, given that the Tense-feature of the prepositional complement is not valued, the movement does not violate the A-over-A principle. Since *pod* cannot assign case, there is no lower copy of *pod* in (22); only the prefixal copy on the verb *pisal*. The figure argument is not syntactically present; semantically it is represented as the free variable  $x$  in (23); and the variable is interpreted as a signature at the semantic interface. This is the reason why *podpisat'* ‘sign’ and its equivalents are considered to be non-compositional in the literature (e.g. Młynarczyk 2004, Tatevosov 2008). Thus, the meaning of  $vP$  in (23) is that a signature is in the state of being under the contract, which is caused by the event of writing, and the agent of the writing event is Boris.

<sup>5</sup> The proposed system differentiates between compositionality of derivations and compositionality of prefixed verbs, tested by paraphrases (only prefixed verbs of class 1 ( $P^{reg}V^{reg}$ ) are compositional).

As expected, if the figure argument is syntactically present – that is, if the preposition *pod* is not defective –, the prepositional copy of P is also spelled out and case is assigned, as shown by examples in (24), with the reflexive figure and the instrumental ground.

- (24) a. On pod-pisal-sja pod kontraktom. (R)  
 he under-wrote-self under contract
- b. Pod-pisał się pod umową. (P)  
 under-wrote self under contract
- c. Pode-psal se pod smlouvou. (CZ)  
 under-wrote self under contract  
 ‘He signed the contract.’

The figure is ‘his signature’, not ‘his name’ because it does not have to be a name, and the reflexive is interpreted as the possessive ‘his’, as supported by translations of the following examples from Russian (25a) and Czech (25b-c).<sup>6</sup>

- (25) a. ob-delat’-sja                      b. po-dělat se                      c. vy-dělat se  
 around-do-self                      on-do self                      out-do self  
 ‘shit one’s pants’                      ‘shit one’s pants’                      ‘do one’s business’

If we allow the presence of the object in the paraphrase, as shown in the Russian example (26), then *podpisat* ‘sign’ and its equivalents like the Polish *podpisać* and the Czech *podepsat* will belong to class 1 (P<sup>reg</sup>V<sup>reg</sup>). If such a paraphrase is not allowed, the verb will belong to class 2 (P<sup>reg</sup>V<sup>irreg</sup>), in which the meaning of verbs is irregular. In fact, it is not crucial which class the verb belongs to; what is important is that the approach can derive all of the attested possibilities.

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<sup>6</sup> In reality, the signature can be false as shown in (i), with the instrumental adjunct (Yulia Sorokina, p.c.). In this case, (ib) is dispreferred given the presence of the reflexive figure *-sja*, which clashes with Maria’s name.

(i) a. Boris pod-pisal kontrakt imenem Marii.  
 Boris.NOM under-wrote contract.ACC name.INST Marija.GEN  
 ‘Boris signed the contract with Maria’s name.’

b. Boris pod-pisal-sja pod kontraktom imenem Marii.  
 Boris.NOM under-wrote-self under contract.LOC name.INST Marija.GEN  
 ‘Boris signed the contract with Maria’s name.’

- (26) a. pod-pisat'                    ~                    b. pisat' podpis' pod (čto-to)  
           under-write                                        write signature under something  
           'sign'

The example under discussion also shows that defectivity is not an inherent property of particular prefixes/prepositions. One and the same prepositional element can be defective in certain prefixed verbs (like *pod* in *podpisat'*), whereas in other prefixed verbs it can be non-defective (like in *podpisat'sja* above).<sup>7</sup>

The proposed analysis can be applied to *spray/load* alternations. The case with the accusative figure and the prepositional ground, like in the Russian (27a), represents the non-defective PP, whereas cases with the promoted accusative ground, instrumental adjunct expressing the figure and missing preposition, like in (27b), represent the defective PP.

- (27) a. Artur na-mazal marmelad na chleb.  
           Artur on-spread jam.ACC on bread.ACC  
           'Artur distributed jam over a slice of bread.'
- b. Artur na-mazal chleb marmeladom.  
           Artur on-spread bread.ACC jam.INST  
           'Artur spread the bread with jam.'

As noted by Romanova (2006), cases like (27b) resemble passivisation of transitive verbs in that the lower argument is promoted and receives a structural case and the higher argument is optional and marked with instrumental (corresponding to the *by*-phrase).

### 3.4 Class 2: regular-meaning prefix and irregular-meaning verb

I will now turn to class 2, which contains verbs with a regular-meaning prefix and an irregular-meaning verb, as illustrated in the Czech example in (28). This example contains a non-defective PP because both the figure and the ground are present, two copies of *od* are spelled out and the preposition assigns genitive.

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<sup>7</sup> It remains to be seen what factors determine the defective status of prepositions. For some generalisations, see e.g. Svenonius (2003) and Romanova (2006).

- (28) Jirk-a      od-dělal    křesl-o      od      okn-a.  
 Jirk-NOM    away-did    chair-ACC    away    window-GEN  
 ‘Jirka took the chair away from the window.’

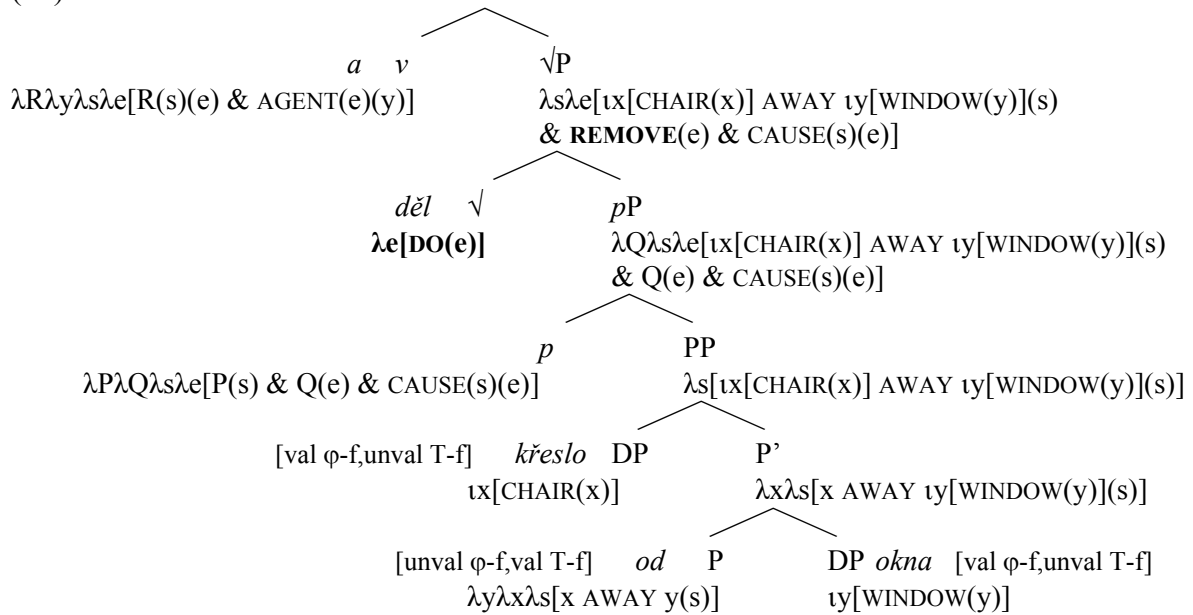
Example (29), repeated from section 3.2, shows that *oddělat* ‘take sth. away from sth.’ indeed belongs to class 2 ( $P^{reg}V^{irreg}$ ) because only the prefix can be used in the paraphrase.

- |         |                            |      |    |                |                          |
|---------|----------------------------|------|----|----------------|--------------------------|
| (29) a. | od-dělat                   | ~    | b. | odstranit (co) | od (čeho)                |
|         | away-do                    |      |    | remove         | something away something |
|         | ‘take sth. away from sth.’ | not: | c. | dělat (co)     | od (čeho)                |
|         |                            |      |    | do             | something away something |

In a morphosyntactic approach, given their idiosyncratic meanings, non-compositional prefixed verbs can be treated as idioms (see e.g. Marantz 2001, 2007; Zeller 2001b). According to Nunberg, Sag & Wasow (1994), many idioms have meanings which are compositional in the sense that the semantic contribution of individual constituents within the idiom can be isolated. They argue that not every idiom must be listed in the lexicon as a complete constituent. In this chapter, I apply this approach to prefixed verbs.

I will also follow Nunberg’s (1995) predicate transfer analysis, which was used for metaphors, metonymies and similar phenomena. Nunberg assumes two conditions on the predicate transfer operation: salience and noteworthiness. With respect to salience, there must be a functional correspondence between the original and the derived predicate. According to noteworthiness, the transfer must be conversationally interesting or relevant. To be more concrete, consider the derivation of (28), as shown in (30).

(30)



The meaning of PP and  $pP$  is derived as in the case of non-defective prepositional phrases above. Specifically, the chair is in the state of being away from the window and this state is caused by the event  $Q$ . What is important is that when the  $vP$  phase is interpreted, the meaning of *dělat* ‘do’ is shifted to ‘remove’ in  $\sqrt{P}$ , as shown in boldface (the original meaning of  $\sqrt{P}$  is not shown there). This transfer is properly licensed because there is a salient relation between these predicates; functionally, ‘do’ is a superset of ‘remove’. The transfer is also noteworthy, that is, conversationally relevant, because the speaker does not want to or cannot use the more specific predicate.

A similar case is shown in the Czech example in (31), where the meaning of *dělat* ‘do’ is shifted to the more specific ‘defecate’. This type of transfer of the dummy ‘do’ is typical for taboo words. In contrast to (28), in *podělat* ‘shit on sth.’, PP is defective; the figure argument and the prepositional copy are missing.

- |         |                |   |      |          |       |             |
|---------|----------------|---|------|----------|-------|-------------|
| (31) a. | po-dělat       | ~ | b.   | kálet    | po    | (čem)       |
|         | on-do          |   |      | defecate | on    | something   |
|         | ‘shit on sth.’ |   | not: | c.       | dělat | po (čem/co) |
|         |                |   |      | do       | on    | something   |

The meaning shift is also contextually restricted; it happens only in certain semantic contexts delivered by the sister constituent. In the derivation in (30) it is determined by the *od* PP. If there were, for instance, only the direct object *křeslo* ‘chair’ (more concretely, the



prepositional phrase introducing the theme argument, as discussed in chapter 2.8.2) instead of the *od* PP, the meaning of the verb would never be shifted in this way and the interpretation would be ‘make a chair’. Since *dělat* itself does not have the meaning *remove*, the transfer must happen in the course of the derivation.

This holds generally. When prefixed verbs are morphosyntactically derived and their parts do not bear the irregular meaning from the beginning (which is a natural assumption in the case of non-compositional verbs; which is also supported by the particular dictionary entries), then their idiomatic meaning must arise in the derivation. The regular meaning(s) must be somehow updated. Verbs like the Czech *podělat* ‘shit on sth.’ in (31), the Russian *obdelat’sja* and *zadelat’* in (32a-b) and the Czech *sdělat* in (32c) support this view since the meaning of *dělat* is always shifted in accordance with the meaning of the prefix and the prepositional phrase present in the derivation.

- |         |                       |  |    |              |  |    |                            |
|---------|-----------------------|--|----|--------------|--|----|----------------------------|
| (32) a. | ob-delat’-sja         |  | b. | za-delat’    |  | c. | s-dělat                    |
|         | around-do-self        |  |    | behind-do    |  |    | from-do                    |
|         | ‘shit in one’s pants’ |  |    | ‘cover sth.’ |  |    | ‘take sth. down from sth.’ |

There are also more complicated cases like the Russian *smyt’sja* ‘make off’ in (33) and the Czech *zdrhnout* ‘make off’ in (34). The paraphrase test suggests that these verbs belong to class 2 (P<sup>reg</sup>V<sup>irreg</sup>). The expressiveness of *smyt’sja* and *zdrhnout* satisfies the noteworthiness condition but there seems to be no salient relation between *myt’sja* and *ujti* and between *drhnout* and *prchnout*.

- |         |               |   |      |          |          |           |      |
|---------|---------------|---|------|----------|----------|-----------|------|
| (33) a. | s-myt’-sja    | ~ | b.   | ujti     | s        | čego      |      |
|         | from-wash-sja |   |      | make.off | from     | something |      |
|         | ‘make off’    |   | not: | c.       | myt’-sja | s         | čego |
|         |               |   |      | wash     | from     | something |      |
- 
- |         |            |   |      |          |         |           |      |
|---------|------------|---|------|----------|---------|-----------|------|
| (34) a. | z-drhnout  | ~ | b.   | prchnout | z       | čeho      |      |
|         | from-rub   |   |      | make.off | from    | something |      |
|         | ‘make off’ |   | not: | c.       | drhnout | z         | čeho |
|         |            |   |      | rub      | from    | something |      |

If the restrictive analysis is preferred and noteworthiness and salience are maintained as general conditions on the meaning transfer, verbs like *smyt'sja* and *zdrhnout* will be derived as verbs of class 4 ( $P^{irreg}V^{irreg}$ ), where a special listed meaning is used for the complex head  $\sqrt{\quad}$  (as discussed in section 3.6).<sup>8</sup> The same applies to the Russian verb *s-žit'* 'hound sb. out of sth., drive sb. to his death', in which *žit'* 'live' was replaced with *sognat'* 'drive' in the paraphrase in (8) in section 3.2. Alternatively, since *žit'* means 'live' and 'reside', *s* means 'from' and *sžit'* has the meaning 'drive sb. to his death' and 'hound sb. out of sth. (e.g. flat)', one may propose that *ži-* is a complement of P that incorporates into it (and there is a null root merged with *pP*). The question, however, would arise why the order of *s* and the incorporated *ži-* is reversed in *sžit'*.

### 3.5 Class 3: irregular-meaning prefix and regular-meaning verb

Class 3 is represented by prefixed verbs with an irregular-meaning prefix and a regular-meaning verb, as illustrated by the following Czech example with appropriate paraphrases. There is a defective PP, in which only the ground argument is syntactically present, receiving structural accusative from the aspectual head, and only one copy of *za* 'behind' is spelled out. Given the great variability of the lexicon, there are differences between particular Slavic languages; whereas Slovenian behaves like Czech and has *za-piti sina* and *piti na sina* with the meaning 'celebrate son by drinking' (and also has *za-liti sina* 'celebrate son'), Russian behaves differently in that it allows cases like *pit' za zdorov'e* 'drink to the health'.

- (35) a. Jan          za-pil          syn-a.          ~          b. Jan    pil          na    syna.  
Jan.NOM    behind-drank    son-ACC          Jan    drank    on    son  
'Jan celebrated his son by drinking.'          not:    c. Jan    pil          za          syna.  
Jan    drank    behind    son

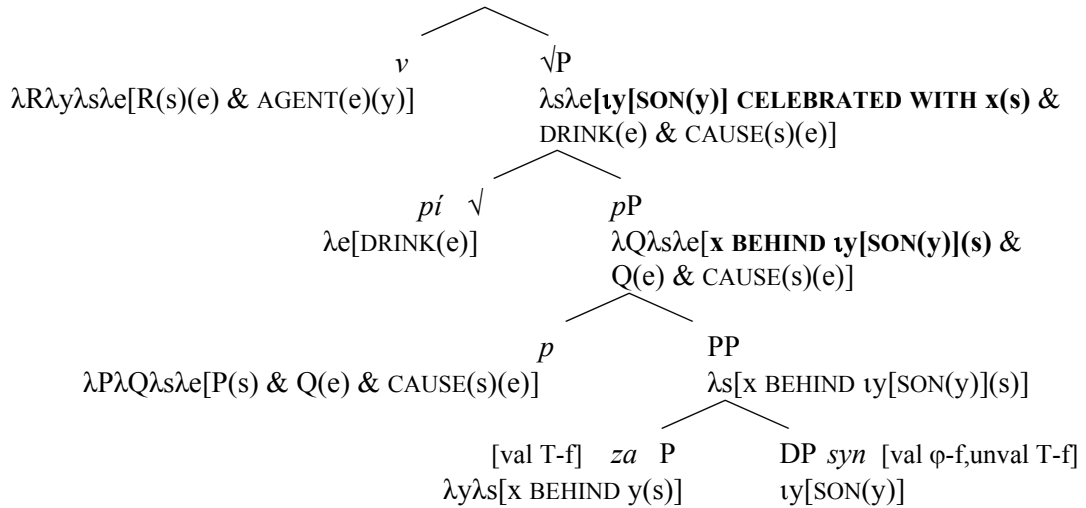
The relevant part of the derivation of example (35a) is shown in (36). The defective P *za* does not have  $\varphi$ -features and the figure argument is represented as the free variable *x*. When the  $\sqrt{vP}$  phase is interpreted, the meaning of *za* 'behind' is shifted to *na* 'on' in the meaning of  $\sqrt{P}$ , which in the context of 'drink' expresses the reason for celebration (in accordance with (35b))

---

<sup>8</sup> Since *smyt'sja* also means 'wash off', which has the result that some entity is removed, an alternative analysis could be that the meaning 'make off' is metaphorically derived from the meaning 'wash off', i.e., from the whole prefixed predicate, not only from the verbal part.

and the Slovenian *piti na sina*); consider the boldfaced parts of the derivation in (36).<sup>9</sup> The meaning of the root is not shifted, nor is there a special listed meaning for the complex head *za-pi* in the root, which could be used (as in the case of verbs of class 4 ( $P^{irreg}V^{irreg}$ ), as we will see below), hence the regular meaning of *pi(t)* ‘drink’ is used.

(36)



If not specified otherwise, the free variable  $x$  is interpreted as alcoholic beverages at the semantic interface. The figure can also be overtly realised by an instrumental adjunct, as in *něčím zapít syna* ‘celebrate son by drinking something’, therefore it occurs as ‘with  $x$ ’ in the meaning of  $\sqrt{P}$  in (36). In this respect, it is similar to the defective case of *spray/load* alternations discussed in section 3.3 (with the difference that there is no non-defective alternative) and to other *za*-verbs in which the referent of the accusative ground is covered with the referent of the instrumental figure argument, like it is the case with the verbs in (37).

- (37) a. zasypat’ (R) / zasypać (P) / zasypat (CZ) / zasípati (SL)  
‘fill in’
- b. zaliť (R) / zalać (P) / zalít (CZ) / zalíti (SL)  
‘pour sth. over sth.’
- c. zasadit’ lesom (R) / zalesić (P) / zalesnit (CZ) / zasadíti z drevesi (SL)  
‘afforest’

<sup>9</sup> When *na* is directly merged with *syn* instead of *za*, then we obtain a non-defective PP with the argument *se*: *napít se na syna* ‘celebrate son by drinking’.

Given the general spatiotemporal properties of prepositions, I assume that there is always a salient relation between them. And the reason for the celebration can be taken to be noteworthy in the conversation. Beside these two general conditions, the meaning transfer is again restricted by the semantic context. For instance, it does not happen in cases with consumable entities in PP like in *za-pít pilulku* ‘wash down a pill’.

Let us now consider examples (38) and (39). With respect to paraphrases, the Russian *dokupit’* and the Czech *dokoupit* behave like verbs of class 3 ( $P^{\text{irreg}}V^{\text{reg}}$ ). They can be paraphrased as shown in examples (b) but not like examples (c).

- |         |                             |   |      |    |                  |                   |
|---------|-----------------------------|---|------|----|------------------|-------------------|
| (38) a. | do-kupit’                   | ~ |      | b. | kupit’ k         | (čemu)            |
|         | to-buy                      |   |      |    | buy              | towards something |
|         | ‘buy in addition/some more’ |   | not: | c. | kupit’ do (čego) |                   |
|         |                             |   |      |    | buy              | to something      |

- |         |                             |   |      |    |                  |                   |
|---------|-----------------------------|---|------|----|------------------|-------------------|
| (39) a. | do-koupit                   | ~ |      | b. | koupit k         | (čemu)            |
|         | to-buy                      |   |      |    | buy              | towards something |
|         | ‘buy in addition/some more’ |   | not: | c. | koupit do (čeho) |                   |
|         |                             |   |      |    | buy              | to something      |

Despite this fact, these verbs are compositional because the prefix *do-* with the same meaning – adding something to something – also occurs in other verbs, as shown by the Russian example (40a) and the Czech example (40b).<sup>10</sup>

- |         |                                      |           |                   |
|---------|--------------------------------------|-----------|-------------------|
| (40) a. | Nužno                                | do-pisat’ | strok-u.          |
|         | necessary                            | to-write  | line-ACC          |
|         | ‘It is necessary to add the/a line.’ |           |                   |
| b.      | Je třeba                             | do-psat   | řádk-u.           |
|         | is                                   | necessary | to-write line-ACC |
|         | ‘It is necessary to add the/a line.’ |           |                   |

Because of this, such *do-*verbs belong to class 1 ( $P^{\text{reg}}V^{\text{reg}}$ ).

<sup>10</sup> The prefix can also have the completive superlexical meaning, in which case the sentences are interpreted as ‘It is necessary to finish the/a line.’

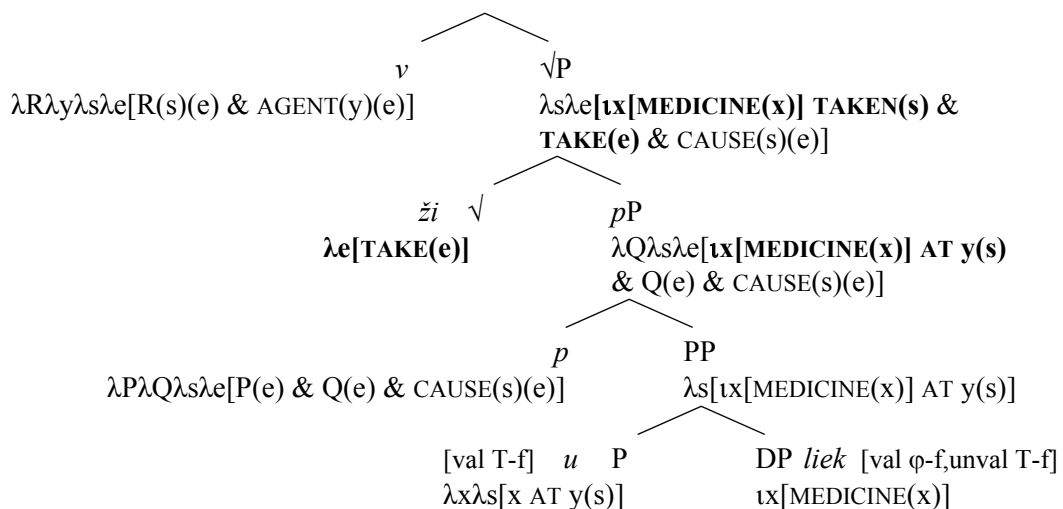
### 3.6 Class 4: irregular-meaning prefix and irregular-meaning verb

The fourth class, which contains prefixed verbs whose meanings are related neither to those of the prefixes nor of the verbs, is the largest category. As to the test, there are no paraphrases that can use the prefix or the verb or both of them. In contrast to class 2 ( $P^{reg}V^{irreg}$ ) and 3 ( $P^{irreg}V^{reg}$ ), verbs of this class are not derived by predicate transfer; hence salience and noteworthiness play no role here. Instead, the meaning of the whole prefixed root is listed in the lexicon. Thus, prefixed verbs of this class are derived like ‘true’ idioms. Let us now demonstrate how the derivation of the Slovak example (41) works.

- (41) Janko u-žil liek.  
 Janko at-lived medicine  
 ‘Janko took medicine.’

There is only one copy of the prepositional element *u*, no prepositional case and only the figure argument (*liek* ‘medicine’) is syntactically present in (41). This means that the preposition is defective, as demonstrated in (42). Crucially, when the *vP* phase is interpreted, the listed meaning ‘take’ is used for the complex root *uži* (the incorporation of *u* is not shown in the tree). The listed meaning occurs directly in the head  $\sqrt{\phantom{x}}$  in (42), which means that there is no shift from an original meaning to a shifted one, which we saw in the case of class 2 ( $P^{reg}V^{irreg}$ ).

(42)



In class 4 ( $P^{irreg}V^{irreg}$ ), the idiosyncratic meaning is always used from the beginning. Since the listed meaning is used for the whole prefixed root, the meaning must also be used accordingly for the result subevent, as shown in the meaning of  $\sqrt{P}$ . This derives the fact that both elements of the prefixed verb have an irregular meaning.

Interestingly, some meanings of prefixed verbs can be derived in two steps. Consider, for instance, the Czech verbs *oddělat*, which is polysemous between ‘take sth. away from sth.’ and ‘hit’ in the sense of ‘kill’, and *podělat*, which is polysemous between ‘shit on sth.’ and ‘fuck up’. We already know that the first meanings of these verbs are derived by the shift of the verb, which is characteristic for class 2 ( $P^{reg}V^{irreg}$ ); consider the paraphrases in (43) and (44), repeated from section 3.4.

- |         |                            |   |      |           |           |           |           |
|---------|----------------------------|---|------|-----------|-----------|-----------|-----------|
| (43) a. | od-dělat                   | ~ | b.   | odstranit | (co)      | od        | (čeho)    |
|         | away-do                    |   |      | remove    | something | away      | something |
|         | ‘take sth. away from sth.’ |   | not: | c.        | dělat     | (co)      | od (čeho) |
|         |                            |   |      | do        | something | away      | something |
|         |                            |   |      |           |           |           |           |
| (44) a. | po-dělat                   | ~ | b.   | kálet     | po        | (čem)     |           |
|         | on-do                      |   |      | defecate  | on        | something |           |
|         | ‘shit on sth.’             |   | not: | c.        | dělat     | po        | (čem/co)  |
|         |                            |   |      | do        | on        | something |           |

With respect to the second meanings, they are metaphorically derived from the first meanings and belong to class 4 ( $P^{irreg}V^{irreg}$ ) because there are no appropriate paraphrases for them that could use the verb or the prefix. One might propose that the ‘fuck up’ meaning of *podělat* is derived as in the case of verbs of class 3 ( $P^{irreg}V^{reg}$ ), where the meaning of the prefix is shifted, that is, as ‘do something badly’. This analysis probably is not on the right track because there is an analogous polysemous verb *posrat* with the meanings ‘shit on sth.’ and ‘fuck up’, which is derived from the verb *srát* ‘shit’ (cf. also the Slovenian *posrati*, which has the meanings ‘shit on sth.’ and ‘fuck up’, as well).

### 3.7 Conclusion

In this chapter, I have classified compositional and non-compositional prefixed verbs by means of paraphrases and provided a syntactic and semantic analysis of their various types. We have seen that prefixed verbs can be treated as idioms and can receive a compositional

analysis even if they have an idiosyncratic meaning. Non-compositional prefixed verbs are derived in the standard bottom-up fashion but the meaning of derivational steps can be updated in the course of the derivation. Class 1 ( $P^{\text{reg}}V^{\text{reg}}$ ) contains compositional verbs. Non-compositional prefixed verbs are of three types. Verbs of class 2 ( $P^{\text{reg}}V^{\text{irreg}}$ ) and 3 ( $P^{\text{irreg}}V^{\text{reg}}$ ) are non-compositional in the sense that their meaning is not composed of the original meanings of their parts but they can be derived compositionally with the help of Nunberg's (1995) predicate transfer. In contrast, prefixed verbs of class 4 ( $P^{\text{irreg}}V^{\text{irreg}}$ ) are derived like 'true' idioms, that is, by the insertion of a listed meaning.

While lexical prefixes derive verbs of all four classes, superlexical prefixes only derive verbs of class 1 ( $P^{\text{reg}}V^{\text{reg}}$ ) and 2 ( $P^{\text{reg}}V^{\text{irreg}}$ ). In this respect, the proposed classification is different from the most widely accepted lexical-superlexical approach to prefixed verbs, which groups together spatially prefixed verbs and idiosyncratically prefixed verbs in opposition to superlexically prefixed verbs. My approach classifies spatially prefixed verbs (with the regular meaning of the prefix) and superlexically prefixed verbs together and separates them from idiosyncratically prefixed verbs.

## Chapter 4

### Prefixes in target state participles

#### 4.1 Introduction

This chapter investigates the role of verbal prefixes in target state adjectival participles in Czech. It is argued that prefixed adjectival participles are headed by an adjectival head that works as a stativising operator. Building on the analysis in the preceding chapters, it is proposed that the state variable introduced by the prefix – that is, by the incorporated preposition – licenses the presence of the stativising operator in the derivation. Since the stativiser merges in a high syntactic position, adjectival participles can contain lexical as well as superlexical prefixes. Both types of prefixes play an important role in the derivation of adjectival participles; they help verbs to derive target state participles because they induce perfectivity and telicity and can add an unselected argument.

As discussed in chapter 2, according to the most widely adopted syntactic approach, Slavic prefixes are divided into two types, superlexical (external) and lexical (internal), which differ with respect to their base position; see, for instance, Babko-Malaya (1999), Ramchand (2004), Svenonius (2004), Di Sciullo & Slabakova (2005), Romanova (2006), Richardson (2007) and Gehrke (2008).

Lexical prefixes are usually analysed as merged in  $vP/VP$ . For instance, according to Gehrke (2008), Russian and Czech lexical prefixes are resultativity markers that head a predicational phrase, which is selected by the verbal head  $V$ . Romanova (2006) proposes that lexical prefixes project a prepositional phrase embedded under the result head, which in turn is selected by the verbal head  $V$ , or that lexical prefixes merge directly as the result head. According to Richardson (2007), lexical prefixes are merged below the verbal projection  $vP$ , where they can affect the lexical aspect of the verb.

On the other hand, superlexical prefixes are usually analysed as merged in a position above the verbal projection  $vP$ . More concretely, according to Svenonius (2004), the majority of Slavic superlexical prefixes merges higher than the aspectual head, whereas all lexical prefixes merge lower than the aspectual head. Gehrke (2008) argues that Czech superlexical



prefixes behave like adverbial modifiers and that they adjoin to the verbal phrase VP. According to Ramchand (2004), superlexical prefixes merge either directly in the aspectual phrase, where they assert a definite time point, or in a higher functional projection like the cumulative phrase.

Concerning adjectival participles, it has been shown that they exhibit different syntactic and semantic properties in different languages (they can even differ in a particular language) and that they differ with respect to the height of attachment of the participial morpheme.

For instance, Kratzer (2000), following Parsons (1990), distinguishes between two types of participles (state passives), target state participles and resultant state participles. In contrast to resultant state passives, which denote states that hold forever – like the German *es ist bewiesen* ‘it is proven’ –, target state passives describe states that are reversible, like *er ist versteckt* ‘he is hidden’. The meaning of target state passives is derived by means of the stativising operator  $\lambda R\lambda s\exists e[R(s)(e)]$ , which existentially binds the event variable *e* and projects the state variable *s*. Thus, target state participles are derived from telic verbs, which have an eventive and a stative component (see e.g. Nedjalkov & Jachontov 1988; Kratzer 1994, 2000; Rapp 1996; Giger 2009).

Target states participles can also be found in Slavic, as shown by the Russian example in (1a), the Polish example in (1b) and the Czech example in (1c). The presence of the adverb ‘still’ ensures that the examples contain a target state participle, not a resultant state participle; see Nedjalkov & Jachontov (1988), Kratzer (2000), Taraldsen & Medová (2007); for a detailed discussion of this test see Irmer & Mueller-Reichau (2018).

- |   |   |   |
|---|---|---|
| (1) a. Ona eščě otkryta.<br>she still opened<br>‘It is still open.’ | b. Jest jeszcze schowany.<br>is still hidden<br>‘He is still hidden.’ | c. Je ještě oteklý.<br>is still swollen<br>‘It is still swollen.’ |
|---|---|---|

Kratzer (1994) argues that in certain German adjectival passives (*Zustandspassiv*), the participial affix – representing the adjectival head – attaches to the verbal phrase VP, which can be modified by an adverb, thus showing that the participle is phrasal and not lexical. In verbal passives (*Vorgangspassiv*), which contain an agent, the participial affix attaches to the voice phrase, dominating the verbal phrase, because this is the projection where the agent is merged.

According to Paslawska & von Stechow (2003), in Russian target state participles like *zakryto* ‘closed’, the participial affix (-*t*-) represents the participial head and embeds the voice phrase, which dominates the root phrase.

Anagnostopoulou (2003), building on Kratzer (2000), argues that there are two different stativising operators in German and Greek. The first one derives target states and attaches to the root phrase in both languages and the second one derives resultant states and attaches to the verbal phrase *vP* in German and to the voice phrase in Greek.

Alexiadou & Anagnostopoulou (2008) propose that in Greek adjectival participles the participial morpheme – which syntactically represents the aspectual head and semantically the stativising operator – can attach to three different categories, in accordance with the eventive and agentive properties of the particular participle. It can attach to the verbal projection *vP*, to the voice phrase or directly to the root.

Given these proposals, one expects that there will be a certain interaction between the two discussed phenomena. If the lexical-superlexical approach with two different base positions for prefixes is correct, then it predicts that a superlexical prefix which attaches high in the syntactic structure cannot be contained in an adjectival participle that is closed by a participial morpheme merged in a position lower than the appropriate superlexical prefix. On the contrary, one expects that lexical prefixes can always be present in adjectival participles. The following sections offer a detailed investigation of this matter. The chapter is organised as follows. In section 4.2, I will provide background on adjectival participles briefly comparing participial systems of Russian, Polish and Czech. Then I will discuss target state participles in Czech in more detail; I will investigate how the presence of a prefix affects the derivation of *ly*-participles and *ny*’-/*ty*’-participles. The main proposal – that incorporated prepositions (prefixes) license the presence of the target state operator – is found in section 4.3. In Section 4.4, I examine the morphosyntactic structure of adjectival participles and discuss the positioning of the stativiser in the participial structure. In section 4.5, I investigate which types of prefixes can appear in which adjectival participles and explore how the prefixes interact with the stativising head. Section 4.6 shows step by step how the derivation of adjectival participles works. Section 4.7 summarises the chapter’s main findings.

## 4.2 Prefixes and adjectival participles

In this section, I first provide background on adjectival participles in Czech, comparing them briefly with adjectival participles in Russian and Polish. Then, I will investigate target state participles in Czech in more detail, focusing on adjectival *ly*-participles and *ny*’-/*ty*’-participles.

### 4.2.1 Participles in Russian, Polish and Czech

In Russian, there are four types of adjectival participles, which can be cross-classified by two oppositions, active/passive and present/past (see, e.g., Isačenko 1962; Švedova 1970, 1980; Schoorlemmer 1995; Borik 2002); consider table 1 with participles derived from the verb *risovat* ‘draw’.<sup>1</sup>

Table 1

	Active	Passive
Present	risujuščij ‘drawing’	risuemyj ‘being drawn’
Past	(na)risovavšij ‘having drawn’	narisovannyj ‘drawn’

The table demonstrates that present participles are derived from imperfective (unprefixed) verbs, whereas past active participles can be derived from perfective as well as imperfective verbs. As shown by the prefix *na* ‘on’, past passive participles are derived only from perfective verbs (but see Schoorlemmer 1995: chap. 4 for some exceptions). In addition, passive participles are only derived from transitive verbs.

Polish also has four types of participles, two adjectival participles – active *acy*-participles and passive *ny*’-/*ty*’-participles – and two adverbial participles, anterior *wszy*/*wszy*-participles and simultaneous *ąc*-participles (e.g. Damborský 1967a,b; Weiß 1977; Grzegorzczkova, Laskowski & Wróbel 1984; Cetnarowska 2000, 2001; Tokarski 2001). The distinction between anterior and simultaneous participles corresponds to the opposition past/present in table 1 and to the aspectual opposition perfective/imperfective (in fact, the distinction is based on relative tenses (i.e. (im)perfectivity), not absolute tenses, because the time reference is construed relative to a time point different from the speech time).

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<sup>1</sup> In the typological literature, active participles are called *agent-oriented* and passive participles *patient-oriented*; see, e.g. Lehmann (1984: 152) and Haspelmath (1994: 153).

From the simultaneous adverbial participles in *-ąc*, like *czytając* ‘(while) reading’, which refer to an event that happens simultaneously to another event, adjectival present active participles are derived; consider table 2, with participial forms derived from the verb *czytać* ‘read’. Present active participles – just like the simultaneous participles – are only derived from imperfective verbs; hence they refer to an ongoing event.

Table 2

	Active	Passive
Present	czytający ‘reading’	czytany ‘being read’
Past	przeczytawszy ‘having read’	przeczytany ‘read’ zwiędły ‘withered’

In contrast to Russian, Polish does not have adjectival past active participles; the past active function is fulfilled by the anterior adverbial participles in *-wszy/-wszy*, as shown in the table. These participles are derived only from perfective verbs; hence they refer to an event that was completed before another event.

Adjectival passive participles in *-ny/-ty* are derived from perfective and imperfective transitive verbs. For the present passive function, for which Russian uses the *myj*-participle, Polish employs the imperfective (unprefixed) *ny/-ty*-participle and for the past passive function, it uses the perfective (prefixed) *ny/-ty*-participle, a cognate of the Russian past passive participle.

Polish also has adjectival *ły*-participles like *zwiędły* ‘withered’, which are derived from perfective intransitive verbs and can be analysed as adjectivised verbal *l*-participles (e.g. Bartnicka 1970 and Cetnarowska 2000). Since the sole argument is an underlying object, these participles are an intransitive counterpart of the transitive past passive participles and can be placed in the same slot in table 2.

The Czech participial system – as the Russian system – has four types of adjectival participles, which can also be cross-classified by the oppositions active/passive and present/past (Petr 1986b; Karlík, Nekula & Rusínová 1995, Čechová *et al.* 2000). The present/past distinction again correlates with the aspectual opposition imperfective/perfective,

that is, with the absence/presence of a prefix (abstracting away from secondary imperfectives), as shown in table 3, with participial forms derived from the verb *nést* ‘carry’.

Table 3

	Active	Passive
Present	nesoucí ‘carrying’	nesený ‘being carried’
Past	přinesší ‘having carried’	přinesený ‘brought’ oteklý ‘swollen’

Present active participles are related to an ongoing event and are derived by means of the adjectival suffix *-í* from the feminine/neuter singular form of present (simultaneous) adverbial participles. In contrast to Polish, Czech also has adjectival past active participles, which are very bookish (they were borrowed from Russian in 19th century) and which are formed by adding the adjectival suffix *-í* to the feminine/neuter singular form of past (anterior) adverbial participles.

As to passive participles, they are only derived from transitive verbs, as in Russian and Polish. Formally, they are very similar to Polish passive participles; present passive participles, derived from imperfective verbs, end in *-ný/-tý* and past passive participles, derived from perfective verbs, end in *-ný/-tý* or *-lý*. As in Polish, Czech *lý*-participles are formed from the verbal *l*-participle of unaccusative verbs (these facts give support to the claim by McIntyre 2013 that the derivation of participles from unaccusative and transitive verbs in English – which uses the same suffixes for them – must include two distinct formation processes; see also Embick 2004 and Bruening 2014 and Meltzer-Asscher 2011 for Hebrew).<sup>2</sup>

Given this discussion, it is obvious that with respect to prefixation, the most interesting participles occur in the past passive slot; hence, in what follows, I will focus on target state *lý*-participles and *ný/-tý*-participles.

<sup>2</sup> The *l*-participle is also called *active participle* or *past participle*. As usual, I gloss the *l*-participle (and the *lý*-participle) with the English past tense form.

#### 4.2.2 Properties of *ny’-/ty’*-participles

It is known that intransitive verbs do not form the verbal *n-/t*-participle and the verbal *n-/t*-passive; see Petr (1986b), Karlík, Nekula & Rusínová (1995) and Karlík (2004) (without going into unnecessary details, the choice between *-n* and *-t* depends on the conjugation paradigm of the appropriate verb).<sup>3</sup> This holds for both unergative verbs, as in (2), and unaccusative verbs, as shown in (3).<sup>4</sup>

- (2) a. \* je pracován                      b. \* je hučen                                      c. \* je hloubán  
      is being.worked                      is being.rumbled/murmured                      is being.mused

- (3) a. \* je tečen                              b. \* je kveten                                      c. \* je blednut  
      is being.flowed                              is being.blossomed                                      is being.become.pale

Given that adjectival *ny’-/ty’*-participles formally include the verbal *n-/t*-participles, it can be argued that *ny’-/ty’*-participles are derived from *n-/t*-participles; consider also the following arguments, which show that the two types of participles behave alike. In (4) the *ny’-/ty’*- and *n-/t*-participles shorten the root vowel in contrast to the infinitive in (4a) and they do not contain the suffix *-j-* in contrast to the present tense form in (4b). The participles also show the same root-consonant allomorphy, as demonstrated in (5). Moreover, both types of participles can drop the *-nu/-nou-* suffix in contrast to the infinitive and the present tense form, as shown in (6).

- (4) a. ušít                                      b. ušije                                      c. ušit                                      d. ušitý  
      sew    sews    sewn    sewn

- (5) a. prosit                                      b. prosí                                      c. prošen                                      d. prošený  
      ask    asks    being.asked                                      being.asked

- (6) a. zatnout                                      b. zatne                                      c. zaťal (zatnul)                                      d. zaťatý (zatnutý)  
      clench    clenches    clenched    clenched

<sup>3</sup> Besides the verbal passive, *n-/t*-participles also occur in the possessive resultative construction (also called *perfect*) like *mám uvařeno* ‘I have cooked’ and the get passive, like *dostat vyhubováno* ‘get scolded’. In bookish Czech, *n-/t*-participles can also occur in the predicative position, as we will see in section 4.4.

<sup>4</sup> I mostly use the masculine ending in examples but both verbal and adjectival participles inflect for number, gender and case (case properties of verbal participles are reduced to structural cases though).

Because of the fact that *ný-/tý*-participles are based on *n-/t*-participles, we expect that *ný-/tý*-participles – just as *n-/t*-participles – cannot be derived from intransitive predicates. This is correct, as shown by (7) for unergative predicates and (8) for unaccusatives.

- |                                    |                                       |                                     |
|------------------------------------|---------------------------------------|-------------------------------------|
| (7) a. * pracovaný<br>being.worked | b. * hučený<br>being.rumbled/murmured | c. * hloubaný<br>being.mused        |
| (8) a. * tečený<br>being.flowed    | b. * kvetený<br>being.blossomed       | c. * blednutý<br>being.become.paled |

Most of the known diagnostics for unergativity/unaccusativity cannot be applied to Czech. However, building on the agentive (causative) properties of unergative verbs, at least two tests can be used here. The contrast between the grammatical examples in (9), with the agent-oriented adverb *úmyslně* ‘intentionally’, and the ungrammatical examples in (10) shows that the predicates in (2) are unergative and the ones in (3) unaccusative.

- |   |  |
|---|--|
| (9) a. Úmyslně pracoval.<br>intentionally worked<br>‘He was intentionally working.’ | b. Úmyslně hučel.<br>intentionally murmured/rumbled<br>‘He was intentionally murmuring.’ |
| c. Úmyslně hloubal.<br>intentionally mused<br>‘He was intentionally musing.’        |  |
| (10) a.* Úmyslně tekł.<br>intentionally flowed                                      | b. * Úmyslně kvetł.<br>intentionally blossomed   |
| c.* Úmyslně bledł.<br>intentionally became.pale                                     |  |

Another diagnostic, which has a restricted use, works like the well-known diagnostic with the suffix *-er* in English. The suffix *-tel* attaches only to agentive verbs, hence it can derive *hloubatel*, as shown in (11a).<sup>5</sup> The other two verbs *pracovat* and *hučet* can also derive nouns

<sup>5</sup> *Hloubatel* is not as frequent as *hloubavec* ‘somebody who muses’.

with agentive properties but they use other suffixes; see (11b) and (11c).<sup>6</sup> As shown in (12), the three verbs from (3) cannot derive agentive nouns combining with *-tel* or the suffixes *-ák* and *-ník* (which is composed of *-n-* and *-ík*).

- |         |                      |    |                          |    |            |
|---------|----------------------|----|--------------------------|----|------------|
| (11) a. | hlouba-tel           | b. | huč-ák                   | c. | pracov-ník |
|         | muse-tel             |    | rumble-ák                |    | work-ník   |
|         | ‘somebody who muses’ |    | ‘the thing that rumbles’ |    | ‘worker’   |

- |         |                    |    |                      |    |                       |
|---------|--------------------|----|----------------------|----|-----------------------|
| (12) a. | * tek-tel/-ák/-ník | b. | * kvet-tel/-ák/-ník  | c. | * blednu-tel/-ák/-ník |
|         | flow-tel/-ák/-ník  |    | blossom-tel/-ák/-ník |    | pale-tel/-ák/-ník     |

The next argument is based on the behaviour of resultative predicates. According to Levin & Rappaport Hovav (1995), resultative constructions are possible with unaccusative verbs, not with unergatives, but resultative predicates can be licensed with unergatives by a fake reflexive. This diagnostic confirms the previous result; consider the unaccusatives with resultative predicates in (13) and the unergatives with the fake reflexive *se* ‘self’ in (14).<sup>7</sup>

- |         |                                      |    |                               |
|---------|--------------------------------------|----|-------------------------------|
| (13) a. | Voda na-tekla dovnitř.               | b. | Roz-kvetl do krásy.           |
|         | water on-flowed inside               |    | apart-blossomed to beauty     |
|         | ‘Water flowed in.’                   |    | ‘It blossomed into a beauty.’ |
| c.      | Z-bledl k nepoznání.                 |    |                               |
|         | from-became.pale to non.recognition  |    |                               |
|         | ‘He became pale beyond recognition.’ |    |                               |

- (14) U-pracoval / u-hučel / u-hloubal \*(se) k smrti.  
 at-worked at-rumbled at-mused self to death  
 ‘He worked/rumbled/mused himself to death.’

Finally, the formation of *lý*-participles can also be used as a test for unaccusativity or unergativity since only unaccusative predicates derive *lý*-participles; see Medová (2012) for Czech, Cetnarowska (2000) for Polish *ły*-participles and Kosta & Frasek (2004) for both languages. Since perfectivity is necessary for the formation of *lý*-participles, the tested

<sup>6</sup> The suffix *-tel* can combine with the prefixed verb *zpracovat* ‘process’, deriving *zpracovatel* ‘processor, author’.

<sup>7</sup> The verbs in examples are prefixed to ensure that the result state is reached.



predicates below are prefixed (with the exception of *oteklý* ‘swollen’, they are prefixed with superlexical prefixes, which only add phasal and intensity properties to the lexical meaning of the base verb). The ungrammatical status of (15) shows that the predicates are unergative. In contrast, the predicates in (16) are unaccusative according to the diagnostic. The control example (17) demonstrates that the prefixed unergatives from (15) can form *l*-participles.

- |   |  |   |
|---|--|---|
| (15) a. * do-pracovalý<br>do-worked                         | b. * za-hučelý<br>behind-rumbled/murmured                                  | c. * do-hloubalý<br>to-mused                        |
| (16) a. o-teklý<br>about-flowed<br>‘swollen’                | b. roz-kvetlý<br>apart-blossomed<br>‘in blossom’                           | c. po-bledlý<br>on-became.pale<br>‘a little pale’   |
| (17) a. do-pracoval<br>to-worked<br>‘(he) finished working’ | b. za-hučel<br>behind-rumbled/murmured<br>‘(he) muttered under his breath’ | c. do-hloubal<br>to-mused<br>‘(he) finished musing’ |

Having established that the predicates *pracovat*, *hučet* and *hloubat* are unergative and the predicates *téci*, *kvést* and *blednout* unaccusative, let us now look at other properties of *ný*-/*tý*-participles.

The presence of an accusative object is a necessary condition for the formation of *ný*-/*tý*-participles. For instance, the transitive verb *číst* ‘read’ derives the *n*-/*t*-passive and *ný*-/*tý*-participles, as shown in (18). The example also shows that the verbal participles, as in (18a) and (18c), and the adjectival participles, as in (18b) and (18d), can be perfective (prefixed) as well as imperfective (unprefixed).

- |   |   |
|---|---|
| (18) a. Ten román byl čten.<br>the novel was being.read<br>‘The novel was being read.’    | b. čtený román<br>being.read novel<br>‘the novel that is being read’                    |
| c. Ten román byl roze-čten.<br>the novel was apart-being.read<br>‘The novel was started.’ | d. roze-čtený román<br>apart-being.read novel<br>‘the novel that has not been finished’ |

If the verbal object is not accusative, as in (19a), then the default agreement appears on the auxiliary and the *n-/t-*participle in the corresponding passive sentence, as shown in (19b). The passive with nominative cannot be derived, see (19c), and the related *ný’-/tý’*-participle is ungrammatical, too, as demonstrated in (19d), in contrast to the participles in (18b) and (18d). This holds true independently of whether or not the predicate is prefixed.

- (19) a. (Po-)děkovali lingvistům. c.\* Lingvisté byli (po-)děkováni.  
 on-thanked linguists.DAT linguists.NOM were (on-)being.thanked  
 ‘They were thanking linguists.’  
 ‘They thanked linguists.’
- b. Bylo (po-)děkováno lingvistům. d.\* (po-)děkování lingvisté  
 was (on-)being.thanked linguists.DAT (on-)being.thanked linguists  
 ‘They were thanking linguists.’  
 ‘They thanked linguists.’

An interesting effect of prefixation can be found in example (20), partially repeated from chapter 2.4. The verb *otročit* selects a dative argument, hence the default agreement occurs on the verbal passive in (20a) and the *ný’-/tý’*-participle is ungrammatical, as demonstrated in (20b). In contrast, the prefixed verb *zotročit* assigns structural accusative, therefore the full agreement occurs on the passive in (20c) and the *ný’-/tý’*-participle is grammatical, as shown in (20d).

- (20) a. Pravidlům nemá být otročen-o.  
 rules.DAT not.should be being.slaved-N.SG  
 ‘Man should not be a slave to rules.’
- b.\* otročená pravidla  
 being.slaved rules
- c. Celá populace byl-a z-otroč-en-a.  
 entire population.NOM was-F.SG from-being.slaved-F.SG  
 ‘They enslaved the entire population.’
- d. z-otroč-ená populace  
 from-being.slaved population  
 ‘an enslaved population’

We saw in examples (7) and (8), repeated for convenience as (21) and (22), that the unprefixed *ny’-/ty’*-participles are ungrammatical.

(21) a. \* pracovaný                      b. \* hučený                      c. \* hloubaný  
           being.worked                      being.rumbled/murmured                      being.mused

(22) a. \* tečený                      b. \* kvetený                      c. \* blednutý  
           being.flowed                      being.blossomed                      being.become.pale

However, when a prefix is attached to the predicates, grammatical judgements change. As shown below, at least some of the verbs can derive *ny’-/ty’*-participles because they are transitivised (reflexivised) by the prefix. The participles can be based on a reflexive verb, as in (23) and (24), or on a non-reflexive verb, as in (25).

(23) a. za-hloubat    se  
           behind-muse    self  
           ‘muse about sth.’  
       b. za-hloubaný                      student  
           behind-being.mused    student  
           ‘a student lost in thought’

(24) a. pře-pracovat    se  
           over-work        self  
           ‘overwork’  
       b. pře-pracovaný                      lékař  
           over-being.worked    doctor  
           ‘an overworked doctor’

(25) a. vy-pracovat  
           out-work  
           ‘work out sth.’  
       b. vy-pracované                      svaly  
           out-being.worked    muscles  
           ‘worked-out muscles’

When the base verb is not transitivised by the added prefix, the *ny’-/ty’*-participle is ungrammatical, as demonstrated by the examples below. Examples (26)-(28) show that although the prefixed unaccusative verbs form an *l*-participle, they do not derive the *ny’-/ty’*-participle. With respect to parallel behaviour of prefixed unergative verbs, consider example (29), in which the prefix does not transitivise.

- (26) a. Prst o-tekl.  
finger about-flowed  
'The finger swollen.'
- b. \* o-tečený prst  
about-being.flowed finger
- (27) a. Strom roz-kvetl.  
tree apart-blossomed  
'The tree blossomed.'
- b. \* roz-kvetený strom  
apart-being.blossomed tree
- (28) a. Pavel z-bledl.  
Pavel from-became.pale  
'Pavel became pale.'
- b. \* z-blednutý Pavel  
from-being.become.pale Pavel
- (29) a. Příklad do-hučel.  
device to-rumbled  
'The device stopped rumbling.'
- b. \* do-hučený přístroj  
to-being.rumbled device

When a predicate is transitivised by the prefix but the object is not marked with accusative, then the *ny'/ty'*-participle is ungrammatical, as demonstrated by example (30), containing the dative reflexive *si*. This again shows that the presence of an accusative object is necessary for the formation of *ny'/ty'*-participles.<sup>8</sup>

- (30) a. po-pracovat si  
on-work self.DAT  
'work for a while'
- b. \* po-pracovaný  
on-being.worked

It is known that English stative verbs like *have*, *resemble*, *cost*, albeit transitive, cannot occur in the passive. Similar facts can be observed in Czech; *ny'/ty'*- and *n-/t*-participles cannot be

<sup>8</sup> Some transitive verbs with the accusative reflexive *se* can derive both *ly'*- and *ny'/ty'*-participles, e.g., *opít se* 'get drunk': *opilý/opitý student* 'drunk student' and *vyspat se* 'get a good sleep': *vyspalý/vyspaný student* 'well-slept student'. However, there is a semantic difference: *Opilý* 'drunk' denotes a result state without specifying whether the student got drunk by himself or was made drunk by someone else, whereas *opitý* 'drunk' can only mean that the student was made drunk by someone else. As to the contrast between *vyspalý* and *vyspaný*, if the predicate is not reflexive, then only the *ny'/ty'*-participle is possible, as shown in (i).

- (i) a. Student se vyspal. ⇒ vyspalý / vyspaný student  
student self got.a.good.sleep well-slept well-slept student  
b. Student vyspal opici. ⇒ vyspaná / \* vyspalá opice  
student slept.off hangover slept.off slept.off hangover

There are also some unaccusative verbs that derive the *ny'/ty'*-participle, e.g. *zhnisáný* 'festering'. Such cases, however, are more often in dialects and colloquial Czech than in standard Czech.

derived from non-agentive (non-causative) verbs. Example (31), with the accusative experiencer, shows that even if a verb is transitive and has an accusative argument, *ny’-/ty’-* and *n-/t-* participles can be ungrammatical (see also Veselovská & Karlík 2004).

- (31) a. Pavla gól (za-)mrzel.  
 Pavel.ACC goal.NOM (behind-)regreted  
 ‘Pavel was sorry about the goal.’
- b. \* Pavel/gól byl (za-)mrzen.  
 Pavel.NOM/goal.NOM was (behind-)being.regreted
- c. \* (za-)mržený Pavel/gól  
 (behind-)being.regreted Pavel.NOM/goal.NOM

Specifically, (31a) demonstrates that the verb derives the *l*-participle and the past tense and (31b) shows that the sentence cannot be passivised, independently of whether it is the experiencer or the theme that appears in the subject position. Example (31c) then shows that the *ny’-/ty’-* participle is ungrammatical regardless of which of the arguments is modified. It is also irrelevant whether or not the predicate is prefixed.

To conclude this section, in the vast majority of cases, *ny’-/ty’-* participles are derived from agentive (causative) transitive predicates with an accusative object. Czech differs from Russian, in which *nnyj’-/tyj’-* participles are mostly formed from perfective transitives and which uses the *myj’-* participle for the present passive function, and patterns with Polish, in which *ny-/ty-* participles are also regularly derived from imperfective transitives. We have also seen that prefixes help predicates to derive *ny’-/ty’-* participles because they can transitivise unergative predicates.

#### 4.2.3 Properties of *ly’-* participles

In this section, I discuss relevant properties of *ly’-* participles. The following examples demonstrate that imperfective intransitives can form *l*-participles and the past tense.<sup>9</sup> This holds for both unergatives, as in (32), and unaccusatives, as in (33).

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<sup>9</sup> Besides past tenses, the *l*-participle also occurs in modal constructions like *přišel by* ‘he would come’, but it cannot occur in the future tense, in contrast to Polish.

(32) a. pracoval (jsem)      b. hučel (jsem)      c. hloubal (jsem)  
 worked am                  rumbled/murmured am                  mused am  
 ‘(I) was working’                  ‘(I) was rumbling/murmuring’                  ‘(I) was musing’

(33) a. tekl (jsem)      b. kvetl (jsem)      c. bledl (jsem)  
 flowed am                  blossomed am                  became.pale am  
 ‘(I) was flowing’                  ‘(I) was blossoming’                  ‘(I) was becoming pale’

However, neither the unergative verbs from (32) nor the unaccusative verbs from (33) derive *lý*-participles, as illustrated by the examples in (34) and (35).<sup>10</sup>

(34) a. \*pracovalý                  b. \*hučelý                  c. \*hloubalý  
 worked                          rumbled/murmured                          mused

(35) a. \*teklý                  b. \*kvetlý                  c. \*bledlý  
 flowed                          blossomed                          became.pale

At first sight, it is surprising because *lý*-participles are based on *l*-participles. Cetnarowska (2000) argues that the Polish suffix *-l* in verbal *l*-participles is identical with the *-l-* in adjectival *lý*-participles because the two participles show formal identity and also identical morphological alternations. The same also holds for Czech participles; the verbal *l*-participle and the adjectival *lý*-participle can, for instance, drop the *-nu/-nou-* suffix in contrast to the infinitive and the present tense form, as shown in (36). Example (37) then demonstrates that the two participles have the same thematic vowel and in this respect differ from the infinitive and the present form and example (38) shows that the participles also pattern together in the root allomorphy.

(36) a. vypnout                  b. vypne                  c. vypl (vypnul)                  d. vyplý (vypnutý)  
 turn.off                          turns.off                          turned.off                          turned.off

<sup>10</sup> There are some apparent counterexamples to this generalisation, e.g. *plynulý* ‘fluent’, *lesklý* ‘shiny’, *bdělý* ‘vigilant’. According to Petr (1986a), however, words like these are true adjectives. They are often gradable and often undergo meaning shift (for similar facts see Bartnicka 1970, who deals with adjectivised past participles in Polish).

(37) a. probdít                      b. probdí                      c. probděl                      d. probdělý  
           be.awake                      is.awake                      was.awake                      sleepless

(38) a. spéct (se)                      b. speče (se)                      c. spekl (se)                      d. speklý  
           fuse self                      fuses self                      fused self                      fused

The data in (39) and (40), repeated from (16), show that the formation of *lý*-participles is sensitive to aspectual properties. When the verbs under discussion are prefixed, some of them derive *lý*-participles since verbal prefixes have a perfectivising and telicising effect, as we saw in chapter 2; compare (34) and (35) with (39) and (40); see also Weiss (1977) and Cetnarowska (2000) for the claim that Polish *lý*-participles can be derived only from perfective verbs and Kopečný (1959), Maslov (1988) and Giger (2003), who argue that resultatives are only derived from perfective verbs, and Giger (2009), who claims that target state participles are derived from telic verbs. In the same vein, Cetnarowska (2000) argues that Polish resultative *lý*-adjectives are derived from telic predicates. As to non-Slavic languages, see, for instance, Kratzer (1994, 2000) and Rapp (1996), who argue that adjectival participles in German are derived from telic verbs, which have an eventive and a stative component. For similar suggestions with respect to Greek participles, see Anagnostopoulou (2003) and Alexiadou & Anagnostopoulou (2008), who argue that participles derived from activities are marginal and participles derived from statives ungrammatical.

(39) a. \* vy-pracovalý                      b. \* do-hučelý                      c. \* za-hloubalý  
           out-worked                      to-rumbled/murmured                      behind-mused

(40) a. o-teklý                      b. roz-kvetlý                      c. po-bledlý  
           about-flowed                      apart-blossomed                      on-became.pale  
           ‘swollen’                      ‘in blossom’                      ‘a little pale’

In addition, it is only *unaccusative* perfective, telic verbs that can derive *lý*-participles, as shown by the contrast between the ungrammatical unergatives in (39) and the grammatical unaccusatives in (40) (see also (15) for more examples with unergatives). For this reason, the formation of *lý*-participles has been used as a diagnostic for unaccusativity, as already discussed in the previous section. In this respect, Czech behaves as many other languages;

consider, for instance, the English and German examples in (41) and (42), which show that the unergative participle is ungrammatical in contrast to the unaccusative one.

- |         |                       |    |                   |
|---------|-----------------------|----|-------------------|
| (41) a. | * worked man          | b. | frozen man        |
| (42) a. | * gearbeiteter Mensch | b. | gefrorener Mensch |
|         | worked man            |    | frozen man        |

The formation of *lý*-participles is also sensitive to the (in)transitivity status of the appropriate predicate. As argued by Lamprecht, Šlosar & Bauer (1986), Karlík, Nekula & Rusínová (1995) and Nübler (2004), transitive predicates do not derive *lý*-participles in Modern Czech. This is illustrated below. Although transitive verbs form *l*-participles, as in (43), they do not derive *lý*-participles, as shown in (44). Thus, of the two types of adjectival participles in the passive slots, *lý*-participles are restricted to unaccusative predicates and *ný*-/*tý*-participles are built from transitives, as already mentioned in section 4.2.1.

- |         |                |    |               |    |                |
|---------|----------------|----|---------------|----|----------------|
| (43) a. | za-kryl        | b. | po-sunul      | c. | od-lepil       |
|         | behind-covered |    | on-pushed     |    | away-pasted    |
|         | ‘(he) covered’ |    | ‘(he) pushed’ |    | ‘(he) unstuck’ |
| (44) a. | * za-krylý     | b. | * po-sunulý   | c. | * od-lepilý    |
|         | behind-covered |    | on-pushed     |    | away-pasted    |

Transitive predicates with the suffix *-nou/-nu-* behave exceptionally since they can often form both participles, the *ný*-/*tý*-participle with *-nu-* and the *lý*-participle without *-nu-*, for example, *odemknout* ‘unlock’ derives *odemknutý* and *odemklý* and *zapnout* ‘fasten, turn on’ derives *zapnutý* and *zaplý*. Note that verbs with *-nou/-nu-* already had a special status in Old Church Slavonic because the suffix *-NĀ-* was omitted in preterite active participles, perfect active participles and the asigmatic aorist.

In certain cases, there is a semantic difference between the two participles; consider (45) with participles derived from the verb *přepadnout* ‘fall over’.<sup>11</sup> The *ný*-/*tý*-participle expresses

<sup>11</sup> The adjectives are resultant state participles, not target state participles.



the transitive meaning of the verb and the *lý*-participle the unaccusative meaning, which is in accordance with the generalisation above.<sup>12</sup>

- |         |  |    |   |
|---------|--|----|---|
| (45) a. | přepadený člověk<br>fallen.over man<br>'a man that was mugged' | b. | (přes zábradlí) přepadlý člověk<br>over railing fallen.over man<br>'a man that fell over a railing' |
|---------|--|----|---|

In this section, we have seen that with the exception of verbs with the suffix *-nou-/nu-*, only perfective/telic, unaccusative predicates derive *lý*-participles.<sup>13</sup> Prefixes again play an important role in this process because they perfectivise the base verb and turn atelic eventualities into telic ones. For a predicate to be able to derive a resultative (target state) adjectival participle, like the *lý*-participle, it must be telic, that is, must have the potential to include a result state, and it must be perfective, that is, the result state must be reached.

### 4.3 The stativiser

In what follows, I investigate the morphosyntactic structure of adjectival participles and discuss the positioning of the stativising operator in the participial structure. Consider the contrast between the unprefixed, that is, imperfective, *l*-participles in (32) and (33), repeated as (46) and (47), and the ungrammatical *lý*-participles in (34) and (35), repeated below as (48) and (49).

- |         |   |    |   |    |   |
|---------|---|----|---|----|---|
| (46) a. | pracoval (jsem)<br>worked am<br>'(I) was working' | b. | hučel (jsem)<br>rumbled/murmured am<br>'(I) was rumbling/murmuring' | c. | hloubal (jsem)<br>mused am<br>'(I) was musing'            |
| (47) a. | tekl (jsem)<br>flowed am<br>'(I) was flowing'     | b. | kvetl (jsem)<br>blossomed am<br>'(I) was blossoming'                | c. | bledl (jsem)<br>became.pale am<br>'(I) was becoming pale' |

<sup>12</sup> There are also some transitives without *-nou-/nu-* that derive *lý*-participles, like *zdědilý* 'inherited', *rožlý* 'switched on', but these cases are very often archaic or dialectal; see Kopečný (1962).

<sup>13</sup> As to the difference between unaccusative and transitive predicates, consider also the often-made claim in the literature on English (Bruening 2014 and references therein) that unaccusatives derive the adjectival passive but do not the verbal passive.

- |                               |                                 |                            |
|-------------------------------|---------------------------------|----------------------------|
| (48) a. * pracovalý<br>worked | b. * hučelý<br>rumbled/murmured | c. * hloubalý<br>mused     |
| (49) a. * teklý<br>flowed     | b. * kvetlý<br>blossomed        | c. * bledlý<br>became.pale |

The verbal participles in (46) and (47) show that the participial morpheme *-l* can attach to imperfective verbs. This means that the ungrammatical status of the adjectival *lý*-participles in (48) and (49) is not due to aspectual selectional requirements of the morpheme *-l*, as the comparison of (49) with the prefixed (50), repeated from (40), might suggest.

- |  |  |   |
|--|--|---|
| (50) a. o-teklý<br>about-flowed<br>'swollen' | b. roz-kvetlý<br>apart-blossomed<br>'in blossom' | c. po-bledlý<br>on-became.pale<br>'a little pale' |
|--|--|---|

The ungrammaticality of the adjectival *lý*-participles in (48) and (49) also cannot be based on aspectual selectional requirements of the agreement marker *-ý* because it can attach to imperfective verbs, too, as shown by forms like *čtený* 'being read' in (18b). The reason must be found somewhere else.

Since the perfective *lý*-participles in (50) have a stative (resultative) interpretation, I will follow the proposal by Biskup (2010, 2016b), who, building on Kratzer (2000), assumes that there is a covert affix between the participial *-l* and the ending *-ý* that represents an adjectival head and functions as a target state operator. The stative property is confirmed by example (51), with the predicate *zůstat* 'remain', which can co-occur with a stative complement but cannot with an eventive complement (for other verb tests, which cannot be applied to Czech, see Anagnostopoulou 2003 and references therein).

- |         |                                      |          |           |          |        |
|---------|--------------------------------------|----------|-----------|----------|--------|
| (51) a. | Zůstal                               | klidný / | nemocný / | zdravý / | slabý. |
|         | remained                             | calm     | ill       | healthy  | weak   |
|         | 'He remained calm/ill/healthy/weak.' |          |           |          |        |
| b.      | * Zůstal                             | plavat / | jet /     | padat /  | bodat. |
|         | remained                             | swim     | go        | fall     | stab   |

- c. Zůstal oteklý / rozkvetlý / pobledlý.  
 remained swollen in.blossom a.little.pale  
 ‘He/it remained swollen/in blossom/a little pale.’

Example (51a) demonstrates that *zůstat* is compatible with adjectives; (51b) shows that *zůstat* is not compatible with eventive predicates; and crucially, (51c) demonstrates that it is compatible with the *lý*-participles from (50).

*Ný*-/*tý*-participles derived from perfective predicates also have a stative interpretation (cf. Kopečný 1962); therefore, they can co-occur with *zůstat*, as shown in (52a).<sup>14</sup> In contrast, the eventive, unprefixated participles *čtený*, *hlášený*, *topený*, *česaný* are ungrammatical; see (52b). The unprefixated *hloubaný* and *pracovaný* are ungrammatical because of their intransitivity, independently of *zůstat*.

- (52) a. Zůstal rozečtený / přihlášený / zatopený /  
 remained unfinished.reading registered flooded  
 učesaný / zahloubaný / vypracovaný.  
 combed mused worked-out  
 ‘He/it remained unfinished/registered/flooded/combed/mused/worked-out.’
- b. \* Zůstal čtený / hlášený / topený / česaný.  
 remained being.read being.announced being.drowned being.combed

For this reason, I also assume the stativiser in the adjectival head of perfective *ný*-/*tý*-participles. Recall that prefixes almost always turn atelic eventualities into telic ones and that they – the incorporated prepositions – introduce a state variable into the derivation, as proposed in chapter 2. This fits in with the idea that the target state operator can apply only to predicates that have a *visible* state (e.g. Kratzer 2000 and Alexiadou, Rathert & von Stechow 2003). Given this proposal, the reason why the *-lý* participles in (49) are ungrammatical in contrast to the participles in (50) is that they do not have a prefix, which would introduce a state variable that could license the application of the stativiser.

<sup>14</sup> Since *zůstat* selects temporary properties, the combination of *zůstat* and the resultant state *dočtený* ‘read to the end’ (or *přečtený* ‘read to the end’) is ungrammatical.

In the same vein, in the case of *ný-/tý*-participles derived from eventive predicates, only the prefixed participles, like in (52a), which have the state variable added by the prefix, can have a stative interpretation.<sup>15</sup>

#### 4.4 The stativiser and the structure of *lý-* and *ný-/tý*-participles

The stativising operator cannot be realised by the participial affixes *-l* or *-n/-t* because these affixes also derive words which do not have a stative meaning, as shown, for instance, by the *n*-participle *čten* ‘being read’ in (18a) and the *l*-participle *pracoval* ‘was working’ in (32a). For the same reason, the stativiser also cannot be attached somewhere lower in the structure because then one would expect the stative meaning to be possible with all words that syntactically embed the operator (unless its effect is neutralised by some assumption). The stativising operator also cannot be represented by the prefix itself since prefixed words do not have to be stative, as demonstrated by eventive *l*-participles like *odlepil* ‘unstuck’ in (43c).

The stativising operator also cannot be spelled out by the adjectival ending *-ý* because the suffix can occur in words without a stative meaning, as demonstrated in (53). The translations show that in (53a) the interpretation is progressive and in (53b) numeral.

- (53) a. *topen-ý*                      *člověk*  
          being.drowned-M.SG.NOM    man  
          ‘the man who is being drowned’
- b. *čtver-ý*                      rum  
          four-M.SG.NOM      rum  
          ‘four kinds of rum’

Given that the stativiser must be higher than the participial affixes *-l* and *-n/-t* and cannot be realised by the adjectival ending, I assume that there is a covert head that embeds the

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<sup>15</sup> With the exception of a few simplex verbs that are perfective/telic without a prefix and cases like (i). With respect to unprefixated case like (i), which - given the long ending - can only have the stative reading in standard Czech, there are at least two possibilities. *Lepená* can either be analysed as a true adjective (see Petr 1986a, Štícha 1986) or as a participle with the perfective interpretation, i.e., with the telic meaning. Note also that it has been proposed for perfective unprefixated predicates that they contain a covert prefix (Fowler 1996). Cases like *čtený autor* ‘a popular author’ can only be analysed as adjectives. This is supported by the meaning shift of *čtený* and the fact that *čtený* is gradable, as shown in (ii).

- (i) Ta knížka je lepená.  
    the book is glued  
    ‘The book is glued.’
- (ii) Hemingway je čtenější než Tolstoj.  
    Hemingway is more.widely.read than Tolstoj  
    ‘Hemingway is more popular than Tolstoj.’

participial projection PartP headed by one of the participial affixes. This head contains the stativising operator and is of adjectival nature since *lý*-participles and *ný/-tý*-participles inflect as adjectives. The adjectival ending *-ý/-á/-é* itself is an agreement marker expressing  $\phi$ -features of the adjectival head *a*; historically, these suffixes are composed of a nominal ending and a personal pronoun. In contrast to these long endings, verbal participles have short endings *-ø/-a/-o*, which are reduced to structural cases and are of nominal nature historically.

As discussed above, verbal participles occur in analytical verb forms, *l*-participles in past tenses and modal constructions and *n*-/*t*-participles in the verbal passive, in the perfect and the get passive. In contrast, adjectival participles occur in the attributive position, as in *zabloubaný student* ‘a student lost in thought’ from (23b), and in the predicative position; consider the target state participles in (54) (recall that target states differ from resultant states in that they can be modified by *still*).<sup>16</sup>

- (54) Jirka je stále ještě za-hloubaný / po-bledlý.  
 Jirka is still behind-being.mused on-became.pale  
 ‘Jirka is still lost in thought/somewhat pale.’

The generalisation drawn from the data is that long endings are related to stativity and short forms to eventivity (cf. Petr 1986b, Veselovská & Karlík 2004, Taraldsen & Medová 2007 and Caha 2009: chap. 5; and also Geist 2010 and Borik 2013 for the difference between Russian short-form and long-form participles and adjectives). Given this, it is reasonable to propose that the adjectival head *a* is present only in long forms, that is, in adjectival participles, and that the stativiser occurs in this head. Verbal participles then project only the participial phrase, hence the extended verbal projection cannot be stativised, and short endings are markers realizing  $\phi$ -features of the participial head.

There are two problematic cases. First, *n*-/*t*-participles can also occur in the predicative position. However, such cases with the stative reading are bookish or archaic. Consider example (55), which is ambiguous between the eventive (verbal passive) reading and the stative (adjectival passive) reading.

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<sup>16</sup> In colloquial Czech, in certain Bohemian dialects, the adjectival (long) participles can also occur in the verbal passive. For the verbal (short) *n*-/*t*-participles in the predicative position see below.

- (55) Ten toustovač byl rozbit už před dvěma týdny.  
 the toaster was broken already before two weeks  
 ‘The toaster was broken already two weeks ago.’

According to the proposal above, the short form *rozbit* should project only the participial phrase, hence the interpretation should only be eventive, contrary to the facts. Or, considering the stative interpretation, the adjectival head should project; but then the participle should have the long form *rozbitý*.

To account for these facts, I assume that the adjectival head with the stativiser indeed projects and that at PF the short vocabulary item  $-\emptyset$  is inserted instead of the long ending  $-\acute{y}$ . This strategy is suboptimal, which is why *n-/t-*participles with the stative interpretation in the predicative position are judged as bookish or archaic.

Second, it seems that not all adjectival participles in the attributive position – which have the long ending – have a stative interpretation. The prefixed attributive participles in (23)-(25), repeated below in more complex examples, have a stative reading: a student is in the state of being lost in thought, a doctor is in the state of being overworked and some muscles are in the worked-out state (see also the diagnostic in (52)).

- (56) a. Ten za-hloubaný student sedí támhle.  
 the behind-being.mused student sits there  
 ‘The student lost in his thought is sitting over there.’
- b. Ten pře-pracovaný lékař je na dovolené.  
 the over-being.worked doctor is on holiday  
 ‘The overworked doctor is on holiday.’
- c. Jeho vy-pracované svaly mu nepomohly.  
 his out-being.worked muscles him not.helped  
 ‘His worked-out muscles did not help him.’

As to unprefixed participles, they have an eventive reading; see (57) (cf. also (52b)), where the participles do not express a state but a process. Specifically, the news is being reported; a boy is being drowned and a girl is being combed.

- (57) a. Ta zpráva (zrovna teď) hlášená v místním rozhlasu nebude nikoho  
 the news (right now) being.reported in local radio will.not nobody  
 zajímat.  
 interest  
 ‘The news reported in the public address system (right now) will not interest  
 anybody.’
- b. Tomu topnému chlapci se to vůbec nelíbí.  
 the being.drowned boy self it at.all not.likes  
 ‘The boy that is being drowned does not like it at all.’
- c. Té česané holčičce dávají bonbón.  
 the being.combed girl give bonbon  
 ‘They are giving a bonbon to the girl that is being combed.’

Thus, only the prefixed attributive participles have a stative interpretation. This is in accordance with the proposal above. Since prefixes introduce a state variable, the participles in (56) can have a stative interpretation in their structure, in contrast to the participles in (57).

This pattern is parallel to the behaviour of German prenominal past participles. The following example shows that atelic predicates like the one in (58a), taken from Rapp (1997: 242), originally from Paul & Stolte (1962: 311), have an ongoing interpretation in the prenominal position and telic predicates like the one in (58b) have a stative (resultative) interpretation.

- (58) a. ein von vier Pferden gezogener Wagen  
 a by four horses pulled cart
- b. ein von vier Pferden in den Hof gezogener Wagen  
 a by four horses in the courtyard pulled cart

The directional adverbial has the same telicising effect as the prefixes discussed above. In contrast to standard German, however, Slavic languages have the morphological aspect, which is relevant to the derivation of resultative participles, too. Specifically, although the prefixes in example (59) introduce the state, the participles are not stative. Since they contain the secondary imperfective suffix *-va-*, they have the ongoing interpretation.

- (59) vypracováváný / přepracováváný úkol  
 worked.out reworked assignment  
 ‘an assignment that is being worked out/reworked’

To conclude this discussion, the adjectival head does not necessarily have the stative semantics in *ny’-/ty’*-participles. This, however, only holds for the attributive position; in the predicative position, only prefixed *ny’-/ty’*-participles can occur (except the cases discussed in footnote 15), given the presence of the copula *být* ‘be’. Consider the ungrammatical examples in (60), having the participles from (57) in the predicative position.

- (60) a. \* Ta zpráva je hlášená (v místním rozhlase).  
 the news is being.reported (in local radio)  
 b. \* Ten chlapec je topený.  
 the boy is being.drowned  
 c. \* Ta holčička je česaná.  
 the girl is being.combed

In contrast, the prefixed participles from (56) can occur in the adjectival passive, as illustrated by the examples in (61).

- (61) a. Ten student je za-hlobaný.  
 the student is behind-being.mused  
 ‘The student is lost in his thought.’  
 b. Ten lékař je pře-pracovaný.  
 the doctor is over-being.worked  
 ‘The doctor is overworked.’  
 c. Jeho svaly jsou vy-pracované.  
 his muscles are out-being.worked  
 ‘His muscles are worked-out.’

Since in contrast to the copula *být* ‘be’ in the adjectival passive, the homophonous auxiliary *být* ‘be’ in the verbal passive can embed unprefixated (imperfective) participles – as in *Ten román byl čten* ‘The novel was being read’ from (18a) –, I consider these two verbs to be different elements (contrary to Veselovská & Karlík 2004). This is supported by the fact that



the verbs have different distributional properties (see Krchňavá 2010). The following example, taken from Krchňavá (2010: 78), demonstrates that the raising verb *zdát se* ‘seem’ selects only *být* with the stative (adjectival) participle, as in (62a), not *být* with the eventive (verbal) participle, as in (62b). The control examples in (62c) and (62d) show that both participles with *být* are grammatical if they are not embedded under *zdát se*.

- (62) a. Pokoj se zdá být uklizený.  
 room self seems be cleaned  
 ‘The room seems to be cleaned.’
- b. \* Pokoj se zdá být uklízen.  
 room self seems be cleaned
- c. Pokoj je uklizený.  
 room is cleaned  
 ‘The room is cleaned.’
- d. Pokoj je uklízen.  
 room is cleaned  
 ‘The room is being cleaned.’

Another distributional argument is presented in (63), with the perfective semelfactive *kopnout* ‘kick’. Semelfactive verbs are instantaneous events consisting of a single point that do not contain a change of state (see e.g. Smith 1991). Therefore, if the copula *být* selects a complement with a stative component, then when combined with a semelfactive verb like *kopnout*, it should produce an ungrammatical sentence. This is indeed the case, as shown in example (63a), with the adjectival participle *kopnutý*.

- (63) a. \* Pavel byl kopnutý.  
 Pavel was kicked
- b. Pavel byl kopnut.  
 Pavel was kicked  
 ‘Pavel was kicked.’

The second relevant point with respect to (63) is that if the verb *být* occurring in verbal passives were identical to the copula *být*, then it would not be clear why the *být* in (63b) can freely combine with the semelfactive verbal participle *kopnut*.

The proposal that the copula *být* selects only a complement with a stative component is also supported by the fact that it cannot embed adjectival present participles, which are derived only from imperfective verbs and have an ongoing interpretation; consider (64).

- (64) \* Jirka je dělající / česající / čtoucí.  
Jirka is working combing reading

The final argument for the different status of the two verbs *být* is of comparative nature. There are many languages that use different verbs in the verbal and adjectival passive; consider, for instance, the following German example (see also Rapp 1997, Kratzer 2000 for arguments that adjectival passives are not perfect verbal passives with the auxiliary *worden* ‘become’ deleted).

- (65) a. Das Haus ist verkauft.  
the house is sold  
‘The house is sold.’  
b. Das Haus wird verkauft.  
the house becomes sold  
‘The house is being sold.’

As to Slavic languages, consider example (66), coming from Polish, which differentiates between auxiliaries in the verbal and the adjectival passive in the case of perfective main verbs.

- (66) a. To dziecko zostało umyte.  
the child became washed  
‘The child was washed.’  
b. To dziecko było umyte.  
the child was washed  
‘The child was washed.’

There are some cases with unprefixes *ny’-/ty’*-participles in the predicative position; see (67). However, as already mentioned in footnote 15, such cases receive a different analysis; the *ny’-/ty’*-forms are standardly analysed as adjectivised participles denoting a property of the entity

over which they predicate (Trávníček 1923; Petr 1986a,b; Štícha 1986; Giger 2003; see also Horecký *et al.* 1989 for Slovak and Isačenko 1962, Kalakuckaja 1971 for Russian). Thus, *vařené* denotes a true adjective that denotes a gastronomic kind of potatoes and can be contrasted, for instance, with baked potatoes.<sup>17</sup>

- (67) Ty brambory jsou vařené.  
 the potatos are cooked  
 ‘The potatoes are cooked.’

As to *ny’-/ty’*-participles in the perfective use and perfect constructions like in (68a) and (68b), respectively, they are imperfective but denote a telic event (see e.g. Hausenblas 1963). Hence, independently of how such cases are analysed (there could e.g. be a covert prefix adding a state variable), they do not pose a challenge to the claim that in the predicative position only participles with a stative component occur (cf. Kratzer 2000, Meltzer-Asscher 2011 for the claim that adjectival passives are derived only from verbs that have states as part of their meaning).

- (68) a. To pivo je placené.  
 the beer is being.paid  
 ‘The beer has been paid.’
- b. To pivo mám placené.  
 the beer I.have being.paid  
 ‘I have paid for my beer.’  
 ‘Somebody has paid for my beer.’

Since *l*-participles can be derived from all types of verbs, *-l* realises any participial head, as schematised in (69a). In contrast, the suffix *-n/-t* is more specific; it spells out a participial head that has selectional features [agent(ive), *p*] since *n/-t*-participles can only be derived from agentive transitive verbs; consider (69b).<sup>18</sup> The feature [*p*] stands for transitivity because all verbal arguments that do not merge in the specifier of *vP* – including the direct object – merge in a prepositional phrase *pP* selected by the root, as discussed in chapter 2.8.2.

- (69) a. [PartP [Part *l* [ ]]]  
 b. [PartP [Part [agent, *p*] *n/t* [ ]]]

<sup>17</sup> *Lý*-participles are well-behaved since they must always be perfective, as we saw in section 4.2.3.

<sup>18</sup> Let us assume that the vocabulary item *-n/-t* has features [agent(ive), *p*], in contrast to *-l*.

Since I assume the copy theory of movement and the incorporation analysis of head movement, the agentive  $v$  and the selectional feature  $[p]$  of the verbal root are visible for the participial head. More generally, given the head movement analysis of Slavic verbs proposed in the preceding chapters, the information about the object will always be accessible, independently of whether or not the preposition introducing it incorporates into the root.

Recall that the adjectival head  $a$  is present only in long forms, that is, in adjectival participles. In contrast to  $l$ -participles, which can be derived from all types of verbs,  $l\acute{y}$ -participles are only formed from unaccusative verbs, as discussed in section 4.2.3. For this reason, I assume that the stativising head  $a$  selects a complement with the unaccusative  $v$ , which does not introduce an external argument, in contrast to the active and passive  $v$  (which can introduce the instrumental agent), as shown in (70).

(70) [ $a$ P  $a_{\text{stat}}$  [ $\text{unacc}$ ] [ $\text{PartP}$  [ $\text{Part}$   $l$  [ ]]]]

The fact that  $l\acute{y}$ -participles are only formed from telic (prefixed) predicates will be derived by the semantic (in)compatibility of the stativiser with the meaning of its sister. Specifically, the (in)compatibility depends on whether or not the sister contains a state variable, which is introduced by prefixes, as we already know. As discussed in section 4.1, the target state operator needs a predicate with an event argument and a state argument; hence, when it combines with an unprefixated predicate, which does not have the state argument, the derivation results in semantic mismatch.

The question arises as to why  $l\acute{y}$ -participles like *rozkvétalý* (based on the grammatical imperfective verb *rozkvétat* ‘be coming into blossom’), which contain a prefix – that is, the state component –, are ungrammatical. The fact that the perfective form without the secondary imperfective suffix *rozkvětly* (based on *rozkvést* ‘come into blossom’) is grammatical shows that it is the morphological aspect that is relevant here. In chapter 2, we saw that in the case of the imperfective aspect, the reference time is included in the event time. Given this *inner* perspective on the event, imperfective predicates do not express that a result state is or will be reached. For this reason, it does not make any sense to predicate a result state over an entity in the actual world.<sup>19</sup>

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<sup>19</sup> One could also propose that the ungrammatical status results from semantic mismatch between the target state operator – which existentially binds the event argument and projects the state argument – and the meaning of its sister containing the imperfective aspectual head existentially quantifying over the eventuality arguments  $s$  and  $e$ . In contrast, if the perfective head can – in addition to the meaning discussed in chapter 2.8.2 – also have the meaning without existential quantifiers (as proposed in 4.6):  $\lambda R\lambda s\lambda e[R(s)(e) \ \& \ \tau(e)\sqsubseteq t \ \& \ \tau(e)\supset\subset\tau(s)]$ , there will be no mismatch. The question, however, is whether such a difference is defensible.

Let us turn to *ny’-/ty’*-participles now. Given that *ny’-/ty’*-participles are derived from transitive verbs, the stativising adjectival head of these participles does not have the unaccusative selectional feature in contrast to the adjectival head present in *ly’*-participles.

The fact that stative *ny’-/ty’*-participles are formed from telic verbs will be analysed as in the case of *ly’*-participles. Recall that unprefixed *ny’-/ty’*-participles in the attributive position have an eventive interpretation, like *čtená kniha* ‘a book that is being read’. Combining the stativising adjectival head with this type of participles will again result in a semantic mismatch since unprefixed *ny’-/ty’*-participles do not contain a state component (with the exception of a few perfective, telic simplex verbs). Hence, the stative interpretation results from combining the target state operator of *a<sub>stat</sub>* with prefixed *ny’-/ty’*-participles and unprefixed participles like *čtená kniha* are derived by a non-stativising adjectival head.

On the other hand, combining the non-stativising adjectival head with a prefixed participle will not derive the stative meaning, as with prefixed secondary imperfectives like *vypracovávaný* ‘being worked out’. In this respect, *ny’-/ty’*-participles differ from *ly’*-participles, which only have the stativising adjectival head and do not derive grammatical secondary imperfectives (as shown by the ungrammatical *rozkvétalý* above).

Taken together, the higher structure of *ny’-/ty’*-participles looks like (71). The difference between the two types of *ny’-/ty’*-participles is that the adjectival head in the eventive attributive *ny’-/ty’*-participles does not have the target state operator, hence it does not stativise the extended verbal projection.

- (71) a. [<sub>aP</sub> *a<sub>stat</sub>* [<sub>PartP</sub> [<sub>Part</sub> [<sub>agent, p</sub> *n/t* [ ] ] ] ] ] ] ]  
 b. [<sub>aP</sub> *a* [<sub>PartP</sub> [<sub>Part</sub> [<sub>agent, p</sub> *n/t* [ ] ] ] ] ] ] ]

With respect to the question as to why the stativiser is always present in the adjectival head of *ly’*-participles, in contrast to *ny’-/ty’*-participles, one possibility is that the eventive interpretation of *ly’*-participles is blocked by the existence of *ci’*-participles, which also derive the eventive interpretation from unaccusative verbs; consider (72a) for unaccusatives, (72b) for unergatives and (72c) for transitives. The eventive interpretation of *ny’-/ty’*-participles is not blocked since these participles are derived from transitives and *ci’*-participles cannot modify the accusative object, as shown in (72d).

- (72) a. hořící dům      b. štěkající pes      c. čtoucí student      d.\* čtoucí kniha  
 burning house      barking dog      reading student      reading book

In this respect, I follow the proposal by McIntyre (2013), who argues that the ongoing interpretation of English unaccusative participles such as *fallen leaves* is blocked by the existence of *ing*-participles like *falling leaves*.

As discussed in section 4.2.2, while *n*-/*t*-participles receive the default agreement when the verbal object is marked with case other than structural accusative, *ny*'-/*ty*'-participles are ungrammatical in such a case; consider (73), repeated from (19).

- (73) a. Bylo děkováno lingvistům.                                      b. \*děkování lingvisté  
       was being.thanked linguists.DAT                                      being.thanked linguists  
       ‘They were thanking linguists.’

Thus, there are two important factors in this matter, the type of the participle – verbal versus adjectival – and case properties of the internal argument, structural accusative versus other cases.

It has been argued that the object over which the adjectival participle predicates does not originate in the verbal domain but is merged outside the participle (Belletti & Rizzi 1981, Levin & Rappaport 1986, McIntyre 2013, Bruening 2014). Following Bruening (2014), I assume that the adjectival participle contains a null operator representing the internal verbal argument (in my analysis generated in the prepositional phrase), which is attracted by the adjectival head, which wants to have a nominal element in its specifier, as schematised in (74). This movement forms a predicate of individuals from the proposition; hence the adjectival phrase can combine with the noun, either via functional application or via predicate modification (as we will see in the semantic derivation in section 4.6).

- (74)  $[_{DP} D [_{NP} N [_{aP} Op_1 [_{a_{stat}} [ \dots [_{pP} t_1 ] ] ] ] ] ] ] ] ]$

Recall from chapter 3 that in the case of defective prepositional phrases, the head P does not have  $\phi$ -features and does not assign case – hence the prepositional complement receives structural accusative from the aspectual head after its movement to the outer specifier of  $\nu P$  – and the preposition can only occur as a prefix on the verb. In contrast, in non-defective prepositional phrases, the prepositional complement receives prepositional case from the head P and must not move because the movement would violate the A-over-A principle applied to

the perfective Tense-feature, as discussed in chapter 2.8.1.<sup>20</sup> Consider example (75) with a non-defective prepositional phrase, from which the prepositional complement cannot move.

- (75) a. Pavel (na-)sypal koření na stůl.  
 Pavel on-poured spice on table  
 ‘Pavel poured/was pouring spice on the table.’
- b. Na stůl Pavel (na-)sypal koření.  
 on table Pavel on-poured spice  
 ‘On the table, Pavel poured/was pouring spice.’
- c. \* Stůl Pavel (na-)sypal koření na.  
 table Pavel on-poured spice on

Given the impossibility of preposition stranding and the assumption that non-structural cases like the dative in (73a) are assigned by a covert non-defective preposition (the object cannot be marked with structural accusative), the null operator generated as the complement of the non-defective P in adjectival participles cannot move to the specifier position of *a* and cannot abstract over the structure.<sup>21</sup> Consequently, the appropriate type  $\langle e, t \rangle$  is not derived, the participle remains a proposition and cannot combine with the to-be-modified noun (which standardly is of the type  $\langle e, t \rangle$ ); as shown by the ungrammatical status of (73b).

In contrast, in cases like (76a), the null operator can move out of the prepositional phrase (via the  $\nu$  P edge) since the preposition is defective, as demonstrated by example (76b), in which the preposition does not assign case and is spelled out only as a verbal prefix.<sup>22</sup> Note that *z* only assigns genitive and that the object corresponding to the operator is marked with structural accusative in (76b).

- (76) a. z-otročená populace  
 from-being.slaved population  
 ‘an enslaved population’
- b. Z-otročili celou populaci.  
 from-slaved entire population  
 ‘They enslaved the entire population.’

<sup>20</sup> It remains to be seen whether the proposal holds universally, i.e., whether preposition stranding is restricted to languages that do not have the morphological aspect.

<sup>21</sup> As we already know from the preceding chapters, the covert nature of the preposition does not necessarily mean that the head P is defective.

<sup>22</sup> The defective status is supported by the semantic emptiness of the prefix.

Concerning *n-/t-* (verbal) participles, like in (73a), they do not contain the adjectival projection; thus, there is no probe that could move the prepositional complement. *N-/t-* participles also do not contain a null operator; the appropriate object merges directly in the prepositional phrase.

However, the dative object can move, as shown in (77). This type of movement is optional and can be treated as scrambling or topicalisation of the entire prepositional phrase; compare the grammatical topicalisation example in (75b). Note that if the covert preposition were stranded, we would expect (77) to be ungrammatical given the violation of the A-over-A principle, as discussed in 2.8.1. Since the object participated in the Agree relation with the head P, the *n-/t-* participle and the auxiliary in the passive must receive the default agreement, as demonstrated in (77).

- (77) *Lingvistům<sub>1</sub> bylo děkováno t<sub>1</sub>.*  
 linguists.DAT was.N.SG being.thanked.N.SG  
 ‘They were thanking linguists.’

The movement of the whole prepositional phrase might be used to avoid preposition stranding in the case of *ny’-/ty’-* participles, however, given that the adjectival head needs to move the operator alone, such a derivation would exhibit a Freezing effect (cf. Ross 1967, Wexler & Culicover 1980, Müller 1998, Boeckx 2008).

Let us now move down in the participial structure. Example (78) demonstrates that the secondary imperfective suffix *-va-/-vá-/-a-* is closer to the root than the participial morphemes *-l* and *-n/-t*.<sup>23</sup> Given that the participial morphemes represent the participial head and the secondary imperfective suffix spells out the aspectual head, the participial projection must be higher than the aspectual projection in the participial structure.

- (78) a. *při-děl-á-va-l*                      b. *při-děl-á-vá-n*                      c. *roz-kvét-a-l*  
 at-do-TH-SI-PART                      at-do-TH-SI-PART                      apart-blossom-SI-PART  
 ‘fixed’                                      ‘fixed’                                      ‘was coming into blossom’

<sup>23</sup> The secondary imperfective (and iterative) suffix *-(v)a-* is historically identical with the Proto Slavic suffix *-a-* present in the imperfect (Němec 1956).



Examples (78a) and (78b) also show that there is a thematic vowel between the root and the secondary imperfective suffix. Since thematic suffixes determine the syntactic category and the conjugation class in Slavic, they represent the verbalizing head *v*, as we already know; consider the contrast between the infinitives with the thematic suffix *-a-* in (79a) and (79c) and the nouns with the nominalising suffixes in (79b) and (79d).

- |   |   |
|---|---|
| <p>(79) a. (při-)děl-a-t<br/>at-do-TH-INF<br/>'fix'</p> | <p>b. díl-ø-o<br/>do-NMLZ-NOM.SG.N<br/>'(master)work'</p> |
| <p>c. řez-a-t<br/>cut-TH-INF<br/>'cut'</p>              | <p>d. řez-b-a<br/>cut-NMLZ-NOM.SG.F<br/>'carving'</p>     |

Since thematic suffixes are closer to the root than the secondary imperfective suffix, I posit the following structure for adjectival participles.

- (80) [<sub>oP</sub> a [<sub>PartP</sub> Part [<sub>AspP</sub> Asp [<sub>vP</sub> v [<sub>vP</sub> √ [<sub>oP</sub> P [<sub>PP</sub> P]]]]]]]]]

Given this structure and the proposal that the agent argument is introduced by the head *v*, one expects an agentive phrase in *ny'-/ty'-* participles but does not expect it in *ly'-* participles because *ly'-* participles contain the unaccusative *v*.<sup>24</sup> Example (81a) shows that the target state *ly'-* participle *oteklý* 'swollen' can occur in the adjectival passive and (81b) demonstrates that the *ly'-* participle indeed cannot co-occur with an agent or causer.

- (81) a. Jeho prst je (stále ještě) oteklý.  
his finger is still swollen  
'His finger is (still) swollen.'
- b. \*Jeho prst je oteklý Pavlem / úderem kladívka.  
his finger is swollen by.Pavel / by.hit of.hammer

At first sight, it seems that *ny'-/ty'-* participles also cannot co-occur with an agentive phrase; consider example (82).

<sup>24</sup> *L*-participles can contain an agent since they are not restricted to unaccusative verbs.

- (82) a. Ten koberec je (stále ještě) srolovaný.  
 the carpet is still rolled.up  
 ‘The carpet is (still) rolled up.’
- b. ?\* Ten koberec je srolovaný Pavlem.  
 the carpet is rolled.up by.Pavel

However, Rapp (1996) argues that participles in the adjectival passive must not contain information that is not characteristic for the appropriate result state. This correctly excludes cases like (82b) and correctly includes adjectival passives like the German (83a) and its Czech equivalent (83b).<sup>25</sup>

- (83) a. Der Brief ist von einem Experten geschrieben.  
 the letter is by a expert written (Rapp 1996: 257)
- b. Ten dopis je napsaný nějakým expertem.  
 the letter is written by.some expert  
 ‘The letter is written by an expert.’

Consider also the State Relevance Hypothesis in McIntyre (2015b) and the contrast in (84), showing that the instruments are acceptable if they can be inferred from the markings on the text.

- (84) Some words are underlined with a {highlighter/blue pen/\*short pen}.  
 McIntyre (2015b: 942)

Similarly, Meltzer-Asscher (2011) proposes that modifiers are licensed with adjectival passives only if they can modify the state denoted by the participle. This also holds for other phrases detecting the agent argument, like instrumental phrases. Consider the Hebrew example in (85), taken from Meltzer-Asscher (2011: 825).

- (85) a. \* ha-mixtav katuv be-et yafe.  
 the-letter written in-pen beautiful

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<sup>25</sup> These examples (and the ones below with *napsaný* ‘written’) contain a resultant state but that does not affect the argument.

- b. ha-mixtav katuv be-et kaxol.  
 the-letter written in-pen blue  
 ‘The letter is written with a blue pen.’

According to Meltzer-Asscher, (85a) is ungrammatical because the pen is not part of the description of the written letter, whereas (85b) is grammatical if *kaxol* denotes the colour of the ink, not the colour of the pen. Such an interpretation is also possible in German, as shown in (86), and in Czech, as illustrated in (87).<sup>26</sup>

- (86) Der Brief ist mit roter Tinte geschrieben.  
 the letter is with red ink written (Rapp 1996: 257)

- (87) Ten dopis je napsaný červeným inkoustem.  
 the letter is written with red ink  
 ‘The letter is written with a red ink.’

In the same vein, Maienborn (2007) argues that German adjectival passive constructions can contain *by*-phrases, instruments and locative adverbials to a certain extent. With respect to licensing conditions, she argues that the appropriate modifier must form a plausible informational unit with the modified participle, an *ad hoc property*, which is predicated of the subject and which is contrasted with salient alternatives.

That pragmatic principles play an important role in this matter seems to be supported by the contrast in the following example. (88a) is informationally too light in contrast to (88b), where the completion of the letter is brought into prominence by the phasal adverb *už*. For the same contrast, compare (88a) with (87b) and also with (ib) in footnote 26 (for related discussion see Veselovská & Karlík 2004 and for discussion of English data see Ackerman & Goldberg 1996).

- (88) a. \* Ten dopis je napsaný.

<sup>26</sup> According to Rapp (1996: 257), in contrast to (86), (ia) is ungrammatical. It seems that (at least in Czech) the adverb is licensed in a context where (ib) is uttered by a graphologist analysing the handwriting of the letter, which is in accordance with the argumentation above.

- (i) a. \* Der Brief ist langsam geschrieben.  
 the letter is slowly written  
 b. Ten dopis je napsaný pomalu.  
 The letter is written slowly.  
 ‘The letter is written slowly.’

- the letter is written
- b. Ten dopis je už napsaný.  
the letter is already written  
'The letter is already finished.'

Agent-oriented adverbs are also used as a diagnostic for the presence of an agent and for the height of attachment of the stativising operator (e.g. Anagnostopoulou 2003, Paslawska & von Stechow 2003). For instance, *special'no* in the Russian example (89) signals the presence of an agent, as does the Czech adverbs *záměrně/úmyslně* in (90a) and (90b).

- (89) Okno zakryto special'no.  
window closed deliberately  
'The window is deliberately closed.' (Paslawska & von Stechow 2003: 346)

- (90) a. To okno je zavřené záměrně/úmyslně.  
the window is closed deliberately  
'The window is deliberately closed.'
- b. Ten koberec je srolovaný záměrně/úmyslně.  
the carpet is rolled.up deliberately  
'The carpet is deliberately rolled up.'

It is also possible to use the agent-oriented adverbial *velmi nedbale* 'in a negligent manner', which characterises the attitude of the agent. This adverbial is appropriate in a context where we see that the shape of the rolled-up carpet is very uneven; consider example (91).

- (91) Ten koberec je srolovaný velmi nedbale.  
the carpet is rolled.up negligently  
'The carpet is rolled up in a negligent manner.'

The presence of an agent in examples like (82a) is also confirmed by the contradiction test. Specifically, negating the presence of an agent or causer in the rolling event results in a contradiction, as shown below.

(92) # Ten koberec je srolovaný, ale nikdo (nic) ho neroloval(o).  
 the carpet is rolled.up but nobody nothing it NEG.rolled  
 ‘The carpet is rolled up but nobody (nothing) was rolling it.’

From this discussion, I conclude that *ny’-/ty’*-participles can contain an agent (or causer), which is in accordance with the findings in Anagnostopoulou (2003), Meltzer-Asscher (2011), McIntyre (2013), Bruening (2014) and Paslawska & von Stechow (2003). It is either expressed by a *by*-phrase or is implicit (existentially bound). This means that there are three types of the verbal head *v*; in addition to this passive *v* present in *n-/t-* and *ny’-/ty’*-participles, there is an unaccusative *v*, which does not introduce an external argument and is present in *ly’*-participles, and the active *v*, which does introduce the external argument and is present in active sentences. Having established the structure of adjectival participles and the place of the stativising head in it, lets us now look at how prefixes interact with the participial morphology and the target state operator.

#### 4.5 Prefixes and the structure of *ly’-* and *ny’-/ty’-*participles

In the preceding sections, I argued that the stativiser is attached high in the structure of Czech adjectival participles; it is the adjectival head that has the stativising semantics. It has been argued that superlexical prefixes differ from lexical prefixes in several aspects and that the distinctions reflect different base positions of these two types of prefixes, as discussed in section 4.1. Some authors argue that in contrast to lexical prefixes, superlexical prefixes cannot occur in adjectival participles; see Romanova (2006) for Russian past passive participles and Gehrke (2008) for Russian and Czech past active and past passive participles. In what follows, I will scrutinise these proposals with respect to *ly’-* and *ny’-/ty’-*participles, investigating which types of prefixes can appear in which adjectival participles and how the prefixes interact with the stativising head.

##### 4.5.1 Lexical prefixes

The proposal that lexical prefixes are merged very low in the syntactic structure seems to be correct because every lexical prefix can appear in an adjectival participle. We already saw *ny’-/ty’-*participles with the lexical prefixes *vy-* ‘out’ and *s-* ‘with’. I repeat the relevant target state examples in (93) for the sake of convenience. Some other cases of lexical prefixes in *ny’-/ty’-*participles are shown in (94).

- (93) a. vy-pracované svaly  
out-being.worked muscles  
'worked-out muscles'
- b. s-rolovaný koberec  
with-being.rolled carpet  
'a rolled-up carpet'
- (94) a. u-pracovaný člověk  
at-being.worked man  
'a man worn-out with work'
- b. na-metené smetí  
on-being.swept rubbish  
'a rubbish swept on sth.'
- c. o-čarovaný muž  
about-being.made.magic man  
'a bewitched man'
- d. po-dělaný záchod  
on-being.done toilet  
'a dirty toilet'
- e. roz-dělaný přístroj  
apart-being.done gadget  
'a disassembled gadget'
- f. při-dělané lano  
at-being.done rope  
'a rope tied to sth.'
- g. (za skříní) za-sunutá taška  
behind wardrobe behind-being.pushed bag  
'a bag pushed behind the wardrobe'

These prefixes can also appear in *lý*-participles, as shown by the following examples.

- (95) a. led na-mrzlý na mrazáku  
ice on-froze on freezer  
'ice frozen to the freezer'
- b. vy-mrzlý pokoj  
out-froze room  
'a cold room'
- c. při-mrzlé dveře  
at-froze door  
'a door frozen to sth'
- d. za-padlé pero  
behind-fell pen  
'a pen that fell behind sth.'
- e. u-šlý míč  
at-went ball  
'an empty ball'
- f. o-teklý prst  
about-flowed finger  
'a swollen finger'
- g. roz-teklý sýr  
apart-flowed cheese  
'a melted cheese'
- h. po-rostlá zeď  
on-grew wall  
'an overgrown wall'
- i. s-rostlé prsty  
with-grew fingers  
'fingers that are grown together'

These data are not surprising because the participial morphemes *-l* and *-n/-t* and the adjectival head merge in the same projection in both types of adjectival participles. Therefore, from the syntactic point of view, one does not expect any difference between *lý*- and *ný/-tý*-participles with respect to their compatibility with a particular lexical (or superlexical) prefix.

On the other hand, given different semantic properties of *ly'*- and *ny'/ty'*-participles, one expects that there will be differences in the formation of particular participles with respect to properties of the base verb and the attached prefix. Recall that *ny'/ty'*-participles are derived from agentive transitive verbs with an accusative object and *ly'*-participles from unaccusative verbs. Since there is consensus that lexical prefixes can affect the argument structure of the base verb and can change its aspectual properties, they could have an effect on the choice between *ly'*- and *ny'/ty'*-affixes.

Considering data in (93)-(95), the following generalisations emerge with respect to argument structure. One and the same prefix can occur in both types of participles, which is in line with the syntactic prediction discussed above. It then depends on the type of the base verb (root) whether the prefixed verb derives a *ly'*-participle or a *ny'/ty'*-participle. Specifically, the examples in (95) show that when a prefix is attached to an unaccusative verb, then a *ly'*-participle is derived. In contrast, when a prefix is attached to an unergative verb, as in (93a) and (94a) and (94c), then a *ny'/ty'*-participle is derived because the verb is transitivised. Finally, if a prefix is attached to a transitive verb, a *ny'/ty'*-participle is derived because the verb remains transitive, as shown in (93b), (94b) and (94d-g). We already saw this behaviour of prefixes in the case of prefixed infinitives in chapter 2.7. The fact that we observe the same behaviour supports the view that prefixes merge before the infinitival and the participial morphology (and corresponding semantics) is attached.

The examples under discussion show that the type of the prefixed verbs and the type of the participles are determined by the base verb, not by the prefix; compare examples with different prefixes attached to the same verb in (93a) and (94a) for *ny'/ty'*-participles derived from an unergative, in (94d-f) for *ny'/ty'*-participles derived from a transitive verb, and in (95a-c), (95f-g) and (95h-i) for *ly'*-participles derived from a prefixed unaccusative.

Generally, prefixes can add an internal argument and the added argument competes with the complement of unaccusative and transitive base verbs. In addition, prefixes can also add an argumental prepositional phrase. From the constructionist point of view, this supports the view that prefixes are prepositions projecting a phrase in the complement position of the root, as discussed in chapter 2.

Specifically, in *ly'*-participles, the root is selected by the unaccusative *v* and is merged with a prepositional phrase, which is in complementary distribution with the defective prepositional phrase projected by a covert prepositional head introducing the internal argument of the unprefixed verb (which has the theme semantics, as discussed in chapter

2.8.2.<sup>27</sup> For this reason, the argument structure of the base verb is not augmented in *lý*-participles; maximally, a prepositional phrase can be added, as in the case of *voda nateklá na louce* ‘water flowed on the meadow’. Since the morpheme *-n/-t* is specified for agentive properties, only an *l*-participle and a *lý*-participle can be derived in this case.

As to *ny’-/ty’*-participles derived by prefixation from unergative verbs, the root occurs in a syntactic environment with the external argument introduced by the passive *v*. The prefix/preposition introduces an unselected argument(s) in its phrase in the complement of the root and we observe a transitivity of the argument structure of the base verb. Given the prepositional nature of prefixes and the fact that *-n/-t* is specified for the features [agent, *p*], a *ny’-/ty’*-participle is derived in this case.

Finally, when a prefix is attached to a transitive verb, the projected prepositional phrase occurs in the position of the defective prepositional phrase introducing the theme argument of the unprefixated verb or the prefix is a preposition moved to the verb from a prepositional phrase selected by the base verb; hence, in both cases, the prefixed verb remains transitive and the prefix contributes an additional predicate to the verb.<sup>28</sup> It is typically the figure argument of the prefix (preposition) which becomes the direct object of the derived verb and over which the participle predicates; see, for instance, examples (94b), (94f) and (94g). Note that when the preposition is not defective, that is, it introduces both arguments and assigns case, the ground argument – being merged in the complement position of the preposition – receives case already in the prepositional phrase.

Example (94f) can also be used to show that prefixes can add an additional (ground) argument to the transitive base verb, as in *lano přidělané ke kolíku* ‘a rope tied to a stake’.<sup>29</sup> As in the case of unergative verbs, since *-n/-t* – being specified as [agent, *p*] – is more specific than *-l* with respect to the feature content of the participial head, a *ny’-/ty’*-participle is derived when base transitives are prefixed.

Concerning the interaction of lexical prefixes and the target state operator, the examples (93)-(95) show that lexically prefixed *lý*- and *ny’-/ty’*-participles have a resultative meaning (see also Svenonius 2004, Romanova 2006, Gehrke 2008 and Žaucer 2009 for the claim that

<sup>27</sup> To make the derivation more economic, the information about unaccusativity/unergativity/transitivity either should be present in the root or the root should bear information – some diacritic – about the environment(s) in which it can occur (e.g. whether or not it can co-occur with the agentive *v*); see e.g. Acquaviva (2009).

<sup>28</sup> Given this complementary distribution and the fact that prepositions have two individual arguments, we approach the explanation of why there are no four-place predicates.

<sup>29</sup> *K(e)* ‘towards’ cannot function as a prefix in Czech; therefore the higher copy of the preposition is spelled out as *při-* ‘at’, which is semantically close to *k*. As already mentioned, it has also been argued for other languages that copies of the incorporated preposition do not have to be phonologically identical (e.g. Baker 1988, Biskup & Putnam 2012).



lexical prefixes are resultativity markers and introduce a result state subevent). The noun modified by the adjectival participle is the subject of the state expressed by the appropriate participle. The lexical prefixes can turn states and activities into telic eventualities; as shown by the resultative participles *namrzlý* ‘frozen onto’, *vymrzlý* ‘cold’ and *přimrzlý* ‘frozen to’ in (95a-c), derived from the stative *mrznout* ‘freeze’, and by the resultative participles *oteklý* ‘swollen’ and *roztekly* ‘melted’ in (95f-g), derived from the activity *téci* ‘flow’.

All the prefixed participles in (93)-(95) can denote a target state; as an illustration, consider the following examples, containing the diagnostic adverbial *stále ještě* ‘still’, which use the participles from (94d-f).

- (96) a. Ten záchod je stále ještě po-dělaný.  
the toilet is still on-being.done  
‘The toilet is still dirty.’
- b. Ten přístroj je stále ještě roz-dělaný.  
the gadget is still apart-being.done  
‘The gadget is still disassembled.’
- c. To lano je stále ještě při-dělané.  
the rope is still at-being.done  
‘The rope is still tied to sth.’

Given that the target state operator existentially binds the event variable and project the state variable present in the meaning of its sister constituent, the lexical prefixes (adding the state variable) must be lower than the stativising head in the participial structure.

To sum up, by means of transitivity, lexical prefixation helps unergative base verbs to derive *ny’-/ty’*-participles and by perfectivisation and adding the state variable it helps imperfective unaccusative base verbs to derive *ly’*-participles and in the same way it helps imperfective transitive verbs to derive resultative *ny’-/ty’*-participles. The fact that lexical prefixes license the target state interpretation confirms that they are merged lower than the stativiser.

#### 4.5.2 Superlexical prefixes

In what follows, I investigate prefixes with superlexical interpretation that are homophonous with the prefixes discussed in the preceding section. Only the prefix *vy-* ‘out’ cannot have a superlexical meaning, which conforms to the view that superlexical prefixes form a subset of

lexical prefixes (compare also the Russian *vy-* and the Polish *wy-*). The prefix *s-* ‘with, from’ can have the attenuative superlexical meaning in cases like *skropený* ‘a little sprinkled’, *smočený* ‘a little dipped’ but it is difficult to find a target state participle. In Russian, certain semelfactives are derived by means of the prefix *s-*, for instance, *schodit’* ‘go there and back’, *sletat’* ‘fly there and back’, *splavat’* ‘swim there and back’, *srabotat’* ‘bring into action’ (see Zaliznjak & Šmelěv 1997), however, in Czech this meaning is mostly expressed by means of the prefix *za-*.

The other superlexical prefixes occurring in target state *ny’/ty’*-participles are shown in (97), concretely, inceptive *za-* in (97a), inceptive *u-* in (97b), cumulative *na-* in (97c), inceptive *o-* in (97d), attenuative *po-* in (97e), inceptive *roz-* in (97f) and attenuative *při-* in (97g).<sup>30</sup>

- |         |                         |         |    |                         |         |
|---------|-------------------------|---------|----|-------------------------|---------|
| (97) a. | za-milovaný             | chlapec | b. | u-vězněný               | chlapec |
|         | behind-being.loved      | boy     |    | at-being.kept.in.prison | boy     |
|         | ‘a boy in love’         |         |    | ‘an imprisoned boy’     |         |
| c.      | na-žehlená              | košile  | d. | o-slepený               | řidič   |
|         | on-being.ironed         | shirt   |    | about-dazzled           | driver  |
|         | ‘a neatly ironed shirt’ |         |    | ‘a dazzled driver’      |         |
| e.      | po-mačkaná              | sukně   | f. | roz-pracovaný           | článek  |
|         | on-being.crumpled       | skirt   |    | apart-being.worked      | article |
|         | ‘a crumpled skirt’      |         |    | ‘an unfinished article’ |         |
| g.      | při-mhouřené            | oko     |    |                         |         |
|         | at-being.squinted       | eye     |    |                         |         |
|         | ‘a squinted eye’        |         |    |                         |         |

The same prefixes can also appear in *ly’*-participles, as shown below. Consider attenuative *za-* in (98a), inceptive *u-* in (98b), cumulative *na-* in (98c), inceptive *o-* in (98d), attenuative *po-* in (98e), inceptive *roz-* in (98f) and attenuative *při-* in (98g).

<sup>30</sup> The verb *oslepit* does not have an unprefixated counterpart – just as *uvykly’* in (98b) – and from the traditional-grammar point of view it is derived from the adjective *slepy’*. From the decompositional point of view, cases like these argue for the incorporation analysis of prefixes because the possibility of formation of these verbs is dependent on the presence of the prefix, as discussed in chapter 2.7.

- (98) a. za-rudlá ruka b. člověk u-vyklý pracovat  
 behind-reddened hand man at-accustomed work  
 ‘a reddened hand’ ‘a man accustomed to work’
- c. na-běhlé ruce d. o-chraptělý řečník  
 on-ran hands about-became hoarse speaker  
 ‘swollen hands’ ‘a hoarse speaker’
- e. po-bloudilý kazatel f. roz-měklý sníh  
 on-was.lost preacher apart-softened snow  
 ‘a heretic preacher’ ‘softened snow’
- g. při-tuhlá nafta  
 at-solidified oil  
 ‘solidified oil’

Some of the prefixes discussed can also have other superlexical meanings, like *na-*, which has the attenuative meaning in *nakloněný* ‘a little leaned’. Given their inherent properties, the prefixes in (97) and (98) mostly form participles with the inceptive and the attenuative meaning. Other prefixes with a superlexical meaning can derive adjectival participles as well, as shown, for instance, by the excessive *pře-* in *přesycený* ‘overfed’. Broadly speaking, it seems that except the saturative *za-*, all superlexical prefixes can occur in adjectival participles, namely in both *ný-/tý-* and *lý-* participles.

In fact, there is no special interaction between superlexical prefixes and the stativiser in the adjectival head. All prefixed participles in (97) and (98) can denote a target state, as shown by the following examples with *stále ještě* ‘still’, based on participles from (97a-c).

- (99) a. Ten chlapec je stále ještě za-milovaný.  
 the boy is still behind-being.loved  
 ‘The boy is still in love.’
- b. Ten chlapec je stále ještě u-vězněný.  
 the gadget is still at-being.kept.in.prison  
 ‘The boy is still in prison.’
- c. Ta košile je stále ještě na-žehlená.  
 the shirt is still on-being.ironed  
 ‘The shirt still looks neatly ironed.’

This suggests that superlexical prefixes merge below the head *a*, just as lexical prefixes. Recall from the discussion above that the target state operator existentially binds the event variable and projects the state variable. Since it is the prefix that brings the stative component, superlexical prefixes must be merged below the adjectival head with the target state operator.

With respect to aspectual classes, adjectival participles with superlexical prefixes behave like lexically prefixed adjectival participles. Superlexical prefixes can also turn states and activities into telic eventualities, as demonstrated in (97a), where the resultative *zamilovaný* ‘in love’ is related to the state *milovat* ‘love’, and in (97c), where the accomplishment participle *nažehlený* ‘neatly ironed’ is related to the activity *žehlit* ‘iron’ (see Brecht 1985, Klein 1995, Bertinetto 2001 and Arsenijević 2006 for the claim that superlexical prefixes are resultative as well).

If it were correct that superlexical prefixes differ from lexical ones in that they do not affect the lexical aspect of the base verb, as argued by Di Sciullo & Slabakova (2005) and Richardson (2007), they should not help atelic unaccusatives to derive *lý*-participles. However, the contrast between, for instance, *ochraptělý* ‘hoarse’ in (98d) and the ungrammatical unprefixed *chraptělý*, formed from the atelic verb *chraptět* ‘speak in a hoarse voice’, shows that the generalisation does not hold.

The low-Merger analysis of superlexical prefixes is also supported by the fact that they can change the argument structure of the unprefixed predicate because argument structure properties are determined in the verbal domain; consider the transitivised (reflexivised) predicates *přepracovat se* ‘overwork’ from (24a), *popracovat si* ‘work for a while’ from (30a) and *rozpracovaný* ‘unfinished’ from (97f), formed from the intransitive *pracovat* ‘work’. As in the case of lexical prefixes, when a superlexical prefix is attached to an unaccusative predicate, a *lý*-participle is derived, as shown in (98). When the prefix is attached to an unergative predicate – which cannot derive adjectival participles –, the base verb is transitivised and consequently a *ný*-/ *tý*-participle can be derived, as in the case of *rozpracovaný* ‘unfinished’ in (97f). And when the prefix is attached to a transitive predicate, the derived predicate is again transitive and a *ný*-/ *tý*-participle is derived, as in (97a-c), (97e) and (97g). Thus, at least some superlexical prefixes can be analysed on a par with lexical prefixes, that is, as an incorporated preposition projecting its argument structure in a prepositional phrase merged with the root.

The argument-structure augmentation facts and the derivation of *lý*- and *ný*-/ *tý*-participles can be accounted for as in the case of lexical prefixes in terms of the insertion of the appropriate vocabulary item (*-l* versus *-n/-t*) into the participial head and the

complementary distribution of the prepositional phrase projected by the prefix and the prepositional phrase introducing the object. This means that superlexical prefixes can fulfil two functions, the argument-structure function and the quantificational/adverbial function. As to the latter, the appropriate superlexical prefixes can be analysed as a reflection of some higher functional category, as discussed in chapter 2. Not all superlexical prefixes must be analysed in this way, as we will see below; recall that there are also superlexicals that do not add arguments, like the completive *do-* in *dopracovat* ‘finish working’.

The data presented argue against the generalised distinction between lexical and superlexical prefixes with respect to the possibility of the formation of adjectival participles of the widely adopted syntax-based approach. It seems that ungrammatical superlexically prefixed participles should be rather analysed on a case-by-case basis. Note that one and the same superlexical prefix can behave differently with different predicates; for instance, the inceptive *u-* derives an adjectival participle with *věznit* ‘keep in prison’: *uvězněný* ‘imprisoned’ in (97b), but does not derive an adjectival participle with the verb *věřit* ‘believe’; the inceptive *roz-* derives an adjectival participle with *pracovat* ‘work’: *rozpracovaný* ‘unfinished’ in (97f) and *měknout* ‘soften’: *rozměkly* ‘softened’ in (98f), but does not derive an adjectival participle with *bolet* ‘ache’; and the completive *do-* derives an adjectival participle with *stavět* ‘build’: *dostavěný* ‘built’ and *hořet* ‘burn’: *dohořelý* ‘burnt out’, but does not derive an adjectival participle with *hučet* ‘rumble’, as shown in (29b) and (39b).<sup>31</sup>

The ungrammaticality of the examples can be accounted for as follows. Since (*u*)*věřit* ‘believe’ takes a dative object, which is introduced by a covert non-defective preposition and the preposition cannot be stranded, the null operator present in the prepositional phrase cannot move to the specifier of the adjectival head and form a predicate of individuals with the consequence that the derivation (of *\*uvěřilý* or *\*uvěřený*) crashes; see the discussion in section 4.4 again.

In the case of *rozbolet* ‘begin to ache’, the *ný/-tý*-participle *rozbolený* is ungrammatical because the participial head spelled out by *-n/-t* selects an agentive complement but *rozbolet* is an experiencer verb. On the other hand, the *lý*-participle *rozbolelý* is ungrammatical since the stativising adjectival head of *lý*-participles selects a complement with the unaccusative *v*.

As to the completive *do-*, *dostavěný* ‘built’ is grammatical because the derivation contains the agentive *v* and a prepositional phrase with the theme object and *dohořelý* ‘burnt out’ is grammatical because *hořet* contains the unaccusative *v*. The impossibility of the

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<sup>31</sup> *Dostavěný* and *dohořelý* are resultant state participles. The completive prefix *do-* does not form target states; the completeness of the appropriate eventuality holds forever.

formation of a *ny’-ty’*-participle from an unergative predicate correlates with the inability of the prefix to introduce an argument, like in the case of the ungrammatical *dohučený* formed from *hučet* ‘rumble, murmur’. The prefix *do-* only adds the completive meaning to the base predicate but does not affect its argument structure. Given that the completive *do-* does not add an argument (a prepositional phrase containing it) with unergatives, it is reasonable to assume that it also does not introduce an argument in the case of transitive verb bases. This means that the internal argument is introduced by the object-introducing prepositional phrase with both the prefixed transitive verb and the unprefixed transitive verb. The same also holds for the unaccusative *dohořelý* ‘burnt out’. Since the object-introducing prepositional phrase is defective (the preposition does not assign case; note that with unaccusatives the internal argument is assigned nominative and with transitives structural accusative), the null operator can move to the specifier of the adjectival head.

The prefix *do-* can merge, for instance, in the specifier of the aspectual projection, as proposed by Ramchand (2004). Being a specifier, it does not belong to the complex verbal head projecting the aspectual phrase, hence it is not visible for the *-n/-t* participial head with the selectional features [agent, *p*], which results in ungrammaticality of *dohučený*. The *ly’*-participle *dohučelý* also cannot be derived since the predicate does not contain the unaccusative *v*, which is required by the adjectival head of *ly’*-participles.

To summarise this section, since the stativising operator is merged in a high syntactic position, we do not observe any peculiar interaction between it and superlexical prefixes; most of superlexical prefixes can occur in both types of adjectival participles. All superlexical prefixes occur in *l*-participles (and in the past tense). Since *l*-participles are embedded in *ly’*-participles, the ungrammaticality of certain superlexically prefixed *ly’*-participles cannot be based on the too high Merger of the appropriate prefixes, as suggested by the syntactic approach to the distinction between lexical and superlexical prefixes. The same reasoning applies to the ungrammatical superlexically prefixed *ny’-ty’*-participles because *ny’-ty’*-participles contain the same projections as *ly’*-participles. I have argued that superlexical prefixes cannot be treated uniformly and that the ungrammaticality of certain superlexically prefixed participles does not have one source.

The participial data show that also superlexical prefixes can affect argument structure of the base verb. By means of transitivity, they help the unergative unprefixed verb to derive a *n-/t-* and *ny’-ty’*-participle, which means that they must merge lower than these participial morphemes (in actuality, the fact that they change the argument structure of the unprefixed verb suggests that they merge somewhere inside *vP*). Superlexicals can also turn atelic

eventualities into telic ones, thereby helping base verbs to derive participles because telicity (the state variable added by the prefix) is a necessary condition for the formation of *lý-* participles and stative *ný-/tý-* participles. The fact that superlexical prefixes license the stative interpretation also confirms that they are merged lower than the target state operator, present in the adjectival head.

#### 4.6 Deriving target state participles

In this section, I show in more detail how the derivation of target state adjectival participles works. I combine the analysis from the previous chapters with the proposal made in the preceding sections of this chapter. I present a step-by-step derivation of the adjectival participle *zasunutá* contained in the following determiner phrase.

- (100) ta taška za-sunutá za gaučem  
the bag behind-being.pushed behind sofa  
‘the bag (that was) pushed behind the sofa’

That this participle indeed denotes a target state is confirmed by its compatibility with *stále ještě* ‘still’, as demonstrated in (101).

- (101) Ta taška je stále ještě za-sunutá za gaučem.  
the bag is still behind-being.pushed behind sofa  
‘The bag is still behind the sofa.’

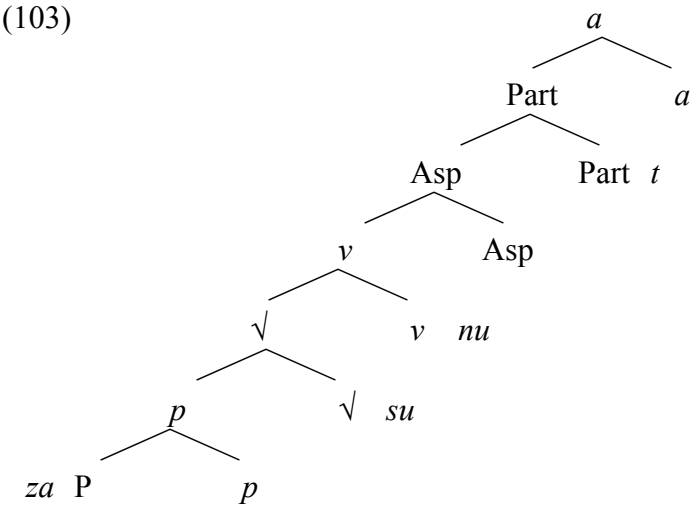
The relevant part of the syntactic structure of the participle, with the appropriate features, looks like (102).

- (102) [<sub>αP</sub> Op<sub>1</sub> a<sub>stat</sub> [<sub>PartP</sub> [<sub>agent, p</sub> n/t [<sub>AspP</sub> Asp [<sub>vP</sub> t<sub>1</sub> [<sub>vP</sub> nu [<sub>vP</sub> su [<sub>pP</sub> p [<sub>PP</sub> t<sub>1</sub> [<sub>P</sub> za gaučem]]]]]]]]]]]]]

The prepositional phrase is non-defective since it contains both arguments and the preposition assigns case and is spelled out in two copies, on the predicate and in the prepositional phrase. The figure argument *taška* ‘bag’ of the preposition *za* ‘behind’ is located in the specifier of PP and the ground argument *gaučem* ‘sofa’ is merged in the complement position. The complement receives case from the prepositional head P via the operation Agree between their Tense-features and φ-features (for details of the case assignment process, see chapter 6).

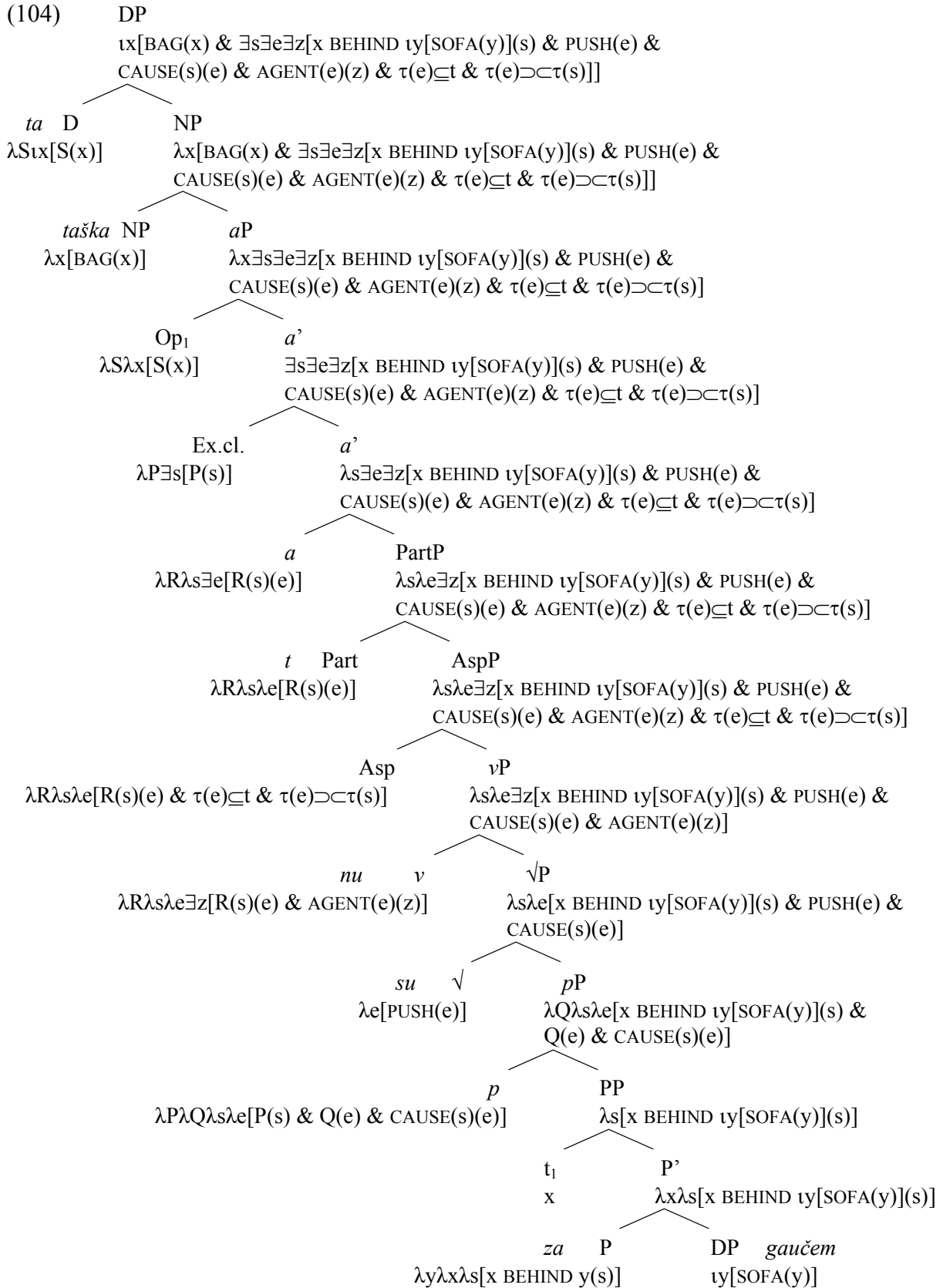
However, since the modified noun is generated outside adjectival participles, the figure argument (*taška*) is, in fact, represented in the prepositional phrase by the null operator. The operator moves to the specifier of the adjectival phrase and since the *vP* projection is a phase, it must stop at the edge of *vP*. This movement is driven by an appropriate Edge-feature. Although the prepositional phrase is non-defective, the operator can move because it is generated in the specifier position of *P*, not in the complement position.

By means of head incorporation, the complex head (103) is derived. Since the little verbal head of *zasunutá* is agentive and since *p* is part of the complex head, as demonstrated in (103), selectional requirements of the participial head *-n/-t* are satisfied. (103) also shows that head incorporation derives the correct order of morphemes *za-su-nu-t*. The form of the participial ending – in our example *á* – is determined by  $\phi$ -features properties of the modified noun *taška*, with which the adjectival head agrees, and by a case assigner that assigns case to the whole determiner phrase (which is not present in (100)).



Having the syntactic structure in mind, let us now turn to the semantic analysis. For the example under discussion, I propose the derivation in (104).





licenses the stative interpretation of prefixed participles. Thus, the state denoted by the prepositional phrase is the result state of the prefixed predicate. The meaning of *za* applies to the definite expression *gaučem*, which results in the meaning that the referent of *x* is in the state of being behind the sofa.

After that, the meaning of *P'* combines with the external argument. Since the modified noun *taška* 'bag' is merged outside the participle, the external argument is a null operator. In the tree in (104), the external argument is represented by the trace of the null operator because the operator moves to the specifier of the adjectival projection, as discussed in section 4.4. The trace is interpreted as a variable and its referent is determined by the assignment function *g* applied to its index (1). After movement of the operator to the specifier of *aP*, the assignment function is manipulated so that the index *I* is mapped to the individual variable *x* bound by the introduced lambda operator, hence I put *x* on all relevant nodes.

Importantly, the meaning of the head *p* derives a prepositional phrase of the prefixal type. As proposed in chapter 2, the meaning consists of three conjuncts:  $\lambda P\lambda Q\lambda s\lambda e[P(s) \ \& \ Q(e) \ \& \ \text{CAUSE}(s)(e)]$ . The first conjunct stands for the meaning of PP, that is, for the result state; the second conjunct introduces an event with properties of the root; and the third conjunct is responsible for the telicity effect of prefixation, that is, for the fact that prefixes bring about the causative relation between the state denoted by the prepositional phrase and the eventuality denoted by the root.<sup>32</sup> This fits in with the claim that resultative adjectival participles are derived from telic verbs that have an eventive and stative component (Kratzer 1994, 2000; Rapp 1996; Cetnarowska 2000; Anagnostopoulou 2003; Giger 2009) and with the data presented in the preceding sections, showing that stative *ny'/ty'*- and *ly'*-participles are only derived from prefixed predicates.

The meaning of *pP* applies to the meaning of the root  $\lambda e[\text{PUSH}(e)]$ , with the result that the referent of the external argument is in the state of being behind the sofa, which is caused by the event of pushing. Since *n-/t*-participles have *v* of the passive type and there is no agentive instrumental phrase in our example, the external argument needs to be existentially quantified. I put the existential quantifier directly into the meaning of the little verbal head but it could also occur in a higher head. For ease of exposition, movement of the null operator to the edge of *vP* is not shown in (104); predicate abstraction and function application of the

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<sup>32</sup> Recall from chapter 2 that for superlexical prefixes merged in the complement of the root I assume that the superlexical semantics is present in a higher head (e.g. in the cumulative head in the case of the cumulative prefix) and that the prefix is an overt reflection of this semantics and that it is related to the higher head by means of a corresponding uninterpretable feature.

resulting meaning to the moved operator (of the type  $\langle e \rangle$ ) returns a meaning identical to the meaning of  $\nu P$  before the predicate abstraction.

Since the unvalued Tense-feature of the aspectual head is valued as perfective by the incorporated preposition, the aspectual head receives the perfective meaning. The perfective head is standardly treated as a perfective operator, which localises the running time of the event within the reference time:  $\lambda P \lambda t \exists e [\tau(e) \subseteq t \ \& \ P(e)]$  (e.g. Klein 1994, Paslawska & von Stechow 2003). Instead of the usual existential quantification over the event variable, I use lambda binding since it will be the target state operator that will existentially bind the variable. Because of the meaning of the prepositional phrase, I also add the state variable and assume that the time of  $e$  abuts the time of  $s$ :  $\lambda R \lambda s \lambda e [R(s)(e) \ \& \ \tau(e) \subseteq t \ \& \ \tau(e) \supset \subseteq \tau(s)]$ .

The reference time variable  $t$  is usually existentially bound by the tense head, which encodes the relation between the reference time and the speech time. However, adjectival participles do not contain the tense projection; they do not have their own speech time and do not include elements spelling out the tense head, for instance, the future prefix *po-*, as will be shown in chapter 5. The reference time of adjectival participles can be interpreted as the reference time of the main predicate of the clause; it can be specified by the context or by an adverbial; therefore, I leave the variable free and the contextual information will decide how it will be interpreted.

Since the stativising operator, present in the adjectival head, is higher than the participial suffix representing the participial head, the participial morphology is meaningless and the participial head can be treated as an identity function. The meaning of the participial projection combines with the adjectival head, which has the meaning of Kratzer's (2000) target state operator, which existentially closes the event argument and externalises the state variable:  $\lambda R \lambda s \exists e [R(s)(e)]$ . Crucially, since a lexical prefix is present in the structure of the participle *zasunutá* 'pushed', hence a prefixal  $pP$  with a state variable, too, the stative meaning is successfully derived.

At this point, the state should still be accessible for modification. This is corroborated by example (105), in which the adverbial *dvě hodiny* 'two hours' measures the time span of the stative subevent.

- (105) ta taška dvě hodiny za-sunutá za gaučem  
the bag two hours behind-being.pushed behind sofa  
'The bag that was behind the sofa for two hours.'

There is probably no reason not to existentially bind the state variable in the adjectival phrase already; therefore, I use the existential closure, as shown in (104). This means that the event of pushing causes the existence of the appropriate state. Moreover, we want the adjectival phrase to be of the type  $\langle e, t \rangle$  because nominal elements are of the type  $\langle e \rangle$ ,  $\langle e, t \rangle$  or  $\langle \langle e, t \rangle, t \rangle$ .

The structure with the moved operator is interpreted according to the rule of predicate abstraction. Via the assignment function  $g$  manipulated by predicate abstraction (e.g. Heim & Kratzer 1998), the index  $I$  is mapped to the individual variable  $x$  bound by the introduced lambda operator (for ease of exposition, the lambda operator – bringing the type  $\langle e, t \rangle$  – is not shown in (104)). The moved operator  $Op$ , I analyse as an identity function (cf. Caponigro 2003 and for discussion of other possibilities see e.g. Šimík 2011), which takes the adjectival phrase of the type  $\langle e, t \rangle$  and returns the same type. This allows the adjectival phrase to combine with the noun *taška* ‘bag’, namely, via predicate modification. Finally, the iota operator applies to the meaning of the noun phrase and returns a definite expression of the type  $\langle e \rangle$ , which can then combine with some predicate.

#### 4.7 Conclusion

I have argued that *lý-* and stative *ny’-/tý-* participles are headed by the adjectival head that functions as a stativising operator. Since the stativiser is attached high in the participial structure, both lexical and superlexical prefixes can occur in these adjectival participles. We have seen that it is the prefix – concretely, the projected prepositional phrase with the state variable – that licenses the presence of the target state operator, hence the stative interpretation. Both types of prefixes help verbs to derive adjectival participles because they induce perfectivity and telicity, which are necessary conditions for deriving *lý-* and stative *ny’-/tý-* participles. Specifically, by perfectivisation and adding the state variable, prefixation helps imperfective unaccusative predicates to derive *lý-* participles and in the same way it helps imperfective transitive predicates to derive stative *ny’-/tý-* participles. By means of transitivity, both types of prefixes help unergative predicates to derive *ny’-/tý-* participles (but see also the completive *do-* ‘to’).

I have argued against the generalised distinction between lexical and superlexical prefixes with respect to the possibility of the formation of adjectival participles of the widely-held syntactic approach and showed that the ungrammatical status of superlexically prefixed participles should be rather accounted for on a case-by-case basis.

With respect to the structure of *ny'/ty'*-participles, I have shown that it can contain an agent. The accusative object restriction on the formation of *ny'/ty'*-participles is based on the fact that the null operator can only move from a defective prepositional phrase or from the specifier position of PP.

## Chapter 5

### The future prefix *po-*

#### 5.1 Introduction

While the preceding chapters discussed verbal prefixes from a broad perspective, this chapter is only concerned with the prefix *po-* ‘on’.<sup>1</sup> It is shown that in contrast to Russian and Polish, Czech has a genuine future *po-*, which introduces the future time reference when attached to a motion verb. This prefix has a special status among other verbal prefixes. A comparison with non-future verbal prefixes (by which I mean all verbal prefixes except future *po-*) shows that the future *po-* differs from them, for instance, in its inability to affect selectional, aspectual and argument structure properties of the host verb and in its inability to form verbal nouns, participles and certain verbal forms. While the preceding chapters dealt with upward movement of prepositional elements from the synchronic point of view, this chapter is concerned with upward movement of prepositional elements from the diachronic point of view. It provides an analysis, under which the specific properties of future *po-* derive from the fact that it is a prepositional element that became grammaticalised as a future marker. Consequently, many differences between the future *po-* and non-future prefixes can be accounted for in terms of their different structural positions. It is proposed that the grammaticalisation process took place in two steps; while the first step is common to all three languages – Russian, Polish and Czech –, the second step only happened in Czech.

This chapter is organised as follows. Section 5.2 briefly discusses properties of the prefix *po-* in Russian, Polish and Czech and compares the Czech future *po-* with ingressive *po-* in Russian and Polish. Section 5.3 is concerned with morphosyntactic and semantic properties of the future *po-* in Czech. In section 5.4, the properties discussed are compared with corresponding properties of non-future prefixes. It is shown that the future *po-* differs from other readings of *po-* and from other prefixes in many respects, for instance, in its inability to form various verbal forms. Section 5.5 analyses future *po-* as a prepositional

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<sup>1</sup> As in the preceding chapters, I will use the gloss *on* for the prefix.

element that evolved into a future marker in two reanalysis steps. It is shown that the proposed analysis accounts for properties of future *po-* as well as differences between future *po-* and other prefixes. It is proposed that the speaker-oriented meaning of future *po-* imperatives is based on the ability of the *po-* marker to spell out the allative/adessive meaning of the tense head. Finally, section 5.6 summarises the chapter.

## 5.2 The prefix *po-* in Russian, Polish and Czech

This section discusses similarities and differences between the Russian, Polish and Czech *po-*. The prefix can convey various meanings.<sup>2</sup> For instance, all three languages have surface *po-*, as shown in (1), distributive *po-*, as in (2), delimitative *po-*, as in (3), iterative-diminutive *po-*, used together with the iterative suffix, as in (4), and the pure perfectivising *po-*, as in (5); for Russian see Isačenko (1962), Timofeev (1966), Švedova (1980), Zaliznjak & Šmel'ev (1997), for Polish Grzegorzczkova, Laskowski & Wróbel (1984), Śmiech (1986), Piernikarski (1975) and for Czech Němec (1954), Kopečný (1962), Šlosar (1981), Petr (1986a), among others.

(1) a. <i>po-rasti</i> (R) on-grow 'overgrow'	b. <i>po-sypać</i> (P) on-sprinkle 'sprinkle'	c. <i>po-bít</i> (CZ) on-beat 'cover sth. with sth. in a beating manner'
(2) a. <i>po-měrznut'</i> (R) on-freeze 'freeze one by one'	b. <i>po-łapać</i> (P) on-catch 'catch one by one'	c. <i>po-bít</i> (CZ) on-beat 'kill one by one'
(3) a. <i>po-dumat'</i> (R) on-think 'think for a while'	b. <i>po-boleć</i> (P) on-give.pain 'give pain for a while' 'feel sorry for sth. for a while'	c. <i>po-stát</i> (CZ) on-stand 'stand for a while'
(4) a. <i>po-gulivat'</i> (R) on-walk 'walk a little from time to time'	b. <i>po-gwizdywać</i> (P) on-whistle 'whistle lightly, iteratively'	c. <i>po-dřimovat</i> (CZ) on-doze 'doze off iteratively'

<sup>2</sup> There are also other types of *po-*, which are not shown here, e.g., the attenuative and saturative *po-* (see the literature cited above).

- |                        |                     |                    |
|------------------------|---------------------|--------------------|
| (5) a. po-smotret' (R) | b. po-dziękować (P) | c. po-chválit (CZ) |
| on-look                | on-thank            | on-praise          |
| 'look'                 | 'thank'             | 'praise'           |

Russian and Polish also have ingressive *po-*, which forms verbs denoting the beginning of a dynamic event, as demonstrated by example (6). More concretely, ingressive verbs in *po-* are derived from determinate verbs of motion and similar verbs with a motion component; see, for instance, Isačenko (1962), Śmiech (1986), Zaliznjak & Šmelëv (1997), Anstatt (2003) and Dickey (2007).<sup>3</sup>

- |                   |                 |                 |                  |
|-------------------|-----------------|-----------------|------------------|
| (6) a. po-jti (R) | b. po-bežať (R) | c. po-biec (P)  | d. po-jechać (P) |
| on-walk           | on-run          | on-run          | on-go            |
| 'start walking'   | 'start running' | 'start running' | 'start going'    |

However, when the prefix *po-* attaches to an indeterminate motion verb, it brings about the delimitative interpretation, as in (7), which does not arise with determinate verbs of motion (Grzegorzczkova, Laskowski & Wróbel 1984, Zaliznjak & Šmelëv 1997, Anstatt 2003).

- |                       |                   |                   |                   |
|-----------------------|-------------------|-------------------|-------------------|
| (7) a. po-chodit' (R) | b. po-begat' (R)  | c. po-biegać (P)  | d. po-jeździć (P) |
| on-walk               | on-run            | on-run            | on-go             |
| 'walk for a while'    | 'run for a while' | 'run for a while' | 'go for a while'  |

In contrast to Russian and Polish, in Modern Czech, the prefix *po-* cannot yield the ingressive interpretation with motion verbs; compare (8) with (6) (the form *pojít* is grammatical only with the meaning 'die'). Neither modern grammars of Czech like Petr (1986a) and Karlík, Nekula & Rusínová (1995) nor the standard work by Kopečný (1962) list the ingressive function of *po-* in Modern Czech. According to Šlosar (1981), ingressive *po-* is productive to a smaller extent in Modern Czech but his examples do not include verbs of motion.

- |                |              |            |
|----------------|--------------|------------|
| (8) a. *po-jít | b. *po-běžet | c. *po-jet |
| on-walk        | on-run       | on-go      |

---

<sup>3</sup> While determinate motion verbs denote single more or less linear motion, indeterminate motion verbs express iterative, non-linear motions.



Instead, Czech – Slovak and to a certain extent Slovenian and Sorbian – has future *po-* (Kopečný 1962, Jacko 1973, Janaš 1976, Fasske 1981, Bláha 2008). What is interesting is that future *po-* (*pů-*) shows analogous behaviour; it only combines with determinate verbs of motion and verbs that have an inherent motion property, as shown in (9).

- |                      |                     |                   |
|----------------------|---------------------|-------------------|
| (9) a. <i>pů-jdu</i> | b. <i>po-běžím</i>  | c. <i>po-jedu</i> |
| on-walk.1SG          | on-run.1SG          | on-go.1SG         |
| ‘I will be walking’  | ‘I will be running’ | ‘I will be going’ |

Moreover, analogously to Russian and Polish, when the prefix *po-* attaches to an indeterminate motion verb, then the derived verb has a delimitative meaning, as illustrated in the Czech example below.

- (10) *Po-chodím / Po-běhám / Po-jezdím (si) po horách.*  
 on-walk.1SG on-run.1SG on-go.1SG (self) on mountains  
 ‘I will walk/run/go in the mountains for a while.’

These facts point to the conclusion that ingressive *po-* evolved into future *po-* in Czech, but not in Russian and Polish (cf. Němec 1958, Kopečný 1958, Šlosar 1981). This is supported by the fact that the ingressive meaning and the future meaning are related, as argued by Kopečný (1958), Šlosar (1981) and Christensen (2011).

Dickey (2007), following Bondarko (1961), argues that the Czech future *po-* developed directly from the ablative meaning of Old Czech *po-*. This analysis, however, is problematic in the light of the parallel behaviour of future *po-* and ingressive *po-* and the fact that Old Czech had ingressive *po-* with motion verbs, as Russian and Polish, but later this type of *po-* disappeared. What is more, it seems that ingressive *po-* began to disappear approximately in the time when future *po-* began to expand, in 13th century; see Šlosar (1981: 76-80).

Future *po-* only co-occurs with verbs in the present tense in Czech, as shown by the comparison of (8), (9) and (11).

- |                             |                          |                        |
|-----------------------------|--------------------------|------------------------|
| (11) a. <i>*po-šel jsem</i> | b. <i>*po-běžel jsem</i> | c. <i>*po-jel jsem</i> |
| on-walked am                | on-ran am                | on-went am             |

In contrast, ingressive *po-* derives the whole tense paradigm in Russian and Polish, as demonstrated by examples (6) and (12).

- |         |                        |    |                            |     |
|---------|------------------------|----|----------------------------|-----|
| (12) a. | po-jdu                 | b. | po-šěl                     | (R) |
|         | on-walk.1SG            |    | on-walked.M.SG             |     |
|         | ‘I will start walking’ |    | ‘I/you/he started walking’ |     |
| c.      | po-biegneę             | d. | po-biegłem                 | (P) |
|         | on-run.1SG             |    | on-ran.1SG.M               |     |
|         | ‘I will start running’ |    | ‘I started running’        |     |

If it is correct that ingressive *po-* evolved into a future marker in Czech, then it is obvious why the other verbal forms – the infinitive and the past tense – are ungrammatical when combined with the prefix, in contrast to Russian and Polish.

To summarise this section, while all three languages have in common that they have the delimitative, distributive, surface and other readings of *po-*, they differ in the fact that only Czech has the genuine future *po-*. We have seen that Russian and Polish have ingressive *po-* in the context where Czech has future *po-* and that the Czech *po-* can be analysed as a future marker developed from ingressive *po-*.

### 5.3 Properties of future *po-*

In this section, I examine properties of the Czech future *po-* in more detail. The examples in (13) demonstrate that determinate verbs of motion like *jet* ‘go’ and *nést* ‘carry’ and verbs with an inherent motion property like *růst* ‘grow’ form the future tense by means of the prefix *po-*, which attaches to the present tense form of these verbs.

- |         |                   |    |                      |    |                     |
|---------|-------------------|----|----------------------|----|---------------------|
| (13) a. | po-jedu           | b. | po-nesu              | c. | po-rostu            |
|         | on-go.1SG         |    | on-carry.1SG         |    | on-grow.1SG         |
|         | ‘I will be going’ |    | ‘I will be carrying’ |    | ‘I will be growing’ |

The base verbs as well as the derived verbs are imperfective in contrast to the ingressive verbs in Russian and Polish, as in (6), and verbs which are derived by non-future prefixes in Czech, as shown in (14), where the prefixed verbs have a future time reference because of their perfectivity; see also (17) below for the diagnostic with the auxiliary *být* ‘be’ (for the imperfective status of verbs with future *po-* in Czech, see Trávníček 1951, Kopečný 1962,

Večerka 1999, Karlík, Nekula & Rusínová 1995, Komárek 2006, for Slovak, see Paulíny, Ružička & Štolc 1967, for Upper Sorbian, Fasske 1981 and for Lower Sorbian, Janaš 1976).<sup>4</sup>

- |         |                  |    |                |    |                  |
|---------|------------------|----|----------------|----|------------------|
| (14) a. | s-jedu           | b. | při-nesu       | c. | vy-rostu         |
|         | from-go.1SG      |    | at-carry.1SG   |    | out-grow.1SG     |
|         | ‘I will go down’ |    | ‘I will bring’ |    | ‘I will grow up’ |

Since the imperfective status of future *po-* verbs is seldom tested in the literature, below I will present several arguments for their imperfectivity. Given that future *po-* is only compatible with present tense forms, the standard tests for perfectivity using phasal verbs or the future auxiliary *budu* ‘I will’ cannot be used. The other tests, using various participial forms, are not applicable either because future *po-* verbs do not form participles for independent reasons, as will be shown below.

However, if perfectivity correlates with telicity in the case of prefixed verbs (possibly with the exception of delimitative *po-* and the perdurative *pro-*), as discussed in chapter 2.3, we can use the telicity test with adverbial modifiers. First consider the contrast between the prefixed verbs with *for-*adverbials in (15) and *in-*adverbials in (16). The examples show that the prefixed verbs are telic because they are compatible with *in-*adverbials and incompatible with *for-*adverbials.

- |         |              |           |        |                   |    |         |
|---------|--------------|-----------|--------|-------------------|----|---------|
| (15) a. | *S-jedu      | hodinu.   | b.*    | Při-nesu          | to | hodinu. |
|         | from-go.1SG  | hour      |        | at-carry.1SG      | it | hour    |
| c.      | *Vy-rostu    | dva roky  | (o     | pět centimetrů).  |    |         |
|         | out-grow.1SG | two years | (about | five centimetres) |    |         |
- 
- |         |   |        |           |        |                                |    |        |         |
|---------|---|--------|-----------|--------|--------------------------------|----|--------|---------|
| (16) a. | S-jedu  | za     | hodinu.   | b.     | Při-nesu                       | to | za     | hodinu. |
|         | from-go.1SG   | behind | hour      |        | at-carry.1SG                   | it | behind | hour    |
|         | ‘I will be down in one hour.’                       |        |           |        | ‘I will bring it in one hour.’ |    |        |         |
| c.      | Vy-rostu  | za     | dva roky  | (o     | pět centimetrů).               |    |        |         |
|         | out-grow.1SG  | behind | two years | (about | five centimetres)              |    |        |         |
|         | ‘I will grow up five centimeters within two years.’ |        |           |        |                                |    |        |         |

<sup>4</sup> There are a few exceptions; the negation prefix *ne-* and prefixes with a long vowel *ná-*, *zá-* and *při-* do not perfectivise, like in *náležet* ‘belong’ *nenávidět* ‘hate’, *závidět* ‘envy’ and *příslušet* ‘belong’.

Now consider the following examples, which confirm the correlation between telicity and perfectivity, showing that the prefixed verbs are perfective. Their infinitives cannot co-occur with the future auxiliary *budu* ‘I will’.

- (17) a. \**budu s-jet*                      b.\* *budu při-nést*                      c. \**budu vy-růst*  
           I.will from-go                      I.will at-carry                      I.will out-grow

Crucially, a comparison of (15) and (16) with (18) and (19) reveals that the examples with future *po-* display the opposite pattern; verbs with future *po-* combine with *for-*adverbials but do not with *in-*adverbials. Specifically, the event time of future *po-* predicates can only be measured by *for-*adverbials; the sentences with *in-*adverbials in (19) are grammatical only when the adverbial is meant to measure the time between the speech time and the beginning of the event time. Given the correlation between telicity and perfectivity, this pattern supports the view that verbs with future *po-* are imperfective.

- (18) a. *Po-jedu hodinu.*                      b. *Po-nesu to hodinu.*  
           on-go.1SG hour                      on-carry.1SG it hour  
           ‘I will be going for one hour.’                      ‘I will be carrying it for one hour.’  
       c. *Po-rostu dva roky.*  
           on-grow.1SG two years  
           ‘I will be growing for two years.’

- (19) a. \**Po-jedu za hodinu.*                      b.\* *Po-nesu to za hodinu.*  
           on-go.1SG behind hour                      on-carry.1SG it behind hour  
       c. \* *Po-rostu za dva roky.*  
           on-grow.1SG behind two years

Verkuyl (1972) proposes a test with conjoined adverbials; while sentences with telic predicates only have a reading with two distinct events, sentences with atelic predicates are ambiguous; besides the reading with two different events, they also have a reading under which one and the same event takes place during the time interval denoted by the conjoined adverbials. More concretely, the verbs with the non-future prefixes in (20) bring about only the reading with two distinct events.

- (20) a. S-jedu (tam) odpoledne a večer.  
 from-go.1SG there afternoon and evening  
 ‘I will go down (there) in the afternoon and in the evening.’
- b. Při-nesu to odpoledne a večer.  
 at-carry.1SG it afternoon and evening  
 ‘I will bring it in the afternoon and in the evening.’
- c. Té ještěrce vy-roste ocas tento měsíc a příští měsíc.  
 the lizard.DAT out-grow.3SG tail this month and next month  
 ‘The tail of this lizard will (re)grow this month and next month.’

In contrast, the following examples with verbs with future *po-* also have the reading with one event stretching over the time denoted by the two adverbials. Again, if telicity correlates with perfectivity, these data support the imperfective analysis of future *po-* verbs.

- (21) a. Po-jedu (tam) odpoledne a večer.  
 on-go.1SG there afternoon and evening  
 ‘I will go (there) in the afternoon and in the evening.’
- b. Po-nesu to odpoledne a večer.  
 on-carry.1SG it afternoon and evening  
 ‘I will carry it in the afternoon and in the evening.’
- c. Té ještěrce po-roste ocas tento měsíc a příští měsíc.  
 the lizard.DAT on-grow.3SG tail this month and next month  
 ‘The tail of this lizard will regrow this month and the next month.’

So far, we have used diagnostics based on (a)telicity; now, let us turn to (im)perfectivity itself. Example (22a) shows that adverbial clauses which are introduced by the conjunction *když* ‘when, if’ and contain an imperfective verb license the simultaneous reading. The event of singing the Rolling Stones takes place at the same time as the event of suffering. On the contrary, when the adverbial clause contains a perfective verb, as in (22b), the simultaneous reading is not possible; the event of singing the Rolling Stones must follow the event of suffering. Examples (22c) and (22d) demonstrate the same for the future tense.

- (22) a. Když trpěl, zpíval Stouny.  
 when suffered sang the.Rolling.Stones  
 ‘While he was suffering, he was singing the Rolling Stones.’
- b. Když to pro-trpěl, zpíval Stouny.  
 when it for-suffered sang the.Rolling.Stones  
 ‘After he got through, he was singing the Rolling Stones.’
- c. Když bude trpět, bude zpívat Stouny.  
 when will suffer will sing the.Rolling.Stones  
 ‘While suffering, he will be singing the Rolling Stones.’
- d. Když to pro-trpí, bude zpívat Stouny.  
 when it for-suffer will sing the.Rolling.Stones  
 ‘After he gets through, he will be singing the Rolling Stones.’

Let us apply the diagnostic to verbs with future *po-*. When the adverbial clause contains the verb *pojede*, the events of going/driving and singing can overlap, as demonstrated in (23a).<sup>5</sup> This shows that future *po-* derives imperfective verbs. This conclusion is confirmed by the simultaneous interpretation of example (23b), with the future *po-* verb *ponese*. If it is correct that verbs with delimitative *po-* are perfective but atelic, then example (23c), with the non-simultaneous reading, shows that it is indeed (im)perfectivity – and not (a)telicity – that determines the type of the reading in the diagnostic discussed.

- (23) a. Když po-jede, bude zpívat Stouny.  
 when on-go.3SG will sing the.Rolling.Stones  
 ‘He will be singing the Rolling Stones while driving/going.’
- b. Když po-nese ten velký balvan, bude zpívat Stouny.  
 when on-carry.3SG the heavy stone will sing the.Rolling.Stones  
 ‘He will be singing the Rolling Stones while carrying the big stone.’
- c. Když si (trochu) po-lyžuje, bude zpívat Stouny.  
 when self a little on-ski.3SG will sing the.Rolling.Stones  
 ‘After some skiing, he will be singing the Rolling Stones.’

---

<sup>5</sup> Marginally, the adverbial clause could also receive the interpretation ‘If he is allowed to go’. Then the event of singing the Rolling Stones can precede the event of going.

The next argument is based on aspectual preferences of certain conjunctions. For instance, the conjunction *mezitím co* ‘while’ selects an imperfective verb in the adverbial clause; hence (24a), with the imperfective *četla*, is grammatical, in contrast to (24b), with the perfective *přečetla*. The example with delimitative *po-* in (24c) again shows that the relevant factor is (im)perfectivity and not (a)telicity.

- (24) a. Mezitím co četla, umyl nádobí.  
 while read.F.SG washed.M.SG dishes  
 ‘While she was reading, he did the dishes.’
- b.\* Mezitím co pře-četla noviny, umyl nádobí.  
 while over-read.F.SG newspaper washed.M.SG dishes
- c.\* Mezitím co si po-četla, umyl nádobí.  
 while self on-read.F.SG washed.M.SG dishes

This diagnostic applied to verbs with future *po-* confirms that these verbs are imperfective since both (25a) and (25b), containing the future *po-* verbs *pojede* and *ponese*, are grammatical. This conclusion is corroborated by the contrast between (25a) and the ungrammatical (25c), which contains the perfective verb *přijede*.

- (25) a. Mezitím co František po-jede domů, Alžběta nakoupí.  
 while František on-go.3SG home Alžběta buy.3SG  
 ‘While František is going home, Alžběta will do the shopping.’
- b. Mezitím co Alžběta po-nese nákup domů, František zaparkuje  
 while Alžběta on-carry.3SG shopping home František park.3SG  
 auto.  
 car  
 ‘While Alžběta is carrying the shopping home, František will park his car.’
- c.\* Mezitím co František při-jede domů, Alžběta nakoupí.  
 while František at-go.3SG home Alžběta buy.3SG

Having shown that future *po-* verbs are imperfective, let us now turn to their temporal properties. There are various analyses of the fact that verbs with non-future prefixes have the future meaning (see e.g. Klein 1995, Schoorlemmer 1995, Borik 2002, Paslawska & von Stechow 2003) and all of them build on perfectivity of the prefixed verbs. However, since

verbs with future *po-* are imperfective, the analyses cannot be applied to them and the future meaning of these verbs must be derived in a different way.

Imperfective verbs derive the future tense with the help of the auxiliary *být* ‘be’, as shown in (26). This formation, however, is not possible with verbs with future *po-* since future *po-* does not derive the infinitival form, as demonstrated in (8), repeated below as (27).

- |         |                   |    |                     |    |                     |
|---------|-------------------|----|---------------------|----|---------------------|
| (26) a. | budu dělat        | b. | budu zpívat         | c. | budu číst           |
|         | will.1SG do       |    | will.1SG sing       |    | will.1SG read       |
|         | ‘I will be doing’ |    | ‘I will be singing’ |    | ‘I will be reading’ |

- |         |         |    |           |    |         |
|---------|---------|----|-----------|----|---------|
| (27) a. | *po-jít | b. | *po-běžet | c. | *po-jet |
|         | on-walk |    | on-run    |    | on-go   |

We saw in examples (9) and (13) that future *po-* is compatible with imperfective verbs and example (28) shows that it cannot attach to perfective verbs. Unfortunately, the compatibility cannot be tested with simplex perfective verbs because all unprefixated motion verbs are imperfective. Although *vyrostu* ‘I will grow’ cannot take future *po-*, as shown in (28c), *povyrostu* is grammatical with the meaning ‘I will grow a little’, that is, when it contains the attenuative *po-*. Grammaticality of this attenuative *povyrostu* also shows that the ungrammatical status of (28a) and (28b) is not caused by multiple prefixation.

- |          |                |     |                 |     |                 |
|----------|----------------|-----|-----------------|-----|-----------------|
| (28) a.* | po-s-jedu      | b.* | po-při-nesu     | c.* | po-vy-rostu     |
|          | on-from-go.1SG |     | on-at-carry.1SG |     | on-out-grow.1SG |

The fact that future *po-* only combines with imperfective verbs cannot be ascribed to a general property of prefixes because non-future prefixes can co-occur with perfective verbs, simplex, as in (29a) and (29b), as well as prefixed, as in (29c), with the attenuative *po-*.

- |         |                          |    |              |    |                             |      |
|---------|--------------------------|----|--------------|----|-----------------------------|------|
| (29) a. | vy-hodím                 | b. | na-koupím    | c. | po-vy-razím                 | si   |
|         | out-throw.1SG            |    | on-buy.1SG   |    | on-out-strike.1SG           | self |
|         | ‘I will throw sth. away’ |    | ‘I will buy’ |    | ‘I will paint the town red’ |      |

Future *po-* does not form participles, neither *l*-participles, as shown in (30), nor *n-/t*-participles, as illustrated in example (31), with the transitive verbs *vézt* ‘carry’, *nést* ‘carry’



and *vést* ‘lead’ (recall from chapter 4 that *n-/t-* participles can only be derived from transitives).<sup>6</sup>

(30) a.* <i>po-jel</i>	b.* <i>po-nesl</i>	c.* <i>po-rostl</i>
on-went	on-carried	on-grew

(31) a.* <i>po-vezen</i>	b.* <i>po-nesen</i>	c.* <i>po-veden</i>
on-being.carried	on-being.carried	on-being.led

For this reason, future *po-* also does not derive forms based on these participles, like adjectival participles, as shown in (32) and (33), the past tense, as shown in (34) (see also example (11)), and the periphrastic passive, as demonstrated in (35).<sup>7</sup>

(32) a.* <i>po-jelý</i>	b.* <i>po-neslý</i>	c.* <i>po-rostlý</i>
on-went	on-carried	on-grew

(33) a.* <i>po-vezený</i>	b.* <i>po-nesený</i>	c.* <i>po-vedený</i> <sup>8</sup>
on-being.carried	on-being.carried	on-being.led

(34) a.* <i>po-jel jsem</i>	b.* <i>po-nesl jsem</i>	c.* <i>po-rostl jsem</i>
on-went am	on-carried am	on-grew am

(35) * <i>je/ byl/ bude</i>	<i>po-vezen,</i>	<i>po-nesen,</i>	<i>po-veden</i>
is/ was/ will	on-being.carried	on-being.carried	on-being.led

Adverbial participles (transgressives) with future *po-* are also ungrammatical, as shown by the present adverbial participles (which can be derived from both perfective and imperfective verbs) in (36) and by the past adverbial participles (which are derived only from perfective verbs) in (37). Therefore, they cannot be used as a diagnostic for the (im)perfective status of future *po-* verbs. It is important to note that adverbial participles are very bookish.

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<sup>6</sup> The form *porostl* is grammatical with the meaning ‘overgrew’, i.e., when it contains surface *po-*. This also holds for the forms in (32c) and (34c).

<sup>7</sup> There are also other restrictions on the formation of adjectival participles relevant to the cases discussed; see chapter 4.

<sup>8</sup> The form *povedený* is grammatical with the meaning ‘well-done’.



Similarly, example (42a), with the proximity adverb *sem* ‘here’, has the meaning component ‘to the speaker’, but when *sem* is replaced with the adverb expressing distality *tam* ‘there’, as in (42b), only the reading with the speaker actively involved in the event is possible.

- |         |                      |    |                             |
|---------|----------------------|----|-----------------------------|
| (42) a. | Po-jed’ <i>sem</i> ! | b. | Po-jed’ <i>tam</i> !        |
|         | on-go.2SG here       |    | on-go.2SG there             |
|         | ‘Come here!’         |    | ‘Let us go there together!’ |

Having described properties of future *po-*, let us now turn to non-future prefixes.

#### 5.4 Properties of non-future prefixes

This section compares properties of future *po-* discussed in the preceding section with corresponding properties of non-future prefixes. We will see that future *po-* differs from other readings of *po-* and from other prefixes in many respects.

In (43), there are various types of *po-*, surface *po-* in (43a), delimitative *po-* in (43b), distributive *po-* in (43c), attaining-property *po-* in (43d) and the pure perfectivising *po-* in (43e). Prefixes other than *po-* will be represented by *za-* ‘behind’ in this section. In contrast to future *po-*, which derives imperfective verbs, as we saw in the preceding section, all the prefixed verbs in (43) are perfective because they cannot co-occur with the future auxiliary (see also (17)).

- |               |              |                    |                     |
|---------------|--------------|--------------------|---------------------|
| (43) * budu + | a. po-mazat  | b. po-zpívat si    | c. po-mřít          |
| I.will        | on-spread    | on-sing self       | on-die              |
|               | ‘spread’     | ‘sing for a while’ | ‘to die one by one’ |
|               | d. po-češtit | e. po-trestat      | f. za-mazat         |
|               | on-to.Czech  | on-punish          | behind-spread       |
|               | ‘Czechify’   | ‘punish’           | ‘dirty’             |

As to aspectual properties of the base verb, non-future prefixes differ from future *po-*, which only attaches to imperfective verbs, because they do not impose any aspectual restrictions on their host. Thus, they are compatible with perfective verbs, as shown by the attenuative *po-* attached to the prefixed verb in (44a) and to the simplex perfective verb in (44b), and by the prefix *za-* in (44c) (for other examples with other prefixes see (29)).

- |                     |                         |              |
|---------------------|-------------------------|--------------|
| (44) a. po-vy-jet   | b. po-hodit             | c. za-hodit  |
| on-out-go           | on-throw                | behind-throw |
| ‘drive out a little | ‘throw sth. carelessly’ | ‘throw away’ |

That non-future prefixes can also attach to imperfective verbs is demonstrated in (43). With the exception of *češtit*, which does not exist as a verb, all the verbs in (43a-f) are imperfective.<sup>9</sup>

Non-future prefixes also differ from future *po-* with respect to lexico-semantic properties of the host verb. While future *po-* only attaches to determinate verbs of motion, as discussed in section 5.2, non-future prefixes co-occur with indeterminate motion verbs, as shown in (45), partially repeated from (10), and with non-motion verbs, as illustrated in (46).

- |  |
|--|
| (45) a. Po-chodím / Po-běhám / Po-jezdím (si) po horách. |
| on-walk.1SG on-run.1SG on-go.1SG (self) on mountains     |
| ‘I will walk/run/go in the mountains for a while.’       |
| b. Za-jezdím si na lyžích.                               |
| behind-go.1SG self on skis                               |
| ‘I will ski.’  |

- |                    |                    |             |
|--------------------|--------------------|-------------|
| (46) a. po-milovat | b. po-číst si      | c. za-držet |
| on-love            | on-read self       | behind-hold |
| ‘make love to sb.’ | ‘read for a while’ | ‘hold’      |

Other prefixes like *za-* can also freely attach to determinate verbs of motion, as shown in the following example.

- |                         |                            |                        |
|-------------------------|----------------------------|------------------------|
| (47) a. za-jít          | b. za-jet                  | c. za-nést             |
| behind-walk             | behind-go                  | behind-carry           |
| ‘walk somewhere, visit’ | ‘go somewhere, knock down’ | ‘bring sth. somewhere’ |

In contrast, non-future *po-* prefixes do not attach to determinate motion verbs because that would lead to a situation where one and the same form (e.g. *pojede* from *jet* ‘go’) is

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<sup>9</sup> The verb *mřít* is probably used only in artistic texts.

imperfective (with future *po-*) and perfective (with a non-future *po-*) at the same time. There are three exceptions, *pojít* ‘die’, *pověst se* ‘succeed’ and *potáhnout* ‘cover’, but the future form derived from the perfective *pojít* is *pojde* ‘he/she/it will die’, whereas future *po-* derives the non-homophonous imperfective future *půjde* ‘he/she/it will walk’.

As to tense properties, non-future prefixes are more open than future *po-* because they also derive the infinitive form, as shown in (43), (44), (46), (47), and the past tense form, as demonstrated in (48).

- |         |                        |      |    |                           |      |    |                |      |
|---------|------------------------|------|----|---------------------------|------|----|----------------|------|
| (48) a. | po-vy-jel              | jsem | b. | po-hodil                  | jsem | c. | za-hodil       | jsem |
|         | on-out-went            | am   |    | on-threw                  | am   |    | behind-threw   | am   |
|         | ‘I drove out a little’ |      |    | ‘I threw sth. carelessly’ |      |    | ‘I threw away’ |      |

The example above also shows that non-future prefixes form *l*-participles and the examples in (49) and (50) demonstrate that non-future prefixes also derive *n-/t*-participles and corresponding adjectival participles if the base verb is transitive.

- |         |                    |    |                     |    |               |
|---------|--------------------|----|---------------------|----|---------------|
| (49) a. | po-sypán           | b. | po-hozen            | c. | za-hozen      |
|         | on-being.sprinkled |    | on-thrown           |    | behind-thrown |
|         | ‘sprinkled’        |    | ‘thrown carelessly’ |    | ‘thrown away’ |
- 
- |         |                    |    |                     |    |               |
|---------|--------------------|----|---------------------|----|---------------|
| (50) a. | po-sypaný          | b. | po-hozený           | c. | za-hozený     |
|         | on-being.sprinkled |    | on-thrown           |    | behind-thrown |
|         | ‘sprinkled’        |    | ‘thrown carelessly’ |    | ‘thrown away’ |

In contrast to future *po-*, non-future prefixes can also derive adjectival *lý*-participles if the base verb is unaccusative, as shown in (51).

- |         |                 |    |             |    |                    |
|---------|-----------------|----|-------------|----|--------------------|
| (51) a. | po-bledlý       | b. | po-rostlý   | c. | za-rostlý          |
|         | on-became.pale  |    | on-grew     |    | behind-grew        |
|         | ‘a little pale’ |    | ‘overgrown’ |    | ‘overgrown, hairy’ |

Given the fact that non-future prefixes form *n-/t-*participles, it does not come as a surprise that they derive the periphrastic passive, as well; consider (52).<sup>10</sup>

- (52) je/ byl/ bude po-sypán, po-hozen, za-hozen  
 is/ was/ will on-being.sprinkled on-thrown behind-thrown  
 ‘It is/was/will be sprinkled with something/thrown carelessly somewhere/thrown away.’

In contrast to adverbial participles with future *po-*, adverbial participles containing non-future prefixes are grammatical, as demonstrated by the past adverbial participles in (53).

- (53) a. po-sypav on-having. sprinkled.M.SG ‘having sprinkled’  
 b. po-hodiv on-having.thrown.M.SG ‘having thrown carelessly’  
 c. za-hodiv behind-having.thrown.M.SG ‘having thrown away’

As mentioned in the preceding section, present adverbial participles can also be derived from perfective (prefixed) verbs. However, these forms are even rarer than present adverbial participles derived from imperfectives (see Dvořák 1983) and because of their perfective aspect, they are used to refer to an anterior event in the future; see the examples in (54).

- (54) a. po-sypaje on-having. sprinkled.M.SG ‘having sprinkled’  
 b. po-hodě on-having.thrown.M.SG ‘having thrown carelessly’  
 c. za-hodě behind-having.thrown.M.SG ‘having thrown away’

---

<sup>10</sup> Prefixed (perfective) *n-/t-*participles cannot have the ongoing – the verbal passive – interpretation with the present form of the auxiliary *být* ‘be’, as discussed in chapter 4. This interpretation is not available because of the perfective aspect of the main verb (which is similar to the case of perfective verbs in the present tense form) and the construction *je + posypán/pohozen/zahozen* in (52) receives a stative interpretation.

Non-future prefixes also differ from future *po-* in their ability to form verbal nouns, as demonstrated in example (55).

- |         |               |    |                       |    |                 |
|---------|---------------|----|-----------------------|----|-----------------|
| (55) a. | po-sypání     | b. | po-hození             | c. | za-hození       |
|         | on-sprinkling |    | on-throwing           |    | behind-throwing |
|         | ‘sprinkling’  |    | ‘throwing carelessly’ |    | ‘throwing away’ |

Let us now turn to verbal mood. I showed in the preceding section that while future *po-* derives the indicative and imperative, it does not form the conditional mood. In addition, we saw that the imperative with future *po-* has a speaker-oriented meaning component. In contrast, non-future prefixes derive all three moods; for the conditional, see (56), for the imperative (57) and for the indicative, see example (48) above. Importantly, none of the forms have a speaker-oriented interpretation with the meaning component ‘to the speaker’ or ‘together with the speaker’.

- |         |                               |       |    |                             |       |    |                       |       |
|---------|-------------------------------|-------|----|-----------------------------|-------|----|-----------------------|-------|
| (56) a. | po-vy-jel                     | by    | b. | po-hodil                    | by    | c. | za-hodil              | by    |
|         | on-out-went                   | would |    | on-threw                    | would |    | behind-threw          | would |
|         | ‘he would drive out a little’ |       |    | ‘he would throw carelessly’ |       |    | ‘he would throw away’ |       |

- |         |                       |    |                                  |    |          |    |                  |     |
|---------|-----------------------|----|----------------------------------|----|----------|----|------------------|-----|
| (57) a. | Po-vy-jed’!           | b. | Někde                            | to | po-hod’! | c. | Za-hod’          | to! |
|         | on-out-go             |    | somewhere                        | it | on-throw |    | behind-throw     | it  |
|         | ‘Drive out a little!’ |    | ‘Throw it carelessly somewhere!’ |    |          |    | ‘Throw it away!’ |     |

We already saw in the preceding chapters that prefixes can affect selectional and argument structure properties of the verb they attach to. This, however, only holds for non-future prefixes; consider example (58), with delimitative *po-*, which makes the dative *si* obligatory, and (59), with distributive *po-*, which requires a plural (mass) object.

- |         |  |          |           |           |         |     |      |         |           |
|---------|--|----------|-----------|-----------|---------|-----|------|---------|-----------|
| (58) a. | František  | (*si)    | včera     | odpoledne | lyžoval | a   | pak  | šel     | do práce. |
|         | František  | self.DAT | yesterday | afternoon | skied   | and | then | went to | work      |
|         | ‘František was skiing yesterday afternoon and then he went to work.’ |          |           |           |         |     |      |         |           |

- b. František \*(si) včera odpoledne po-lyžoval a pak šel do práce.  
 František self.DAT yesterday afternoon on-skied and then went to work  
 ‘František skied for a while yesterday afternoon and then he went to work.’

- (59) a. Vy-hazoval míč / míče.  
 out-threw ball / balls  
 ‘He threw up the ball/balls.’
- b. Po-vy-hazoval \*míč / míče.  
 on-out-threw ball / balls  
 ‘He threw up the \*ball/balls one by one.’

Properties of future *po-* and non-future prefixes are summarised in table 1.

Table 1

	Future <i>po-</i>	Non-future prefixes
Tense	only present tense	also past and infinitive
Aspect	does not perfectivise	perfectivise
Aspect	only with imperfectives	also with perfectives
Lexico-semantic properties	only determinate motion verbs	also other verbs
Voice	only active	also passive
Mood	indicative and imperative	also conditional
Imperative	speaker-oriented	not speaker-oriented
Participles	no	yes
Verbal nouns	no	yes
Argument structure	does not affect	can affect
Selectional properties	does not affect	can affect

To conclude, it is obvious from the discussion above that future *po-* is very different from other readings of the prefix and from other prefixes and that a separate analysis is necessary.

### 5.5 Future *po-* and reanalysis

In this section, I provide an analysis that can account for the specific properties of future *po-* as well as differences between future *po-* and non-future prefixes. I will analyse future *po-* as

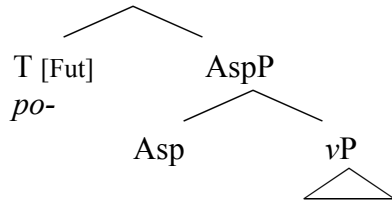


a prepositional element that evolved into a future marker and propose that the process took place in two reanalysis steps.

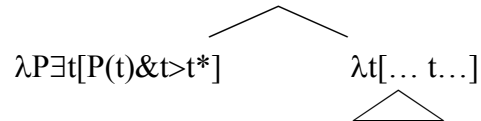
Since future *po-* only attaches to imperfective verbs in the present tense form, which have the present time reference, and the resulting verbs have a future meaning, it must be the prefix that brings about the future meaning. Note also that the future meaning cannot arise from combining perfectivity with the present tense – as in the case of non-future prefixes – since the verbs derived with future *po-* are imperfective. Moreover, if future *po-* had the same status as non-future prefixes, it should also form infinitives and the past tense, contrary to the facts.

For this reason, I propose that future *po-* represents the tense head and works as a future marker. Syntactically, it spells out the tense head whose Tense-feature has the value [Future], as shown in (60a). Semantically, the tense head combines with the aspectual phrase, which denotes a predicate over times (as discussed in chapter 2.8.2), existentially binds the time variable and introduces the precedence relation between the speech time  $t^*$  and the reference time  $t$ , as schematised in (60b).

(60) a.



b.



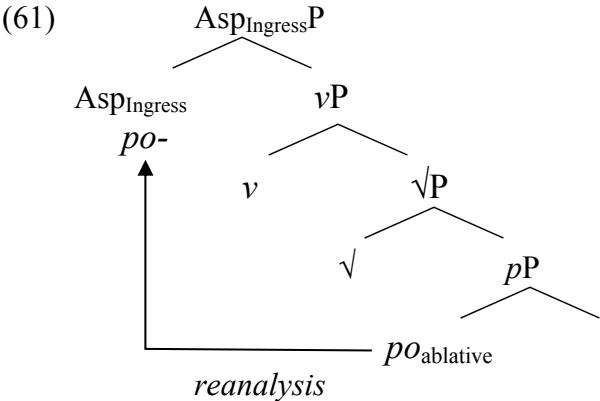
As to the progressive property of the future tense, it is determined in the aspectual head. Specifically, since base verbs to which future *po-* attaches are imperfective, the aspectual head introduces the restriction that the reference time must be included in the event time.

Besides the non-future *po-* prefixes, future *po-* is also homophonous with the preposition *po*, which is in accord with the claim that many prefixes (and particles) in many Indo-European languages are historically derived from prepositions or that prefixes and prepositions have a common ancestor (e.g. Smyth 1920/1974, Němec 1954, Kopečný 1973, Wunderlich 1987, Lehmann 1993, Stiebels 1996, Van Gelderen 2011). According to Němec (1954), the Slavic preposition *po* and the prefix *po-* evolved from the adverb *\*po* and these elements had three spatial meanings, the ablative, allative/adessive and the goal-oriented meaning. The first two meanings gradually disappeared, whereby the specific ablative meaning evolved into the abstract ingressive meaning (see Christensen 2011 for the claim that

ingressive verbs like the Polish *pobiec* ‘start running’ also denote movement away from a source).

Such diachronic changes can be analysed in terms of historical reanalysis of morphosyntactic structure; see, for instance, Roberts & Roussou (1999, 2003) and Van Gelderen (2004, 2011). Specifically, since it is less economical to merge early and then move than wait as long as possible before merging, Van Gelderen (2004, 2011) proposes an economy principle *Late Merge Principle*, according to which elements merge in the derivation as late as possible. This principle can account for grammaticalisation changes like the change from lexical to functional head or from functional to higher functional head.

With respect to lexical prefixes, I have argued that they start as a preposition in the complement position of the root and then incorporate into the verb. This analysis can also be applied to the ablative *po-*. As to superlexical prefixes, it has been argued that they can project an (aspectual) phrase above the verbal domain (e.g. Ramchand 2004, Markova 2011, Wiland 2012). If this holds for ingressive *po-*, then we can propose that the lower *po* with the ablative meaning was reanalysed as the ingressive aspectual head because of the *Late Merge Principle*, as shown in (61).



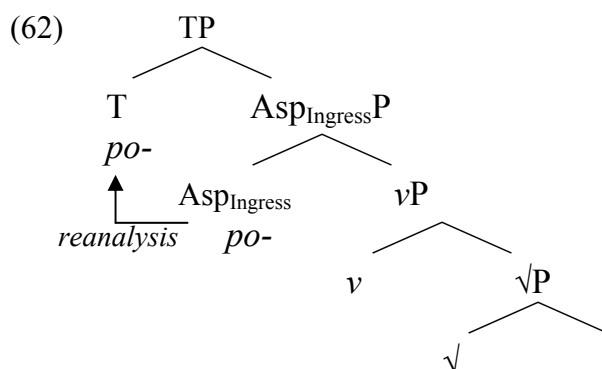
Such an analysis can also be applied to other superlexical prefixes because superlexicals always have a homophonous lexical counterpart (superlexicals form a subset of lexical prefixes) and their meaning can be treated as a certain abstraction of the meaning of the corresponding lexical prefix. Recall that I argued in chapter 2.8 that at least some superlexical prefixes should be analysed as lexical prefixes, with the difference that they license the presence of a higher functional head in the derivation. If the proposal with reanalysis of superlexical prefixes is on the right track, then such cases can be viewed as a transition-period cases and we expect that later such superlexical prefixes will be fully grammaticalised and

merge directly in the higher clausal position and project the corresponding functional projection.

If the ingressive aspectual head in (61) is just a certain type of the standard aspectual head, then ingressive *po-* should block the secondary-imperfective suffix, which also represents the aspectual head. This prediction is borne out because the secondary-imperfective *poplyvat'* from the Russian *poplyt'* 'start swimming' is ungrammatical and the Russian verb *pochodit'* cannot function as a secondary-imperfective form of the ingressive *pojti* 'start walking'.

According to Němec's (1954) diachronic point of view, in many cases, the prefixed verb is older than prepositional phrases with a preposition homophonous to the verbal prefix. If this also holds for the ablative *po*, then my diachronic assumptions would be that firstly the ablative *po* always incorporates into the verb and later it gains the ability to stay *in situ*. Since Němec's analysis relies on overt occurrences of prepositional elements, the historic data with prefixed verbs do not exclude the possibility that there is a covert copy of the preposition in a prepositional phrase in the complement position of the root. Note also that the prefixed verbs often take a complement with case identical to the case assigned by the homophonous preposition.

As discussed in section 5.2, in contrast to Russian and Polish, ingressive *po-* evolved into future *po-* in Czech. Since the aspectual head is lower than the tense head in the clausal architecture, the *Late Merge Principle* is applicable in this case, as well. Thus, in Czech, the lower ingressive *po-* was reanalysed as the tense head, in contrast to Russian and Polish, as illustrated in (62).



This analysis is supported by Dostál (1954), who argues that the modern *půjdu* 'I will be walking' was originally part of the aspectual system but that this is no longer so.

Given that future *po-* represents the future tense head as a result of reanalysis, we can now explain why infinitival forms like *ponést* ‘on.carry’ are ungrammatical. Crucially, the infinitival marker *-t* cannot spell out the tense head with the Tense-feature with the [Future] value because it is specified as [Infinitive]. Since in finite forms with future *po-* like *ponesu* ‘I will be carrying’ the tense head is represented by two vocabulary items – by future *po-* and the agreement ending *-s*, I assume the operation Fission here.<sup>11,12</sup>

The proposed analysis can also account for why future *po-* does not perfectivise the base verb. In chapter 2, we saw that non-future prefixes affect aspectual properties of their host because they incorporate into the verb and value the unvalued Tense-feature of the aspectual head. However, since the tense head is higher than the aspectual head, future *po-* cannot value the Tense-feature of the c-commanded aspectual head. On the other hand, in the case of the Russian and Polish ingressive *po-*, which was not reanalysed, we expect that verbs like the Russian *pojti* ‘start walking’ and the Polish *pobiec* ‘start running’ will be perfective. This is indeed the case.

Why does future *po-* not combine with perfective verbs in contrast to other prefixes? First, let us look at similarities in the aspectual behaviour of future *po-* and the future auxiliary. The examples below show that future *po-* in (63a) and the future auxiliary in (63b) bring about the ongoing interpretation in the adverbial clause, in contrast to the non-future prefix in (63c), which derives the bounded interpretation because of its perfectivising function. Thus, since future *po-* verb *ponese* and the periphrastic future *bude vyplňovat* (as a whole) are imperfective, the event of calling overlaps with the event of carrying and filling in (63a) and (63b), whereas in (63c) the event of calling takes place after the event of filling; see also the simultaneous reading in examples (22) and (23) in section 5.3.

- (63) a. Zavolej na něj, až to po-nese.  
 call on him when it on-carries  
 ‘Shout at him when he is carrying it.’
- b. Zavolej na něj, až to bude vy-plňovat.  
 call on him when it will out-fill  
 ‘Shout at him when he is filling it.’

<sup>11</sup> An alternative analysis would be to assume that the agreement ending spells out a projection dedicated to agreement, which is placed above the tense phrase.

<sup>12</sup> The agreement ending is also compatible with the tense head with the value [Present], as in *nesu* ‘I am carrying’.

- c. Zavolej na něj, až to vy-plní.  
 call on him when it out-fills  
 ‘Shout at him when he has filled it.’

Further, while in example (63c), the speech time can overlap with the event of filling, it is not possible in (63a) and (63b), where the events of carrying and filling must follow the speech time. Another aspectual parallelism between future *po-* and the future auxiliary concerns the imperfective status of the verb with which they combine (recall from section 5.3 that the future auxiliary is used as a diagnostic for imperfectivity).<sup>13</sup>

According to Błaszczak & Klimek-Jankowska (2012), the Polish future auxiliary *będzie* ‘he/she/it will’ denotes a Kimian state that selects complements that are semantically unbounded. The auxiliary represents the aspectual head and imposes a morphosyntactic restriction on its verbal complements requiring that it must have the Imperfective-feature.<sup>14</sup> The semantic analysis is not applicable to future *po-* but it is possible to use the syntactic implementation. Since there is a selectional relation between the tense head and its aspectual phrase complement, I assume that the tense head with the future value – that is, the tense head which is spelled out by the future *po-* – selects an imperfective complement. On the contrary, non-future prefixes/prepositions do not have such a selectional property.

If the future auxiliary is merged in the aspectual phrase, then we explain why forms like *po bude zpívat* ‘on.will sing’, containing the future auxiliary with future *po-*, are ungrammatical. Since the future auxiliary itself is perfective (historically, it is the perfective present form of the verb *byť* ‘be’, see Van Schooneveld 1951 and for Russian e.g. Miklosich 1926, Junghanns 1997), the aspectual phrase does not satisfy the imperfective selectional requirement of the tense head.

The fact that future *po-* only combines with determinate verbs of motion can be explained by historical factors. In the case of the most important motion verbs in Proto-Slavic and Old Czech, there was an opposition between determinate and indeterminate types of verbs. This opposition played a crucial role in obviating the tension between the perfectivising function of non-future prefixes and the imperfective function of future *po-*. More concretely, the perfective meaning was expressed by the indeterminate *po-* verb, like *pochoz’u* ‘I will walk’, and the imperfective future was expressed by the determinate *po-* verb, like *pójdu* ‘I

<sup>13</sup> See also Kopečný (1962), who argues that a verb with future *po-* is synonymous with the phrase which contains the same verb and the future auxiliary and that the two forms can only differ in stylistic properties.

<sup>14</sup> Cf. Veselovská (2008) and Gruet-Skrabalova (2012), who argue that the Czech future auxiliary merges in a position lower than the tense head, albeit not in the aspectual head (they do not posit AspP).

will be walking’ (see Šlosar 1981). The imperfective future function of *po-* then spread to other motion verbs by analogy and the prefix became productive (most strongly in the last 150 years according to Šlosar; see also Horálek 1955, Ertl 1925/1926 and Kopečný 1962). Since lexico-semantic properties like ‘determinate motion’ are not visible to syntax, this (in)compatibility issue is resolved at the semantic interface.

Many of the differences between future *po-* and non-future prefixes observed in sections 5.3 and 5.4 can be accounted for by different structural positions in which the two types of prefixes merge. Future *po-* does not derive *n-/t-* participles, corresponding adjectival *ny’-/tý-* participles and the periphrastic passive because it is too high for these elements. As we saw in chapter 4, participles are structurally smaller than the tense phrase and maximally contain the aspectual phrase from the verbal domain. This is corroborated by data like example (64), with the *n-* participle *nesen*, which shows that temporal properties are expressed by the auxiliary *být* ‘be’.

- (64) On je / byl / bude nesen.  
 he is was will being.carried  
 ‘He is/was/will be carried.’

On the other hand, non-future prefixes can occur in all such forms because they typically merge in some position inside the aspectual phrase.

The same reasoning applies to *l-* participles, to the corresponding adjectival *lý-* participles and also to the past tense and the conditional, which contain an *l-* participle. Since also the *l-* participle maximally contains the aspectual phrase, as discussed in the preceding chapter, future *po-* is excluded from these forms. Note also that in the past tense, the tense head is represented by the auxiliary *být* ‘be’, like in *nesl jsem* ‘I was carrying’, which bears information about person and number of the subject (which is the typical agreement property of the tense head). The reasoning applies to adverbial participles, too, which also do not contain the tense phrase and bear only the standard participial agreement markers expressing gender and number.

According to Schoorlemmer (1995), Russian verbal nouns are relatively small; they contain the verbal projection with an agreement projection, but do not embed the aspectual phrase. Although Czech verbal nouns contain the aspectual projection, they do not provide temporal information; consider example (65), which shows that the verbal noun is compatible with the past, present and future time references introduced by the three adjectives.

(65) včerejší / dnešní / zítřejší zpívání  
yesterday's today's tomorrow's singing

Again, future *po-* is structurally too high for deriving verbal nouns, contrary to the lower non-future prefixes.

In the preceding section, we saw that non-future prefixes can affect selectional and argument structure properties of the base verb. This follows from the fact that argument structure and selectional properties are determined locally in the verbal domain (*vP*), that is, in the place where lexical and also some superlexical prefixes merge. From this, it is obvious that future *po-*, representing the tense head, cannot change such properties.

Concerning verbal mood, we already know that future *po-* does not form the conditional because it cannot occur in *l*-participles. As to the indicative, future *po-* and non-future prefixes do not differ. What about the imperative? Why is the imperative of future *po-* verbs speaker-oriented?

As demonstrated in sections 5.3 and 5.4, the presence of the speaker-oriented meaning depends on the presence of future *po-*; we saw that unprefixated verbs and verbs with a non-future prefix do not have such a meaning component. It seems that the *po-* in imperatives with a motion verb is identical with future *po-* since future *po-* evolved from the prefix *po-*, which also had the allative/adessive meaning; compare Němec (1954), who hypothesises that the speaker-oriented meaning of the imperative *po-* can be a relic of the allative/adessive meaning. I interpret it in the way that the marker *po-* still has the ability to spell out the allative/adessive meaning.

If the imperative *po-* and future *po-* are identical, then the feature representing the speaker-oriented meaning – the allative/adessive meaning – should occur in the tense head, given the proposal that future *po-* spells out the tense head.<sup>15</sup> *Po-* cannot merge in a lower position with the allative/adessive meaning and then move to the tense head, where it is spelled out, since there is no productive preposition *po* or prefix *po-* in Modern Czech that has the allative/adessive meaning (see also properties of future *po-* discussed in section 5.3, which argue against such an analysis).

Note that the tense phrase can be treated as an anchoring category because it (deictically) anchors the event expressed by the clause – its reference time – to the speech time and encodes the information about the speaker (speech act participants); see Wiltschko

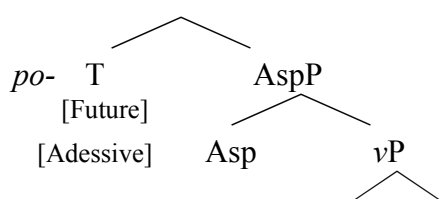
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<sup>15</sup> If the operation Fusion is assumed, the relevant feature could also occur on the complementiser head, which fuses with the tense head; see Biskup (2016c).

(2014) for the proposal that the grammatical category tense instantiates the general anchoring category and that in tense-less languages like Halkomelem, the anchoring can be encoded by the proximate/distal location. Consider also Harley & Ritter (2002), who, among others, decompose the Person-feature into three features: speaker, participant and person and treat the particular person values as bundles of these features.

Therefore, I assume that the tense head bears an Adessive-feature, which brings about the speaker-oriented meaning at LF, that is, the interpretation ‘with the speaker’ or ‘to the speaker’; see (66).

(66)



Given that the speaker-oriented meaning is restricted to future *po-* imperatives, the tense phrase with [Future] and [Adessive] is only selected by an imperative complementiser head.

On one hand, since future *po-* also occurs in forms without the speaker-oriented meaning (i.e. without the feature [Adessive]) like *ponesu* ‘I will be carrying’, it cannot be specified as [Adessive] given the Subset Principle. On the other hand, future *po-* should be more specific than non-future prefixes and the future auxiliary since these elements do not bring about the speaker-oriented interpretation. It is sufficient if future *po-* is specified as [Future] in contrast to the future auxiliary and non-future prefixes.<sup>16</sup>

This feature specification does not pose a problem for interpretation since the future auxiliary is perfective, as discussed above, hence the future meaning of the periphrastic future, like *budu zpívat* ‘I will be singing’, can be derived in the same way as with the simple future, that is, as with verbs with a non-future prefix in the present tense, like *zazpívám* ‘I will sing’, in which the combination of perfectivity and the present tense shifts the reference time forward.

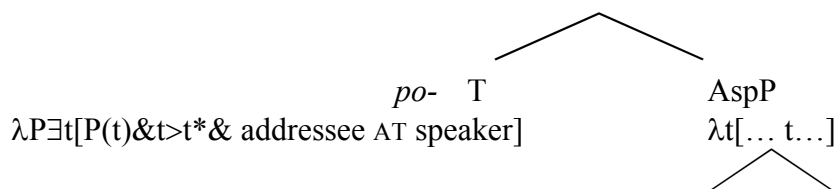
When the *po-* marker is inserted into the tense head with [Future], we derive the progressive future meaning, like in *pojedu* ‘I will be going’, whereas when it is inserted into the tense head with [Future] and [Adessive], we derive the speaker-oriented future meaning in imperatives like *pojď* ‘come here’.

<sup>16</sup> This will also block future *po-* from appearing in present forms, i.e., in the tense head with the value [Present].



In (60b) I proposed that the tense head with [Future] has the following meaning  $\lambda P\exists t[P(t)\&t>t^*]$ . Recall also that prepositions localise the figure argument with respect to the ground element. More concretely, in Old Church Slavonic, Old Czech and other Old Slavic languages, the adessive prepositional element *po* had the stative meaning with the figure argument located ‘at’ the ground argument and the allative *po* had the dynamic meaning with motion of the figure ending at the ground argument. Since the tense head encodes the information about speech act participants, it does not come as a surprise that the figure argument is the addressee and the ground argument the speaker in future *po*- imperatives. Consequently, I propose for the tense head with [Future] and [Adessive] the meaning shown in (67), which differs from the meaning of the tense head with [Future] in the presence of the third conjunct.

(67)



It depends on the meaning of other elements in the sentence and the contextual information whether the stative, adessive interpretation – that is, ‘with the speaker’ – or the dynamic, allative interpretation – that is, ‘to the speaker’ – is obtained. If the goal of the motion verb is specified (in the sentence or in the context) and differs from the location of the speaker, as in (41b), repeated as (68a), we receive the adessive interpretation; the ground of the preposition *do* ‘to’ is not identical with the ground of the *po*-. In addition, both the speaker and the addressee are the figure argument of the directional *do*.

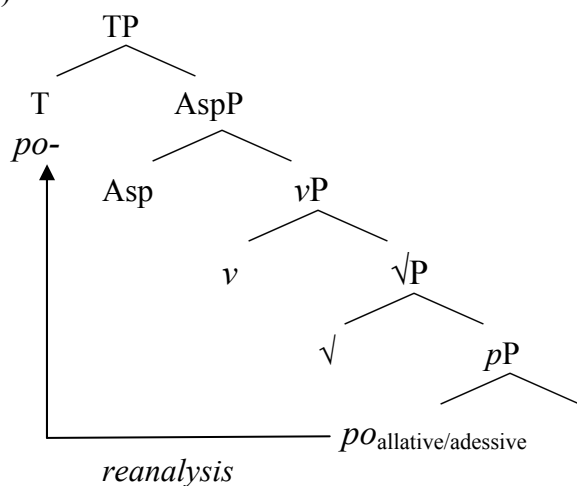
- |  |  |   |
|--|--|---|
| (68) a. Po-jed’ do Prahy!<br>on-go.2SG to Prague<br>‘Come with me/us to Prague!’ | b. Po-jed’!<br>on-go.2SG<br>‘Come here!’ | c. Po-jed’ sem!<br>on-go.2SG here<br>‘Come here!’ |
|--|--|---|

In contrast, when the goal of the motion verb is not specified, as shown in (68b), we receive the allative interpretation and the goal of the motion is identical with the ground of the *po*-, that is, with the location of the speaker. The same also holds for cases with the proximity adverb *sem* ‘here’, as in (68c).

Let us look at the allative/adessive meaning from the diachronic point of view. As already mentioned, Old Czech, as other Old Slavic languages, had the allative/adessive prepositional element *po*. This reading of *po* evolved into the posterior reading of *po*, as in the Czech *po něm* ‘after him’, and in surface *po*, which then evolved into delimitative *po-*, as in the Russian *pochodit’* ‘walk for a while’. The original allative/adessive meaning was in conflict with the ablative meaning of *po-* and disappeared and the only relic is the speaker-oriented meaning of future *po-* in imperatives in Czech; in Russian and Polish imperatives with motion verbs, the prefix *po-* cannot have the adessive/allative meaning.

Loss of flexibility of the allative/adessive prepositional element *po* – the allative/adessive meaning only occurs with the future prefix *po-*, only in imperatives and only with the speaker and addressee as arguments –, can be taken as evidence for a grammaticalisation process. Hence, I postulate the reanalysis in (69) for Czech.

(69)



Since the reanalysis ends in the tense head, as does the reanalysis of ingressive *po-*, one vocabulary item *po-* spells out the allative/adessive meaning and the future meaning at the same time.

## 5.6 Conclusion

This chapter has provided an analysis of the verbal prefix *po-*. The comparison of the Czech future *po-* with non-future verbal prefixes and *po-* from Russian and Polish has shown that future *po-* differs from other uses of verbal prefixes in a number of important ways. I have proposed a diachronic analysis with two reanalysis steps, which derives the idiosyncratic properties from the fact that future *po-* is a prepositional element that was grammaticalised as a future marker representing the tense head. In the first step, the ablative *po* was reanalysed as

the ingressive prefix *po-* and in the second step, the ingressive prefix was reanalysed as future *po-*. In contrast to Czech, Russian and Polish did not undergo the second grammaticalisation step. I have also proposed that the speaker-oriented meaning of imperatives containing a verb with future *po-* results from the ability of the marker *po-* to spell out the allative/adessive meaning. The original allative/adessive prepositional element was reanalysed as an allative/adessive tense element taking the addressee and the speaker as its arguments.

## Chapter 6

# Decomposed prepositional phrases and case

### 6.1 Introduction

In the preceding chapters, I treated verbal prefixes as incorporated prepositions and analysed prepositional phrases as containing two projections, PP and *p*P. This chapter explores prepositional phrases in more detail and provides a more articulated analysis of their syntactic and semantic structure. It also presents a new model of prepositional case assignment, focusing on Russian, Polish and Czech prepositions. Building on the preceding chapters, prepositional cases are treated on a par with structural cases as a reflection of the operation Agree between  $\phi$ -features and Tense-features. The type of prepositional case assigned is determined by semantic properties of particular heads of the decomposed preposition. I assume that there is a correspondence between semantic properties of the particular heads and their syntactic features. Syntactic features of heads incorporated into the case-assigning head are copied on the prepositional complement by the operation Agree and at the level of PF, they are spelled out as a case by means of a specific vocabulary insertion rule. The proposed system derives case properties of simple and complex prepositions as well as adverbial prepositions.

This chapter is organised as follows. In section 6.2, I discuss properties of Russian, Polish and Czech primary prepositions and adverbial prepositions. In section 6.3, I decompose prepositions into several projections and discuss syntactic and semantic properties of the particular phrases. I will be concerned mainly with spatial prepositions. It is shown that the prepositional complement can be overt as well as covert. Section 6.4 demonstrates how the process of prepositional case assignment works. It establishes the relation between the meaning of particular projections and their syntactic features and proposes vocabulary insertion rules for particular cases. Section 6.5 summarises the chapter.

## 6.2 Properties of Russian, Polish and Czech prepositions

This section is concerned with prepositional systems of Russian, Polish and Czech. It focuses on case properties of primary prepositions, complex and adverbial prepositions. Let us begin with Russian prepositions.

### 6.2.1 Russian prepositions

According to Švedova et al. (1980), there are twenty four simple primary prepositions in Russian. Fifteen of them assign one case: *bez* ‘without’, *dlja* ‘for’, *do* ‘to’, *iz* ‘out’, *k* ‘towards’, *krome* ‘except’, *nad* ‘above’, *ot* ‘away’, *pered* ‘in front of’, *pred* ‘in front of’, *pri* ‘at’, *pro* ‘for’, *radi* ‘for’, *u* ‘at’, *čerez* ‘over’; as an illustration consider (1).

- |        |   |    |   |    |   |
|--------|---|----|---|----|---|
| (1) a. | do avtomobil-ja<br>to car-GEN.SG<br>‘to the car’          | b. | iz avtomobil-ja<br>out car-GEN.SG<br>‘out of the car’ | c. | k avtomobil-ju<br>towards car-DAT.SG<br>‘towards the car’ |
| d.     | ot avtomobil-ja<br>away car-GEN.SG<br>‘away from the car’ | e. | u avtomobil-ja<br>at car-GEN.SG<br>‘at the car’       | f. | čerez avtomobil’<br>over car.ACC.SG<br>‘over the car’     |

Seven prepositions assign two cases: *v* ‘in’, *za* ‘behind’, *mež* ‘between’, *meždu* ‘between’, *na* ‘on’, *o* ‘about’, *pod* ‘under’ and three cases are assigned by prepositions *po* ‘on’ and *s* ‘from’. Apart from the prepositions *mež* and *meždu*, all these prepositions use case assignment to express the difference between the stative (locative) and dynamic (directional) meaning. In dynamic contexts these prepositions assign accusative case (see (2b) and (3b)). In stative contexts some of them assign instrumental case (2a) and others locative (3a).<sup>1</sup>

- |        |                |             |
|--------|----------------|-------------|
| (2) a. | pod / za       | jaščik-ami  |
|        | under / behind | box-INST.PL |
| b.     | pod / za       | jaščik-i    |
|        | under / behind | box-ACC.PL  |

---

<sup>1</sup> I will use the terms *stative* and *dynamic* instead of *locative* and *directional* because they also cover differences between non-spatial prepositions.

- (3) a. v / na / o stol-e  
in / on / about table-LOC.SG  
b. v / na / o stol  
in / on / about table.ACC.SG

This difference is confirmed by the (in)compatibility of the prepositional phrases with stative verbs like *ležat'* 'lie', as shown in (4) and (5) (*o* is incompatible with positional verbs like *ležat'* but it can combine with other stative verbs – which also holds for Polish and Czech – like *pomnit'* 'remember': *pomnit' o stole* / \**pomnit' o stol*). Since dynamic verbs can co-occur with a stative prepositional phrase when the prepositional phrase localises the whole event, I will only use stative verbs for testing purposes.

- (4) a. ležat' pod / za jaščik-ami  
lie under / behind box-INST.PL  
b. \*ležat' pod / za jaščik-i  
lie under / behind box-ACC.PL

- (5) a. ležat' v / na stol-e  
lie in / on table-LOC.SG  
b. \*ležat' v / na stol  
lie in / on table.ACC.SG

Turning to prepositions assigning three cases, consider, for instance, the difference between the stative meaning of the locative and instrumental prepositional phrases in (6a) and (7a) and the dynamic meaning of the accusative and genitive prepositional phrases in (6b) and (7b).

- |   |  |
|---|--|
| <p>(6) a. po priezd-e<br/> after arrival-LOC.SG<br/> 'after the arrival'</p>          | <p>b. po pojas<br/> to waist.ACC.SG<br/> 'up to waist'</p>                     |
| <p>(7) a. stakan s vod-oj<br/> glass with water-INST.SG<br/> 'a glass with water'</p> | <p>b. veter s jug-a<br/> wind from south-GEN.SG<br/> 'wind from the south'</p> |

Specifically, in (6a) the (missing) figure argument is just temporally located after the time of the arrival, whereas in (6b) there is a body path going from below to the waist. In (7a) there is a containment relation, with water placed in the glass, whereas in (7b) there is a path followed by the wind that goes from the south to the reference point. The preposition *s* also assigns the approximative accusative and *po* also assigns dative, which can convey various meanings, for instance the distributive meaning, the reason meaning and the motion along a surface.

### 6.2.2 Polish prepositions

Let us now turn to Polish prepositions. They behave similarly to Russian prepositions. In contrast to inflected parts of speech and adverbs, prepositions do not receive much attention in Polish grammars. Grammars like Szober (1957), Grzegorzyczkowa *et al.* (1984), Wróbel (2001) and Bąk (2010) discuss prepositions only in connection with other phenomena like parts of speech, nominal cases, selectional properties of verbs and they do not offer a complete overview. A more complete overview can be found in Bartnicka *et al.* (2004), who list seventeen primary prepositions.<sup>2</sup> Eight of them assign one case: *bez* ‘without’, *dla* ‘for’, *do* ‘to’, *ku* ‘towards’, *od* ‘away’, *przez* ‘over’, *przy* ‘at’, *u* ‘at’, six assign two cases: *na* ‘on’, *nad* ‘above’, *o* ‘about’, *pod* ‘under’, *przed* ‘in front of’, *w* ‘in’ and three prepositions assign three cases: *po* ‘on’, *z* ‘from’ and *za* ‘behind’.

Some of the prepositions assigning one case are shown in example (8), which is analogous to the Russian (1). There are, however, three differences. Firstly, since Polish does not have the preposition *iz*, *z* is used instead in the ‘out’ meaning in (8b); secondly, in the ‘towards’ meaning in (8c), *do* must be used instead of *ku* (*samochodowi*) since *ku* is rarely used nowadays; and thirdly, in the ‘at’ meaning in (8e), *przy*, *koło* or *obok* must be used instead of *u* since the adessive *u* in cases like *u samochod-u* is judged as archaic or bookish (Markowski *et al.* 2000).

- |   |  |  |
|---|--|--|
| (8) a. do samochod-u<br>to car-GEN.SG<br>‘to the car’ | b. z samochod-u<br>from car-GEN.SG<br>‘out of the car’ | c. do samochod-u<br>to car-GEN.SG<br>‘towards the car’ |
|---|--|--|

---

<sup>2</sup> Some authors present a more extensive list of prepositions but they also include compound prepositions, e.g. Skibicki (2007), or they list primary and secondary prepositions together, e.g. Kaleta (1995) and contrastive grammar books like Engel *et al.* (1999), Rytel-Schwarz *et al.* (2012).

- |                     |            |              |              |                |            |
|---------------------|------------|--------------|--------------|----------------|------------|
| d. od               | samochod-u | e. przy      | samochodzi-e | f. przez       | samochód   |
| away                | car-GEN.SG | at           | car-LOC.SG   | over           | car.ACC.SG |
| ‘away from the car’ |            | ‘at the car’ |              | ‘over the car’ |            |

As far as prepositions assigning two cases are concerned, consider the accusative-instrumental alternation in (9) and the accusative-locative alternation in (10). The examples show that similarly to Russian, instrumental and locative prepositional phrases have the stative meaning and accusative prepositional phrases the dynamic meaning.

- (9) a. nad / pod / przed skrzyni-ami  
 above / under / in.front.of box-INST.PL
- b. nad / pod / przed skrzyni-e  
 above / under / in.front.of box-ACC.PL
- c. leżeć nad / pod / przed skrzyni-ami  
 lie above / under / in.front.of box-INST.PL
- d. \*leżeć nad / pod / przed skrzyni-e  
 lie above / under / in.front.of box-ACC.PL
- (10) a. w / na / o stol-e  
 in / on / about table-LOC.SG
- b. w / na / o stół  
 in / on / about table.ACC.SG
- c. leżeć w / na stol-e  
 lie in / on table-LOC.SG
- d. \*leżeć w / na stół  
 lie in / on table.ACC.SG

Polish is not as restrictive as Russian and Czech with respect to the co-occurrence of verbs and stative prepositional phrases. Stative prepositional phrases like (9a) can also combine with certain dynamic verbs and denote the final location of the figure argument. This, however, does not mean that the prepositional phrases have a dynamic meaning (see e.g. Weinsberg 1973, Grochowski 1975, Przybylska 2002).

Prepositions assigning three cases also express the difference between the stative and dynamic meaning, as shown by the difference between the locative and instrumental



prepositional phrases in (11a), (12a) and (13a) and the accusative and genitive prepositional phrases in (11b), (12b) and (13b). The dynamic meaning of the examples in (b) is based on the presence of a body path in (11b), a transportation path in (12b) and the trajectory of the figure argument that ends behind the house in (13b), in contrast to (13a), where the whole event takes place behind the house.<sup>3</sup>

- |   |   |
|---|---|
| <p>(11) a. po      obiedzi-e<br/>               after lunch-LOC.SG<br/>               ‘after the lunch’</p>                           | <p>b. po kolan-a<br/>            to knee-ACC.PL<br/>            ‘knee deep’</p>   |
| <p>(12) a. kolega    z    jabłk-ami<br/>               colleague with apples-INST.PL<br/>               ‘a colleague with apples’</p> | <p>b. jabłka z    prowincj-i<br/>            apples from province-GEN.SG<br/>            ‘apples from the province’</p>   |
| <p>(13) a. strzelać za      dom-em<br/>               shoot behind house-INST.SG<br/>               ‘shoot behind the house’</p>      | <p>b. strzelać za      dom<br/>            shoot behind house.ACC.SG<br/>            ‘shoot at sth. behind the house’</p> |

### 6.2.3 Czech prepositions

Šmilauer (1969) lists nineteen primary prepositions: *bez* ‘without’, *do* ‘to’, *k* ‘towards’, *na* ‘on’, *nad* ‘above’, *o* ‘about’, *ob* ‘every other’, *od* ‘away’, *po* ‘on’, *pod* ‘under’, *pro* ‘for’, *před* ‘in front of’, *přes* ‘over’, *při* ‘at’, *s* ‘from’, *u* ‘at’, *v* ‘in’, *z* ‘from’, *za* ‘behind’. In the case of secondary prepositions *dle* ‘according to’ and *mezi* ‘between’, their relation to the base word is not noticeable today, hence they are sometimes classified as primary prepositions, too; see Cvrček *et al.* (2010) (compare also their Russian and Polish counterparts in the lists above).

Ten of the primary prepositions assign one case: *bez* ‘without’, *do* ‘to’, *k* ‘towards’, *ob* ‘every other’, *od* ‘away’, *pro* ‘for’, *přes* ‘over’, *při* ‘at’, *u* ‘at’, *z* ‘from’; seven prepositions assign two cases: *na* ‘on’, *nad* ‘above’, *o* ‘about’, *po* ‘on’, *pod* ‘under’, *před* ‘in front of’, *v* ‘in’; and two prepositions assign three cases: *s* ‘from’, *za* ‘behind’. Consider (14), which contains prepositions assigning one case and is analogous to the Russian (1) and Polish (8).

<sup>3</sup> The preposition *po* also assigns dative, conveying the adverbial manner meaning, as in *po cichu* ‘quietly’. *Z* also assigns accusative, which is restricted to the approximative meaning, as in *z godzinę* ‘about one hour’. This type of *z* is often categorised as a particle; see e.g. Markowski *et al.* (2000). And *za* also assigns genitive which has the temporal meaning ‘during’: *za mlodych lat* ‘at an early age’.

- |         |  |    |  |    |  |
|---------|--|----|--|----|--|
| (14) a. | do aut-a<br>to car-GEN.SG<br>'to the car'          | b. | z aut-a<br>from car-GEN.SG<br>'out of the car' | c. | k aut-u<br>towards car-DAT.SG<br>'towards the car' |
| d.      | od aut-a<br>away car-GEN.SG<br>'away from the car' | e. | u aut-a<br>at car-GEN.SG<br>'at the car'       | f. | přes aut-o<br>over car-ACC.SG<br>'over the car'    |

As in the case of Polish prepositions, *z* must be used in the 'out' meaning in (14b), however, in contrast to Polish, the prepositions *k* and *u* can be used in the 'towards' and 'at' meaning, respectively, as it is the case in Russian; see (14c) and (14e).

With respect to prepositions assigning two cases, the accusative-instrumental alternation in (15) and the accusative-locative alternation in (16) again show that instrumental and locative prepositional phrases have the stative meaning and that accusative prepositional phrases have the dynamic meaning. As to (16), the Czech preposition *o* also cannot combine with positional verbs like 'lie' and *v(e)* cannot co-occur with the accusative *stůl* because it only combines with accusative determiner phrases which have an abstract meaning or which express time units.

- |         |                                 |             |
|---------|---------------------------------|-------------|
| (15) a. | nad / pod / před                | bedn-ami    |
|         | above / under / in.front.of     | box-INST.PL |
| b.      | nad / pod / před                | bedn-y      |
|         | above / under / in.front.of     | box-ACC.PL  |
| c.      | ležet nad / pod / před          | bedn-ami    |
|         | lie above / under / in.front.of | box-INST.PL |
| d.      | * ležet nad / pod / před        | bedn-y      |
|         | lie above / under / in.front.of | box-ACC.PL  |
- 
- |         |                 |              |
|---------|-----------------|--------------|
| (16) a. | ve / na / o     | stol-e       |
|         | in / on / about | table-LOC.SG |
| b.      | na / o          | stůl         |
|         | on / about      | table.ACC.SG |
| c.      | ležet ve / na   | stol-e       |
|         | lie in / on     | table-LOC.SG |

- d. \* ležet na stůl  
lie on table.ACC.SG

The difference between the stative and dynamic meaning can also be found in the case of prepositions assigning three cases, as demonstrated below. The instrumental prepositional phrases in (17a) and (18a) again have the stative meaning and the genitive and accusative prepositional phrases have the dynamic meaning, as shown in (17b) and (18b). While in (17a) there is a containment relation, in (17b) there is a path going from the staircase to the floor. In (18a) the prepositional phrase localises the event of shooting behind the house, whereas in (18b) it is only the final part of the trajectory path that is placed behind the house.<sup>4</sup>

- |  |   |
|--|---|
| <p>(17) a. sklenice s vod-ou<br/>glass with water-INST.SG<br/>'a glass with water'</p>       | <p>b. pád se schod-ů<br/>fall from staircase-GEN.PL<br/>'a fall from the staircase'</p>     |
| <p>(18) a. střílet za dom-em<br/>shoot behind house-INST.SG<br/>'shoot behind the house'</p> | <p>b. střílet za dům<br/>shoot behind house.ACC.SG<br/>'shoot at sth. behind the house'</p> |

#### 6.2.4 Complex prepositions, adverbial prepositions and the case marker

All three languages also have complex prepositions consisting of two or three prepositions, as shown for Russian in (19), for Polish in (20) and for Czech in (21).

- |  |   |
|--|---|
| <p>(19) a. iz-za stol-a<br/>out-behind table-GEN.SG<br/>'from behind the table'</p>              | <p>b. iz-pod stol-a<br/>out-under table-GEN.SG<br/>'from under the table'</p> |
| <p>(20) a. s-przed stoł-u<br/>from-in.front.of table-GEN.SG<br/>'from in front of the table'</p> | <p>b. z-nad stoł-u<br/>from-above table-GEN.SG<br/>'from above the table'</p> |

<sup>4</sup> The preposition *s* also assigns accusative but only in idioms *být s to něco udělat* 'be able to do something' and *kdo s koho* 'who wins over whom'. *Za* also assigns genitive, with the circumstantial and temporal 'during' meaning, similarly to the Polish *za*.

c. s-po-za stol-u  
 from-on-behind table-GEN.SG  
 ‘from behind the table’

(21) a. ze-za stol-u  
 from-behind table-GEN.SG  
 ‘from behind the table’

b. z-pod stol-u  
 from-under table-GEN.SG  
 ‘from under the table’

c. z-po-nad stol-u  
 from-on-above table-GEN.SG  
 ‘from above the table’

All three languages also have adverbial prepositions, which often can function as an adverbial and which consist of more than one preposition or of a preposition (or more prepositions) and an element belonging to another word class, as demonstrated in the Russian (22), Polish (23) and Czech (24) examples below.<sup>5</sup>

(22) a. v-pered-i drug-ich  
 in-in.front.of-LOC.SG other-GEN.PL  
 ‘in front of the others’

b. s-zad-i dom-a  
 from-back-GEN.SG house-GEN.SG  
 ‘from behind the house’

(23) a. po-środk-u stol-u  
 on-middle-LOC.SG table-GEN.SG  
 ‘in the middle of the table’

b. do-koł-a stol-u  
 to-circle-GEN.SG table-GEN.SG  
 ‘around the table’

(24) a. o-kol-o stol-u  
 about-circle-ACC.SG table-GEN.SG  
 ‘around the table’

b. ze-zad-u místnost-i  
 from-back-GEN.SG room-GEN.SG  
 ‘from the back of the room’

The case assigned by a preposition can attach to various categories, for instance, to a noun, as in (25a), (26a) and (27a), to an adjective, as in (25b) and (26b), to another preposition, as in (27b), to a demonstrative pronoun, as in (25c) and (26c), and to a deictic adverb, as in (27c).

<sup>5</sup> In (22a) *pered* is analysed as a preposition, not like the noun *perēd* ‘front’, because the case ending *-i* does not go together with the masculine gender of *perēd*. The related Czech *před* in examples like (27b) is also glossed as *in front of* since it can only function as a preposition.

- |         |   |    |  |    |   |      |
|---------|---|----|--|----|---|------|
| (25) a. | v Moskv-u<br>in Moscow-ACC.SG<br>'to Moscow'  | b. | s-vysok-a<br>from-high-GEN.SG<br>'from above, haughtily' | c. | po-t-om<br>after-it-LOC.SG<br>'then'              | (R)  |
| (26) a. | do-koł-a<br>to-circle-GEN.SG<br>'around'      | b. | do syt-a<br>to sated-GEN.SG<br>'to one's fill'           | c. | przed-t-em<br>in.front.of-it-INST.SG<br>'earlier' | (P)  |
| (27) a. | na-míst-o<br>on-place-ACC.SG<br>'in place of' | b. | do-před-u<br>to-in.front.of-GEN.SG<br>'forward'          | c. | z-tam-a<br>from-there-GEN.SG<br>'from there'      | (CZ) |

Having the relevant properties in place, let us now move to the internal structure of prepositional phrases.

### 6.3 Decomposing prepositional phrases

This section decomposes prepositional phrases into several projections and discusses their syntactic and semantic properties.

#### 6.3.1 Dynamic and stative prepositional phrases

In the preceding section, we saw that prepositions can have a stative or dynamic meaning and that the meaning is related to the assigned case. It has been argued that dynamic prepositional phrases are structurally, or at least semantically, more complex than stative prepositional phrases; see Jackendoff (1983), Bierwisch (1988), Wunderlich & Herweg (1991), Koopman (2000), Kracht (2002), (2008), Van Riemsdijk & Huijbregts (2002), Zhang (2002), Zwarts (2008), Den Dikken (2010) and Pantcheva (2011). In addition to the stative meaning, dynamic prepositional phrases contain a dynamic component. In what follows, I present several empirical arguments for this point of view.

There are complex prepositions with a dynamic meaning that contain a stative preposition, as we saw in examples (19)-(21), but there are not complex prepositions with a stative meaning that contain a dynamic preposition. Although the prepositions *nad* 'above', *pod* 'under', *przed* 'in front of' and *za* 'behind' are ambiguous between the stative and directional meaning, in the examples in (19)-(21) their stative meaning is used, for instance,

the Russian *iz-pod stola*, repeated below as (28a) denotes motion from a place that is located under the table (and does not denote motion to under the table) and the Polish *znad stołu* in (28b) denotes motion from a place that is above the table (and does not denote motion that ends above the table).

- |         |                        |    |                         |
|---------|------------------------|----|-------------------------|
| (28) a. | iz-pod stol-a          | b. | z-nad stol-u            |
|         | out-under table-GEN.SG |    | from-above table-GEN.SG |
|         | ‘from under the table’ |    | ‘from above the table’  |

For the same point with some non-ambiguous examples see the postpositions from Lezgian in (29) and (30), taken from Haspelmath (1993: 214-216). While *wilik* has the spatial or temporal stative meaning, the relative form *wilikaj* has the path dynamic meaning. In the same vein, *arada* has the spatial stative meaning and the relative *aradaj* expresses source and path.

- |         |                       |    |             |
|---------|-----------------------|----|-------------|
| (29) a. | wilik                 | b. | wilikaj     |
|         | in.front.of           |    | in.front.of |
|         | ‘in front of, before’ |    | ‘along’     |
- 
- |         |                  |    |                            |
|---------|------------------|----|----------------------------|
| (30) a. | arada            | b. | aradaj                     |
|         | between          |    | between                    |
|         | ‘between, among’ |    | ‘from between, from among’ |

The same pattern can also be observed in the case of case affixes, as shown by the following Lezgian examples, where the dynamic markers *-aj* and *-di* are attached to the stative markers *-w* and *-q<sup>h</sup>* (Haspelmath 1993: 74).

- |         |               |    |                  |    |                   |
|---------|---------------|----|------------------|----|-------------------|
| (31) a. | sewre-w       | b. | sewre-w-aj       | c. | sewre-w-di        |
|         | bear.ERG-at   |    | bear.ERG-at-from |    | bear.ERG-at-to    |
|         | ‘at the bear’ |    | ‘from the bear’  |    | ‘toward the bear’ |
- 
- |         |                      |    |                          |    |                          |
|---------|----------------------|----|--------------------------|----|--------------------------|
| (32) a. | sewre-q <sup>h</sup> | b. | sewre-q <sup>h</sup> -aj | c. | sewre-q <sup>h</sup> -di |
|         | bear.ERG-behind      |    | bear.ERG-behind-from     |    | bear.ERG-behind-to       |
|         | ‘behind the bear’    |    | ‘from behind the bear’   |    | ‘to behind the bear’     |

Similarly, dynamic *wh*-adverbs can be derived from stative *wh*-adverbs, as shown for Polish and Czech temporal adverbs below. On the contrary, there are no examples of stative *wh*-adverbs derived from dynamic *wh*-adverbs.

- |         |        |             |              |
|---------|--------|-------------|--------------|
| (33) a. | kiedy  | b. do kiedy | c. od kiedy  |
|         | when   | to when     | from when    |
|         | ‘when’ | ‘till when’ | ‘since when’ |

- |         |        |             |              |
|---------|--------|-------------|--------------|
| (34) a. | kdy    | b. dokdy    | c. odkdy     |
|         | when   | to when     | from when    |
|         | ‘when’ | ‘till when’ | ‘since when’ |

It is not decisive for the argument whether or not the preposition forms one word with the adverb; what is crucial is that the dynamic element includes the stative element. With respect to locative adverbs, we find the same pattern in German; consider (35), where the illative *wohin* and the ablative *woher* contain the stative *wo* (consider also the complex directional adverbs *dorthin* ‘to that place’ and *dahin* ‘to that place’ and the contrast between the English *th-/h-/where*, *th-/h-/whither* and *th-/h-/whence*).

- |         |         |             |              |
|---------|---------|-------------|--------------|
| (35) a. | wo      | b. wo-hin   | c. wo-her    |
|         | where   | where-there | where-here   |
|         | ‘where’ | ‘where’     | ‘from where’ |

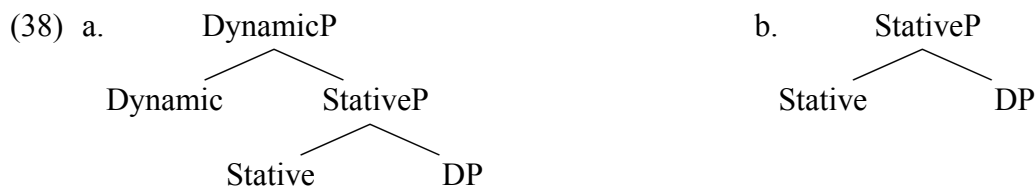
Adverbial prepositions behave in the same way. Dynamic adverbial prepositions, as the Russian (36b), (36c) and the Polish (37b), (37c), contain a stative preposition, as (36a) and (37a), but there is no stative adverbial preposition that contains a dynamic preposition.

- |         |               |                       |                         |
|---------|---------------|-----------------------|-------------------------|
| (36) a. | pered         | b. v-perēd            | c. s-pered-i            |
|         | in.front.of   | in-in.front.of.ACC.SG | from-in.front.of-GEN.SG |
|         | ‘in front of’ | ‘to the front of’     | ‘from the front of’     |

- |         |                   |                  |                        |
|---------|-------------------|------------------|------------------------|
| (37) a. | koł-o             | b. do-koł-a      | c. w-o-koł-o           |
|         | circle-NOM/ACC.SG | to-circle-GEN.SG | in-about-circle-ACC.SG |
|         | ‘at’              | ‘around’         | ‘around’               |

One might propose that the Russian *vperĕd* is derived from the noun *perĕd* but this is problematic for *speredĭ* because the case ending *-i* does not go together with the masculine gender of *perĕd* (see footnote 5).<sup>6</sup>

To conclude this discussion, elements with the dynamic meaning project a dynamic phrase and embed the stative phrase, which encodes the stative meaning, as shown in (38a). In contrast, stative elements have structure (38b).



Recall from section 6.2 that there is a correspondence between cases and the type of the meaning: locative and instrumental prepositional phrases have the stative meaning and accusative and genitive prepositional phrases have the dynamic meaning. Given this, locative and instrumental prepositional phrases have the structure in (38b), whereas accusative and genitive prepositional phrases have the structure in (38a).

### 6.3.2 The tense head and case

At this stage, the question arises how case is assigned in the decomposed structure. The generalisation drawn from the data is that case is determined by the highest head in the prepositional structure. For instance, complex prepositions like the Polish *sprzed* and *znad* in (20), repeated here for convenience as (39), assign genitive, which is the case assigned by the dynamic *s* and *z*. What is crucial is that the prepositions *przed*, *nad* and *po* do not assign genitive; *przed* and *nad* assign accusative and instrumental and *po* assigns dative, accusative and locative.

<sup>6</sup> The Czech adverbials *dopředu* ‘to the front’ *zepředu* ‘from the front’, *kupředu* ‘forward’, *vpředu* ‘forward’, which contain the preposition *před* ‘in front of’ and the preposition *do/ze/k(u)/v*, show the same pattern. Although *před* is ambiguous between the stative and dynamic meaning, in the discussed examples, its stative meaning is used; the adverbials describe motion to or from a place that is located in front of a certain reference point.





In the Russian example in (42), the null accusative and the locative and genitive *-i* are assigned by the left prepositions *v* and *s*, which can be dynamic (as in (42a) and (42c)) in contrast to the stative *pered*, which assigns only instrumental. In the Polish examples, the accusatives in (43a) and (43b) could theoretically be assigned by both prepositions, *na* and *o* and *w* and *o*, but crucially the genitive in (43c) can be only assigned by the left preposition *do*.

- |         |                        |    |                        |    |                         |
|---------|------------------------|----|------------------------|----|-------------------------|
| (42) a. | v-perēd                | b. | v-pered-i              | c. | s-pered-i               |
|         | in-in.front.of.ACC.SG  |    | in-in.front.of-LOC.SG  |    | from-in.front.of-GEN.SG |
|         | ‘to the front of’      |    | ‘in front of’          |    | ‘from the front of’     |
|         |                        |    |                        |    |                         |
| (43) a. | na-o-koł-o             | b. | w-o-koł-o              | c. | do-o-koł-a              |
|         | on-about-circle-ACC.SG |    | in-about-circle-ACC.SG |    | to-about-circle-GEN.SG  |
|         | ‘around’               |    | ‘around’               |    | ‘around’                |

In the Czech adverbials below, the dative case in (44a) and the genitives in (44b) and (44c) must be assigned by the higher dynamic prepositions *k(u)*, *do* and *ze* since the preposition *před* assigns accusative and instrumental.

- |         |                            |    |                       |    |                         |
|---------|----------------------------|----|-----------------------|----|-------------------------|
| (44) a. | ku-před-u                  | b. | do-před-u             | c. | ze-před-u               |
|         | towards-in.front.of-DAT.SG |    | to-in.front.of-GEN.SG |    | from-in.front.of-GEN.SG |
|         | ‘forward’                  |    | ‘to the front’        |    | ‘from the front’        |

As discussed in the preceding section, stative prepositions project only the stative phrase and assign stative cases, whereas prepositions with a dynamic meaning project the dynamic phrase above the stative phrase and assign dynamic cases. This means that the case assigning head should know whether or not the dynamic phrase projects. The dynamic and stative heads, however, cannot assign case by themselves because the dynamic head should assign case exactly when the stative head does not assign case and the stative head in turn should assign case when the dynamic head does not project. From the derivational point of view, the stative head cannot know whether or not the dynamic head will merge in the structure, which gives rise to the look-ahead problem. Another problem is that it is not clear why in certain cases the stative head could assign case and in others could not.

It also does not help to assume that the ability of the stative head to assign case is tied to the presence of unvalued  $\phi$ -features (or some other feature) that are optional because there

should be a dependency between the presence/absence of these features on the stative head and the presence/absence of the dynamic head (or its unvalued  $\phi$ -features) in the derivation. The problem is summarised in table 1, showing all possible scenarios.

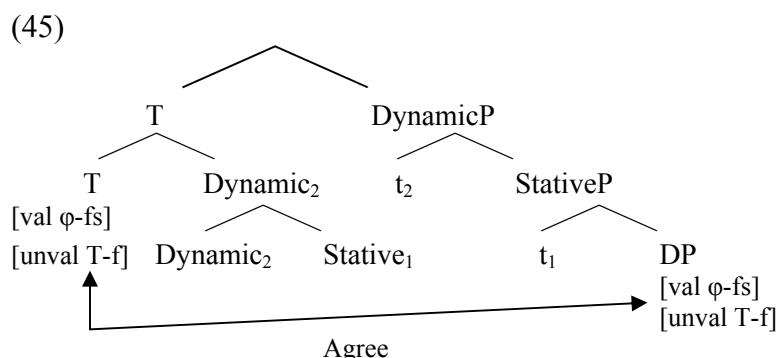
Table 1

	a. No Dynamic	b. Dynamic without $\phi$ -fs	c. Dynamic with $\phi$ -fs
1. No Stative	not interesting	*	*
2. Stative without $\phi$ -fs	*	*	√
3. Stative with $\phi$ -fs	√	*	*

The cells 2c and 3a pose the dependency problem. Cases 1b and 1c are ungrammatical because the presence of the dynamic meaning – that is, the presence of the dynamic head – presupposes the presence of the stative meaning (head). Cases 2a and 2b potentially violate the Case Filter because it can happen under certain circumstances that the prepositional complement does not receive case in the derivation. Case 3b is ungrammatical because the appropriate preposition would have a dynamic meaning but the prepositional complement would receive a stative case. Finally, 3c is ungrammatical because  $\phi$ -features on the dynamic head would remain unvalued.

Because of these problems, I adopt the assumption in Biskup (2009b) that prepositional case is assigned by some higher head, which has all information relevant to case assignment. Analogously to the verbal domain, there is a tense head in the prepositional structure, which c-commands the dynamic and stative head. In accordance with the proposal in preceding chapters that also prepositional cases are a reflection of the operation Agree between Tense-features and  $\phi$ -features, the tense head has a valued Tense-feature and unvalued  $\phi$ -features. Since the case assigned to the prepositional complement is not identical for all prepositions, as we saw in section 6.2, the tense head must be somehow instructed which case it shall assign. This is ensured by incorporation of the lower prepositional heads into the tense head. Given that the stative head follows the dynamic one (e.g. in the Russian *iz-za* ‘from behind’, Polish *s-przed* ‘from in front of’ and Czech *z-pod* ‘from under’), the incorporation happens to the right. In this respect Slavic languages differ from languages like English where the lower preposition precedes the higher one like in *into* and *onto*. This should not pose a problem because it is known that directionality parameters can be set differently for different categories even in one and the same language, for instance, the verbal domain in German is

OV, whereas the prepositional domain is VO (with a few exceptions). The whole case assigning process is schematised in the tree in (45).<sup>8</sup>



Recall from chapter 2 that there are indeed languages that manifest overt prepositional agreement or have tensed prepositions; for overt prepositional agreement consider the Jacaltec example in (46) and the Kiribati example in (47) and for tensed prepositions see the Maori example in (48) and the Titan example in (49).

(46) y-ul te' ñah  
 3-in the house  
 'in the house' (Baker 2008: 194; originally Craig 1977: 110)

(47) nako-ia mooa  
 to-3PL chickens  
 'to the chickens' (Hagège 2010: 139; originally Groves *et al.* 1985: 65)

<sup>8</sup> For more details, see section 6.4. One might propose that the tense head can receive the relevant information via the selection/sisterhood relation with its complement (dynamic or stative phrase). This proposal would be problematic in the case of more articulated prepositional phrases where case is determined by more projections. It is also difficult (albeit not impossible) to model it in terms of Agree; the tense head would have to enter into an Agree relation with all heads relevant to the case assignment and results of these operations would have to be reflected by the operation Agree between the tense head and the prepositional complement. In approaches assuming multiple cases (e.g. Merchant 2006, Matushansky 2008, Biskup 2009a, Richards 2013, Assmann *et al.* 2014), the prepositional complement staying *in situ* could receive case from every relevant head either via the operation Agree or some case assigning mechanism that percolates case to all elements present in the sister constituent. Note, however, that in none of the discussed Slavic languages are there multiple case markers on the prepositional complement and that the prepositional case marker does not have to occur on all elements contained in the prepositional complement. The prepositional complement could also move to the relevant case assigning projections (e.g. Van Riemsdijk 2007, Caha 2009) but it is difficult to motivate such movements because the Spec-Head relation is not necessary for case assignment in the minimalist approach and the movements also would have no word order reflections, in contrast to e.g. Dutch, where directional prepositions can follow their complement.

- (48) a. Kei hea te poutāpeta?  
 at.PRES where the post.office  
 ‘Where is the Post Office?’
- b. I Ōtepoti ia i tērā wiki.  
 in.PST Dunedin 3SG of that week  
 ‘She/he was in Dunedin last week.’ (Harlow 2007: 146)

- (49) Matamorai i=tawi Nauna pe ala lau i-ti wei.  
 sun 3SG.NFUT=create Nauna.Island and 3PL people NFUT-in INAN.3SG  
 ‘The sun created Nauna Island and the people on it.’  
 (Bowern & Aygen-Tosun 2000: 39)

At first sight, it might seem awkward to assume a tense projection in the prepositional structure. However, we know that the prepositional predication holds at a certain time. For instance, according to Klein (1990, 1991) the internal and the external argument bear a time index. In contrast to Klein, Wunderlich (1993) argues that the time indices are never different and that it is the location as a whole that is predicated of some time interval. He proposes that prepositions localise the eigenplace (region of interaction) of the figure argument with respect to the ground argument and that eigenplaces are time dependent. In the same vein, von Stechow (2006, 2007) assumes a time argument in the meaning of prepositions, besides the internal and external argument and the world argument. Similarly, Kracht (2008) postulates a function *loc*’ in the prepositional meaning, which takes an object and a time point and returns the region that the object occupies at that time point.

The relevance of the tense projection in prepositional phrases can be illustrated with the following example: *Ta žena se zničeným kufrem se chová divně*. ‘The woman with the broken suitcase is behaving inappropriately.’ The prepositional phrase *se zničeným kufrem* ‘with the broken suitcase’ can be related at least to two different times, to the speech time – for instance, in a dialogue between two people who are observing a woman at a party that has a broken suitcase and that is behaving inappropriately – or to some reference time in the past, for instance, in a dialogue when two people are observing a woman at a party who is behaving inappropriately and whom they also met at the airport a short while ago, where she had a problem with her broken suitcase.

Following my proposal in chapter 2, there is a little prepositional head *p* on the top of the prepositional structure and this head selects the tense phrase and brings about the right categorial status of the whole prepositional structure, allowing its embedding.

### 6.3.3 The prepositional structure in more detail

The internal structure of prepositional phrases is more complex, for instance, Lang (1991) and Wunderlich & Herweg (1991) propose that there is a localising function that situates the figure argument in space relative to a neighbourhood region of the ground argument. This localising function has been argued to be morphologically realised in Japanese and Korean (Wunderlich 1991, 2012; Bierwisch 1996; cf. also Svenonius 2008); consider the general locative marker *ni* in the Japanese example (50).

- (50) Hon wa teeburu no ue/ shita ni aru.  
 book TOP table GEN on-/ under-region LOC be

lit. ‘The book is located in the on-region/under-region of the table.’

(Wunderlich 2012: 320)

The neighbourhood region is often expressed by a special functional word with a meaning like ‘top’, ‘bottom’, ‘front’, ‘back’, which is called *relator noun* (Blake 2001) or *Axial Part* (Svenonius 2006); hence some authors assume an AxPart projection in the prepositional structure (e.g. Kracht 2008, Pantcheva 2008). In the example above, the neighbourhood region is represented by *ue* and *shita*. As to Slavic languages, we could analyse the Russian *dol’*, the Polish *śród* and the Czech *zad* as AxPart elements in the adverbial prepositions in (51).

- |         |                  |    |                    |    |                    |
|---------|------------------|----|--------------------|----|--------------------|
| (51) a. | v-dol’           | b. | w-śród             | c. | ze-zad-u           |
|         | in-bottom.ACC.SG |    | in-middle.ACC.SG   |    | from-back-GEN.SG   |
|         | ‘down, along’    |    | ‘in the middle of’ |    | ‘from the back of’ |

Following the idea of the region semantics, I will use the meaning (52) for the locative head. In order to allow the application of the little prepositional head, I modify the usual meaning of the localising function by adding the state variable. Thus, the referent of the figure argument *x* is in the state of being located with respect to the neighbourhood region of the ground argument *R*, which is specified by the appropriate preposition.

(52)  $\lambda R \lambda x \lambda s [x \text{ LOC } R(s)]$

Dynamic prepositional phrases have been proposed to contain the operator BECOME (or CHANGE); see Dowty (1979), Wunderlich (1991), Stiebels (1996) and McIntyre (2006) (but see Gehrke 2008 for some criticism of BECOME in prepositional phrases). This operator identifies the transition from one region (in the case of spatial prepositions like here; more generally, it is an event/state) into the other and takes the final stage as its argument.<sup>9</sup> It comes in two types; for goal prepositions, I propose the meaning (53a) and for source prepositions the meaning (53b).

- (53) a.  $\lambda P \lambda x \lambda s [\text{BECOME}(P(x)(s))]$   
 b.  $\lambda P \lambda x \lambda s [\text{BECOME}(\neg P(x)(s))]$

The presence of BECOME is responsible for telicity of prepositional phrases, which differs from telicity of prefixed verbs, which is derived by the CAUSE operator in the head *p* of the prefixal type. That these two phenomena are different is obvious from the fact that incorporated prepositions/prefixes generally induce telicity in the verbal domain (possibly there are two exceptions, delimitative *po-* and perdurative *pro-*), as discussed in chapter 2.3, and that non-incorporated telic prepositions with BECOME do not telicise the verb.

Instead of BECOME, the notion of path and the path projection could be used (see e.g. Zwarts 2005); this would also derive the case patterns under discussion.<sup>10</sup> Although the path approach is more flexible in certain aspects, there are also arguments for the presence of BECOME in the structure of prepositional phrases; see McIntyre (2006).

The dynamic phrase, projected by the BECOME operator, embeds the phrase containing the localising function LOC, which in turn embeds the stative phrase. I assume that AxPart elements also project the stative phrase. Consequently, the prepositional structure of dynamic prepositions looks like (54) and stative prepositions differ from them in lacking the dynamic projection.

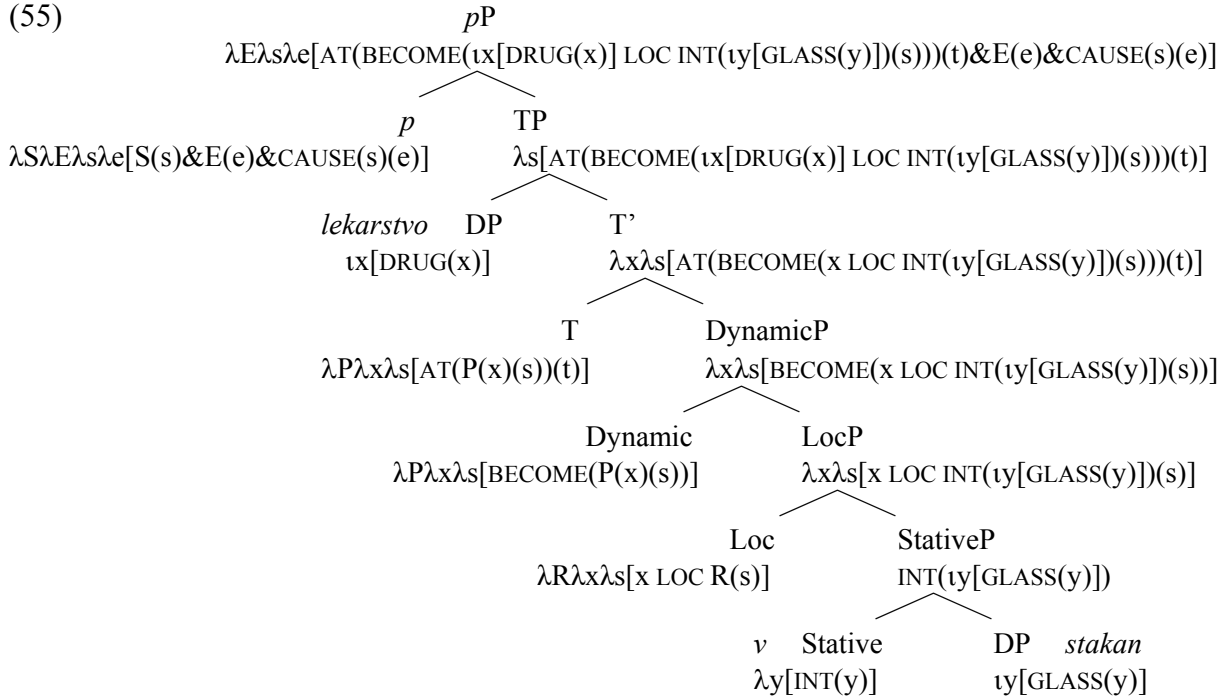
(54)  $[_{pP} P [_{TP} T [_{\text{DynamicP}} \text{Dynamic} [_{\text{LocP}} \text{Loc} [_{\text{StativeP}} \text{Stative} [_{DP} N]]]]]]]]$

<sup>9</sup> Compare the definition of BECOME in (i) from Beck (2005: 7), and also Dowty (1979), von Stechow (1996), Filip (2012). Compare also Fong's (1997) concept of phase quantifiers.

(i)  $[[\text{BECOME}]] (P)(e) = 1$  iff *e* is the smallest event such that *P* is not true of the prestate of *e* but *P* is true of the result state of *e*.

<sup>10</sup> It is also possible to combine both approaches; compare Kracht (2002, 2008).

As an illustration consider the LF with the Russian dynamic prepositional phrase *v stakan* ‘into the glass’ in (55), occurring, for instance, in the sentence *Artur vлил lekarstvo v stakan* ‘Artur poured the drug into the glass’.



Applying the meaning of the stative head to its complement, we receive the internal region of the referent of the glass. The localising function situates the referent of the figure argument  $x$  in that region. The figure, however, merges later in the derivation since it does not intervene between the case-assigning tense head and the ground argument.<sup>11</sup>

Applying the meaning of the dynamic head, the result is that it becomes true that the referent of  $x$  is in the state of being located in the internal region of the glass. The tense head then relates this meaning to a certain time. The time variable is free and receives a value at the semantico-pragmatic interface, depending on the meaning of other elements in the sentence and the context. In certain sentences, the time of the prepositional predicate could be identified, for instance, with the event time of the verbal predicate, as in the Polish *Leżał na podłodze* ‘He was lying on the floor’ (recall also the Titan example in (49) showing that some languages manifest tense concord on prepositions) but there are also cases where such an identification is not possible. Consider the Czech example in (56), where, given the present tense of the verb, its event time coincides with the reference time and the speech time. The

<sup>11</sup> Alternatively, the figure argument could merge directly in the specifier of the locative phrase and the ground would have to move across it. The question, however, arises how such movement would be motivated. What is more, some higher copy of  $v$  would have to be spelled out as the preposition.



time of the prepositional phrase *do Japonska*, however, must be different; the time for which it (possibly) holds that the goods are located in Japan must follow the speech time.

- (56) To zboží do Japonska stojí tamhle.  
 the goods to Japan stand.PRES over.there  
 ‘The goods to be exported to Japan are over there.’

Returning to the derivation in (55), the figure argument merges in the specifier position of the tense phrase. It is the earliest option for it not to block Agree and the case assignment between the tense head and the ground argument. This means that the locus of the syntactic defectivity, as discussed in chapter 3.3.3, is the tense head. For instance, if a prepositional phrase is defective and the figure argument is missing, its tense head does not have  $\phi$ -features and the selectional feature responsible for Merger of the figure. The syntactically unrealised prepositional argument would then semantically correspond to the free variable  $x$  in the meaning of the localising function.

In chapter 2.8.2 we saw that in cases with an incorporated preposition like (55), the little prepositional head has the prefixal meaning with the CAUSE relation between the two subevents because prefixes telicise. In verbal complements like in the Russian *v Germanii* in (57), from which the preposition does not incorporate into the verb, the little prepositional head cannot have the CAUSE meaning because the event of Artur’s residing does not cause Artur’s state of being in Germany.

- (57) Artur žil v Germanii.  
 Artur lived in Germany

Therefore, I assume that in cases like this the little prepositional head has the meaning (58) (note that in many cases, the same tense phrase can be selected by both types of  $p$ , deriving either prefixed or unprefixated verb). It takes the tense phrase, which expresses Artur’s state of being in Germany, and then it takes the root of *žit’* ‘live’, which is a predicate over events.

- (58)  $\lambda P\lambda Q\lambda s\lambda e[P(s) \ \& \ Q(e)]$

If the time of the prepositional phrase is identified with the event time of the verbal predicate *live*, we obtain a correct meaning for (57) since Artur is in an argument relation with the event of living and at the same time he is located in Germany.<sup>12</sup>

If Larson (1988), Pesetsky (1995), Stroik (1996), Haider (2004) and others are right in that modifiers – like the Russian *pod mostom* in (59) – can merge in the complement position of the verb, then the meaning (58) can also be used for the little prepositional head in these cases.

- (59) Timur spal pod mostom.  
 Timur slept under bridge  
 ‘Timur was sleeping under the bridge.’

Coming back to (55), the prepositional phrase merges with the root of *lit* ‘pour’ and the complex head *p* incorporates into it. Semantically, the meaning of the prepositional phrase applies to the predicate of events expressed by the verbal root and then the derivation proceeds as discussed in chapter 2.

#### 6.3.4 The covert prepositional complement

Let us now turn to prepositional complements. They can be overt as well as covert. The Russian (60a-b), Polish (60c-d) and Czech (60e-f) examples do not contain an overt determiner phrase but they contain a case ending.

- |                    |                   |                       |
|--------------------|-------------------|-----------------------|
| (60) a. po-sred-i  | b. iz-redk-a      | c. na lew-o           |
| on-amidst-DAT.SG   | out-rare-GEN.SG   | on left-ACC.SG        |
| ‘in the middle of’ | ‘seldom’          | ‘on the left’         |
| d. do syt-a        | e. z-tam-a        | f. do-před-u          |
| to sated-GEN.SG    | from-there-GEN.SG | to-in.front.of-GEN.SG |
| ‘to one’s fill’    | ‘from there’      | ‘forward’             |

---

<sup>12</sup> Another possibility would be to replace the state variable of the prepositional phrase with the variable *e* so that both *P* and *Q* would predicate over the same event:  $\lambda P\lambda Q\lambda e[P(e) \ \& \ Q(e)]$ , which is the standard modification template. In any case, Artur is an argument of the verbal as well as the prepositional predicate, which means that it moves from *pP* to *vP*.

In what follows, I present several arguments for the presence of a covert noun in examples like these. The first one is theory-internal; since case is a reflection of the operation Agree between  $\phi$ -features, there must be an element in these examples that has valued  $\phi$ -features (at least historically in unproductive cases).<sup>13</sup> Secondly, adverbials like *dopředu* ‘forward’ refer to a certain place; hence we expect a referential element in such phrases (e.g. a covert noun PLACE, as proposed by Katz & Postal 1964, Kayne 2004, Botwinik-Rotem 2008, Pantcheva 2008, Noonan 2010). Such an analysis is supported by the existence of prepositions in which the noun *place* itself is present overtly; consider the Russian (61a), the Czech (61b), the Slovak (61c), the German (61d) and the English *in place of*.

- (61) a. v-mesto                      b. na-místo                      c. na-miesto                      d. an-statt  
       in-place.ACC                      on-place.ACC                      on-place.ACC                      on-place  
       ‘in place of’                      ‘in place of’                      ‘in place of’                      ‘in place of’

Another argument comes from the consistent case behaviour; compare case markers in the Czech example (62) with the singular case endings of the masculine paradigm *hrad* ‘castle’ in table 2 (the Russian adverbial prepositions *speredí* ‘from the front of’, *vperěd* ‘to the front of’ and *vperedí* ‘in front of’ use the feminine paradigm *tetrad’* ‘notebook’). This means that there must be information in the prepositional phrase that ensures that the assigned cases are spelled out as nominal endings of the appropriate paradigm.

- (62) a. do-před-u                      b. ze-před-u  
       to-in.front.of-GEN.SG                      from-in.front.of-GEN.SG  
       ‘to the front’                      ‘from the front’  
       c. ku-před-u                      d. v-před  
       towards-in.front.of-DAT.SG                      in-in.front.of.ACC.SG  
       ‘forward’                      ‘forward’  
       e. ve-před-u  
       in-in.front.of-LOC.SG  
       ‘in the front’

Table 2

NOM	hrad
GEN	hrad-u/a
DAT	hrad-u
ACC	hrad
LOC	hrad-u/ě
INST	hrad-em

<sup>13</sup> An interesting question is what all information remains present or active in the unproductive forms. I will not discuss this issue here since it would lead us too far away from the main topic of this chapter.

The nominal element becomes visible in the Czech noun *předek* ‘front, ancestor’ (cf. the Russian *predok* ‘ancestor’), as shown in (63).

- |         |                            |    |                            |
|---------|----------------------------|----|----------------------------|
| (63) a. | do před-k-u                | b. | na před-ek                 |
|         | to in.front.of-NMLZ-GEN.SG |    | on in.front.of-NMLZ.ACC.SG |
|         | ‘to the front’             |    | ‘onto the front’           |
|         | c. v před-k-u              |    |                            |
|         | in in.front.of-NMLZ-LOC.SG |    |                            |
|         | ‘in the front’             |    |                            |

Another argument is based on case-assigning properties. Adverbial prepositions like the Russian *vperedi* ‘in front of’ or the Czech *zezadu* ‘from the back of’ assign genitive, which is the case of complements of nouns.

Examples like *izredka* ‘seldom’ in (60b), *na lewo* ‘on the left’ and *do syta* ‘to one’s fill’ in (60c-d), in which the case marker is attached to an adjective, contain a covert noun of the Slavic neuter *o*-stem paradigm; compare also the Polish and Czech examples with the locative ending *-e*, respectively: *biednie* ‘poorly’, *řídce* ‘seldom’. There are prepositional phrases in which the neuter noun is present overtly; consider the Polish *około* ‘about’, *dookola* ‘around’, *dookola* ‘around’, *wokoło* ‘around’, the Russian *okolo* ‘about, near’ and the Czech *okolo* ‘about, around’, *kolem* ‘about, around’, which contain the neuter noun *kolo* ‘wheel’.

Doetjes (1997) argues that quantificational adverbs contain nominal material which forms the restrictor of the tripartite quantificational structure. This is the reason why quantificational adverbs cannot combine with nouns. This should also hold for cases like the Russian *izredka*, the Polish *rzadko* and the Czech *zřídka* and *řídce*, all with the meaning ‘seldom’, if they indeed contain a covert noun. Example (64a) demonstrates it for the Czech *zřídka*. The control example in (64b) shows that the adverb can co-occur with a verbal predicate (i.e. the nucleus of the quantifier) and (64c) shows that if the adverbial category is changed to the adjectival category, the phrase becomes grammatical.<sup>14</sup>

<sup>14</sup> This also holds for quantificational adverbs like *často* ‘often’ (Russian *často* and Polish *często*), which have the accusative ending *-o* of the neuter *o*-stem paradigm. In certain quantificational adverbs, the noun is visible; consider e.g. the Russian *mного raz* ‘many times’, the Polish *wiele razy* ‘many times’, the German *oftmals* ‘often’ and the English *oftentimes* and *many times*.



- |         |  |    |  |    |  |
|---------|--|----|--|----|--|
| (66) a. | bel'-m-o<br>white-NMLZ-NOM.SG<br>'sclera'    | b. | běl-m-o<br>white-NMLZ-NOM.SG<br>'sclera'     | c. | bel'-m-o<br>white-NMLZ-NOM.SG<br>'sclera'    |
| (67) a. | pas-m-o<br>belt-NMLZ-NOM.SG<br>'strip, belt' | b. | pás-m-o<br>belt-NMLZ-NOM.SG<br>'strip, belt' | c. | pás-m-o<br>belt-NMLZ-NOM.SG<br>'strip, belt' |

The covert noun is also present in conjunctions consisting of a preposition, a demonstrative pronoun and a complementiser, as illustrated by the following examples.

- |         |   |    |   |    |   |
|---------|---|----|---|----|---|
| (68) a. | po-tomu čto<br>along-this that<br>'because' | b. | pre-to-že<br>for-this-that<br>'because' | c. | mezi-tím-co<br>between-this-that<br>'while' |
|---------|---|----|---|----|---|

Particular Slavic languages differ with respect to the grammaticalisation and orthography of these conjunctions. For instance, the Russian *potomu čto* in (68a) consists of two words but Slovak and Czech have a one word conjunction for the same meaning; consider the Slovak *pretože* in (68b) and the Czech *protože*. Further, the Czech *mezi tímco* from (68c) can also be written as *mezi tím co*, as its Slovak counterpart *medzi tým čo*, whereas its Russian equivalent *meždu tem kak* 'lit. between this how' is fully transparent.

If the forms of the neuter demonstrative *to* in (68) represent the determiner head, then, given the overtly realised agreement between demonstratives and the noun in Slavic languages, there must be a covert neuter noun in the conjunctions. Consequently, the structure of these expressions looks like (69).

- (69) [<sub>PP</sub> pre [<sub>DP</sub> to [<sub>NP</sub> N [<sub>CP</sub> [<sub>C'</sub> že ... ]]]]]

The second prominent analysis – the no-DP analysis – analyses traditional determiners as adjectives adjoined to a noun phrase (e.g. Bošković 2009). Again, there must be a noun in conjunctions like those in (68), to which the demonstrative is adjoined.

If we do not analyse the demonstrative as a determiner selecting a noun phrase and treat it as an independent pronoun, there will still be a noun present since pronouns themselves always contain a noun in their structure, as argued by Déchaine & Wiltschko (2002).

If we assumed that the demonstrative selects directly the clausal projection CP, which has  $\phi$ -features that can enter into an Agree relation with the demonstrative, we would have a problem with embedded clauses that do not contain a neuter element capable of valuing  $\phi$ -features of the complementiser; consider the Russian example in (70).

- (70) ... po-tomu čto ona pošla v škol-u.  
 along-this that she went.F.SG in school-F.SG  
 ‘... because she went to the school.’

One might then propose that the embedded clause always has neuter  $\phi$ -features for some reason or that the neuter form of the demonstrative is the default form used in the configurations discussed. This proposal, however, would have a problem with conjunctions in which the demonstrative is not neuter, as in the Czech (71).

- (71) po-té co  
 after-this.LOC.F.SG that  
 ‘after’

The analysis with a covert noun is also supported by the fact that there are conjunctions like the Polish example in (72), in which the noun is present overtly.

- (72) pod-czas gdy  
 under-time.ACC.M.SG when  
 ‘whereas’

The observed pattern is not specific to Slavic languages; it can also be found in Germanic, Romance and various other languages, as shown by the conjunctions below. The Italian *affinché* in (73a) is composed of the preposition *a* ‘to’, the noun *fine* ‘end’ and the complementiser *che* ‘that’; and *allorché* in (73b) is derived from *allora* ‘at that time’ – which is from the Latin *ad illam hōram* ‘lit. at those hours’ – and the complementiser *che*. In contrast to these examples, the Spanish example in (73c) is fully transparent.

- |                  |                   |                |
|------------------|-------------------|----------------|
| (73) a. affinché | b. allorché       | c. de modo que |
| to.end.that      | at.that.time.that | by way that    |
| ‘in order that’  | ‘when’            | ‘so that’      |

The example in (74) demonstrates the pattern for German. In certain German dialects, conjunctions with the prepositional structure like *trotzdem* can be followed by the complementiser *daß* ‘that’.

- (74) ... trotz-dem daß man ihm nicht trauen kann.  
 despite-the that man him not trust can  
 ‘... despite the fact that one cannot trust him.’ (Lenerz 1984: 98)

Now consider the contrast between the Malayalam examples (75) and (76) (taken from Alsina, Mohanan & Mohanan 2005: (32)). They show that the postpositions cannot have a *that* clause as their complement but can merge with a *that* clause if it is embedded under a nominal element.

- |   |  |
|---|--|
| (75) a. *[kuTTi ciriccuwenn] ineppatti        | b.* [kuTTi ciriccuwenn∂] koNT∂                     |
| child smiled.that about                       | child smiled.that because.of                       |
| (76) a. [kuTTi ciriccuwennat] ineppatti       | b. [kuTTi ciriccuwennat∂] koNT∂                    |
| child smiled.that.it about                    | child smiled.that.it because.of                    |
| ‘about (the statement) that the child smiled’ | ‘because of (the statement) that the child smiled’ |

Note also that it has been argued that (at least certain) clauses are dominated by a noun projection; see Lees (1960), Rosenbaum (1967), Ross (1967), Chomsky (1973), Emonds (1976), Müller (1995), Müller & Sternefeld (1995), Davies & Dubinsky (1998), Alsina, Mohanan & Mohanan (2005), Takahashi (2010), Bruening & Al Khalaf (2017). If that is correct, then it is not surprising that there are languages that manifest morphological case on clauses, as for instance Japanese, Korean, Imbabura Quechua, Malayalam and Yukulta. In the Japanese example (77), the complementiser or nominaliser of the embedded clause *koto* bears a case marker even if the clause is not selected by a preposition.



- (77) Hanako-ga piano-o hiku koto-o kiita.  
 Hanako-NOM piano-ACC plays koto-ACC heard  
 ‘I heard that Hanako plays the piano.’ (Kaiser *et al.* 2013: 535)

Having the structure of prepositional phrases in place, let us now turn to the prepositional case assignment.<sup>16</sup>

#### 6.4 Prepositional case assignment

In this section, I discuss in more detail how prepositional case assignment works. It is shown that the choice of prepositional case is determined by the meaning of particular projections of the decomposed preposition.

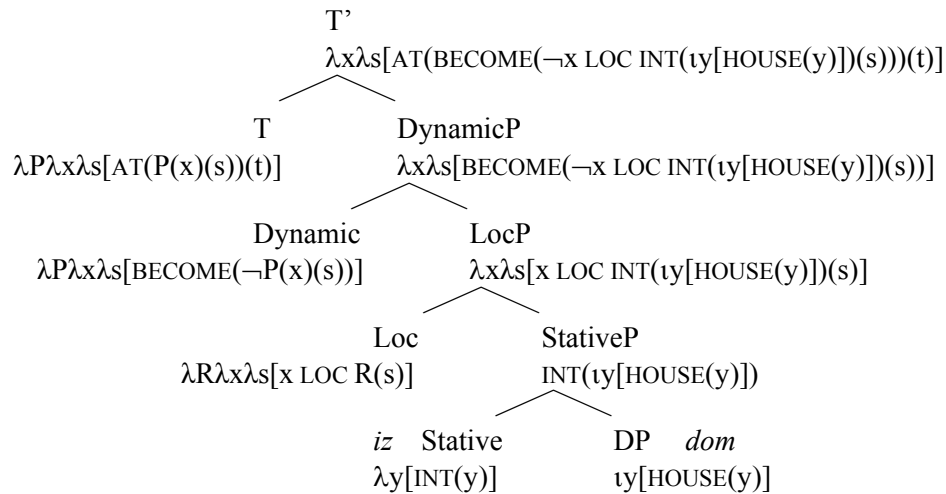
I assume that there is a correspondence between semantic properties of particular heads of the prepositional structure and their syntactic features, and that syntactic features of heads incorporated into the tense head represent values of its Tense-feature. These values are copied on the prepositional complement by the operation Agree. At the level of PF, the values are spelled out as a case by means of the operation Vocabulary Insertion. This proposal has the advantage that the relation between prepositions and their cases is not accidental since case is based on semantic properties of the particular preposition, which is in accord with the semantic approach to cases like that of Jakobson (1936, 1958), Chvany (1986), Neidle (1988) and Franks (1995), who treat cases as bundles of semantic features.

Let us demonstrate this with some examples (I will not analyse all prepositions here; I will only present some representative examples). Consider (78), with the LF of the Russian dynamic prepositional phrase *iz doma* ‘out of the house’, showing the part relevant to the case assignment process. The meaning of the preposition *iz* ‘out’ differs from the meaning of *v* ‘in’, shown in (55), in the type of the BECOME operator, as illustrated below. Since *iz* (and its Polish and Czech counterpart *z*) is a source preposition, the negative BECOME is used.

---

<sup>16</sup> Besides the adjectival and adverbial modifiers discussed above, there are also negative and existential morphemic modifiers *-ni-* and *-ně/-nie-* like in the Russian *niotkuda* ‘from nowhere’, in the Polish *donikąd* ‘to nowhere’ and in the Slovak *odniekiaľ* ‘from somewhere’ (see also footnote 7). Unbound phrasal modifiers are also possible; consider the Czech *dva metry za domem* ‘two metres behind the house’. The structure of prepositional phrases can be even more articulated; see e.g. Kracht (2008), Svenonius (2008), Caha (2009), Cinque (2010), Noonan (2010) and Pantcheva (2011).

(78)



As to the correspondence between semantic properties of particular heads and their syntactic features, the internal meaning of the stative head corresponds to the syntactic Internal-feature and the meaning of the negative BECOME corresponds to the syntactic Become-feature and Source-feature.<sup>17</sup> The presence of the general Become-feature and the specific Source-feature or Goal-feature on the dynamic head allows us to have just one vocabulary insertion rule for accusatives, as we will see below. Since source prepositions assign genitive – see the Russian *iz*, the Polish *z* and the Czech *od* in (79), taken from section 6.2 –, I propose the vocabulary insertion rule (80).

- |         |                  |              |    |                  |            |    |                     |            |
|---------|------------------|--------------|----|------------------|------------|----|---------------------|------------|
| (79) a. | <i>iz</i>        | avtomobil-ja | b. | <i>z</i>         | samochod-u | c. | <i>od</i>           | auta       |
|         | out              | car-GEN.SG   |    | from             | car-GEN.SG |    | away                | car-GEN.SG |
|         | ‘out of the car’ |              |    | ‘out of the car’ |            |    | ‘away from the car’ |            |

(80) [Become, Source] → genitive

Because of the high complexity of the case system of the three discussed languages, I will only use general vocabulary insertion rules, as argued in Biskup (2017) (see also Matushansky 2008 and Biskup 2009b). Instead of particular vocabulary items, I put case in the vocabulary insertion rules, which should be viewed as an abstraction over the specific case markers. Although such general rules do not capture syncretism of particular case markers – as do the rules with specific vocabulary items –, they have the advantage that they (at least partially) show the meaning of particular cases and that they are crosslinguistically and

<sup>17</sup> Since the meaning of the locative head is identical for all prepositions, its features do not have to be taken into considerations.

transparadigmatically valid. For instance, the rule in (80) can be used for all three discussed languages and all their inflectional classes.

For the insertion of the case marker, also  $\phi$ -features and the inflectional class feature of the host noun are relevant, which comes specified with these features from the syntactic component. Regarding the class feature, in a morphosyntactic approach like the current one, in which derivational affixes are merged in syntax, it must be already present in the syntactic component because the class information is inherent to derivational suffixes, as demonstrated in the examples below. In the Russian example (81a), the suffix *-ar'* derives a masculine noun of the first declension from the root. In (81b), *-tel'* also derives a noun of the first declension, but from the verbalised root. In (81c), the suffix *-nic* derives a feminine noun of the second inflectional class from the noun (81b). In the Polish (82), the nominaliser *-al* derives a masculine *o*-stem from the root (compare it with the feminine *a*-stem in (82a)) and the suffix *-k-* again derives a feminine *a*-stem.

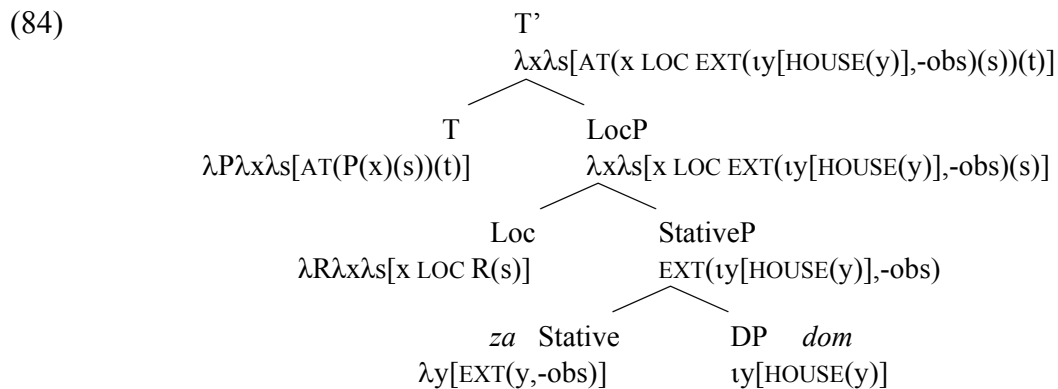
- |   |   |
|---|---|
| <p>(81) a. pis-ar'-<math>\emptyset</math><br/>         write-NMLZ.M-NOM.SG.M<br/>         'clerk'</p> | <p>b. pis-a-tel'-<math>\emptyset</math><br/>         write-TH-NMLZ.M-NOM.SG.M<br/>         'writer'</p> |
| <p>c. pis-a-tel'-nic-a<br/>         write-TH-NMLZ.M-NMLZ.F-NOM.SG.F<br/>         'writer'</p>         |   |
| <p>(82) a. gór-a<br/>         mountain-NOM.SG.F<br/>         'mountain'</p>                           | <p>b. gór-al-<math>\emptyset</math><br/>         mountain-NMLZ.M-NOM.SG.M<br/>         'highlander'</p> |
| <p>c. gór-al-k-a<br/>         mountain-NMLZ.M-NMLZ.F-NOM.SG.F<br/>         'highlander'</p>           |   |

In the Czech example, (83a) shows a masculine noun of the declension *hrad* 'castle'. The suffix *-ař* derives a masculine noun of the declension *muž* 'man' from the root in (83b); but there is also the nominaliser *-ák*, which derives a colloquial masculine noun of the declension *pán* 'gentleman' in (83c). In (83d), the suffix *-k-* derives a feminine noun of the inflection *žena* 'woman' from (83b) and in (83e) *-tv-* derives a neuter noun of the inflection *stavení* 'building'.

- (83) a. zub-Ø                      b. zub-ař-Ø                      c. zub-ák-Ø  
tooth-NOM.SG.M                  tooth-NMLZ.M-NOM.SG.M                  tooth-NMLZ.M-NOM.SG.M  
‘tooth’                                  ‘dentist’                                  ‘dentist’
- d. zub-ař-k-a                                  e. zub-ař-s-tv-í  
tooth-NMLZ.M-NMLZ.F-NOM.SG.F                  tooth-NMLZ.M-A-NMLZ.N-NOM.SG.N  
‘dentist’    ‘stomatology’

Regarding the source preposition *iz* and the difference between particular Slavic languages, prepositions differ with respect to how many meanings they can spell out. While Russian has two specific prepositions *iz* and *s* for the meanings ‘out’ and ‘from’, respectively, Polish only has one form *z* for both meanings. Czech patterns with Polish, with the exception that in addition to *z*, it has an orthographic variant *s* for the meaning ‘from surface’.

Let us look at a stative preposition, for instance, the Russian *za* (and its Polish and Czech counterpart *za*), as shown below in the prepositional phrase *za domom* ‘behind the house’.



The referent of the figure argument (represented by the variable *x* in (84)) is located in a region that is external to the house. The exterior is relativised with respect to the observer axis *obs*; specifically, *-obs* is used for the meaning ‘behind’ and *+obs* for the ‘in front of’ meaning.

The external meaning of the stative head corresponds to the syntactic External-feature and the observer axis meaning (and the vertical axis meaning for prepositions *nad* ‘above’ and *pod* ‘under’) corresponds to the syntactic Projective-feature. Since stative projective prepositions assign instrumental, as shown by the Russian *za* ‘behind’ and *pod* ‘under’, by the

Polish *nad* ‘above’ and the Czech *před* ‘in front of’ in (85), taken from section 6.2, I assume the vocabulary insertion rule (86).

- (85) a. pod / za jaščík-ami  
under / behind box-INST.PL  
b. nad skrzyni-ami  
above box-INST.PL  
c. před bedn-ami  
in.front.of box-INST.PL

(86) [Projective] → instrumental

In section 6.2, I showed that the stative *na* ‘on’, *o* ‘about’, *po* ‘along’, *v* ‘in’ and their Polish and Czech equivalents assign locative; consider the Russian examples in (87a), the Polish example in (87b) and the Czech example in (87c).

- (87) a. na / o stol-e  
on / about table-LOC.SG  
b. w stol-e  
in table-LOC.SG  
c. po stol-e  
on table-LOC.SG

These prepositions can be taken to denote a contact between the figure argument and the ground argument (with *o*, it is a non-spatial relation), in addition to their specific meanings. This meaning is present in the stative head and correspondingly, the head has a syntactic Contact-feature (sometimes called *coherence* or *intimacy*; see e.g. Hjelmslev 1935: 134 and Wiese 2004). Given this, we can use the following vocabulary insertion rule.<sup>18</sup>

(88) [Contact] → locative

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<sup>18</sup> The Russian locative preposition *pri*, the Polish *przy* and the Czech *při*, all having the meaning ‘at’, could also be analysed in this way.

As we already know, dynamic projective prepositions assign accusative; compare, for instance, the examples in (89) with (85).

- (89) a. *pod* / *za*      *jaščík-i*  
          under / behind    box-ACC.PL
- b. *nad*      *skrzyni-e*  
          above    box-ACC.PL
- c. *před*      *bedn-y*  
          in.front.of box-ACC.PL

The dynamic *za* (modulo *pod* and the Polish *nad*, *pod*, *przed*, *za* and the Czech *nad*, *pod*, *před*, *za*) has a meaning like the stative *za* in (84), with the difference that the dynamic head with the BECOME operator is present. The positive become meaning corresponds to the syntactic Become-feature and Goal-feature, which suggests the following vocabulary insertion rule.

- (90) [Become, Goal] → accusative

Given these two features, accusative markers are more specific than instrumental markers; consider the vocabulary insertion rule in (86), containing only the Projective-feature. Therefore, accusative markers fit better in the dynamic feature specification provided by the syntactic derivation in the instrumental-accusative alternation examples.

While in Polish and Czech all four projective prepositions assign both accusative and instrumental, in Russian it is only *pod* ‘under’ and *za* ‘behind’; *pered* ‘in front of’ and *nad* ‘above’ assign only instrumental.<sup>19</sup> In cases like this, differences between prepositions are accounted for in terms of the presence or absence of certain projections (and their corresponding meanings) in the structure of the prepositional phrase and in terms of different feature specifications provided by the syntactic context for the insertion of vocabulary items. Concretely, the Russian *pered* and *nad* never contain the dynamic projection and consequently features copied on the prepositional complement by Agree never form a feature context appropriate for the insertion of an accusative marker, that is, a superset context.

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<sup>19</sup> This only holds for Modern Russian (and Modern Belarussian); in Old Russian (and Old Belarussian), these prepositions also assign accusative (Mareš 1984).

The vocabulary insertion rule in (90) can also be used with the same effect for the Russian prepositions *na* ‘on’, *o* ‘about’, *po* ‘along’, *v* ‘in’ and their Polish and Czech equivalents (as discussed with respect to (87)), which alternate between locative and accusative, and also for the accusative preposition *čerez/przez/přes* ‘over’. This is in line with the fact that goal prepositions mostly assign accusative and with the claim that accusative is characterised as indicating the goal (Jakobson 1936, Van Schooneveld 1986, Anderson 2006; more generally, in Indo-European languages, accusative is typically used for dynamic meanings, whereas stative meanings are expressed by oblique cases; consider e.g. the contrast between accusative and locative in Proto-Indo-European, between accusative and ablative in Classical Latin or between accusative and dative in German and Classical Greek).

In contrast to Russian, in West Slavic languages, the preposition *v* loses its ability to assign accusative, especially, in spatial contexts (in Czech and Slovak more than in Polish, see Kopečný 1973); in such cases, the preposition *do* ‘to’ is used instead. The goal preposition *do* assigns genitive, as demonstrated in (91a) for Russian, in (91b) for Polish and in (91c) for Czech, taken from section 6.2.

- |         |                 |    |               |    |               |
|---------|-----------------|----|---------------|----|---------------|
| (91) a. | do avtomobil-ja | b. | do samochod-u | c. | do aut-a      |
|         | to car-GEN.SG   |    | to car-GEN.SG |    | to car-GEN.SG |
|         | ‘to the car’    |    | ‘to the car’  |    | ‘to the car’  |

Given the form of the other vocabulary insertion rules, it is not possible to have one rule for this goal genitive and the source genitive (e.g. [Become] → genitive). Since with *do* the referent of the figure argument does not have to end in the ground argument – it can be located just near the ground argument –, I assume that the stative head has a Proximity-feature. This feature stands for the union of the interior and the proximal exterior region of the prepositional complement. Given this assumption, the vocabulary insertion rule in (92) then correctly prevents accusative markers from appearing on the complement of the preposition *do* because they are less specific than the goal genitive markers.

- (92) [Become, Goal, Proximity] → genitive

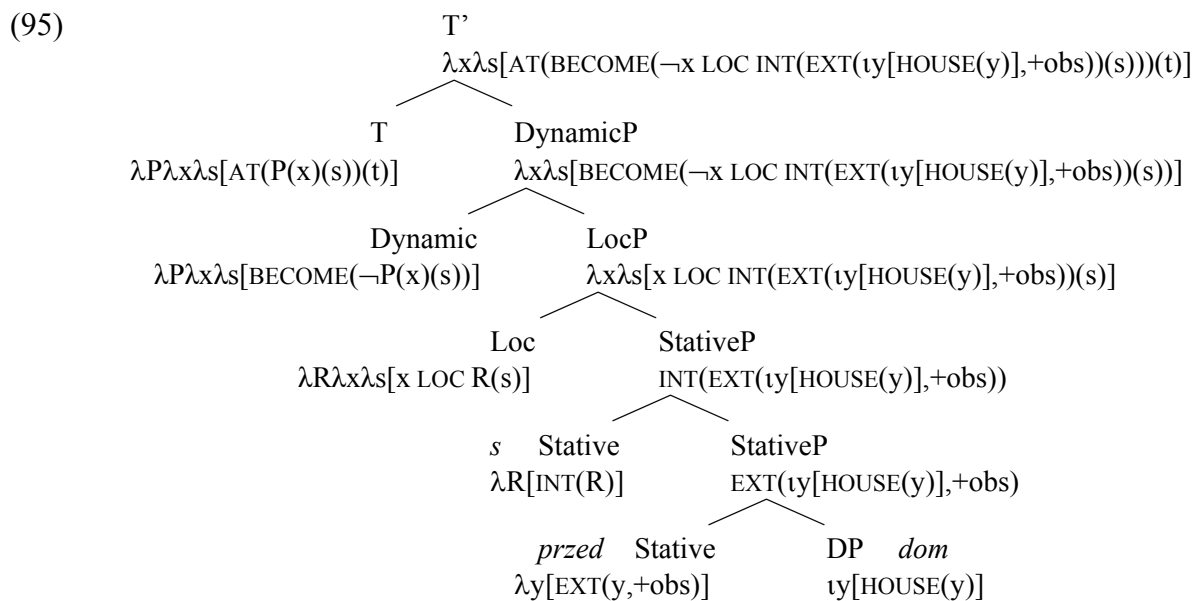
Concerning dative case, it is assigned by the prepositions *k*, *ku*, *k*, with the meaning ‘towards’, as shown in (93a) for Russian, in (93b) for Polish and in (93c) for Czech.<sup>20</sup> With these prepositions, the figure argument is oriented with respect to the ground argument, which leads to the vocabulary insertion rule (94).

- (93) a. *k*          *avtomobil-ju*          b. *ku*          *nieb-u*          c. *k*          *aut-u*  
towards car-DAT.SG          towards sky-DAT.SG          towards car-DAT.SG  
‘towards the car’          ‘towards the sky’          ‘towards the car’

(94) [Become, Goal, Oriented] → dative

This vocabulary insertion rule blocks accusative markers from appearing on the complement of the preposition *k/ku/k* because the accusative goal markers are less specific than the goal dative markers.

Complex prepositions like the Russian *iz-za* ‘from behind’, the Polish *sprzed* ‘from in front of’ and the Czech *zpod* ‘from under’ have a more complex structure; as an illustration, consider (95), with the Polish *sprzed domu* ‘from in front of the house’. The referent of the figure argument moves out of the region that is located in front of the house. Structurally, the derivation contains two stative projections.



<sup>20</sup> As already mentioned in section 6.2, the Polish *ku* is bookish and is rarely used nowadays.



The external meaning of the lower stative head corresponds to the syntactic External-feature and the feature *+obs* corresponds to the Projective-feature. The internal meaning of the higher stative head corresponds to the syntactic Internal-feature and the meaning of the negative dynamic head corresponds to the syntactic Become-feature and Source-feature. Since the vocabulary item with the highest number of matching features is inserted into the terminal, a genitive marker wins over the instrumental marker; compare the vocabulary insertion rule in (80), with the Become-feature and Source-feature, and the vocabulary insertion rule in (86), containing only the Projective-feature.

Analogously, we can analyse adverbial prepositions like the Russian *spered-i* ‘from the front of’, with the difference that, in contrast to the derivation in (95), the determiner phrase is covert (only its case ending *-i* is visible) and embeds a genitive complement.

In this way, we account for the observation that it is the higher preposition that determines case. Specifically, a comparison of the proposed vocabulary insertion rules shows that dynamic case markers are more specific than stative case markers. This, however, is not sufficient for all cases because there are also cases like the Russian adverbial preposition *vpered-i* in (96a) and the Czech adverbial *vepředu* in (96b), which contain two statively used prepositions. In these examples, case is determined by the higher (left) preposition *v* and *ve* but vocabulary insertion rules for locative and instrumental are equally specific; compare (86) with (88).

- |         |                       |    |                       |
|---------|-----------------------|----|-----------------------|
| (96) a. | v-pered-i             | b. | ve-před-u             |
|         | in-in.front.of-LOC.SG |    | in-in.front.of-LOC.SG |
|         | ‘in front of’         |    | ‘in the front’        |

Thus, in cases in which two vocabulary items are not in a subset/superset relation and compete for insertion into the same morpheme, structural properties come into play. What is relevant is c-command relations between particular heads and their features in a specific prepositional phrase, not a universal hierarchy of features (contrary to e.g. Noyer 1997). Recall that particular heads of the prepositional structure with their syntactic features incorporate into the tense head and that the syntactic features represent values of the Tense-feature, which are copied by Agree on the prepositional complement.

I assume that the feature structure of the complex tense head (i.e., values of the Tense-feature) is translated into a partially ordered set. In the case of *vpered-i* and *vepředu*, the set with ordered values of the Tense-feature copied on the prepositional complement looks like

(97), where features of the higher stative head Contact and Internal precede features of the lower stative head Projective and External.

(97) {Contact, Internal > Projective, External}

Then, in the process of competition, the vocabulary item with the highest feature wins. Concretely, for the feature context (97), there are two competing vocabulary insertion rules, (86) and (88), as shown below. Comparing the Projective-feature and the Contact-feature, the vocabulary insertion rule in (88) has the highest feature, hence a locative marker is inserted in *vperedi* and *vepředu*.<sup>21</sup>

(86) [Projective] → instrumental

(88) [Contact] → locative

Building on this discussion, I define *Specificity*, as follows.

(98) *Specificity*

A vocabulary item VI<sub>1</sub> is more specific than a vocabulary item VI<sub>2</sub> with respect to feature context C if a or b holds.

- a. VI<sub>1</sub> has more features belonging to C than VI<sub>2</sub> has.
- b. VI<sub>1</sub> and VI<sub>2</sub> have an equal number of features belonging to C and VI<sub>1</sub> is the vocabulary item with the highest feature belonging to C.

As we know, the Subset Principle of the Distributed Morphology framework chooses the most specific vocabulary item for insertion into the feature context C, whose features are a subset of C. The principle in (98) then defines specificity of vocabulary items; (98a) is the standard part of the definition and (98b) adds the structural component relevant to the insertion procedure in the exceptional cases like *vperedi*.

One may ask whether there can be two vocabulary items that both have the highest feature belonging to C, given that particular heads of the decomposed preposition can have more features (that are then equally high in the feature context on the prepositional complement). For instance, the source genitive has features [Become, Source] and accusative

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<sup>21</sup> Alternatively, one could use impoverishment, but why should it always be features of the lower head that are deleted?

has features [Become, Goal]. Although these two vocabulary items have an equal number of features, they, in fact, cannot compete because there is generally only one dynamic phrase with the BECOME operator in the prepositional structure. Concretely, either there is a dynamic head with features [Become, Goal] or with features [Become, Source], with the consequence that features of the accusative and genitive vocabulary item cannot be a subset of the feature context C at the same time. Concerning the Polish *naokoło* ‘around’ (in which both *na* and *o* can assign accusative), the accusative ending *-o* is determined by the higher preposition *na* because *o* does not project a (second) dynamic phrase.

In the case of dative, with features [Become, Goal, Oriented], and the goal genitive, with features [Become, Goal, Proximity], the problematic situation with two highest features could hypothetically occur because the Become-feature and the Goal-feature are present on the dynamic head in the decomposed preposition and the Oriented-feature and the Proximity-feature occur on a stative head. In actuality, however, such a configuration does not exist; there is no complex preposition or an adverbial preposition of the form *do-k(-case marker)* or *k-do(-case marker)*.

In the ideal case, the vocabulary insertion rules proposed in this section should be used for all cases, that is, also for the non-prepositional ones. This means that, for instance, in the case of structural accusative, the verb (specifically, the aspectual head) must assign at least features [Become, Goal] to create an appropriate context for insertion of the accusative marker.<sup>22</sup> It seems that these features are not much worse than features of syntax-based approaches (e.g. Bierwisch 1967 and Müller 2004) since, as already mentioned, accusative signals the goal (Jakobson 1936, Van Schooneveld 1986, Anderson 2006). Similarly, the dative features [Become, Goal, Oriented] could also be used for the indirect object of a verb because the event (theme) is typically oriented to its recipient. Other vocabulary insertion rules can be more problematic, for instance, it is not easy to find a relation between the agentive instrumental in passive constructions and the Projective-feature used in the vocabulary insertion rule for the prepositional instrumental.

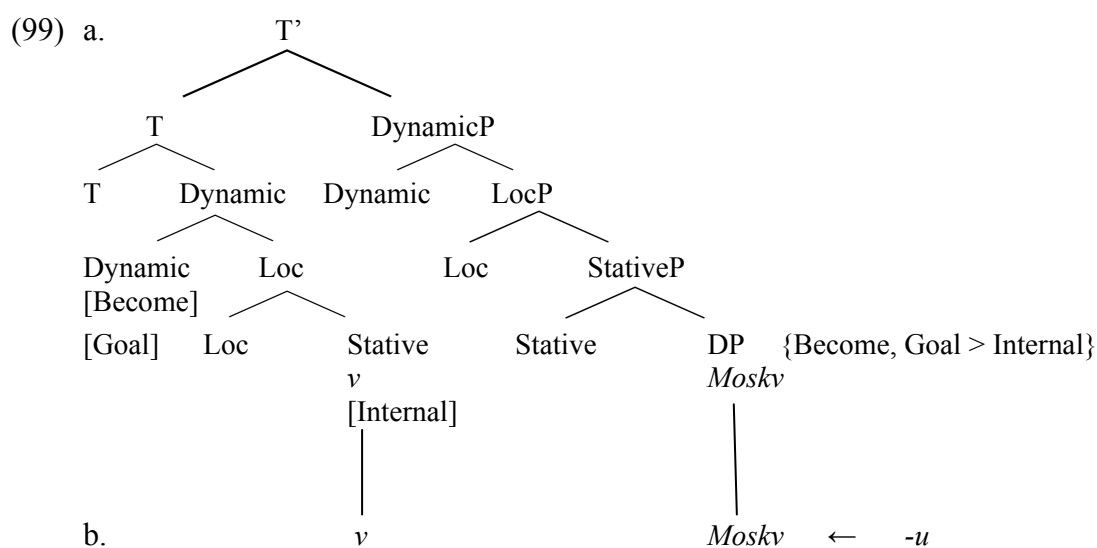
Approaches using syntax-based features, however, face the same problem, just the other way around; they often use features that have little relevance to differentiating prepositional cases. Consider, for instance, the feature [+oblique]; one expects all prepositional cases to be oblique, that is, also the prepositional accusative, in contrast to structural accusative. It seems

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<sup>22</sup> These features cannot come from an incorporated preposition because the aspectual head always assigns accusative (or genitive) and not all prepositions have such features; moreover, there are also unprefixing verbs assigning accusative (genitive). The same also holds for the tense head, assigning nominative, if the complex aspectual head incorporates into it.

that no contentful case decomposition theory can fully handle all cases, prepositional as well as non-prepositional. In the current approach, I follow localist theories of the content of case, in which cases are analysed in terms of spatial dimensions (e.g. Hjelmslev 1935, Anderson 1971, 2006). This point of view is supported by the facts that in languages with large case systems, their systems elaborate on spatial cases and the fact that when nouns develop to adpositions, the development is almost always to a spatial form (Blake 2001). In addition, non-spatial cases typically develop from spatial cases in the evolution of case systems (Creissels 2008).

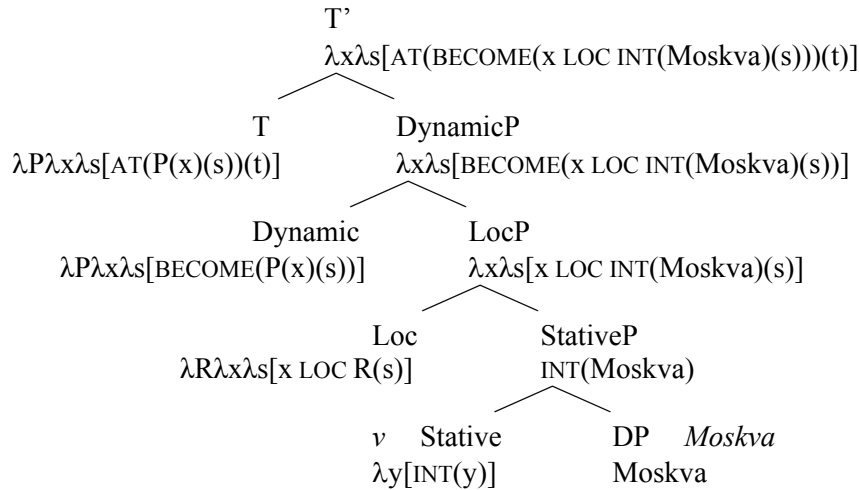
Now, for the sake of clarity, I will present the relevant part of the derivation of the Russian prepositional phrase *v Moskvu* ‘to Moscow’. The syntactic derivation, with the complex tense head and appropriate features relevant to case assignment, is shown in (99a). The Tense-feature of the prepositional complement is valued as {Become, Goal > Internal} via the operation Agree with the complex tense head.<sup>23</sup>



The PF of *v Moskvu* is shown in (99b). Given the feature context {Become, Goal > Internal}, the most specific vocabulary item is an accusative marker; see the vocabulary insertion rule in (90) [*Become, Goal*] → *accusative*. Because of the singular number and the second inflectional class of *Moskva*, the accusative marker *-u* is suffixed to the noun. The semantic derivation of *v Moskvu* is shown in (100).

<sup>23</sup> It also receives the perfective value from the tense head. Since this always happens and the value has no consequences for the prepositional case assignment, I omit it in the following derivations.

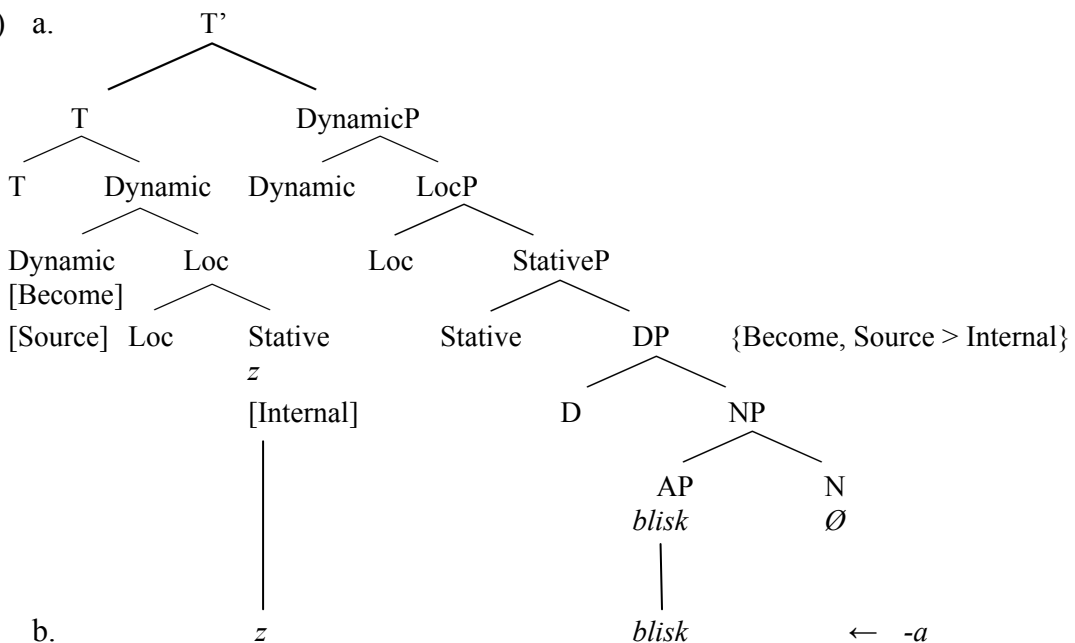
(100)



The positive become meaning of the dynamic head corresponds to the syntactic Become-feature and the Goal-feature and the internal meaning of the stative head corresponds to the syntactic Internal-feature.

With respect to the position of the case marker, it holds that it is spelled out in accordance with the linearised syntactic structure, that is, on the closest overt element. If the noun of the prepositional complement is covert, the marker is suffixed to the closest non-nominal element. Given that precedence relations of the linearised derivation reflect c-command relations of the prepositional structure, the closest host is also structurally the closest element. For instance, in the Russian prepositional phrase *svysoka* ‘from above, haughtily’ and the Polish *z bliska* ‘from near’, the genitive ending *-a* is suffixed to the adjectival modifier, as demonstrated in (101) for *z bliska*.

(101) a.



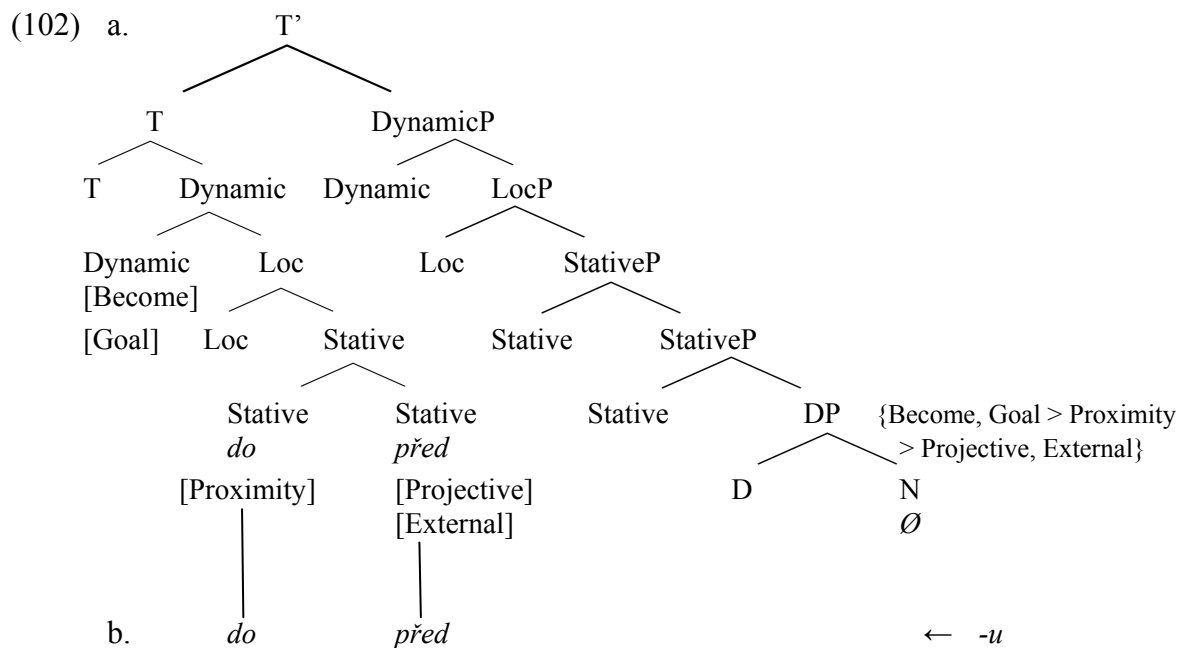
b.

z

blisk

← -a

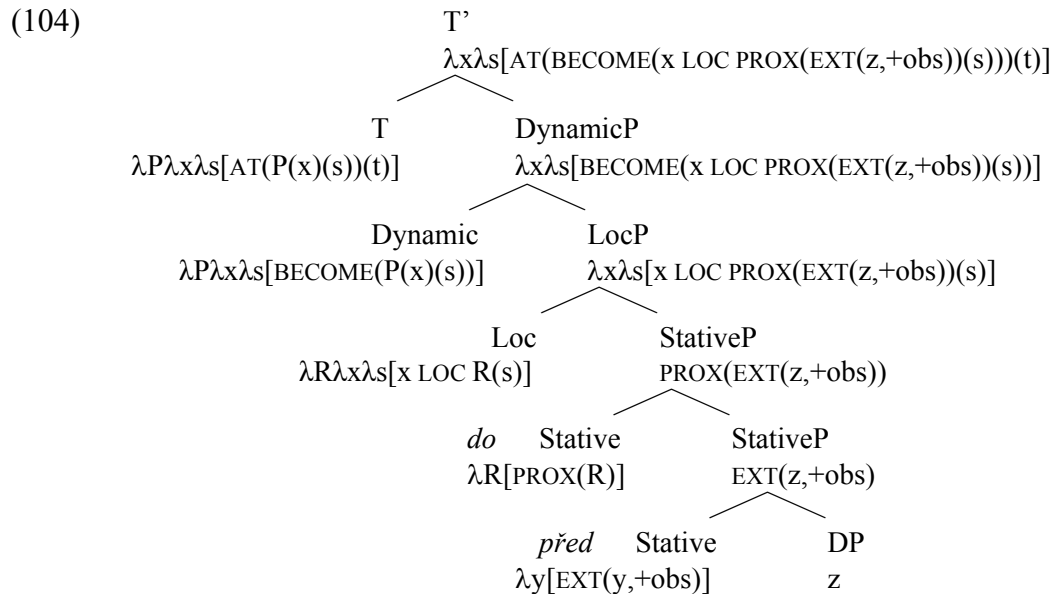
If there is no modifier, the case ending is attached to the determiner (if it is present overtly), as in the Russian *potom* ‘then’ in (25c) and the Polish *przedtem* ‘earlier’ in (26c), which contain the deictic morpheme *-t-*. If there is not an overt element in the determiner phrase, the case marker is suffixed to the closest preposition like in the Czech adverbial *dopředu* ‘forward’ in (27c). As an illustration, consider the syntactic derivation of *dopředu* with appropriate features in (102a) and the level of PF in (102b). The Tense-feature of the prepositional complement is valued as {Become, Goal > Proximity > Projective, External} via the operation Agree with the tense head. For this feature context, goal genitive markers are more specific than accusative markers and instrumental markers, as shows the comparison of vocabulary insertion rules  $[Become, Goal, Proximity] \rightarrow genitive$ ,  $[Become, Goal] \rightarrow accusative$  and  $[Projective] \rightarrow instrumental$ . Since the covert noun is of the paradigm *hrad* ‘castle’, as discussed in section 6.3.4, the genitive marker *-u* is attached to *před*.



Examples like these show that under suitable circumstances, case markers can occur on a ‘wrong’ element. The English genitive marker occurring on the verbs in (103) provides another example of this sort.

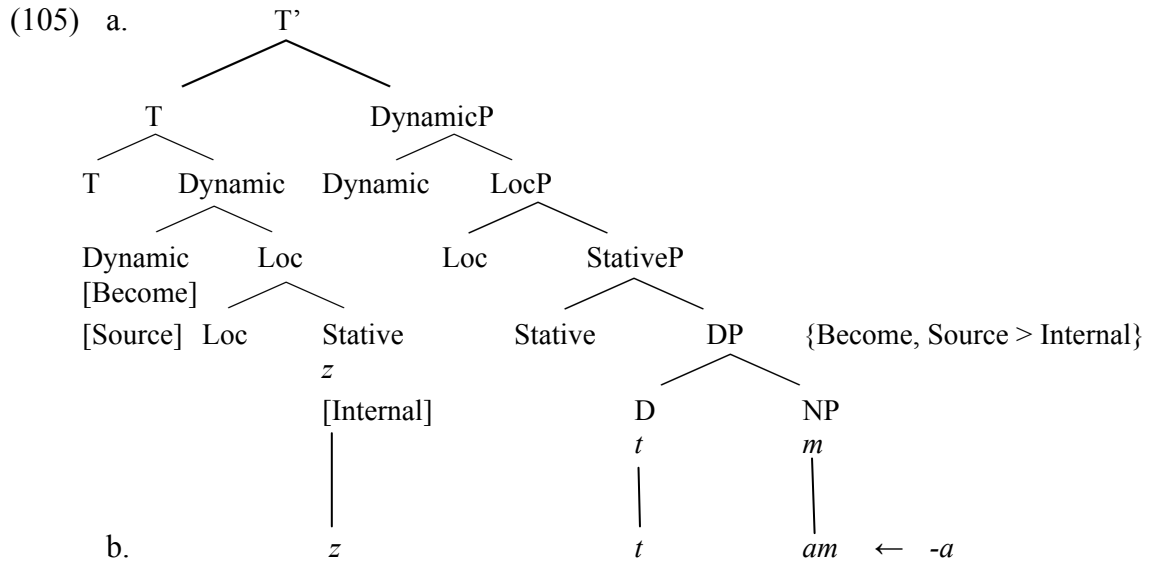
- (103) a. % Who do you think’s idea was best? (Andrew McIntyre, p.c.)  
 b. the player I met’s jersey

For the sake of completeness, consider now the semantic derivation of *dopředu* in (104). The covert prepositional complement is represented by the free variable  $z$ , whose meaning is determined by the context. Typically, it refers to the speaker or the subject of the sentence. The meaning of the stative *do* applies to the region of the lower stative phrase and returns its proximity region, that is, the union of the interior and the proximal exterior. Then the derivation continues with the known meaning steps.

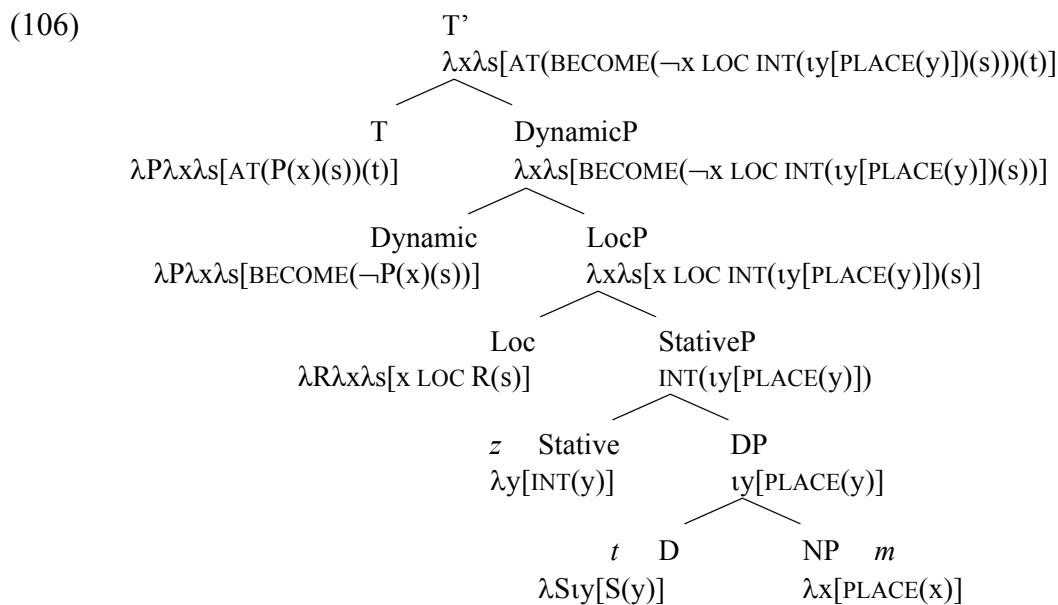


How does the derivation work in the case of deictic adverbs like the Czech *ztama* ‘from there’? When the adverb *tam* ‘there’ is decomposed along the lines discussed in section 6.3.4, then the derivation (at least from the diachronic point of view) proceeds as shown in (105). Given the feature context {Become, Source > Internal} and the vocabulary insertion rule  $[\text{Become}, \text{Source}] \rightarrow \text{genitive}$ , a genitive marker attaches to the noun morpheme *-m*.<sup>24</sup> Since the noun is of the neuter *o*-stem paradigm *město* ‘town’, as argued in 6.3.4, the genitive marker *-a* is used.

<sup>24</sup> The status of *-a-* in *tam* is not clear; it might be inserted for pronunciation reasons.



The semantic derivation of *ztama* is shown in (106). The noun phrase is a place predicate and the determiner, which is of the type  $\langle\langle e, t \rangle, e \rangle$ , derives a definite expression from it. Applying the meaning of the stative head, we receive the internal region of the place and then the derivation proceeds analogously to the examples above.



## 6.5 Conclusion

This chapter has provided a detailed analysis of syntactic and semantic properties of prepositional phrases. It has presented a model of prepositional case assignment, with complete derivations, showing their syntactic and semantic structures, and the level of PF



with a (non-exhaustive) set of vocabulary insertion rules, which, accompanied by the Subset Principle and Specificity, correctly derive the prepositional cases discussed.

We have seen that prepositional cases have a meaning; they are based on semantic properties of particular prepositional heads incorporated into the case-assigning tense head. Syntactically, prepositional cases result from the operation Agree between  $\varphi$ -features and Tense-features of the tense head and the prepositional complement. I have shown that the prepositional complement can be overt as well as covert and provided several arguments for the presence of a covert noun in prepositional phrases. In either case, the case marker is spelled out on the closest overt element in the prepositional phrase, be it a noun, a modifier, a determiner or a preposition.

## Chapter 7

### Conclusions

This book has discussed topics that are very prominent in the literature on Slavic languages, case and aspectual phenomena, from both the domain of the grammatical aspect and the domain of the lexical aspect. We have seen that these phenomena are related. Verbal prefixes – as incorporated prepositions – are responsible for prepositional case, for telicity and perfectivity and also indirectly for certain case alternations.

I argued in chapter 2 that lexical prefixes and certain superlexical prefixes are prepositions that project a prepositional phrase with the figure argument and the ground argument and then incorporate into the verbal root. It was shown that it is the syntactic and semantic properties of the prepositional phrase whose head incorporates that are responsible for various prefixation effects. Specifically, prepositions denote a state – with the exception of the prepositional phrase introducing the theme argument of unprefixated verbs – and the verbal root introduces another eventuality and the head *p* of the prefixal type with the CAUSE operator relates these two eventualities. The head P bears a Tense-feature with the value [perfective] and values the Tense-feature of the aspectual head, which results in the perfective interpretation that the event time is included in the reference time.

As far as case is concerned, structural as well as non-structural cases have been treated as a reflection of Agree between  $\phi$ -features and Tense-features and some case alternations have been based on the difference between the perfective and the imperfective value of the Tense-feature. More concretely, partitive genitive has been analysed as a spell-out of the perfective Tense-feature of the verbal object, which was assigned by the aspectual head.

The perfective Tense-feature has been used not only for the uniform analysis of cases and deriving perfectivity but also for deriving various definiteness effects. In other words, verbal prefixes are indirectly responsible for definiteness and quantisation of the direct object because they value the aspectual head as perfective, which in turn values the Tense-feature of the direct object. Specifically, in syntax, given the A-over-A principle, the perfective Tense-feature blocks extraction of an embedded element with a Tense-feature of the same value; at

LF, the feature triggers the quantised interpretation and at PF, the feature can be realised as a definite marker in languages like Bulgarian.

Given the fact that most of the verbal prefixes are prepositions that introduce two individual arguments in their phrase in the complement position of the base verb, they can change its argument structure. We have seen that they can, for instance, add an unselected argument to unergative predicates.

Chapter 3 categorised compositional and non-compositional prefixed verbs by means of a paraphrase diagnostic and provided syntactic and semantic analyses of their various types. I treated non-compositional prefixed verbs as idioms and showed that they can receive a compositional analysis even if they have an idiosyncratic meaning. We have seen that non-compositional prefixed verbs are derived in the standard bottom-up fashion and that they differ from compositional prefixed verbs in the fact that the meaning of certain derivational steps can be updated in the course of the derivation.

It has been argued that there are three types of non-compositional prefixed verbs. Prefixed verbs of class 2 ( $P^{\text{reg}}V^{\text{irreg}}$ ) and class 3 ( $P^{\text{irreg}}V^{\text{reg}}$ ) are non-compositional in the sense that their meaning is not composed of the original meanings of their parts but they have been derived compositionally with the help of the operation of predicate transfer. The third type of non-compositional prefixed verbs ( $P^{\text{irreg}}V^{\text{irreg}}$ ) has been derived in the way typical for idioms, by the insertion of a listed meaning into the verbal root.

This proposal has a consequence for the classification of prefixed verbs because it groups together spatially prefixed verbs, with the regular meaning of the prefix, and superlexically prefixed verbs, and separates them from idiosyncratically prefixed predicates. This contrasts with the widely accepted lexical-superlexical approach, which groups together spatially prefixed verbs and idiosyncratically prefixed verbs in opposition to superlexically prefixed predicates.

Chapter 4 investigated prefixed *lý-* and *ny’-/ty’-* participles in Czech and argued against the generalised distinction between lexical and superlexical prefixes with respect to the possibility of formation of adjectival participles. It was argued that the ungrammatical status of some superlexically prefixed participles should be accounted for on a case-by-case basis.

It was shown that it is the prepositional phrase with its state variable whose head incorporates that licenses the presence of the target state operator in the participle. I argued that the stativiser is present in the adjectival head, which has the consequence that both lexical and superlexical prefixes can be contained in target state adjectival participles.

We have seen that prefixes help verbs to derive adjectival participles because they induce perfectivity and telicity, which are necessary for deriving *lý-* and stative *ný-/tý-* participles. In addition, by means of transitivity, both types of prefixes help unergative verbs to derive *ný-/tý-* participles.

With respect to the accusative object restriction on the formation of *ný-/tý-* participles, it has been argued that it derives from the fact that the null operator can only move from a defective prepositional phrase or from the specifier position of the PP projection.

In chapter 5, I discussed the verbal prefix *po-*. The comparison of the Czech future *po-* with other verbal prefixes and *po-* from Russian and Polish has shown that future *po-* differs from other uses of verbal prefixes in a number of important ways, for instance in its inability to derive various verbal forms. I analysed future *po-* as a prepositional element that evolved into a future marker representing the tense head in two reanalysis steps. It was shown that the proposed analysis accounts for properties of future *po-* as well as differences between future *po-* and other prefixes.

In the first step, the ablative *po* was reanalysed as the ingressive prefix *po-* and in the second step, the ingressive prefix was reanalysed as future *po-*. Russian and Polish – in contrast to Czech – did not undergo the second step.

I proposed that the speaker-oriented meaning of imperatives with future *po-* is based on the ability of the marker *po-* to spell out the allative/adessive meaning. The original allative/adessive prepositional element was reanalysed as an allative/adessive tense element, which takes the addressee and the speaker as its arguments.

In chapter 6, I provided a detailed analysis of syntactic and semantic properties of primary prepositions and adverbial prepositions in Russian, Polish and Czech. I presented a model of prepositional case assignment in which the choice of prepositional case is determined by the meaning of particular projections of the decomposed preposition.

Thus, prepositional cases have a meaning; they are based on semantic properties of particular prepositional heads incorporated into the case-assigning tense head. Syntactically, prepositional cases are a reflection of the operation Agree between Tense-features and  $\phi$ -features of the tense head and the prepositional complement. It was proposed that there is a correspondence between semantic properties of particular heads of the prepositional structure and their syntactic features and that the syntactic features of heads incorporated into the tense head represent values of its Tense-feature. These values are copied on the prepositional complement by Agree and at PF, the values are spelled out as a case with the help of the operation Vocabulary Insertion. I proposed a non-exhaustive set of vocabulary insertion rules,

which, accompanied by the Subset Principle and Specificity, correctly derive the prepositional cases under discussion.

I argued that the prepositional complement can be overt as well as covert and provided several arguments for the presence of a null noun in prepositional phrases. We have seen that in either case, the case marker is spelled out on the closest overt element in the prepositional phrase, be it a noun, a modifier or a preposition.

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